INFORMATION TO USERS

The most advanced technology has been used to photograph and reproduce this manuscript from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book. These are also available as one exposure on a standard 35mm slide or as a 17" x 23" black and white photographic print for an additional charge.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

U·M·I

University Microfilms International
A Bell & Howell Information Company
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA
313/761-4700 800/521-0600

Order Number 9015747

The changing world system: Economic dominance, political dominance, and Third World development, 1945–1985

Gong, Yoosik, Ph.D.

University of Illinois at Chicago, 1989

U·M·I
300 N. Zeeb Rd.
Ann Arbor, MI 48106

THE CHANGING WORLD SYSTEM: ECONOMIC DOMINANCE, POLTICAL DOMINANCE, AND THIRD WORLD DEVELOPMENT, 1945-1985

BY

YOOSIK GONG
B.A., Yon-Sei University, Seoul, 1976
M.A., Yon-Sei University, Seoul, 1980

THESIS

Submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy in Sociology
in the Graduate College of the
University of Illinois at Chicago, 1989

Chicago, Illinois

THE UNIVERSITY OF ILLINOIS AT CHICAGO
The Graduate College

July 26, 1989

I hereby recommend that the thesis prepared under my supervision by

Yoosik Gong

entitled CHANGING WORLD SYSTEM: ECONOMIC DOMINANCE, POLITICAL DOMINANCE, AND THIRD WORLD DEVELOPMENT, 1945-1985

be accepted in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

Richard E. Barrett

In Charge of Thesis

Recommendation concurred in

William P. Murphy

Raphael T. Campbell

Christopher Ross

M. Simpson

Committee

on

Final Examination

THE UNIVERSITY OF ILLINOIS AT CHICAGO

D517 Rev. 1/87

To My Family

ACKNOWLEDGEMENTS

I would like to thank my committee members for their helpful advice and encouragement in completing this work. Professor Richard E. Barrett, the chair of the committee, and Professor Christopher O. Ross have helped me at every stage of my dissertation writing. They guided me in developing and organizing the ideas, and they had extraordinary ability and patience in encouraging me whenever I was struggling. Professor Barrett read the manuscript probably more times than I did. Professor Ross has introduced me to network analysis techniques and to the computation of dominance scores, which served as the key variables of my dissertation. He kindly allowed me to use his data on multinational corporations and provided me with valuable suggestions on major methodological issues.

Professor Moshe Semyonov gave insightful comments on many areas to which I had given insufficient attention in early drafts of my dissertation. I learned much from him, and profited from his energetic and enthusiastic attitude to sociological issues. Professor William P. Bridges and Professor Richard T. Campbell have always opened their doors whenever I needed their help; their methodological expertise improved my analytical skills substantially. Professors David Rubinstein and R. Stephen Warner read selected chapters of my work; their criticism as well as encouraging comments built up my confidence at the early stage of my dissertation. I owe special thanks to the Department of Sociology for providing me with institutional support,

such as a personal computer and an office, which became a great help in my final stage of dissertation writing. I will not forget the warm environment that I have enjoyed here.

I owe much to my parents and parents-in-law who never stopped encouraging me from miles away. I have to give my greatest appreciation to my wife Jeeyoung and my son Jonathon who should have shared more time with me and yet never complained.

YSG

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

TABLE OF CONTENTS (continued)

LIST OF TABLES

LIST OF TABLES (continued)

LIST OF TABLES (continued)

LIST OF FIGURES

LIST OF ABBREVIATION

ASEAN	Association of Southeast Asian Nations
COMECON	Council for Mutual Economic Aid
CPE	Centrally Planned Economy
EEC	European Economic Community
GDP	Gross Domestic Product
GNP	Gross National Product
IBRD	International Bank for Reconstruction and Development
ICPSR	Inter-University Consortium for Political and Social Research
IMF	International Monetary Fund
LDC	Less Developed Country
MDC	More Developed Country
MNC	Multinational Corporations
NATO	North Atlantic Treaty Organization
OECD	Organization for Economic Cooperation and Development
OLS	Ordinary Least Square
OPEC	Organization of Petroleum Exporting Countries
SMSA	Standard Metropolitan Statistical Area
WST	Dependency / World-System Theory

SUMMARY

Although dependency/world-system theory (WST) provided new insights, its overemphasis on external causes over internal causes and economic factors over political factors resulted in an incomplete understanding of the process of economic development. This study has attempted to overcome the theoretical and methodological limitations in the current WST literature. First, I assumed that the world-system consists of two analytically separable and yet equally important domains: the economy and the polity. This goal was achieved by synthesizing the economically-oriented dependency theories and the politically-oriented international relations theories. Second, I have critically reviewed various contending theories of development, ranging from modernization theory to neo-classical economic theories of development, and selected four internal factors which influence economic development: the quality of human capital, the productivity of natural resources, the level of domestic investment and the level of internal state strength. The key concept of WST 'dependency' has been previously measured by unidirectional data. Based on a network analysis technique, I measured the external factor, 'dependency' by using relational data, and termed it 'dominance' indicating a nation's world-system position: multinational corporations exchange for economic dominance, diplomatic relations for diplomatic dominance, and arms transfer and trade for arms dominance. With these theoretical and methodological reformulations, the major findings of this study can be summarized as follows.

I computed global inequality by using Theil's index, and decomposed the change in the GDP per capita distribution among 123 nations during the period from 1950 to 1985. The results conform reasonably well to WST's expectation: global inequality was steadily increasing and there was very little positional mobility of individual nation-states in the stratified world-system. That is, the rich nations in fact got richer and the poor, poorer. I then analyzed the patterns of change and disparity in economic and political dominance. I identified an interesting regularity in various nations' mobility along the economic and political spectra. For example, there was a clear distinction between three groups of nations (the OECD nations, the CPEs, and the Third World) regarding economic and political dominance. Third World nations were economically and politically inferior to both the OECD and the CPE countries. Although the CPEs were competing with the OECD nations in arms power, the OECD nations were undoubtedly the leaders of world politics as well as of the world economy.

The interaction effects between economic dominance and the four internal variables mentioned above were tested. Although economic dominance has a positive impact on Third World economic growth, its significant effect vanishes when controlling for the other four internal factors. Among the four internal conditions, only the quality of human capital had a positive and significant effect on economic growth and it is the only internal condition that significantly

interacts with economic dominance. I also found an interesting regional variation in the relationship between economic development and internal conditions; i.e., the quality of human capital and the level of domestic investment had little impact on economic growth in Latin America. In other words, Latin American countries had failed to utilize their internal resources to promote their economic development, while other nations did.

Finally, I investigated the processes in which a nation's economic dominance is influenced by the interplay between its internal and external conditions. Internal and external conditions were found to be operating together and to shape a nation's economic dominance. The initial level of development had a significant effect on both diplomatic and economic dominance but it had no influence on arms dominance. On the other hand, internal state strength had little to do with either diplomatic or arms dominance, and it contributed negatively to economic dominance. This tells us that a nation can be active in diplomacy or engage in an arms build-up regardless of its state capacity, but for Third World countries, the overextension of internal state power is detrimental to their economic dominance. The results also confirmed that diplomatic and arms dominance are two different dimensions of world politics. They had different impacts on a nation's economic dominance; i.e., diplomatic dominance is more influential factor than arms dominance in determining a nation's economic position in the world.

Chapter 1

INTRODUCTION

At the global level, the most significant change after World War II is probably the growing number of independent nation-states; the United Nations grew from some 60 member nation-states at its inception to over 160 today. These countries have formed into three distinctive groups in terms of development patterns.[1] The First World, the already advanced capitalist countries even before World War II, enjoyed a continuing economic prosperity. The Second World, the communist bloc of countries, went through a different developmental trajectory, and yet they also achieved considerable economic development. The majority of nation-states (the Third World), however, have suffered from a low rate of economic growth, and many remain in misery and poverty.

---

[1] Development and modernization can be used interchangeably. But 'modernization', especially within the modernization paradigm, was often equated with becoming more like the western societies including the US. On the other hand, 'development' was used as more or less a neutral concept. It should be noted how the concept development, which contrasts the state or the level of change in social structure, has been developed over the decades. Earlier usage, like the term modernization, contains such pejorative connotations as backward versus advanced economies, or traditional versus modern countries. Then the classification by a continuum based on the level of development became popularized, like developed versus underdeveloped or more developed versus less developed countries (or developing countries to emphasize continuing change). Further, countries can be classified by income level (low, middle and high), region (north versus south), and political-economic linkage (First, Second, Third, and even Fourth World).

This study investigates the global change in the world political and economic environment since 1945 and its impact on Third World development. The analysis also extends to the First World and to socialist economies. Third World development or stagnation cannot be adequately explained without considering political as well as economic changes in the world environment, particularly of the economically and politically strong First World countries. We have observed many significant changes in world politics and in the world economy after World War II: a sharp political cleavage between the two blocs allied with the US and the USSR, but a growing economic exchange between the blocs; a reshuffling of political and economic ranks among OECD countries (e.g., the surge of Japan and West Germany as leading economic powers and the relative decline of US hegemony); and a widening gap between the poor and the rich countries. These changes are interrelated and had a tremendous impact on Third World development.

It is the contribution of the dependency/world-system perspective that Third World development can only be explained in a global context. But the dependency school overemphasizes economic aspects of global exchange while ignoring political exchange among nation-states, and its holistic view ignores the independent role of each nation-state. National development is contingent on political as well as economic changes in the world environment. Moreover, each nation-state is primarily responsible for its own development. Although this study

basically takes the dependency framework, it is not ready to support the dependency view as it is usually expressed. This research reformulates dependency theory to overcome these limitations and constructs a comprehensive model for an empirical test.

1.1 A Shift of Paradigms

The origin of dependency theory goes back to the early 1950s, but its importance was overshadowed by the modernization paradigm, which dominated key areas of the social sciences for several decades until the late 1960s. Now the dependency perspective seems to dominate the sociology of development.

The two contending perspectives address the same questions: why do some countries develop while others do not, and why are some countries growing rapidly while others stagnant? In brief, the two perspectives differ in their respective theoretical emphasis. The modernization model focuses on the internal factors, such as endogenous institutional arrangements and human capital, even including individual psychological traits. Development or stagnation depends on whether or not each nation-state has capable administrative units, a good educational system, a healthy and well-educated population and so on. On the other hand, the dependency model emphasizes external structural effects, position in the world-system, or dependency on outsiders for national development. This new perspective sees the miserable economic condition of the Third World as inseparable from the prosperity of the

First World. It is the outcome of global expansion of a single economic system, capitalism, in which the rich First World countries are the beneficiaries and the rest remain stagnated due to the structural blockage imposed by the First World.

The modernization approach, often labeled as ethnocentric, proposes a quite optimistic view on the Third World development; if the Third World imitates institutional features of the West, they would achieve economic development rather quickly. In fact, the Third World has had a rapid expansion of its educational systems, public services, and state systems after World War II (Meyer and Hannan, 1979; Reynolds, 1985; Boli-Bennett, 1980). However, such institutional emulations were not followed by comparable economic growth. Rather, a widening of the average economic growth rate between the Third World and OECD countries has occurred (Seligson, 1984). More significant is the sharp pulling apart of growth rates within the Third World itself. In the 1980s, we find a top tier of Third World countries like South Korea, Hong Kong, and Taiwan, that will certainly continue to grow and probably overtake some of the OECD countries. There is another group of Latin American countries with very low economic growth (e.g., Argentina, Chile, Mexico, Uruguay) who were already industrialized in the 1950s. At the bottom is a group of stagnating or even declining economies that are falling farther and farther behind the world average, such as Afghanistan, Ghana, Sudan, Uganda, Mozambique, Nepal, and Zaire (see Papanek, 1977 and 1973; Reynolds, 1985: 390-2). The modernization view

could not explain those stagnating economies who nevertheless had substantially improved their internal conditions other than economies.

With the failure of the modernization approach, a new perspective emerged, known as the dependency or world-system theory (Baran, 1957; Frank, 1967; Sunkel, 1973; Galtung, 1971; Wallerstein, 1974a). To this approach, the most important obstacle to development is not lack of capital, entrepreneurial skills, or educational facilities, but the international division of labor, and these causes are external to the underdeveloped economy. Development and underdevelopment are described as two aspects of a single global process. The center, i.e., the West, exploits the peripheral Third World countries; development in the center directly implies underdevelopment in the periphery. By shifting our attention from internal to external factors and from the individual nation-state as a unit of analysis to the world as a whole, the new perspective provided clues to understanding the deteriorating Third World economic situation.

1.2 Failures in the Empirical Validation of the Dependency View

The fresh insights of the dependency perspective drew enthusiastic attention from scholars in various fields. Dependency theory was soon subjected to vigorous empirical assessment. The so-called cross-national quantitative studies of the dependency/world-system paradigm have been almost a 'fashion' for the last ten years or more. The results are, however, depressing; there are tremendous

inconsistencies in the empirical findings (see Rubinson and Holtzman, 1982).

It is a popular misconception that the dependency school explains underdevelopment by external factors only. Although during the 1960s the dependency approach initially proposed a sharp polemic argument against the then-prevailing modernization theory, and claimed that the national economy was basically externally determined, such polemical exaggerations were soon abandoned, particularly by dependency theorists themselves. For instance, Frank changed his earlier extreme position and saw the importance of both internal class relations and external exchange relations; i.e., that external and internal factors play a combined dialectical role (1978: 54).[1] Cardoso went one step further, and provided a distinction between external factors as 'conditioning' forces and internal factors as 'determining' forces (1973; also see Cardoso and Falleto, 1979).

The cross-national quantitative studies failed to incorporate such theoretical developments into a comprehensive statistical model (see Bach, 1977; Palma, 1978; Ragin, 1982). Most studies still stick to the earlier dependency argument; the diverse internal social, political and economic variables, which are crucial for coping with external constraints, were not considered in quantitative studies. Not only did

---

[1] Frank even announced the end of dependency theory. "The evidence is accumulating that 'dependence' has ended or is completing the cycle of its natural life, at least in the Latin America that gave it birth. The reason is the newly changing world economic and political reality" (Frank, 1977:357).

this model have a problem of misspecification, but these quantitative studies also have such methodological limitations as premature and incomplete operationalization of the concept of dependency, small numbers of cases, improper time-design and so on (see Chapters 3 and 4). As Chirot and Hall correctly observed (1982:95), "it is so easy to find some United Nations data, run it through a machine, and tack on a little world-system verbiage, it is a style that has been abused."

To correct these problems, critics (e.g., Reynolds, 1985) and even defenders (e.g., Cardoso, 1977) have suggested that the historical case study is the only valid method to capture the complex interplay between the internal and the external factors and thereby to prove whether or not dependency theory is true. However, these two methods of analysis are by no means contradictory to each other. The quantitative study, if properly used, can preserve the theoretical richness that the historical case study may provide. This does not mean that the dependency perspective is flawless, or that the inadequate use of quantitative methods is the sole cause of inconsistent findings. As suggested, the dependency view has several limitations, such as an overemphasis on economic and external factors. The methodological problems of quantitative studies and the inherent theoretical limitations of the dependency view are interrelated and combined to produce the inconsistent findings.

1.3 Research Problems and Objectives of Study

The problems of the current dependency/world-system theories can be summarized as follows. The dependency view overemphasizes the economic aspect of global exchange; it sees the world-system as essentially an economic system of capitalism. Under this logic, the polity is subjected to the economy (i.e., the economically strong states are also politically strong in international politics; Hopkins and Wallerstein, 1977:130; Wallerstein, 1979b:272-3), and thus political exchange between nation-states is generally ignored. But critics argue that the operation of the international state system is independent of world capitalism (Bulls, 1977; Waltz, 1979; Skocpol, 1979). We have observed that political struggles among the superpowers have crippled some Third World economies, such as Vietnam, Nicaragua, and Afghanistan. On the other hand, many Third World countries are taking advantage of superpower competitions (not only the competition between the US and the Soviet but the competition among the core capitalist countries) for advancing their own economic interests. These suggest that each state has an active role in international politics regardless of its economic status, and even a small and economically weak country can exert political power over other states (Kaplan, 1975).

Moreover, the global expansion of capitalism did not seem to include socialist economies, who established their own political bloc and who did not, until recently, become actively involved in economic exchange with capitalist societies. Yet they achieved rapid economic

growth and maintained solid political systems. The world cannot be simply described as economic relations between the core and the periphery sectors.

Second, the dependency view, with its holistic explanatory scheme, underestimates the autonomy of a nation-state in the world-system. The role of each nation-state in deciding its fate or transforming the entire system is regarded as trivial (see Chase-Dunn, 1981). The internal structures of Third World states are viewed more as reflections or consequences than as possible causes of dependency, or for their effects on a nation's relative position in the world division of labor. Therefore, the internal structural conditions, which can buffer external influences, are much ignored. As many rapidly growing Third World nations (e.g., Korea, Taiwan, Brazil) have shown, each nation-state is primarily responsible for its economic development. Whether or not they are successful in overcoming external threats and achieving economic growth depends on internal conditions such as the governmental capacity of each nation-state (Gruhn, 1983).

In order to solve these problems in world-system/dependency theory, this study seeks to accomplish the following goals. The first objective is to bring political terms into dependency theory. The world-system is first assumed to consist of two domains: the economy and the polity. Both aspects of the system are not only analytically separable but also equally important. By separating the two domains, we can bring back the autonomy of the nation-state and see the

important role of the state in economic progress and in the world political economic order. More important, we can include the socialist bloc of countries in the analysis; for instance, the USSR does not belong to the core nations in the world-economy, but she is competitive with the US in the political arena. It is worth investigating how the two domains have changed and influenced national development for the last several decades. Contrary to Wallerstein's reified world-system notion (i.e., assuming that the world-system really exists), the world-system in this study is used as a nominal concept, which simply describes a network structure consisting of a number of interdependent nation-states. Thus, the unit of analysis is not the whole world-system but a nation-state.[1]

The second goal is to combine various modernization arguments with the dependency view and to construct a proper statistical model which reflects mutual influences between internal and external factors. More specifically, I will emphasize the backward causation from internal factors based on the assumption that the internal structure of a nation-state determines its relative position in the world-system. The current empirical studies of the dependency view are limited to

---

[1] For Wallerstein, the unit of analysis is the world-system as a whole, not the individual nation-state (1979a:7-21). Yet he explains the emergence and development of the world-system with reference to specific relations between nation-states, or through comparisons of the core and the periphery. It is not clear what can be added to explaining Third World development by producing a new and ambiguous definition of the world-system. See Szentes (1985:301-7) and Ragin (1987:6-9) for a further discussion.

external factors only; and if not, they suffer from methodological problems and do not test reciprocal influences between the internal and the external factors.

To sum up, the purpose of this study is two-fold; one is to attempt a theoretical reformulation of the dependency view and the other is to provide methodological alternatives for quantitative tests of this theory. To achieve these goals, chapter 2 provides a general overview of various branches of modernization and dependency theories. The first part of chapter 3 gives a critical assessment of the dependency perspective in theoretical and methodological terms. The second half of the chapter reformulates the dependency theories by incorporating international relations theories into them. It also introduces a key concept from the population ecology literature, 'dominance', and its measurement technique (based on a network analysis), into debate. Chapter 4 specifies the research problems in a more tangible form to construct testable statistical models. It also deals with refining the measurements of modernization variables, such as human capital, endowments of natural resources, state strength and so on. The relative position of a nation in the world-system is measured by political and economic dominance based on the techniques developed in Chapter 3. The hypotheses are constructed, and the data collection methods and the statistical models are stated. Chapter 5 is a descriptive overview of the changing world-system. It computes the level of global inequality by five-year periods from 1950 to 1985 and

correlations between network dominance scores and internal variables are examined. The focus here is on the mobility of nation-states along the dimensions of political and economic dominance during the period. Chapter 6 tests the hypotheses of the conventional dependency/world-system theory constructed in Chapter 4; i.e., the hypotheses 1-1 to 1-5. Since most previous empirical tests of the dependency/world-system theory did not include either the socialist or the developed core countries, the analyses in Chapter 6 are limited to Third World nations. The hypotheses of conventional dependency theory are tested by non-additive ordinary least squares estimation. Chapter 7 tests the hypotheses of the reformulated version; i.e., Hypotheses 2-1 to 2-5. It includes all nations where data are available. These hypotheses are tested by path analytic regression. Chapter 8, the conclusion, discusses major findings of the study.

Substantively, this study will contribute to theories of development in three ways. First, although the time period of this study is limited to the era from 1945 to the present, it is a sufficiently long enough and proper time period for testing the applicability of dependency/world-system theories. Second, by separating the two economic and political domains of the world-system, this study draws a new fuller portrait of world-system structure. Third, by making the world-system a nominal concept, and retaining the nation-state as the unit of analysis, this study illuminates the important role of each nation-state in determining its own development and in structuring the world-system.

Chapter 2

CONVERGENCE OF MODERNIZATION AND DEPENDENCY THEORIES

Horowitz (1979) distinguishes three groups of development theories: modernization, developmentalist, and dependency theories.[1] According to him, modernization theories emphasize psychological and attitudinal variables within nation-states. On the other hand, the other two approaches see that development and underdevelopment result from an interplay between internal and external forces. They differ in the relative importance they assign to internal and external factors. Developmentalist theorists place greater emphasis on the internal structure of nations while dependency theories emphasize external factors (i.e., all forms of interaction with the core countries).

---

[1] The complexity and variety of intellectual traditions of development theories make it difficult to distinguish how they are similar and different. We can use various criteria: by ideology (liberal versus Marxist; e.g., Apter, 1987), by type of causation (mono-causal versus multifactor, internal versus external, structural versus psychological; e.g., Papanek, 1977) or by chronological order. In fact, Horowitz's distinction is based on ideological differences. He identifies ideologies of 'Western capitalism' in modernization theory and 'soviet communism' in dependency theory; to him, developmentalist theory is relatively neutral. Basically, I disagree with any attempt to analyze or understand a theory in terms of ideological orientation. Such effort often leads us to neglect the focus of argument of the theory, and no theory can be free from some sort of ideology.

Although Horowitz provides a succinct summary of the trends and the major arguments of various development theories, his classification is naive and oversimplified. As suggested in the previous chapter, for instance, recent developments in the dependency school (e.g., Frank, 1978) are not much different from the developmentalist notion that Horowitz identifies. Further, Horowitz holds the common misconception that the modernization paradigm is preoccupied with individual attitudes and psychological modernity. Modernization theory as such is only one of many branches under the modernization paradigm, although this notion was once popular and often is misconstrued as if it represents all.

In this chapter, I will specify four types of development theories, which are: cultural-psychological modernization, structural-institutional modernization, early-dependency and neo-dependency theories. The cultural-psychological modernization approach is represented by Inkeles, Hoselitz, Lerner, McClelland, Almond and so forth. This approach is primarily concerned with the psychological traits of the individual (this is what Horowitz identifies as modernization theory) and the culture reflected in a collective form, such as political or civic culture. The structural-institutional modernization approach, on the other hand, changes the analytical focus from the social-psychological to the socio-structural dimension, and from individual traits to institutional arrangements of political and economic factors. Economic theories of

development, and political and sociological modernization theories influenced by a Parsonian evolutionary notion may belong to this approach These two approaches constitute the modernization paradigm.

The discussion of the early-dependency approach is limited to the extreme version, which originated from the Latin American liberal economics and Marxian tradition. The basic ideas can be found in the earlier writings of the leading figures, such as Prebisch (1950), Baran (1957), and Frank (1967). The neo-dependency approach includes various elaborations of the early-dependency approach which recognize the interaction between internal and external factors, such as state theory and local class theory (e.g., Brenner, 1977; Petras, 1977).

2.1 Modernization View

One of the annoying assumptions of the modernization paradigm is that there is a single route to development or modernization. In other words, the process of development that western societies experienced is the model of development, and the late-comers would (or should) follow its pattern irrespective of their different historical paths to the present. This kind of evolutionist notion once characterized the 19th century sociological theories: The best-known are Spencer's evolutionary stages of growth, Durkheim's theory of social change from the mechanical to the organic foundations of solidarity, Marx's vision of development toward socialism and so on. The modernization paradigm retains such a notion and applies it to explain Third World

Development. Rostow's five 'stages' of development (1971), Kerr et al.'s (1960) 'convergence', Bendix's (1967) 'emulation', and Rogers et al.'s (1971) 'diffusion' are the contemporary versions of the evolutionist notion.[1]

---

[1] An evolutionist (traditional evolutionary) perspective views history as unilinear progressive stages of increasing complexity and perfection (see Nisbet, 1969; Granovetter, 1979; Lenski, 1976). A neo-evolutionary perspective, on the other hand, focuses on the underlying processes of change without assuming progressive perfectionism. The former implies an equilibrium assumption, movement from one stage of equilibrium to another, while the latter focuses on continuing process of change (Nisbet, 1969:197; see also Stinchcombe, 1978:23). There is nothing wrong with 'stage' concept per se. If it is properly used, the stage concept becomes a powerful tool which provides a meaningful causal link among scattered historical facts. If not, historical materials are converted to a chronological array of historical facts which fit the stage (Hawley, 1979:22). In the latter usage of 'stage' concept, even a very inappropriate model can be illustrated historically without being put to the rigorous test of making real sense of actual patterns and causal process in history (Skocpol, 1977:1088). The method as such is not the historical method but an ahistorical and a selective illustration of historical facts which satisfy a theory. There have been continuing disputes regarding the use of historical materials and theory construction. To Smelser, historical selectivity, formalized by a model, is an essential ingredient of all historical analysis (1968:78). Similarly, Roth says that the construction of types (or models) is methodologically indispensable for the historical analysis (1971:93). On the other extreme, Stinchcombe argues that one does not apply theory to history; rather one uses history to develop theory (1978:1; see pp. 77-104 for a criticism of Smelser). I do not think that Stinchcombe ignores the methodological necessity of a model which gives a meaningful causation among historical facts. The point of his argument is that such a model should not be constructed beforehand. Early dependency theory, for instance, is derived from careful observation of experiences of the Latin American countries. But the application of the dependency theory to other nations, the so-called cross-national quantitative analysis, turns out very often to be ahistorical. The former is correct usage of historical materials while the latter is not.

The evolutionist modernization approach describes historical experiences of the Third World according to pre-set evolutionary stages of development, or from a set of standard factors observed in the Western experiences.[1] On this level of generalization, the theory does not provide any causal explanation for development or underdevelopment. Rostow's (1971) model, for instance, is basically a classificatory scheme; while it does tell what stage an economy is in, it does not specify how and why a country moves from one stage to another. I will not discuss these kinds of grandiose theories which deal with long term trends of social transformation or social differentiation. However, it should be remembered that the evolutionist notion became the backdrop of various modernization theories.

2.1.1 Cultural-Psychological theories

Joseph Schmpeter (1934) was one of the first few economists who considered the development of the Third World. He defined development as the carrying out of new combinations, such as the introduction of new goods, new methods of production, the opening of new markets, the finding of new sources of supply of raw materials or the carrying out of a new organization of industry. Schmpeter emphasized the importance

---

[1] Because of this, this approach is discredited as ahistorical and ethnocentric by some critics. That is, specific historical, geopolitical and socio-structural components of the Third World are often ignored by such an ethnocentric view. There is no reason for non-western societies, which began to develop in a totally different historical context, to follow the developmental process that the western societies experienced.

of the entrepreneur or innovator. This idea was taken over by Hagen and McClelland, who argued that the entrepreneur is the engine of growth.[1]

McClelland (1961) argued that psychological attitudes or motivations, labeled as 'n-Achievement', are related with development. McClelland found that entrepreneurs have higher levels of 'n-Ach', and that entrepreneurs take moderate risks, find success important, and wish to engage in tasks with well-defined measure of success. According to Hagen (1962), child-rearing practices are crucial for the appearance of such an innovative entrepreneurial personality. Lerner (1958) proposed the concept of 'empathy' and found it had a relationship to the level of development. Empathy is a mental capacity, formed by education and the mass media, to understand or to take the role of another person without losing one's own objectivity.

---

[1] Cultural-psychological theories often claim that the emphasis on ideas, values, culture and individuals is a direct continuation of the theme developed in Max Weber's The Protestant Ethics and the Spirit of Capitalism (1958). For instance, McClelland said that "ideas are more important in shaping history than purely materialistic arrangement" (1961:17). However, what Weber wanted to do in his book was to show complex interplay between ideas and material interests under a given social historical context. Weber even hesitates to identify a direct causal link between the protestant ethic and capitalism; instead, he uses 'elective affinity' to describe the relationship (Weber, 1958:91). Cultural-psychological theorists ignore the Weberian treatment of historic-cultural issues and concentrate only on the primacy of ideas in society (Portes, 1976:55-7; also see Collins, 1980:925).

The most comprehensive work on modernization in this perspective was conducted by the sociologist Alex Inkeles (Inkeles and Smith, 1974; see also Inkeles, 1983). By formulating various measurements of modernity, Inkeles defines 'modern man' as an informed participant and citizen, a man of autonomy, cognitive flexibility, democratic orientation and so on (Inkeles and Smith, 1974:290). Inkeles was concerned with how people become modern, and the effect of modernity on society as a whole; he tested the impact of modernizing institutions like the school, the factory, and the mass-media on individual modernity scores. He concluded that the process of individual modernization is very important because neither rapid economic growth nor efficient government can develop without such modern characteristics being present at the individual level (1974:315-6).

Although these studies have been thoroughly criticized as ahistorical and ethnocentric (e.g., Cardoso, 1973; Frank, 1967; Tipps, 1973; Portes, 1973),[1] the implications of cultural-psychological theories are not yet fully exhausted. The human capital theory in economics and the theory of political or civic culture in political science shared the basic assumptions of these cultural-psychological modernization theories. Recently, several studies attempted to revive

---

[1] Frank (1967) calls modernization theory a 'Western-oriented' ideal-typical index method and Cardoso (1973) called it a schematic and mechanical analysis. Cardoso showed that Brazilian businessmen did not turn out to be the backbone of the growing Latin American bourgeoisie; they were found to be totally devoid of initiative and energy, totally dependent on the government and foreign capital.

the idea of the primacy of culture. Ajuac (1981) argues that culture determines a country's ability to industrialize and the type of industrialization that might occur. More specifically, Kahn (1979) says that much of the success of those Asian countries that have made spectacular economic progress since World War II, Japan, South Korea, Taiwan, can be attributed to their Confucian cultures. According to him, a properly trained member of Confucian culture will be hardworking, responsible, skillful, and ambitious. Similarly, Harrison (1985) argues, as is clear from the title of his work Underdevelopment is a State of Mind, that the creative capacity of human beings is at the heart of the developmental process and the society is responsible for encouraging such creative minds.[1]

2.1.2 Structural-Institutional Theories

Cultural-psychological theories focused on cultures, values, attitudes, and individuals, but they believed these traits are acquired through social institutions such as the family (Hagen and McClelland), schools or the mass media (Lerner and Inkeles; see Inkeles, 1983: chapter 15 for further detail). In other words, economic development is caused by modernizing institutions that can provide people with modern values. The argument had a circular logic; the Third World or the less

[1] These new theories of culture are, however, different from the earlier arguments in many respects. For example, unlike the argument that 'modern man' has universal characteristics and can be created in any social context, for Ajuac, Kahn and Harrison, cultural traits are society-specific and history-specific in nature.

developed countries are poor because they lack modern men and modern values, and they lack modern men and values because they lack the modernizing institutions that breed such people. To correct this problem, structural-institutional modernization theories in economics, political science and sociology began to deal exclusively with non-psychological and non-individual factors.

Economic theories of development are based on the assumptions that the accumulation of capital is essential for economic growth, and the Keynesian idea that capitalism typically produces mass unemployment of workers qualified and anxious to work. Theories of economic planning evolved from these two concepts of 'capital' and 'labor'; i.e., economic growth was thought to depend on maximizing savings as a way of accumulating capital and handling an unlimited supply of labor.

The long-run growth theory, based on the Harrod-Domar equation (in the most simplest form 'g = s/k,' where 'g' is the growth rate, 's' the savings ratio, and 'k' the capital-output ratio), was adopted by the LDCs as a model for economic planning.[1] The growth rate can be maximized by maximizing the marginal savings from output growth and minimizing the incremental capital-output ratio. Arthur Lewis's theory of economic development with unlimited supplies of labor (1954, and

---

[1] The simple Harrod-Domar planning model becomes much more complicated by breaking the formula into component variables and relationships; by separating the economy into sectors such as agriculture, industry, and services; by distinguishing domestic and foreign savings; by adding factors of production, such as the labor market structure, natural resources, kinds of imports, consumption, and so on. But the basic principle of the solution does not change.

also Ranis and Fei, 1964; this notion is often called the dual economy or dual sector theory) represent economic planning theories in terms of labor. Lewis argues that accumulation of capital will not bring economic growth unless marginal productivity is increased in the agricultural (or traditional) sector.[1] Since there is not enough work to employ the entire rural work force full time in most LDCs, most rural workers are underemployed. Thus a large portion of the rural work force can be removed without decreasing total production; some remaining workers would simply change from part-time to full-time effort. The industrial sector, the core area for economic growth, can be expanded by hiring as many workers as needed without raising industrial wages and without decreasing agricultural production. Economic development of the LDCs depends on the expansion of industrial productivity through appropriate wage and labor policies.

These two models based on capital investment and labor dominated the economics of development at least until the early 1970s, and provided a basic skeleton for economic planning in many LDCs. Yet they were not free from criticism. Critics could provide empirical evidence which cast doubt on these models; many countries could not grow because of social, cultural, and political reasons, not simply because of such economic obstacles as low rates of investment (Papanek, 1977:271-2).

---

[1] Moreover, the less developed countries (LDCs) were regarded as incapable of saving for many reasons, such as the unreasonably high levels of consumption (Lewis, 1960; Higgins, 1968), the high rate of population growth (Nelson, 1956), the small size of internal markets (Nurkse, 1952) and so forth.

In many LDCs, the share of modern sector employment has not increased in spite of rapid growth of GDP; as a result, many countries suffer from high unemployment, low productivity in the agricultural sector, and an enormous gap between the rural and urban economy (Bigsten, 1983:31).

In reaction to these mono-causal economic theories, there was another group of economists who called systematic attention to 'non-economic' factors in economic development. Bert Hoselitz lead this group, and such efforts were collected in the economics journal, Economic Development and Cultural Change. But most work in this direction was conducted by sociologists and political scientists. These theories are mainly rooted in the Parsonian systems model, and assume that several factors must exist simultaneously.[1] Here, economic and political development was seen as an aspect of a wider process of modernization, including structural differentiation, subsystem autonomy, and cultural secularization (Almond and Coleman, 1960; Almond and Powell, 1965; Apter, 1965).

Unlike individually-oriented cultural-psychological theories and economic theories of development which emphasized only economic factors, this approach examined the multiplicative effect of social,

---

[1] Although these theories do not fully accept Parsons' evolutionary scheme, the basic assumptions and theoretical orientation can be found in Parsons' The Evolution of Societies (1977; especially, chapter 11 and 12). There are voluminous empirical studies using Parsons' pattern variables, but a few studies directly applied his evolutionary scheme to development (e.g., Buck and Jacobson, 1968).

cultural, political, and economic factors on development. And, unlike those evolutionary notions which looked for sweeping generalizations, this approach tried to identify structural variations among nations. However, it was not as widely accepted as the cultural-psychological theories or economic theories of development partly due to the difficulty of empirical support and partly due to its theoretical limitations.[1]

The common method of analysis in this tradition is to compare the LDCs with a set of standard variables or factors identified as essential for development; that is, simply describing how much the LDCs deviate from those standard factors. Those factors which deviate from the Western standards are regarded as obstacles which should be removed or improved for further development (Hirschman, 1965). The absence or presence of a certain factors become the determinants of obstacles or contributors for development. But many of those factors identified as important for development are nothing more than the common denominators of the already developed western nations. More important, the direction of causality among the factors is often not clear.[2]

---

[1] Structural variations of the nations cannot be easily observed without in-depth historical study, and few studies attempted to do so (e.g., Moore, 1966; Eisenstadt, 1966; Gerschenkron, 1962).

[2] For instance, Adelman and Morris (1967) used multivariate analysis to find out what social, political and economic variables are important for economic development. Yet they never specified which are the causes and which are effects, and which are sufficient and which are necessary for economic development. This type of analysis is mainly a sort of hunt for correlation and the theory is more or less absent.

2.1.3 The Decay of Modernization Paradigm

The modernization view, a dominant paradigm in the 1950s and 1960s, has not been sustained for several reasons. First, the uniform evolutionist notion has not been a historical reality. There has been a diversity of development processes. Even in the western societies, as Moore shows (1966), there was no unilinear path to development: there was a classic bourgeois revolution in Britain, a revolution from above in Germany, and a revolution from below in Russia. Moreover, the Third World experiences since World War II have not supported the predictions of the modernization view. The Third World has imitated many of the western institutional and cultural features (Meyer and Hannan, 1979; Boli-Benett, 1980), but its economic performance remains poor. Second, since the modernization view saw development as an autarkic, internal matter, it never considered international effects on national development, a factor which is now considered critical.[1] After World War II, in fact, politics and economy no longer remain isolated in each society. Even a small political incident in a small country could influence the international economic and political environment. Third, the entire argument is basically 'ethnocentric';

---

[1] This does not mean that these theories totally ignored the impact of external factors on a nation's development. Almond points to the sources of political change caused by the international environment (1973:35-7) and Bendix recognizes modernization not only as a change of endogenous factors but as a process of international emulation (1967).

i.e., those factors (institutions and values) found in western societies are modern and favorable to development, no matter what they are, and those found in non-western societies are traditional, backward, and uncivilized (Tipps, 1973).[1] On these ideological grounds, 'ethnocentricity' alone was sufficient reason for non-western social scientists to reject the modernization paradigm and formulate their own theory of development. Of all of these critiques, the Latin American critique was the most prominent; this eventually became the root of dependency/world-system theory.

2.2 Dependency/world-system View

The dependency school is by no means a homogenous movement. Since so much has been written, it is not easy to sum up the different variants of this approach. All branches, however, seem to share two key elements. First, development or underdevelopment is not an isolated internal matter. It is a result of the global expansion of capitalism. Second, in global economic exchange, the rich countries are always the beneficiaries. The former argument is directly derived from Marx's

---

[1] However, in a sense, all three approaches share an ethnocentric view. The modernization approach can be regarded as a 'theory of development'; i.e., development and underdevelopment are explained in the light of the more developed countries. The dependency approach, on the other hand, is often used synonymously with a 'theory of underdevelopment', and to certain representatives of the dependency school (e.g., Frank), development is totally incompatible with any kind of dependence. The latter view is also ethnocentric, in the sense that underdevelopment is accentuated in terms of the noncore nations' poor economic conditions. See Blomström and Hettne (1984:74-5) and Horowitz (1979:287-8) for further discussion.

theory of colonialism and Lenin's analysis of imperialism. Yet neither Marx nor Lenin expected that capitalist expansion would automatically lead the Third World to poverty. Rather they foresaw the positive impact of capitalist expansion. The opposite argument was proposed by a group of Latin American economists who were working for the Economic Commission for Latin America under the United Nations (ECLA) in the 1950s. They claimed that trade led to the deterioration of the Latin American economies. This was contrary to the expectation of the conventional economic theory of trade, which argues all countries gain economic benefits from trading with one another. Baran (1957) combined the two arguments and Frank (1967) further elaborated Baran's theme, and now we have the American variation, Wallerstein's world-system theory (1974a).

Thus, dependency theory is a co-product of the Marxian theory of imperialism and Latin American liberal economics. No one, at least within the dependency school, challenges the argument that the Third World underdevelopment is the outcome of capitalist expansion on a global scale.[1] Various branches have mainly evolved around how the rich countries take advantage of the Third World; critics in particular

---

[1] This does not apply to the early ECLA argument (particularly of Prebisch) and its other variants, such as market vulnerability argument of Futardo (1965), and unequal exchange argument of Mandel (1975) and Emmanuel (1972). These theories basically attacked the comparative advantage theory of trade and emphasized the unequal outcome of international trade, but they never considered the problem in a global context. The unit of analysis was the nation-state and the basic concern was about dyadic economic exchange.

showed that a core country's penetration does not generate uniform underdevelopment in the Third World. The following section deals exclusively with the earlier, extreme dependency arguments, and the next section discusses the variants of and the reactions against the early arguments.

2.2.1 Early-Dependency Theories

Marx was basically unconcerned with non-western development because he believed that capitalism, irrespective of its origin (internally promoted or externally imposed), brings about the same result. Marx's writing on colonialism are largely restricted to India and Ireland under British rule (see Chandra, 1980; Marx and Engels, 1979). Although Marx observed some negative economic impact in both historical cases, he argued that capitalist intervention in the less developed world is basically a positive, even revolutionary, force for development (Jacobs, 1971; Warren, 1980; De Janvry, 1981; Carnoy, 1984). He felt that the expansionist drive is inherent in the capitalist economy, and that it would reproduce a pattern of social change in less developed areas similar to those which occurred in Western Europe. Thus, he noted, "the country that is more developed industrially only shows, to less developed, the image of its own future" (Marx, 1976:91).

Unlike Marx's limited attention to non-western societies, Lenin (1965) analyzed extensively why and how western capitalism expanded to

another world. For Lenin, imperialism, defined as the process of capitalist accumulation on a world scale, is a necessary phase of capitalism: it is a logical extension of capitalist development. According to him, there are two forces behind imperialism. One is the excessive and monopolized accumulation of surplus in the advanced capitalist countries and the other is military competition among capitalist powers.

Lenin highlighted Marx's theory of capitalist development: the rate of profit on capital inevitably declines as growth takes place. Competition in the face of this declining rate of profit leads to the stronger capitalists swallowing up the weaker, who then join the ranks of the proletariat. The result is the further concentration of capital in a few hands. He calls this tendency a transition from competitive capitalism to monopoly capitalism. To resolve these crises, the advanced countries began to export surplus capital to backward areas, where "profits are usually high, for capital is scarce, the price of land is relatively low, wages are low, and raw materials are cheap" (Lenin, 1965:216). Another driving force for imperialism is the rivalry between the capitalist powers in seeking hegemony and for the conquest of territory. Thus in Lenin's argument, economic (inherent crises of capitalism) and political (military competition) factors combine to lead to imperialism.

Nevertheless, Lenin, like Marx, retained an optimistic view of the result of imperialism or capitalist penetration in less developed

societies. He predicted that workers in the colonial empire also produce a surplus, and once the colonial ties were severed, the less developed countries would go through industrialization. He emphasized the positive role of foreign capital for development, while ignoring the fact that this surplus, drained off abroad, may inhibit industrialization.[1] Although Lenin dealt little with the impact of imperialism on the less developed areas' internal conditions, he provided a general answer for why and how capitalism expands to a global level.

However, Marx and Lenin's consideration of development in a global context did not receive much attention. As mentioned before, such international contextual impact on development was generally ignored by the modernization paradigm, with a few exceptions (see Almond, 1973 and Bendix, 1967) Comparative advantage theory in economics, which encouraged free trade, was one of them.[2] Comparative advantage theory

---

[1] Lenin's work, according to Warren (1980), is historically inaccurate in contending incorrectly that monopoly capitalism was stagnating in the industrialized countries and hence had to seek profits elsewhere. By the late 19th century and early 20th century there was very little evidence to support the view that the rate of profit was declining, and it was clearly evident that the real wages were rising (Gillis et al., 1983:34; also Warren, 1980:7-12). At the same time, however, the capitalist powers of Europe were vigorously expanding their colonial empires. Warren argues that there was no connection between the two phenomena (1980:49). Yet it is interesting to note that Lenin's consideration of this political factor, competition among capitalist powers, is not adopted by dependency theorists, including Wallerstein.

[2] Similarly, Gerschenkron (1962) proposed a theory of the 'comparative advantage of backwardness' that developing countries are in a position to learn from the experience of already-advanced nations.

suggests that all countries can maximize their economic growth through trade, whether or not they differ in their factor endowments of production. The key implications of the theory can be summarized as follows (Gillis et al., 1983:407):

1. Any country can increase its income by trading, because the world provides an opportunity to buy some goods at relative prices that are lower than those which would prevail at home in the absence of trade.

2. The smaller the country, the greater this potential gain form trade, but all countries are likely to benefit to some extent.

3. A country will gain most by exporting commodities that it produces using its abundant factors of production most intensively, while importing those goods whose production would require relatively more of the scarcer factors of production.

It was Prebisch (1950), a leading member of the ECLA, who first challenged comparative advantage theory. Prebisch divided the world into two parts, center and periphery, and showed that gains in trade are greater in industrial core countries than in agricultural and raw-material based periphery countries during the period from the late 19th century to the late 1930s. Prebisch argued that free trade only generates an international division of labor which imposes unequal exchange and unequal outcome. Later, Baran (1957) combined Lenin's idea of imperialism with Prebisch's theme, and concluded that expansion of capitalism is only possible at the expense of the Third World and that no country in the Third World can break its economic dependence and eventually reach a level of development to the one of the now developed First World economies.

Frank, in his seminal work, "The Development of Underdevelopment" (1967), argued that European and North American countries developed only because they exploited Latin American resources. He saw that the unbalanced outcome resulted from a long-term historical structural relationship between the two regions; he called it a 'metropolis-satellite' relation, in which the development of the metropolis determines the underdevelopment of the satellites. Frank's argument is basically a combination of Prebisch's center-periphery notion and Baran's theme of exploitation. But he pursued the problem in a much broader historical context and demonstrated that such a relationship exists not only between countries but within each country.[1]

In brief, Latin American dependency theory showed that development and underdevelopment are the same phenomenon, and that the process can be understood only by reference to a world-wide historical context and by focusing on the total network of inter-societal relations. Sunkel and Dos Santos' following statements best summarize the Latin American dependency theories:[2]

---

[1] Andre G. Frank is probably the Latin American dependency theorist best known to American sociologists. Although Frank made some theoretical improvements over Prebisch and Baran, he became famous partly because he wrote in English. Unfortunately, however, his later work (1978), which is almost comparable to Wallerstein's piece (1974a, 1979a) in terms of historical scale and theoretical richness, was overshadowed by Wallerstein's.

[2] Both statements are quoted from Valenzuela and Valenzuela (1978).

> Both underdevelopment and development are aspects of the same phenomenon, both are historically simultaneous, both are linked functionally and, therefore, interact mutually (Sunkel and Pedropaz, 1970:6)
>
> dependency is a situation in which a certain number of countries have their economy conditioned by the development and expansion of another country ... placing the dependent countries in a backward position exploited by the dominant countries (Dos Santos, 1970:180).

No version of the early dependency theory has received as much attention as Wallerstein's world-system theory (1979a; also 1974a).[1] Wallerstein traced the emergence of the modern world-system back to 16th century Europe. According to him, there is no such thing as 'national' development; neither development nor underdevelopment of any specific territorial unit can be explained without referring to the expansion of the overall logic of capitalism. The world-system, from the beginning, was organized as a single division of labor that extends beyond political and cultural boundaries. It is comprised of multiple cultural systems, multiple political entities, and different modes of labor control (1979a:43,159). The world-system has been shaped by the historical relationships among three subsystems or international 'classes': the core, the semi-periphery, and the periphery. The core is comprised of rich, powerful, and highly industrialized countries that dominate the world-system in economic exchange and political strength. On the other hand, the periphery is made up of poor and weak

---

[1] It is wrong to classify all Wallerstein's works as early-dependency theory because he, along with his associates such as Hopkins, Rubinson, Chass-Dunn, later accepted criticisms and changed his earlier position. The same is true for Frank.

countries that are exploited by the core nations. The semi-periphery takes the middle position between the two, and consists of the moderately industrialized countries who are attempting to move up to core status. They are able to exploit the periphery but they are still under the control of the core. For Wallerstein, the world-system has been completely structured and now is moving toward its perfection: transition from capitalism to socialism (1979b, 1983).

The arguments of the early-dependency theories are in general naive and deterministic. It might be desirable to emphasize external factors for the purpose of sharp departure from the modernization paradigm, which considered internal factors only. In fact, by so doing, it began to see the phenomena of development in a new way, a long term historical relation between the West and the East. And it provided a clue why many Third World nations cannot get out of extreme poverty. But its one-sided emphasis inevitably led to ignoring internal conditions which counteract the external influences, and a failure to see the possibility of self-propelled development in the periphery. The poor periphery countries are passive and weak entities which can do nothing in the face of external forces, whether they originated from the core or the world-system itself (i.e., the system force). Further, it is not possible for the periphery to break its ties with the external forces. The periphery has no options to grow unless there is a revolutionary breakup of the whole capitalist world-system. Such deterministic causation has received thorough criticisms from within and without the dependency school.

Moreover, the arguments of the early dependency theories have no historical validity. Japan has been the most successful country which actively discouraged foreign penetration throughout her history; but she has become one of the leading core capitalist powers after existing in peripheral status in the 19th century. We have seen the economic growth of the socialist countries which were relatively unconnected with the core capitalist countries of the West. After World War II, China eliminated all foreign connections and yet grew at a substantial rate. On the other hand, the US relied heavily on foreign saving, particularly during the period from 1835 to 1860, to help propel her economic development, and she now is the center of the core (Gillis et al., 1983:365). Many Third World nations, heavily dependent on the US, Japan, and Western Europe, have grown rapidly. Examples include South Korea, Hong Kong, Singapore, and Taiwan (see Barrett and Whyte, 1982). Moreover, not all of the Latin American countries (which were the model cases of the dependency school) deteriorated; Mexico and Brazil could achieve economic growth through import substitution and state intervention (Bigsten, 1983:36; see Evans, 1979 and Frank, 1977). All these are the deviant cases of the early dependency model; don't we have too many deviant cases?

2.2.2 Neo-Dependency Theories

To overcome deterministic causation and thereby to explain variations in dependency effects, the neo-dependency theories turned to internal factors which were assumed to mediate (positively or negatively) external influences. But such internal factors are not the modernization school variables as educational levels, factor endowments in production, or cultural values. Rather, neo-dependency arguments are centered around two factors, internal 'class' structure, and 'state' structure. As opposed to the early dependency theories, for instance, Brenner (1977) has claimed that the class relations and the structure of government basically determine economic growth. For Brenner, the external forces, such as the inflow of foreign capital and unequal terms of trade, take a secondary role in economic development or underdevelopment.

The 'class' arguments and the 'state' arguments are seemingly different, but they are rooted in the same intellectual origin, i.e., the Marxian theory of the state. The class-centered arguments view the state as a 'servile' instrument of the ruling class. On the other hand, the state centered arguments focus on the independent role of the state from the ruling class as well as the civil society. As Badi and Birnbaum (1983:5-10) suggested, Marx wrote on both aspects of the state; Marx sometimes emphasized the autonomy of the state, but at other times he took the reductionist view of the state (i.e., that the state was created and controlled by the most powerful social and

economic forces). Thus the two versions of Marxian state theory mainly come from different interpretations of Marx.[1] In my view, the neo-dependency theories are the products of an intellectual marriage between the dependency/world-system theory and the neo-Marxian theory of state.

2.2.2.1 The Class-Centered Arguments

Among the early-dependency theorists, Frank (1972) was one of the first who recognized the role of the internal class structure in mediating the influences of external forces on national development.[2] According to him, the elites of the core form a mutually beneficial alliance with the peripheral state elites (Lumpenbourgeoisie). The peripheral elites are able to control the domestic state, and to

---

[1] Badi and Birnbaum argued that Marx was more interested in the autonomous role of the state. Similarly, Skocpol (1979:27) called the instrumentalist notion of the state a vulgarization of Marxian state theory; i.e., the notion that states were nothing but instruments manipulated consciously and directly by leaders and interest groups representing the dominant class. Now, a pervasive view in the neo-Marxist theories of state is that the state becomes more autonomous from the class conflict. Although the state can be temporarily controlled by the dominant class, the state is a complex instrument for resolving the inherent problems of capitalism (Gold et al., 1975; Poulantzas, 1973; Anderson, 1974), and a specialized component of the system to pursue various goals of the society (Miliband, 1983). In short, the state is above the class structure and it has 'relative' autonomy from other components of society (see Thomas and Meyer, 1984).

[2] Wallerstein is very often the target of the neo-Marxian critique. Skocpol (1977) claimed that Wallerstein does not use the concept of class, but instead uses undefined status and interest groups. In fact, the concept of class is afforded only a peripheral role in Wallerstein's work (1974a), like the mode of production (see Worsely, 1984).

maintain policies that enable foreign capitalists to exploit domestic resources and cheap labor. In return, these peripheral elites are compensated with favorable contracts and cash payments. This mutually beneficial relationship further deepens the dependency of the periphery.

Although Frank introduced the idea of the important role of the local class structure in relation to external forces, he saw the internal class structure as basically determined by external forces, and that the local class, dominating the state apparatus, served the international bourgeoisie. In other words, for Frank, the local class is internally strong vis-a-vis the state and the other sectors of society, but it is weak and passive vis-a-vis the external capitalist forces. It is not surprising that such notion has received sarcastic criticisms from orthodox Marxist class theorists, such as Lacalu (1971) and Brenner (1977).

Both Lacalu and Brenner perceived that capitalist penetration changes the existing local class structure to a certain extent, but they never thought that the local class structure is realigned to serve the interest of the external bourgeoisie. Rather, the local elites actively utilized the new opportunity (i.e., the inflow of foreign capital) to maximize their interests and to seek a new pattern of class coalition with the external bourgeoisie as well as among themselves. For Lacalu and Brenner, the local elites are both internally and externally strong; they have the ability to manage the internal economy

and the strength to cope with external threats. Thus, capitalist penetration does not bring about uniform results in the peripheral economy; it depends on specific local class situations, and how the local elites respond to the external demands. Lacalu and Brenner agreed that external penetration may weaken the internal class structure. In that case, the result would be the same as Frank's; i.e., the continuation of dependency. However, what they emphasized were the autonomy of the local class and the possibility of local variation of dependency effects.

In the meantime, Michael Lipton (1976) proposed the urban bias theory, in which he also recognized the important role of the local class structure. Lipton's argument is somewhat different from Marxist critiques of the dependency theory. Lipton simply bypassed (or ignored) dependency theory, and argued that Third World underdevelopment is not caused by the penetration of external capital or by lack of modernization. Rather, Third World stagnation is more caused by unbalanced economic policies, which encourage the development of the urban sector at the expense of the traditional agricultural sector. Lipton emphasized the internal class conflicts and coalitions behind urban-oriented economic policies. He outlined the fundamental tenets of his theory as follows:

> The most important class conflict in the poor countries of the world today is not between labour and capital. Nor is it between foreign and national interests. It is between the rural classes and the urban classes. The rural sector contains most of the poverty, and most of the low-cost sources of potential advance; but the urban sector contains

> most of the articulateness, organisation and power. So the urban classes have been able to 'win' most of the rounds of the struggle with the countryside; but in so doing they have made the development process needlessly slow and unfair (Lipton, 1976:13).

For Lipton, however, the local classes are not strong enough to compete with the state. Although the urban classes exert a greater influence on the state than the rural classes, they require support not only from other urban elites (industrialists, bureaucrats) but also from rural elites. Therefore, internal class situations consist of complex processes of conflicts and coalitions among various interest groups such as industrialists, urban wage-workers, and large-scale farmers. Unlike Frank or orthodox Marxists, Lipton separated the class and the state and stressed that the state is a relatively autonomous entity which allows no single group or class to manipulate state policies (1976:61).[1]

---

[1] It is incorrect to classify Lipton's theory as a variant of the neo-dependency view. I included his notion because of his unique class analysis and suggestive insights which might be used to combine various perspectives of development theories. Lipton's contributions can be summarized as follows. First, he viewed economic development as basically an internal matter; although he recognized the impact of foreign capital, he argued that the external influences are minor. Second, by distinguishing the class from the state, he perceived independent roles of the local class structure and the state structure in determining national development. Finally, he challenged the traditional dual sector model, the basis of economic planning of most underdeveloped nations (see the section on structural-institutional modernization theories) which gave more emphasis on the development of the urban industrial sector than the rural sector.

Similarly, Chase-Dunn (1980) also stressed the independent roles of the local classes and the state (though he basically agreed with Frank's notion that the world capitalist system is controlled by the alliances of world bourgeoisie). For Chase-Dunn, the local bourgeois class is by no means a homogeneous group; it consists of various capitalist factions with different and often contradictory interests. These different class factions compete with each other to control the state; the most successful groups influence state policies, but no single group can grasp state power completely. Rather, the state is able to maintain its autonomy from any dominant faction at any time, and even mediates conflicts between the factions.

2.2.2.2 The State-Centered Arguments

In the above section, we have seen various class arguments which place different weights on state and class. Frank, Lacalu, and Brenner share the idea that the local classes have the ability to control the state machinery, and that they use the state for the sake of their own interests. For Frank, however, the local elites are cooperative with or are subjected to pressures from the external bourgeoisie; for Lacalu and Brenner, on the other hand, the local classes are strong enough to compete with external forces. Both Lipton and Chase-Dunn give a relatively equal weight to the class and state structure, though their perspectives are somewhat different. The importance of the state role is most appreciated by the state-centered arguments.

Recently, many theorists have argued that the role of the state in the Third World has expanded (Petras, 1977; Evans, 1979; Thomas and Meyer, 1984). Although there is no agreement regarding why the state is getting stronger and expanding its role, many empirical studies have supported this argument (e.g., O'Donnell, 1973; Boli-Bennett, 1980; Evans et al., 1985).[1] For instance, Evans demonstrated (1985) how increasing international trade and capital flows have enhanced the relative power of the state against the internal classes and the local economy. The World Bank's 1983 World Development Report lucidly describes the increasing state role in the LDCs' economic development (46):

> The state plays a pivotal role; it is government that determines the policy environment in which enterprises and farmers must operate; government that provides the social and physical infrastructure that underpins productive activities; and government that frequently contributes to production through state-owned enterprise.

Cardoso's 'associated-dependent development' (1973) and Evans' 'dependent development' (1979) can be understood in this context. Cardoso argued that the simultaneous and differentiated expansion of the three sectors of the economy (the private national, the foreign,

---

[1] While this question is beyond the scope of this study, there are several alternative explanations for the expansion of the state. International relations theorists argue that the state is inevitably getting stronger in order to manage demanding external relations, such as trade and warfare, and a rapidly changing world-environment (see King, 1986: chapter 8). In the economists' view (see Rostow, 1971), the state expands to manage economic growth. On the societal level, Parsons (1977) and Eisenstadt (1966) argued that social differentiation requires increasing governmental power and scope.

and the public) can bring in a certain (limited) level of development in Latin American Countries. Similarly, for Evans, the formation of a 'triple alliance' (the state and local and foreign capital) is the key for dependent development. Of all state-centered arguments, the 'state capitalist model' of development (Petras, 1977: Bamat, 1977) particularly emphasized the state role in Third World economic development. The state capitalist model argues that only the state can cope with the problems of dependency in Third World societies, because the power of the state comes from the control over the state bureaucracy, independent of any class interests associated with foreign or local capital.

But the above studies did not specify why the state began to play the dominant role in Third World development. As has been discussed, the local bourgeois class is not an organized homogeneous group; rather it consists of various factions with different interests competing with each other for their respective interests (Chase-Dunn, 1980; Lipton, 1976). On the other hand, the state has a well-organized bureaucratic machine. Moreover, in many Third World nations the local class (i.e., a class with a certain level of economic and political power) has not yet been established. There is only a small group of western-educated people, who are working for the government or for foreign companies (see Magubane, 1976). The international bourgeoisie or multinational companies cannot find the local elites who can work for them. Instead, they have to cooperate with the local state. Evans (1979) showed that

the local elites played an integrative role in Brazilian national development as well as for foreign companies. However, Brazil is relatively more developed compared to other Third World nations (i.e., so-called a semi-periphery). For the poor periphery nations, as the modernization view suggested, it may be much easier to copy the western type of state bureaucracy than to establish a solid local class based on the local capital.

Block's distinction (1977) between the state managers and the ruling class further clarifies this reasoning. According to Block, the ruling class cannot control the state; rather, the state managers are running the state bureaucracy. Although the state managers come from various factions of the ruling class, once they take the responsibility, they are relatively independent from any faction's interest and able to engage in economic activities for national interests. Thus the autonomous state bureaucracy can attempt to "negotiate better international economic terms not necessarily for the national bourgeoisie vis-a-vis transnational enterprises, but for the state bureaucracy itself" (Carnoy, 1984:204). However, a strong state with an efficient bureaucracy dose not necessarily guarantee economic development.[1] As Jacobs (1985) suggested, if the state chooses

---

[1] O'Donnell (1973) found some affinity between 'bureaucratic authoritarianism' and export-oriented industrialization, and several rapidly growing economies happened to have strong bureaucratic machines. But there is lack of any consistent association between economic growth and a particular type of political system (see Collier, 1979: chapter 9).

non-developmental policies for political reasons, the increased role of the state may become counterproductive. Cuba in the 1960s, for instance, experienced little economic growth because its energies were concentrated on achieving a major redistribution of income, education, and other benefits in favor of the poorest elements of the society (Gillis et al., 1983:26).

To sum up, the neo-dependency theories departed from the early extreme version, and began to recognize the possibility of self-sustaining growth in the Third World. They have shown that there could be local variations of dependency effects, i.e., the internal conditions can buffer external influences. Among various possible internal factors, they concentrated on class and state. The arguments made by class and state theories are intellectually compelling, however, almost no systematic empirical evidence has been presented linking economic dependency, economic performance, class phenomena and state role, partly because of conceptual problems (see Ragin and Delacroix, 1979). The key concepts of these theories, class and state, are so ambiguously defined that it becomes very difficult to track the complex class phenomena or functioning of state on empirical grounds, particularly in terms of a comparative perspective. A few case studies have provided a successful but a limited evidence supporting their arguments (e.g., Frank, 1972 and Evans, 1979). Instead, much effort has been devoted to theoretical and conceptual debate (see Evans et al., 1985).

Chapter 3

A CRITIQUE AND REFORMULATION OF THE DEPENDENCY PERSPECTIVE

The previous chapters have examined various development theories. These theories seem to have converged. The modernization perspective focused on internal factors only. The dependency perspective initially rejected the importance of internal factors, but it has begun to recognize the role of the state and class structure in national development. These are obviously internal conditions of a nation state. Now the focal concern is to investigate the reciprocal relationship, or the interaction between internal and external factors. In other words, the dependency perspective no longer insists on the uniformly negative influence of external capitalist forces, and admits that local variations of dependency effects, that is, certain forms of class and state structure can upset or mitigate the negative impact of dependency or the global expansion of capitalism.

However, many problems remain unsolved. This chapter deals with two categories of problems found in the dependency literature: one is the conceptual ambiguities of the key concepts, such as class, state, and dependency (or position in the world-system); and the other is the holistic system approach that ignores the role of each nation state (particularly of those in the periphery) and deemphasizes the political dimension of the world-system.

With these problems in mind, I will first discuss the conceptual ambiguity of the dependency/world-system theories. These ambiguities have also caused measurement problems and may account for some of the inconsistent findings of the quantitative studies of dependency. I will then reformulate the dependency perspective on the basis of international relations theory, which is mainly concerned with inter-state political relations. The latter theory suggest that a nation-state is autonomous from other societies as well as from its own society, regardless of its economic position in the world-system. The purpose of this chapter is to build the main assumption of this study: that the world-system consists of two domains, economy and polity, that each nation-state is primarily responsible for its own development, and that each nation-state can improve its position in the network of the world political-economic system.

3.1 Conceptual Ambiguity and Measurement Problems

3.1.1 Class and State

The modernization theories suggested that there are many internal factors that could influence national economic development. Yet the internal factors are reduced to an ambiguously defined dominant class and state by the dependency view. As has been discussed above, class and state are two aspects of the same phenomena. The neo-Marxian debate on the relative autonomy of the state centers on the nature of the state in the most advanced capitalist societies. The

neo-dependency view extended Marxian theory and applied it to Third World situations. It may be wrong to generalize Marxian theory of the state to all societies because the class and state structure vary by societies.

In some Third World nations, there is no local class able to form endogenous capital, and thereby to establish a mutually beneficial relationship with the external capitalists (see Magubane, 1976). In some countries, like the United States, the state power is widely diffused to the local level, while in many Third World nations it is concentrated by a handful of military officers (Badi and Birnbaum, 1983:chapter 8). In socialist countries, like the Soviet Union, the state organs include virtually all segments of the society, such as the mass media and the educational system (see Lenski, 1966:53).

Measurements of class and state are even more problematic. The quantitative studies often use the ratio of domestic investment to GNP (or GDP) as an indicator for the strength of the local class vis-a-vis the state (see Ragin, 1983). State strength is reduced to governmental fiscal power, often measured by the ratio of government revenue per capita to GDP or GNP (see Ramirez and Thomas, 1981). The theoretical meaning of class and state, as implied by the neo-Marxian theory of the state, is more than that, and cannot be captured by these simple indicators. Either the Marxian theory of the state has not yet been elaborated for an empirical test, or the quantitative studies have failed to operationalize the concept; or perhaps, neither task has been accomplished.

3.1.2 Internal versus External Factors

The dependency perspective argues that the internal conditions of the periphery are determined by external factors. What, then, are the external factors hindering Third World development? They seem to include the core power's threat or blockage and the growing expansion of world capitalism or imperialism. Since such 'real' external factors are not thought to be directly measurable, empirical studies have used such indicators as investment dependence, aid dependence, degree of MNC penetration and so on (see the next section). All these indicators are called external factors, which are believed to be the consequences of the 'real' external factors as described above. In fact, however, they are internal factors (or 'internalized' external factors); the distinction between the external and the internal factors disappears.

Moreover, if the internal conditions of the periphery of poor nations (even including class and state structure) are externally determined, then there is nothing that can be labeled as an internal factor, unique to each nation state in the periphery. The modernization view argued that many internal conditions found in the Third World nations are obstacles to national development. Now the dependency perspective argues that those factors found in the LDCs are externally determined, and they are symptoms of dependency and detrimental to endogenous development. The sweeping generalization, which once haunted the modernization view and caused its decay, is alive in the dependency view.

More seriously, the dependency argument implies that the internal conditions of the core nations are not influenced by external forces or the growing expansion of world capitalism. If the system's force, the expansionist drive of world capitalism, is strong enough to put a majority of nations into poverty, why are not the core countries influenced? If such forces are external to the periphery, that must also be external to the core nations. The dependency view ignores competition among the core countries and reactions from other core countries and the periphery countries as possible forces external to the core itself.

It is not surprising that system analysis like the dependency/world-system view denies the autonomy of the individual units. However, not all subunits, nation-states, are deprived of autonomy under the logic of the world capitalist system. The core countries have autonomy while the periphery countries do not because the core is controlling the system but the periphery is powerless, passive and dependent. Then the distinction between internal and external factors is not only ambiguous but also misleading.

3.1.3 Dependency and the Position in the World-System

According to the dependency theorists, dependency is a holistic concept; it embraces a variety of internal conditions from economic to cultural, which can be understood as a configuration, symptom or syndrome (Galtung, 1971; Caporaso, 1978). 'Dependency' is so loosely defined that there have been many different measures, which make it difficult to compare results of different studies and to generalize their findings. It is often measured by the ratios of foreign investment, foreign aid, foreign debt, and foreign trade to GNP (or GDP), concentration of export partners and export commodities, and so on.

Measures of investment, trade, aid, and debt dependency indicate the level of external control and market dependence relative to the size of the economy (see Bornschier et al., 1978, for a review of cross-national studies utilizing such measures). Measures of forms of participation, such as the degree of specialization in the export of primary products and degree of concentration of export commodities, refer to the structural positions of countries in the international division of labor (Delacroix and Ragin, 1981:1322-3). Some advocates (Bach, 1977; Palma, 1978) of the dependency view accused the authors of the quantitative studies of only measuring economic aspects of dependency. Because of this, many studies have developed measurements to capture various dimensions of dependency, such as military dependence measured by the ratio of foreign military aid to GNP (e.g.,

Hartman and Walters, 1985); cultural dependence measured by the proportion of imported foreign films to domestic films (e.g., Delacroix, 1977), or the proportion of foreign mail to domestic or total mail (e.g., Nolan, 1983); and educational dependence measured by university students studying abroad as a proportion of total university students (e.g., Mahler, 1980) and so on.

However, if the concept of dependency is multi-dimensional and sufficiently holistic to cover various features of internal conditions, everything that can be found in the Third World countries is 'dependency', probably including poor economic performance. Then it is not possible to say what causes underdevelopment (see Lall, 1975). Even though one finds a negative relationship between the high scores of these measures and economic performance (measured by growth rate or level of economic development), this proves neither the existence of the hierarchical world economic system nor the existence of the network between the core and the periphery bourgeoisie. Unfortunately, however, the quantitative studies do not hesitate to draw such conclusions; it is an exaggerated extrapolation beyond what they have found. There is obviously a missing link in the relationship.

Wallerstein's concept of 'position in the world-system' is clearer than 'dependency' as far as the definition is concerned. Position in the world-system refers to a country's economic power relative to other countries (Wallerstein, 1974a and 1979a). By introducing a system concept, he hoped to solve the problem of internal versus external

factors. In other words, Wallerstein internalized the external factor by saying that "the world system is a social system which is characterized by the fact that life within it is largely self-contained and that dynamics of its development are largely internal" (1974a:347). That is, he evaporates the meaning of 'external' by incorporating economic activities of subunits (nation-states) into a single capitalist system. Under this system logic (the world contains a single system), nothing can be external; taken to an extreme, everything that happens under the sun is an internal matter.

The concept of 'position in the world-system', moreover, has a meaning only if we prove that the world is a single system under the world capitalist economy. This, then, is the most fundamental question: do we have capitalism on a global level? The answer is no; instead, there exist unknown external factors and unknown forces of capitalist expansion. In order to show that the capitalism is completed on a global level, there must be evidence that the economy of the core is above the political structure (i.e., the bourgeoisie is controlling the state and the state policies in both the core and the periphery); that there is a system of networks in which the periphery ruling class and the core bourgeois are cooperating with each other for their mutual interests; and, that all nation-states are incorporated into such a system. The dependency/world-system theories have failed to provide convincing evidence supporting any of these conjectures.

Recently, socialist countries have been increasing their volume of economic exchange with capitalist economies. This alone cannot be evidence that the world capitalist system has completed its structuring and is moving toward perfection. We cannot ignore the autarkic development that they have achieved for the last several decades. Although socialist economies are involved in capitalist mode of exchange (world trade), as Worsley suggested (1984), they have maintained their own mode of production, communism. We may have a unified global economic system in the future, whether it is capitalism, communism, or socialism; but obviously we are not living in such a system. This study is not interested in such grandiose evolutionist and futuristic notions. To conclude, Wallerstein's concept of 'position in the world-system' is based on a vague and unaccomplished world capitalist system, which simply ignores the autonomy of each nation-state and the political dimension of the world-system.[1]

---

[1] Wallerstein agreed with those critics who accused him of not allowing individual actors to be autonomous. Wallerstein (1976:30) said, "All systemic analysis denies the real autonomy of parts of a whole. It is not that there are not particularitics of each acting group. Quite the contrary. It is that the alternatives available for each unit are constrained by the framework of the whole, even while each actor opting for a given alternative in fact alters the framework of the whole."

3.2 Beyond Dependency: Bringing the State Back In

The global view of the dependency argument enabled us to realize that development in different parts of the world does not consist of a series of isolated developmental processes. This has now led to a fairly widespread understanding that each country has, to a great extent, its own unique developmental problems, dictated by both external and internal conditions. The previous section has accused the dependency school of exaggerating the importance of the external factors, which are ambiguous at best; the concepts of 'dependency' and 'position in the world-system' are unclear and unilateral, and thus, do not allow for the autonomy of a nation-state to decide its fate or to change the entire system. Nevertheless the questions that the dependency school raised were relevant and will remain so.

The next step is to clarify the concepts and reformulate the theory to overcome its limitations without losing its merits. As many critics suggested, the dependency/world-system argument may only be a conceptual framework or a perspective, not a theory, and that dependency arguments supply concepts to be developed, not hypotheses to be tested (Bach, 1977:812; Portes, 1980). In this spirit, this section intends to develop a concept that allows the autonomy of each nation-state while retaining the dependency school's global analytical view.

3.2.1 World Economic Division of Labor and International State System

According to the dependency/world-system theory, the world-system is essentially an economic system; i.e., capitalism, containing subsystems with a hierarchical division of labor. Under this logic, the polity is subjected to the economy. Hopkins and Wallerstein (1982:58), for instance, said that "the economy is primarily a 'world' structure, but political activity takes place primarily within and through state-structures whose boundaries are narrower than those of the economy."[1] For the theorists of international relations, on the other hand, the world-system is a predominantly a state system, based on mutual influences between independent political communities (nation-states; see Bulls, 1977:7-20). International politics is "a domain distinct from the economic, social, and other international domains that one may conceive of" (Waltz, 1979:79). Similarly, Skocpol argued, "the international state system as a transnational structure of military competition was not originally created by capitalism ... throughout the world history, it represents an analytically autonomous level of transnational reality-interdependent ... with world capitalism, but not reducible to it ... (1979:22)."

---

[1] This statement is an extension of Wallerstein's earlier position. Wallerstein (1974b:403) argued that "the capitalist world economy requires that groups pursue their economic interests within a single world market while seeking to distort this market for their benefit by organizing to exert influences on states, some of which are more powerful that others but none of which controls the market in its entirety". For Wallerstein, the role of state in the world-economy is not important because the state system is already integrated in a single economic logic, capitalism.

Followers of Wallerstein (especially, Chase-Dunn, 1981; also Chase-Dunn and Rubinson, 1977) elaborated Wallerstein's earlier position but further minimize the importance of the political role of a nation-state in the world-system. States are regarded as competing economic actors (or business firms): central ones as capitalist; peripheral ones as proletarian (Meyer, 1980:114; Chase-Dunn, 1981; see also Wallerstein, 1979b:35,275). In the meantime, Skocpol also strengthened her position in a collaborative work, Bringing the State Back In (Evans et al., 1985). The issue here is whether the world-system is primarily economic or a joint political-economic system. My position is that the world-system should be understood equally by economic and political terms. Although two aspects of the system (the international state system and the world economy) are so closely intertwined as to constitute a single logic of capitalism, we shall fail to understand the functioning of the world-system if we ignore or deemphasize either side. The literature on international politics provides very suggestive ideas regard to this position.

The most significant insight of international politics that we can borrow to reformulate world-system theory is that it treats each nation-state as an independent entity while accepting the existence of superpowers (equivalent to economic core powers). If such idea of world politics is combined with Wallerstein's predominantly economic world-system, we would portray a better picture of our world. According to Morton Kaplan (1975), the world is now a 'loose bipolar

system', which has risen after the breakdown of the 'balance of power' system since World War II. It is 'loose' because it is not strictly hierarchical and it is 'bipolar' because it consists of two polarized blocs; one is the US bloc and the other is the Soviet bloc. In the situation where two blocs clash and compete with each other, crude hierarchical control is not always desirable. Kaplan (1975:38) argues:

> Bloc actors are to attempt to extend the membership of their bloc but to tolerate the non-member position of a given national actor if non-tolerance would force that national actor to support the objectives of the rival bloc or to join the rival bloc.

Whether or not we have a loose bipolar world political system is beyond the scope of this study; the important implication of Kaplan's theme is that even a politically weak nation-state can have an independent role in world politics. In fact, there is a plenty of evidence that very weak states are less and less willing to accept foreign policy mandates from the superpowers (Lowenthal, 1976). The weak states have various options to cope with external political influences, such as coalitions among themselves (e.g., ASEAN), active participation in international organizations (e.g., to exercise voting power in the U.N. and other international agencies), and regime restructuring (see Krasner, 1981). The power of hegemonic states is dissipated by the very institutions they have created to serve their own purposes (e.g., OPEC; Krasner, 1978:200-1). Nevertheless, as Kaplan suggested, the superpowers are less likely to exercise crude power on the weak states. Instead, they use diplomacy, cajoling,

bullying, and other verbal threats, and economic sanctions. If every option fails, the last resort is of course military intervention. However, the costs of military intervention will probably outweigh possible gains, and have done so, since Czechoslovakia, Vietnam, and Afghanistan (see Galtung, 1981:117).

These tendencies suggest that we may be witnessing the 'ending of the hegemonic presumption,' as Lowenthal (1976) put it, and that the economic relations are becoming more important than political relations. In fact, since 1850, the US military has intervened in Latin America alone more than seventy times, and in many cases at the request of American companies whose assets or conditions of operation were seen as under threat (Lernoux, 1982:173). In this sense, then, there are reasons for thinking of the US as an imperialist state, and as a typical example of the capitalist expansionist drive. On the other hand, however, the USSR's intervention in other states is not generally based on an attempt to make economic gain or to make a profit. Soviet overseas investments are negligible compared to The US'. The Soviet interest in its sphere is mainly political, and to some extent parallels that of the US in maintaining the capitalist system as a whole (Gibbs, 1986:243).

Thus there seem to be the two forces structuring our world environment. One is the capitalist expansionary drive headed by the US, and the other is the communist expansionary drive by the USSR; the former is more or less economic, and the latter, political. In this

context, Worsley (1984) rejects Wallerstein's monistic view that there is only one world system, capitalism. According to him, capitalist and communist states are based on fundamentally different economic systems because they produce goods under different sets of social relations and fundamentally different political systems. Based on this argument, he distinguishes four worlds; the developed capitalist first world, the developed communist second world, the underdeveloped capitalist third world, and a fourth category of underdeveloped communist states.

Wallerstein's and Worsley's descriptions of the world-system are so abstract and general that they are probably beyond empirical validation. But their imagery of the world suggests that nation-states are interconnected to each other in complex ways along economic and political dimensions. It is true that some communist countries are deeply involved in the capitalist world economy through trade (e.g., Yugoslavia), but it is also true that some capitalist countries have active political relationships, beyond simple diplomatic exchange, with communist bloc polities (e.g., the Scandinavian countries). Capitalist countries have established political coalitions among them (e.g., NATO) as well as economic coalitions (e.g., the EEC). Likewise, we must not forget the existence of such economic institutional realities as COMECON in the socialist bloc, or the post-revolutionary military and economic aid by the USSR to Cuba and Vietnam for non-economic reasons.

However, the world seems to have adopted a single form of economic transaction; i.e., the capitalist way of exchange. I think that this

is what Wallerstein accentuated in his works; as a result, he failed to include the communist bloc of countries into his analysis by ignoring (or deemphasizing) the political aspect of the world-system.[1] As Worsley (1984) suggested, the 'mode of exchange' and the 'mode of production' are the two different aspects of the economy. In terms of exchange (world trade), the capitalist way dominates the world; but the 'mode of production' is substantially different in the two blocs, mainly for political and ideological reasons. Thus there is no unified mode of production.

To conclude, this section has shown that the world-system consists of two analytically separable domains: economy and polity. The two domains are equally important, and nation-states, as individual actors, are complexly interrelated with each other along the two dimensions.

---

[1] For Wallerstein, the superpower conflict is not of two different economic systems, but of different political ideologies. The communist state is just a "collective capitalist firm so long as it remains a participant in the market of the capitalist world-economy" (Wallerstein, 1979a:35). Chase-Dunn (1981:51) further stated, "even the 'socialist' states which have tried to establish a separate mode of production have eventually returned to production for, and exchange with, large commodity markets."

3.2.2 Dependency, Interdependence and Dominance

In order to bring political terms into the economy-oriented world-system theory, it is better for us to get away from the concept of 'dependency,' which implies 'hierarchical' and only economic relationships between nation-states. Of course, there is plenty of evidence of the pervasive dependence of the overwhelming majority of the LDCs on the MDCs for capital investment, loans, technical and organizational skills, diverse export markets and so on (Gereffi, 1984:98). Small countries, with limited internal markets and limited natural resources, have no choice but to depend on markets in foreign countries in order to expand their economies of scale. Even though a country has an abundance of resources and a potentially large market, it has to be dependent on foreign countries if it lacks capital, technology, managerial skills and so on. However, such dependence does not necessarily lead to a relationship of the exploiter and the exploited.

Since the concept of 'dependency' only describes a unilateral and asymmetric relationship, it does not take account of strategic options that the actors involved would have. More specifically, the periphery has no strategic option while the core has various options. But Third World countries have made different choices about their openness to foreign investment, foreign aid, and foreign trade. For instance, Latin American import substitution development policies contrast

sharply with East Asian export-oriented policies.[1] Moreover, as the existence of 'reverse foreign aid' began to be more widely recognized in the 1960s, Third World governments began restricting incentives for foreign firms and demanding that foreign firms transfer technologies and managerial positions. At the initial stage of MNC penetration, the host countries often provide favorable incentives, such as tax exemption, free rent of land, and etc. Yet, such incentives are soon removed; the host countries often attempt to control the MNCs once they are established (e.g., saturation laws which make it mandatory for MNCs to sell a specified percent of equity in each project to host country citizens; Gillis et al., 1983:387-97). These suggest that foreign influences are not producing uniformly negative results, and can be mitigated or upset by the recipient country's policies. Gruhn (1983:4) emphasized the administrative capacity and the strategic ability of the state:

> Administratively weak states are in no position to make knowledgeable choices with respect to strategic technical assistance or funding. Bad advice is often bought, contradictory programs and policies followed, and costly financing choices undertaken ... a poor, weak state , rather than having too many options, basically has only one: to accept, more or less, and to seek to implement whatever medicine is recommended by the [outsiders].

---

[1] The negative impact of foreign investment and aid is much exaggerated by the dependency school. Among several forms of foreign savings, only bilateral aid and investment can be treated as extensions of the donor's or investor's direct control. However, bilateral aid and investment accounted for only 11 percent of the total foreign saving entering developing countries in 1980, a sharp drop from its 23 percent in 1960 (Gillis et al., 1983:377, Table 14-1).

Foreign investment on the part of the core countries is also the outcome of a series of strategic calculations. The investor countries consider the so-called 'investment climate', such as tax incentives, future marketability, cheap labor, natural resources, political stability, and so on. These factors are in turn valuable assets of the country in which investments are made. Therefore, the periphery, if strategically capable, can take advantage of foreign capital, and turn it to its favor; for instance, the larger the size of a nation-state (with its potential market size, unlimited supply of cheap labor, and material abundance), the better the bargaining power it would have in foreign economic relations (e.g., China).[1] In addition to these, non-economic factors, such as competition among the core nations and the US-Soviet conflict, make the core countries more vulnerable to Third World nations. The motives behind economic aid or investment are complex, and can range from profit-making to political-coalition

---

[1] The dependency school overemphasizes the MNC operation in the periphery. Critics of MNC penetration allege that the foreign firms have freedom to choose the sectors to be invested in; i.e., they tend to invest in capital-intensive industries. But there is little empirical support for this claim (see Lipsey, et al. 1978). Rather, according to Fransman (1986), a state (government) is in the position to select either the capital-intensive or the labor-intensive foreign investments considering the internal conditions. For instance, when choosing technology, a state considers not only the efficiency but also its social implications. That is, while techniques A may be efficient, which B is not, B could still be taken to be superior from the social point of view (Fransman, 1986:16). By choosing the appropriate industries and technologies (e.g., labor-intensive industries with low-level of technology), a country can create high employment opportunities and thereby stimulate development without substantially worsening the distribution of income.

building. Post-war American aid to European countries, Japan, and other Asian and African nations cannot be solely attributed to the profit motive. Similar forms of the Soviet aid are also present in a variety of nations in Latin America, Asia and Africa.

If we distinguish economy from polity and analyze them separately, the interrelationships among countries in each sector would be asymmetric: the core versus the periphery in the domain of economy, and the dominant versus the dominated in the political domain. However, even the political superpowers have to be dependent upon a small country regarding some issues (Baldwin, 1980), and the core economies often depend on foreign sources of supply, particularly the LDCs, for oil, strategic minerals, cheap labor, and large markets (Gereffi, 1984). Economic dependence cannot be equated with periphery position in the world economic system, and political dependence does not necessarily mean a dominant (or dominated) position in the world political system. Further, if the two domains were combined, things become more complex. All countries, as individual actors, try to maximize their interests through continuous strategic calculations, regardless of their economic and political positions. Thus, the concept of 'dependency', implying unilateral and asymmetric relationships, cannot capture the complexity of international relationships in the politico-economic world-system. Rather, nation-states are 'strategically interdependent' with each other along economic and political dimensions.

Interdependence, as commonly used by international relations scholars, implies relations that would be mutually costly to break (Baldwin, 1980). To take the example of world trade, countries are mutually dependent (or interdependent) if they rely on each other for goods and services that are relatively vital and cannot be easily produced at home. Interdependence, then, involves a situation in which the opportunity costs of breaking relations are high (i.e., the vulnerability of a state to alterations in certain kinds of international relationships). As an analytical tool for understanding the structure and the dynamics of the modern politico-economic world-system, however, 'interdependence' is a very weak concept; although it describes a dyadic relationship well, it says nothing about the whole structure in which the relationship is found. Since this study is interested in both aspects (a series of dyadic relationships and the whole structure of the relationships constituting the world-system), the concept of 'interdependence' is of limited value.

For the above reasons, this study borrows the ecological concept of dominance, which was used to analyze relationships among communities (e.g., Duncan et al., 1960, on a system of cities) and power distributions within communities (e.g., Hawley, 1963). The concept of dominance allows interdependence of subunits while emphasizing the existence of the larger system in which subunit activities occur. The concept matches well with the intention of this study, i.e., of allowing the autonomy of nation-state while retaining the dependency

school's global system notion. Ross (1987:258) combined the ecological notion of dominance with the social network concept of power; he reconceptualized dominance as the position of a metropolis in a nationwide hierarchical system of urban places.

Following Ross and extending the level of analysis, dominance is defined here as the position of a nation in a worldwide hierarchical system of nation-states. Since this study assumes that the world consists of two domains of economy and polity, I distinguish economic dominance from political dominance. Economic dominance means a nation's position in the economic domain, and political dominance refers to a nation's position in the political domain.

3.2.3 Concept of Power and Index of Dominance

Dominance is derivative of another concept, 'power,' which has been one of the most cumbersome yet most frequently studied subjects for social scientists. It has been regarded as impossible to measure until the emergence of the network analysis technique. There are three different conceptualizations of power in the network literatures. The first approach sees power as a series of pairwise or dyadic characteristics. Jacobs (1974) elaborated Emerson's (1972 [1962]) simple dyadic power relationship (i.e., A's power over B is equal to B's dependence on A) and added two components of dependence: substitutability and essentiality. That is, B depends on A to the extent that the resources what B derives from A are of great value

(essentiality), and these resources are not available from alternative sources (substitutability). This view of power is not too different from the 'interdependence' described above; it does not consider the whole structure of relations in which the dyadic relations are embedded.

The second approach sees power as a pure structural property; i.e, power is considered a consequence of the whole network structure. The centrality of an actor in the network is power itself (Mariolis and Jones, 1982). The third approach introduces the idea of 'network vulnerability,' defined as the effect of removal of an actor on the whole network. This is called as 'structural dependence' (the dependence of the whole network on an actor), as distinguished from Emerson's 'dyadic dependence'.

The ecological concept of dominance, by definition, includes these three dimensions of power. The ecological approach, however, has not been successful in measuring dominance as defined. A common mistake was that indicators for dominance include non-directional endogenous factors, the so-called urban characteristics, such as population size, employment structure, and so on (e.g, Lincoln, 1978; see Ross, 1987). Dominance measured as such does not conform to the theoretical agenda of ecological dominance which implies multilateral influences among interdependent units in the larger system. Ross (1987) adopted an index of prominence as a measure for metropolitan dominance, and overcame the problem of operationalization.

Ross' index of prominence can be directly applied to this study; the only difference is the unit of analysis. He used the term 'control linkages' to refer the relations between the metropolises (SMSAs), which were measured by whether or not a corporation with headquarters in one SMSA has production facilities in other SMSAs. Since economic and political relations between nation-states are not necessarily hierarchical, I use the term 'exchange' (which is more or less neutral) instead of 'control' in order to emphasize the autonomy of the nation-states. Thus, the dominance of a nation D_j can be expressed as the sum of the exchange linkages between the nation and all other nations in the world-system Z_{ji}, weighted by the dominance of those other actors (Ross, 1987:260-1).[1]

$$D_j = D_1Z_{j1} + D_2Z_{j2} + \ldots + D_nZ_{jn}, \qquad (3\text{-}1)$$

where D_j = dominance of nation j in the world-system,

Z_{ji} = dyadic exchange linkage between the nation j and the nation i,

while $\Sigma_j Z_{ji}$ is constrained to a unit of 1.0.

In a matrix form: $D = D*Z'$ (Z' is a transpose of the Z matrix).

---

[1] The equation is solved by substituting the eigenvector of the first principal component (from an analysis of the Z matrix) for the vector of dominance scores D used to weight the exchange links Z (see Ross, 1987:262).

This summary measure of dominance captures all three aspects of power as described above: the sum of pairwise exchange relations, the centrality of an actor in the network, and the structural dependence of the network on an actor. Because of the constraint $\Sigma_j Z_{ji} = 1.0$, Z_{ji} refers to the proportional intensity of i's relation with j, which reflects the number of alternative sources of relations for i (substitutability). The constraint on the column sum makes the matrix a negatively connected network. The connection is negative "if exchange in one relation is contingent on nonexchange in the other" (Cook et al., 1983:277). If a nation i has five alternative sources for exchange, for instance, i's relation to the five partners is negative because i can substitute partners. Thus the number of alternative sources of relations is negatively related with the intensity of i's relations with (or dependence on) each of its partners.

If economic and political exchange data are collected in a continuous scale (as opposed to binary form, coded 0 or 1, simply reflecting presence or absence of the relationship),[1] the magnitude of Z_{ji} tells directly the 'essentiality' and the 'substitutability' of the relation for i and j. The more essential the resources or the relations of j for i, the more i will increase these exchange relations

---

[1] For instance, Ross (1987) used a continuous measure of the control linkages between cities (i.e., the number of production facilities in a city controlled by a headquarter in another city) to compute prominence scores of the cities.

and the more i will depend on j. The more j attracts the dependence of i, for instance, by increasing economic or military aid, the more powerful j becomes; that is, the value of Z_{ji} will get larger to the extent that the sources of i's relations are not substitutable. Moreover, this summary measure of dominance includes not only the volume but also the quality of the relations. By weighting the dominance of those other actors (D*Z), the measure reflects the idea of network vulnerability (or structural dependence); thus, it captures all three aspects of power (essentiality, substitutability and vulnerability) and transcends the conceptual limitations of dependency and interdependence.[1]

---

[1] Suppose that both nation A and nation B are politically allied with five other nations, respectively; but nations that allied with nation A also have active diplomatic relations with many other nations, while B's allies do not have any diplomatic exchanges other than with nation B. Since Z matrix only tells the 'volume' of the relationship, A and B will be treated as having the same level of dominance. But it is clear that A is relatively more dominant than B in this situation. By weighting the dominance of other actors (Z*D), the index can assess the 'quality' of the relation.

Chapter 4

RESEARCH DESIGN

The previous two chapters have built the groundwork for the research problems introduced in Chapter 1. Chapter 2 reviewed the various contending theories of development in order to show how they have converged. Chapter 3 critically assessed the problems of the dependency view and reformulated it to provide each nation-state with independent autonomy, and thereby to allow for the possibility of a nation-state improving its economic and political position in the world-system. This chapter narrows down the research problems into an empirically testable form. First, measurements to operationalize major variables of various theories are discussed. In particular, economic and political dominance are measured by a network technique introduced in the previous chapter. Second, several hypotheses are constructed. To assess the conventional dependency view and the reformulated version, two sets of hypotheses are formulated. Third, the data collection methods are presented. Efforts are made to expand the generalizability of findings by including as many nations as possible, including the core countries and the socialist economies. Finally, statistical methods to test the hypotheses are specified. Attention is directed to developing dynamic models in which the effects of position in the world-system on economic development can be examined.

4.1 Conceptualizations and Measures

4.1.1 Explanatory Variables

Level of Economic Development: Most previous cross-national studies used GNP or GDP per capita (standardized by an exchange rate in US dollars) as a measure for national development. This exchange-based GNP or GDP in general underestimates the poor countries' level of economic development to a great extent. This problem of income comparison (i.e., ignoring the differences in price structure) may be overcome by using a physical measure of economic welfare such as per capita energy consumption (Gillis et al., 1983:10). We now have new estimates for GDP based on direct price comparison, which allow for more accurate cross-national comparisons than converting domestic currency figures by an exchange rate. Gilbert and Kravis (1983 [1954]) first challenged the use of exchange-based GDP as a measure of national wealth. Since then, a group of economists, in conjunction with World Bank, have been working for the better estimates of national wealth. Finally Kravis et al. (1978 and 1982) produced real GDP per capita for 124 nations based on various domestic consumption factors of each country (in fact, they computed the estimation for 16 nations, and they extrapolated those estimates for the rest of the nations). Summers and Heston have continued to revise earlier estimates (1984 and 1988). This study used the most recent data estimated in 1988 which include GDP for 130 nations from 1950 to 1985. Since this measure is highly skewed, it was transformed based on natural log in regression analyses.

State Strength: In this study, 'state strength' is considered as having two aspects, internal and external.[1] Internal state strength refers to the relative power of the state vis-a-vis its own society. External strength means the ability to manage the interstate affairs within the world-system; i.e., it is the relative power of the state vis-a-vis other societies, defined here as political dominance (see below).

The state is here narrowly defined as a governmental organization. This of course cannot capture the meaning of the state, suggested by the neo-dependency view (see the state-centered argument in Chapter 2); however, as discussed, their definitions are too ambiguous to operationalize (see Evans et al., 1985). The most frequently used indicator for state strength is the government revenue as a proportion of GNP or GDP (e.g., Rubinson, 1977; Thomas and Meyer, 1980). Government revenue levels show the wealth of a society, but do not

---

[1] As discussed in Chapter 3, the dependency/world-system view rarely distinguishes these two aspects of state strength because it assumes that the core states are strong vis-a-vis their own society and vis-a-vis other societies while the periphery states are weak, internally and externally (Wallerstein, 1974a:236-7; Chase-Dunn and Rubinson, 1977:460; Hopkins, 1979:24; Chase-Dunn, 1981:23-8). However, strong states have been developed in some economically weak countries (Boli-Bennett, 1980; Thomas and Meyer, 1984), although those states are externally weak. Wallerstein, recently, restated his earlier argument and put it that "... accumulators in core zones have generally wanted strong states at home, but they have also wanted states in the peripheral zones-states weak enough that the peripheral states do not have the power to set the terms of the flow of factors of production, yet strong enough to guarantee this flow against the interference of local potentates or the resistance of the local workforce" (1982:27).

reflect political capacity. Delacroix and Ragin (1981) suggested that the level of direct taxation is a better measure to reflect the capacity of state to control the economy and other sectors of society.[1] Besides these, centralization (whether or not there is a single-party system; e.g., Thomas and Meyer, 1980) has been used. Since state strength is a multi-dimensional property, this study computed the first principal values from total government current expenditure as a percentage of GDP (exchange based) and total government revenue as a percentage of GDP in 1970 (Taylor and Jodice, 1983). The zero-order correlation between the two indicators are .787. The eigenvalue value associated with the first principal values are 1.787, which explains 89.4 percent of variation.

Economic dominance: Compared to political dominance, economic dominance is often considered by the followers of the dependency/world-system perspective, although none of them used the concept of dominance. Snyder and Kick's study (1979) was the first attempt using network analysis technique to measure a nation's position in the world-system on the basis of dyadic relational data, such as

---

[1] Actual extraction also includes indirect taxes, profits from government monopolies, and profits obtained through borrowing. Yet Delacroix and Ragin (1981) did not include these measures. In addition, they used the ratio of secondary school enrollment to the secondary school age population, which was assumed to indicates that the state is active in creating citizenship role. But authoritarian states are more likely to control the educational system and thus it may not be a good measure of state strength. Moreover, in this study, the level of education is treated as another determining factor for economic development.

trade, diplomatic exchange, conjoint treaties, and military intervention. Yet there are several problems in their methodology. First, since their prime interest was to test Wallerstein's classification of nations of the world-system (core, semi-periphery and periphery), they did not measure the position of individual countries. By using the block modeling technique, they identified nine (eventually four) groups of countries. Second, the data were basically relational, but were coded by absence or presence of the relationship (i.e., binary data coded as 0 or 1). Thus, the data do not reflect the quantity (volume) and the quality of the relationship. Third, they mixed one economic factor (trade flow) with political factors (diplomatic exchange, treaties and military intervention). Economic and political dominance must be distinguished for reasons that have been previously discussed.

To overcome Snyder and Kick's problems,[1] it is desirable to use only economic transaction data with the actual amount and value. However, for several methodological reasons, this study could not utilize such data as trade, investment, aid and loan. Instead, the level of MNC penetration (measured by the number of subsidiaries or affiliates in the host countries; i.e., whether or not a country with

---

[1] Besides these problems, Snyder and Kick's study has been criticized on various grounds: improper use of blockmodeling (Jackman, 1980), misclassification of countries (Bollen, 1983), and violation of the key arguments of world-system theory (Declaroix and Ragin, 1981; Nemeth and Smith, 1985). For instance, Declaroix and Ragin (1981:1322) blamed them for "betraying the logic of economic primacy inherent in dependency theory."

MNC headquarters has subsidiaries in other countries) was used to compute the economic dominance score (Ross, 1988, unpublished data; see Appendix B for other sources).[1] If a MNC has more than fifty percent of stock shares of its foreign subsidiary, which means that the MNC controls management, then it was weighted by 2; otherwise it was unweighted. I computed both prestige and centrality score out of the Z matrix (see the formula on page 69). Thus the economic dominance score used in this study is the geometric mean of prestige and centrality scores, ranging from 0 to 1.

---

[1] First, trade flow per se does not give a complete picture of the world economy. Many (e.g., Galtung, 1971) have argued that not only trade but the kinds of traded commodity (i.e., concentration) determine dependency, and it has been empirically supported that the latter is a more influential factor causing dependency (see Rubinson and Holtzman, 1982). This is quite true, but the commodity that a nation can export is probably the outcome of the world division of labor (as world-system theory argues) and at the same time, it depends on endogenous factors such as human capital, natural resources and technology level. That is, the concentration of export commodities, as a variable, is contaminated by internal variables. Suppose that a country has abundant raw materials but was without qualified labor and technology. Hence the country cannot export the finished products not because of external blockage but because of its internal conditions. The opposite is also true (e.g., Japan is not a major exporter of chemical products out of oil). Recently, Smith and White (unpublished manuscript, 1988) measured a nation's position in the world-system on the basis of export commodity concentration. Like Snyder and Kick, however, they were more interested in the classification of countries than in an individual country's position. Moreover, the data they used were incomplete; they included only 65 nations of the world. Second, there are two types of investment, aid and loan: direct (i.e., bilateral, through government or MNCs) and indirect (through international agencies such as the OECD, IMF, IBRD). In the latter form of flow, we cannot identify the countries of origin and yet, this form of flow accounts for a substantial portion of foreign trade, investment and loans (see Gillis et al., 1983). In general, the data on these three types of between-country economic transactions were either unavailable or incomplete.

Political dominance: Political dominance (i.e., external national strength) is not of prime interest for dependency/world-system theory, but it is obviously an important concept in international politics. Nevertheless, few studies in international politics have tried to measure state power in terms of the relational context. The most popular approach is to measure state power by using endogenous factors, such as the level of GNP, military expenditure, size of armed forces, population size, territorial size, and so on (see Hart, 1976, and Baldwin, 1979).[1] These factors are crucial for the power of nations. Yet such endogenous factors are not necessarily components of power in a relational context or a real situation. In other words, they are sources of 'potential' power but not 'actualized' power. The USSR has a much higher GNP, military expenditure, and larger armed forces and territory than Korea, for instance, but the former does not have direct political influence on the latter.

---

[1] Hart (1976) summarized three approaches to measurements of national power in international politics. The approaches differ in their conceptualization of power: power as control over actor, power as control over resources, and power as control over events and outcomes. Game theory represents the first approach; but it is too complex to operationalize, particularly in the situation in which many actors are involved, because it considers both objective and subjective factors. The second approach has been the most popular method, as mentioned. Hart applied Coleman's theory to several hypothetical situations of international relations, focusing on the US, the USSR, and the OPEC. However, his intention was basically illustrative, and power of individual actors was not considered.

Potential power cannot be equated with the actualized power; the potential power can only be validated or actualized by a real situation, such as war.[1] Coleman (1973) argued that an actor is powerful when he controls events and outcomes in the relationship as well as his own resources. Events and outcomes in an international context include various national goals, such as war or prevention of war, diplomatic exchanges, military interventions and so on. In this sense, Snyder and Kick's (1979) study was quite relevant; as noted above, they included political variables (diplomatic exchange, treaties, and military exchange) in measuring a nation's position in the world-system. For these reasons, in order to measure political dominance, I used only those indicators which are clearly relational (see Lazarsfeld and Menzel, 1969).

Here, political dominance is further specified into two dimensions (arms dominance and diplomatic dominance) because diplomatically active nation-states are not necessarily strong in the military arena, and vice versa (see Kaplan, 1975). For instance, the Scandinavian countries have maintained diplomatic ties with virtually all nations of the world

---

[1] In this context, Kugler and Domke (1986) analyzed whether the potentially powerful countries won the major wars, i.e., the First and the Second World Wars; they showed that abundant material base, particularly GNP alone, do not make nations winners of the war. However, their measurements of national strength were rather sophisticated. They used various indicators, what they called internal and external capabilities, such as internal economic factors (GNP, minerals), government extractive capacity (taxation, organizational capability), external state economic power (trade), and those of allies. These factors combined together accounted for 14 of 15 winners of the two major wars.

while they have not build up huge military forces. On the other hand, many Third World nations, such as Iran, Iraq, South and North Korea, and Israel, have been less active in diplomacy but they have kept (or expanded) their strong military capacity. Both conjoint treaties and military interventions were used in Snyder and Kick's work; however, these two indicators were excluded because of several data problems.[1] This study used the data on arms trade during the period of 1963-1973 and arms transfers for the 1945-1968 period (US Arms Control and Disarmament Agency, 1970 and 1975; ICPSR 5404 and 7454). The cumulative arms trade (measured in US dollars) between 1963 and 1973 was used to compute the 1970 arms dominance score; however, the data before 1963 were unavailable. Arms transfer data were originally collected annually but they were combined and divided into two periods, from 1945 to 1956 and from 1957 to 1968.[2] The former was used to compute the 1960 dominance score and the later for the 1970 score. Since arms trade data in the earlier period (before 1963) was not

---

[1] First, both kinds of data are available only in a binary form (presence or absence). Second, treaties range from cultural to political or a combination of several dimensions and thus it is difficult to decide what is to be included or excluded. Third, treaties range from dyadic to multilateral, and the duration of treaties is too diverse. Fourth, only US-centered military intervention data are available (e.g., Blechman and Kaplan, 1978). These data underestimate the relative arms power of the other countries. Moreover, military intervention includes various military activities in foreign countries ranging from dispatch of military consultants to actual military attack; we may not be able to use this data without a new definition of military intervention.

[2] Division of arms transfer data was an arbitrary decision in order to have two equal periods of 12-years each.

available, only arms transfer data were used to compute the 1960 arms dominance score but both arms transfer and arms trade data were used to compute the 1970 arms dominance score.

I collected continuous measures of diplomatic exchange such as the size of staffs in embassies and/or consulates and the number of visits by governmental officials. But these data were limited to the relationship between the United States and the rest of countries (e.g., US Department of State, 1988). Following Snyder and Kick (1979), a simple binary data was used to compute diplomatic dominance scores, indicating whether or not countries have diplomatic relationships.[1] Presence or absence of diplomatic relations in 1950 and 1955 were used for the 1960 diplomatic dominance score and those in 1960 and 1965 for the 1970 score (Singer and Small, 1972; ICPSR 5025). Therefore, the cell values could have 0, 1 or 2; '0' means no diplomatic relationship in both time periods, '1' means having relations in one of two periods and '2' means for the both. As with the economic dominance score, prestige and centrality scores were computed and this geometric mean was taken for political dominance scores.

---

[1] Of course, this does not tell the importance (quantity and quality) of the relationship. In fact, this is the main reason why I computed both centrality and prestige score and took the geometric mean of the two. Nevertheless, this would not hurt the spirit of this study because both dimension of network positions are equally important. Moreover, the computational procedures are the same; the only difference is that Z matrix for the prestige score is asymmetric (reflecting the actual volume of the relationship) while the Z matrix for centrality is symmetric (simply 0s and 1s). The correlations between prestige and centrality scores are very high: .653 for the 1960 arms dominance and .955 for the 1970 diplomatic dominance.

4.1.2 Control Variables

Modernization variables: Among the variables suggested by various modernization theories, this study includes 'the quality of human capital', 'the level of domestic capital formation', and 'the amount of natural resources'. The contribution of education to economic development would vary by different educational level. Psarcharopoulos (1982) proposed a weighting scale which gives a different weight to different levels of education: the sum of primary education enrollment rates; plus 1.4 times secondary school enrollment rates; plus 2.2 time enrollment rates in higher education. I collected combined enrollment rates of primary and secondary education and the enrollment rates in higher education (college or more; Taylor and Jodice, 1983). In this study, the combined rates of primary and secondary education were multiplied by 1.4 and the rates in higher education were weighted by 2.2. Then I extracted the first principal component values out of these two indicators. The zero-order correlation between the two indicators is .652 and the eigenvalue associated with the principal values is 1.652, which explains 82.6 percent of the variation. Gross domestic investment as a proportion of real GDP in 1970 (Summers and Heston, 1988) is employed as the level of capital formation of a nation.

The amount and kind of natural resources are basic and important internal resources which can be mobilized for economic development. Following Bornschier and Heintz (1979), this study used a nation's

production of the three most important raw materials as a measure of natural resources availability: natural gas, petroleum and coal production in 1973. Since the production of these major materials are relatively stable over time, the values were used as the 1970 measure. Again, the first principal component values were taken from these three indicators (the zero order correlations between coal production and petroleum production is .652, .790 for coal and natural gas, and .728 for natural gas and petroleum). The associated eigenvalue was 2.449 and it explains 81.6 percent of the variation. The first principal values were almost equally loaded on three variables: .577 for coal, .596 for natural gas and .559 for petroleum.

Geo-political and Ecological Variables: 'Military Expenditure per capita' was derived from the constant US dollar figures (exchange based) for military expenditures and the population figures in 1970. Log transformation was performed for regression analyses. 'Armed forces personnel per thousand units population' is derived from the data on armed forces size and population in 1970. The size of armed forces refers to the number of military personnel actively on duty; reserve forces are not included (U.S. Arms Control and Disarmament Agency, 1975; ICPSR 7454). The 'population size' is the number of people in the nation (Summers and Heston, 1988) and the log transformation was applied for regression analyses. 'Territorial size' is the geographical size of a nation in 1000 square kilometers. It was log transformed for analyses. Since the areal size is relatively stable over time, 1975 data was used (Taylor and Jodice, 1983).

4.2 Hypotheses and Models

4.2.1 The Dependency Version

The early dependency theories argued that 'dependency' hinders economic growth in the Third World nations, no matter what their internal conditions are. For Wallerstein, the lower the position of a nation in the world-system, the poorer its economic performance. But, as has been reviewed in the previous chapters, the internal characteristics of nations furnish good reasons to doubt the existence of a constant negative effect. Now, neo-dependency theories do not reject the possibilities of national development in the face of external threats or blockages by foreign forces; i.e., they admit that the negative impact of dependency can be overturned by specific configurations of internal conditions.

To test this argument, I considered four internal variables suggested by neo-dependency theories and various modernization theories. They include state strength, and the factor endowments of production, such as the level of domestic investment, the quality of human capital, and the availability of natural resources. The following hypotheses are derived from the relationship between these internal conditions and dependency as measured by "economic dominance in the world-system." Previous studies have constructed hypotheses based on a linear additive assumption, where each variable constitutes an independent hypothesis. This is not an appropriate mode of analysis for exploring the potential interactions (or mutual influences) between

internal and external factors. Thus my hypotheses are stated to test the mutual interaction between internal conditions and economic dominance as an external factor, except for the basic hypothesis 1-1.[1]

Hypothesis 1-1: The lower a nation's score on economic dominance, the lower its economic growth rate.

A particular weakness in most Third World nations is a shortage of people in the middle and lower levels of management. There may be competent economic technocrats at the top of the government structure, but as one goes down the hierarchy, capacity diminishes rapidly. The result can be what Latin American call 'projectismo'-the development of ambitious plans at the top that are executed only partially or not at all (Reynolds, 1985:417). Thus the quality of human capital is important for national development. External penetration has often taken advantage of a relatively highly educated but low cost labor force. But nations with highly qualified human resources can overturn the negative impact of external penetration; for instance, MNC penetration would leave know-how (probably, even know-why) among a disciplined labor force within the national boundary as a by-product additional to the wage paid.

Hypothesis 1-2: The positive relation between economic dominance and economic growth in a nation will be stronger as the quality of human capital increases.

---

[1] Since the political dominance is not of prime interest for the dependency view, it is not taken account of in these hypotheses.

Nations with a strong state capacity can exert strong governmental control over the operation of external agencies, and may be able to offset the negative effect of dependency on behalf of their national interests. As discussed in Chapter 2 (see the state-centered argument), the extent to which the state can control the economic activities of other social groups is generally held to generate a positive result in economic growth.

Hypothesis 1-3: The positive relation between economic dominance and economic growth in a nation will be stronger as state strength increases.

Nations with abundant raw materials but without strong human capital endowments and technology are often the target of external penetration because they are unable to export finished products. External penetration aims at utilizing cheap raw materials and would not provide Third World nations with much benefit except the factor cost paid for the raw materials. Usually, raw materials are extracted and processed to be sold in the international market, and the profits earned are drained from the host nation without any further investment. This type of penetration thus will contribute little to economic growth, and deepen the unevenness of the production structure by concentrating capital-intensive and raw-material-related economic sectors.

Hypothesis 1-4: The positive relations between economic dominance and economic growth in a nation will be reduced as the level of available natural resources increases.

As neo-classical economic theories of development suggested, the formation of endogenous capital is crucial for economic development. Nations with high levels of domestic investment can cope better with international capitalism than others, because local firms based on local capital can potentially compete with or even dominate MNC penetration.

Hypothesis 1-5: The positive relation between economic dominance and economic growth in a nation will be stronger as the level of domestic capital formation increases.

4.2.2 The Reformulated Version of Dependency Theory

The assumptions of this reformulated version are that the world-system as a single capitalist system does not exist; rather that the world-system is a nominal network system, in which nation-states, as independent actors, interact strategically with each other. The world-system consists of two domains, the economy and the polity, which are interrelated but independent of each other. Although the world-system is hierarchical in nature, a nation-state (when economically or politically weak) can improve its status by improving its internal conditions. Thus the economic and political performance (measured by dominance) of a nation is basically determined by the configuration of various internal conditions, primarily by the level of economic development and state strength. From these assumptions, the following hypotheses are derived regarding the relationship between

four major variables; state strength, economic development, and political and economic dominance.

A nation's economic level of development is expected to have a direct influence on its economic and political performance in the world-system. Yet, internal state strength (the state capacity to control and regulate economic and social activities) does not necessarily lead to economic dominance; rather it may have an indirect effect through the level of development. For the last several decades, in fact, state strength has universally increased regardless of regimes, types of government and economic structure (see Boli-Bennett, 1980). However, an internally strong state can better manage international affairs to improve its political position. Many Third World states are less likely to accept a superpower's political demands even though they are economically dependent on the latter (Lowenthal, 1976; Krasner, 1981).

Hypothesis 2-1: The level of economic development determines the political dominance of a nation.

Hypothesis 2-1a: The level of economic development determines the diplomatic dominance of a nation.

Hypothesis 2-1b: The level of economic development determines the arms dominance of a nation.

Hypothesis 2-2: The level of economic development determines the economic dominance of a nation.

Hypothesis 2-3: State strength determines the political dominance of a nation.

Hypothesis 2-3a: State strength determines the diplomatic dominance of a nation.

Hypothesis 2-3b: State strength determines the arms dominance of a nation.

Hypothesis 2-4: State strength has no direct effect or has a weak influence on economic dominance of a nation.

As has been discussed, dependency/world-system theory does not distinguish between political and economic dominance; a nation's external political strength depends on economic conditions represented by surplus appropriation and by the expression of the different world market interests of the dominant classes of that nation (Wallerstein, 1974: chapter 3). In brief, economically dominant countries are also dominant in political arena and politically dominant countries can take advantage of their position to enhance their economic performance vis-a-vis other nations.[1]

Hypothesis 2-5: Political dominance determines the economic dominance of a nation.

Hypothesis 2-5a: Diplomatic dominance determines the economic dominance of a nation.

---

[1] This may be true for the several core countries like the US. But we can think of two extreme countries that dependency/world-system theory may not explain: Japan and the USSR. No doubt Japan is one of the core countries that is economically dominant but not so in international politics; the opposite is true for the USSR. In fact, economic and political dominance are mutually influential (to be faithful to Wallerstein's argument, economic dominance determines political dominance), however, I could not to collect the data for testing simultaneous influences between them.

Hypothesis 2-5b: Arms dominance determines the economic dominance of a nation.

The following path diagram summarizes the casual relationships stated in the above hypotheses. This model can test the longitudinal effects of internal conditions on a nation's economic and political performance. This is opposite to the model suggested by the conventional dependency theories. For instance, economic dominance, normally used as an independent variable, becomes a dependent variable to be explained by internal conditions including the level of economic development. Yet it is an appropriate model to test the assumption of whether a nation can improve its position in the world-system by improving its internal conditions.

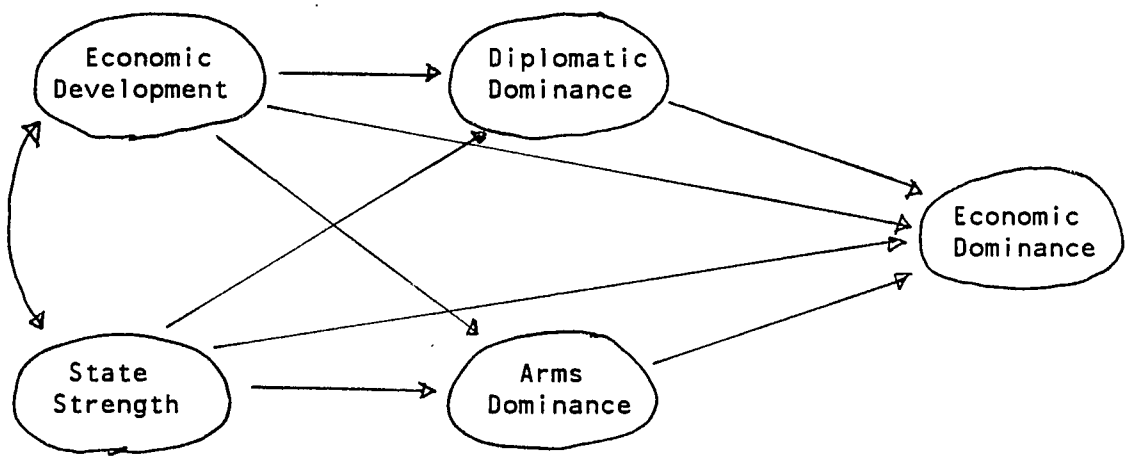


Figure 1. A Path Model for the Reformulated World-System Hypotheses

4.3 Data Collection

4.3.1 Period of Study

The time period of this study is from 1945 to the present, although some analyses are limited to a more recent period because of data unavailability. The time period is too short either to support or reject either dependency or world-system theory in its entirety, especially considering Wallerstein's coverage of several centuries of history. But it is long enough to test whether or not the dependency or world-system model is applicable to the post-World War II world. More specifically, the time span of this study is limited by the following three problems.

1. The meaning of 'world community' fits better to this period than to the period before 1945. Only after the World War II did a large number of countries, formerly colonized or non-existent, became independent nations. The rapid development of communication and transportation technology has enabled us to build up the world-system in a literal sense. This does not contradict Wallerstein's argument that neither the world-system nor the world-economy but a world empire, which is locally dominant, can exist under the condition of low levels of communication and transportation technology (1974a). Even so, we should go back to much earlier period (say 50 or 100 years) to be faithful to the argument of the dependency/world-system model. Then we shall come up against the next problem.

2. Validity and availability of data: Only after 1945 did global scale organizations such as the U.N. and other specialized agencies (IBRD, IMF, OECD and etc) regularly collect a great variety of socio-economic measurements for almost every country. The quality of the national level aggregate data still varies widely from country to country, but it is much better than before 1945. Recently, much effort has been devoted to collecting in-depth historical data on those measurements before 1945. Yet such data is available for only a limited number of countries (e.g., Reynolds, 1985) and its reliability and the validity are still questionable.

3. Comparability: In theory, the dependency/world-system model covers a longer period, but, in practice, most empirical studies focus on the period after 1945. The purpose of this study is not only to test the proposed models but also to compare them with previous findings. In general, the time-span of this study is much longer than that of most previous empirical studies, and thus it is comparable with other results.

4.3.2 The Unit of Analysis and Data Sources

The level of analysis is the nation-state, not the whole world-system. Previous studies suffer from a disparity between the analytical unit and the observational unit (see Ragin, 1987:3-9). Most previous studies have excluded Western countries and the socialist economies for

theoretical reasons (or because of data unavailability), thus reducing their comparative nature by limiting the variation of dependency. This study will include both dependent and non-dependent nations and socialist countries. Thus no arbitrary decision is involved in deciding which nations qualify for inclusion. The smaller size and composition of observations used in other studies diminish the scope and generalizability of the empirical findings. This study includes all nations with relevant data. In order to achieve this, I used various international publications describing the characteristics of nation-states (see Appendix B for a detailed data sources).

4.4 Statistical Methods

A nation's economic growth (or growth rate) is the single most important variable to be explained in the comparative studies of economic development.[1] But the question of how to measure or assess a nation's economic growth has been a serious methodological issue and this has contributed to inconsistent empirical findings. Various models of change, which can handle panel or time-series data, have been suggested (see Markus, 1979; Ostrom Jr., 1978; Kessler and Greenberg, 1982; Liker et al., 1985); however, there seems to be no agreement on which method is the best for comparative studies of economic development.

---

[1] Economic growth and the level of economic development are conceptually distinct; the former is a measure of change in economic condition, while the latter is a static measure.

The previous studies have used either the 'ratio model' or the 'panel model' (see Ragin, 1983). The 'ratio model' employs the rate of change between two different observations as the dependent variable, while independent variables are measured at the beginning point of time. The 'panel model' (or the first differences model) adopts the absolute difference between two observations as the dependent variable, and the initial observation of the dependent variable is included as a control variable along with other independent variables. The following equations illustrate the two models in the simplest form: (1) ratio model and (2) panel model.

$$Y_t / Y_{t-1} = \beta_1 X_{t-1} + \epsilon, \qquad (4\text{-}1)$$

$$Y_t - Y_{t-1} = \beta_1 Y_{t-1} + \beta_2 X_{t-1} + \epsilon, \qquad (4\text{-}2)$$

These models have several methodological problems. First, each model may introduce a potential bias in estimating the change for a dependent variable; the ratio model uses division while the panel model uses subtraction. The first model is sensitive to situations in which nations have lower GNP per capita, while the second model is sensitive to situations in which nations have higher GNP per capita.[1] Because of

---

[1] For example, compare a nation, A, of which GNP per capita has increased from $100 to $150, with another nation, B, of which GNP per capita has increased from $10,000 to $15,000 for a given time. The ratio of change for both nations is 1.5. But the absolute increase of GNP per capita for the nation A is $50, while for the nation B is $5,000.

this, the results of the analysis using two different models have been very different (not only the magnitude of coefficients differ, but even the sign can change; see Ragin, 1983:123-5 for an illustration). Second, in the two models, lagged variables appear in the right sides of the equations, and thus autocorrelation or serial correlation problem is inevitable.[1] As is well known, the national level of aggregate data are likely to be affected by the heteroskedasticity problem (cross-sectionally and longitudinally), which make it difficult to apply the ordinary least square (OLS) method. These models by themselves cannot handle these methodological problems without appropriate corrections. With a few exceptions (e.g., Hannan, 1979 and Bollen, 1979), most studies simply bypassed these problems and nevertheless, applied the OLS routine (see Ragin, 1982:126).

Jackman (1980) has pointed out that a log transform may eliminate heteroskedasticity of error terms and provide a straightforward interpretation of the coefficients in the equation (4-2) above. Instead of estimating equation (4-2), we can estimate a comparable equation involving the transformed variables.

$$\text{Log}(Y_t) - \text{Log}(Y_{t-1}) = \beta_1^* \text{Log}(Y_{t-1}) + \beta_2 X_{t-1} + \epsilon, \qquad (4\text{-}3)$$

---

[1] Xt-1 in equation (4-1) and Yt-1 in equation (4-2) will be necessarily correlated with Yt, respectively, through autocorrealtion or serial correlation of the disturbance terms. See Markus (1979) and Ostrom Jr. (1978) for a further discussion.

Since Log(Yt)-Log(Yt-1) = Log(Yt/Yt-1), the coefficient β_1* represents the effect of Yt-1 on the percentage rate of growth in Yt-1; this cures the heteroskedasticity problem to a certain extent and provides an easy interpretation of the coefficient of change, however, it still does not solve the problem of serially correlated disturbances.

The role of the initial level of a dependent variable as a predictor has been a controversial methodological issue. Borhnstedt (1969) argues that the negative correlation between initial level and change (the so-called the regression effect) should be controlled by adding the initial level of the dependent variable as an explanatory variable. As Liker et al. (1985) has mathematically proven, this is unnecessary and is more likely to introduce bias than to eliminate it. More important, adding the initial level measure is not simply a mathematical issue; it is the controversy over 'explanation' versus 'prediction'.

> With most data any particular variable is well predicted by past values of itself and yet is rarely caused by its past value so we do not advocate adding lagged values unless there is a causal link (Liker et al., 1985:89; emphasis, mine).

In fact, the main focus of this study is to examine the impact of various internal and external factors on economic development. The relationship between the initial and the later development is of no theoretical interest here.

With these methodological and theoretical considerations, this study uses the absolute difference of GDP levels in two time periods (Yt - Yt-1) as a measure for economic growth and does not include the lagged dependent variable as an explanatory variable. The non-additive OLS (i.e., the hierarchical estimation of interaction effect) is applied to test the hypotheses of conventional dependency version (hypotheses from 1-1 to 1-5). For the test of reformulated version (hypotheses from 2-1 to 2-5), path analytic regression is used.

Chapter 5

CHANGING GLOBAL INEQUALITY, ECONOMIC DOMINANCE AND POLITICAL DOMINANCE

This chapter is a descriptive overview of changing world-system regarding global inequality, economic and political dominance. In the first half, the level of global inequality for the last 35 years is measured by the Theil's index (1967). It also analyzes the patterns of change and persistence of GDP per capita distributions based on the decomposition technique suggested by Kessler and Greenberg (1981) and thereby to identify the sources of changing global inequality. The second half estimates economic and political dominance scores for circa 1960, 1970, and circa 1980 based on the formula developed in Chapter 3, and examines correlations between network dominance scores and internal variables. It also analyzes residuals from the simple bivariate regression to scrutinize the change of dominance over time and the cross-sectional disparity between different dimensions of dominance scores. The focus of this chapter is on the mobility of nation-states along the level of GDP per capita, economic and political dominance scores over the last several decades.

5.1 Changing Global Inequality Estimated by Theil's Coefficient

According to the dependency/world-system theories (WST), the gap between the poor and the rich countries has been growing and will be further be widened in a dualist or tripartite world-economy (see Seligson, 1984). But little research has directly measured or demonstrated such a pattern of growing global inequality; the over-time comparison of mean GNP per capita (or mean growth rate) between world-system zones was the only source of empirical proof for this increasing global inequality (e.g., Nolan, 1983). Inequality within nations is a primary concern for sociologists as well as economists (see Gagliani, 1987), while global inequality has been neglected. For the last ten years or so, several economists attempted to compute global inequality (Kravis et al., 1978; Theil, 1979; Whalley, 1979; Berry et al, 1983; Grosch and Nafziger, 1986); however, their efforts were limited to the single point of time, 1970. Recently, Peacock et al. (1988) applied the Theil index (1967) and computed the year-by-year global inequality for 53 nations during the period between 1950 and 1980.

Peacock et al.'s research is an important peace of work in three respects. First, they used GDP per capita based on price factors instead of conventionally used GDP (or GNP) per capita based on exchange rate. As noted in the previous chapter, the latter in general underestimates the poor countries' level of economic development to a great extent. Thus their computation approximates the reality of

global inequality better than using any other national economic indicators. Second, Peacock et al.'s research is not limited to a single point of time but provides the longitudinal trend of global inequality over the 31 years. Third, they contributed to the sociology of development by introducing a method of directly assessing dependency/world-system argument of global inequality.

Peacock et al.'s findings did not fully support world-system argument of growing global inequality. Although between-zone inequality showed a increasing trend in favor of the world-system argument (divergence between three zones: core, semiperiphery and periphery), within-zone inequality and internal inequality for each zone did not show a decreasing trend which contradicts the world-system theory's expectation (convergence within zones). But Peacock et al.'s work has several theoretical and methodological problems; (1) they have misunderstood the underlying implications of the Theil index of inequality, (2) they also have distorted the world-system argument of growing global inequality, and (3) this computation of global inequality based on dubious classification of Nemeth and Smith (1985), which is misleading since it only includes 53 nations, or less than one-third of population of the world (see Gong and Ross, 1989, unpublished manuscript). For these reasons, Peacock et al.'s findings should not be taken as the final and their rejection of the WST is tentative and suggestive at best. Here, I recompute the Theil's global inequality after fixing several problems of Peacock et al.'s work.

5.1.1 The Increasing Global Inequality

Table I reports the level of global inequality from 1960 to 1985 by every 5-year period; the computation is based on the most recent GDP figures estimated by Summers and Heston (1988) for 123 nations including 9 centrally planned economies (CPE), where both GDP and population data are available throughout the period. The following is the computational formula for Theil's inequality (Theil, 1967:101):

$$GI = \frac{GDP}{World\ GDP} * Log\ N \frac{GDP}{World\ GDP}, \qquad Eq\ (5\text{-}1)$$

where GI = the level of global inequality, GDP = the GDP per capita for each nation, World GDP = the sum of all nations' GDP per capita, and N refers to the number of nations.[1]

Before presenting the results, two things should be noted. Since the Theil's index is very sensitive to extreme values (the index becomes less reliable if the computation involves even one or two

---

[1] This formula treats individual countries as independent income-earners, and thus is different from what Peacock et al. used. The most attractive aspect of the Theil index is its neat decomposability; its relatively easy computation procedure (compared to other inequality measures) is another. Since Peacock et al.'s interest was to see the gap between three world-system zones, they decomposed the index into two parts: between- and within-group inequality (see Theil, 1967:101-4; Allison, 1978a:867; Peacock et al., 1988:843). In my study, the unit of analysis is not the group of nations but the individual nation-state, and thus I did not use the decomposed formula.

extreme cases; see Gong and Ross, 1989 for further details), Kuwait was excluded from this computation because of its unusually high rate of decrease in GDP during the period. GDP per capita for Kuwait in 1960 was $48,987 and it was decreased to $14,868 in 1985 (see Appendix D). Second, I used the term 'capitalist' countries to distinguish them from centrally planned economies (CPEs) or socialist countries. The term 'capitalist' is rather ambiguous. A dichotomy of 'market' versus 'centrally planned' economy would be more preferable. Yet such distinction is not widely accepted by sociologists. Throughout this study, 'capitalist', 'non-socialist', and 'non-CPEs' are used interchangeably to refer those countries which do not belong to CPEs or socialist countries as classified by the World Bank.

As evident as shown in Table I (see also graphical presentation of the trend in Figure 1), the global inequality has been steadily increasing over the decades. The global inequality level in 1960 was .3782 for all nations (.4033 for non-socialist countries only) and it rose to .4388 by 1985 (.4713, excluding CPEs); it was increased by 15 percent (17 percent, excluding CPEs). The inequality levels for all 123 nations are generally about .03 lower than those for non-socialist countries only throughout the period. The reason is that 9 CPEs have relatively higher GDP per capita than non-CPEs and relatively equal GDP per capita among themselves. Among the CPEs, East Germany has the highest GDP per capita of $8,740 in 1985 and the remainder of CPEs have GDP capita of $4,273 (Romania) or higher with the exception of China (GDP per capita of $2,444; see Appendix D).

I believe that the inequality levels for 114 non-socialist countries are the better reflection of the reality of global inequality than those including 9 CPEs because GDP estimates for the CPEs are less reliable.[1] There is a trade-off between maximizing the time limit and maximizing the number of cases. As I have criticized the previous studies for having too few cases (Peacock et al.'s work is one example), I chose to include as many cases as possible; an analysis of small number of nations cannot represent the world reality. Because of this, in Table I, inequality levels before 1960 were not computed, however. The overall results stay the same even if we extended the period back to 1950s (see Table XX in the appendix A); here, the number of cases decrease from 123 to 72 nations and the magnitude of inequality level gets bigger by twice or more.

The results shown in Table I (also see Figure 1) seem to support the WST argument of increasing global inequality. Yet such an argument is not unique to the WST and there are many alternative explanations for the same results in economics literature (see Seligson, 1984 and Gagliani, 1987). To be consistent with the logic of WST, we must prove that the rich nations (so-called cores) have utilized their position to enhance their economic growth while constraining the poor nations' (the

---

[1] As Summers and Heston (1988:5) noted, only four of nine CPEs (Hungary, Poland, Romania and Yugoslavia) have maintained comparable quality of GDP estimates with market economies. In fact, GDP for the other five CPEs are extrapolated estimates based on the four CPEs' estimates. Most previous studies have excluded the CPEs from their analysis mainly for theoretical reasons but partly because of data problems, either unreliability or unavailability.

TABLE I

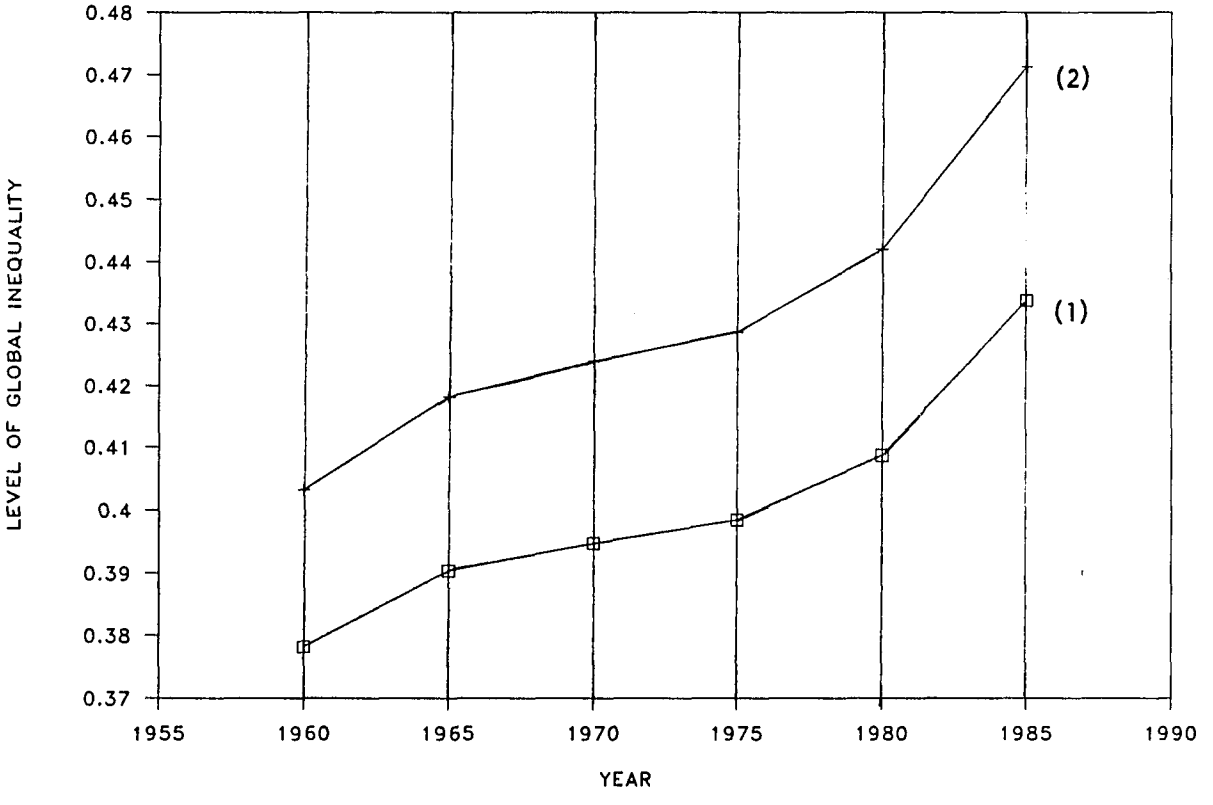
CHANGING GLOBAL INEQUALITY ESTIMATED BY THEIL'S COEFFICIENT BASED ON GDP PER CAPITA FOR 123 NATIONS, 1960-1985

Year	123 Capitalist and Centrally[a] Planned Economies	114 Capitalist Economies
1960	0.3782	0.4033
1965	0.3904	0.4183
1970	0.3948	0.4241
1975	0.3985	0.4287
1980	0.4088	0.4420
1985	0.4338	0.4713

[a] The 9 centrally planned economies (CPEs) include Bulgaria, China, Czechoslavakia, East Germany, Hungary, Poland, Romania, Yugoslavia and the Soviet Union.

periphery) economic growth; i.e., the rich nations should have been getting richer and the poor, poorer during the period. Table I does not answer this question. The decomposition of GDP per capita changes shown in Table II may provide some clues.

Figure 1. Pattern of Changing Global Inequality, 1960-1985



Note: based on the results in Table 1.

(1) inequality for 123 capitalist and centrally planned economies (CPEs) based on GDP per capita.

(2) inequality for 114 capitalist countries excluding 9 CPEs based on GDP per capita.

5.1.2 Components of GDP Per Capita Changes

The Decomposition of Change: Kessler and Greenberg (1981) introduced an index of change (Q^2) in quantitative measurements over time. The formal definition of Q^2 is:

$$Q^2 = (X_2 - X_1)^2 + s_1^2 + s_2^2 - 2s_1s_2r_{12} \qquad (5\text{-}2)$$

where X_1 and X_2 are means, s_1 and s_2 are standard deviations, and r_{12} is the correlation between observations at times 1 and 2. Q^2 reflects the magnitude of change in squared units of the observed variables. Equation (5-2) can be rearranged as follows, by adding new terms and isolating the common terms (see Kessler and Greenberg, 1981:48-57):

$$Q^2 = (X_2 - X_1)^2 + (s_2 - s_1)^2 + 2s_1^2(1 - r) + [2s_1(s_2 - s_1)(1 - r)]. \qquad (5\text{-}3)$$

The above decomposition enables us to identify the source of change when all but one of the components are held constant. For instance, if there is no change in the standard deviation over time ($s_1 = s_2$), and if all individuals maintain their relative positions over time ($r = 1$), then the sole source of variation is necessarily in the change of the mean distribution: i.e., in this case, $Q^2 = (X_2 - X_1)^2$. On the other hand, if it is the mean that remains unchanged ($X_2 = X_1$) and relative positions are again maintained, then total change must be due to movement in the dispersion: i.e., $Q^2 = (s_2 - s_1)^2$. The first

two components of equation (5-3) indicate the degree of change induced by system-wide distributional differences over time, what McClendon (1977) called it 'structural change'. The third component specifies the 'positional change' among individuals within a given distributional structure. That is, if both the mean and the dispersion are assumed to be constant over time, then total change reduces to zero-sum movement in the relative position of individuals; i.e., $Q^2 = 2s_1s_2(1 - r)$. The zero-sum quality of this component means that for every unit increase by one individual there must be a corresponding unit decrease by some other individual. The last component in equation (5-3), $[2s_1(s_2 - s_1)(1 - r)]$, refers to overlapping or interaction term between 'change of dispersion' and 'positional change.'[1]

Although the Q^2 is a quite appealing measure of change across time, it is not scale-free and therefore less useful for cross-metric comparison. Collver and Semyonov (1979) suggested a standardized measure of Q^2 by dividing the equation (5-3) by $2s_1^2$.

$$Q^2/2s_1^2 = (X_2 - X_1)^2/2s_1^2 + (s_2 - s_1)^2/2s_1^2 + (1 - r) + [2s_1(s_2 - s_1)(1 - r)]/2s_1^2 \qquad (5\text{-}4)$$

---

[1] It is clear from the expression, $[2s_1(s_2 - s_1)(1 - r)]$, that any increase in the standard deviation over time will tend to enhance the net contribution of $(1 - r)$ while a decrease will produce just the opposite result. In the latter case the overlap component actually switches signs and contributes negatively to overall change. Likewise, the net contribution of any change in the dispersion $(s_2 - s_1)$ is affected by the $(1 - r)$ component of positional change.

Dividing each component by a factor of $2s_1^2$ controls for differences in scale across decompositions and distributions over time; for instance, the term (1 - r) becomes an intuitive and readily interpretable scale-free measure of positional change. In the following, I will decompose the change in GDP per capita distributions during 1960-1985.

Means, standard deviations, and correlations over the two sets of countries are shown in the top portion of Table II. Means of GDP per capita for 114 non-socialist countries are lower than those when including 9 centrally planned economies ($68 in 1960 and $158 in 1985) while standard deviations get larger ($19 in 1960 and $52 in 1985). This provides additional information as to why the levels of global inequality for non-socialist countries are higher than those when we include the CPEs (see Table I). Correlations between 1960 and 1985 GDP per capita for both set of countries are almost identical (.897 for all countries and .895 for excluding the CPEs) and strong, with magnitudes indicating that about 80 percent of the variance in GDP per capita distributions remained constant over 25-year period. This finding seems to be consistent with WST because it suggests that there would be little change in the relative positions of individual countries. To sort out these separate pieces of evidence we must turn to the decomposition results presented in the bottom half of Table II.

As shown in Table II, the magnitude of total change for both cases are much the same, 1.179 for all countries and 1.133 for excluding the CPEs. The predictions from the logic of WST can be directly tested by

TABLE II

COMPONENTS OF CHANGES IN GDP PER CAPITA DISTRIBUTIONS FOR 123 CAPITALIST AND CENTRALLY PLANNED ECONOMIES, 1960-1985

Component	123 Capitalist and Centrally Planned Economies		114 Capitalist Economies	
1) Descriptive Properties:				
X_{1960}	$1,846		$1,778	
X_{1985}	3,556		3,398	
s_{1960}	1,728		1,747	
s_{1985}	3,432		3,484	
2) Decomposition:				
Total Change[a]	1.179	(100.0)[b]	1.133	(100.0)
a. Change of Mean $(X_2 - X_1)^2/2s_1^2$	.490	(41.6)	.430	(37.9)
b. Change of Dispersion $(s_2 - s_1)^2/2s_1^2$	.487	(41.3)	.494	(43.6)
c. Positional Change $(1 - r_{12})$	.102	(8.6)	.105	(9.3)
d. Overlap Term (b and c) $2s_1(s_2 - s_1)(1 - r_{12})/2s_1^2$	.100	(8.5)	.104	(9.2)

[a] The total change is the sum of the components (a,b,c,d): this can also be computed by $\Sigma(X_{2i} - X_{1i})^2/2Ns_1^2$.

[b] The percentage of variation of the total change explained by each component is given in parentheses.

examining the relative contributions of the structural and the positional change. The structural change (i.e., change in means and standard deviations) accounts for more than eighty percent of the total amount of change in GDP per capita distributions for both set of countries. By contrast, positional change (individual movement) accounts less than ten percent of the total change. This means that the relative position of individual nations remain almost unchanged during the period; it again conforms to the WST argument of little mobility.

The presence of positive overlap term in both decompositions indicates the simultaneous change in individual positions and structural dispersion, however. There is no way to sort out what portion of the positional change contributes to dispersion of GDP per capita distributions (it is the limitation of this decomposition technique). Notice that both change of mean and change of dispersion similarly account for the total change in the case of 123 nations including the CPEs, 41.6 percent and 41.3 percent, respectively. After excluding the CPEs, however, change of mean explains 37.9 percent of the total change while change of dispersion, 43.6 percent. This implies that the larger proportion of structural dispersion can be attributed to divergence among capitalist economies in terms of GDP per capita; it again confirms the WST of growing inequality in capitalist world-system.

The next question is then whether these patterns of change hold up within the more homogeneous groups of countries such as core and periphery (or OECD and non-OECD members). To answer this question, a separate decomposition analysis was performed on each group of nations according to world-system position, and the results were compared.

There have been several attempts to classify nations by world-system position (Snyder and Kick, 1979; Bollen, 1983; Nemeth and Smith, 1985). Here I used Snyder and Kick's classification (1979). Although Snyder and Kick mixed economic with political factors for their classification, they included virtually all nations, including CPEs, while the other two classifications had many fewer cases.[1]

Table III compares decomposition results for 114 non-socialist countries: 20 core nations and 94 periphery nations.[2] WST would predict that the rich nations had been getting richer and the poor,

---

[1] This does not necessarily support the validity of Snyder and Kick's classification. Snyder and Kick's study has been criticized on various grounds, such as misuse of the blockmodeling technique (Jackman, 1980), misclassification of countries (Bolen, 1983) and violation of WST (Declaroix and Ragin, 1981). Moreover, I believe that such after-the-fact classifications have weakened the WST argument rather than strengthening it; even Wallerstein never specified what countries in the present world belong to core, semiperiphery or periphery except for some obvious cases. For instance, was Japan a core state in the early 1900s?

[2] Snyder and Kick originally classified 118 countries into 21 core, 29 semiperiphery and 68 periphery nations (1979:1110-15). I excluded 9 CPEs because of their unreliable GDP estimates (see Summers and Heston, 1988:5). Yugoslavia, a centrally planned economy, was excluded from the core, and semiperiphery countries were treated as periphery. Those countries that were not in the Snyder and Kick's list were classified as periphery.

poorer over the 25-year period. The descriptive statistics reported in Table III indicate that this is indeed the case. Both sets of nations have approximately doubled their mean GDP per capita during the period: 2.04 times for the 20 core states and 1.81 times for the 94 periphery states. From this, one may say that all nations were better off irrespective of their world-system position. However, the absolute gap in mean GDP per capita between core and periphery also sharply increased (by 2.13 times), from $3,197 in 1960 to $6,828 in 1985. Moreover, the periphery shows a higher rate of increase in the standard deviation of GDP distribution than the core does: 1.56 times for the core and 1.97 times for the periphery. These statistics tell us that many periphery countries were much worse-off compared to core nations during the 1960-1985 period. Decomposition results presented in the bottom half of Table III show further details of these changes in GDP distribution.

First of all, the magnitude of total change for the core (4.096) is three times higher than that for the periphery (1.293), suggesting that the change in GDP distribution is much more substantial in the core than in the periphery. Yet the more important point here is the sources of these changes; i.e., the crucial comparison is again between structural and positional (individual) change in GDP distributions. For the core, change of mean explains 89.7 percent of total change, while change of dispersion and positional change contribute little to overall change (4.4 and 3.8 percent, respectively). By contrast,

TABLE III

COMPONENTS OF CHANGES IN GDP PER CAPITA DISTRIBUTIONS FOR 114 CAPITALIST ECONOMIES, 1960-1985: CORE VERSUS PERIPHERY COUNTRIES

Component	20 Core Nations[a]		94 Periphery Nations	
1) Descriptive Properties:				
X_{1960}	$4,414		$1,217	
X_{1985}	9,029		2,201	
s_{1960}	1,702		1,143	
s_{1985}	2,650		2,246	
2) Decomposition:				
Total Change[b]	4.096	(100.0)[c]	1.293	(100.0)
a. Change of Mean $(X_2 - X_1)^2/2s_1^2$	3.676	(89.7)	.371	(28.7)
b. Change of Dispersion $(s_2 - s_1)^2/2s_1^2$	.180	(4.4)	.466	(36.0)
c. Positional Change $(1 - r_{12})$	.154	(3.8)	.232	(17.9)
d. Overlap Term (b and c) $2s_1(s_2 - s_1)(1 - r_{12})/2s_1^2$	.086	(2.1)	.224	(17.3)

[a] The twenty core-nations include Austria, Austrailia, Belgium, Canada, Denmark, France, Greece, Italy, Japan, Luxembourg, Netherlands, Norway, Portugal, South Africa, Spain, Sweden, Switzerland, the United Kingdom, the United States, and West Germany.

[b] The total change is the sum of the components (a,b,c,d).

[c] The percentage of variations in the total change explained by each component is given in parentheses.

change of mean accounts for only 30.6 percent of total change in GDP distributions among periphery countries and change of dispersion explains 36.1 percent. The analysis reveals the presence of noticeable positional change among periphery states; 17.9 percent of the total change can be attributed to individual movement (upward or downward).

The decomposition results in Table III provide more specific answers for the question as to why global inequality had been steadily growing during the 1960-1985 period, analyzed in Table II. Comparing the coefficients for change of mean between the core and the periphery, it is clear that core countries achieved much faster economic growth than periphery countries; i.e., the gap between them was rapidly growing. Little change of dispersion for the core means that every core member was successful in improving its economic conditions. On the other hand, the large coefficient for change of dispersion in the periphery indicates that some of them were successful and some were not (see Appendix D). In fact, there was substantial individual mobility (positional change) in the periphery but not so in the core. From these findings, I should conclude that WST argument of growing global inequality is reasonably well confirmed, if not strongly.[1]

---

[1] As discussed above, not everyone accepts the legitimacy of Snyder and Kick's classification. For this reason, I performed another decompostion analysis by using the World Bank classification of nations (i.e., 17 OECD versus 97 non-OECD). Five core countries (Greece, Louxembourg, Potugal, South Africa and Spain) in the Snyder and Kick were reclassified as non-OECD members and instead of them, New Zealand and Finland were included as OECD nations (see Table VI for the names of the rest OECD members). The results are almost identical. Refer to Table XXI in Appendix A for further detail.

5.2 Changes in Economic and Political Dominance

The focus of this section is to examine the change and the persistence of economic and political (arms and diplomatic) dominance scores over the decades, however. As noted in the previous chapter, first, economic dominance was not measured over time (though the economic dominance score was computed on the basis of dyadic MNC penetration during the period of 1978-1983, a single summary measure was extracted for the 1980 score). Thus, the changes in economic dominance could not be investigated. Second, both arms dominance and diplomatic dominance scores were measured twice in 1960 and 1970, but only 52 nations' scores were available for 1960 arms dominance and only 84 nations' scores for 1960 diplomatic dominance. Moreover, these political dominance scores were not measured in 1980. Although these data problems restrict comprehensive analysis of changes in dominance scores, with these limited data, some interesting patterns of dominance in world-system will be presented.

However, one may question the validity of dominance scores of this study because no one has ever measured a nation's position in the world-system by dominance scores directly comparable to those computed here. Snyder and Kick (1978), Nemeth and Smith (1985), and Smith and White (1988, unpublished manuscript) used a similar network analysis technique to classify the nations' position in the world-system. But as briefly discussed in Chapter 4 (see the section on measurements), Snyder and Kick mixed economic factors with political factors and used

the binary form of data; thus, the results of their study may not be compared with this one. On the other hand, Nemeth and Smith's (1985) and Smith and Whyte's (1988) studies used data on actual trade volume (import only); the former used the 1970 import transaction data and the latter, the 1980 data. Since my economic dominance score is based on the data around 1980, Smith and Whyte's (1988) findings on structural position of nations could be compared with mine; that is, both results are expected to have a significant and positive correlations. Otherwise, either Smith and Whyte's or my estimation of economic dominance might be invalid.

Likewise, the two dimensions of political dominance scores need to be validated as well. As mentioned before (see Chapter 4), no dependency or world-system researcher has ever attempted to measure a nation's political position in the world-system because the political aspect of world-system is of secondary concern to them, and thus has been ignored. Interestingly enough, even in political science and international relations literature, I could not find any relational measure of external political power. Conventional measures of national power vis-a-vis other nations are military expenditure, size of armed forces, population and territorial size (Hart, 1976; Baldwin, 1979; Kugler and Domke, 1985). My political dominance scores are expected to have positive relationships with all these conventional measures. Before analyzing the changes in dominance patterns, below, I will examine the correlations between my dominance measures with other conventional measures of national power for an indirect validity test.

5.2.1 Validity of Dominance Measures

Economic Dominance: Table IV reports the ANOVA test of 1980 economic dominance score by three groups of nations. Classification of nations is from Smith and Whyte (1988). Like Snyder and Kick (1978), they used the block modeling method to classify the nations and thus they did not estimate the structural position of the individual nation-state. Smith and Whyte originally classified nations into five groups based on the volume of import transaction in 1980. Here, group 1 in the Smith and Whyte is regarded as core, group 2 as semiperiphery, and groups 3, 4 and 5 as periphery. These three groups are significantly different in economic dominance score, with a F value of 28.77 ($p<.005$). Pairwise t-tests reveal that the core countries have significantly higher economic dominance scores (mean of .2924) than both semiperipheries and peripheries do (means of .0410 and .0067 respectively; $p<.05$), while there was no significant differences between semiperipheries and peripheries.

Admittedly, the comparability of Smith and Whyte's work and that reported here is rather limited. Since only 63 nations' positions were estimated by Smith and Whyte, comparison was made to those limited cases. Their computation method and data are different from mine: they made an estimation of a group's position versus an individual nation's position, and they used data on import transaction versus MNC penetration. However, we share the network analysis technique as well as our emphasis on the relational data. Both trade and MNC

TABLE IV

COMPARISON OF ECONOMIC DOMINANCE SCORE BY CORE, SEMIPERIPHERY, AND PERIPHERY IN 1980

Country Group	ECON80D	F
11 Core countries[b]	.2924 (.2685)[a]	
15 Semiperipheries[c]	.0410 (.0272)	28.77*
37 Peripheries[d]	.0067 (.0072)	

* $p < .005$

[a] Standard deviations are in parentheses.

[b] Core: Belgium, Canada, France, Italy, Japan, Netherland, Sweden, Switzerland, United Kingdom, United States, and West Germany.

[c] Semipeiphery: Argentina, Austrailia, Austria, Brazil, Denmark, Finland, Hong Kong, Ireland, South Korea, Norway, New Zealand, Singapore, Spain, Venezuela, and Yugoslavia.

[d] Periphery: Central Africa, Colombia, Cameroon, Congo, Costa Rica, Ecuador, Egypt, El Salbador, Gabon, Greece, Guatemala, Honduras, Hungary, India, Israel, Jordan, Libya, Madagascar, Malawi, Malaysia, Moroco, Nicaragua, Niger, Peru, Philippine, Pakistan, Panama, Portugal, Sudan, Senegal, Sri Lanka, Thailand, Tunisia, Togo, Turkey, and Upper Volta.

penetration are commonly used indicators in the previous studies. Therefore, the significant F value and the significant pairwise t-tests results are sufficient evidence that an economic dominance score is a valid measure of a nation's position in the capitalist world-system.

Political Dominance: The zero order correlations between two political dominance scores and conventional measures of external state strength are presented in Table V; all these indicators are measured in 1970. Arms dominance and diplomatic dominance have a moderate correlation of .374 ($p<.01$) between themselves. These two political dominance measures maintain significant correlations with three indicators of national power such as geographical size, population and military expenditure; the lowest correlations is between arms dominance and geographical size ($r=.312$) and the highest is between diplomatic dominance and military expenditure ($r=.724$).

By contrast, they are weakly correlated with two other measures of national power: size of armed forces and internal state strength. Except for the moderate and significant correlation between diplomatic dominance and internal state strength ($r=.384$), the rest of the relationships are weak and barely significant. Although some of these indicators are not necessarily good measures of national power[1] and the strength of the relationships are relatively moderate, I would conclude

---

[1] For instance, size of armed forces is measured by the number of soldiers per 1,000 people; thus, it may not be a good indicator for external state strength. Rather the actual number of armed forces (i.e., without being adjusted by a nation's population size) may better reflect the military capacity of a nation.

TABLE V

ZERO ORDER CORRELATIONS BETWEEN ARMS AND DIPLOMATIC DOMINANCE SCORES AND CONVENTIONAL MEASURES OF EXTERNAL STATE STRENGTH

	DIP70D	LAREA	LPOP70	LMEXP70	AFPT70	STATE70
ARM70D	0.37433	0.31234	0.44139	0.51894	0.19664	0.16488
	0.0001	0.0002	0.0001	0.0001	0.0313	0.0744
	142	138	127	120	120	118
DIP70D		0.31702	0.57475	0.72359	0.17127	0.38400
		0.0002	0.0001	0.0001	0.0614	0.0001
		138	127	120	120	118
LAREA			0.63408	0.40900	-0.19872	-0.04113
			0.0001	0.0001	0.0296	0.6583
			126	120	120	118
LPOP70				0.76612	0.06386	-0.06480
				0.0001	0.5055	0.4953
				111	111	113
LMEXP70					0.40601	0.46297
					0.0001	0.0001
					120	107
AFPT70						0.30700
						0.0013
						107

VARIABLE		N	MEAN	STD DEV
ARM70D	Arms Dominance Score, 70	142	0.037	0.109
DIP70D	Diplomatic Dominance Score, 70	142	0.291	0.253
LAREA	Logged Geographical Size	148	5.046	2.165
LPOP70	Logged Population, 70	128	8.806	1.607
LMEXP70	Logged Military Expenditure, 70	120	3.995	2.425
AFPT70	Soldiers per 1000 people, 70	120	7.308	8.011
STATE70	Internal State Strength, 70	118	2.207	1.001

that political dominance scores of this study are as valid as those conventional measures of external state strength.

Finally, Table VI tests the mean differences of economic dominance in 1980, arms and diplomatic dominance in 1970 by three groups of nations (the official World Bank classification which is widely used in most economic development literatures other than WST and different from Smith and Whyte's employed in Table IV). There is no doubt that 17 OECD countries are the leaders of world politics as well as economics and thus, they are expected to have high scores of economic and political dominance. We also know that socialist countries have been competing with leading capitalist countries in political arena though they were not actively involved in economic transactions (see Chase-Dunn, 1981). Table VI confirms these common-sense facts of world reality.

Overall, three groups of countries are significantly different in their economic dominance, arms and diplomatic dominance. Pairwise t-tests tell that OECD countries have significantly higher economic and diplomatic dominance scores than both CPEs and the rest of countries ($p<.05$), while there was no significant difference between CPEs and the rest. In arms dominance, however, both OECD members and CPEs do not show significant difference between them while they both have significantly higher arms dominance scores than the rest. These results further support the validity of my measures of economic and political dominance. We may now turn to the analysis of changing dominance patterns.

TABLE VI

COMPARISON OF DOMINANCE SCORES BY THREE GROUPS OF COUNTRIES: ECONOMIC DOMINANCE IN 1980, ARMS AND DIPLOMATIC DOMINANCE IN 1970

Country Group	ECON80D	F	ARM70D	F	DIP70D	F
17 OECD countries[b]	.2056 (.2448)[a]		.1034 (.2393)		.6760 (.1994)	
12 CPEs[c]	.0001 (.0001)	35.71*	.0981 (.1743)	5.62*	.3572 (.2108)	30.42*
96 Others	.0094 (.0174)		.0227 (.0521)		.2615 (.2018)	

* $p < .005$

[a] Standard deviations are in parentheses.

[b] OECD countries: Austrailia, Austria, Belgium, Canada, Denmark, Finland, France, Italy, Japan, Netherland, New Zealand, Norway, Sweden, Switzerland, United Kingdom, United States, West Germany

[c] CPEs (centrally planned economies): Albania, Bulgaria, China, Cuba, Czechoslovakia, East Germany, Hungary, North Korea, Romania, Soviet Union, Yugoslavia

5.2.2 Patterns of Change and Disparity in Dominance Scores

Correlations between Dominance Scores: Table VII shows the zero order correlations between dominance scores. Arms and diplomatic dominance have two time points of observations, in 1960 and 1970, while economic dominance has only one, in 1980. But remember that these scores are computed on the basis of cumulative arms transfer and trade, diplomatic exchanges and MNC penetrations; and thus, the range of period goes back to as early as 1945 and the MNC penetration data covers the period from 1978 to 1983 (see the section on measurements in Chapter 4). All the relationships turn out to be statistically significant (except for the correlation between the 1960 diplomatic dominance and the 1970 arms dominance but this relationship is of no interest here). The strongest correlation is found in the relationship between the 1960 and the 1970 diplomatic dominance scores (r=.892) while the two arms dominance scores do not show such a strong relationship but demonstrate relatively a high correlation (r=.631). We may say that about 80 percent of variations in nations' diplomatic power remained constant over the 20 years of period and for the relative arms power, about 40 percent did.

It is interesting to see that the two political dominance measures maintain relatively a low but quite a stable relationship over time (correlations of .384 in 1960 and .374 in 1970). This implies that arms and diplomatic relations are the two different aspects of international politics. The correlations between economic dominance

TABLE VII

ZERO ORDER CORRELATIONS AMONG DOMINANCE SCORES, 1960-1980

Variable	DIP70D	ARM60D	ARM70D	ECON80D
DIP60D	0.89171 0.0001 84	0.38363 0.0078 47	0.20525 0.0611 84	0.47728 0.0001 84
DIP70D		0.47995 0.0003 52	0.37433 0.0001 142	0.49226 0.0001 142
ARM60D			0.63148 0.0001 52	0.74225 0.0001 52
ARM70D				0.66115 0.0001 142

	VARIABLE	N	MEAN	STD DEV
DIP60D	Diplomatic Dominance Score in 1960	84	0.4020	0.2370
DIP70D	Diplomatic Dominance Score in 1970	142	0.2905	0.2534
ARM60D	Arms Dominance Score in 1960	52	0.0758	0.1774
ARM70D	Arms Dominance Score in 1970	142	0.0367	0.1099
ECON80D	Economic Dominance Score in 1980	142	0.0311	0.1058

and the two political dominance measures further confirm this fact. Economic dominance and arms dominance in 1960 and 1970 are highly correlated (.742 and .661, respectively) and these correlations are much more stronger than those with diplomatic dominance scores (.477 in 1960 and .492 in 1970).[1]

In Table VI, we have seen that even economically weak countries (non-OECD members) have active diplomatic exchanges with other countries; the mean diplomatic dominance score was .262 which is not significantly different from CPEs' mean of .357 (though both scores are significantly lower than OECD's .676). As Kaplan correctly observed (1975), many Third World nations have been the indispensable target of both OCED's and CPE's diplomacy. Two polarized blocs, lead by the US and the USSR, have attempted to extend the membership of their blocs; the US bloc did that mainly for economic reasons while the Soviet bloc, mainly for political purposes (see Chapter 3). Therefore, a nation's economic position in the world-system has little to do with the nation's diplomatic dominance, particularly for the Third World nations.

---

[1] As explained in Chapter 4, the 1960 arms dominance scores are computed only from arms transfer data while the 1970 scores are based on both arms transfer and arms trade. Notice that the number of observation for the 1960 arms dominance is 52 while the 1970 has 142 cases. The latter includes twelve CPEs whose arms dominance scores are relatively high (e.g., the USSR, China, Cuba, and East Germany) while their economic dominance scores are virtually zeros. These factors may result in a relatively lower correlation in 1970.

On the other hand, the high correlation between arms and economic dominance is not an unusual result. Many OECD members, the most dominant nations in the world-economy, have been the major arms transferrers and exporters to the Third World, such as the United States, France, West Germany, and United Kingdom. Unlike diplomatic dominance, the Third World countries are less likely to have higher arms dominance unless they are in the specific situations such as being at war or conflict (internal or external). Although arms and diplomatic dominance are significantly correlated, each of them represents a different dimension of world politics.

Changes in Dominance Scores: Table VII shows some interesting relationships between dominance scores, but it does not tell the patterns of change and persistence in dominance. Moreover, a direct comparison of the correlations are less meaningful due to a large number of missing observations across the correlation matrix. I applied the following simple regression equation to analyze the change of dominance over time.

$$Y_t = \beta_1 Y_{t-1} + \epsilon, \qquad (5\text{-}5)$$

In equation (5-5), Y measured at time t is regressed on its lagged observation at time t-1. The effect of Yt-1 on Yt ($\beta 1$) is typically called 'stability coefficient'; i.e., $\beta 1$ represents the extent to which the dependent variable remains stable over time (Liker et al. 1985:87). However, this equation is not free from methodological problems such as

'regression effect' and 'autocorrelated disturbances' (see section on statistical methods in Chapter 4). If we are interested in a causal component of the equation β1 (the effect of Yt-1 on Yt), as suggested elsewhere, we may need another appropriate equation to correct those methodological problems (see Ostrom Jr., 1978 and Markus, 1979). My interest is not in the coefficient β1, but rather in the stochastic components summarized in the disturbance term (ε) of the equation. The disturbance term represents the changes of Y measured at two separate points in time.

As noted above, not all dominance scores were measured over time and it would be interesting to examine the relationship between two different dominance scores. Correlation methods are sensitive to changes in variances across populations, thereby rendering comparisons problematic, while the unstandardized bivariate regression techniques are not. In this case, the residual component of the regression equation would tell the disparities of two different dominance scores (again, the interpretation of β coefficient is not a concern). From this simple logic of regression analysis, changes and disparities in dominance scores are presented below.[1]

---

[1] Of course, the residuals of the regressions cannot be purely attributed to either change in or disparity of between the dominance scores. In fact, the residuals include not only the component of change (or disparity) but the portion of the variation which could be explained by some other variables. However, the sole purpose of the analysis is not 'causal' but 'descriptive'.

Table VIII lists the countries with twelve largest negative and twelve largest positive residuals, respectively, and the arms dominance scores in 1960 and 1970. The residuals are computed by regressing 1970 arms dominance on 1960 arms dominance. The interpretation of residuals is rather straightforward: those countries with the largest negative residuals had lost their 'relative' arms power after the 1960s while those with the positive residuals had gained their 'relative' arms power compared to the previous period (note that the dominance scores computed here are 'relative' power vis-a-vis other societies).

It is not surprising that the United Kingdom has the largest negative residuals; Britain's relative military capacity has been continuously degraded after the World War II. Pakistan and India are the second and the third largest residuals; after Pakistan became independent from India in 1948, both countries were involved in a series of conflict across the borderline until it became stabilized in the early 1960s. This might have caused a temporary military build-up in these two nations. Interestingly, the remainder of the countries with negative residuals are from South America except for Lebanon.[1]

---

[1] As the early Latin American dependency theory argued (e.g., Frank, 1967), South American countries were the first immediate target of the United States' capitalist expansion drive. In fact, the US has been the single largest investor in this region since World War II and has intervened in Latin American politics a numerous times under the guise of protecting American assets (Lernoux, 1982). Moreover, most South American countries had already experienced frequent rise and fall of military regimes in the 1950s (later, the tendency of military involvement had spread to Asian and African nations; see Huntington, 1968). These external and internal factors could have contributed to the early military build-up in the region.

TABLE VIII

CHANGE OF ARMS DOMINANCE: RELATIVE ARMS DOMINANCE RESIDUALS, ARMS DOMINANCE SCORES IN 1960 AND 1970 (N = 52)

Country	Residuals	ARM70D	ARM60D
12 largest negative residuals			
United Kingdom	-0.33410	0.1465	0.7254
Pakistan	-0.19324	0.1288	0.4600
Brazil	-0.13101	0.0437	0.2134
India	-0.11678	0.1350	0.3424
Peru	-0.08289	0.0181	0.0900
Colombia	-0.06841	0.0091	0.0507
Argentina	-0.06324	0.0390	0.0921
Chile	-0.06038	0.0231	0.0607
Mexico	-0.05790	0.0088	0.0326
Nicaragua	-0.05773	0.0012	0.0196
Dominican Republic	-0.05408	0.0033	0.0170
Lebanon	-0.04848	0.0083	0.0160
12 largest positive residuals			
Soviet Union	0.51297	0.5667	0.0109
United States	0.37671	0.9952	0.9562
Vietnam[a]	0.31246	0.3653	0.0094
South Korea	0.24663	0.3705	0.1283
France	0.14452	0.2246	0.0550
West Germany	0.12234	0.1701	0.0009
Cuba	0.08927	0.1724	0.0601
Iran	0.08473	0.1482	0.0272
Egypt	0.07771	0.2017	0.1285
Iraq	0.03934	0.1564	0.1169
Indonesia	0.03600	0.1021	0.0316
Israel	0.01139	0.0806	0.0368

[a] South and North Vietnam combined.

The two leading military powers, the Soviet Union and the United States, show the first and the second largest residuals (although the USSR's arms dominance in 1970 was about 60 percent of the US', it has the largest residual partly because it had very low dominance score in the 1960s). France and West Germany had replaced the United Kingdom and became major arms exporters in recent decades. The remaining countries with positive residuals can be called 'hot-spots' of the world: all these nations were either at war (internal/external) or confronting with hostile nations during the period.[1]

Disparity between Dominance Scores: Table IX presents twelve largest negative and positive residuals from the regression of the 1970 arms dominance (ARM70D) on the 1970 diplomatic (DIP70D). The residual component of the regression equation is the variation of ARM70D unexplained by DIP70D; thus the residual of each observation refers to disparity of two dominance scores in 1970. Countries with negative residual do not have a strong arms power comparable to their active diplomacy, while those with positive residual maintain arms power

[1] Not only the surrounding external situation but some internal conditions could contribute to a nations' military build-up. For exploratory purposes, I computed zero order correlations between the residuals from the regression of ARM70D on ARM60D and five internal variables. Among them, the residual scores (indicating an arms build-up during the period) are significantly correlated with the quality of human capital in 1970 (r=.316) and the productivity of natural resources (r=.516); these correlations are based on the data for 42 nations only. The causality of these correlations should be investigated in another study. I also examined the changes in diplomatic dominance scores between 1960 and 1970. As evident in their high correlation (r=.892), no interesting change was observed (see Table XXII in Appendix A).

surpassing their diplomatic capability.

As shown in Table IX, diplomatic dominance scores for the countries with negative residuals are far above the overall mean diplomatic dominance of .291, while their arms dominance scores are less than the average arms dominance of .037 (see Table VII for the mean dominance scores). No wonder that most of the so-called politically neutralized nations are listed in the twelve largest negative residuals, such as Austria, Belgium, Denmark, Finland, Netherlands, Norway, Switzerland, and Sweden. The other four countries are Japan, Italy, Mexico and Yugoslavia. Yugoslavia is an exceptional socialist country that has maintained continuous interaction with capitalist nations, politically as well as economically.

Countries with positive residuals have arms dominance scores far higher its average of .037. It seems that South Korea, Vietnam, and Algeria are included in the list because they are diplomatically isolated. Diplomatic dominance scores for these three nations are much lower than the average of .291; .142, .156 and .176, respectively. Seeing their relatively high arms dominance scores, however, this may not be necessarily true. Both South Korea and Vietnam show very high arms dominance scores (.371 and .365) and even Algeria has the lowest arms dominance score of .069, but, this score is still twice as large as average. Note that ten out of twelve countries with positive residual (except for Algeria and Pakistan) also appeared in the bottom list of Table VIII; i.e., they also had positive residuals from the

TABLE IX

DISPARITY BETWEEN ARMS AND DIPLOMATIC DOMINANCE: RELATIVE DOMINANCE RESIDUALS, ARMS AND DIPLOMATIC DOMINANCE SCORES IN 1970 (N = 142)

Country	Residuals	ARM70D	DIP70D
12 largest negative residuals			
Belgium	-0.10419	0.0093	0.7633
Netherlands	-0.09658	0.0169	0.7632
Austria	-0.09648	0.0024	0.6733
Sweden	-0.09587	0.0070	0.6979
Switzerland	-0.09404	0.0067	0.6848
Italy	-0.08744	0.0397	0.8473
Denmark	-0.08668	0.0070	0.6413
Finland	-0.08488	0.0013	0.5951
Yugoslavia	-0.08210	0.0050	0.6008
Japan	-0.07971	0.0257	0.7135
Mexico	-0.07851	0.0088	0.6021
Norway	-0.07733	0.0169	0.6447
12 largest positive residuals			
United States	0.84339	0.9952	0.9992
Soviet Union	0.48169	0.5667	0.5879
South Korea	0.35789	0.3705	0.1421
Vietnam[a]	0.35049	0.3653	0.1557
West Germany	0.11563	0.1701	0.3999
Egypt	0.10477	0.2017	0.6613
France	0.10006	0.2246	0.8313
Cuba	0.09998	0.1724	0.5104
Iraq	0.09473	0.1564	0.4442
Iran	0.07274	0.1482	0.5291
Algeria	0.05049	0.0686	0.1760
Pakistan	0.04655	0.1288	0.5709

[a] South and North Vietnam combined.

regression of ARM70D on ARM60D. We can say that these countries had rapidly build up their arms power in the 1960s beyond their diplomatic capability; they are Cuba, Egypt, France, Iran, Iraq, South Korea, Soviet Union, United States, Vietnam, and West Germany.

In Table X and Table XI, the 1980 economic dominance (ECON80D) is regressed on ARM70D and DIP70D, respectively. Compared to the two previous analyses presented in Table VIII and Table IX, we must have extra caution in interpreting the results. In Table VIII, ARM70D was regressed on it lagged variable ARM60D, and thus the pattern of change could be analyzed. Table IX used two different variables, ARM70D and DIP70D; since both variable were measured at the same point of time, we could analyze the level of disparity between them. On the other hand, the following analyses use different variables measured at different points of time. Thus the 'causal' component of these regressions (i.e., β coefficient) becomes more important and the residual part is less likely to be pure disparities or discrepancies between dominance scores. Again, the sole purpose of these analyses is not 'causal' but 'descriptive'. With this in mind, I will keep using the term 'disparity' in the following analyses.

In Table X, countries with negative residual means that their economic position in the world-system are much weaker than their relative arms dominance. Both Indonesia and Israel are in the list of the countries who made a rapid military build-up in the 1960s (see Table VIII). Pakistan and Algeria are the countries whose arms power

surpassed their diplomatic activities in 1970 (see Table IX). Seven countries in the list (Cuba, Egypt, Iran, Iraq, South Korea, the Soviet Union and Vietnam) belong to both categories of the cases; i.e., they had gained arms capacity much beyond their diplomatic capability. Only India is newly added in the list. Notice that Soviet Union has economic dominance score of zero mainly because she had neither MNC headquarters nor subsidiaries during the period of 1978-1983 (she now receives foreign investment according to Gorbachev's new open economic policy). This of course underestimated the Soviet Union's economic capacity to a great extent, considering her central role in economic transactions among socialist bloc of countries (see Roeder, 1985). But there is no doubt that the Soviet Union as a leading arms power, competing with the United States, has expanded her military power beyond her diplomatic and economic capability.

The bottom half of Table X lists the countries with positive residuals. Their economic dominance scores are much higher than the average ECON80D of .031. On the other hand, their arms dominance scores range from .995 of the United States to .007 of Sweden. Only four of these twelve nations have arms dominance noticeably higher than the average (.037). Canada's and Italy's arms dominance scores (.056 and .040, respectively) are slightly higher than the average but the rest nations' scores are much below the average. All these nations with positive residuals are no other than OECD members, the forerunners of the world-economy.

TABLE X

DISPARITY BETWEEN ECONOMIC AND ARMS DOMINANCE: RELATIVE DOMINANCE RESIDUALS, ECONOMIC AND ARMS DOMINANCE SCORES IN 1980 AND 1970
(N = 142)

Country	Residuals	ECON80D	ARM70D
12 largest negative residuals			
Soviet Union	-0.36829	0.0000	0.5667
Vietnam[a]	-0.23996	0.0002	0.3653
South Korea	-0.22927	0.0142	0.3705
Egypt	-0.13348	0.0026	0.2017
Cuba	-0.11734	0.0001	0.1724
Iraq	-0.10696	0.0003	0.1564
Iran	-0.09174	0.0103	0.1482
Pakistan	-0.08160	0.0081	0.1288
India	-0.07345	0.0202	0.1350
Indonesia	-0.06002	0.0127	0.1021
Israel	-0.05574	0.0033	0.0806
Algeria	-0.05070	0.0007	0.0686
12 largest positive residuals			
United Kingdom	0.43614	0.5371	0.1465
United States	0.35911	1.0000	0.9952
West Germany	0.26192	0.3779	0.1701
Canada	0.20782	0.2514	0.0563
Switzerland	0.14708	0.1591	0.0067
Japan	0.13939	0.1635	0.0257
Netherlands	0.13519	0.1537	0.0169
Sweden	0.12348	0.1357	0.0070
Belgium	0.09262	0.1063	0.0093
Italy	0.07638	0.1094	0.0397
France	0.07165	0.2223	0.2246
Austrailia	0.07144	0.0967	0.0275

[a] South and North Vietnam combined.

Table XI reports discrepancies between ECON80D and DIP70D. Among the countries with negative residuals (i.e., whose economic dominance does not reach the level of their diplomacy), five CPEs are included, such as Yugoslavia, Soviet Union, Czechoslovakia, Poland and Cuba. As discussed above, these nations' economic dominance scores in 1980 are largely underestimated because they did not accept capitalist MNCs during the period. Austria is one of the leading economies of the world with its GDP per capita of $8,929 in 1985. Nevertheless, Austria is included in the list simply because she is not actively involved in MNC exchanges; Austria is only one OECD member who does not have MNC headquarter company in her soil. The remainder of the list includes Chile, Egypt, Lebanon, India, Pakistan and Turkey; these nations' economic dominance scores are negligible.

Eight of twelve nations with positive residuals are again OECD members: the United States, the United Kingdom, West Germany, Canada, France, Australia and Japan. South Africa is included with its economic dominance of .078 slightly above the average (.031); she had received a large number of foreign MNC subsidiaries rather than sending her own MNC companies. During the period of 1978-1985, only four MNCs, headquartered in South Africa, was controlling about thirty subsidiaries abroad while more than five-hundred foreign companies were operating in South Africa.

The other three nations are Hong Kong, Singapore, and Puerto Rico. These countries are included here partly because of their unique

TABLE XI

DISPARITY BETWEEN ECONOMIC AND DIPLOMATIC DOMINANCE: RELATIVE DOMINANCE RESIDUALS, ECONOMIC DOMINANCE IN 1980 AND DIPLOMATIC DOMINANCE IN 1970 (N = 142)

Country	Residuals	ECON80D	DIP70D
12 largest negative residuals			
Egypt	-0.10472	0.0026	0.6613
Turkey	-0.09932	0.0051	0.6472
Yugoslavia	-0.09458	0.0003	0.6008
Soviet Union	-0.09223	0.0000	0.5879
Czechoslovakia	-0.09002	0.0001	0.5776
India	-0.08498	0.0202	0.6509
Poland	-0.08097	0.0000	0.5331
Pakistan	-0.08063	0.0081	0.5709
Chile	-0.07934	0.0109	0.5782
Austria	-0.07848	0.0313	0.6733
Lebanon	-0.07691	0.0024	0.5250
Cuba	-0.07621	0.0001	0.5104
12 largest positive residuals			
United States	0.82325	1.0000	0.9992
United Kingdom	0.36277	0.5371	0.9874
West Germany	0.32430	0.3779	0.3999
Canada	0.15023	0.2514	0.6314
France	0.08005	0.2223	0.8313
South Africa	0.05596	0.0784	0.2483
Hong Kong	0.05498	0.0264	0.0000
Singapore	0.05138	0.0228	0.0000
Austrailia	0.04896	0.0967	0.3714
Switzerland	0.04695	0.1591	0.6848
Japan	0.04546	0.1635	0.7135
Puerto Rico	0.03628	0.0077	0.0000

diplomatic position in the world (all have zero diplomatic dominance score). The first two are the city-states whose diplomatic ties with other countries usually remain at commercial level and Puerto Rico's diplomacy is under the control of the United States. But such unique political position could provide a preferable business environment and attracted a lot of foreign companies in these regions. In fact, about three-hundred foreign MNC subsidiaries in Hong Kong, about two-hundred in Singapore and fifty in Puerto Rico were operating during the period (note that all fifty foreign companies in Puerto Rico are from the United States).[1]

5.3 Findings and Discussion

The first half of this chapter computed global inequality level by using the Theil's index and decomposed the change in GDP per capita distributions of 123 nations in the world during the period from 1960 to 1985. The overall results conform reasonably well to WST's expectation: the global inequality was steadily increasing and there was very little positional movement of individual nation-states in the stratified world-system. In other words, the rich nations got richer

---

[1] These numbers are big enough to boost their internal economies of scale considering their small geographical size and GDP contribution to world-economy. This may have contributed to their rapid economic development. All three nations are among the fast growing economies in the Third World; Hong Kong's GDP per capita was $9,093 in 1985, $9.834 for Singapore (almost reach to the OECD's GDP level), and about $5,000 (estimated) for Puerto Rico. These are the examples showing that MNC penetration is not necessarily harmful to endogenous economic development.

and the poor, poorer; this tendency becomes stronger when we exclude centrally planned economies.

The levels of global inequality computed here are more comprehensive and reliable than those computed elsewhere (e.g., Peacock et al. 1988 and Grosch and Nafziger, 1986). I used the most recent GDP estimates over the 25-year period and included as many countries as possible. By decomposing the change in GDP distributions, I could identify the sources of growing global inequality which was never investigated before.

Although the data showed an increasing trend of global inequality, the results of this chapter should not be taken as the final proof of WST for several reasons. The time period was too short and GDP figures for many Third World nations as well as nine CPEs were not as reliable as those for OECD countries (see Summers and Heston, 1988). Most seriously, within-country inequality was not considered in computing the levels of global inequality.[1] The growing within-country

---

[1] Suppose that we have a hypothetical world of two nations A and B with GDP per capita of $1,000 and the Theil's inequality of .7 and .3, respectively. The two societies are equal in central tendency but not equal in distribution; it is obvious that the nation B is a more equal society than the nation A. Without considering within-country inequality, the global inequality as measured by Theil's index would be zero because two societies have the equal GDP per capita. But this is not a correct picture of the world; we are ignoring existing welfare differentials of the two nations. If we take account of two nation's different within-country inequality levels, the global inequality would not be zero. A nation's real welfare is a product of a mean income and the level of within-nation inequality; both should be considered in computing or comparing inequality level of more than two countries.

inequality is believed to be the most important factor contributing to the inequality at the global level. In fact, within-country income distribution is the focal point in the world-system notion of global inequality. WST argues that the international division of labor characterized by imbalanced core-periphery interaction not only determines the between-country inequality but within-country inequality (Wallerstein, 1974a). Becuase of this, many quantitative assessment of WST have analyzed the impact of dependence (or a nation's position in the world system) on within-country income distribution of the periphery nations (see Gagliani, 1987 for a review). Recently, Samir Amin (1984:25), a founder of WST, reemphasized the role of within-country inequality in world-level income distribution (though he did not provide a method to compute the global inequality):

> distribution tends to more and more unequal in the periphery, whose population constitutes the majority of the world-system, and stable in the core, it obviously evolves toward greater inequality at the global level.

Since reliable data on within-country income distribution are available for a small number of nations, I did not consider them. These problems would limit the generalizability of my findings.

The second half of this chapter presented nations' economic and political dominance scores estimated by the network analysis technique developed in Chapter 3. Measuring a nation's political position in the world-system is probably the first attempt ever done in this area, however. Data unavailability for many Third World nations at the

earlier time points resulted in a lot of missing observations in the 1960 measures. Moreover, the 1980 political dominance and the earlier economic dominance other than 1980 scores were not available. These data limitations restricted comprehensive analysis of change and persistence of economic and political dominance in the world-system. Nevertheless, some interesting patterns of changing dominance were found.

First, the validity of my dominance measures were evaluated. Mean economic dominance scores were compared between three groups of nations (based on the previous world-system and World Bank classifications); both ANOVA and t-tests results confirm that economic dominance is a valid measure of a nation's economic position in the world-system. Second, the correlations of two political dominance (arms and diplomatic) scores with the conventional measures of external national power (areal size, military expenditure, population, size of armed forces, and internal state strength) were examined; in general, the correlations are relatively moderate but statistically significant and thus support that my two political dominance measures are as valid as those conventional measures of external state strength.

I then analyzed the change and the disparity of economic and political dominance by examining the residuals from the simple bivariate regressions of the dominance scores. I found some interesting regularities in nations' mobility along their economic and political positions. The fall of the United Kingdom, once a major arms

power, was observed. The analysis also identified those nations who had achieved a rapid military build-up in the 1960s, such as the United States, the Soviet Union, Vietnam, South Korea, France, West Germany, Cuba, Iran, Iraq, Indonesia, Israel, and Algeria. The prominent diplomatic role of the so-called neutralized nations (Belgium, Netherlands, Austria, Sweden, Switzerland, Denmark, Finland and Norway) are well demonstrated. Yugoslavia's unique political position is found; unlike other socialist nations, Yugoslavia has involved actively in diplomatic exchange with non-socialist bloc of countries. The OECD member's leading economic role in the world-system is undoubtedly confirmed here.

To sum up, there seems to be no dramatic patterns of change in the world-system for the last several decades. Rather, slow but steady patterns of change are revealed in global inequality and dominance structure among nations. It is clear that the gap between the rich and poor nations has been growing and probably will further be growing. There is an obvious cleavage between three groups of nations regarding economic and political dominance. Third World nations are economically and politically inferior to both OECD and CPE members. Although CPEs are competing with OECD nations in terms of arms power, OECD nations turn out to be the leaders of world politics and well as world economy.

Chapter 6

THE EFFECT OF ECONOMIC DOMINANCE ON THIRD WORLD ECONOMIC GROWTH

This chapter tests the conventional dependency/world-system hypotheses constructed in Chapter 4; Hypotheses from 1-1 to 1-5. The previous empirical tests of WST usually did not include core countries in their analyses. Exclusion of the core countries is theoretically acceptable because the WST is mainly concerned with slow or retarded economic development of dependent countries (the so-called dependency effect -i.e., the negative impact of a nation's dependent position in the world-system on its internal development). Because of this, I did not include the seventeen OECD countries, which are presumably non-dependent core nations, for testing the conventional WST model.[1] Note that Yugoslavia is the only CPE which is included in the analysis in this chapter.

---

[1] Two things should be noted: 1) For comparative purposes, some analyses included core countries (e.g., Nolan, 1983). 2) In the previous studies, not all OECD members are classified as core nations. For instance, Australia, Austria, Belgium, Denmark, Finland, Norway and New Zealand are regarded as semiperiphery by Smith and Whyte (1988). Yet there is no standard classification of nations widely accepted by various branches of WST.

6.1 The Contextual Effect of Economic Dominance on Economic Growth

As discussed in Chapter 4, economic growth is measured by the absolute difference of GDP per capita in two points in time; in this chapter, 1970 and 1985. Among 130 nations, where GDP per capita data are available, 38 nations showed negative absolute per capita growth during the period (from -$3,060 for Venezuela to -$6 for Senegal; see Appendix D).[1] Since the distribution of growth rate is highly skewed, it was log transformed.[2]

A total of 89 nations are included in the regression to test the the conventional WST model. The zero order correlations of the variables with listwise deletion of missing cases are presented in Table XII. As expected, economic growth (LABGROW) is significantly correlated with the quality of human capital (QHUM70), the level of domestic investment (DMINV70) and 1980 economic dominance (ECON80D). However, the positive correlation of LABGROW with state strength (STATE70) and its negative correlation with the amount of natural resources (NATR70) did not reach to the level of statistical

---

[1] Of the thirty-eight nations with negative growth, four were the leading oil-producing economies (Kuwait, United Arab Emirates, Iraq and Saudi Arabia) and twelve nations were Latin American countries (Argentina, Bolivia, Chile, Guyana, El Salvador, Honduras, Jamaica, Nicaragua, Trinidad and Tobago, Peru and Venezuela), and the rest were African nations, except for Afghanistan and Papua New Guinea.

[2] For the log transformation, a constant value of $3,061 is added to all nations' absolute growth rate; thus Venezuela has a minimum growth of $1. In fact, both Kuwait and United Arab Emirate lost more than $10,000 of GDP per capita during the period, however, they are not included in the regression analyses due to their missing data on other variables.

TABLE XII

ZERO ORDER CORRELATIONS BETWEEN GROWTH RATE, HUMAN CAPITAL, NATURAL RESOURCES, DOMESTIC INVESTMENT AND ECONOMIC DOMINANCE EXCLUDING OECD (N = 89)

	QHUM70	STATE70	NATR70	DMINV70	ECON80D
LABGROW	0.43068 0.0001	0.15094 0.1580	-0.06224 0.5623	0.35325 0.0007	0.24016 0.0234
QHUM70		0.36721 0.0004	-0.03587 0.7386	0.55921 0.0001	0.35671 0.0006
STATE70			0.13415 0.2101	0.47411 0.0001	-0.03909 0.7161
NATR70				0.06187 0.5646	0.15343 0.1511
DMINV70					0.25443 0.0161

	VARIABLE	MEAN	STD DEV
LABGROW	Logged Absolute Growth Rate	3.920	3.144
QHUM70	Quality of Human Capital, 70	1.609	0.724
STATE70	Internal State Strength, 70	1.904	0.822
NATR70	Natural Resource Endowment, 70	1.858	0.292
DMINV70	Domestic Investment Share/GDP, 1970	12.305	6.722
ECON80D	Economic Dominance Score, 80 / STD	1.795	0.169

significance. These correlations are stronger when OECD countries are included; in particular, the correlation between LABGROW and STATE70 becomes statistically significant (see Table XXIII in Appendix B). The correlations between independent variables do not show any potential multicollinearity problem; the highest is between QHUM70 and DMINV70 which has a correlation of .559. In fact, I had checked the multicollinearity problem for each equation throughout the analyses and found no problems in the base models. Yet high correlations between base variables and their product terms resulted in unusually high unstandardized coefficients (i.e., a symptom of multicollinearity) in several interaction models. As Allison (1977) and Southwood (1978) demonstrated, multicollinearity is often the problem in interaction or multiplicative models; however, such problem does not bias significance tests and the unstandardized coefficients.

The results of the regression analyses are reported in Table XIII. These results can be summarized as follows. Examining the base model (Eq1), the predicted positive effect of ECON80D on LABGROW is not confirmed. Only QHUM70 has a significant influence on LABGROW (the effect of QHUM70 remains to be significant in all interaction models). But, among four interaction models, the product term of ECON80D and QHUM70 (i.e., ECO*HUM) turns out to be significant in equation 2 (Eq2) and ECON80D becomes significant as well. This suggests that the effect of ECON80D on LABGROW is not independent of QHUM70. The sign of the effect for the product term is negative, contrary to my expectation.

TABLE XIII

REGRESSION ANALYSIS OF ECONOMIC GROWTH (1970-1985) ON HUMAN CAPITAL, STATE STRENGTH, NATURAL RESOURCES, DOMESTIC INVESTMENT AND ECONOMIC DOMINANCE: DEPENDENT NATIONS (N = 89)

Variable		Eq1	Eq2	Eq3	Eq4	Eq5
Constant		-.737	-28.370	3.340	-36.596	.083
	b[a]	1.331**	15.177*	1.359*	1.339*	1.337*
QHUM70	β	.307	3.497	.313	.309	.308
	t	(2.438)	(1.913)	(2.468)	(2.451)	(2.378)
	b	-.123	-.182	-2.458	-.229	-.124
STATE70	β	-.032	-.048	-.643	-.060	-.033
	t	(-.277)	(-.412)	(-.567)	(-.498)	(-.277)
	b	-.782	-.862	-.677	17.844	-.773
NATR70	β	-.073	-.080	-.063	1.655	-.072
	t	(-.719)	(-.802)	(-.611)	(.915)	(-.698)
	b	.083	.065	.085	.084	.031
DMINV70	β	.177	.139	.183	.179	.066
	t	(1.401)	(1.097)	(1.434)	(1.418)	(.030)
	b	1.772	17.666*	-.629	21.911	1.291
ECON80D	β	.095	.952	-.034	1.181	.070
	t	(.871)	(1.898)	(-.129)	(1.036)	(.131)
	b		-7.741*			
ECO*HUM[b]	β		-3.564			
	t		(-1.749)			
	b			1.292		
ECO*ST	β			.614		
	t			(.541)		
	b				-10.387	
ECO*NAT	β				-2.177	
	t				(-.956)	

TABLE XIII (Continued)

REGRESSION ANALYSIS OF ECONOMIC GROWTH (1970-1985) ON HUMAN CAPITAL, STATE STRENGTH, NATURAL RESOURCES, DOMESTIC INVESTMENT AND ECONOMIC DOMINANCE: DEPENDENT NATIONS (N = 89)

Variable		Eq1	Eq2	Eq3	Eq4	Eq5
ECO*INV	b					.030
	β					.120
	t					(.050)
Adjusted R^2		.170	.190	.163	.169	.160

** $p \leq .01$.
* $p \leq .05$.

[a] b's are the unstandardized coefficients and βs are the standardized. t-values of one-tailed test are in parentheses.

[b] ECO*HUM is an interaction term between economic dominance and human capital: ECO*ST with state strength, ECO*NAT with natural resources, and ECO*INV with domestic investment.

There is an obvious multicollinearity problem in the equation due to the high correlations between base variables and the product term (r's are greater than .75).; the β coefficients for QHUM70 and the product term (ECO*HUM) exceed unity, and the β for ECON80D even is close to unity (.952). As mentioned above, however, the t values and the unstandardized coefficients in equation 2 are unbiased. Therefore, parsimony suggests that equation 2 is the best model; the increase in R^2 from Eq1 to Eq2 is significant, while the increase for the other interaction models is not. The equation of interest is:

$$\begin{aligned} \text{LABGROW} = &- 28.370 + 15.177\,(\text{QHUM70})^{**} - .182\,(\text{STATE70}) \\ &- .065\,(\text{DMINV70}) - 862\,(\text{NATR70}) + 17.666\,(\text{ECON80D})^{*} \\ &- 7.741\,(\text{ECO*HUM})^{*}. \end{aligned}$$

The net effect of ECON80D on the rate of change in LABGROW is mathematically equivalent to the partial derivative of LABGROW with respect to ECON80D (Stolzenberg, 1980). The partial derivative for the above equation is:

$$\text{dLABGROW/dECON80D} = 17.666 - 7.741\,(\text{QHUM70}).$$

It is clear that the positive effect of ECON80D on LABGROW diminishes by 7.741 for each one unit increase in QHUM70. This is an odd result, considering the consistent positive effect of the level of education on

economic growth in most previous studies. Nevertheless, this unusual result cannot be solely attributed to the multicollinearity problem.

Remember that 38 out of 130 nations showed negative absolute growth and the majority of them come from either Latin America or Africa. The above regression analyses included 89 countries and 32 nations of them still showed negative growth: 11 from Latin America and 17 from Africa. Put aside African countries, it is well known that many Latin American countries had already achieved a substantial level of education as early as the 1950s, such as Argentina, Brazil, Chile, Mexico and Venezuela (see Gillis et al., 1983). Nevertheless, these countries showed very low or even negative economic growth during the period from 1970 to 1985; Brazil is probably the only Latin American nation that overcame this regional economic stagnation. Since the regression analysis is sensitive to outlier, these Latin American countries as a group might have caused the negative interaction term in equation 2.

6.2 Latin American Dependency versus African Dependency

Both Latin America and Africa are important regions to WST; early dependency theory took many stagnating Latin American economies, while Wallerstein's world-system theory is basically derived from African experiences. From the above analyses, it is suspected that there might be an regional effect, and if there is, it is worth examining it.

To find regional differences regarding the related variables, Table XIV classified 89 nations into three groups: 21 Latin American countries (including Central America), 39 African nations and the remaining 29 nations (neither Latin nor African countries). Next all variables are regressed on this new variable 'region'. As shown in Table XIV, both Latin and African countries show a significantly lower economic growth rate (LABGROW) than the remaining 29 countries. Aside from economic growth, Latin American countries are not different from the remaining nations, although they show slightly higher QHUM70 and ECON80D and lower STATE70, NATR70 and DMINV70, these differences are not statistically significant. On the other hand, African nations show significantly lower QHUM70, NATR70 and DMINV70 than the remaining nations. But, like Latin American countries, they are not different from the remaining nations in terms of STATE70 and ECON80D. These regional differences may have caused the somewhat unusual result in equation 2 of Table XIII.

Two separate regression analyses are performed by including two dummy variables (LATIN and AFRICA, respectively) in addition to the

TABLE XIV

REGRESSION OF ECONOMIC GROWTH, HUMAN CAPITAL, STATE STRENGTH, NATURAL RESOURCES, DOMESTIC INVESTMENT AND ECONOMIC DOMINANCE ON REGION (N = 89)

Variable		LABGROW	QHUM70	STATE70	NATR70	DMINV70	ECON80D
Constant		5.785	1.924	2.114	1.952	14.383	1.803
LATIN[a]	b[c]	-2.684**	.166	-.393	-.113	-.120	.070
	t	(-3.238)		(-1.678)	(-1.373)	(-.109)	(1.495)
AFRICA[b]	b	-2.812**	-.808**	-.267	-.153	-4.634	-.056
	t	(-3.964)	(-5.676)	(-1.334)	(-2.180)*	(-2.953)**	(-1.385)
Adjusted R^2		.153**	.358**	.013	.032	.094**	.065*
	F	(8.957)	(25.538)	(1.579)	(2.437)	(5.543)	(4.072)

** $p \leq .01$.
* $p \leq .05$.

[a] The 21 Latin American countries include Central America. They are Argentina, Bolivia. Barbados, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Jamaica, Mexico, Nicaragua, Peru, Panama, Paraguay, Trinidad and Tobago, and Venezuela.

[b] The 39 African countries are Algeria, Benin, Burundi, Botswana, Central Africa, Chad, Cameroon, Congo, Egypt, Ethiophia, Gabon, Ghana, Guinea, Ivory Coast, Kyena, Liberia, Lesotho, Mali, Madagascar, Malawi, Moroco, Mauritius, Niger, Nigeria, Rwanda, South Africa, Sudan, Somalia, Senegal, Sierra Leon, Swaziland, Tunisia, Tanzania, Togo, Uganda, Upper Volta, Zair, Zimbabwe and Zambia.

[c] b's are the unstandardized coefficients and βs are the standardized. t and F values are in parentheses.

independent variables previously included in Table XIII. Instead of including LATIN and AFRICA in the same equation, I ran two separate regressions because my intention was not in the simultaneous comparison of three groups. Then interaction terms between LATIN (or AFRICA) with other independent variables are hierarchically added to test the regional effect. It turns out that the dummy variable LATIN has significant interactions with other independent variables while AFRICA does not.[1] In other words, the effect of independent variables on economic growth is contingent on region, particularly for Latin America. The results are shown in Table XV (see Table XXIV in Appendix A for the equation including AFRICA).

The base model (Eq1 in Table XV) confirms that Latin American countries have significantly lower economic growth than other nations; the coefficient for the dummy variable LATIN is negative and statistically significant. Yet none of independent variables achieve statistical significance, except for QHUM70. There are two interaction

---

[1] The following equation, which includes LATIN and AFRICA simultaneously, tells why only LATIN has significant interactions with other independent variables (t-values are in parentheses).

$$\begin{aligned} \text{LABGROW} = .134 &- \underset{(-4.407)}{3.444\,(\text{LATIN})^{**}} - \underset{(-1.653)}{1.320\,(\text{AFRICA})} + \underset{(2.565)}{1.581\,(\text{QHUM70})^{*}} \\ &- \underset{(-1.029)}{.442\,(\text{STATE70})} - \underset{(-1.264)}{1.319\,(\text{NATR70})} + \underset{(1.533)}{.083\,(\text{DMINV70})} \\ &+ \underset{(1.464)}{2.733\,(\text{ECON80D})} \end{aligned}$$

In the above equation, the coefficient for LATIN is negatively significant while that for AFRICA is not.

TABLE XV

REGRESSION ANALYSIS OF ECONOMIC GROWTH ON HUMAN CAPITAL, STATE STRENGTH, NATURAL RESOURCES, DOMESTIC INVESTMENT AND ECONOMIC DOMINANCE EXCLUDING OECD AND WITH A DUMMY, LATIN AMERICA (N = 89)

Variable		Eq1	Eq2	Eq3	Eq4	Eq5	Eq6
Constant		-1.613	-2.281	-1.611	-3.895	-2.471	1.487
LATIN[b]	b[a]	-3.016**	4.476	-2.971	8.125	-.004	-8.894
	β	-.410	.608	-.404	1.103	-.001	-1.208
	t	(-4.048)	(1.413)	(-1.629)	(1.190)	(-.002)	(-1.336)
QHUM70	b	2.098**	2.367**	2.097**	2.175**	1.896**	2.231**
	β	.483	.545	.483	.501	.437	.514
	t	(3.914)	(4.446)	(3.855)	(4.083)	(3.533)	(4.004)
STATE70	b	-.588	-.577	-.583	-.644	-.495	-.618
	β	-.154	-.151	-.152	-.168	-.129	-.162
	t	(-1.382)	(-1.397)	(-1.270)	(-1.524)	(-1.178)	(-1.447)
NATR70	b	-.765	-.536	-.768	-.324	-.914	-.741
	β	-.071	-.050	-.071	-.030	-.085	-.069
	t	(-.766)	(-.550)	(-.760)	(-.317)	(-.929)	(-.741)
DMINV70	b	.089	.095*	.090	.083	.133*	.089
	β	.191	.202	.192	.177	.285	.191
	t	(1.645)	(1.791)	(1.626)	(1.533)	(2.305)	(1.642)
ECON80D	b	2.399	2.267	2.396	3.267*	2.813	.549
	β	.129	.122	.129	.176	.152	.030
	t	(1.279)	(1.243)	(1.268)	(1.692)	(1.515)	(.196)
LAT*HUM[c]	b		-3.661*				
	β		-1.063				
	t		(-2.429)				
LAT*ST	b			-.025			
	β			-.007			
	t			(-.027)			

TABLE XV (Continued)

REGRESSION ANALYSIS OF ECONOMIC GROWTH ON HUMAN CAPITAL, STATE STRENGTH, NATURAL RESOURCES, DOMESTIC INVESTMENT AND ECONOMIC DOMINANCE EXCLUDING OECD AND WITH A DUMMY, LATIN AMERICA (N =89)

Variable		Eq1	Eq2	Eq3	Eq4	Eq5	Eq6
LAT*NAT	b				-6.126		
	β				-1.538		
	t				(-1.642)		
LAT*INV	b					-.213*	
	β					-.437	
	t					(-1.969)	
LAT*ECO	b						3.190
	β						.821
	t						(.888)
Adjusted R^2		.300	.339	.291	.314	.324	.298

** $p \leq .01$.
* $p \leq .05$.

[a] The b's are the unstandardized coefficients and βs are the standardized ones. The t-values of one-tailed test are in parentheses.

[b] LATIN is a dummy variable; The 21 Latin American countries, including Central America, are coded as 1 and the others as 0. Refer to Table XIV for the names of these countries.

[c] LAT*HUM is an interaction term between Latin America and human capital: LAT*ST with state strength, LAT*NAT with natural resources, LAT*INV with domestic investment and LAT*ECO with economic dominance.

models worth examining in Table XV; they are Eq2 and Eq5, and the R^2 increase for these equations is significant.

$$\begin{aligned} LABGROW = &- 2.281 + 4.476\,(LATIN) + 2.367\,(QHUM70)^{**} - .577\,(STATE70) \\ &- .536\,(NATR70) + .095\,(DMINV70)^{*} + 2.267\,(ECON80D) \\ &- 3.661\,(LAT{*}HUM)^{**} \end{aligned}$$

$$\begin{aligned} LABGROW = &- 2.471 - .004\,(LATIN) + 1.896\,(QHUM70)^{**} - .495\,(STATE70) \\ &- .914\,(NATR70) + .133\,(DMINV70)^{*} + 2.813\,(ECON80D) \\ &- .213\,(LAT{*}INV)^{**} \end{aligned}$$

In the above two interaction models, both QHUM70 and DMINV70 remain significant; that is, the quality of human capital and the level of domestic investment have positive influences on economic growth. However, for Latin American countries, the positive effect diminishes substantially. In Table XIV, we have seen that Latin American countries are not significantly different from the other nations in terms of QHUM70 and DMINV70. This indicates that Latin American countries maintained at least similar levels of education and domestic investment with other nations during the period. But such factors did not contribute to economic growth in Latin America, while they did elsewhere. Finally, notice the equation 4 involving the interaction between LATIN and NATR70 (Eq4 in Table XV); the R^2 increase for this equation almost reaches to the significance level. In this equation,

DMINV70 is no longer significant while QHUM70 remains significant and ECON80D becomes significant. The interaction term indicates that the adverse impact of natural resources on economic growth for the Third World nations in general may be even more severe in Latin American countries.[1]

Several interaction models in Tables XIII and XV do have multicollinearity problems. Nevertheless, the quality of human capital maintains its significant effect on economic growth in all equations including those with such a problem. As discussed above, some (e.g., Allison, 1977) believe that multicollinearity is not an unusual problem in multiplicative or interaction models and it would not influence the significance test of the coefficients, while others (e.g., Cohen, 1978) discredit the use of product terms in equations with multicollinearity problems. This study has no intention of reiterating this controversial methodological issue. However, it is worth examining whether the previous results presented in Tables XV are true. To further analyze this, I performed separate regression analyses by region. These regression equations involve no interaction terms and they do not include two variables (the productivity of natural resources and state strength) that were insignificant (or negligible) in the previous analysis. The results are reported in Table XVI.

---

[1] All intercepts in Table XV are negative because they include the African nations' mean growth rate. Remember that many African nations also showed a negative growth rate and their mean growth rate is much lower than that of other nations, excluding Latin nations (see Table XIV).

TABLE XVI

REGRESSION ANALYSIS OF ECONOMIC GROWTH ON HUMAN CAPITAL, DOMESTIC INVESTMENT AND ECONOMIC DOMINANCE BY REGION: LATIN AMERICA, AFRICA AND OTHERS (N = 89)

Variable		(Eq1) All	(Eq2) LATIN	(Eq3) AFRICA	(Eq4) OTHER[a]
Constant		-2.130	-3.291	1.965	-1.978
QHUM70	b[b]	1.351**	-.972	2.477**	1.614**
	β	.311	-.114	.430	.478
	t	(2.581)	(-.450)	(2.630)	(2.501)
DMINV70	b	.073	-.045	.099	.081
	β	.156	-.081	.225	.209
	t	(1.342)	(-.317)	(1.385)	(1.187)
ECON80D	b	1.657	4.840	-1.561	1.935
	β	.089	.356	-.066	.102
	t	(.864)	(1.548)	(-.444)	(.612)
Adjusted R^2		.211	.135	.309	.431
N		89	21	39	29

** $p \leq .01$.

[a] The 29 non-Latin and non-African nations are Afghanistan, Bangladesh, Burma, Cyprus, Fiji, Greece, Iceland, India, Indonesia, Iran, Iraq, Ireland, Israel, Jordan, South Korea, Malta, Malaysia, Nepal, Philiphine, Pakistan, Papua New Guinea, Portugal, Saudi Arabia, Singapore, Spain, Sri Lanka, Syria, Thailand, and Turkey. See Table XIV for Latin and African countries.

[b] b's are the unstandardized coefficients and βs are the standardized. t-values are in parentheses.

The effect of the quality of human capital remains positive and significant in the equation for Africa and Others, while it is negative and insignificant for Latin America. Although the level of domestic investment does not reach the significance level in all equations, its effect on economic growth is positive for Africa and Others and negative for Latin America. Economic dominance has a positive effect on economic growth for Latin America and Others, while it is negative for Africa. In the new analyses, no variable achieves statistical significance except for the quality of human capital, partly because of the small number of cases in each equation. Yet the overall results do not contradict the previous analyses. It is again confirmed that Latin American countries as a group failed to utilize their internal resources (such as human capital and investment) to improve their economic conditions compared to other regions of the world.[1]

---

[1] Moreover, Latin American countries show higher economic dominance scores, which appears to have positive impact on economic growth (the magnitude of the coefficients associated with economic dominance between the equations are statistically significant; see Hanushek and Jackson, 1977:124).

6.3 Findings and Discussion

This chapter tested the contextual effect of economic dominance (ECON80D) on economic growth. Economic dominance was measured by dyadic exchange of MNC subsidiaries and/or affiliates between nations; this measure is different from conventional unidirectional measures of 'dependency'. To identify the context in which ECON80D can produce varying results, four internal conditions were considered. The quality of human capital (QHUM70), the level of internal state strength (STATE70), the productivity of natural resources (NATR70), and the level of domestic investment (DMINV70) are operationalized to incorporate the arguments of modernization theory, state theory, and economic theories of development. Then, the interaction effect between ECON80D and the four internal variables were tested on economic growth, which was measured by the absolute difference between the 1970 and the 1985 GDP per capita.

As expected in Hypothesis 1-1, economic dominance has a positive impact on Third World economic growth; the zero order correlation between ECON80D and LABGROW (log transformed absolute growth) is relatively weak but statistically significant (see Table XII). However, the significant effect of economic dominance on economic growth vanishes, when controlling the other four internal conditions. Among the four internal conditions, only QHUM70 remains to have a positive influence on economic growth, and it is the only internal condition that significantly interacts with economic dominance. In

other words, the positive interaction effect of economic dominance with the level of internal state strength and the level of domestic investment, and the negative interaction effect of economic dominance with the productivity of natural resources were not confirmed (Hypotheses 1-3, 1-5 and 1-4, respectively). Moreover, contrary to hypothesis 1-2, the sign of the interaction effect between economic dominance and the quality of human capital (ECO*HUM in Table XIII) turns out to be negative; that is, the positive effect of economic dominance on economic growth diminishes as the quality of human capital increases.

Faced with these unusual results, I classified 89 countries included in the analyses into three regions (Latin America, Africa and the rest) to detect potential regional effects. Classification by region is meaningful in two respects. First, during the 15-year period, more than one third of the sample (32 of 89 nations) showed negative economic growth, and the majority of them were either from Latin America or Africa: 11 Latin and 17 African countries. If they did not show negative growth, most nations in the two regions remained economically stagnant over the period, with a few exceptions (e.g., Brazil in Latin America and South Africa in Africa). Second, the dependency/world-system theory originated from the study of these two regions' economic deterioration; i.e, early dependency theory is based on the Latin American experience and the early empirical underpinning of the work of such founders of WST as Wallerstein and Amin is largely based on African experience.

Two separate regressions were performed by including a dummy variable region; one for LATIN and the other for AFRICA. No internal condition was found to interact with the dummy variable AFRICA while the quality of human capital and the level of domestic investment interacted significantly with LATIN.[1] The signs of these significant interaction terms were all negative while the signs for the main effects (QHUM70 and DMINV70) are positive. This means that the quality of human capital and the level of domestic investment contributed negatively to Latin American economic growth, while they contributed positively to the other nations' growth. However, such an interpretation is rather awkward. I would conclude that Latin American countries as a group failed to utilize their internal resources, including human capital and investment (and even perhaps natural resources), for improving their economic conditions. Remember the fact that the quality of human capital and the level of domestic investment for Latin American countries are not different from those for other nations (see Table XIV).[2]

---

[1] African nations as a group had relatively poorer internal conditions (including economic dominance) compared with other nations; of those differences, QHUM70, NATR70 and DMINV70 were statistically significant (see Table XIV). At the same time, they also had much lower economic growth. Therefore, it is not surprising that no internal condition interacted significantly with the dummy variable AFRICA.

[2] Since the coefficient for the main effect of ECON80D was not significant in both interaction models (see Eq2 and Eq5 in Table XV), higher order interaction terms such as LATIN*QHUM70*ECON80D or LATIN*DMINV70*ECON80D were not considered.

To summarize, no hypothesis in the conventional dependency version was satisfactorily supported in this chapter. There are some serious methodological problems in my analyses, which may have caused this failure. First, the time period for measuring economic growth is too short. In other words, the time-lag may not be long enough to test the effect of those internal conditions (although the time-lag for most previous tests of WST were no longer and often shorter than this). Economic dominance, measured during the period of 1978-1983, is particularly influenced by this time-lag problem. Since economic dominance is the variable of major theoretical interest, the test of the contextual effect (i.e., the effect of interactions with other internal conditions) might be inefficient and inappropriate. Second, the absolute difference of GDP levels in two time points may not be a good measure of economic growth. The negative interaction term between economic dominance and the quality of human capital might be caused by this. As carefully examined in Chapter 4, however, the the two widely accepted methods of estimating economic growth (ratio model and panel model) also suffer from similar methodological problems, which partly caused inconsistent results in the previous empirical tests (see Ragin, 1983 and Jackman, 1980).

Although I could not support or reject the hypotheses of the conventional WST partly due to these methodological problems, I found an interesting regional variation in the relationship between economic growth and two internal conditions; i.e, the quality of human capital

and the level of domestic investment had little, if not adverse, impact on economic growth in Latin America. This is by no means evidence supporting the Latin American dependency theory as opposed to Wallerstein's world-system theory because the contextual effect of economic dominance was not appropriately tested in this chapter.[1] However, this is an important finding because no previous empirical test of WST has seriously considered regional variation in dependency effects.[2]

---

[1] As noted above, African nations had much lower levels of education and domestic investment compared to other nations, while Latin African countries did not. From this, one may argue that African economic stagnation can be explained by their poor internal conditions (i.e., a modernization effect) while Latin American economic situations should be explained by some other causes (i.e., dependency effect).

[2] First of all, most previous studies were preoccupied with a dualist or tripartite classification of nations. Even if they were concerned with regional variations, the number of cases were too small for an efficient test of regional effects (less than 50 cases; e.g., Chase-Dunn, 1975).

Chapter 7

THE EFFECT OF INTERNAL CONDITIONS ON A NATION'S DOMINANCE IN THE WORLD-SYSTEM

This chapter tests the hypotheses of my reformulated dependency/world-system theory constructed in Chapter 4. The previous chapter did not include OECD members because the conventional WST mainly focused on the economic development or underdevelopment of Third World nations. My reformulated WST is not necessarily limited to Third World economic development. I argued that any nation, whether it is core or periphery, can improve its world-system position by improving its internal conditions. In my reformulated version, such an argument as 'the exploitation of the periphery by the core' is less meaningful, and thus core-periphery distinction is obsolete. As shown in Chapter 5, however, those OECD countries in general turned out to be both economically and politically strong. It would be interesting to compare the OECD states with the rest of the nations.[1] For this, the analyses are performed for the two groups of states and the results are compared: one for all 103 nations including the 17 OECD countries, and

[1] Nevertheless, my comparison of OECD versus non-OECD nations has nothing to do with (at least theoretically) those previous classification of nations based on economic factors only (e.g., Smith and Whyte, 1988). As shown in Chapter 5, countries vary by economic and political dominance; for instance, a poor nation can be politically strong (e.g., Vietnam) and a economically strong nation a can be politically weak (e.g., Japan).

the other for 86 nations excluding those OECD members (compared to the analyses in Chapter 6, an additional three nations are excluded due to missing data). Again, only Yugoslavia is included from among the CPEs. Since this chapter differs from Chapter 6 in terms of theoretical stance and methodological usage, the following section provides a brief description of those differences.

7.1 Economic versus Political World-System

The conventional WST holds that a nation cannot improve its position in the world-system (basically its economic position) by improving its internal conditions, including its economic situation. According to the WST, the dualist or tripartite configuration of the world-system is the product of a long historical process of capitalist expansion on a global level. Such a structural configuration of nations has already been completed and is now moving toward its perfection (see Wallerstein, 1979b and 1983). Therefore, a nation's upward mobility in the world-system is not permissible (at least theoretically) unless there is a revolutionary breakup of the whole world-system. As has been thoroughly criticized in Chapter 2, however, WST never answered the question how a nation is then initially positioned in a certain stratum of the world-system, and it fails to include the socialist bloc of countries in its theoretical scheme.[1]

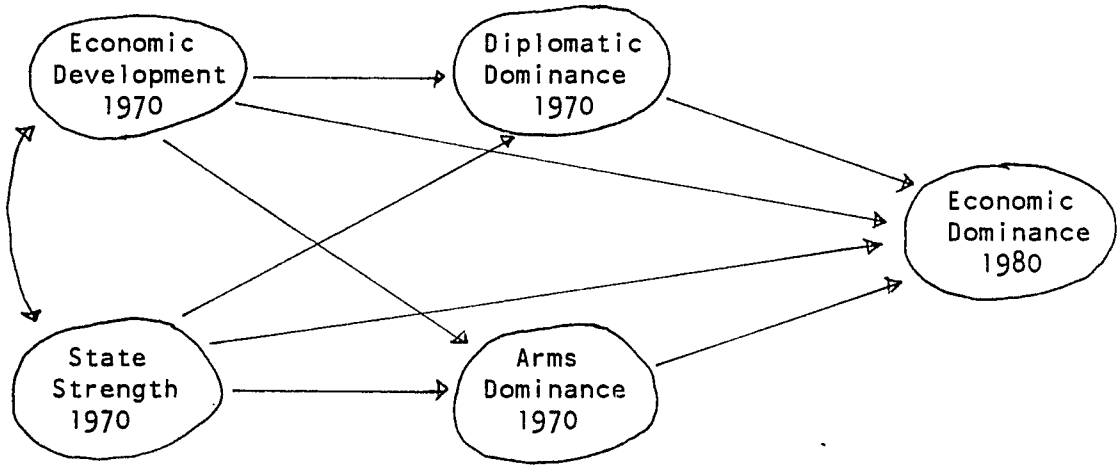
[1] For WST, the socialist countries are deviant cases. Although they are temporarily cut off from the world-system, they cannot transform the entire system and they will eventually return to the capitalist world-system (see Chase-Dunn, 1981).

Moreover, we have observed the fall of the once most dominant nations such as the United Kingdom and Netherlands (though they are still the core nations) and the rise of the once dependent countries such as Singapore and South Korea. I believe that even the United State and Japan, undoubtedly the two most dominant nations in the current world economy, were in the periphery earlier; the United States relied heavily on European investment until the mid 1800s and Japan was by no means a leading economy until recently (see Gillis et al., 1983).

This chapter challenges such dogmatic, deterministic, and futuristic notion of WST. For convenient presentation, Figure 2 recapitulates the path diagram derived from the hypotheses of the reformulated version. The model analyzes how a nation's economic dominance in 1980 is influenced by its previous internal conditions (initial level of economic development and internal state strength in 1970) and its external political position (arms and diplomatic dominance in 1970): these are implied in Hypotheses from 2-1 to 2-5. This model was designed to test the assumption that a nation, whether it is core or periphery, can improve its world-system position by improving its internal conditions. In addition, the model considers a nation's political position (political dominance) as another determinant of its economic position in the capitalist world-system.

In the conventional WST, political relations between nations have been deemphasized or even ignored, since the polity is believed to be subject to the economy; that is, economically strong nations are also

Figure 3. A Path Model for testing the Reformulated World-System Hypotheses



strong in the political arena (see Hopkins and Wallerstein, 1977; Wallerstein, 1974b and 1979b). To be faithful to the Marxian framework embedded in WST, it is the nation's economic position that determines its political position and not vice versa. My model reversed this causal order; that is, a nation's political dominance in 1970 is expected to have an effect on the nation's economic position in 1980.

My intention in switching this causal relations between economic and political position is not directly opposed to WST. Rather, I argued that both economic and political dominance are equally important, and they influence each other simultaneously. In my model, 1980 economic dominance is to be explained by previous political dominance. If the 1970 economic dominance measure or the 1980

political dominance measure were available, a simultaneous interaction model reflecting mutual influences between economic and political dominance could be tested. As noted in Chapter 4 (see the section on measurements), however, neither of these kinds of data were available. Therefore, the path model in Figure 2 is proposed as an alternative to the mutual interaction model. Although this model cannot fully test my theoretical agenda, it still can test the causal effect of political dominance on economic dominance, and it satisfies the time sequence of causal modeling.

7.2 Interplay between Internal and External Conditions, and Economic Dominance

Zero order correlations of the variables in the path analysis are presented in Table XVII. Above the diagonal is the full sample of 103 nations, and below the diagonal is the sample of 86 nations after excluding the 17 OECD countries. The means and standard deviations for each sample are presented at the bottom of the table. Both sets of correlations indicate no serious multicollinearity problems in the analysis.

As shown in Table XVII, all correlations are positive except for the correlation between 1980 economic dominance (ECON80D) and the 1970 internal state strength (STATE70) for 86 nations ($r=-.033$ with $p=.761$). Notice that the two groups of samples show some striking differences in the correlations. For instance, correlation between the 1980 economic

TABLE XVII

ZERO ORDER CORRELATIONS BETWEEN RGDP PER CAPITA, STATE STRENGTH, ARMS AN DIPLOMATIC DOMINANCE IN 1970, AND ECONOMIC DOMINANCE IN 1980 FOR TWO GROUPS OF NATIONS

	LRGDP70	STATE70	ARM70D	DIP70D	ECON80D[a]
LRGDP70		0.64935 0.0001	0.21894 0.0263	0.61353 0.0001	0.43815 0.0001
STATE70	0.47133 0.0001		0.17190 0.0825	0.43662 0.0001	0.34699 0.0003
ARM70D	0.07642 0.4843	0.06772 0.5356		0.39194 0.0001	0.78064 0.0001
DIP70D	0.42029 0.0001	0.11636 0.2860	0.33491 0.0016		0.52263 0.0001
ECON80D	0.38860 0.0002	-0.03332 0.7607	0.05630 0.6034	0.39753 0.0002	

	VARIABLE	MEAN	STD DEV[b]
LRGDP70	Logged Real GDP/Capita, 70	7.374 (7.082)	1.048 (0.882)
STATE70	Internal State Strength, 70	2.210 (1.937)	1.038 (0.851)
ARM70D	Arms Dominance Score, 70	2.005 (1.886)	1.011 (0.497)
DIP70D	Diplomatic Dominance Score, 70	2.208 (1.948)	0.995 (0.811)
ECON80D	Economic Dominance Score, 80	2.106 (1.801)	1.158 (0.171)

[a] Below the diagonal is the correlations for 86 nations excluding the 17 OECD countries. Above the diagonal is the correlations for 103 nations including the 17 OECD countries.

[b] Means and standard deviations in parentheses are for the sample excluding the OECD countries.

dominance and the 1970 arms dominance (ARM70D) for 103 nations is strong and significant (r=.781) while that for 86 Third World nations it is insignificant and almost negligible (r=.057). In general, the correlations for 103 nations are stronger than those for the 86 nations (after excluding the 17 OECD members). Moreover, five pairwise correlations for the smaller sample fail to achieve the significance level, while only one fails for the full sample (the correlation between STATE70 and ARM70D; r=.172 with p=.08).

Table XVIII reports the results of the path analyses for 103 nations including the 17 OECD members, and Table XIX reports them for 86 nations excluding the OECDs. It was hypothesized that a nation's initial level of economic development (LRGDP70) has a positive influence on its diplomatic and arms dominance (Hypothesis 2-1 and its corollaries 2-1a and 2-1b). Equations 1 and 2 tell us that the initial level of development has a positive and significant influence on diplomatic dominance for both samples. On the other hand, it has no significant influence on arms dominance. However, notice that the unstandardized coefficients for LRGDP70 in both samples show a big difference in magnitude; .179 for the full sample and .032 for the smaller sample. This implies that initial development has little impact on arms dominance, particularly in Third World nations.

Internal state strength is expected to have a positive influence on the two dimensions of political dominance (Hypothesis 2-3 and its corollaries 2-3a and 2-3b). Contrary to my expectation, internal state

TABLE XVIII

PATH ANALYSIS OF ECONOMIC DOMINANCE ON INITIAL DEVELOPMENT, STATE STRENGTH, DIPLOMATIC AND ARMS DOMINANCE (N = 103)

Variable		(Eq1) DIP70D	(Eq2) ARM70D	(Eq3) ECON80D
Constant		-1.926	.574	-1.339
LRGDP70	b[a]	.542**	.179	.190*
	β	.571	.186	.172
	t	(5.506)	(1.447)	(2.058)
STATE70	b	.063	.050	.072
	β	.066	.051	.065
	t	(.638)	(.401)	(.883)
DIP70D	b			.140
	β			.120
	t			(1.602)
ARM70D	b			.784**
	β			.685
	t			(11.289)
Adjusted R^2		.367	.031	.683

** $p \leq .01$.
* $p \leq .05$.

[a] b's are the unstandardized coefficients and βs are the standardized. t-values are in parentheses.

TABLE XIX

PATH ANALYSIS OF ECONOMIC DOMINANCE ON INITIAL DEVELOPMENT, STATE STRENGTH, DIPLOMATIC AND ARMS DOMINANCE (N = 86)

Variable		(Eq1) DIP70D	(Eq2) ARM70D	(Eq3) ECON80D
Constant		-.895	1.613	1.280
LRGDP70	b[a]	.429**	.032	.076**
	β	.470	.057	.392
	t	(4.182)	(.461)	(3.288)
STATE70	b	-.100	.024	-.050*
	β	-.105	.041	-.247
	t	(-.935)	(.329)	(-2.274)
DIP70D	b			.059*
	β			.278
	t			(2.484)
ARM70D	b			-.017
	β			-.050
	t			(-.489)
Adjusted R^2		.166	.001	.232

** $p \leq .01$.
* $p \leq .05$.

[a] b's are the unstandardized coefficients and βs are the standardized. t-values are in parentheses.

strength has no effect on either diplomatic or arms dominance; moreover, the magnitude of the coefficients (both unstandardized and standardized) are minimal at best. Interestingly, the signs of the causal paths from internal state strength to diplomatic dominance are different in the two samples, although neither of them is significant; that is, for Third World nations, the internally strong state has a negative effect on its diplomatic dominance.

R^2's for equation 1 in both samples are reasonably high (.367 for the full sample and .166 for the smaller sample) while the R^2's for equation 2 are negligible. This means that a nation's arms power has little to do with its internal economic and political conditions. Remember that those who had to rapidly build up their arms power in the 1960s were not necessarily economically better-off countries except for those superpowers such as the United States, the Soviet Union, France and West Germany (see Table VIII in Chapter 5). But also remember that these countries were either at war or in another form of conflict during the period. Under these special circumstances, any nation has to become heavily involved in the arms trade or seek arms transfers from the superpowers irrespective of its internal economic and political strength (strengthening a nation's arms power by itself is likely to induce further deterioration in its the internal economic and political strength).

Equation 3 tests the simultaneous effect of internal conditions and political dominance in 1970 on 1980 economic dominance. The

results reveal an interesting contrast between the two samples. As expected (Hypothesis 2-2), a nation's initial level of economic development has a significant effect on that nation's economic position in the world-system; this is true for both samples. On the other hand, the effects of the other three variables are sharply different between the samples.

It was hypothesized that internal state strength has no direct effect on economic dominance, and, if it has, the effect would be very weak (Hypothesis 2-4). As shown in Table XIX, internal state strength has little impact on economic dominance for the full sample. By contrast, its effect becomes negative and significant for the smaller sample of non-OECD nations. Both diplomatic and arms dominance were expected to have positive influences on economic dominance (Hypotheses 2-5 and its corollaries 2-5a and 2-5b). Again, the effects of these two political dominance variables differ in the two samples. Although the effect of diplomatic dominance maintains its positive sign for both samples, it does not quite reach the level of statistical significance for the full sample ($t=1.602$) while it does for the smaller sample ($t=2.484$). Finally, arms dominance turns out to be the most significant factor contributing to a nation's economic dominance for the full sample (see Table XIX); the magnitude of its β (.685) is about four times larger than that for the initial level of economic development ($\beta=.172$). For the smaller sample, however, the effect of arms dominance is insignificant and the least important of the variables.

7.3 Findings and Discussion

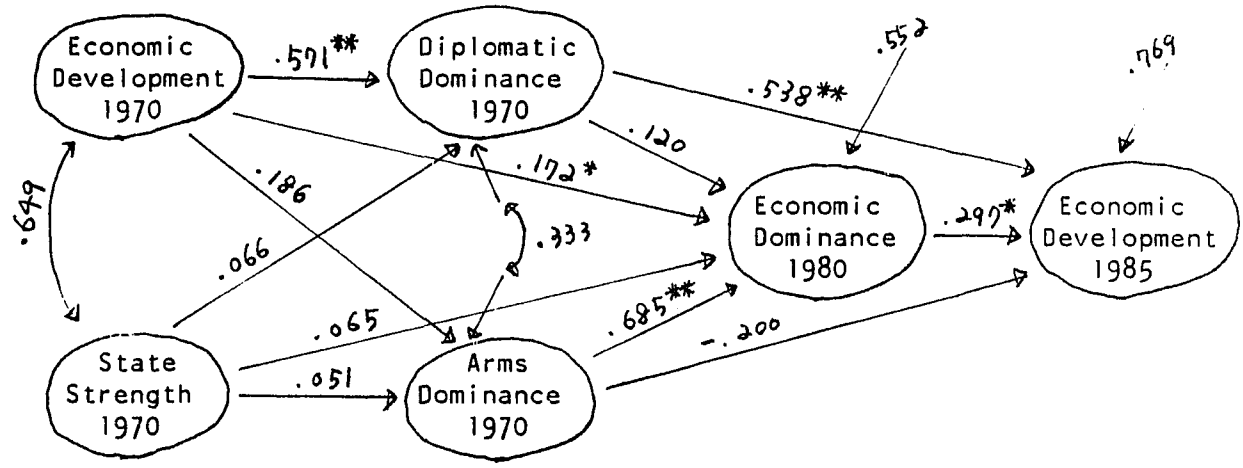
This chapter tested the reformulated version of dependency/world-system theory. The main question of this chapter was how a nation's economic dominance is influenced by the interplay between its internal and external conditions. The initial levels of development and state strength were chosen to represent a nation's internal conditions, and diplomatic and arms dominance in the world-system were considered as a nation's external conditions. Figure 3 summarizes the results presented in Table XVIII and Table XIX.

It is clear that internal and external conditions operate together and shape a nation's economic dominance. However, the patterns of influence seem to be different in the different samples of nations; this is perhaps the most interesting finding of this chapter. The top half of Figure 3 shows the path coefficients for the full sample which includes the economically and politically dominant OECD nations, and the bottom half of Figure 3 shows it for the smaller sample excluding them.

According to these data, a nation's diplomatic dominance is contingent on its level of economic development; this is true for all nations. Yet diplomatic dominance has little to do with state strength. As discussed above (see Chapter 3 and 5), Third World nations have often been the targets of active diplomacy of the superpowers in the relatively polarized state of world politics in this

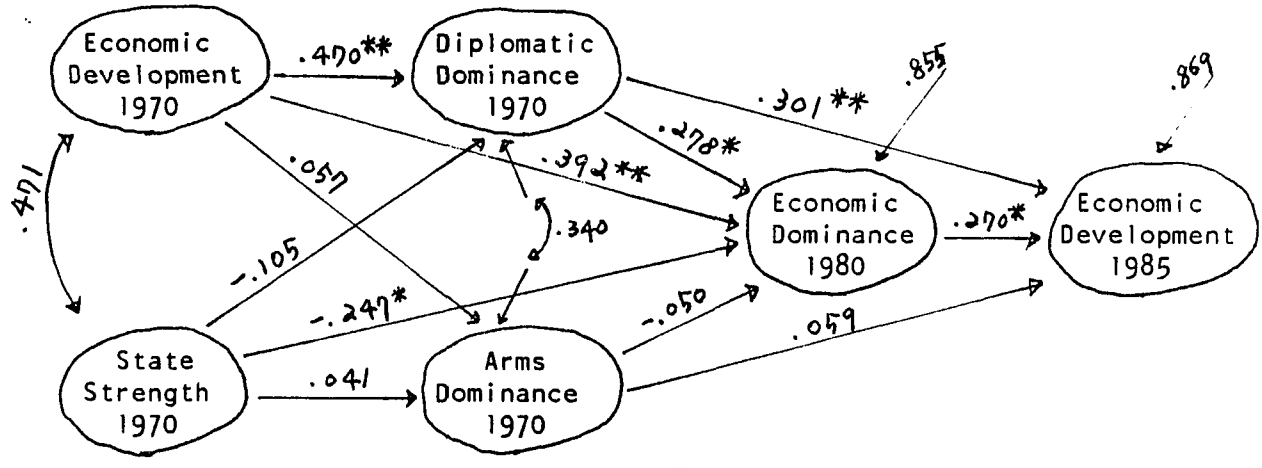
Figure 3. Path Analyses Results for the Reformulated World-System Theory

MODEL FOR 103 COUNTRIES INCLUDING 17 OECD NATIONS



Note: * $p \leq .05$.
** $p \leq .01$.

MODEL FOR 86 COUNTRIES EXCLUDING 17 OECD MEMBERS



period; the East-West division is the obvious influence here. Moreover, Third World nations have established their coalitions for the sake of their own interests, such as ASEAN, Arab League, OPEC and so on. Except for a few diplomatically isolated countries (e.g., Albania, Algeria, Libya, South and North Korea and Vietnam), most nations can easily be involved in such diplomatic activities irrespective of the nation's diplomatic ability and sometimes even whether they want to or not.

The results of the path analyses confirm the fact that diplomatic and political dominance are two different dimensions of world politics. They have a different impact on a nation's economic dominance, and arms dominance seems to have nothing to do with the aforementioned two internal conditions. But this is not a surprising result. As noted above, those countries involved in war or other kinds of armed conflict have had to build up their arms power no matter what their internal conditions are.

From the path coefficients directed to 1980 economic dominance, we can find some interesting and divergent effects of the two internal conditions and the two political dominance variables. First, the initial level of economic development has a significant effect on economic dominance for both samples. Internal state strength, by contrast, has a minor influence on economic dominance for the full sample while it has a strong negative impact after excluding the OECD nations. This tells us that strengthening internal state power is

detrimental to Third World economies. This result conforms to the previous findings that state power has been drastically expanded in Third World nations without improving internal and external economic conditions (Boli-Bennet, 1980; Evans et al., 1985).

Diplomatic dominance contributes positively to a nation's economic dominance in both samples (the path coefficient for the full sample is in fact insignificant but it almost reaches the significance level). Arms dominance seems to be the most important factor determining economic dominance in the case of the full sample (β=.685) while this is obviously not true for the smaller sample (β=-.050). I believe that the path coefficient for the full sample is highly overestimated. This might be caused by the inclusion of those nations with exceptionally strong arms power in the measure, such as the United States, France, West Germany and the United Kingdom.[1] Since these countries are also among the leaders of the world economy (i.e., they have high economic dominance scores), the coefficient seems to be inflated largely by these outliers. Therefore, I would conclude that diplomatic dominance, rather than arms dominance, is more the influential factor contributing to a nation's level of economic development as well as economic dominance.

---

[1] Although Britain's relative arms power has rapidly decreased (see Table VIII in Chapter 5), she is still one of the strongest nations in terms of arms power.

Chapter 8

CONCLUSION: THE WORLD AS A POLITICO-ECONOMIC SYSTEM

Although dependency/world-system theory (WST) provided new insights, its overemphasis on external causes over internal causes and economic factors over political factors resulted in an incomplete understanding of the process of economic development in our changing world-system. Proponents of WST such as Amin, Cardoso, Frank and Wallerstein, have now abandoned their earlier deterministic view and admitted that the mutual influences between internal and external forces shape a nation's economic conditions; yet they have failed to recognize the important role of political variables in the world-system. Even worse, aside from admitting that there was a political dimension to the world-system, the so-called quantitative comparative studies of development have devoted little effort towards incorporating such theoretical improvements into an appropriate statistical model, and therefore could not test the interactions between internal and external factors in a nation's economic development.

This study has attempted to overcome these theoretical and methodological limitations in the current WST literature. First, I have brought political terms into the predominantly economically-oriented dependency theory. I assumed that the

world-system consists of two analytically separable and yet equally important domains: the economy and the polity. This goal was achieved by synthesizing the economically-oriented dependency theories and the politically-oriented international relations theories.

Second, four major internal factors proposed by various contending theories of development (ranging from modernization theory to neo-classical economic theories of development) were selected to provide a context in which the external factors emphasized by WST can produce varying results in explaining economic development. Next a statistical model was constructed to test the interaction effect between the internal and the external factors. The four key internal variables considered here are the quality of human capital, the productivity of natural resources, the level of domestic investment and the level of internal state strength. The operationalization of these internal factors is based on previous quantitative studies. On the other hand, I employed network analysis techniques to measure the external factor, 'dependency,' and termed it 'dominance'. With a few exceptions (Snyder and Kick, 1978; Nemeth and Smith, 1985), the key concept of WST 'dependency' has been previously measured by unidirectional data. For example, a country's imports from other countries are considered, while that country's exports to others is not simultaneously taken into account. I used relational data to measure a nation's world-system position: multinational corporations' (MNC) exchange for economic dominance, diplomatic relations for diplomatic

dominance, and arms transfer and trade for arms dominance. With this theoretical and methodological reformulation, the major findings of this study can be summarized as follows below.

Chapter 5 first tested one of the basic arguments of WST, but one which had never been properly investigated, i.e., whether or not the gap between the rich and poor countries is growing. I computed global inequality by using Theil's index, and decomposed the change in the GDP per capita distribution among 123 nations in the world during the period from 1950 to 1985. The overall results conform reasonably well to WST's expectation: global inequality was steadily increasing and there was very little positional mobility of individual nation-states in the stratified world-system. That is, the rich nations in fact got richer and the poor, poorer; this tendency becomes stronger when excluding 9 centrally planned economies (CPE).

I then analyzed the change and disparity in economic and political dominance by examining the residuals from the simple bivariate regressions between the dominance scores. There was an interesting regularity in various nations' mobility along the economic and political spectra. The fall of the United Kingdom, once a major arms power, was observed. It also identified that those nations that had build up huge military power during 1960s (the United States, the Soviet Union, Vietnam, South Korea, France, West Germany, Cuba, Iran, Iraq, Algeria) and those that demonstrated a prominent diplomatic role in world politics compared to their economic and arms power (Belgium,

Austria, Netherlands, Sweden, Switzerland, Denmark, Finland, and Norway). Yugoslavia's unique political position was also shown; i.e., she was the only CPE that was actively involved in diplomatic exchange with the non-socialist bloc of countries. In sum, there was a clear distinction between three groups of nations (the OECD nations, the CPEs, and the Third World) regarding economic and political dominance. Third World nations were economically and politically inferior to both the OECD and the CPE countries. Although the CPEs were competing with the OECD nations in arms power, the OECD nations were undoubtedly the leaders of world politics as well as of the world economy.

Chapter 6 tested the contextual effect of economic dominance on economic growth. The dependent variable, economic growth, was measured by the logged absolute difference between 1970 and 1985 GDP per capita. Then, the interaction effects between economic dominance and the four internal variables mentioned above were tested. Although economic dominance has a positive impact on Third World economic growth, its significant effect vanishes when controlling for the other four internal factors. Among the four internal conditions, only the quality of human capital had a positive and significant effect on economic growth and it is the only internal condition that significantly interacts with economic dominance. The positive interaction effect of economic dominance with the level of internal state strength and the level of domestic investment, and the negative interaction effect of economic dominance with the productivity of natural resources were not

confirmed. I could not support or reject the hypotheses of conventional WST, and particularly of the contextual effect between economic dominance and the four internal conditions on economic growth. But I found an interesting regional variation in the relationship between economic dominance and the two internal conditions; i.e., the quality of human capital and the level of domestic investment had little impact on economic growth in Latin America. In other words, Latin American countries had failed to utilize their internal resources to promote their economic development, while other nations did.

Chapter 7 investigated the processes in which a nation's economic dominance is influenced by the interplay between its internal and external conditions by using path analytic regression. Internal state strength and 1970 GDP per capita (the initial level of development) were selected to represent internal conditions, and diplomatic and arms dominance were used as measures of external conditions. Two separate path analyses were performed to find if there were differences in economic dominance between the OECD and the Third World: one included all 103 nations, and the other only included Third World nations (i.e., excluding the 17 OECD members). Overall, internal and external conditions were found to be operating together and to shape a nation's economic dominance. Interestingly, however, the patterns of influence were different in the two samples of nations.

The initial level of development had a significant effect on both diplomatic and economic dominance but it had no influence on arms

dominance; this is true for both samples. On the other hand, internal state strength had little to do with either diplomatic or arms dominance, and it contributed negatively to economic dominance. This tells us that a nation can be active in diplomacy or engage in an arms build-up regardless of its state capacity, but for Third World countries, the overextension of internal state power is detrimental to their economic dominance. The results also confirmed that diplomatic and arms dominance are two different dimensions of world politics. They had a different impact on a nation's economic dominance; i.e., diplomatic dominance is a more influential factor than arms dominance in determining a nation's economic position in the world.

This study has been fueled by the need for theoretical integration and methodological clarification of previous inconsistent assessments of national economic development. I have attempted to integrate various contending theories of development to demonstrate the reciprocal role of internal and external factors in promoting a nation's economic development. I also introduced international relations theories to show that political factors are equally important as economic factors in maintaining the world-system. All this effort was devoted to establishing a comprehensive theoretical model of economic development, and I believe I have achieved this theoretical goal. The next step is then to construct a dynamic statistical model, in which the process of economic development is specified to reflect the interaction between internal and external factors and the interplay

between economic and political forces. While it was not possible to fully accomplish such an ambitious goal, as summarized above, some interesting results were found with limited data and a rather oversimplified statistical model.

This study by no means denies the contribution of WST; the questions raised by WST were quite relevant and will remain so. However, there are so many deviant cases of economic development which may not be explained by WST. The rapidly growing economies that overcame the negative effect of 'dependency,' such as Brazil and the Asian gang of four, cannot be explained by WST because of its overemphasis on external factors. The socialist countries that achieved autarkic development for the last several decades cannot be properly explained by WST because of its overemphasis on economic factors.

It appears that socialist countries have now begun to become involved in the capitalist mode of economic exchange and to follow the developmental trajectory of the West. After observing the recent Tiananmen Square incident in China, however, it is premature to say that the world has been integrated into a single system of capitalism. Socialist countries may have to open their economic doors to the capitalist world, and yet they seem to have no intention to open their political doors; they do want maintain a system in which the economy is subject to the polity, and not the other way around. This emphasizes the need for a comprehensive theory that could take account of domestic

political effects (as well as international ones) on economic development.

The level of knowledge accumulated in this field makes it difficult, if not impossible, to clarify the linkage between internal and external factors and between economic and political factors in a comprehensive manner. Future studies must be directed toward incorporating such dynamics into a relevant theoretical and statistical model for the better understanding of national economic development. I hope that this study has found some theoretical and empirical criteria that can serve as a stepping stone toward that end.

APPENDICES

Appendix A

SUPPLEMENTARY TABLES

TABLE XX

CHANGING GLOBAL INEQUALITY ESTIMATED BY THEIL'S COEFFICIENT BASED ON GDP PER CAPITA FOR 72 NATIONS, 1950-1985

Year	72 Capitalist and Centrally[a] Planned Economies	63 Capitalist Economies
1950	0.2760	0.4307
1955	0.4366	0.5607
1960	0.8126	0.9718
1965	0.8275	0.9882
1970	0.8487	1.0103
1975	0.8492	1.0123
1980	0.8483	1.0124
1985	0.8697	1.0398

[a] The 9 centrally planned economies (CPEs) include Bulgaria, China, Czechoslavakia, East Germany, Hungary, Poland, Romania, Yugoslavia, and the Soviet Union.

Appendix A (continued)

TABLE XXI

COMPONENTS OF CHANGES IN GDP PER CAPITA DISTRIBUTIONS FOR 114 CAPITALIST ECONOMIES, 1960-1985: OECD VERSUS NON-OECD COUNTRIES

Component	17 OECD Members		97 Non-OECD Members	
1) Descriptive Properties:				
X_{1960}	$4,933		$1,225	
X_{1985}	9,927		2,254	
s_{1960}	1,233		1,126	
s_{1985}	1,509		2,244	
2) Decomposition:				
Total Change[a]	8.650	(100.0)[b]	1.367	(100.0)
a. Change of Mean $(X_2 - X_1)^2/2s_1^2$	8.202	(94.8)	.418	(30.6)
b. Change of Dispersion $(s_2 - s_1)^2/2s_1^2$	.025	(.2)	.493	(36.1)
c. Positional Change $(1 - r_{12})$	.102	(4.9)	.229	(16.7)
d. Overlap Term (b and c) $2s_1(s_2 - s_1)(1 - r_{12})/2s_1^2$	.100	(.1)	.227	(16.6)

[a] The total change is the sum of the components (a,b,c,d).

[b] The percentage of variations in the total change explained by each component is given in parentheses.

Appendix A (continued)

TABLE XXII

CHANGE OF DIPLOMATIC DOMINANCE: RELATIVE DIPLOMATIC DOMINANCE RESIDUALS, DIPLOMATIC DOMINANCE SCORES IN 1960 AND 1970 (N = 84)

Country	Residuals	DIP70D	DIP60D
12 largest negative residuals			
Panama	-0.32025	0.1251	0.4052
Syria	-0.22649	0.2040	0.3866
South Africa	-0.17093	0.2483	0.3725
China	-0.13311	0.1539	0.2070
Taiwan	-0.11705	0.1134	0.1362
Dominican Republic	-0.11178	0.3704	0.4513
Ecuador	-0.10172	0.4141	0.4934
North Korea	-0.09364	0.0582	0.0378
East Germany	-0.08217	0.0755	0.0451
Guatemala	-0.07508	0.3539	0.3847
Albania	-0.06983	0.1329	0.1015
Brazil	-0.06794	0.6460	0.7414
12 largest positive residuals			
Japan	0.34444	0.7135	0.3097
Austria	0.30033	0.6733	0.3146
Indonesia	0.20213	0.5469	0.2793
United States	0.18060	0.9992	0.8724
Thailand	0.16940	0.4922	0.2518
Sri Lanka	0.15244	0.4345	0.2008
Israel	0.13301	0.5214	0.3339
Philiphine	0.09821	0.4024	0.2285
Burma	0.09355	0.3649	0.1874
Cambodia	0.09175	0.2491	0.0447
India	0.08212	0.6509	0.5597
Finland	0.07617	0.5951	0.4973

Appendix A (continued)

TABLE XXIII

ZERO ORDER CORRELATIONS BETWEEN GROWTH RATE, HUMAN CAPITAL, NATURAL RESOURCES, DOMESTIC INVESTMENT AND ECONOMIC DOMINANCE (N = 105)

	QHUM70	STATE70	NATR70	DMINV70	ECON80D
LABGROW	0.56052 0.0001	0.36827 0.0001	0.10896 0.2685	0.46825 0.0001	0.29697 0.0021
QHUM70		0.57820 0.0001	0.39823 0.0001	0.58296 0.0001	0.57543 0.0001
STATE70			0.17632 0.0720	0.53800 0.0001	0.34580 0.0003
NATR70				0.03188 0.7468	0.41593 0.0001
DMINV70					0.19800 0.0429

	VARIABLE	MEAN	STD DEV
LABGROW	Logged Absolute Growth Rate	4.527	3.233
QHUM70	Quality of Human Capital, 70	1.887	0.984
STATE70	Internal State Strength, 70	2.152	0.998
NATR70	Natural Resource Endowment, 70	1.964	0.926
DMINV70	Domestic Investment Share/GDP, 1970	13.625	7.167
ECON80D	Economic Dominance Score, 80 / STD	2.083	1.144

Appendix A (continued)

TABLE XXIV

REGRESSION ANALYSIS OF ECONOMIC GROWTH ON HUMAN CAPITAL, STATE STRENGTH, NATURAL RESOURCES, DOMESTIC INVESTMENT AND ECONOMIC DOMINANCE EXCLUDING OECD AND WITH A DUMMY, AFRICA (N = 89)

Variable		Eq1	Eq2	Eq3	Eq4	Eq5	Eq6
Constant		-.518	.893	-.504	-.413	.118	-1.244
	b[a]	-.154	-2.674	-.202	-.881	-1.334	2.772
AFRICA[b]	β	-.024	-.424	-.032	-.140	-.212	.440
	t	(-.185)	(-1.440)	(-.111)	(-.097)	(-.915)	(.340)
	b	1.258*	.689	1.257*	1.257*	1.252*	1.265*
QHUM70	β	.290	.159	.290	.289	.289	.292
	t	(1.859)	(.895)	(1.845)	(1.845)	(1.850)	(1.859)
	b	-.099	-.061	-.105	-.096	-.022	-.106
STATE70	β	-.026	-.016	-.027	-.025	-.006	-.028
	t	(-.211)	(-.131)	(-.202)	(-.203)	(-.047)	(-.225)
	b	-.847	-1.153	-.845	-.868	-.970	-.806
NATR70	β	-.079	-.107	-.078	-.081	-.090	-.075
	t	(-.738)	(-.997)	(-.730)	(-.732)	(-.839)	(-.695)
	b	.082	.075	.082	.081	.035	.084
DMINV70	β	.175	.160	.175	.174	.074	.180
	t	(1.373)	(1.261)	(1.364)	(1.339)	(.450)	(1.394)
	b	1.801	1.984	1.799	1.770	1.877	2.138
ECON80D	β	.097	.107	.097	.095	.101	.115
	t	(.877)	(.972)	(.871)	(.842)	(.913)	(.944)
	b		1.767				
AFR*HUM[c]	β		.361				
	t		(1.516)				
	b			.025			
AFR*ST	β			.008			
	t			(.030)			

Appendix A (continued)

TABLE XXIV (continued)

REGRESSION ANALYSIS OF ECONOMIC GROWTH ON HUMAN CAPITAL, STATE STRENGTH, NATURAL RESOURCES, DOMESTIC INVESTMENT AND ECONOMIC DOMINANCE EXCLUDING OECD AND WITH A DUMMY, AFRICA (N = 89)

Variable		Eq1	Eq2	Eq3	Eq4	Eq5	Eq6
	b				.399		
AFR*NAT	β				.114		
	t				(.081)		
	b					.098	
AFR*INV	β					.200	
	t					(.987)	
	b						-1.647
AFR*ECO	β						-.459
	t						(-.361)
Adjusted R^2		.160	.173	.150	.150	.160	.151

** p ≤ .01.
* p ≤ .05.

[a] b's are the unstandardized coefficients and βs are the standardized. t-values of one tailed-test are in parentheses.

[b] AFRICA is a dummy variable; the 39 African countries are coded as 1 and the others as 0. Refer to Table XIV for the name of these countries.

[c] AFR*HUM is an interaction term between Africa and human capital: AFR*ST with state strength, AFR*NAT with natural resources, AFR*INV with domestic investment, and AFR*ECO with economic dominance.

Appendix B

VARIABLES AND DATA SOURCES

Variables	Indicators	Sources
Level of Economic Development	GDP per capita (price factor)	Summers and Heston (1988), "A New Set of International Comparison of Real Product and Price Levels of for 130 Countries, 1950-85." Review of Income and Wealth. 34:1-25.
Population	Mid-year number of Population	same as above
Domestic Investment (DMINV70)	Gross domestic investment share of Real GDP in 1970	same as above
Territorial Size (LAREA)	Geographical size of a nation in 1000 K^2 in 1975.	Taylor and Jodice (1983). World Handbook of Political and Social Indicators. 3rd. ed. (ICPSR Tape No. 7761)
State Strength (STAT70)	Government revenue and Government expenditure as a percentage of GDP (exchange based)	same as above
Quality of Human Capital (QHUM70)	Primary and secondary school enrollment rates and enrollment rates in higher education	same as above
Productivity of Natural Resources (NATR70)	Petroleum production Coal production Natural gas production in 1973	same as above

Appendix B (continued)

Variables	Indicators	Sources
Military Expenditure (LMEXP70)	Military expenditure per capita in 1970	US Arms Control and Disarmament Agency. World Military Expenditures and Arms Trade, 1963-73 (ICPSR Tape No. 7454).
Size of Armed Forces (AFPT70)	Armed forces personnel per thousand units population in 1970	same as above
Economic Dominance	Headquarter location of multinational corporations (MNC) and their overseas subsidiaries. Actual number of affiliated companies are recorded.	Ross (1988). "City Position in the International Urban Hierachy," unpublished data. Stopford, Dunning and Haberich (1982). The World Directory of Multinational Enterprises. Moody's International (1983). Major Corporations in Europe (1986).
Arms Dominance	Arms transfers between nations, measured by quantity of arms units ranging from missiles to vessels. Cumulative dyadic trade measured by US dollars. (only for 1970 data)	Leiss (1970). Arms Transfers to Developing Countries, 1945-196. (ICPSR Tape No. 5404). US Arms Control and Disarmament Agency. World Military Expenditures and Arms Trade, 1963-73 (ICPSR Tape No. 7454).

Appendix B (continued)

Variables	Indicators	Sources
Diplomatic Dominance	Dyadic diplomatic exchange between nations, coded as 1s and 0s.	Singer and Small (1972). Diplomatic Missions Received by Each International System Member, 1817-1970 (ICPSR Tape No. 5025); Four years (50, 55, 60, 65).

Note: In MNC penetration, we have two data matrices 98 by 98 for 1978-1980 and 123 by 123 for 1983-1986. These two matrices were merged to compute the 1980 economic dominance score (ECON80D).

In arms transfer, the data during the period from 1945 to 1957 were summed up for the 1960 data matrix, 53 by 53; the data from 1958 to 1968 added for the 1970 data matrix, 75 by 75. Cumulative arms trade between 1963 and 1973 were used for the 1970 trade dominance score, 106 by 106 matrix. Arms transfer and trade matrices were eventually merged to compute the 1970 arms dominance score (ARM70D)

In diplomatic exchange, 1950 and 1955 data were merged to constitute the 88 by 88 matrix for the 1960 diplomatic dominance; 1960 and 1965 data for the 1970 data matrix of 122 by 122.

Appendix C

COUNTRY CODE AND LIST IN THE STUDY

SEQ NUM	ABBR NAME	FULL NAME
001	AFGN	Afghanistan
002	ALBN	Albania
003	ALGR	Algeria
004	ANGL	Angola
005	ARGN	Argentina
006	AUSL	Australia
007	AUST	Austria
008	BHMS	Bahamas
009	BLGM	Belgium
010	BLGR	Bulgaria
011	BNGL	Bangladesh
012	BNIN	Benin (Dahomey)
013	BOLV	Bolivia
014	BRBD	Barbados
015	BRMA	Burma
016	BRND	Burundi
017	BRZL	Brazil
018	BTSN	Botswana
019	CAFR	Central African Republic
020	CHAD	Chad
021	CHLE	Chile
022	CHNA	China
023	CLMB	Colombia
024	CMRN	Cameroon
025	CNDA	Canada
026	CNGO	Congo, People's Republic (Brazzaville)
027	CRCA	Costa Rica
028	CUBA	Cuba
029	CYPR	Cyprus
030	CZCH	Czechoslovakia
031	DMNR	Dominican Republic
032	DNMK	Denmark
033	ECDR	Ecuador
034	EGPT	Egypt (United Arab Republic)
035	ELSL	El Salvador
036	ETHP	Ethiopia
037	FIJI	Fiji

Appendix C (continued)

SEQ NUM	ABBR NAME	FULL NAME
038	FNLD	Finland
039	FRG	Germany, Federal Republic (West)
040	FRNC	France
041	GBON	Gabon
042	GDR	Germany, Democratic Republic (East)
043	GHNA	Ghana
044	GMBA	Gambia
045	GNEA	Guinea
046	GRCE	Greece
047	GRND	Granada
048	GTML	Guatemala
049	GYNA	Guyana
050	HATI	Haiti
051	HGKG	Hong Kong
052	HNDS	Honduras
053	HNGR	Hungary
054	ICLD	Iceland
055	INDA	India
056	INDS	Indonesia
057	IRAN	Iran
058	IRAQ	Iraq
059	IRLD	Ireland
060	ISRL	Israel
061	ITLY	Italy
062	IVCT	Ivory Coast
063	JMCA	Jamaica
064	JPAN	Japan
065	JRDN	Jordan
066	KMPC	Kampuchea (Cambodia)
067	KNYA	Kenya
068	KORN	Korea, North DPR
069	KORS	Korea, South ROK
070	KWAT	Kuwait
071	LAOS	Laos (Lao People's Democratic Republic)
072	LBNN	Lebanon
073	LBRA	Liberia
074	LBYA	Libya (Libyan Arab Republic)
075	LSTO	Lesotho
076	LXBG	Luxembourg
077	MALI	Mali

Appendix C (continued)

SEQ NUM	ABBR NAME	FULL NAME
078	MDGS	Madagascar (Malagasy)
079	MLTA	Malta
080	MLWI	Malawi
081	MLYS	Malaysia
082	MNGL	Mongolia
083	MRCO	Morocco
084	MRTN	Mauritania
085	MRTS	Mauritius
086	MXCO	Mexico
087	MZBQ	Mozambique
088	NCRG	Nicaragua
089	NGER	Niger
090	NGRA	Nigeria
091	NPAL	Nepal
092	NRWY	Norway
093	NTHL	Netherlands
094	NZLD	New Zealand
095	OMAN	Oman
096	PERU	Peru
097	PHLP	Philippines
098	PKST	Pakistan
099	PLND	Poland
100	PNMA	Panama
101	PPNG	Papua New Guinea
102	PRGY	Paraguay
103	PRTG	Portugal
104	PRTR	Puerto Rico
105	QTAR	Qatar
106	RMNA	Romania (Rumania)
107	RWND	Rwanda
108	SAFR	South Africa
109	SDAN	Sudan
110	SDAR	Saudi Arabia
111	SMLA	Somalia
112	SNGL	Senegal
113	SNGP	Singapore
114	SPAN	Spain
115	SRLE	Sierra Leone
116	SRLK	Sri Lanka (Ceylon)
117	SRNM	Suriname

Appendix C (continued)

SEQ NUM	ABBR NAME	FULL NAME
118	SWAZ	Swaziland
119	SWDN	Sweden
120	SWTZ	Switzerland
121	SYRA	Syria (Syrian Arab Republic)
122	TLND	Thailand
123	TNSA	Tunisia
124	TNZN	Tanzania (Tanganyka)
125	TOGO	Togo
126	TRKY	Turkey
127	TRNT	Trinidad and Tobago
128	TWAN	Taiwan
129	UAE	United Arab Emirates
130	UGND	Uganda
131	UK	United Kingdom
132	UPVL	Upper Volta (Burkina Faso)
133	URGY	Uruguay
134	USA	United States
135	USSR	Soviet Union
136	VNM	Vietnam, Socialist Republic (Unified) *1
137	VNZL	Venezuela
138	YGSL	Yugoslavia
139	YMEN	Yemen *2
140	ZAIR	Zaire (Leopoldville Congo)
141	ZIMB	Zimbabwe
142	ZMBA	Zambia (Rhodesia)

Note: The abbreviations are from Taylor and Jodice (1983)

(1) South and North Vietnam combined.

(2) Yemen of Aden (People's Democratic Republic) and Sana (Arab Republic) combined.

Appendix D

COMPARISON OF ABSOLUTE ECONOMIC GROWTH AND RATE OF GROWTH

ABBR NAME	RGDP85	RGDP70	ABGROW	GROWRATE
KWAT	14868	34024	-19156	0.43699
MZBQ	528	1020	-492	0.51765
UAE	12404	23937	-11533	0.51819
ANGL	609	1146	-537	0.53141
VNZL	3548	6608	-3060	0.53692
CHAD	254	466	-212	0.54506
ZAIR	210	358	-148	0.58659
GHNA	349	568	-219	0.61444
LBRA	491	708	-217	0.69350
JMCA	1725	2422	-697	0.71222
MDGS	497	673	-176	0.73848
ZMBA	584	789	-205	0.74018
TOGO	489	644	-155	0.75932
SDAN	540	683	-143	0.79063
SDAR	5971	7405	-1434	0.80635
GYNA	1259	1546	-287	0.81436
PPNG	1374	1664	-290	0.82572
IRAQ	2813	3317	-504	0.84806
CAFR	434	511	-77	0.84932
NCRG	1989	2292	-303	0.86780
ARGN	3486	4002	-516	0.87106
BOLV	1089	1237	-148	0.88036
ELSL	1198	1358	-160	0.88218
IVCT	920	1028	-108	0.89494
ETHP	310	341	-31	0.90909
AFGN	609	664	-55	0.91717
BNIN	525	571	-46	0.91944
NGRA	581	630	-49	0.92222
PERU	2114	2285	-171	0.92516
GMBA	526	566	-40	0.92933
SMLA	348	374	-26	0.93048
CHLE	3486	3687	-201	0.94548
MRTN	550	570	-20	0.96491
SRLE	443	459	-16	0.96514
HNDS	911	927	-16	0.98274
UGND	347	352	-5	0.98580
TRNT	6884	6957	-73	0.98951

Appendix D (continued)

ABBR NAME	RGDP85	RGDP70	ABGROW	GROWRATE
SNGL	754	760	-6	0.99211
URGY	3462	3453	9	1.00261
NPAL	526	506	20	1.03953
GTML	1608	1544	64	1.04145
OMAN	7792	7308	484	1.06623
NGER	429	401	28	1.06983
SAFR	3885	3609	276	1.07648
KNYA	598	552	46	1.08333
BRND	345	315	30	1.09524
MALI	355	317	38	1.11987
HATI	631	550	81	1.14727
CRCA	2650	2300	350	1.15217
SWTZ	10640	9164	1476	1.16107
ZIMB	948	810	138	1.17037
GNEA	452	386	66	1.17098
AUSL	8850	7344	1506	1.20507
NZLD	8000	6595	1405	1.21304
UPVL	377	305	72	1.23607
PHLP	1361	1094	267	1.24406
TNZN	355	283	72	1.25442
PLND	4913	3888	1025	1.26363
RWND	341	268	73	1.27239
MLWI	387	301	86	1.28571
ISRL	6270	4861	1409	1.28986
CZCH	7424	5732	1692	1.29518
MXCO	3985	3063	922	1.30101
INDA	750	576	174	1.30208
BLGR	5113	3897	1216	1.31203
FIJI	2893	2201	692	1.31440
NTHL	9092	6915	2177	1.31482
HNGR	5765	4379	1386	1.31651
USA	12532	9459	3073	1.32488
SWDN	9904	7401	2503	1.33820
LXBG	10540	7857	2683	1.34148
CNGO	1338	992	346	1.34879
UK	8665	6319	2346	1.37126
ALGR	2142	1551	591	1.38104
PNMA	2912	2093	819	1.39130
IRAN	3922	2816	1106	1.39276
MRCO	1221	876	345	1.39384

Appendix D (continued)

ABBR NAME	RGDP85	RGDP70	ABGROW	GROWRATE
BRMA	557	398	159	1.39950
DNMK	10884	7776	3108	1.39969
USSR	6266	4472	1794	1.40116
FRNC	9918	7078	2840	1.40124
BNGL	647	458	189	1.41266
DMNR	1753	1232	521	1.42289
IRLD	5205	3628	1577	1.43467
CNDA	12196	8495	3701	1.43567
FRG	10708	7443	3265	1.43867
BLGM	9717	6750	2967	1.43956
PKST	1153	797	356	1.44668
PRTG	3729	2575	1154	1.44816
ICLD	9037	6157	2880	1.46776
SPAN	6437	4379	2058	1.46997
ITLY	7425	5028	2397	1.47673
JRDN	2113	1421	692	1.48698
TRKY	2533	1702	831	1.48825
SRNM	3522	2365	1157	1.48922
GBON	3103	2082	1021	1.49039
FNLD	9232	6186	3046	1.49240
GDR	8740	5836	2904	1.49760
SRLK	1539	1018	521	1.51179
GRCE	4464	2952	1512	1.51220
CLMB	2599	1711	888	1.51899
AUST	8929	5843	3086	1.52815
CMRN	1095	703	392	1.55761
SWAZ	1187	743	444	1.59758
BRBD	5212	3147	2065	1.65618
RMNA	4273	2563	1710	1.66719
PRGY	1996	1189	807	1.67872
ECDR	2387	1403	984	1.70135
JPAN	9447	5496	3951	1.71889
CYPR	5310	3028	2282	1.75363
YGSL	5063	2885	2178	1.75494
EGPT	1188	671	517	1.77049
NRWY	12623	7104	5519	1.77689
TLND	1900	1063	837	1.78739
MRTS	1869	1025	844	1.82341
SYRA	2900	1581	1319	1.83428
BRZL	3282	1782	1500	1.84175

Appendix D (continued)

ABBR NAME	RGDP85	RGDP70	ABGROW	GROWRATE
TNSA	2050	1076	974	1.90520
BTSN	1762	881	881	2.00000
LSTO	771	360	411	2.14167
MLYS	3415	1525	1890	2.23934
INDS	1255	559	696	2.24508
TWAN	3581	1514	2067	2.36526
CHNA	2444	1012	1432	2.41502
HGKG	9093	3555	5538	2.55781
KORS	3056	1189	1867	2.57023
MLTA	5319	2068	3251	2.57205
SNGP	9834	2869	6965	3.42768

Note: Refer to Appendix C for the full country name.

RGDP85 is GDP per capita in 1985.
RGDP70 is GDP per capita in 1970,
ABGROW is the absolute growth (RGDP85 - RGDP70).
GROWRATE is the rate of growth (RGDP85 / RGDP70).

BIBLIOGRAPHY

Adelman, I. and Morris, C.T.: Society, Politics, and Economic Development. Baltimore, Johns Hopkins University Press, 1967.

Ajuac, H.: Culture and Growth. In The Political Economy of New and Old Industrial Countries, eds. C. Sauders, pp. 50-61. London, Butterworths, 1981.

Allison, P.D.: Measures of Inequality. American Sociological Review. 43:865-80, 1978

Allison, P.D.: Testing for interaction in multiple regression. American Journal of Sociology. 83:144-153, 1977.

Almond, G.: Political System and Political Change. In State and Society, eds. R. Bendix, Berkeley, University of California Press, 1973.

Almond, G. and Coleman, J.S.: ed. The Politics of Developing Areas. Princeton, N.J., Princeton University Press, 1960.

Almond, G. and Powell, C.B.: Comparative Politics: A Developmental Approach. Boston, Little Brown, 1965.

Amin, S.: Income Distribution in the Capitalist System. Review. 8:3-28, 1984.

Amin, S.: Unequal Development: An Essay on the Social Formations of Peripheral Capitalism. New York, Monthly Review, 1976.

Amin, S., Giovanni, A., Frank, A.G., and Wallerstein, I.: Dynamics of Global Crisis. New York, Monthly Review Press, 1982.

Anderson, P.: Lineages of the Absolutist State. New York, Schocken, 1974.

Apter, D.: Rethinking Development: Modernization, Dependency, and Postmodern Politics. Berverly Hills, Sage Publications Inc, 1987.

Apter, D.: The Politics of Modernization. Chicago, University of Chicago Press, 1965.

Armer, J.M. and Marsch, R.M.: ed. Comparative Sociological Research in the 1960s and the 1970s. Leiden, E.J. Brill, 1982.

Bach, R.L.: Methods of analysis in the study of the world-economy. American Sociological Review. 42:811-14, 1977.

Badie, B. and Birnbaum, P.: The Sociology of the State. trans. A. Goldhammer. Chicago, The University of Chicago Press, 1983.

Baldwin, D.A.: Interdependence and Power: a comparative analysis. International Organizations. 34(4):471-506, 1980.

Baldwin, D.A.: Power analysis and World Politics. World Politics. 31:161-94, 1979.

Bamat, T.: Relative state autonomy and capitalism in Brazil and Peru. The Insurgent Sociologist. 7(2):18-32, 1977.

Baran, P.: The Political Economy of Growth. New York, Monthly Press, 1957.

Barrett, R.E. and Whyte, M.K.: Dependency Theory and Taiwan: Analysis of a Deviant Case. American Journal of Sociology. 87(5):1064-1089, 1982.

Bauer, P.T.: Dissent on Development. Cambridge, Harvard University Press, 1976.

Bendix, R.: Tradition and Modernity Reconsidered. Comparative Studies in History and Society. 9:292-346, 1967.

Bergensen, A.: eds. Crisis in the World-System. Beverly Hills, Sage Publications, 1983.

Bergensen, A.: eds. Studies of the Modern World-System. New York, Academic Press, 1980.

Berry, A., Bourguigon, F., and Morrision, C.: The Level of World Inequality: How much Can One Say? Review of Income and Wealth. 29:217-41, 1983.

Bigsten, A.: Income Distribution and Development: Theory, Evidence and Policy. London, Heineman, 1983.

Blechman B.M and Kaplan, S.S.: Political Use of the United States Armed Forces, 1946-1976. The Inter-University Consortium for Political and Social Research, Study No. 7595, Data Tape, Ann Arbor, Michigan, 1978.

Block, F.: The ruling class does not rule. Socialist Revolution 33: 6-28, 1977.

Blomström, M. and Hettne, B.: Development Theory in Transition: the Dependency Debate and Beyond. London, Zed Books, 1984.

Boli-Bennett, J.: Global Integration and the universal increase of state dominance: 1910-70. In Studies of the Modern World System, eds. A. Bergensen, pp. 77-107, New York, Academic Press, 1980.

Bollen, K.: World System Position, Dependency, and Democracy: the Cross-National Evidence. American Sociological Review. 48:468-79, 1979.

Bohrnstedt, G.W.: Observations on the measurement of change. In Sociological Methodology, eds. E.F. Borgartta, pp. 1113-1136, San Francisco, Jossey-Base, 1969.

Bornschier, V.: "Multinational corporations and economic growth. Journal of Economic Development. 7:191-210, 1980.

Bornschier, V. and Heintz, P.: Compendium of Data for World-System Analysis. Zurich, University of Zurich, 1979.

Bornschier, V., Chase-Dunn, C., and Rubinson, R.: "Cross-national evidence of the effects of foreign investment and aid on economic growth and inequality: a survey of findings and a reanalysis. American Journal of Sociology. 84:651-83, 1978.

Bulls, H.: The Anarchial Society: A study of Order in World Politics. New York, Columbia University Press, 1977.

Brenner, R.: The origins of capitalist development: a critique of neo-Smithian Marxism. New Left Review. 104:25-93, 1977.

Buck, L.B. and Jacobson, A.L.: Social evolution and structural-functional analysis: an empirical test. American Sociological Review. 33(3):343-355, 1968.

Caporaso, J.: Dependence, dependency, and power in the global system: a structural and behavioral analysis. International Organization. 32(1):13-38, 1978.

Cardoso, F.H.: The consumption of dependency theory in the United States. Latin American Review. 12(3):7-24, 1977.

Cardoso, F.H.: Associated-Dependent Development: Theoretical and Practical Implications. In Authoritarian Brazil: Origins, Politics, and Future. eds. A. Stepan, New Haven, Yale University Press, 1973.

Cardoso, F.H. and Faletto, E.: trans. M. Urguidi, Dependency and Underdevelopment in Latin America. Berkeley, University of California Press, 1979.

Carnoy, M.: The State and Political Theory. Princeton, NJ, Princeton University Press, 1984.

Chandra, B.: Karl Marx, his theories of Asian societies and colonial rule. In Sociological Theories: Race and Colonialism, Paris, UNESCO, 1980.

Chase-Dunn, C.: Interstate system and capitalist World-Economy: one logic or two? In World-System Structure, ed. W.L. Hollist and J.N., Rosenau, pp. 30-53, Berverly Hills, Sage Publications, 1981.

Chase-Dunn, C.: Socialist states in the capitalist world-economy. Social Problems. 27:505-525, 1980.

Chase-Dunn, C.: The effects of international economic dependence on development and inequality. American Sociological Review. 40:720-38, 1975.

Chase-Dunn, C. and Rubinson, R.: Cycles, trends, and new departures in world-system development, In National Development and the World System, ed. J.W. Meyer and M. Hannan, pp. 276-295, Chicago, Univeristy of Chicago, Press, 1979.

Chase-Dunn, C. and Rubinson, R.: Towards a structural perspective on the world system. Politics and Society. 7:453-76, 1977.

Cohen, J.: Partialed products are interactions; partialed vectors and curve components. Psychological Bulletin. 85:858-66, 1978.

Chirot, D. and Hall, T.: World-System Theory. Annual Review of Sociology. 8:81-106, 1982.

Coleman, J.: The Mathematics of Collective Action. Chicago, Aldin, 1973.

Collier, D.: eds. The New Authoritarianism in Latin America. Princeton, NJ, Princeton University Press, 1979.

Collins, R.: Weber's Last Theory of Capitalism: A Systematization. American Sociological Review. 45:925-42, 1980.

Collver, A. and Semyonov, M.: Suburban change and persistence. American Sociological Review. 44:480-486, 1979.

Cook, K, Emerson, R., Gillmore, H. and Yamagishi, T.: The distribution of power in exchange networks: theory and experimental results. American Journal of Sociology. 89:275-305, 1983.

De Janvry, A.: The Agrarian Question and Reformism in Latin America. Baltimore, Johns Hopkins University Press, 1981.

Delacroix, J.: Export of raw materials and economic growth. American Sociological Review. 42:795-808, 1977.

Delacroix, J. and Ragin, C.C.: Structural blockage: a cross-national study of economic dependency, state efficacy, and underdevelopment. American Journal of Sociology. 86:1311-47, 1981.

Delacroix, J. and Ragin, C.C.: Modernizing institutions, mobilization, and third world development. American Journal of Sociology. 84:123-49, 1978.

Dos Santos, T.: The structure of Dependence. American Sociological Review. 60(2):231-236, 1970.

Duncan, O.D., Scott, W.R., Lieberson, S., Duncan, B., and Winsborough, B.: Metropolis and Region. Baltimore, Johns Hopkins University Press, 1960.

Dunning, J.H., and Pearce, R.D.: The World's Largest Industrial Enterprises, 1962-1983. New York, St. Martin Press, 1983.

Eisenstadt, S.N.: Modernization: Protest and Change. Englewood Cliffs, NJ, Prentice Hall, 1966.

Emerson, R.M.: Exchange Theory Part II: exchange relations and network structure. In Vol II. Sociological Theory in Progress, ed. P.J. Berger, M. Zeldich Jr., B. Anderson, Boston, Houghton Mifflin Co, 1972.

Emmanuel, A.: Unequal Exchange: A Study of the Imperialism of Trade. New York, Monthly Press, 1972.

Evans, P.: Transnational linkages and the economic role of the state: an analysis of developing and internationalized nations in the post-World War II period. In Bring in the State Back In, ed. Evans et al., Cambridge, Cambridge University Press, 1985.

Evans, P.: Dependent Development: The Alliance of Multinational State, and Local Capital in Brazil. Princeton, NJ, Princeton University Press, 1979.

Evans, P., Rueschemeyer, D., and Skocpol, T.: ed. Bring the State Back In. Cambridge, Cambridge University Press, 1985.

Frank, A.G.: Dependent Accumulation and Underdevelopment. New York, Monthly Press, 1978.

Frank, A.G.: Dependence is Dead, Long Live Dependence and the Class Struggle: An Answer to Critics. World Development. 5(4):355-70, 1977.

Frank, A.G.: Economic dependence, class structure, and underdevelopment. In Dependence and Underdevelopment, ed. J.J. Cockcroft et al, pp. 19-45, New York, Doubleday, 1972.

Frank, A.G.: Capitalism and Underdevelopment in Latin America. New York, Monthly Press, 1967.

Futardo, C.: Development and stagnation in Latin America: a structuralist view. Studies in Comparative International Development. 1(11):159-75, 1965.

Fransman, M.: Technology and Economic Development. Boulder, Westview Press, 1986.

Friedman, E.: ed. Ascent and Decline in the World-System. Beverly Hills, Sage Publications, 1982.

Gagliani, G. : Income Inequality and Economic Development. Annual Review of Sociology. 13:313-34, 1987.

Galtung, J.: Global process and the world in the 1980s. In World System Structure, ed. W.L. Hollist and J.N. Rosenau, pp. 110-138, Beverly Hills, Sage Publications, 1981.

Galtung, J.: A structural theory of imperialism. Journal of Peace Research. 8(2):81-117, 1971.

Gereffi, G.: Power and Dependency in an Interdependent World: A Guide to Understanding the Contemporary Global Crisis. International Journal of Comparative Sociology. 25:91-113, 1984.

Gerschenkron, A.: Economic Backwardness in Historical Perspective. Cambridge, Harvard University Press, 1962.

Gibbs, M.: The state in an international context. In The State in Modern Society, R. King, Chapter 8, Chatham, NJ, Chatham House, 1986.

Gilbert, M. and Kravis, I.B.: An International Comparison of National Products and the Purchasing Power of Currencies. New York, Garland Publishing Inc., 1983[1954].

Gillis, M., Perkins, D.H., and Snodgrass, D.R.: Economics of Development. New York, W.W. Norton & Co, 1983.

Gold, D., Lo, Y.H., and Wright, E.O.: Recent developments in the Marxist theories of the state. Monthly Review 27(Sep):29-43 and (Oct):36-51, 1975.

Granovetter, M.: The Idea of 'Advancement' in Theories of Social Evolution and Development. American Journal of Sociology. 88: 489-519. 18: 313-27. 1979.

Grosh, M.E. and Nafziger, E.W.: The Computation of World Income Distribution. Economic Development and Cultural Change. 34(2): 347-59, 1986.

Gruhn, I.V.: The recolonization of Africa: international adjustment process. Finance and Development. 30(4):38-49, 1983.

Hagen, E.E.: On the Theory of Social Change. Homewood, Ill., Dorsey Press, 1962.

Hannan, M.T.: Issues in panel analysis of national development: a methodological overview. In National Development and the World-System, ed. J. Meyer and M.T. Hannan, pp. 17-36, Chicago, University of Chicago Press, 1979.

Hanushek, E.A. and Jackson, J.E.: Statistical Methods for Social Scientists. New York, Academic Press, 1977.

Hart, J.: Three Approaches to the Measurement of Power in International Relations. International Organizations. 30:289-305, 1976.

Hartman, J. and Walters, P.B.: Dependence, Military Assistance and Development: a cross-national study. Political Society. 14(4):431-58, 1976.

Harrison, L.F.: Underdevelopment Is a State of Mind. Lanham, MD, Maryland University Press, 1985.

Hawley, A.H.: Directions and Continuities in Societal Growth. In Societal Growth, eds. A.H. Hawley, pp. 19-29, New York, The Free Press, 1979.

Hawley, A.H.: Community power and political struggle in the decaying central city. American Journal of Sociology. 68:422-31, 1963.

Hepman, E.: MNCs and Trade Structure. Review of Economic Study. 52:443-57, 1985.

Higgins, B.: Economic Development. London, Constable and Co., 1968.

Hirschman, A.: The Strategy of Economic Development. New Haven, Yale University Press, 1958.

Hollist, W.L. and Rosenau, J.N.: ed. World System Structure: Continuity and Change. Beverly Hills, Sage Publications, 1981.

Hopkins, T.: The study of the capitalist world-economy: some introductory considerations, In The World-System of Capitalism: Past and Present, ed. W. Goldfrank, Beverly Hills, Sage Publications, 1979.

Hopkins, T. and Wallerstein, I.: World-Systems Analysis. Beverly Hills, Sage Publications, 1982.

Hopkins, T. and Wallerstein, I.: Structural Transformations of the World-Economy. In Dynamics of World Development, eds. R.R. Rubinson, pp. 233-261, Beverly Hills, Sage Publications, 1982.

Hopkins, T. and Wallerstein, I.: Processes of the World-System. Beverly Hills, Sage Publications, 1980.

Hopkins, T. and Wallerstein, I.: Patterns of development in the modern world-system. Review. 1,2:111-45, 1977.

Horowitz, I.: The Sociology of Development and the Ideology of Sociology. In Societal Growth. eds. A.H. Hawley, pp. 279-89, New York, The Free Press, 1979.

Huntington, S.P.: Political Order in Changing Societies. New Haven, Yale University Press, 1968.

Inkeles, A.:. Exploring Individual Modernity. New York, Columbia University Press, 1983.

Inkeles, A. and Smith, D.H.: Becoming Modern: Individual Change in Six Developing Countries. Cambridge, Harvard University Press, 1974.

Jackman, R.: A Note on the Measurement of Growth Rate in Cross-National Research. American Journal of Sociology. 86:604-17, 1980.

Jacobs, D.: Dependency and vulnerability: an exchange approach to the control of organizations. Administrative Science Quarterly. 19:45-59, 1974.

Jacobs, N.: Max Weber, the theory of Asian society, and the study of Thailand. Sociological Quarterly. 12:525-30, 1971.

Kahn, H.: World Economic Development: 1979 and Beyond. Boulder, CO, Westview Press, 1979.

Kaplan, M.A.: System and Process in International Politics. Huntington, New York, Robert E. Kriger Publishing Co., 1975.

Kerr, C., Dunlop, J., Myers, C., and Harbison, F.: Industrialism and Industrial Man. Cambridge, Harvard University Press, 1960.

Kessler, R.C. and Greenberg, D.F.: Linear Panel Analysis: Models of Quantitative Change. New York, Academic Press, 1981.

King, R.: The State in Modern Society: New Directions in Political Sociology. Chatham, NJ, Chatham House, 1986.

Khalaf, N.: Country size and economic growth and development. Journal of Development Studies. 16(1): 67-72, 1979.

Krasner, S.D.: Transforming international regimes: what the Third World wants and why? In World System Structure, ed. W.L. Hollist and J.N. Rosenau, Beverly Hills, Sage Publications, 1981.

Kravis, I.B., Heston, A.W., and Summers, R.: World Product and Income: International Comparison of Real Gross Product. Baltimore, Johns Hopkins University Press, 1982.

Kravis, I.B., Heston, A.W., and Summers, R.: Real GNP per capita for More than One Hundred Countries. Economic Journal. 88:215-42, 1978.

Kugler, J. and Domke, W.: Comparing the Strength of Nations. Comparative Political Studies. 1986.

Lacalu, E.: Feudalism and capitalism in Latin America. New Left Review. 67:19-38, 1971.

Lall, S.: Is dependence a useful concept in analyzing underdevelopment?. World Development. 3(1):799-810, 1975.

Lazarsfeld, P.F. and Menzel, H.: On the relation between individual and collective properties. In A sociological Reader on Complex Organization, 2nd ed., eds. A. Etzioni, New York, Holt, Reinhart an Winston., 1969.

Lenin, V.I.: The State and Revolution. Peking, Foreign Language Press, 1965.

Landau, D.: Explaining Differences in per capita income between Countries: a hypothesis and test for 1950 and 1970. Exploratory Economic History. 22:296-315, 1985.

Leiss, A.C.: Arms Transfers to Less Developed Countries. The Inter-University Consortium for Political and Social Research, Study No. 5404, Data Tape, Ann Arbor, Michigan, 1970.

Lenski, G.: History and Social Change. American Journal of Sociology. 82:548-64, 1976.

Lenski, G.: Power and Privilege. New York, McGraw Hill, 1966.

Lerner, D.: The Passing of Traditional Society: Modernizing the Middle East. Glencoe, Ill., Free Press, 1958.

Lernoux, P.: Cry of the People: The Struggle for Human Rights in Latin America. Harmmondworth, Penguin, 1982.

Lewis, A.: The Theory of Economic Growth. London, George Allen and Unwin, 1960.

Lewis, A.: Economic development with unlimited supplies of labor. The Manchester School. 22:34-47, 1954.

Liker, J.K., Augustyniak, S., and Duncan, G.J.: Panel Data and Models of Change: A comparison of First Difference and Conventional Two-Wave Models. Social Science Review. 14:80-101, 1985.

Lincoln, J.: The urban distribution of headquarters and branch plants in manufacturing: mechanism of metropolitan dominance. Demography. 15:213-24, 1978.

Lipton, M.: Why Poor People Stay Poor: A Study of Urban Bias in World Development. Cambridge, Harvard University Press, 1976.

Lowenthal, A.: The United States and Latin America: ending the hegemonic presumptions. Foreign Affairs. 55:199-213, 1976.

Magubane, B.: The evolution of the class structure in Africa: In The Political Economy of Contemporary Africa, ed. P. and M. Jones, Beverly Hills, Sage Publications, 1976.

Mahler, V.:. Dependent Approach to International Political Economy: A Cross-National Study. New York, Columbia University Press, 1980.

Mandel, E.: Late Capitalism. London, Humanities Press, 1975.

Mariolis, P. and Jones, M.: Centrality in corporate interlock networks: reliability and stability. Administrative Science Quarterly. 27:571-84, 1982.

Markus, G.N.: Analyzing Panel Data. Berverly Hills, Sage, 1979.

Marx, K.: Capital. Vol I. New York, Vintage Books, 1976.

Marx, K. and Engels, F. Collected Works. London, Lawrence and Winschart, 1979.

McClelland, D.: The Achieving Society. Princeton, NJ, D. Van Nostrand, 1961.

Meyer, J.W.: The World Polity and the Authority of the Nation-State. In Studies of the Modern World-System. eds. A. Bergensen, New York, Academic Press, 1980.

Meyer, J.W. and Hannan, M.: National Development and the World System. Chicago, University of Chicago Press, 1979.

Miliband, R.: State power and class interests. Monthly Review. 138:37-68, 1983.

Moore, B.: Social Origins of Dictatorship and Democracy: Lord and Peasant in the Making of the Modern World. Boston, Beacon Press, 1966.

Nemeth, R.J. and Smith, D.A.: International Trade and World-system Structure: A Multiple Network Analysis. Review. 8:517-60, 1985.

Nisbet, R.: Social Change and History. New York, Oxford Galaxy, 1969.

Nolan, P.D.: Status in the World Economy and National Structure and Development. International Journal of Comparative Sociology. 24: 109-120, 1983.

Nurkse,R.; Some International Aspects of the Problems of Economic Development. American Economics Review. 42:571-83, 1952.

O'Donnell, G.: Modernization and Bureaucratic-Authoritarianism. Berkeley, University of California Press, 1973.

Ostrom, Jr., C.W.: Time Series Analysis: Regression Techniques. Beverly Hills, Sage, 1978

Palma, G.: Dependency: a formal theory of underdevelopment or a methodology for the understanding of concrete situation of underdevelopment? World Development. 6:881-924, 1978.

Papanek, G.F.: Economic Development Theory: The Earnest Search for a Mirage. In Essays on Economic Development and Cultural Change in Honor of Bert F. Hoselitz, ed, M. Nash, Chicago, University of Chicago Press, 1977.

Papanek, G.F.: Aid, Foreign Investment, Savings and Growth in Less Developed Countries. Journal of Political Economy. 81:120-30, 1973.

Parsons, T.: The Evolution of Societies. Englewood Cliffs, NJ, Prentice Hall, 1977.

Peacock, W.G., Hoover, G.A., and Killian, C.D.: Divergence and Convergence in International Development: A Decomposition Analysis of Inequality in the World System. American Sociological Review. 53:838-52, 1988.

Petras, James: State Capitalism and the Third World Development and Change. 8(1):1-18, 1977.

Poulantzas, N.: Political Power and Social Classes. London, New Left, 1973.

Portes, A.: Convergencies between conflicting theoretical perspectives in national development. In Sociological Theory and Research, eds. H. Blalock, pp. 220-227, New York, The Free Press, 1980.

Portes, A.: On the sociology of national development: theories and issues. American Journal of Sociology. 82(1):55-85,1976.

Porte, A.: Modernity and development: a critique. Studies in Comparative International Development. 8:247-79, 1973.

Prebisch, P.: Economic Development of Latin America and the Principal Problems. New York, United Nations, 1950.

Psacharopoulos, G.: Education as an investment. Finance and Development. 19:181-196, 1982.

Ragin, C.C.: The Comparative Methods: Moving Beyond Qualitative and Quantitative Strategies. Berkeley, University of California Press, 1987.

Ragin, C.C.: Theory and Methods in the Study of Dependency and International Inequality. International Journal of Comparative Sociology. 24:121-36, 1983.

Ragin, C.C.: Comparative Sociology and the Comparative Method. In Comparative Sociological Research in the 1960s and 1970s, eds. J.M. Armer and R.M. Marsh, pp. 102-120, Leiden, E.J. Brill, 1982.

Ragin, C.C. and J. Delacroix: Comparative advantage, the world division of labor, and underdevelopment. Comparative Social Research. 2:181-214, 1979.

Ramirez, F.O. and Thomas, G.: Structural antecedents and consequences of statism. In Dynamics of World Development. eds. R. Rubinson, pp. 139-64, Beverly Hills, Sage Publications, 1981.

Ranis, G. and Fei, J.C.: Development of the Labor Surplus Economy. Homewood, Il., Richard Irwin, 1964.

Reynolds, L.G.: Economic Growth in the Third World, 1850-1980. New Haven, Yale University Press, 1985.

Roeder, P.G.: The Ties that Bind: Aid, Trade, and Political Compliance in Soviet-Third World Relations. International Studies Quarterly. 29:191-216, 1985.

Rogers, E. and Shoemaker, F.: Communication of Innovation. New York, The Free Press, 1971.

Ross, C.O.: organizational dimensions of metropolitan dominance: prominence in the network of corporate control, 1955-1975. American Sociological Review. 52:258-267, 1987.

Rostow, W.W.: Politics and the Stage of Growth. London, Cambridge University Press, 1971.

Roth, G.: Max Weber's Comparative Approach and Historical Typology. In Comparative Methods in Sociology, ed. I. Vallier, Berkeley, University of California Press, 1981.

Rubinson, R.: eds. Dynamics of World Development. Beverly Hills, Sage Publications, 1981.

Rubinson, R.: State boundaries and the world-economy. American Sociological Review. 43:614-25, 1978.

Rubinson, R.: Development., government revenue, and economic growth, 1955-70. Studies in Comparative International Development. 12:3-28, 1977.

Rubinson, R. and Holtzman, D.: Comparative Dependence and Economic Development. In Comparative Sociological Research in 1960s and 1970s, ed. J.M. Armer and R.M. Marsh, Leiden, E.J. Brill, 1982.

Seligson, M.A.: eds. The Gap between Rich and Poor. Boulder, Westview Press, 1984.

Schmpeter, J.: The Theory of Economic Development, Cambridge, Harvard University Press, 1934.

Schneider, F. and Frey, R.S.: Economic and Political Determinants of Foreign Direct Investment. Finance Development. 22:31-4, 1985.

Singer, J.D. and Small, M.: Diplomatic Missions Received by Each International System Member, 1817-1970. The Inter-University Consortium for Political and Social Research, Study No. 5025, Data Tape, Ann Arbor, Michigan, 1972.

Skocpol, T.: States and Social Revolutions. Cambridge, Cambridge University Press, 1979.

Skocpol, T.: Wallerstein's world capitalist system: a theoretical and historical critique. American Journal of Sociology. 82:1075-90, 1977.

Smelser, N.: Essays in Sociological Explanation. Englewood Cliffs, NJ, Prentice Hall, 1968.

Smith, T.: The Pattern of Imperialism. Cambridge, Cambridge University Press, 1981.

Smith, T.: The underdevelopment of development literature: the case study of dependency theory. World Politics. 31(2):247-88, 1979.

Snyder, D. and Kick, E.L.: Structural Position in the World System and Economic Growth, 1955-1970: A Multiple Network Analysis of Transnational Interactions. American Journal of Sociology. 84:1096-1126, 1979.

Southwood, K.E.: Substantive Theory and Statistical Interaction: Five Models. American Journal of Sociology. 83:1154-1203, 1978.

Stinchcombe, A.L.: Theoretical Methods in Social History. New York, Academic Press, 1978.

Stolzenberg, R.M.: The measurement and decomposition on causal effect in nonlinear and nonadditive models. In ed. K. Schuessler. Sociological Methodology, pp. 34-48, San Francisco, Jossey-Bass, 1980.

Stopford, J., Dunning, J., Haberich, K.: The World Directory of Multinational Corporations, Vol I and II, London, 1982.

Summers, R. and Heston, A.: A New Set of International Comparisons of Real Product and Price Levels Estimates for 130 Countries. Review of Income and Wealth. 34:1-25, 1988.

Summers, R. and Heston, A.: Improved International Comparison of Real Product and its Composition: 1950-1980. Review of Income and Wealth. 26:19-66, 1984.

Sunkel, O.: Transnational Capitalism and National Disintegration in Latin America. Social and Economic Studies. 22(1):132-76, 1973.

Szentes, Tamás.: Theories of World Capitalist Economy. Budapest: A Kadémiai Kiadó 1985.

Taylor, C.W. and Jodice, D.A.: World Handbook of Political and Social Indicators. 3rd. ed. New Haven, Yale University Press, 1983.

Theil, H.: Econometrics and Information Theory. Amsterdam, North Holland, 1967.

Theil, H.: World Income Inequality and Its Components. Economic Letters 2:99-102, 1979.

Thomas, G.M. and Meyer, J.W.: The expansion of the State. Annual Review of Sociology. 10:461-82, 1984.

Thomas, G.M. and Meyer, J.W..: Regime changes and state power in an intensifying world state system, In Studies of Modern World System, eds. A. Bergensen, pp. 139-58, New York, Academic Press, 1980.

Thomas, Ramirez, Meyer, J.W., and Gobalet, J.: Maintaining national boundaries in the world system: the rise of centralist regimes, In National Development and the World System, ed. J.W. Meyer and M.T. Hannan, Chicago, University of Chicago Press, 1979.

Tipps, D.: Modernization theory and the study of national societies: a critical perspective. Comparative Studies and History. 15(2):199-226, 1973.

Todaro, M.: Economic Development in the Third World. 3rd ed. New York, Longman Press, 1985.

United States Arms Control and Disarmament Agency: World Military Expenditures and Arms Trade and Cumulative Arms Trade, 1963-1973. Inter-University Consortium for Political and Social Reseach, Study No. 7454, Data Tape, Ann Arbor, Michigan, 1975.

Valenzuela, J.S. and Valenzuela, A.: Modernization and Dependency: alternative perspectives in the study of Latin American underdevelopment. Comparative Politics. 10(4):535-57, 1983.

Wallerstein, I.: The Three Instances of Hegemony in the History of the Capitalist World-Economy. International Journal of Comparative Sociology. 24:100-108, 1983.

Wallerstein, I.: Crisis as transitions. In Dynamics of Global Crisis, ed. S. Amin et al., New York, Monthly Press, 1982.

Wallerstein, I.: The Modern World-System: Mercantilism and the Consolidation of the European World-Economy, 1600-1750. New York, Academic Press, 1980.

Wallerstein, I.: The Capitalist World-Economy. Cambridge, Cambridge University Press, 1979a.

Wallerstein, I.: World networks and the politics of the world economy. In Societal Growth, eds. A.H. Hawley, pp. 269-78, New York, The Free Press, 1979b.

Wallerstein, I.: The Modern World System. New York, Academic Press, 1974a.

Wallerstein, I.: The rise and future of the world capitalist system: concepts of comparative analysis. Comparative Studies in Society and History. 16:387-415, 1974b

Weber, M.: The Protestant Ethics and the Spirit of Capitalism. trans. T. Parsons, New York, Charles Scribner's Sons, 1958.

Weede, E. and Kummer, J.: Some Criticism of Recent Work on World System Status, Inequality, and Democracy. International Journal of Comparative Sociology. 26:135-48, 1985.

Whalley, J.: The Worldwide Income Distribution: Some Speculative Calculations. Review of Income and Wealth. 25:261-76, 1979.

Waltz, K.N.: Theory of International Politics. Reading, MA, Addison-Wesley, 1979.

Warren, B.: Imperialism: Pioneer of Capitalism. London, New Left Books, 1980.

World Bank: World Development Report. Baltimore, Johns Hopkins University, 1983.

Worsley, P: The Three Worlds: Culture and World Development. Chicago, University of Chicago Press, 1984.

VITA

NAME:	Yoosik Gong
EDUCATION:	B.A., Department of Sociology, Yon-Sei University, Seoul, Korea, 1976
	M.A., Department of Sociology, Yon-Sei University, Seoul, Korea, 1980
	Ph.D., Department of Sociology, University of Illinois at Chicago, Chicago, Illinois, 1989
TEACHING EXPERIENCE:	Instructor, Department of Sociology, National Kang-Won University, Choon-Chon, Korea, 1980.
	Instructor, College of General Education, Kwang Woon Institute of Technology, Seoul, Korea, 1981.
	Teaching Assistant, Department of Sociology, University of Illinois at Chicago, 1982-88.
	Visiting Assistant Professor, Department of Sociology, University of Illinois at Chicago, 1989.
PROFESSIONAL MEMBERSHIP:	American Sociological Association Midwest Sociological Society Southern Sociological Society