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The Non-Aligned States: An Analysis of Institutional Formality, Economic Confidence, and Their Impact on Economic Diversification

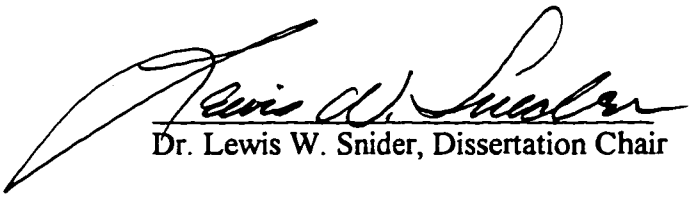
by

Stephen Paul Wood

A Dissertation submitted to the Faculty of The Claremont Graduate School in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the Graduate Faculty of Politics and Policy.

Claremont, California
January 1997

Approved by:



Dr. Lewis W. Snider, Dissertation Chair

We, The undersigned, certify that we have read this dissertation and approve it as adequate in scope and quality for the degree of Doctor of Philosophy.

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Abstract of the Dissertation

The Non-Aligned States: An Analysis of Institutional Formality, Economic Confidence, and Their Impact on Economic Diversification

by

Stephen Paul Wood
The Claremont Graduate School: 1997

Assessing North's methodological appraisal that institutions cannot be felt or measured, (North, 1990: 107) this dissertation defines and operationalizes "effective" institutions. The model provided specifies the relationship between variations in the formality of institutions, variations in economic confidence, and empirically tests their impact upon economic diversification in the Third World. Institutional formality refers to the degree to which authoritative political structures (institutions) are dedicated to disabling elite discretion (i.e., formality) regarding the protection of private property rights and contract rights. Economic confidence refers to the general perception that the state credibly protects private property and enforces contracts. It is this perception that most structures the costs or benefits surrounding long term, complex economic activity. It is the prevalence of complex, irrevocable, and impersonal forms of economic exchange that distinguishes the Developed from the Underdeveloped World. Economic diversification captures the critical element of economic development: It refers to the proportion of a country's economy comprised of complex production, namely manufactures and manufactures as a percentage of exports.

Institutions structure the constraints and opportunities that promote complex contracting. This model tests the assumption that the formalization of institutions and

increased economic confidence lead to economic diversification. This two equation simultaneous system generates two principal hypotheses. First, the greater the institutional formality the greater is the economic confidence. Second, the greater the perceived economic confidence, the greater will be economic diversification.

The data for the empirical analysis are pooled cross-section time-series and comprised of observations from thirty-eight countries from 1984-1992. (N = 342) As this model is a two equation simultaneous equation system, the quantitative technique used is Two-Stage Least Squares estimation. The results of the quantitative tests on these data demonstrate that there is strong and significant empirical evidence supporting the theoretical relationships specified by this model.

To my wife and daughter,

Maria Eugenia Wood and Kasey Leigh Wood.

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First, last, and always, I would like to thank my wife Maria E. Wood for her indefatigable support, patience, and sacrifice throughout that which has been the long doctoral process. Words cannot even begin... Thank you to my parents, Paul S. and Margaret D. Wood, for continually imparting upon me the importance of education. Since childhood, I was prodded to reach for the "brass ring" of success that America and higher education offer. Their lifetime of support gave me the single-mindedness of purpose and the wherewithal to complete my doctorate. I am also grateful for the (not-so) subtle competition with my older brother, Andrew J. Wood, regarding which one of us would finish his doctorate first.

I am greatly indebted the chair of my dissertation committee, Lewis Snider, for mentoring me and getting me through the dissertation process. His tutelage, patience, and professional expertise expedited immensely the conceptualization, design, and writing of this dissertation. I cannot thank him enough. I would like to extend my gratitude to Jacek Kugler, who early on made the conceptual and methodological lights turn on for me and numerous other students: His influence on my studies and this dissertation is extensive. Thank you also to Arthur Denzau for his conceptual oversight, methodological direction, data affluence, and for helping me import discipline into this research.

Stephen Paul Wood
Claremont, California
October, 1996

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Introduction: Taking an Institutional Look at Economic Diversification

[I]nstitutional arrangements - structure and procedure - affect the credibility of public choices and, therefore, the capacity of public institutions to effect social improvement. (Shepsle, 1989: 38)

Introduction

The fundamental research query of this dissertation is, why have some countries developed economically when others have not? Perhaps even more interestingly, why have some countries experienced unstable economic development where precipitous growth has been succeeded by precipitous decline? In the attempt to shed light on this perennial puzzle of economic development in the Third World, this dissertation offers a comparative investigation of how variations in the quality of political and economic institutions among countries contribute to the economic diversification that has been to the key economic distinction between those countries that are economically developed and those that are not.

The staple models of economic diversification have had limited success (Olson, 1995) because they overlook a theoretically and substantively critical component of economic activity: Economic actors examine their political and institutional environments when they engage economic calculations. It is the central argument of this dissertation that the relationship between institutional quality and generally held economic confidence is a crucial element in whether or not a country can diversify its economy and achieve economic diversification. Additionally, this dissertation demonstrates that those institutions that contribute to economic diversification are not

political factor endowments, but also political variables. As such, research that integrates and specifies the relationship between political structures and economic behavior captures the essential properties economic diversification and development. Noting assertions that institutional analysis is not amenable to quantification and empirical testing, (North, 1990: 107) I seek to specify a "positive theory of institutions" (Moe, 1990: 215) that empirically supports a scientific explanation for the impact of political structures upon economic diversification

In this dissertation a model with formal assumptions is specified, testable hypotheses are derived regarding the interrelationships between institutions and economic diversification in the Less Developed Countries (LDCs), and the derived hypotheses are empirically tested. Using data for thirty-eight countries, the rigorous examination provided in this dissertation tests the assumptions upon which this model rests: The results of the show significant empirical confirmation for the synergistic relationship between political institutions and economic diversification that has, heretofore, relied largely upon description and postdiction.

The Argument

Taking An Institutional Look at Economic Diversification

Political and economic institutions provide the constraints and opportunities that shape economic behavior. In looking at the structure of choices and costs surrounding economic behavior in the LDCs, the model presented in this dissertation offers the choice between formal state institutions that protect private property rights

and contract rights and informal, self-enforcing institutions that do not. Where there is the prevalence of formal state institutions we expect increased economic confidence and then increased participation in complex contracting, or long term, irrevocable, and impersonal forms of economic exchange. It is the institutional capacity of a polity to increase economic confidence and thus stimulate complex contracting that distinguishes the First World from the Third.

This argument builds upon a rich body of literature within political economy where political scientists have been drawn to focus upon economic phenomena. The analytic focus on institutions in the explanation and prediction of economic diversification is, in part, a reaction to the unsatisfactory results from earlier work. One reason for this incomplete picture has been the utilization of a "predatory" perspective of the state. (North 1981:22) A predatory perspective of the state is consistent with the public choice perspective, where the state extracts resources from society in order to achieve its own limited goals or for the private consumption of elite socio-political groups that support it.[1] (Olson, 1991; 1993; North, 1990a, 1990b; North and Weingast, 1989) This highly competitive perspective examines how the wealth of society is identified, extracted, and mobilized by the state; this perspective, however, is limited because it does not examine the role of state institutions in the creation of wealth and the facilitation of economic diversification.[2] My approach

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[1] For a more in-depth exploration of the theory, scaling, and measurement of revenue and resource extraction by the state, see Snider (1990, 1996) and Arbetman and Kugler (1996).

[2] See Snider (1996: Table 1.2) The results he obtained show either an insignificant or inverse relationship between the effective predatory state, wealth creation, and economic growth. He finds that as the capacity of the predatory state, or "relative political extraction[,] extends beyond mean levels, it will either exert a dampening effect on economic performance or its effect will be nil." (Snider, 1996: 27)

utilizes a contractual perspective of the state. This perspective of the state, or the "productive" state, (Snider, 1996; Snider and Wood, 1996) argues that the structures and institutions of the state can be used to stimulate society toward wealth creation, not simply the identification, extraction, and application of societal wealth: The state and its structures play the role of wealth maximizer for society.

Other political scientists have used use regime type, usually a comparison and contrast of democratic versus non-democratic regimes, as an explanatory variable for economic diversification. (Pourgerami, 1988) This approach argues that structural differentiations, those that result from different regime types, impact economic behavior and diversification. Current students of an institutional approach and former regime analysts have concludes, however, that regime type, specifically democratization, is unrelated to economic growth. (Barro, 1993; Leblang; 1996; Alesina, et. al., 1992; Alesina and Rodrik, 1991) Concurring with the re-conceptualization of the interaction between political structures and economic diversification is Shepsle (1989). His appraisal of institutions as elite-constraining structures synposizes a theoretical argument consistent with many (North, 1973-1993; March and Olson, 1984; Moe, 1984, 1990) who view the institutions of the state (Demsetz, 1968: 34; North, 1990b: 35) as a substantively important and theoretically useful unit of analysis in explanation and prediction of economic phenomena.

The shift toward an institutional approach is not peculiar to political scientists. The axial models of neo-classical economics, the assuming away of transaction costs, and the performance of the fundamental variables of this model have also come under

scrutiny. Noting this, and underscoring the expectation that developmental analysis ought not reside exclusively within the province of economists, Mancur Olson notes that most economic models of development are underspecified: Increased rates of human capital, forced saving, and investment in the developing world have failed to prevent economic failure. Additionally, there has also been no correlation between capital infusion and economic growth. (Olson, 1995; see also Greif, 1995) The lack of empirical and substantive significance for the staple variables and hypotheses of the neo-classical model has been attributed to the fact that the literature of economics "has focused mainly on the transforming [economic] growth and its attendant effects, sometimes forgetting that economic transactions take place only in politically bounded spaces." (Crone, 1996: 471) Echoing this observation, Olson summarizes that the "process of elimination suggests that the economically successful countries have...different institutions...than economies that have failed." (Olson, 1995) It appears that the theoretical importance of political and economic institutions in the study of economic development has made in-roads into the research agendas of economists as well. "Third World countries are poor because [their] institutional constraints define a set of payoffs to political/economic activity that do not encourage productive activity." (North, 1990b: 110)

A nascent paradigmatic shift (Kuhn, 1970) appears to be gaining momentum within both political science and economics. As a growing number of research strategies move away from a reliance upon assuming environments free of transaction costs or assuming away preference-forming institutions, those structures that condition

transaction costs, preferences, and shape economic decisions become increasingly important. In studying economic diversification and development our models need to consider that "[w]hen it is costly to transact, institutions matter." (Coase, quoted in North, 1990b: 12) Developmental analysts are beginning to re-specify that the behaviors of actors are, in large part, in direct response to the structure of the costs and constraints that they face. Since costs and constraints are structured by institutions, if we wish to explain and predict economic diversification we must understand the effects of the institutional environment upon economic behavior and consider that " the quality of a country's institutions is a principal determinant of its economic performance[.]" (Olson, 1995: 2) The focus of this dissertation is part and parcel of this concpetual shift. This dissertation heeds Olson's call to research and specifies a more formal modeling for the interaction between institutions, their impact upon economic diversification, and provides empirically testable hypotheses.

The Variables

Institutions: Institutional Formality

The general argument of the institutional approach has been that economic diversification in the Third World is dependent upon polities having "effective" institutions. "Effective" institutions, however, have been left undefined. The model presented here focuses this argument: It defines a specific qualitative type for those "effective" institutions. In order to test this model it is necessary to identify and define those institutions that have distinguished the economically developed from the

economically underdeveloped worlds. Such a definition permits me to transform the largely vague concept of an "effective" institution into an operational measure amenable to quantitative analysis. This operational measure is the "formal" institution. An institution is more formal to the extent that it obliges political elites to symmetrically and credibly protect private property rights and to enforce contract rights over extended periods of time. This disabling of elite discretion regarding the dispensation of property and contract rights is a crucial institutional element because "the self-interest of those with political power...[is]...a persistent obstacle to the emergence of efficient institutions." (Miller, 1989: 68) Thus, when elites choose to create and implement those authoritative structures that disable their own discretion regarding the dispensation of private property and contracts, institutions become more formal. When this phenomenon is generally manifest, it connotes an increase in "institutional formality." Conversely, those institutions that do not disable elite discretion to capriciously protect private property rights and contract rights are "informal." The disabling of elite discretion over the protection of private property rights and the enforcement of contract rights is the *sine qua non* of institutional formality.

Economic Confidence

In addition to providing an operational measure for institutions, the model presented in this dissertation specifies that institutions do not directly impact economic diversification. Rather, institutions are the structural constraints that shape the

perception of economic confidence, or how sanguine economic actors are about the protection of economic rights, and thus how risky will be complex economic activity. Influenced by the literature on transaction costs, (Coase, 1960; Demsetz, 1968) this model specifies that it is this perception of economic confidence that structures preferences and determines the choices of economic actors. (Denzau and North, 1994) Economic confidence is a cognitive variable that reflects whether economic actors perceive that the costs associated with an economic activity are a function of market forces or of institutional debility. Variations in economic confidence measure perceptions regarding the expected security of and return on long-term, irrevocable investment and extended entrepreneurial activity. Enhancing economic confidence is crucial if the state is to mobilize the needed investment capital for industrialization. Without sufficient institutional formality in the political sphere, there is low confidence in the economic sphere. This is because entrepreneurs who sink their resources into physical capital that promises high yields expose themselves to the very real risk of expropriation or reneging by the state, since at least part of their investment is irreversible.

Economic Diversification

The explained variable of this model is economic diversification. Economic diversification is perhaps the most substantively relevant distinction, in economic terms, between the First World and the Third World. Contrasted with rival measures, this conceptualization and measure of economic development is indicative of those

economic outcomes that delineate economic development from underdevelopment. The crucial elements of "economic development" that are best captured by economic diversification include the productivity of labor and capital, trade competitiveness, wealth creation and purchasing power, and (perhaps most importantly) the economy's capacity to absorb, utilize, or even propel technological development.

In such diversified and developed economies, the complex "transaction sector accounts for a large percentage of gross national product." (North, 1990b: 121) Developed economies have diversified production and industrialization and thus have a high ratio of manufactures as exports. Consequently, in contrast to the more lenient measure of growth in GDP as the operationalization for economic diversification, this analysis uses a more restrictive operational measure for economic diversification: The diversification of an economy into production of manufactures and manufactures as a percentage of exports. This operational measure is a substantively and theoretically robust indicator for economic diversification. At times in this dissertation economic development and economic diversification are used interchangeably, especially when I synthesize the literature with this dissertation's modeling.

The Model

In order to model institutional formality, economic confidence, and economic diversification, I have used North (1990b) as a theoretical blueprint. North notes that after an initial stage, where there is a movement from kinship ties and traditional organization as enforcement mechanisms, comes a stage of "coercive political order"

where there is the stimulation of physical and irreversible investment with large amounts of fixed capital. In this stage "personal ties...are no longer effective" when the "gains from defection are great enough" to stifle complex economic activities. (North, 1990b: 121; See also Greif, 1995) Therefore, institutions must first protect private property rights. The next stage is where complex "trade, finance, banking, and insurance" (North, 199b: 121) activities are facilitated through the enforcement of contract rights. Thus, the institutions that protect private property rights predate those that enforce contract rights. Next, it requires time for institutional formality (the disabling of elite discretion regarding the enforcement of property rights and contract rights) to disseminate into the perceptions of economic actors: Both property rights and contract rights predate economic confidence. Therefore, the data values for property rights are lagged behind the data values for contract rights; the data values for contract rights are lagged behind those for economic confidence. Economic confidence and economic diversification are contemporaneous in this model. This is a two-stage model specification. First it shows the impact of lagged institutional formality upon economic confidence. Then, it shows the coeval impact of economic confidence upon economic diversification. Similar to second model of Alesina, et. al., (1992) this model proceeds from the premise that single equation modelings for institutions and economic diversification are underspecified. This re-specification of the institutional approach makes it theoretically imperative for us to revise our understanding of how institutions impact economic diversification: We must incorporate the intervening activation variable of economic confidence in order to

theoretically link institutions to economic diversification. Where the activation and linking variable of economic confidence is absent, empirical analyses are at best measuring an indirect relationship. Such results are potentially spurious.

The model specifying the interrelationships among these variables is as follows.[3]

⇑ Institutional Formality → ⇑ Economic Confidence → ⇑ Economic Diversification

where,
Institutional Formality = Property Rights$_{(t-2)}$ and Contract Rights$_{(t-1)}$
Economic Confidence$_{(t0)}$
Economic Diversification$_{(t0)}$

This two stage, two equation model specifying the relationship between institutions, economic confidence, and economic diversification generates two principal hypotheses. The hypothesis later specified by Equation 1 is:

H_1: The greater the institutional formality,

the greater is the perceived economic confidence.

The hypothesis later specified by Equation 2 is:

H_2: The greater the perceived economic confidence,

the greater will be economic diversification.

By empirically testing these hypotheses, it is possible for us to either confirm or reject them within a set degree of statistical confidence - not to simply verify them

[3] See Chapter Three for the theoretical and econometric logic underlying this lagging schema.

through argumentation, description, or postdiction. The operationalization and empirical testing of these hypotheses accomplishes three main epistemological objectives. First, the methodological controls used in this dissertation establish that the variables of the model are valid measures of the concepts they represent. Second, the empirical confirmation of the hypotheses derived from this model offer empirical confidence that this model is accurately specified. This is to say that the theorized relationships specified by this model are substantively accurate representations of that slice of reality wherein formal institutions, economic confidence, and economic diversification interact. Third, the design of this research renders it replicable. Other students of the institutional approach to economic diversification can either replicate this research or improve upon it. To the extent that this and future empirical evidence consistently fails to reject the hypotheses generated by this model (or the hypotheses generated by similar models) we are lead to conclude that the general theory underlying this model is evidential. As a result, we are able to make empirically substantiated generalizations regarding the indirect effects of institutional type on economic diversification.

Outline of the Dissertation

Chapter One of this dissertation is a review of the literature dealing with the institutional approach to economic diversification. This review covers the major scholarship and research within the institutional approach upon which this analysis is founded. The literature survey enumerates how previous investigations of the impact

of institutions on economic diversification are extended by the research reported in this dissertation. This chapter also synthesizes and extends the literature on the institutional approach. A more detailed exploration of the theory and modeled interrelationships between the institutional formality, economic confidence, and economic diversification is presented. Chapter One rests upon the a contractual perspective of state-society interaction and how the capacities and structures of government are used to actualize both privately and publicly desirable outcomes. State-society interaction need not be competitive and states need not be predatory. There are socially optimal outcomes toward which state elites can and do choose to apply the resources of government: The state can behave as a neutral arbiter that acts toward the attainment of other than its own immediate goals. (North, 1990a, 1990b; Nordlinger, 1987)

In Chapter Two, the concepts presented in Chapter One are operationalized into variables with empirical referents in order to make the hypotheses amenable to empirical testing. The data sources used to operationalize these concepts are provided. Chapter Two also contains the methodology and research design used for the quantitative analysis, a specification of the regression equations and simultaneous equation system, data corrections, and quantitative techniques. Finally in Chapter Two is empirical support for a two stage modeling of the impact of institutions upon economic diversification. These results are presented in Table 2-1 and Table 2-2. In Chapter Three, the results from the quantitative tests of H_1 and H_2 are presented in Tables 3-1 and 3-2, respectively, and interpreted.

Chapter Four summarizes and integrates the theoretical objectives, principal hypotheses, and quantitative results of this dissertation. In this chapter I enumerate how a more methodologically rigorous analysis permits us to formulate empirically significant and generalizable statements about the impact of institutional formality on economic diversification. Chapter Four addresses the question: Given the results of this research, how has our understanding of the impact of politics on economic outcomes changed?

Perhaps the most prescient results of this study are those that support the contentions that the neo-classical model of economic development is underspecified and has not performed well. (North, 1990a, 199b; Olson, 1995) In order to understand economic diversification, we must incorporate political variables into our models. The model presented in this dissertation performs quite well, empirically speaking. First, the findings of this research substantiate the argument (North, 1990b) that political change - the formalization of institutions - precedes and strongly affects economic change. Socially optimal economic outcomes and operative markets do not generate spontaneously, but rather are dependent on and sensitive to changes in politics and political institutions. Second, political variables account for a large percentage of the variance in economic outcomes, like economic diversification. Formal institutions appear to be a needed pre-condition for economic diversification. Furthermore, the data results show that formal institutions are not political factor endowments, but rather political variables. As variables that can and do change over both time and section, these results evidence that political technology (in the form of institutional

formality) can be successfully imported by Third World political leaders to produce economic confidence and facilitate economic diversification. Let us turn now to a review of the major literature and research within the institutional approach to economic diversification.

Chapter One: An Institutional Model of Economic Diversification

Traditional Perspectives of Development

Traditional Perspectives in Political Science

There has been no dearth of scholarship with regard to development. Beginning in the 1920s, a number of scholars have echoed Max Weber's taxonomizing of "successful" polities with development. In general, these political culturalists argue that particular, or "within-system," factors such as inherited political culture, cultural attitudes, (Almond & Verba, 1965) or historical inertia, (Wiarda, 1985) are the deterministic variables of economic development. Somewhat similarly, Modernization-oriented theorists (Lerner, 1958; Organski, 1965; Huntington, 1968; Rostow, 1971; Fukuyama, 1992) have offered a decidedly historicist approach. They contend that there is a deterministic and unilinear path of changing socio-political values that separates modernity from tradition. These Modernization theorists argue that those polities that failed to develop economically were simply unable to overcome the societal and cognitive obstacles of tradition that act to impede the process of modernization. Scholars within the Dependency school of development (Baran, 1957; Prebisch, 1963; Gunder Frank, 1969; O'Donnell, 1973; Wallerstein, 1974) have argued that economic development, usually the lack thereof, is best understood through the dynamics of the "metropolis" effect and the examination of an exploitative international political economy. Dependency theorists argue that the global economic system is constructed and collusively administered to safeguard the dominance of Developed economies at the expense of industrial latecomers. In explaining economic underdevelopment, Dependency theorists assert that economic variables (e.g., trade,

foreign investment, etc.) must behave inversely in the Third World. Instead of being agents of growth and development as they are in the First World, in the Third World these variables actually cause a cascade of socio-political distortions.

By and large, these traditional perspectives have neither accurately described nor accurately explained economic development. The mixed economic development within the Third World (Argentina, Chile, and the Asian Tigers for example) over the last fifty years attests to this. Either these perspectives have been so general and vague as to not be testable or, where they have been tested, their logical hypotheses have not proven themselves evidential. Be they overly optimistic or overly pessimistic, if we look at the performance of these theories we see that the predicted outcomes for development in the Third World, with rare exception, simply did not happen. (Gusfield, 1971; Jackman, 1982)

Traditional Perspectives in Economics

Until recently, the theoretical and operational staples of the neoclassical economic model, usually savings and investment, have enjoyed a "virtual hegemony" (Jones, 1983: 169) in the research agendas and modelings of economic development within economics. The epicentral perspective of neoclassical economics essentially argues two points. First, all countries are better off when they export those products in which they have a comparative advantage and import those products in which they do not have a comparative advantage. (Stolper and Samuelson, 1941: 334) Second, if developing nations can only stimulate sufficiently high savings levels and induce high

levels of both domestic and foreign capital investment, these Third World nations would develop economically. This specification for the causal relationship of economic development has also been associated with the political science literature. (Rostow, 1971) Olson (1995) notes that the modeling of savings and investment rates as the singular causal variables of economic development has not established its evidentiality. Olson's criticism of the neo-classical model is that it is underspecified. "[H]igh rates of forced saving and investment have in fact failed to prevent economic failure...[and there] has also been no correlation between the amounts of capital provided to countries through foreign aid and their rates of economic growth." (Olson, 1995: 1)

The explanation for this poor performance has been attributed to the theoretical and substantive paucity of key assumptions within economics. The first substantively and conceptually implausible assumption at the core of liberal economics is perfect information. (Jones, 1983: 176) A second problematic assumption of neo-classical economics, and a key component of this dissertation's model, is the substantively unreasonable assumption of zero-transaction costs in economic exchange. (Coase, 1960) This is because "[o]pportunism [and] reneging...are often serious obstacles to the success of...agreements...Theories [presuming that] cooperation takes place...beg these serious issues. (Shepsle and Weingast, 1984: 219) Coase notes that where transaction costs approach zero the neo-classical model works; it is where transaction costs are significantly greater than zero that the model fails. The explanatory variables in this dissertation's model speak directly to Coase's formal deduction: Formal institutions create an artificial pocket of lower transaction

costs, although transaction costs are never zero. On the other hand, where formal institutions are absent, transaction costs are always higher. By identifying and operationalizing those transaction cost reducing institutions we are moving toward positive theories of political economy. These theories, based on a rationality hypothesis, have been suspicious of approaches that wish the credibility problem away: These approaches either assume an exogenous source of enforcement or the existence of "natural" incentives that exercise discretion in a prudent fashion. (Shepsle, 1989: 22) The analytic focus of this dissertation is how variations in institutional formality affect economic confidence (transaction costs) and how variations in economic confidence affect economic diversification. As institutions become formal they provide consistent information about the credible protection of property rights and the enforcement of contract rights. When this occurs perceived economic confidence increases, which is to say that transaction costs decrease. Complex contracting and economic diversification are, in part, determined by increases in economic confidence.

Defenses of neo-classical economics have asserted that criticisms "are based upon misunderstandings about the...content of modern [neo-classical economics] and on a failure to appreciate its richness." (Odell and Willett, 1990: 21) However, ranging from the criticisms noted above to the Schumpeterian-influenced economists who have made highly visible in-roads in recent years, the trend in the economics literature appears to suggest that a more comprehensive approach to the study of economic diversification is warranted. This is not state that the neo-classical model does not capture a portion of the variance of economic diversification. It is to state that in order

to explain and predict economic diversification we must decipher the institutional environment (North, 1990: 20) in which transaction costs are set up and human economic motivations interact. Specifically, what is needed is a positive approach that integrates both political and economic modelings. "Put simply, successful long-run economic performance requires appropriate incentives not only for economic actors but for political actors as well." (North and Weingast, 1989: 806)

An institutional approach, one that examines the interaction of political constraints and economic behavior, is likely to be a more successful line of research. In this dissertation I seek to focus in on the broader developmental picture: I seek to explain the variance not explained by traditional models in political science or economics. I will argue that the LDCs are not trapped in a perpetual cycle of economic underdevelopment: This model offers an aperture of political technology by which the Third World political elites can "leap-frog" toward economic diversification. This has been the case for those NICs of East Asia that have "caught up" (Keefer and Knack, 1993) to the First World in terms of economic diversification. This aperture is theoretically and empirically feasible because formal institutions are not factor endowments that are unique to the First World. To the contrary, politically powerful elites in First World polities identified those economic and contractual enforcement mechanisms within society that enhanced the realization of social goals and gave them the force of law. (North and Thomas, 1973) This argument suggests that economic diversification is attainable via institutional formality and demonstrates the logic by which Third World countries might target their limited resources toward this goal.

Now let us press on with the logic of this institutional model of economic diversification.

An Institutional Approach to Economic Diversification

An institutional approach appears to capture the variance of economic diversification that has been missed by traditional perspectives. Beyond the "tautology" of comparative advantage, "the greatest difficulty facing [neo-classical economics] is the fact that most of the more salient factors of production are created by man rather than given by nature." (Jones, 1983: 177-178) It must not be disregarded that

> political and economic processes cannot be separated...Markets are regulated by the coercive institutions of the state...Thus the hard-learned lesson [of neo-classical economics]...is that the state establishes the context in which markets operate[.] (Ordeshook, 1990: 9)

Just the study of economics cannot take place in a social and political vacuum, the study of politics cannot take place in economic vacuum. (Odell and Willett, 1990: 32) How do the political and economic institutions of the state make economic rights credible, shape economic confidence, and impact economic diversification? What is needed is the explication of

> the political factors underpinning economic growth and the development of markets - not simply the rules governing economic exchange, but also the institutions governing how these rules are enforced and how they may be changed. (North and Weingast, 1989: 803)

In this dissertation is a model that specifies, operationalizes, and tests the "balance between state intervention and market forces that provides for the general welfare." (Odell and Willett, 1990: 29) This is because, "Third World countries are poor because the institutional constraints define a set of payoffs to political/economic activity that do not encourage productive activity." (North, 1990b: 110)

Institutions as the Unit of Analysis

In recent years, a number of analyses of have utilized institutions and an institutional approach. In political science this literature is represented by the New Institutionalism which shows how differences in the structure and design of institutions impact individual behaviors. Analytic models within the New Institutionalism school include the Principal-Agent model and the impact of a contractual perspective on organizational relationships. (Moe, 1984: 739) March and Olson argue that "organization of political life makes a difference[,]" and that "political institutions are more than simple mirrors of social forces...[and that they] affect the flow of history." (March and Olson, J., 1984: 747, 739)

The principal influence on this dissertation and its focus on the institutions and economic diversification is the scholarship of the economist Douglas North (1973, 1981, 1989, 1990a, 1990b, 1993). Professor North's work on institutions has sparked great interest for "bringing the state back in." (Evans, 1985) North's research explores the relationship between humanly devised political structures, economic behavior, and economic outcomes. North's general argument is that economic growth and

development are path-dependent upon elites identifying and implementing the proper institutions; namely, those institutions that facilitated the kinds of economic behavior that were the foundation of the economic development experienced by the First World beginning in the late 18th century. For a growing number of scholars political and economic institutions are a key unit of analysis in the investigation of economic phenomena because, the "performance of economies is a consequence of the incentive structures put into place; that is, the institutional framework of the polity and economy." (Denzau and North, 1994: 12, 27)

Institutions and Economic Diversification

The institutions of the contractual state can serve to reorganize economic behavior toward socially optimal ends, such as economic diversification. North and Thomas (1973) argued that economic development and diversification in Western Europe was the result of the discovery and implementation of key political and economic institutions. To paraphrase their argument, those institutions that constrained counter-productive behaviors, beginning with political elites, and encouraged complex contracting was the engine of economic diversification and development in the First World. (North and Thomas, 1973) These same institutions continue to drive economic diversification.

This institutional path of economic diversification, however, is neither deterministic nor irresistible. Indeed, this causal relationship was not omnipresent even within Europe itself: Economic development in Europe and the First World was the

consequence of divergent institutional choices of elite decision makers. Looking at the pre-World War I developmental experiences of Germany, Italy, and Japan, for example, we see that these experiences contrast starkly to that of Britain, the United States, and North-Western Europe. Only an Allied victory in World War II succeeded in introducing those political and economic institutions underlying entrepreneurial capitalism to the Continent and Japan. Even within the context of Western economic development it is evident that *variations in institutional type* lead to *variations in economic diversification.*[1] "Economic growth in Western Europe...was uneven, principally because some polities got things right regarding the [institutional] protection of property rights while others did not." (Shepsle, 1989: 2) The goal is to identify those institutions chosen by elites that are associated with economic diversification.

Within the Less Developed Countries (LDCs) the process of elimination leads to comparable conclusions about the impact of institutional variations on economic diversification. How is it that fully socialized adults, who are impoverished in their country of origin, when transplanted into a First World economy achieve economic success at a rate above the norm for *both* countries? "[T]he differences in per capita income across countries cannot be accounted through differences in education or in the willingness to work or save." (Olson, 1995: 2) And, with the globalization of technology and intellectual capital, why does the First World enjoy a virtual monopoly

[1] "In fact most societies throughout history got 'stuck' in an institutional matrix that did not evolve into the impersonal exchange essential to capturing the productivity gains that came from the specialization and division of labor that have produced the Wealth of Nations." (North, 1993, 14)

on wealth creation and scientific and productive innovation?[2] The delineating factor in whether or not economic actors engage in the complex contracting that drives economic diversification is the type of institutions that distinguish the First World from the Third World. The analysis of the variations in institutional type within and across polities allows us to better explain and predict economic diversification, because its study compels us to examine "the underlying determinants of human behavior, the costs of transacting, and the makeup of institutions." (North, 1990: 16)

Institutions, Transaction Costs, and Economic Confidence

In polities with informal institutions the transaction costs surrounding economic exchange are higher. The often cited pioneer of the transaction cost approach is Coase (1960). Transaction costs are the costs of information about the value of what is being exchanged, the cost of protecting property rights, and the cost of monitoring and enforcing the compliance with contracts. (North, 1990: 27) Formal institutions reduce those costs of transacting that inhibit complex contracting and economic diversification. "[C]apitalist economic institutions are organized so as to minimize...the costs of managing the necessary transactions." (Milgrom and Roberts, 1990: 88) The higher the transaction costs, the lower is the economic confidence.

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[2] "[T]hose individuals from poor countries who happen to be able to enter the economically successful countries usually produce several times as much in the new institutional environment as they did in the one they left, even before they have been in the new environment long enough to have acquired a different culture or education. There are immigrants to the United States from both poor and rich countries, but the differences in the average earnings in the U.S. across these groups of immigrants is very small in comparison to the differences in per-capita incomes in the countries of origin." (Olson, 1995: 1)

When formal state institutions increase economic confidence, complex contracting, and economic diversification are facilitated. "The most important effects of alterations in institutional arrangements may well be the impact of such reorganizations on the cost of transacting." (Alchian and Demsetz, 1973: 22) In his analysis of the on the New York Stock Exchange, Demsetz (1968) stresses the crucial role, in terms of costs-effectiveness and having the resources and capacity to reach and affect large populations, of the institutions of a contractual state. Though institutions arise in all polities (beginning with familial situations) in his empirical work on the economics of transacting Demsetz notes that there "are cases in which the cost of government action is less than the cost of transacting in markets." (Demsetz, 1968: 34) Where complex contracting occurs there is a "government action that realigns resources more completely than can be achieved economically in the market place." (Demsetz, 1968: 34) This finding is consistent with de Soto's (1989) argument. It also supports North's premise that it is state institutions that have "been the critical underpinning of successful modern economies involved in the complex contracting necessary for modern economic growth." (North, 1990: 35)

In order to facilitate economic diversification, political elites must select and implement those institutions that increase economic confidence. "Procedures evolve and structural arrangements are *devised* to economize on transaction costs." (Shepsle and Weingast, 1984: 219, italics mine) "[T]here is the comparative advantage of an institutionalized way of dealing with credibility" (Shepsle, 1989: 30) and transaction costs. In contrast to self-enforcing or informal institutions, it is the impact of the

formal institutions of the contractual *state* that impact economic confidence and socially optimal outcomes like economic diversification.[3] With respect to the general, systemic reduction of transaction costs and the facilitation of wide-spread complex contracting, it is the state that has the capacity and resources to effect such an environment. Private and individual mechanisms do not effect general changes as individual actors tend to react to the constraints and opportunities facing them in the maximization of their own, personal expected utility. Individual actors rarely create transaction cost reducing structures outside of personally consequential exchanges. (See also, de Soto, 1989) In the absence of formal state institutions that stand "behind explicit contractual terms designed to constrain opportunism" (Grandy, 1989: 249) high transaction costs force actors to revert back to a reliance upon self-enforcing mechanisms that lead to socially suboptimal forms of economic exchange.

Institutional Formality

Formal Institutions: Private Property Rights and Contracts Rights

Is it simply the general growth of government or bureaucratic expansion that increases economic confidence, or must developing economies take a more targeted structural approach? When applying the limited resources of the LDC state in order to effect socially optimal outcomes, how should the state focus these scarce resources?

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[3] See North (1990) for an in-depth overview of the evolution from unofficial to official institutions and the efficiency gains to be had from such and evolution. He asserts that the state can use its coercive capacities to either increase or decrease economic confidence (i.e., transaction costs). When the state commits itself to the reduction of transaction costs, it facilitates complex contracting such as the "evolution of financial institutions and the creation of more efficient capital markets." (North, 1990: 129)

With positive transaction costs, resource allocations are altered by the structure of property rights. (Coase, 1960) The most effective method for reducing transaction costs is to guarantee two fundamental factors: Private property rights and contract rights. North notes that economic development is path-dependent upon the "development of the state...[being]...able to monitor property rights and enforce contracts effectively[.]" (North, 1990: 59) Clague, et. al., (1995) concur when they concluded that, "to obtain a wide array of gains from trade and specialization.[sic] a populous society needs a government that impartially protects and precisely defines the rights...of the participants in the economy." (Clague, et. al., 1995: 36)

By protecting private property rights[4] formal institutions allow economic exchanges to take place over long distances. By enforcing contract rights, formal institutions allow economic exchanges to take place over long time periods of time. These institutional functions are important as exchanges over large distances and long periods of time (i.e., complex contracting) are where greater "opportunities for opportunistic breach present themselves[.]" (Grandy, 1989: 249)[5] With formal institutions, "individuals may own or possess not only things, but also contracts." (de Soto, 1989: 159) The enforcement of these basic "private [economic] rights...can be

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[4] Using a theoretical definition, Alchian and Demsetz state that private property and private resources are not "owned" outright. "What is owned are *rights* to *use* resources, including one's body and mind, and these rights are always circumscribed, often by the prohibition of certain actions...It is not *the* resource itself which is owned; it is a bundle, or a portion, of rights to *use* a resource that is owned." (Alchian and Demsetz, 1974: 17, italics theirs) The origin and provision of these property rights is addressed by the institutional approach. North notes that "[p]roperty rights are the rights individuals appropriate over their own labor and the goods and services they possess. Appropriation is a function of legal rules, organizational forms, enforcement, and norms of behavior - that is, the *institutional framework.*" (North, 1990: 33, italics mine)

[5] See also Snider (1996: 104) regarding the irreversibility of investment and the sinking of financial and productive resources over time and space as being the essence of complex contracting.

socially useful precisely because they encourage persons to take account of *social* costs." (Alchian and Demsetz, 1973: 24, italics theirs) The complex contracting that distinguishes the First World from the Third World shows that,

> the true purpose of [private] property rights is...to give [entities] the incentive to increase the value of their assets by investing, innovating, or combining them advantageously with other resources, something which would have beneficial results for society...Another advantage of legally enforceable contracts is that they enable parties to enter into beneficial long-term commitments. (de Soto, 1989: 159-160, 164)

Thus, creating "effective" institutions does not mean the general expansion of the state, its bureaucracies, or the large scale intervention by the state into the free market. Rather, creating "effective" institutions refers to creating "formal" institutions by the contractual state that target the credible and long term protection of property rights and the enforcement of contracts.[6] "What established the government's commitment to honoring its agreements [was] notably the promise not to appropriate wealth or repudiate debt[.]" (North and Weingast, 1989: 829)

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[6] In the case of command economies (e.g., the USSR) state institutions were ubiquitous, though not *formal* since they did not secure private property and contracts rights. The resulting economic catastrophes were due to the fact that these state institutions quite effectively offered incentives that lead economic actors to consistently engage in unproductive behaviors. This is essentially the case in market economies in the Third World. In the Third World political and economic institutions are highly effective at leading actors to decisions and behaviors that are socially suboptimal and inefficient. In game theoretic terms, we see that in both the Second and the Third World the institutions are effective at achieving a Nash equilibrium at the expense of a Pareto optimality. This is why it is theoretically, conceptually, and operationally important that "effective" be replaced with "formal" in the discussion of institutions and economic diversification. The term "effective" has no direct empirical or conceptual connection to socially optimal outcomes and economic diversification: It is a *non sequitir*. This in contrast to the term "formal." A formal institution is one that is structured and operates toward the socially optimal goal of economic diversification by securing property and contract rights. The results in Chapter Three show that a formal institution is both theoretically and empirically effective. An effective institution is not necessarily formal, however.

Formal Institutions: Disabling Elite Discretion

Formal institutions must protect private property rights and enforce contracts. This is *what* formal institutions must do. But the question that presents itself is, *how* do formal institutions protect private property rights and enforce contracts? All polities have official state institutions and all polities at all development levels have at least some recognition and enforcement of private property and contract rights, (Brunetti and Weder, 1994) yet not all polities have formal institutions.[7] The second part of the definition, and the *sine qua non* of institutional formality, lies in the disabling of elite discretion. If formal institutions do not disable elite discretion, they will not increase economic confidence. This is because when elite discretion to arbitrarily or unilaterally change economic rights exists, there are in effect no economic rights. Where elite discretion is not disabled, we would not expect property rights and contract rights to have explanatory value over economic confidence.[8] An economy will be able to reap all the potential gains from investment and from long-term transactions only if it has a government that is expected to be both strong enough to last and restrained from violating individual rights to property and reliable contract enforcement.(Olson, 1993: 572).

Formal institutions create an economic environment that is patterned on an easy in/tough out format for the state because the "critical factor is the degree to

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[7] For additional examples of the informal and/or pseudo-formal institutional mechanisms that have preceded the formal institutions that dominate today in the First World, see Greif (1989; 1995).

[8] "We post-behavioralists, like [our] pre-behavioralist brethren, maintain that institutional arrangements and practices condition, channel, and constrain individual behavior and rational action; this is, institutions affect individual behavior, collective action, and social consequences...institutional structure [also has] the effect of disabling some forms of collective discretion, therefore making public commitments more credible." (Shepsle, 1989: 30-31)

which the regime or sovereign is committed to or bound by these rules...For economic growth to occur the sovereign must not merely establish the relevant set of rights, but must make a credible commitment to them." (North and Weingast, 1989: 803)

Those institutions that disable elite discretion to change the rules of the game regarding the protection of private property rights and contract enforcement are formal. "Ambiguity and uncertainty surrounding [the commitment of governmental authority], the product of discretion, may diminish the benefits of an appropriate property rights regime." (Shepsle, 1989: 39) The long term commitment of politically powerful elites within a polity to a concrete set of institutions is essential if economic confidence is to be increased. This is why formal institutions almost always occur in non-transitional polities where such institutions are relatively permanent features. Polities with formal institutions have bureaucracies that are relatively autonomous from pressure by individuals or small groups, and there are no drastic lurches in policy implementation. Formal institutions serve to sink "a vast range of behaviors in formal concrete and [shield] them from political influence." (Moe, 1989: 228) The long-term disabling of political elites to change institutional rules and procedures is critical to increased economic confidence and diversification because

> [d]iscretion is the enemy of optimality, commitment its ally...the ability to commit...expands one's opportunity set, whereas the capacity to exercise discretion, which includes the latitude to renege or behave opportunistically, reduces it. (Shepsle, 1989: 3)

The disabling of elite discretion vis a vis property and contract rights is an essential feature of the institutions that distinguish the First World and the Third World. When the short-term and personal objectives of a few in power are structurally and credibly

subordinated to long-term and socially optimal ends, economic confidence increases. The increase in economic confidence makes economic actors much more sanguine about investing in private property and utilizing contracts. In the Third World it is precisely the inability to develop and implement those institutions that disable elite discretion that is "the most important source of...underdevelopment[.]" (North, 1990: 54) The economic diversification that defines the First World is extremely sensitive to those "dependable long-term economic relationships" (Keefer and Knack, 1993)

Formal institutions offset socially suboptimal behaviors by political *elites*. According to Shepsle, the ability to disable elite discretion is a function of the institutional arrangement. Should commitments not be intrinsically self-enforcing, an institutional mechanism is needed to disable discretion and to make commitments credible. (Shepsle, 1989: 4-5) A key component for the definition and operationalization of institutional formality is that elites be credibly committed over time to a set of rules and their application, and be constrained from reneging or expropriating contrary to those rules. "The shackling of arbitrary behavior of rulers and the development of impersonal rules that successfully bound...the state...[was] a key part of this institutional transformation." (North, 1990: 129) Also confirming this, Shepsle notes that, "[his] ultimate concern is with the matter of whether and how governments can credibly commit themselves to an intertemporal plan or policy, which, if implemented, would enhance social welfare[.]" (Shepsle, 1989: 4)

By disabling elite discretion regarding the protection of economic rights, formal institutions alter payoff matrices so that individually rational behavior is offset

toward a larger social benefit. Formal institutions force elite actors to behave in contradiction to nature. In a constraint-free environment elite actors renege on commitments to economic rights because they perceive such behavior as possible. (de Soto, 1989) Formal institutions must be constructed and enforced that lead elites to perceive that, one, reneging on economic rights is not possible; and, two, that providing credible enforcement of economic rights is in their and society's long run interest. Institutions must convince participants that the individual's and the collective's optimal outcome are identical. This perceptive recalibration of elites is needed to shield economic rights from drastic changes. A polity of formal institutions mitigates "collective-action problems, particularly the commitment and enforcement problems...and thus allow the various actors to cooperate in the realization of gains from trade." (Moe, 1990: 213) When elites are not disabled in their discretionary authority we expect there to be high occurrences of expropriation private property on the part of the state, and that the state will not impartially enforce contracts, up to the point where the state reneges upon its own contracts.

Measuring Institutional Formality

This section begins with North's methodological appraisal that we social scientists "cannot see, feel, touch, or even measure institutions; they are constructs of the human mind." (North, 1990: 107) Although it is apparent that political and economic institutions are not visible or tangible in a physical sense, they are most definitely felt in almost every economic and political transaction that occurs.

Institutions are felt every time an economic actor appraises his or her economic and exchange environment and alters his or her behavior to fit that environment. Security in one's continued ownership of private property and its free use are critical components for the decision of economic actors to sink resources into irreversible tangible assets. It is the protection of private property rights and contract rights (North, 1990; de Soto, 1989; Clague, 1994, 1995; Grandy, 1989; Alchian and Demsetz, 1973) that are theoretically and substantively associated with increased economic confidence.

Private property rights protected when they are insulated from arbitrary confiscation and expropriation by the government. The protection of private property must not be a function of personal access but of generally known and symmetrically applied criteria. The protection of private property rights is operationalized by the *International Country Risk Guide* data on the "expropriation of private property by the government" that measure risk of foreign-held private property being expropriated by the government, including outright confiscation and forced nationalization. It is important to note that this operationalization measures the formality of institutions securing private property rights, not behavioral responses to such institutions.

Contract Rights are secure when they are insulated from arbitrary changes or outright repudiation by the government. The enforcement of contract rights must not be a function of personal access but of generally known and objectively applied criteria. Contract rights is operationalized by the *International Country Risk Guide* data on the "repudiation of contracts by the government" that measure the risk facing

foreign businesses of arbitrary changes or repudiations of binding agreements on the part of the state. Arbitrary contractual changes can take the form of an un-agreed upon modifications, postponements or scaling down, or the outright repudiation of contracts by the government. It is important to note that this operationalization measures the formality of institutions regarding the enforcement of private economic contracts, not the behavioral responses to such institutions.

Institutional Formality, Economic Confidence, and Economic Diversification

Successful economic diversification is contingent upon political elites and state actors being constrained to "obey a set of rules that do not permit leeway for violating commitments...[the] critical role of the constitution and other political institutions is to place restrictions on the state or sovereign." (North and Weingast, 1989: 804-6) These institutions determine whether or not the state produces rules and regulations that serve to benefit a small elite. If they so, they provide little prospect for complex contracting and long-term growth. The compliance of the state with its own agreements measures the extent to which political and economic institutions constrain elites. By increasing economic confidence, economic exchange migrates past the village. The productive state creates a preponderant preference for those long-term transactions that take place over extended distances with actors not in one's immediate physical environment. The efficiency gains, in terms of wealth creation and economic growth, from such state guarantees of private property is enormous. "But the informational and institutional requirements necessary to achieve such efficient

markets are stringent." (North, 1993: 5) Since the state is the only economic actor which has the resources or capacity to be involved in all economic transactions, it is the only truly omnipresent actor that can impact transactions toward socially optimal goals. Such institutional penetration into economic transactions greatly expands the set of economic opportunities and thus increases the evidence of complex contracting.

Elites must be prevented from picking and choosing economic winners and losers based on political versus economic criteria. (Keefer and Knack, 1993) Elites "must not merely establish the relevant set of rights, but must make a credible commitment to them." (North and Weingast, 1989: 803) Enforcement of political and economic institutions cannot be applied only to the masses: There will remain a vast expanse of elite economic activity in which opportunistic behavior will manifest itself. A casual trip through the rent-seeking literature (Krueger, 1974; Olson, 1982) shows how an opportunity to manipulate elite discretion for economic gain is identified. A stone throw away is the "equilibrium" point where rent-seeking is more cost effective than the productive activities associated with economic development. (Olson, 1982) The state must consistently over time reinforce the perception that it is credibly constrained from reneging on contracts for political or opportunistic reasons. Formal institutions are a necessary precursor to increase economic confidence and thus expand the spatial and temporal opportunity sets available to economic actors. In the First World "an institutional framework has evolved that permits the complex impersonal exchange necessary to...capture the potential economic gains of modern

technology. In the latter, personalistic relationships are still the key to much of the political and economic exchange." (North, 1990: 117)

Specifying a Simultaneous Two Equation System

Finally, the model presented in this dissertation establishes that a two equation specification is needed in order to directly measure the relationship between the formalization of institutions and economic diversification by incorporating the activation variable of economic confidence. A two equation modeling is necessitated because the crux of my argument is that institutions do not directly impact economic diversification. A single equation specifies a direct relationship between institutions and economic diversification. I assert that such a modeling is underspecified and measures an indirect relationship. The results from the empirical analyses that measure such an indirect relationship, under the presumption that it is a direct relationship, are questionable and likely spurious. This is because the quantitative methods used do not compensate for the contemporaneous feedback[9] between economic confidence and economic diversification. (See Alesina, et. al, 1992: 10. They use a similar methodological treatment for the simultaneity, albeit in examining the endogeneity effects between government change and economic performance.) While institutions are critical determinants of the economic confidence that impacts economic decision

[9] Contemporaneous feedback means that there exists an interrelationship between two variables that appear on both the right- and left-hand side of the specified regression equations. Neither variable is exogenous : Both variables affect each other. A common example of this simultaneity effect is the contemporaneous feedback between supply and demand in the Economics literature. (See Pindyck and Rubinfeld, 1991: 287-304) In the case of this dissertation's modeling, economic confidence impacts economic diversification *and* economic diversification affects economic confidence.

making, economic diversification "is a consequence of the incentive structures put into place." (Denzau and North, 1994: 27) Therefore, it is necessary to specify a two equation model.

Past empirical tests of this phenomenon have overwhelmingly positioned an operationalization for economic "development" on the left-hand side of the equation (the "dependent" variable) and an operationalization for institutions on the right-hand side of the equation (the "independent" variable). For example, Levine and Renelt (1992) look at the size of government and economic performance and note that the anticipated negative relationship is not always evidenced. Clague, et. al. (1995) find that their institutional proxy for contract and property rights is significantly related to an array of economic indicators of growth and development. Also synthesizing political with economic phenomena Keefer and Knack (1994) show that

> political dynamics...affect the security of property rights...inequality gives rise to a polarized political environment that undermines the security of property rights...[and that]...the effect of inequality on growth and investment is intimately linked to its relationship with property rights. (Keefer and Knack, 1994: 24)

These tests are important and have provided valuable knowledge regarding the empirical relationship between institutions and economic diversification. It is the contention of this dissertation, however, is that this empirical investigation and statistical confirmation can be improved. In keeping with the methodology presented in Alesina, et. al, (1992), such an improvement is constituted by the specification of a two equation, simultaneous model and the utilization of quantitative tools that take

into account and correct for the endogeneity between economic confidence and economic diversification.

Summary

The process of elimination suggested by Olson (1995) shows that there where there were significant transaction costs, formal institutions induced have been a delimiting factor of economic diversification between the First and Third World. Variations in institutional formality are associated with increased economic confidence and economic diversification. The credible, elite disabling protection of property and contract rights is the definition of the "effective" institutional type that has distinguished successful from unsuccessful economic diversification. Methodologically, the operationalization of institutional formality ushers the institutional approach into its next phase. The operationalization and measurement of these variables allows us to quantify variations between cases using a variable - and not a constant - and to test the model and its hypotheses, not simply rely upon description and historical verification. Let us now move on to the operationalization, data sources, methodology, and quantitative tools used in the testing of these this model's two principal hypotheses.

Chapter Two: Research Design, Variable Operationalization, Equation Specifications, and Estimation Technique

Research Design

The purposed research design controls for the factors that may potentially jeopardize internal or external validity.[1] The data used in this analysis are composed of a sufficiently random and large sample within the less developed countries. To control for country-varying factors, a highly representative cross-section of countries has been used. To control for time-variant factors, the data matrix covers a nine year period. The combining of cross-section and time-series data is called pooling.[2] In order to make possible inferences and generalizations across both countries and time, pooled cross section time-series data are used.[3] (For the data corrections, please see Appendix I)

This research design is a Most Different Systems Design (Lijphart, 1975) that provides methodological controls for the impact of idiosyncratic, or "within system" factors. The sample is comprised of less developed countries (LDCs) from East and Southeast Asia, Sub-Saharan and Northern Africa, the Middle East, Latin America, in addition to a G7 baseline case of Japan. Such a wide diversity includes cases from low levels of development to high levels of development. The spatial domain of this data matrix is observations from thirty-eight countries; the temporal domain for this data matrix is 1984-1992. (N = 342)

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[1] See Campbell and Stanley (1963) Chapter 1 for potential threats to internal and external validity and the appropriate controls to control for these factors.
[2] See Pindyck and Rubinfeld, 1991: 223.
[3] Leblang (1996: 14) makes use of a similar design in his analysis of property rights and economic growth.

Though the focus of this analysis is political economy,[4] its method is comparative. In this dissertation, the performance of identical indicators between countries and over time are compared in order to arrive at relationships that are statistically significant, substantively relevant, and generalizable. An important and recurrent caution for those engaging in comparative political analysis is, when specifying identical indicators for use in cross-national comparisons, that they have cross-nationally equivalent referents. (Przeworski, 1973) The only variants on behavior are assumed to be pursuant to structurally imposed constraints and their preferences. Rational choice theory argues that all actors are consistent in their decision making: Actors do not maximize the highest expected (or absolute) value, but rather the highest expected utility of a chosen action. Disparities in observed behavior are thus derivative of the states of nature or the structural constraints that alter the anticipated probability of success of a given action. An assumption of *homo economicus* allows for an identical indicator of economic behavior, the sole variant being how institutions change the probability of success for a given economic activity. This assumption rationality regarding decision-making controls for the caveat of equivalence posed by Przeworski (1973). The other explicit assumption is that political elites in the LDCs avail themselves of scarce resources (they will expropriate property or repudiate on contracts) in order to retain power. These resources are used to recompense coalition partners or new socio-political elements unless elites are

[4] Broadly, this analysis examines the interaction between collectively allocated and authoritatively imposed institutions (political decisions) and individual strategies for profit maximization (economic decisions).

constrained by formal institutions.

Variable Definitions and Operationalization

Endogenous ("Explained") Variables

Y_1: Economic Diversification. This variable measures the degree of economic diversification of an economy. In the diversified, or developed, economy the "transaction sector accounts for a large percentage of gross national product." (North, 1990b: 121) Juxtaposed to aggregate measures of national wealth, this more restrictive operationalization of economic diversification imposes that advanced economies are constituent of the predominance of complex contracting and sophisticated forms of economic exchange. Such economies are characterized by a diversification of production and industrialization. Diversified economies are, with rare exception, not dominated by mono-crop agricultural production whether for subsistence or for export. In the developed economy there is a high ratio of both manufactured goods production (i.e., high technology, high value-added, and high quality products) and price-making industries. There is also a circumscribed reliance upon factor endowments (e.g., agriculture, mining, mineral extraction) for wealth creation: Competitive and productive advantages eclipse naturally occurring comparative advantages. In order to build the solid manufacturing and technological bases that distinguish developed economies there must be a high degree of institutional formality

and economic confidence, as otherwise complex contracting is sporadic.[5] Economic diversification is operationalized using data for the value of the manufacturing sector a percentage of GDP multiplied by the value of the manufactures as a percentage of total exports of goods and services for 38 countries.[6] The data source is the International Monetary Fund, *International Financial Statistics.* (Snider, 1996) Higher values along this variable represent higher economic diversification.

Y_2: Economic Confidence. Economic confidence is a cognitive variable constructed to measure whether the information that actors receive from political and economic institutions leads them to *perceive* that protection of property rights and the enforcement of contracts by the state are credible, open, and symmetric - not a function of individual ties, personal influence, or personal access to information and authoritative guarantees. An increase in economic confidence indicates that subjective expectations about economic activity have been transformed into objective expectations, where the risk associated with an economic activity is a function of market forces, and not of institutional uncertainty. Economic confidence refers to the

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[5] Snider notes that '[m]anufacturing is the most dynamic sector of the economy, the one most dependent upon secure property rights and reliable third-party contract enforcement, and the one most dependent upon reliable information concerning prices and risk." (Snider, 1996: 147)

[6] This operationalization of economic diversification is biased against those countries pursuing Primary and Secondary Import Substitution industrialization. Nations whose exports are dominated by agricultural production often turn to ISI to bolster their manufacturing industries in order to capture the bonus of value-added production. Countries turning to ISI usually do so because they cannot compete with high quality foreign goods: Domestically produced goods are often low in quality and high in price. In order to make domestic industries competitive, policy instruments are needed to make these products artificially attractive to domestic consumers. And, ISI is usually not succeeded by Export Oriented Industrialization. Apart from a few success stories, ISI is prolonged and more an indicator of a state's incapacity to alter political and economic coalitions at critical transition stages than of sustained economic diversification. Simply using manufactured goods as a percentage of GDP would introduce the heavily subsidized target industries of ISI and artificially and inappropriately inflate diversification values. Therefore, this operationalization minimizes the effects of ISI by factoring in the percentage of exports accounted for by manufactured goods.

general perception within a country that private property is credibly protected and that contracts are credibly enforced: The transaction costs associated with complex economic activity are diminished. The operationalization for economic confidence is the *Institutional Investor Country Risk Ranking* that rates the credit-worthiness for each of the 38 countries. (Snider, 1996) This international perception and ranking of economic confidence - regarding the expected security of and return on long-term, irreversible physical and capital investment as well as entrepreneurial activity[7] - is assumed to be a valid proxy indicator for the level of economic confidence perceived by domestic economic actors as well. Higher values along this variable represent higher confidence for the above types of economic enterprises within a given country.[8]

Exogenous ("Explanatory") Variables: Institutional Formality

X_1: Property Rights (t_{-2}) . This variable measures the credible and symmetric protection of private property rights. Private property rights are secure when they are insulated from arbitrary confiscation and expropriation by the government. The retention and protection of private property must not be a function of personal attributes, but of generally known and objectively applied criteria. Security in one's

[7] Snider notes that "[i]rreversibility of investment means that it is not possible to sell the capital goods at their purchase price. When irreversibilities become salient, capital stocks cannot be adjusted instantly and costlessly. Hence, uncertainties about the future environment become important decision criteria." (Snider, 1996: 104)

[8] The data provided by the *Institutional Investor Country Risk* credit ranking represent the overall creditworthiness of a country. The *Institutional Investor Country Risk* ranking construction avoids the potential bias that can derive from sectoral anomalies unrepresentative of the economic organization of the country as a whole. These sectoral biases occur in countries with massive deposits of lucrative minerals where international investment takes place even in the presence of abysmal legal and economic institutions, horrific inflation, currency problems, non-existent infrastructure, and rebellions.

continued ownership of private property and its relatively free use are critical components for the decision of economic actors to sink resources into irreversible tangible assets. The protection of private property rights is operationalized as the *International Country Risk Guide* data on the "expropriation of private property by the government" for 38 countries. These data measure the risk of foreign-held private property being expropriated by the government, including outright confiscation and forced nationalization. This variable measures the perceived profitability for the state of reneging versus compliance on property rights. It is important to note that this operationalization measures the formality of institutions securing private property rights, not behavioral responses to such institutions. Higher values along this variable represent higher institutional formality with respect to the protection of private property rights.

X_2: Contract Rights (t_{-1}). This variable measures the credible and symmetric enforcement of contract rights. Contract rights are secure when they are insulated from arbitrary changes or outright repudiation by the government. The enforcement of contract rights must not be a function of personal attributes, but of generally known and objectively applied criteria. Security in one's contractual rights, and obligations, is a critical component vis a vis the decisions of economic actors to sink resources into long-term, irreversible contractual agreements. The credible and symmetric enforcement of contract rights is operationalized as the *International Country Risk Guide* data on the "repudiation of contracts by the government" for 38 countries. These data measure the risk facing foreign businesses regarding arbitrary changes or

repudiations of binding agreements on the part of the state. Arbitrary contractual changes can take the form of an un-agreed upon modifications, postponements or scaling down, or the outright repudiation of contracts by the government. While the reasons for contract repudiation can include budget cuts, indigenization pressure, government change, or shifts in economic and social priorities, the key implication is that the enforcement of contractual commitments of the state supersedes fluid priorities. This variable measures the generally perceived profitability of reneging versus compliance on contracts. It is important to note that this operationalization measures the formality of institutions regarding the enforcement of private economic contracts, not the behavioral responses to such institutions. Higher values along this variable represent higher institutional formality with respect to the enforcement of contracts.[9]

Variables Exogenous to the System of Equations

Ordinary Least Squares (OLS) makes the assumption that the explanatory variables are uncorrelated with the error term. For reasons to be discussed in greater detail later in this chapter on the estimation of simultaneous equation models, this is not the case for the model presented in this dissertation. The consequence is that OLS is not the appropriate estimation technique to test this model. The quantitative

[9] This operationalization of institutional formality is distinct from the additive measure, which uses multiple indicators from the ICRG data set, employed by Keefer, et al., (1993). This analysis utilizes the ICRG data set more parsimoniously: Two indicators of institutional formality (the ICRG measures of property and contract rights) are run as separate exogenous variables in order to quantify the individual as well as cumulative (F statistic and likelihood ratio statistic) effects of institutional formality upon economic confidence.

technique used to test the empirical relationships within this model is Two-Stage Least Squares estimation. Two-Stage Least Squares estimation incorporates variables that are uncorrelated with the disturbance term within the system of equations, though these variables are highly correlated with the explanatory variables of the equations. These variables are exogenous variables. The exogenous variables used for the Two-Stage Least Squares estimation technique are defined and operationalized as follows.[10]

Variables Exogenous to the System: Economic Confidence Equation

X_1: Political Terrorism (t_{-1}). Political terrorism can affect economic rights within a country. When political and social dissidence are expressed via political terrorism there is a high risk to investors, threats of property loss, and danger to personnel. Such terrorism can take the form of armed attacks, guerrilla activity, or attempted assassinations. Political terrorism can also contribute to the collapse of a regime. Such changes in government increase business risks, not in the least part due to uncertainty about the policies of the new government. The date source is the *International Country Risk Guide*. Higher values along this variable represent lower incidences of political terrorism.

X_2: Economic Planning Failures (t_{-1}). Rash policies by governments in response to economic planning failures increase the likelihood that operating regulations will abruptly change and that credit flows will be affected. Severe economic planning failures, such as precipitous falls in income, employment, foreign

[10] For the text of the *International Country Risk Guide* variable definitions see Appendix 1 or International Country Risk Guide Handbook (1990: 7-14).

exchange, and increased inflation, can put the government under political pressure. These pressure can result in a regime change or the imposition of unfavorable or ill advised economic policies, both of which will have a negative effect on business. (ICRG: 9) This indicator measures the cross-temporal consistency of policies, their stability, longevity, as well as the long-term viability of policy makers. The operationalization of this variable is the *International Country Risk Guide* data on economic planning failures. Higher values along this variable represent greater stability and consistency of economic policies.

X_3: Covert Profit Transfers (t_1). Covert profit transfers is operationalized as the ratio of the international lending rate divided by the domestic lending rate multiplied by inflation. The variable used to approximate the international lending rate is the London Interbank Offer Rate (LIBOR). The source for this variable is from the International Monetary Fund, *International Financial Statistics*. (Snider, 1996) By comparing domestic lending rates to the international benchmark price of capital, this variable captures the extent to which domestic political elites use insidious financial mechanisms for political favoritism. The existence of inequities in capital distribution are detrimental to general economic rights in the financial system. Coupled with high inflation (i.e., informal monetary policy) the covert transfer of profits is a *de facto* backdoor tax on politically disadvantaged groups. "When the nominal [lending] rate is lower than [the] LIBOR, it is an unambiguous indication of covert resource transfer." (Snider, 1996: 101) When the state, through capricious and particularly targeted monetary policies and interest rate machinations, advantages one segment of society at

the expense of others, economic rights suffer. Higher values along this indicator represent lower covert profit transfers.

Variables Exogenous to the System: Economic Diversification Equation

X_1: Investment (t_{-1}). A perennial staple of neo-classical analyses of economic development is the relationship between domestic investment rates and economic diversification. Though a main conceptual starting point of this dissertation was Olson's (1995) observation that the unwavering and often singular reliance of economists upon rates of investment and forced savings rates has proved inadequate explanons and poor predictors of economic diversification, it would be highly premature to dismiss out of hand the impact of investment upon economic diversification. Highly correlated with economic confidence is investment. Investment is operationalized as real gross domestic investment, both private and public, as a percentage of real GDP per capita. The source is for this variable is the *Penn World Tables* data. Higher values along this variable represent higher levels of domestic investment within a country.

X_2: Capital Stock per Worker (t_{-1}). The variable of capital stock per workers is a proxy measure for productivity. In many economic conceptualizations, capital stock per worker is a more direct proxy for productivity than the more commonplace operationalization of education. The source for this variable the *Penn World Tables* data. Higher values along this indicator represent higher rates of capital stock per worker, or productivity.

X_3: Trade Openness (t_{-1}). This variable measures the extent to which a country's trade policies and practices are oriented toward free-trade. Economic models, Stolper-Samuelson (1941) being perhaps the most well-known, show that less protected and less regulated economies fare better in aggregate terms since they are positioned to reap the benefits of comparative advantage, competitive advantage, and free trade. Looking at economic confidence, an open economy is a necessary foundation. Though openness does not drive economic confidence, it is a condition that facilitates it. Protected economies tend not to reap the benefits of comparative advantage, competitive advantage, and free trade. Trade openness is operationalized as exports plus imports divided by real GDP per capita. The data source for this variable is the *Penn World Tables*. Higher values along this indicator represent more open markets and more liberal trading policies.

X_4: Trade Weighted Real Exchange Rate (t_{-1}). This variable captures a country's ability to compete and produce by measuring the value of a country's currency weighted by its export-oriented production. In many LDCs, overvaluation is common where weak governments prefer to avoid difficult, though necessary, decisions. Though a strategy of overvaluation can make imported consumer goods more affordable in the short-term, the negative consequences to foreign exchange holdings and foregone public investment are imminent. This adversely affects economic confidence. Compounding problems, currency overvaluation usually coincides with inflationary monetary policy where elites seek to print themselves into solvency. The source for this variable is the International Monetary Fund,

International Financial Statistics. (Snider, 1996) Higher values along this indicator represent a more stable and objectively valued currency.

X_5: Income per Capita (t_1). Income per capita is a proxy indicator for the wealth of a country. A country's wealth is important because, as Keefer, et al., (1993) note, income gap effects impact economic growth and diversification. The poorest countries develop at slower rates than wealthy countries since they have less available resources while also having greater distributional, educational, and productive obstacles to overcome. The operationalization for this variable is real GDP per capita divided by real GDP per capita ($US). The data source for this variable is the International Monetary Fund, *International Financial Statistics.* (Snider, 1996) Higher values along this indicator represent a higher per capita income, or wealth.

A Simultaneous Two Equation System

A Two Equation System: The Empirical Support

The model is this dissertation specifies a two equation system. It incorporates the activation variable of economic confidence that links changes in institutions with variations in economic diversification. In addition to being theoretically necessary, the re-specification of the institutional approach from a single equation into a two equation system also has strong empirical support.[11] Kormendi and Meguire (1985) offer a quantitative test that verifies whether or not an intervening variable or two equation model is accurately specified. Let's say that a researcher hypothesizes that X

[11] Though they examine the effects of political instability on economic growth, Alesina, et. al, (1992) use similar methodology and quantitative tests.

causes Y; however, the researcher further suspects that X causes Y through an intervening variable, A. How is this presence of an intervening variable to be determined? First, Y is regressed upon X to demonstrate that X is indeed statistically significant as an explanatory variable. Then, Y is regressed upon X and A together. In the second regression, if A is statistically significant and X loses its statistical significance, the interpretation is that X impacts Y through A. This test can also determine what the intervening variable is.[12]

The results of this intervening variable test of my model are presented in Table 2-1 and Table 2-2. Table 2-1 shows the relationship between property rights and contract rights (institutional formality) and economic diversification. The values for the R^2 and Adjusted R^2 are not of interest. The important aspects are the t-statistics for property rights and contract rights. This first regression establishes the statistical significance of the explanatory variables.

[12] This test can also be run to exclude rival intervening variables. If the researcher were to be uncertain whether it were A or B that intervened between X and Y, he/she would run the same test using both A and B in separate runs. The variable that performed as outlined above would be the best choice for the intervening variable (Kormendi and Meguire, 1985)

Table 2-1: Effects of Institutional Formality on Economic Diversification - Instrumental Variable Regression

Variable	Reg. Coeff.	Standard Error	t stat	Prob.
Constant	-10.8643	2.39275	-4.54052	0.0000
Property Rights(-2)	1.54048	0.62459	2.466389	0.0015
Contract Rights(-1)	2.270139	0.494697	4.588952	0.0000
R^2 = .488682				
Adjusted R^2 = .480501				

Mean Dependent Variable = 10.60903
Dependent Variable = Economic Development
Exogenous Variables = Property Rights(-2), Contract Rights(-1), Political Terrorism(-1), Economic Planning Failures(-1), Covert Profit Transfers(-1), Investment(-1), Capital Stock per Worker(-1), Trade Openness(-1), Trade Weighted Real Exchange Rate(-1), and Income per Capita(-1) in $US
N = 128
White t statistics showed consistent standard errors and covariance
F statistic = p<.000

Table 2-1 shows that both property rights and contract rights are statistically significant at the .000 level. Next, to test and empirically substantiate a two equation model, the above regression is run again with the variable of economic confidence included with property rights and contract rights. If economic confidence is indeed an intervening variable, both property rights and contract rights will lose statistical significance with economic confidence being statistically significant. Table 2-2 presents these results.

Table 2-2: Effects of Instrumental Formality and Economic Confidence on Economic Diversification - Instrumental Variable Regression

Variable	Reg. Coeff.	Standard Error	t stat	Prob.
Constant	-5.805558	2.468721	-2.351646	0.0203
Property Rights (-2)	0.40720	0.617693	0.659233	0.5110
Contract Rights (-1)	1.015662	0.543822	1.867638	0.0642
Economic Confidence	0.245409	0.066499	3.690396	0.0003
R^2 = .626531				
Adjusted R^2 = .617496				

Mean Dependent Variable = 10.60906
Dependent Variable = Economic Development
Exogenous Variables = Property Rights(-2), Contract Rights(-1), Political Terrorism(-1), Economic Planning Failures(-1), Covert Profit Transfers(-1), Investment(-1), Capital Stock per Worker(-1), Trade Openness(-1), Trade Weighted Real Exchange Rate(-1), and Income per Capita(-1) in $US
N = 128
White t statistics showed consistent standard errors and covariance
F statistic = p<.000

Table 2-2 shows that economic confidence is highly significant in this second regression run. Equally pertinent are the insignificant t statistics for property rights and contract rights. Once again, the values for the R^2 and the Adjusted R^2 are of no interest. The results presented Table 2-1 and Table 2-2 provide empirical substantiation of the hypothesized two equation model specification: Institutions do not directly influence economic diversification. Rather, changes in institutional

formality impact economic confidence. It is the variance in economic confidence that impacts economic diversification.

The Simultaneity Between Economic Confidence and Economic Diversification

A two equation specification is more focused and allows us to arrive at more theoretically and empirically meaningful results. While scholars have used differing operationalizations for institutions and for economic "development," there is a significant commonality of these analyses: They have not taken into account the simultaneity between economic confidence and economic diversification. When specifying their equation these past analyses have positioned economic "development" on the left-hand side as the explained variable and institutions on the right-hand side of the equation as their explanatory variable(s). The common estimation technique has been (OLS) or Weighted Least Squares (WLS) upon the single specified equation. For example, Clague, et. al., (1995) uses OL S and WLS; Leblang (1996) appears to use OLS; and, Keefer, et al., (1994) uses WLS. In addition to being underspecified, the single equation method has a important empirical shortcoming: It cannot take into account the endogeneity of economic diversification and economic confidence. Because of the endogeneity of economic confidence and economic diversification the use of a single equation and OLS or WLS estimation will then produce results (i.e., parameter estimators) that are biased and inconsistent.[13]

[13] "The statistical inferences obtained are thus unreliable." (Feng, 1996: 13)

This model considers that over time economic diversification impacts economic confidence, be it negatively or positively, separately from the effects of the exogenous variables of institutional formality. When looking at perceived economic confidence we must take into account the "success breeds success" as well as the "failure breeds failure" phenomenon. High levels of economic diversification can affect economic confidence - actors might well focus on past economic success when they calculate expectations about certain actions. A state with a history of formal institutions may be able to increase economic confidence using an inherited reputation, even though this may presently be a fallacious appraisal of the present institutional structure. The same is true of states with a history of informal institutions. Contrary to the current institutional structure, economic actors may be referring to a false inherited reputation when they calculate expectations about certain economic actions. Indonesia is an example of this: Indonesia has the lowest private investment share in the High Performing Asian Economies in terms of GDP. By using a simultaneous two equation system, this model can compensate for this endogeneity between economic diversification and economic confidence. This model identifies and corrects for the contemporaneous feedback between the two endogenous variables.[14] In the upcoming section, I show that the interaction effects of this two equation model is a

[14] The logic behind a simultaneous equations model rests upon the implications of endogeneity on the consistency, bias, and interpretability of empirical results. Two-Stage Least Squares will be used to correct for these factors as well as the problems resident in over-identified equations. This is not Instrumental Variables Estimation, which is a method used in order to correct for problems having arisen from measurement error of the regression variables. If the reader is interested, see Pindyck and Rubinfeld (1991: 158) for a discussion of Instrumental Variables Estimation to correct for measurement error.

simultaneous equation model and why Two-Stage Least Squares is the appropriate estimation technique.

Estimating A Simultaneous Two Equation System: Two-Stage Least Squares

In a simultaneous two equation system, the behaviors of endogenous variables are simultaneously determined by an interrelated series of equations.[15] Endogenous variables are those variables that appear on both the left-hand and right-hand sides within the system of equations. The empirical implication of the existence of simultaneity is that OLS estimation will produce "biased and inconsistent parameter estimators." (Pindyck and Rubinfeld, 1991: 288) In such cases the t-statistics, the significance of a variable in the determination of another, and the interpretability of the regression coefficients are dubious at best. Also, in a simultaneous equation model, the standard variable labels of "dependent" and "independent" need to be replaced with "endogenous" and "exogenous," respectively. The behaviors of endogenous variables are determined within the system of equations, whereas the behaviors of exogenous variables are determined outside of the system of equations.

The operationalization of institutional formality is the lag of property rights and contract rights: These institutional structures are semi-permanent features of a given polity.[16] Property and contract rights are time series variables whose values are *not* determined within the system of equations. In addition to the exogenous variables used

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[15] See Pindyck and Rubinfeld, 1991: 287.

[16] "The rules of the game [economic, political and social] are exogenous at any moment in time to the resources employed in production (and consumption) and to the production function but vary widely across nations." (Scully, 1992: 24)

in the reduced form equations, these lagged endogenous variables are predetermined variables. As such, the variables of property and contract rights are exogenous for the purposes of equation system specification and data analysis. [17] The following functional notation summarizes the relationships of this model. It shows the endogeneity of economic confidence and economic diversification, as well as the exogeneity to the system of property rights, contract rights, and the other exogenous variables. With endogenous variables in bold and exogenous variables in italics, the structural relationships are

$$\mathbf{C} = f(P, D, \mathbf{Y}, Z)$$
$$\mathbf{Y} = f(\mathbf{C}, W)$$

where,
P = Private Property Rights$_{(t-2)}$
D = Contract Rights$_{(t-1)}$
$\mathbf{Y}$ = Economic Diversification
$\mathbf{C}$ = Economic Confidence
Z = Instrumental variables: Property Rights$_{(t-2)}$, Contract Rights$_{(t-1)}$, Covert Profit Transfers$_{(t-1)}$, Political Terrorism$_{(t-1)}$, and Economic Planning Failures$_{(t-1)}$.
W = Instrumental variables: Income per capita$_{(t-1)}$, Trade Openness$_{(t-1)}$, Capital Stock per worker$_{(t-1)}$,Investment$_{(t-1)}$, and Trade Weighted Real Exchange Rate$_{(t-1)}$.

These general theoretical relationships must be converted into an empirically amenable equations called "structural form" equations, or a "structural model." The structural model is given its form from the underlying theory.[18] Simultaneous structural models contain endogenous variables on the left-hand side and endogenous as well as predetermined variables on the right-hand side.[19] With the endogenous

[17] Predetermined variables are also excellent instrumental variables. "The fact that they are present in the model suggests that they are correlated with the endogenous variables, and the fact that they are predetermined guarantees (by assumption) that they are uncorrelated with the error term." (Pindyck and Rubinfeld, 1991: 288-289, 296)
[18] Note that this is not a recursive system as the endogenous variables are not determined sequentially.
[19] See Pindyck and Rubinfeld, 1991: 290.

variables again in bold and the exogenous in italics, the structural form equations for this simultaneous equation system are,[20]

$$\mathbf{C} = \beta_C P + \beta_C D + \gamma_C \mathbf{Y} + \beta_C Z + \varepsilon_1$$

$$\mathbf{Y} = \gamma_Y \mathbf{C} + \beta_Y W + \varepsilon_2$$

Note that the coefficients γ_C and γ_Y take into consideration the contemporaneous feedback among economic confidence and economic diversification. The β_C and β_Y coefficients measure the effects of the exogenous variables. (See Alesina, et al. 1992; Feng, 1996)

These equations are identified, which means that it is possible to obtain values of the parameters from the reduced-form equations system. The equation for economic confidence is identified since there are five exogenous variables (property rights, contract rights, covert profit transfers, economic planning failures, and political terrorism) that do not appear in the equation for economic diversification. The equation for economic diversification is identified as there are five exogenous variables (investment, capital stock per worker, trade openness, trade weighted real exchange rate, and income per capita) that do not appear in the equation for economic confidence. We can obtain values for the parameters of all unknowns including the endogenous variables on the right-hand side of the equation.[21]

[20] These are the equation specifications for H_1 and H_2, respectively.

[21] These structural form equations also satisfy the more restrictive order condition in that the number of exogenous variables exceed by at least one the number of endogenous variables.

In addition to being a simultaneous equations model, the above structural form equations are overidentified as there may be more than one value for each parameter estimate. Therefore, the estimation technique used is Two-Stage Least Squares which is very useful for obtaining the unique values of structural parameters in overidentified equations. The results are efficient, unbiased, and interpretable coefficients for parameter estimators, with reliable significance levels. (For a more in-depth overview of the Two-Stage Least Squares estimation technique and its application to this simultaneous two equation system, please see Appendix II)

In sum, this methodology, research design, and data corrections (Appendix I) give confidence that the variables used in the quantitative analysis are reliable and valid indicators - and that the estimation technique I have employed is the most appropriate. In the upcoming chapter, the results of the Two-Stage Least Squares estimation of the model are presented in Table 3-1 and Table 3-2. These results demonstrate that the two stage, simultaneous equation model specified in this chapter has significant and strong empirical relationships. As is demonstrated in Chapter Three, these results are substantively relevant, theoretically consistent, and quantitatively significant for the model here presented.

Chapter Three: Empirical Results and Interpretation

Lagged Variables

Within the simultaneous equations model the exogenous variables of property rights and contract rights are predetermined by past values. According to econometric theory and the logic presented in the previous chapter, it is evident why it is necessary to lag these variables in order to create predetermined exogenous, variables. Without the utilization of these predetermined exogenous variables it is not possible to correct for the contemporaneous feedback between the endogenous variables in the simultaneous system. The use of lagged values, however, does not end only with methodological justifications. The lagged data values for the exogenous variables are not identical. The theoretical justification for a lagged operationalization (North, 1990b: 121) is that the formalization of private property rights must predate the other exogenous variables.

To recap, North (1990b) defines stages in institutional diversification and development. In the initial stage of economic development there is a movement from kinship ties and traditional organization as the mechanisms for enforcement toward nascent third-party enforcement mechanisms. Then a "coercive political order" and formal institution that protect private property rights create capital markets, stimulate physical and irreversible investment, and foster manufactures. In this stage "personal ties, voluntaristic constraints, and ostracism are no longer effective" when the "gains from defection are great enough" to cripple complex economic activities. (North, 1990b: 121; See also Greif, 1995) Temporally, institutional formality is predicated upon private property rights. The next stage of development is where complex "trade,

finance, banking, and insurance" (North, 199b: 121) activities are facilitated through the credible enforcement of contract rights. In transposing this theoretical argument into an empirical analogue, the operational consequence is that the data values for property rights are lagged behind the data values for contract rights and other exogenous variables impacting economic confidence. Property rights enforcement comes first. Contract rights and the other variables exogenous to the system of equations follow in the temporal sequence of this model.

Using both empirical (predetermined exogenous) and theoretical (North's temporal sequence of institutional development) reasoning, all the values for the exogenous variables are lagged. In the Two-Stage Least Squares empirical test of Equation 1, the exogenous variables and the variable for contract rights are lagged one (1) year behind economic confidence. One would anticipate a lag between changes in institutional type and changes in economic confidence, because changes in structural constraints require time in order to be assimilated into general perceptions and thereby impact the cognitive bases of economic decisions. Consistent with North's argument, in the Two-Stage Least Squares estimation of this model the data values for property rights are lagged two (2) years behind economic confidence and one (1) year behind contract rights and the other exogenous variables.[1] In the Two-Stage Least Squares estimation of Equation 2, the exogenous variables are lagged one (1) year behind

[1] Note that in Two Stage Least Squares estimation it is necessary to used any lagged exogenous variables on the right-hand side of the structural form equation as exogenous variables in the reduced form equation estimation. The constant term also makes an excellent Instrumental Variable and is usually included automatically by most econometric applications in the instrument list. The lagged values of property rights and contract rights, consistent with econometric theory, were included in the instrument list in the reduced form equation estimation of this model.

economic diversification. This allows for changes in the exogenous variables to translate into measurable changes in the operational measure of economic diversification. In Equation 2, however, data values for economic confidence are not lagged. This is because in the simultaneous equations model economic confidence is endogenous, not the lag of economic confidence.[2] This staggered lagging for the variable operationalization accomplishes three things. First, it satisfies the methodological requirements for specifying predetermined exogenous variables in a simultaneous equation model. Second, it accommodates the logic that changes in institutions predate variations in perceived economic confidence. Third, it is consistent with North's sequencing regarding the stages of institutional development.[3]

Quantitative Results

Equation 1

Table 3-1 shows the results from the Two Stage Least Squares estimation of Equation 1:[4]

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[2] The variables of economic confidence and economic diversification cannot be lagged as they are endogenous variables. Though there may be compelling theoretical grounds for lagging economic confidence within the second equation in the model, this is not possible due to the dynamics of a simultaneous system, i.e., the contemporaneous feedback between economic confidence and economic diversification. Economic diversification is not endogenous to the lag of economic confidence, but to its current values. This methodological limitation precludes the lagging of economic confidence in the second equation.

[3] The exact values are: economic confidence and economic diversification, current year values (t_0). Private property rights, two year lag (t_2). Contract rights, one year lag (t_1). All other exogenous variables, a one year lags (t_1).

[4] The variables exogenous to the system were run (OLS) for both Equation 1 and Equation 2. This was done in order to check for multicollinearity and shared variance of the instruments with the explanatory variables. Of the list of instruments, only Trade Openness showed slight significance with a small coefficient. This one instrument was maintained in the quantitative analysis for its strong theoretical contribution. As an instrument on economic diversific tion trade openness will affect manufactures as a percentage of exports exogenous to the system of equation. Closed and/or command economies will simply not have high levels of trade. Also refer to the logic of the operationalization of economic diversification: This variable is biased against Import Substituting and

$$C = \beta_C P + \beta_C D + \gamma_C Y + \beta_C Z + \varepsilon_i$$

Table 3-1: The Effects of Institutional Formality on Economic Confidence - Two Stage Least Squares (2SLS) Estimation

Variable	Reg. Coeff.	Standard Error	t stat	Prob.
Constant	-6.955	4.14703	-1.6771	0.096
Property Rights(-2)	2.68123	.980446	2.7347	0.0072
Contract Rights(-1)	2.25774	.763282	2.95795	0.0037
Economic Diversification	1.25721	0.27512	4.56965	0.0000
R^2 =.751207				
Adjusted R^2 =.74188				

Mean of dependent variable: 34.58906
Dependent variable = Economic Confidence
Exogenous Variables = Property Rights(-2), Contract Rights(-1), Political Terrorism(-1), Economic Planning Failures(-1), Covert Profit Transfers(-1), Investment(-1), Capital Stock per Worker(-1), Trade Openness(-1), Trade Weighted Real Exchange Rate(-1), and Income per Capita(-1) in $US
N =128
White t statistic showed consistent standard errors and covariance
F statistic = p<.000

As the reader can see in Table 3-1, the constant is not significant. As a consequence, the coefficient of the constant is not meaningful. The statistical insignificance of the constant term indicates that the regression line comes through the origin. The interpretation of the regression coming out of the origin is that when institutional formality (property rights and contract rights) is equal to zero, economic confidence is

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other protectionist development strategies that might otherwise inappropriately inflate economic diversification values.

zero as well. The substantive implication of this results is that institutional formality may indeed be a necessary condition in accounting for economic confidence.[5]

Property rights, contract rights, and economic diversification are all significant. The F statistic is also highly significant.[6] The significance of the t- and F- statistics for these variables makes interpretable the beta coefficients (parameter estimators) produced by the Two-Stage Least Squares estimation. For every one unit increase in property rights protection, there is a commensurate 2.68% increase in economic confidence. This result supports the hypothesis that as political elites are auto-constrained to credibly protect private property rights, there is a direct and positive increase in economic confidence.

The interpretation for the contract rights coefficient is that for every one unit increase in contract rights enforcement there is a commensurate 2.25% increase in economic confidence. This result supports the hypothesis that as political elites area auto-constrained to credibly protect contract rights, there is a direct and positive increase in economic confidence. Overall, the results presented in Table 3-1 show that as political elites are institutionally obliged to protect both private property rights and enforce contract rights, there is a direct and significant increase in economic confidence.

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[5] The empirical results are not conclusive to permit interpretation of this operationalization of institutional formality as a sufficient condition for economic confidence.

[6] The very large F statistics of all the Two-Stage Least Squares estimations are also of interest: They allow us to interpret the *cumulative* empirical effects of the explanatory variables. "The F statistic...allows us to test the hypothesis that *none* of explanatory variables helps to explain the variation of Y about its mean...a high value of the F statistic is a rationale for rejecting [this] null hypothesis." (Pindyck and Rubinfeld, 1991: 79) Regarding the interpretation of results in time series analysis, it should be remembered that "[i]n most situations, especially those involving large sample sizes, F tests and likelihood ratio tests should generate very similar results." (Pindyck and Rubinfeld, 1991: 174)

The endogeneity effects captured by the Equation 1 shows that for every one unit increase in economic diversification, there is a commensurate increase in economic confidence.[7] Economic diversification affects economic confidence. By accounting for and correcting this contemporaneous feedback between the endogenous variables, we can measure the unbiased and efficient impact of property rights and contract rights on economic confidence. These significance levels and regression coefficient indicate a strong relationship between the explanatory variables and the explained variable in Equation 1. Additionally, the regression coefficients all have positive signs. These empirical results show the universal significance of the right-hand variables with across-the-board positive relationships to economic confidence.

Table 3-1 contains a "goodness of fit" coefficient for Equation 1. This Adjusted R^2 shows that almost 75% of the variation in economic confidence is explained by the specification of Equation 1.[8] The nearly equivalent value for the R^2 measure suggests that Equation 1 is parsimoniously specified since the correction for regression overloading provided by the Adjusted R^2 did not drastically change the goodness of fit results. With such a high value for the Adjusted R^2, we are lead to conclude that the specification of Equation 1 is superior to alternative specifications.

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[7] Though they looked at growth rates as opposed to economic diversification, this relationship appears to support Keefer's (1993) assertion that, in addition to institutional factors, the starting point of economic development, or "income gap," will have play an important role.

[8] An Adjusted R^2 is preferable to a R^2 as a goodness of fit measure. This is because the Adjusted R^2 may rise or fall with the inclusion of additional right-hand variables, whereas a R^2 measure always increases with the inclusion of additional right-hand variables. The Adjusted R^2 "eliminates at least some of the incentive for researchers to include numerous variables in a model without much though about why they should appear." (Pindyck and Rubinfeld, 1991: 78-79)

Consequently, the competitiveness of rival hypotheses regarding the explanation of economic confidence, is diminished relative to that of Equation 1. These results are consistent with the first hypothesis generated by the model.

$\mathbf{H_1}$: The greater the institutional formality,

the greater is the economic confidence perceived by economic actors.

The results presented in Table 3-1 demonstrate that, as hypothesized, an increase in institutional formality is significantly, strongly, and positively associated with an increase in economic confidence. Formalizing the institutional structures within an economy enhances economic confidence and predisposes actors toward economic behaviors that, while socially and individually preferable, would otherwise be too risky.

Equation 2

Table 4-2 shows the results from the Two Stage Least Squares estimation of Equation 2:

$$Y = \gamma_Y C + \beta_Y W + \varepsilon_2$$

Table 3-2: The Effects of Economic Confidence on Economic Diversification
Two Stage Least Squares (2SLS) Estimation

Variable	Reg. Coeff.	Standard Error	t stat	Prob.
Constant	-2.22683	.908578	-2.4509	0.0156
Economic Confidence	0.371097	0.023954	15.49212	0.0000
R^2 = .624175				
Adjusted R^2 = .621193				

Mean of dependent variable: 10.60906
Dependent variable = Economic Diversification
Exogenous Variables = Property Rights(-2), Contract Rights(-1), Political Terrorism(-1), Economic Planning Failures(-1), Covert Profit Transfers(-1), Investment(-1), Capital Stock per Worker(-1),Trade Openness(-1), Trade Weighted Real Exchange Rate(-1), and Income per Capita(-1) in $US
N = 128
White t statistic showed consistent standard errors and covariance
F statistic = p<.000

As the reader can see in Table 3-2, the constant term is significant which indicates that economic confidence is not the sole contributory factor accounting for economic diversification.[9] Economic confidence is highly significant. The significance of the t- and F-statistics for economic confidence makes interpretable the regression coefficient (parameter estimator) produced by the Two-Stage Least Squares estimation.[10] The interpretation for the economic confidence coefficient of is that for every one unit increase in economic confidence there is a commensurate .37% increase in economic diversification. The results show that economic diversification responds positively and

[9] Again, the empirical results are not nearly conclusive enough to permit interpretation of economic confidence as a necessary or sufficient condition for economic diversification.
[10] See (Pindyck and Rubinfeld, 1991: 79, 174) regarding the interpretation of F statistics and likelihood ratio tests in time series analysis and their parallel interpretation for the *cumulative* effects of explanatory variables.

significantly to changes in economic confidence. These results have also taken into consideration the contemporaneous feedback between economic confidence and economic diversification and control for these endogeneity effects. The coefficient for economic confidence has a positive sign. This means that when political elites manipulate economic confidence via institutional formality, complex contracting and economic diversification are positively affected. Finally, the Adjusted R^2 for Equation 2 shows that over 62% of the variation in economic diversification is explained by the specification of Equation 2. Again, Equation 2 is parsimoniously specified since the correction for regression overloading did not change the goodness of fit. With such a high value for the Adjusted R^2, we can conclude that the specification of Equation 2 is superior to alternative specifications. These results are consistent with the second hypothesis generated by the model.

H_2: The greater the perceived economic confidence,
the greater the economic diversification.

The results presented in Table 3-2 demonstrate that as hypothesized an increase in economic confidence is significantly, strongly, and positively associated with an increase in economic diversification. The capacity of polities to enhance economic confidence (i.e., the reduction of perceived transaction costs via institutionally

disabling elite discretion over property and contract rights) goes a long way in explaining the variance in economic diversification.[11]

These quantitative results Presented in Table 3-1 and Table 3-2 empirically confirm the hypotheses derived from the model. These results offer compelling evidence that the specified relationships between institutional formality, economic confidence, and economic diversification are substantively relevant, theoretically consistent, and quantitatively significant. Chapter Four explores the larger theoretical and substantive implications that are consistent with these empirical results and this dissertation's model.

[11] An alternative operationalization for effective institutions is "contract intensive money" or non-cash holdings within an economy. (Clague, et. al., 1995) Snider (1996) and Snider and Wood (1996) show that institutional formality outperforms contract intensive money and is a more robust indicator that encompasses a broader range of structural constraints.

Chapter Four: Conclusions on the Institutional Approach to Economic Diversification

In the Introduction I asked, "why have some countries developed economically when others have not?" The results of this research suggest that the more appurtenant question is, "why have political and economic actors in some countries made significantly different choices than those in others?" The limited success of the neo-classical model in explaining economic development (North, 1990a, 1990b; Olson, 1995; Crone, 1996) has been due, in part, to its failure to consider how politics and political institutions structure the costs and bind the opportunities that surround economic exchange. The central argument - and central finding - of this dissertation has been that the formality of political institutions, via economic confidence, is a critical element in whether or not a country realizes economic diversification. This argument asserts that all developing countries have a choice between informal, self-enforcing institutions that produce sub-optimal outcomes versus formal, elite-disabling state institutions that lead to complex contracting and economic diversification. The empirical results of this modeling support and substantiate the generalization that it is largely *this* institutional difference that distinguishes the First World from the Third World.

A Model of Institutions and Economic Diversification

In order to more rigorously examine the relationship between the institutions of the contractual state and economic diversification, this dissertation has drawn upon an prominent body of literature that has investigated the impact of the political institutions and economic outcomes. I sought to define these concepts and to model

and test these relationships since, for the most part, the literature has been conceptual, descriptive, and untestable. (Coase, 1960; North, 1972 - 1993; North and Weingast, 1989; de Soto, 1989; Shepsle, 1984, 1989; Denzau and North, 1994; Olson, 1995; Greif, 1995; New Institutionalism). Additionally, where there has been an operationalization of concepts and hypothesis testing (Clague, et.al, 1995; Keefer and Knack, 1993, 1995; Levine and Renelt, 1992; Leblang, 1996) the tendency has been to rely upon single equation specifications.

I have attempted to usher this literature from a largely descriptive state, where general relationships have been inferred from case history or covariation, toward a more systematic analysis. First, synthesizing the theory and concepts in the literature, I defined "effective" institutions[1] as "formal" institutions. Formal institutions function to disable elite discretion regarding the dispensation of private property rights and contracts rights. Consistent with this definition, I operationalized institutional formality as the *International Country Risk Guide* data for "expropriation of private property by the state" and "repudiation of contacts by the state." Next, it was necessary to get a more focused idea of just how political institutions impact economic outcomes. Using North (1990b) as a theoretical blueprint, I modeled the channels and timing rudiments by which institutional formality impacts economic diversification. First, political institutions must disable elite discretion to protect private property rights; next, political institutions must disable elite discretion to enforce contract rights. Since it takes time for this formalization of institutions to influence perceptions of transaction

[1] "Effective" refers to those institutions that contribute toward socially optimal goals, like economic diversification.

costs, both property rights and contract rights are lagged behind economic confidence. Economic confidence and economic diversification are contemporaneous and endogenous in this model. The empirical results presented in Chapter Two substantiate the modeling that institutions do not directly impact economic diversification. Institutions impact economic confidence; it is the variation in economic confidence that impacts economic diversification. While single equation modelings of institutions and economic development were an important step, Table 2-1 and Table 2-2 clearly show that economic confidence is indeed an intervening and linking variable between institutions and economic diversification. This modeling avoids simply assuming away or begging crucial questions about how the transaction costs, incentives, and opportunities of economic exchange are structured by political institutions. Additionally, the use of Two-Stage Least Squares to estimate this two equation simultaneous system controls for the contemporaneous feedback effects that exist between economic confidence and economic diversification; this technique improves our empirical understanding of the these relationships by filtering out endogeneity effects and producing unbiased and efficient estimators for the explanatory and intervening variables.[2]

The results presented in Table 3-1 clearly show that when political elites choose those institutions that disable elite discretion regarding contract rights and

[2] As shown in Chapter Two, endogeneity effects can be thought of as the "success breeds success" or the "failure breeds failure" phenomenon. Levels of economic diversification can affect economic confidence - actors might well focus on past economic success or failures when they calculate expectations about certain actions. These endogeneity effects between the two equations must be controlled for if we are to discern the unbiased and efficient effects of institutional formality on economic confidence, and of economic confidence on economic diversification.

property rights, one to two years later, respectively, there is an increase in economic confidence. The results offered in Table 3-2 plainly demonstrate that increases in economic confidence lead to a coeval increases in economic diversification. These results confirm H_1 and H_2, and provide statistically and substantively significant empirical support for this modeling of the effects of institutions formality on economic diversification. Do note, however, that these results do not show that just any governmental intervention (e.g., increased governmental size, governmental share of GDP, state-society competition, or increased bureaucratization) contributes to economic diversification. (See also Snider, 1996; Snider and Wood, 1996) It is the specifically the formalization of political institutions that increases confidence for complex contracting and contributes to economic diversification. On the other hand, when elites choose those institutions that do not disable elite discretion regarding economic rights, economic confidence is not increased and economic diversification is forgone.

The substantive implication of these results is that political elites in the LDCs can choose to replace those institutions that have contributed to underdevelopment with those that are associated with economic diversification. Institutional formality is not a political factor endowment, but a political variable that changes with elite choices. The results of this research demonstrate that institutional formality can be used to structure the costs and incentives of economic exchange (reduce transaction costs/increase economic confidence) in order to encourage complex contracting. By engaging in auto-constraint, political elites can go a long way toward diversifying and

developing their economies. I do not state that this transition is cost-free or an easy choice; this model can assert nothing about the political capital available to particular LDC elites to effect change. It can be stated, however, that this research allows us to arrive at the empirically supported conclusion that such a transition is possible.

Directions for Future Research

There is an obvious need for further research regarding the contributions that the structures of the contractual state can make toward wealth creation and economic diversification. This research has shown that we ought to heed Olson's (1995) call to focus on institutions explaining and predicting economic diversification, and that we need not be content with simple *post hoc ergo propter hoc* verification. We need to tighten our focus, both theoretically and substantively, on the relationship between institutional and economic diversification in the Third World.

With specific reference to the research presented in this dissertation, there are two important theoretical and substantive concerns that are not addressed by the model or evident from the results presented in Chapter Three. Most conspicuous is the need to develop an explicit measure for the disabling of elite discretion, in contrast to the implicit measure that is provided by the *International Country Risk Guide* data on "expropriation of private property by the state" and the "repudiation of contracts by the state." The identification of an explicit measure for disabled elite discretion is important to the theoretical, operational, and substantive development of *institutional formality*.

Second, though the results presented in Chapter Two show that economic confidence is indeed an intervening variable, this model does not establish a temporal sequencing for institutional formality, economic confidence, and economic diversification. It measures only the overall effects of property rights and contract rights, using them as distinct variables that are offset from one another by a one year lag. Also, what are the interaction effects between property rights and contract rights? Does property rights merely pre-date contracts rights, or does it influence contract rights? While the literature reviewed in Chapter One suggests that property rights and contract rights are both exogenous (Scully, 1992) and interactive, these relationships need to be empirically established. Such a time series modeling would improve on the model presented in this dissertation. Currently this model relies upon North's (1990b) theoretical sequencing and econometric theory as guidelines for lagging property rights at (t_{-2}), contract rights and exogenous variables at (t_{-1}), and putting economic confidence and economic diversification at (t_0).

Conclusions and Implications: Politics and Economic Outcomes in the LDCs

The overall performance of this model demonstrates that the institutional approach to economic diversification and development is an auspicious line of research. The failure of neo-classical models of economics to satisfactorily explain economic development and the process of elimination have impelled us to look at institutions as a critical variable in analyzing economic development. (Olson, 1995) Concomitantly, Snider (1996) and Leblang (1996) concluded that the macro

perspectives of political science have had no significant relationship to the performance and development of economies, because "studies that use a democracy variable as a proxy for property rights have made a fundamental mistake." (Leblang, 1996: 21) The literature using a predatory perspective of the state (Olson, 1991, 1993; North, 1990a, 1990b; North and Weingast, 1989; Snider, 1990, 1996; Arbetman and Kugler, 1996) does not examine the role of political institutions in how wealth and extractable resources are created in the first place.

The results presented in this dissertation suggest that we need to continue studying the interaction between the choices of political elites, the structures of the state, and economic outcomes in the LDCs. The evidentiality of this comparative political economy analysis supports a growing realization that the current boundaries separating economics and political science are conceptually, theoretically, and substantively counterproductive. Research that seeks to explain and predict economic development can remain the unique province of neither economists nor political scientists. Just as the study of economics cannot take place in a social and political vacuum, the study of politics cannot take place in an economic vacuum. (Odell and Willett, 1990: 32) Research that has unique reliance on traditional economics and political science models is underspecified: Where one examines economic development omitting those collective structures that shape the opportunities and costs of transacting, the results are not compelling. (Olson, 1995)

In conclusion, what generalizations about the relationship between politics and economics are supported by the results of this research? First, this process is not

deterministic and institutional formality is not a political factor endowment. Institutional formality is a variable that fluctuates with the political and structural decisions made by political elites over time. Unlike Modernization or Dependency Theory, this dissertation shows that political elites can and do make choices about political structures and that those choices will strongly influence economic diversification. Though the example of Britain may be historical natural selection (see North and Weingast, 1973) we see that, from Central Europe to Southeast Asia, political elites can and do choose those formal institutions that increase economic confidence and lead to socially optimal economic outcomes. We also see that, from Latin America to Africa to Asia, political elites can and do choose those informal institutions that do not increase economic confidence and lead to socially sub-optimal economic outcomes. The choice involved in institutional formality and the ability of institutions to affect outcomes (March and Olson, J., 1984; Scully, 1992) is key to the analysis of economic diversification. The empirical results presented in Chapters Two and Three show that formal political institutions strongly and significantly impact economic diversification, albeit indirectly.

As this author is a political scientist, he is predisposed to view structures as the first move in the game; behavior subsequently responds to constraints.[3] It appears that only the contractual state has the capacity and the resources to be proactive toward attaining socially optimal goals like economic diversification. (Demsetz, 1968; North and Thomas, 1973; North, 1981, 1990a, 1990b, 1993; de Soto; 1989; Chalmers, 1977;

[3] This is not to dismiss the interrelationship effects between the two variables, however. This interrelationship is why the two equation simultaneous model was used take into account and correct for the endogeneity, or contemporaneous feedback, between structure and behavior.

Miller, 1989; Shepsle, 1989; Ordeshook, 1990; Greif, 1995; Olson, 1995; Crone, 1996; Snider, 1996) The data analyzed in this study strongly support this view. We know that neither functioning free markets nor economic diversification spontaneously generate. This research shows that such economic outcomes are dependent upon and quite sensitive to the formality political institutions, or the discretion that political elites have to change economic rights. It is the contractual state that has the capacity to effect a general reduction in transaction costs, whereas individual economic actors tend to react to the constraints and opportunities facing them in the maximization of their own, personal expected utility.[4] Individual actors rarely create transaction cost reducing structures outside of personally consequential exchanges. (de Soto, 1989) The empirical results presented in this dissertation support this conclusion.

Though more research clearly needs to be done, the differences among countries with respect to institutional formality and economic confidence goes a long way in explaining differences in economic diversification. Agreeing in part with Gerschenkron (1962) these results show that developmental late comers require strong contractual states to overcome capital-intensive competition.[5] "If effective political

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[4] There are, obviously, exceptions to this dichotomy between public and private provision of institutionally enforced private property and economic contracts. Perhaps the most visible example of the private provision of institutional formality is the New York Stock Exchange (NYSE). The monitoring, enforcement, and verification services provided (and required) by the NYSE obviously diminish greatly transaction costs. The institution-like functioning of the NYSE facilitates a volume of economic activity that would otherwise not occur. This, however, may be the exception. Most economic activity and transactions, even within the United States, do not take place within the bounded space of the NYSE. Even in the First World, most economic actors participate in economic activity under the auspices and jurisdiction of governmental, and not private, institutions. Also, within Third World countries such institutions are not as common a forum for economic exchange. Additionally, those Third World economic actors of means will usually prefer to exchange in First World exchanges such as New York, London, Tokyo, etc.

[5] Strong, however, does not imply big. The findings of this research suggest that the capital accumulation to which Gerschenkron refers can only be assisted by the state, not accomplished by it.

institutions are a precondition for...sustained economic growth, it behooves us...to suggest strategies of institutional development." (Huntington, 1971: 478) These results confirm the assertion that "[t]hose few low-income countries that have found the right institutions have accordingly been able to enjoy uniquely rapid 'catch up' growth." (Olson, 1995: 2) With respect to policy options, it is important to keep in mind that not all governmental intervention in the LDCs is market friendly. The state must do a precious few things - i.e., disable elites regarding the protection of private property rights and contract rights - and do them well. This is to say that the costs of governmental intervention to structure and reduce transaction costs must not exceed the benefits. (Milgrom and Roberts, 1990: 87; Demsetz, 1968) For Third World countries with limited resources who are weighing policy options and development strategies, the implications that are consistent with this dissertation's results are readily apparent. The results of this research suggest that LDC elite political leaders need to identify and implement those auto-constraining institutions that protect private property rights and contract rights. Where this does not happen, economic confidence will drop and it is likely that economic diversification and development will be foregone. While the politics of coalitional maintenance and the immediate demands of political survival in the Third World may make these auto-constraining institutions pricey goods to be sure (such as losing access to scarce resources like property ripe for expropriation and contracts waiting to be repudiated), institutional formality from a theoretical, empirical, and substantive standpoint appears to be the shortest distance between where the LDCs are and where they want to be.

The most prescient implications that evidence themselves from this research are, first, that institutional formality and the capability to manipulate economic confidence can and do vary. Institutional formality is a political variable that is dependent upon and sensitive to elite choices. It is not a political factor endowment unique to First World countries. Another trenchant implication for both political science and economics: These results clearly show that politics and political institutions strongly affect economic outcomes. This research supports the conclusion that *appropriately* bounded (i.e., the disabling of elite discretion) political spaces (Crone, 1996) encourage those economic transactions that contribute to economic diversification. Table 3-1 clearly shows that politics directly explains over 74% of economic confidence, or perceived economic transaction costs. Table 3-2 plainly shows that politics, indirectly, accounts for almost 63% of the variance in economic diversification. These results provide persuasive empirical support for the argument that politics and political institutions strongly impact economic outcomes in the Third World. Recall that increased rates of human capital, forced saving, and investment in the developing world have failed to prevent economic failure and there has also been no correlation between capital infusion and economic growth. (Olson, 1995; North, 1990a, 1900b, 1993) This conclusion should not be surprising considering the considerable effect that politics and political institutions have on economic outcomes in the LDCs.

This strong relationship between politics and political institutions on economic outcomes, and the fact that institutional formality is a variable, lead me to conclude

that the LDCs are not trapped in an immutable cycle of economic underdevelopment. By theoretically and empirically linking political institutions to transaction costs and transaction costs to economic diversification, this research demonstrates that it in many cases it is political liberalization that must precede economic diversification. Consequently, political elites in the Third World can import the available political technology - in the form of institutional formality - by which they can manage transaction costs and produce diversified and developed economies.

References

References

Alchian, Armen and Harold Demsetz. (1973) "The Property Right Paradigm." Journal of Economic History 33: 16-27.

Alesina, Alberto, Nouriel Roubini, Sule Ozler, and Phillip Swagel. (1992) "Political Instability and Economic Growth." NBER Working Paper #4173. September, 1992.

Almond, Gabriel and Sidney Verba. (1965) The Civic Culture: Political Attitudes and Democracy in Five Nations (Little, Brown).

Alt, James E. and Kenneth A. Shepsle. (1990) Perspectives and Positive Political Economy. (Cambridge [England]; New York: Cambridge University Press).

Arbetman, Marina. (1994) "Relative Political Capacity: The Concept of Relative Political Penetration." Conference on Political Capacity and Economic Behavior, The Claremont Graduate School, March.

Baran, Paul. (1957) The Political Economy of Growth (New York Monthly Review Press)

Barro, Robert J. (1993) "Pushing Democracy is No Key to Prosperity." The Wall Street Journal December 14: A18.

Brunetti, Aymo and Beatrice Weder. (1994) "Political Credibility and Economic Growth in Less Developed Countries." Constitutional Political Economy 5, 1: 23-43.

Campbell, Donald and Julian Stanley.(1963) Experimental and Quasi-Experimental Design for Research (Houghton Mifflin Co.).

Clague, Christopher, Philip Keefer, Stephen Knack, and Mancur Olson. (1994) "Institutions and Economic Performance: A New Look at Democracies and Growth." Presented at the Eastern Economic Association annual meetings in Boston.

- (1995) "Contract-Intensive Money: Contract Enforcement, Property Rights, and Economic Performance." Center on Institutional Reform and Informal Sector (IRIS) at the University of Maryland. February 10, 1995.

Coase, Ronald. (1960) "The Problem of Social Cost." Journal of Law and Economics 3: 1-40.

Crone, Donald. (1996) Scripps College. Book review for East Asia in Transition: Toward a New Regional Order by Robert S. Ross (1995) American Political Science Review Vol. 90, No. 2: 470-471.

de Soto, Hernando. (1989) The Other Path (New York, Harper and Row).

Demsetz, Harold. (1968) "The Cost of Transacting." Quarterly Journal of Economics 82: 33-53.

Denzau, Arthur and Douglass C. North. (1994) "Shared Mental Models: Ideologies and Institutions." Kyklos Vol. 47: 3-31.

Evans, Peter, Dietrich Rueschemeyer, and Theda Skocpol, eds. (1985) Bringing the State Back In (Cambridge/Cambridgeshire; New York: Cambridge University Press).

Feng, Yi. (1996) "Democracy, Political Stability, and Econmic Growth." Center for Politics and Economics, The Claremont Graduate School.

Finkle, Jason and Richard Gable. (1971) Political Development and Social Change (New York, Wiley).

Frank, Andre Gunder (1969) Capitalism and Underdevelopment in Latin America (New York, Monthly Review Press)

Fukuyama, Frances. (1992) The End of History and the Last Man (New York: Free Press)

Gerschenkron, Alexander. (1962) Economic Backwardness in Historical Perspective: A Book of Essays (Cambridge, Mass.: The Belknap Press of Harvard University Press)

Grandy, Christopher. (1989) "Can Government Be Trusted to Keep Its Part of a Social Contract?: New Jersey and the Railroads, 1825-1888." Journal of Law, Economics, and Organization Vol. 5, No. 2, Fall.

Greif, Avner. (1989) "Reputation and Coalitions in Medieval Trade: Evidence on the Maghribi Traders." The Journal of Economic History Vol. XLIX, No. 4, December.

- (1995) "Institutional Structure and Economic Development: Economic History and the New Institutionalism." Prepared under a cooperative agreement between the Institute for Policy Reform (IPR) and the Agency for International Development (AID): 1-47. (No. PDC-0095-A-00-1126-00).

Gusfield, Joseph. (1971) "Tradition and Modernity: Misplaced Polarities in the Study of Social Change." in Finkle and Gable: 15-26.

Hamilton, James D. (1994) Time Series Analysis (Princeton University Press).

Huntington, Samuel. (1968) Political Order In Changing Societies (New Haven, Yale University Press).

- (1971) "Strategies of Institutional Development." in Finkle and Gable: 478-485.

International Country Risk Guide Handbook. (1990) (International Reports: A Division of IBC USA [Publications] Inc.).

Jackman, Robert, (1982) "Dependence on Foreign Investment and Economic Growth in the Third World." World Politics 34: 175-196.

Johansen, Søren. (1991) "Estimation and Hypothesis Testing of Cointegration Vectors in Gaussian Vector Autoregressive Models." Econometrica 59: 1551-1580.

Jones, R. J. Barry. (1983) "Perspective on International Political Economy." in R. J. Barry Jones, ed., Perspectives on Political Economy (St. Martin's Press: 1983)

Keefer, Phillip and Stephen Knack. (1993) "Why Don't Poor Countries Catch Up? A Cross Country National Test of an Institutional Explanation." Working Paper No. 60, June.

- (1994) "Property Rights, Inequality and Growth." Politics and Economics Vol. 4 December, 1994.

Knack, Stephen and Phillip Keefer. (1995) "Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures." Economics & Politics Vol. 7, No. 3: 207-227.

Kormendi, Roger and Phillip Meguire. (1985) "Macroeconomic Determinants of Growth: Cross-Country Evidence." Journal of Monetary Economics Vol. 16, No. 2: 141-163.

Krueger, Ann. (1974) "The Political Economy of the Rent-Seeking Society." American Economic Review 64: 291-303.

Kuhn, Thomas. (1970) The Structure of Scientific Revolutions, Second Edition (The University of Chicago Press, Ltd., London).

Leblang, David A. (1996) "Property Rights, Democracy and Economic Growth." Political Research Quarterly, Vol. 49, No. 1, March: 5-26.

Lerner, Daniel. (1958) The Passing of Traditional Society (N.Y. Free Press)

Levi, Margaret. (1988) Of Rule and Revenue (University of California Press).

Levine, Ross and David Renelt. (1992) "A Sensitivity Analysis of Cross-Country Growth Regressions." American Economic Review 82: 942-963.

Lijphart, Arend. (1975) "The Comparable-Cases Strategy in Comparative Research." Comparative Political Studies 8, July: 158-177.

March, James and Johan Olson. (1984) "The New Institutionalism: Organizational Factors in Political Life." American Political Science Review 78: 734-749.

Midlarsky, Manus. (1989) Handbook of War Studies (Ann Arbor: University of Michigan Press).

Miller, Gary J. (1989) "Confiscation, Credible Commitment and Progressive Reform in the United States." Journal of Institutional and Theoretical Economics 145: 686-692.

Moe, Terry. (1984) "The New Economics of Organization." American Journal of Political Science 28: 739-777.

- (1990) "Political Institutions: The Neglected Side of the Story." Journal of Law, Economics, and Organization Vol. 6, Special Issue.

Milgrom, Paul and J. Roberts. (1990) "Bargaining Costs, Influence Costs, and the Organization of Economic Activity." in Alt and Shepsle, 1990: 57-89.

Nordlinger, Eric. (1987) "Taking the State Seriously." in Weiner and Huntington, eds. (1987) (Boston: Little, Brown).

North, Douglass C. and Robert Paul Thomas. (1973) The Rise of the Western World (Cambridge University Press).

- (1981) Structure and Change in Economic History (New York: Norton).

- and Barry R. Weingast. (1989) "Constitutions and Commitment: The Evolution of Institutions Governing Public Choice in Seventeenth-Century England." Journal of Economic History Vol. XLIX, No. 4, December.

- (1990a) "Institutions and a Transaction-Cost Theory of Exchange." in Alt and Shepsle, 1990: 182-194.

- (1990b) Institutions, Institutional Change and Economic Performance (Cambridge University Press).

- (1993) "Economic Performance Through Time." Washington University, St. Louis. Prepared for presentation as the Prize Lecture in Economic Science in memory of Alfred Nobel, December 9, 1993. (Copyright, Nobel Foundation)

O'Donnell, Guillermo. (1973) Modernization and Bureaucratic Authoritarianism (Berkeley: Institute of International Studies, University of California).

Odell, John and Thomas D. Willett, eds. (1990) International Trade Policies: The Gains from Exchange Between Economics and Political Sciences (Michigan).

Olson, Mancur. (1965) The Logic of Collective Action: Public Goods and the Theory of Groups (Cambridge: Harvard University Press).

- (1982) The Rise and Decline of Nations: Economic Growth, Stagflation, and Social Rigidities (New Haven: Yale University Press).

- (1993) "Dictatorship, Democracy, and Development." American Political Science Review 87: 567-76.

- (1995) "The IRIS Idea: The Needed Research." InterNet Newsgroup: sci.econ.research. Subject: Institutions and Economic Performance, Monday, Oct. 30, 1995, 20:15:12 GMT, University of Maryland.

Ordeshook, Peter. (1990) "The Emerging Discipline of Political Economy." in Alt and Shepsle, 1990: 9-30.

Organski, A.F.K. (1965) The Stages of Political Development (New York: Knopf).

- and Jacek Kugler. (1980) The War Ledger (The University of Chicago Press, Chicago)

Pindyck, Robert and Daniel Rubinfeld. (1991) Econometric Models and Economic Forecasts (McGraw-Hill, Inc.).

Prebisch, Raul. (1963) Hacia una Dinamica del Desarrollo Latino (Mexico, Fondo De Cultura Economica)

Przeworski, Adam and Henry Teune. (1973) "Equivalence in Cross-National Research." in Donald Warwick and Samuel Osherson, eds. Comparative Research Methods: 119-137 (Englewood Cliffs, NJ: Prentice-Hall).

Rostow, Walt. (1971) "The Take-Off into Self-Sustained Growth." in Finkle and Gable: 141-161.

Pourgerami, Abbas. (1988) "The Political Economy of Development: A Cross-National Causality Test of Development-Democracy-Growth Hypothesis." Public Choice 58: 123-141.

Scully, Gerald. (1992) Constitutional Enviornments and Economic Growth (Princeton University Press).

Shepsle, Kenneth, and Barry Weingast. (1984) "When do Rules of Procedure Matter?" Journal of Politics 46: 206-221.

- (1989) "Institutions, Discretion, and the Problem of Government Commitment." May 1989, Conference of Social Theory and Emerging Issues in a Changing Society, sponsored by the Russell Sage Foundation and Maison des Sciences de l'Homme, University of Chicago, April 5-6, 1989.

Snider, Lewis W. (1996) Growth, Debt and Politics: Economic Adjustment & The Political Performance of Developing Countries. (Boulder, CO: Westview Press)

- and Stephen P. Wood. (1996) "State Capacity and Political Liberalization." Prepared for presentation at the Southern Political Science Association Annual Meeting. Atlanta, GA, November, 1996.

Stolper, Wolfgang F. and Paul A. Samuelson. (1941) "Protection and Real Wages." Review of Economic Studies 9: 333-357.

Wallerstein, Immanuel. (1974) "The Rise and Future Demise of the World Capitalist System: Concepts for Comparative Analysis." Comparative Studies in Society and History 16: 387-415.

Weiner, Myron and Samuel P. Huntington, eds. (1987) Understanding Political Development : An Analytic Study (Boston : Little, Brown).

Wiarda, Howard and Harvey Kline, eds. (1985) Latin American Politics and Development, Second Edition (Boulder, Colorado: Westview Press)

Williamson, O. (1981) "The Economics of Organization: The Transaction Cost Approach." American Journal of Sociology 87: 548-577.

Appendix I: Data Corrections

The data used in the empirical analysis are pooled cross-section time-series data.[1] When using pooled cross-section time-series data it is necessary to make certain data corrections, beyond choosing the appropriate estimation technique, if the empirical results are to be meaningful. The validity of estimation techniques that utilize time-series data is predicated upon the assumption that the data are generated by a stochastic, or random, process. This is to say that each value for a variable is drawn randomly from a probability distribution. This is often not the case with time-series data. A recurrent problem in time-series data is that they exhibit a characteristic that is known as a random walk with a trend.[2] This means that these time-series data are not independent with respect to time. Such data are called nonstationary. With nonstationary data assumptions about the stochastic properties of the data do not hold. Nonstationarity distorts the empirical results and compromises their interpretability: When the data values of a variable are compounded over time, that variable's last observation will be the largest determinant of its present value. In these cases, the effects of the exogenous variable are inflated - especially when the regressand is not also time dependent. When data are not of like magnitude or type they cannot be included in the same estimation technique.

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[1] The observations for each country are truly independent from those of the other countries. Within a country the data can evidence serial correlation and multicollinearity, but not across section. As a result, "tests for serial correlation such as the Durbin-Watson d statistic often yield unreliable results because they are based on the assumption that [all observations] have the same independence from one another as [do the countries]." (Snider, 1996: 36)

[2] See Pindyck and Rubinfeld, 1991: 444.

The test for the stationarity of time-series data is the Augmented Dickey-Fuller, or Unit Root, Test.[3] If the data contain a unit root, they are nonstationary. If the data do not contain a unit root, they are stationary. I looked at the correlogram for each variable at level, first, and second differences to check for stationarity. An Augmented Dickey-Fuller test was run on each variable in the system. With the exception of four variables in the exogenous variables list, the absolute values for the Augmented Dickey-Fuller coefficients for all variables were significantly different than the critical value, allowing for the rejection of the null hypothesis that these variables contained a unit root. These data were stationary in that they did not exhibit a random walk with a trend over time and appear to be result of a stochastic process. For four exogenous variables this was not the case. These variables were political terrorism, economic planning failures, investment, and capital stock per worker. In these cases the coefficients produced by the Augmented Dickey-Fuller test were not significantly different than the critical values and the null hypothesis that these data contained a unit root was not rejected. In order to make these four variables amenable to inclusion in the Two-Stage Least Squares estimation, they had to be made stationary. These data had to be "de-trended" in order to purge the data of their time dependence. This de-trending was accomplished by taking the first difference of the nonstationary data. The Augmented Dickey-Fuller test of the first difference of these data rejected the null hypothesis of a unit root: The first difference of the data were stationary. These first

[3] For a detailed overview of the exact theory underlying the Augment Dickey-Fuller, or Unit Root, Test, see Pindyck and Rubinfeld, 1991, Chapter 15.

differenced data were subsequently incorporated in the Two-Stage Least Squares estimation along with the other stationary data.[4]

Another characteristic of time-series data is that endogenous variables may be co-integrated over extended periods of time. The Augmented Dickey-Fuller test showed that the data for the endogenous variables of economic confidence and economic development were the results of stochastic processes. Unlike many macro-economic phenomena there should be no deterministic relationship between the outcomes of collectively imposed institutions (i.e., variations in economic confidence) and economic development over time. This is because economic confidence is a function of institutions. Institutions result from collective political decisions and not of economic phenomena. "Institutions result from the interaction of conscious effort[.]" (Huntington, 1971: 479) Institutions can, do, and must change independently of economic development. Indeed, Olson (1965) notes that in advanced economies institutions can outstrip economic development, thus putting the brakes on growth. This is evidenced by rent-seeking being the profit margin of an individual actor's production function and other ailments of over-regulation. On the low end of the institutional spectrum, a nationalist or Socialist government may come to power that radically alters the institutional enforcement of property and contract rights. Examples of this are a Castro or an Allende. Consequently, we would expect, over long periods of time, that the endogenous variables of economic confidence and economic

[4] Obviously, the differencing of the data corrected for any serial correlation in the data: The errors from one time period ought not affect the errors in the subsequent time period. Additionally, in pooled time-series cross-section data, the Durbin-Watson statistic for serial correlation is not useful. This is because the matrix is not being read with a new case occurring every tenth observation, but as a single data matrix.

development should not tend to move together.[5] This is to say that these variables should not be co-integrated. As institutional formality, economic confidence, and economic development are stationary variables, it is anticipated that a co-integration test is not appropriate.[6] As a precautionary step a Johansen Co-Integration Test (1991) was run on institutional formality and the endogenous variable of economic confidence to test for co-integration. The results demonstrated that there were two cointegrating equations at the .01 and the .05 levels.[7] The interpretation of these results is that, at the .01 and the .05 confidence levels, the value of the log likelihood ratio leads us to reject the hypothesis that the two variables are co-integrated. Therefore, the hypothesis of a random walk (i.e., the stationarity of the co-integrating regression) cannot be rejected for these data at either confidence level. The results of the Johansen Co-Integration Test on the data for institutional formality and the endogenous variable of economic development demonstrate that there were three cointegrating equations at the .01 and the .05 levels. The interpretation of these results is that, at the .01 and the .05 confidence levels, the value of the log likelihood ratio

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[5] See Pindyck and Rubinfeld (1991) Chapter 15, Section 15.4, for greater details on the theory underlying this test for co-integration.

[6] Essentially, a co-integration test takes two nonstationary variables and finds a linear combination of those variables that will be stationary. By accomplishing this discovery, it would then be possible to run a regression between these two variables in levels (as opposed to first or second differences) "even though both variables are random walks." (Pindyck and Rubinfeld, 1991: 466)

[7] The more restrictive test for co-integration, the Vector Error Correction model as opposed to the Vector Autoregression, was used to determine the "co-integrating rank." (See Hamilton, 1994, for a more detailed discussion.) Johansen's Co-Integration Test (Vector Error Correction model) asserts that when the number of co-integrating equations equals N (where N equals the number of endogenous variables) that the variables are *not* co-integrated and therefore do not tend to move together over time. On these data, the number of co-integrating equations generated was 2; as there are two endogenous variables, $N = N$. The endogenous variables in this model are *not* co-integrated. For the variables of Property Rights, Contract Rights, and Economic Development, the number of co-integrating equations generated was 3; as there are three (potentially) "endogenous" variables, $N = N$. The interpretation is that these variables are not co-integrated and therefore do not tend to move together over time.

leads us to reject the hypothesis that there is a linear combination that is stationary: These three variables can be immediately utilized in a regression, at levels, and need not rely upon co-integration techniques.[8] In addition to the use of predetermined values (lagged endogenous) for institutions to operationalize this model, the results of the Johansen Co-Integration Test (in addition to the Augmented Dickey-Fuller test) contribute confidence that the data operationalizing institutional formality (property rights and contract rights) is exogenous to the simultaneous equations model postulated in this dissertation.

Last, the White t-statistics for heteroscedasticity showed consistent standard errors and covariance. The lack of heteroscedasticity, however, may not be exceptionally interesting given the properties of pooled cross-section time-series data. Though the assumption of constant error variance can often be unreasonable in regression analyses, "[h]eteroscedasticity, or unequal variances, does not usually occur in time-series studies because changes in the dependent variable and changes in one or more of the independent variables are likely to be of the same order of magnitude." (Pindyck and Rubinfeld, 1991: 127)

[8] These results offer further confidence that the Augmented Dickey-Fuller test was accurate and correctly performed.

Appendix II: Two-Stage Least Squares Estimation

In the first stage of Two-Stage Least Squares estimation, OLS is used to regress the explained variables on all of the variables exogenous to the system of equations. As property rights (P) and contract rights (D) are predetermined variables, they must be included with all the other exogenous variables on the right-hand side of the equation.[9] These "reduced form" equations are,

$$\hat{C} = \beta_C P + \beta_C D + \beta_C Z + \beta_Y W + \varepsilon_1$$

$$\hat{Y} = \beta_C Z + \beta_C P + \beta_C D + \beta_Y W + \varepsilon_2$$

This first stage produces fitted values of economic confidence (C) and economic diversification (Y) that are by construction independent of the error terms in large samples. These fitted values of economic confidence ($\hat{C}$) and economic diversification ($\hat{Y}$) are the instruments, or instrumental variables. This first stage process yields an instrumental variable that is "linearly related to the predetermined variables...and which is purged of any correlation with the error term[.]" (Pindyck and Rubinfeld, 1991: 299) This corrects for the contemporaneous feedback between the endogenous variables in this simultaneous equation model.

In the second stage, the modified structural equations are estimated using the predicted values of ($\hat{C}$) and ($\hat{Y}$) from the first stage as instruments in place of the right-hand endogenous variables. Ordinary Least Squares estimation in this second

[9] See R.C. Fair, in Pindyck and Rubinfeld, 1991: 307.

stage yields a consistent estimators of the structural, or parameter, equations. (Pindyck and Rubinfeld, 1991: 300, 302, 307) The "structural form" equations are,

$$\hat{C} = \hat{\beta}_C P + \hat{\beta}_C D + \gamma_C \hat{Y} + \hat{\beta}_C Z + \varepsilon_1$$

$$\hat{Y} = \gamma_Y \hat{C} + \hat{\beta}_Y W + \varepsilon_2$$

Had the Two-Stage Least Squares estimation results been identical to the OLS or Indirect Least Squares runs on each separate equation, we say that the structural form equations are exactly identified. Also, had the system been unidentified (where there existed perfect collinearity among the variables) no estimation whatsoever would have been possible. Neither was the case. The quantitative consequence of a simultaneous model is that OLS and WLS must be replaced with Two-Stage Least Squares estimation. The empirical results obtained by running the Two-Stage Least Squares estimation technique on this simultaneous equations model are efficient, unbiased, and interpretable as parameter estimates.[10] Also, the endogeniety effects of economic confidence and economic development are purged from the empirical results.

[10] It has been demonstrated that it is possible for Two-Stage Least Squares to yield inefficient estimates when one does not "take into account that there may be predetermined variables omitted from other equations." The correction for this specification oversight is Seemingly Unrelated Regression. (Pindyck and Rubinfeld, 1991: 308) Seemingly Unrelated Regression has been run on these equations: The results were not significantly different from the Two-Stage Least Squares runs. Additionally, Three-Stage Least Squares (a technique that applies Generalized-Least Squares in a third stage) runs showed no cross-correlation between error terms in this system of equations. The lack of significant contribution of these more sophisticated quantitative methods to empirical results offers increased confidence that Two-Stage Least Squares is the appropriate method to test the model of this dissertation.

Appendix III: Variable Definitions

Institutional Formality

Expropriation of Private Investment by Government (Property Rights)

"The risk of expropriation of private foreign investments encompasses outright confiscation and forced nationalization. The risk of expropriation may vary by type of business or by the investor's country of domicile. However, for simplification of country comparisons, the INTERNATIONAL COUNTRY RISK GUIDE expropriation risk indicator does not make these distinctions. The lowest risk ratings are given to countries where expropriation of private foreign investment is a likely event." (*International Country Risk Guide*, 1990: 17)

Repudiation of Contracts by Government (Contract Rights)

"This indicator addresses the possibility that foreign businesses, contractors and consultants face the risk of a modification in a contract taking the form of repudiation, postponement, or scaling down. A country may initiate contract modification with a foreign business because of an income drop, budget cutbacks, indigenization pressure, a change in government, or a change in government economic and social priorities. Low point totals signify a greater likelihood that a country will modify or repudiate a contract with a foreign business." (*International Country Risk Guide*, 1990: 16-17)

Economic Confidence

Institutional Investor Country Risk Rankings, Bi-annual reports

This variable is based on "ratings provided by leading international banks. Bankers are asked to grade each of the countries on a scale of zero to 100, with zero representing the least creditworthy countries and 100 representing the most creditworthy and the ones with the least chance of default. Study sample ranges from 75 to 100 banks. Banks are not permitted to rate their home countries. The responses are weighted to give more weight to responses from banks with the largest worldwide exposure and the most sophisticated country analysis systems." (Snider, 1996: Institutional Investor, September, 1982)

Economic Diversification

The value of the manufacturing sector as a percent of GDP times the value of the manufacturing sector as a percent of total exports. (Snider, 1996: International Monetary Fund, *International Financial Statistics*)

Variables Exogenous to the System of Equations

Economic Planning Failures

"Failures in economic planning increase risk to foreigners of doing business in a particular country, by creating uncertainties. Operating strategy and cash flow may be affected, and the likelihood of a change in government or government policy toward foreign lenders and investors may be increased. Planning failures may result

from adopting an economic strategy that is not suitable to the country. Even an appropriate development plan can fail if the strategy cannot be implemented. Planning failures typically cause a variety of problems such as a squeeze on income and employment, a shortage of foreign exchange, and in increase in inflation. These adverse economic conditions put the government under political pressure and may result in a change in regime or the imposition of unfavorable or ill advised economic policies, both of which will have a negative effect on foreign business. Debacles in economic planning imply the greatest risk and the lowest point totals, while successful economic planning carries low risk and receives higher risk ratings." (*International Country Risk Guide*, 1990: 9)

Political Terrorism

"This indicator measures the extent to which dissidence is expressed through political terrorism, such as armed attacks, guerrilla activity, or attempted assassinations. In countries with a low propensity for terrorism, opposition can be expressed by parliamentary means, or through some other institutions such as a direct appeal to the ruler, as in Saudi Arabia. Political terrorism carries a high risk for foreign investors because of the threats of property loss and danger to personnel. Terrorism is also a negative political factor because failure of the government to contain or defuse it can lead to the downfall of the regime. Such changes in government can increase business risks, due to uncertainties with respect to the policies of the new government. Therefore, countries with a high incidence of political terrorism receive the lowest risk point totals." (*International Country Risk Guide*, 1990: 12-13)

Covert Profit Transfers

The ratio of international lending rate divided by the domestic lending rate, multiplied by inflation. (Snider, 1996: International Monetary Fund, *International Financial Statistics*)

Investment.

Investment is real gross domestic investment, both private and public, as a percentage of real GDP per capita. *Penn World Tables*

Capital Stock per Worker

This variable is operationalized as the sum of producer durables, non-residential construction, and other construction as a proxy measure for productivity. *Penn World Tables*

Trade Openness

The variable for trade openness is operationalized as exports plus imports divided by real GDP per capita. *Penn World Tables*

Trade Weighted Real Exchange Rate

This variable measures the value of a country's currency weighted by its export-oriented production. (Snider, 1996: International Monetary Fund, *International Financial Statistics*)

Income per Capita ($US)

The operationalization for this variable is real GDP per capita divided by real GDP per capita ($US). (Snider, 1996: International Monetary Fund, *International Financial Statistics*)

Appendix IV: Spatial-Temporal Domain of the Data

The temporal domain of these data is nine years, covering 1984 - 1992. The spatial domain for these data is the following thirty-eight countries: Algeria, Argentina, Bolivia, Brazil, Chile, Taiwan, China (PRC), Colombia, Costa Rica, Cote d'Ivoire, Ecuador, Egypt, Ghana, India, Indonesia, Israel, Jamaica, Japan, South Korea, Liberia, Malaysia, Mexico, Morocco, Nigeria, Pakistan, Peru, Philippines, Singapore, South Africa, Sudan, Tanzania, Thailand, Turkey, Uganda, Uruguay, Venezuela, Zaire, and Zambia.