

**THE POLITICAL ECONOMY OF MILITARY SPENDING, FREEDOM,
CONFLICTS, AND ECONOMIC GROWTH IN DEVELOPING COUNTRIES**

A Dissertation

by

RIAD A. ATTAR

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2006

Major Subject: Political Science

**THE POLITICAL ECONOMY OF MILITARY SPENDING, FREEDOM,
CONFLICTS, AND ECONOMIC GROWTH IN DEVELOPING COUNTRIES**

A Dissertation

by

RIAD A. ATTAR

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Approved by:

Chair of Committee,
Committee Members,

Alex Mintz
John Robertson
Guy Whitten
Christopher Sprecher
Harold Livesay
Patricia Hurley

Head of the Department

May 2006

Major Subject: Political Science

ABSTRACT

The Political Economy of Military Spending, Freedom, Conflicts,
and Economic Growth in Developing Countries. (May 2006)

Riad A. Attar, B.S., Yarmouk University;

B.S., Far Eastern University;

M.A., Midwestern State University

Chair of Advisory Committee: Dr. Alex Mintz

This study assesses the effect of politics on economic growth in developing societies. In this study I developed and applied an augmented production function model to 69 developing countries with several political variables: regime type, institutional freedom, political freedom, political stability, and ideological base. I investigated how changes of political contexts affect economic growth by applying non-linear least squares, and cross national time series techniques to the production function defense-growth model utilizing time series data from 1960 to 2002. The results show that the impacts of political variables on economic growth are at least as significant as the economic variables; the externality of non-military spending has positive and significant impact on economic growth in the majority of countries; and the impacts of economic and military variables and their externalities' effects on economic growth differ with different political contexts. The main findings of the study provide guidelines to policy decision makers in evaluating their "guns"- "butter" alternatives.

ACKNOWLEDGMENTS

I am indebted to Texas A&M University and the Department of Political Science whose support made my scientific endeavor fruitful. I would like to thank Professor Alex Mintz, the chair of my committee, for his continuous help, guidance, and insightful comments throughout this research. I extend my appreciation to my committee members, Professors Chris Sprecher, Guy Whitten, John Robertson, and Harold Livesay.

I would like to express my gratitude to my sons Azeez and Bassel, who bore the brunt of this project. Finally, special thanks go to my wife Reem, who supported me with all her capacity.

TABLE OF CONTENTS

	Page
ABSTRACT	iii
ACKNOWLEDGMENTS	iv
TABLE OF CONTENTS	v
LIST OF FIGURES	viii
LIST OF TABLES	ix
 CHAPTER	
I INTRODUCTION	1
The Production Function Research Program	1
The Evolution of the Production Function	5
The Political Economy of Defense	10
Combining Politics and Economics	17
The Production Function and Developing Countries	19
The Impact of Conflicts on Economic Growth	20
Organization of the Study	22
II THEORY AND MODEL	23
The Heo-Mintz Alternative	29
The Models	31
Hypotheses	34
III DATA AND METHODS	38
Economic Data	38
Military Data	40
Political Data	42
Institutional and Political Freedoms	42
Regime Type	43

CHAPTER	Page
Regime Stability	45
Ideological Base	46
Conflict Variables.....	47
International and Extra-Systemic Wars	47
Civil Wars.....	48
Methods	49
 IV RESULTS	 56
The PF with Political Freedom.....	58
The PF with Institutional Freedom.....	63
The PF with Regime Type	65
The PF with Political Stability	66
The PF with Ideological Base	67
The PF with Internal Conflicts	69
The PF with External Conflicts	70
The PF with Total Conflicts	72
Results of the Cross National Time Series Analysis.....	73
The CNTS Analysis with a Single Political Variable	75
MENA Non-Oil Producing Countries	85
MENA Oil Producing Countries	87
The Arab World	90
The Middle East and North Africa	92
Latin America	94
Africa.....	96
Asia.....	98
The Caribbean Region	100
The CNTS Analysis with Conflicts as Control Variables	102
Africa.....	103
Asia.....	103
MENA	103
Latin America	104
The Caribbean Region	104

CHAPTER	Page
V	THE ECONOMICS AND POLITICS OF DEVELOPMENT IN THE MIDDLE EAST AND NORTH AFRICA 106
	Structural Approach to Political Systems 111
	Economic Growth Based on Easton Model 114
	Apply Easton Framework on the MENA 116
	Egypt and Algeria 123
	Egypt 123
	Algeria 127
VI	CONCLUSION 132
	The PF with Political Freedom 135
	The PF with Institutional Freedom 136
	The PF with Regime Type 137
	The PF with Regime Stability 137
	The PF with Ideological Base 139
	The PF with External Conflicts 140
	The PF with Internal Conflicts 141
	The PF with Total Conflicts 141
	The CNTS Analysis with Conflicts as Control Variables 142
	The CNTS Analysis with a Single Political or Conflict Variables 144
	Problems and Issues Concerning the Empirical Analysis 147
	REFERENCES 152
	APPENDIX A 163
	APPENDIX B 259
	APPENDIX C 275
	VITA 281

LIST OF FIGURES

FIGURE	Page
1	The Impact of Political Freedom, Economic, Military, and Non-military Factors, and Their Externalities on Economic Growth 64
2	The Impact of Institutional Freedom, Economic, Military, and Non-military Factors, and Their Externalities on Economic Growth 64
3	The Impact of Regime Type, Economic, Military, and Non-military Factors, and Their Externalities on Economic Growth 68
4	The Impact of Regime Stability, Economic, Military, and Non-military Factors and Their Externalities on Economic Growth 68
5	The Impact of Regime Ideological Base, Economic, Military, and Non-military Factors, and Their Externalities on Economic Growth 71
6	The Impact of Internal Conflicts, Economic, Military, and Non-military Factors, and Their Externalities on Economic Growth 71
7	The Impact of External Conflicts, Economic, Military, and Non-military Factors, and Their Externalities on Economic Growth 74
8	The Impact of Total Conflicts, Economic, Military, and Non-military Factors, and Their Externalities on Economic Growth 74
9	Model of the Production Function Based on Easton (1965, p.32) 116

LIST OF TABLES

TABLE	Page
1 Summary of the Non-linear Least Squares Empirical Analysis Results	59
2 Summary of the Cross National Time Series Results with Political Variables	76
3 Summary of the CNTS Results with Conflicts as Control Variables	81
4 Cross National Time Series Analysis Results with External and Internal Conflicts as Control Variables –MENA	118
5 Cross National Time Series Analysis Results with a Single Political Variable-MENA.....	120
6 NLS Results of Egypt.....	124
7 NLS Results of Algeria	128

CHAPTER I

INTRODUCTION

This study assesses the effect of politics on growth in sixty nine developing societies. Political economists (e.g. Harrod, 1939; Domar, 1946; Solow, 1957, 1970; Denison, 1967, 1985; Feder, 1982; Ram, 1986; Mintz & Huang, 1990, 1991; Ward & Davis, 1992; Mueller & Atesoglu, 1993a, 1993b; Heo & DeRouen, 1998; Heo, 1998) have not examined empirically the results of political factors on economic development and growth (but see Heo & Mintz, 2002). In this study I developed and applied an augmented production function model to 69 developing countries from 1960 to 2002, and tested it with several political variables: political freedom, institutional freedom, regime type, stability, and ideology, using a non-linear least squares (NLS) method, and cross national time-series (CNTS) analysis. The empirical results show that the influences of economic and military variables on economic growth while controlling for interstate and intra-state conflicts vary across different political contexts. The study demonstrates empirically that politics matters in the development and growth of nations.

The Production Function Research Program

The study is an extension of the production function model research program which began after the Great Depression in the early 1930s. The Purpose of this study is

This dissertation follows the style of the journal *Political Psychology*.

to introduce to the production function defense-growth model political dimensions, and to assess the impact of political and conflict variables on economic growth.

The study theorizes that excluding political factors from the production function defense-growth model hampers any realistic explanation of the problems of economic growth; that the influences of economic and military variables and their externalities effects vary across different political contexts ; that political factors are at least as important as economic factors in determining the outcome of economic growth; and that intra-state and interstate conflicts have different impacts on economic growth, and their impacts differ across regions.

By incorporating political and conflict variables such as political freedom, institutional freedom, regime type, regime stability, regime ideological base; and intra-state, interstate, and total conflicts, I augmented the production function to include the fundamental dimensions of political regimes. Consequently, the production function model should gain more explanatory power to predict economic growth and development of nations. I extended the applicability of the production function defense-growth model to the Third World, which has different level of economic and political development from the First World. The main findings of the study offer important contributions to the study of economic growth in developing countries, and provide guidelines to policy decision makers in evaluating their “guns”-“butter” alternatives.

The study provides preponderance of empirical evidence that the externality of military spending hinders economic growth, while the externality of non-military spending promotes economic growth in all political contexts. This finding is huge

because it resolved a controversial issue, which has been debated for more than three decades. Also, the results of the study show that the impact of the non-military sector on economic growth is positive and significant in the majority of countries, while the impact of military sector on economic growth is positive and significant only in the minority of countries.

Despite the proliferation of studies on the impact of military spending on economic growth, it was inconclusive before this study, whether defense spending hinders or promotes economic growth. In fact, despite many research efforts, no strong conclusion about the relationship between military spending and economic growth can be drawn from the literature. The inconsistent results have led Chan (1985, p. 405) to conclude that a review of the literature in this area is “as likely to bewilder as it is to enlighten.” (see also Mintz & Stevenson 1995, p. 283). Mintz and Stevenson (1995, p. 85) wrote, “the literature has failed to provide any meaningful consensus on the question of whether defense spending encourages or hinders economic growth. Indeed, any study that fails to address these issues is unlikely to contribute to such an answer.” The results of my dissertation significantly contribute to settling such a question.

The study is the first that added conflict variables to the production function defense-growth model and test them empirically across countries and regions. The cross national time-series analysis with external and internal conflicts (2349 observations) shows unequivocally that internal conflicts have negative and significant impact on economic growth in all political contexts, while external conflicts have insignificant negative impact on economic growth in all political contexts. The cross national time-

series analysis of five regions: the Middle East and North Africa (MENA), Latin America, Asia, Africa, and the Caribbean region shows that the impact of conflicts on economic growth differs across regions.

The Middle East and North African region shows preponderance of evidence that internal and external conflicts have negative and significant impact on economic growth with all political contexts. This finding strongly supports the theme of my case study in chapter V, that the Middle East and North African countries have military mode of production.

The study has very important policy implications since it provides compelling empirical evidence and guidelines to policy makers on how to allocate the resources of their states, and to adopt policies that promote economic growth. The main guidelines that I believe are beneficial to policy decision makers are: first, policy makers should reform their political system so it will contribute to economic growth. Improving the levels of freedom, democracy, and openness of the political system are as important as economic factors to promote economic growth; second, the reallocation of resources to the civilian sector is the *sin-qua-none* to improve the performance of the economy in developing countries. The leaders of the Middle East and North African countries should pay closer attention to this point due to the enormous amount of resources that they spend on the military sector; third, Third World leaders should pursue a policy of national reconciliation between rich and poor, and among ethnic and religious groups because domestic conflict has damaging effects on the performance of national economy. In the Middle East and North African countries, in particular, economic

development is more likely to improve if the leaders pursue policies that advance domestic and international reconciliation.

In order to illuminate the above mentioned contributions of this study and show its importance on the evolution of the production function model research program, I first review the evolution of the neoclassic production function model; second, I review the logic of the incorporation of defense spending factors into the neoclassic model of economic growth; and finally, I review the logic of the incorporation of political variables to the production function defense-growth model.

The Evolution of the Production Function

Solow (1988, p. xi) wrote, “Growth theory did not begin with my articles of (1956) and (1957), and it certainly did not end there. Maybe it began with *The Wealth of Nations*; and probably even Adam Smith had predecessors.” The Physiocratic school founded by François Quesnay (1694-1774) preceded Adam Smith in developing the fundamental ideas to achieve economic growth. The Physiocrats articulated the roles of economic activities that expand the country’s revenue such as industrialization, free trade, and investment. The Physiocrats believed that a country should concentrate on manufacturing only to the extent that the local availability of raw materials and of suitable labor enabled it to have cost advantage over its overseas competitors (see Muller, 1978; Eltis, 1988). Thus, the complete lifting of all restrictions on local and foreign sales of agricultural products, and sufficient private investments would only be forthcoming if they improve the general economic climate. In accordance with the

Physiocratic doctrine, the economic climate could be improved by desisting from mercantilist policies, terminate the state's policy of providing special privileges to certain manufacturers, abolish excessive dues and tolls along transport routes, and overhaul the tax system so as to remove the disincentive effect of the existing system. As far as the private investment is concerned Quesnay foresaw that the problem might arise through insufficient saving. Therefore it was incumbent upon the proprietors (the major source of saving) to refrain as far as possible from unnecessary consumption (see Muller, 1978; Eltis, 1988).

In all accounts, Adam Smith's *The Wealth of Nations*¹ embodies a penetrating analysis of the processes whereby economic wealth is produced and distributed. The central thesis of *The Wealth of Nations* is that capital is best employed for the production and distribution of wealth under conditions of governmental noninterference, or "laissez passer-laissez-faire" economy, and free trade. In Smith's view, the production and exchange of goods can be stimulated, and a consequent rise in the general standard of living attained, only through the efficient operations of private industrial and commercial entrepreneurs acting with a minimum of regulation and control by governments (see Smith, 2000).

Although this view of 'laissez passer-laissez faire' economy' has undergone considerable modification by economists in the light of historical developments since Smith's time, many sections of *The Wealth of Nations*, notably those relating to the sources of income and the nature of capital, have continued to form the basis for

¹ *An Inquiry Into the Nature and Causes of The Wealth of Nations*, published in 1776

theoretical study in the field of political economy. *The Wealth of Nations* has also served, perhaps more than any other single work in its field, as a guide to the formulation of governmental economic policies (see Persky, 1989). The Wealth of Nations is Smith's attempt to define the institutional structure which will best harmonize the individual's pursuit of his selfish interests with the broader interests of society. The Smithian model is one of controlled freedom: freedom of behavior and choice exists only within the socially established norms of conduct. Self love and self interests go hand in hand with social control and socialization (see Samuels, 1977, p. 196).

After the Great Depression, the main objectives of classical economists was to regain the stability of the market system and to redefine the steady state conditions of economic growth within the parameters of industrially advanced societies. Struck by unstable economic system after the Great Depression, Harrod (1939) and Domar (1946) attempted to integrate Keynesian analysis with elements of economic growth. Harrod and Domar used the production function with little substitutability among the inputs to argue that the capitalist system is inherently unstable (see Barro, 1999, p. 10). In pursuit of redefining economic stability Harrod and Domar arrived by noticeably different routes at a classically simple answer: the national saving rate (s) has to be equal to the product of the capital-output ratio (v) and the rate of growth of the effective labor force (n), thus, they are compatible if and only if $s = vn$. Contrary to Harrod and Domar's expectations, their formula proved to be explosively unstable as a result of its simplicity and the rigidity of its assumptions (see Deane, 1978, pp. 190-204; Solow, 1988, pp. x-xvi).

The advancement of the technological factor by Robert Solow (1957, 1970) opened up growth theory to a wider variety of real world facts and to a closer connection with general economic theory. Solow (1957, 1970) and Denison (1967, 1985) are credited for having developed the well known neoclassical aggregate production function, which posits that economic growth is a function of changes in input of capital, change in effective labor force, and change in technology. An economy growing at 'steady state' according to Solow (1988, p. 4), "its output, employment, and capital stocks grow exponentially, and its capital/output ratio is constant." Thus, the growth of the output can be explained by the variations of capital and labor.

Later, it became a strong tradition to use the neo-classical production function approach in studying the defense –growth relationship (see Heo, 1999, 2000; Sandler & Hartley, 1995; Heo & Mintz, 2002). Feder (1982) used this approach by dividing the aggregate economic output into: export and non-export sector. Following the logic of the neo-classical production function approach, Ram (1986) developed a two-sector growth (government and private sectors) model to examine the relationship between government spending and economic growth. Ram suggested that the public and private sectors differ with respect to productivity. In several articles, Mintz and Huang (1990, 1991) and Huang and Mintz (1990, 1991) developed a three equation model employing neoclassical production function model to test the impact of defense spending including externalities on economic growth in the United States. Mintz and Huang (1990, 1991) and Ward and Davis (1992) have tested not only the economic effects of military and

non-military public expenditures on growth, but also the externality effects of these expenditures.

The defense-growth production function model prior to Mueller and Atesoglu's (1993a, 1993b) did not include the impact of technological change on economic growth. Mueller and Atesoglu (1993a, 1993b) included technological progress in their model utilizing the concept of the *Hicks neutral technological change* which basically means that changes in technology do not change the share of income going to the factors of production and the factor ratios. In other words, this concept will allow us to measure the effects of technological progress separately without affecting the contribution that labor and capital make to the growth (see also Heo, 1999). Heo and Mintz (2002) noticed that the defense-growth production function model can be benefited by including technology progress. The authors concur with Solow (1988, p. 35) who suggested that technological progress is necessary for steady growth to be possible, and Denison (1985) who contended that the advancement in technology provides a way to produce at lower cost. Thus, Heo and Mintz (2002) concluded that technological progress is the cornerstone for the persistent long-term growth of output per unit of input.

However, Heo and DeRouen (1998) suggest that Mueller and Atesoglu (1993a, 1993b) implicitly assume that technological progress in the non-military public sector, and technological progress in the non-military private sectors are identical. Thus, Heo and DeRouen (1998) argue that it is theoretically more reasonable to separate the private and the non-military government sectors while keeping technological change effects in

the model. They claim that this division of the sectors allows the economic effects of defense spending on growth to be measured more accurately.

Despite the vast number of studies on the defense-growth relationship the political variables were absent from the defense-growth production function model. Heo and Mintz (2002) extend the production function model of Ram (1986), Mintz and Huang (1990), and Ward and Davis (1992) to include an important political factor and test this model with empirical data on the U.S. 1948-1996. The augmented Heo-Mintz (H-M) defense-growth-political production function model introduced a new research program, which paved the way to explore the impact of other political factors on the growth and development of nations.

The Political Economy of Defense

The political economy of defense (PED) is a relatively new field in international political economy. In setting the boundaries for the PED, Ross (1991, p. 7-10) maintains that the PED has budded from defense economic and the works of such economists as Adam Smith, David Ricardo, J.S Mill, and Karl Marx. Ross (1991, p. 32) urges that this new field remedy past mistakes of defense economies because the growing literature of PED has moved beyond the unidimensional disarmament/armament development approach that flourished in the 1970. Prior to the PED, the two main approaches were arms race approach and incrementalism. The arms race approach centered on the superpowers' arms race, particularly, the strategic weapons component. Incrementalism posited that since defense budgetary process must pass over many desks, budgetary

policy makers rely heavily on the record of past expenditures, with only marginal adjustments of previous appropriations (see Mintz, 1991, p. 6).

The PED approach attempts to fill the gap that exists in the literature by integrating domestic and international political and economic phenomena. Therefore, the PED adds explanatory power to the theories that attempt to explain the dynamics of the Third World's development and growth. Nevertheless, there is no consensus among scholars of the impact of defense spending on economic growth. Some scholars such as Benoit (1978, p. 276) argued that defense programs of most countries help economic growth, while others such as Ball (1983) suggests that they do not always promote economic growth. Nevertheless, Mintz and Stevenson (1995, p. 637) observed that, "The question of how defense spending affects economic growth has been important to both academicians and the policy community". While many studies had been conducted, a dominant theoretical framework has not emerged. Therefore, in his review article, Chan (1987, p.35) wrote, "even though we understand the processes through which military spending can affect economic performance much better now than a decade ago, there remains much that we do not know or that we disagree about."

Heo's (1996, pp.4 - 6) dissertation illustrates three different perspectives concerning the relationship between defense spending and growth. According to Heo (ibid), one group of scholars has found that defense spending has a positive impact on economic growth (Atesoglu & Mueller, 1990; Benoit, 1973, 1978; Biswas, 1993; Kaldor, 1976; Kennedy, 1983; Mueller & Atesoglu, 1993a, 1993b; Weed, 1983). The standard argument of researchers in this group is that defense spending directly

stimulates economic growth by increasing purchasing power and aggregate demand. A second group of scholars has found a negative relationship between defense spending and economic growth (Deger, 1986; Deger & Sen, 1983; Deger & Smith, 1983; Faini, Annez, & Taylor, 1984; Mintz & Huang, 1990, 1991; Smith, 1980; Ward & Davis, 1992; Heo, 1998). This group of scholars arguing the negative impact of defense spending and focus on two disadvantages: the allocation effect (gun vs. butter trade-off) and the growth effect (gun vs. growth trade-off). According to the allocation effect argument, the government expenditures have a dampening effect on investment, which in turns slow down economic growth. A third group of scholars have been unable to find any relationship between defense spending and economic growth (Alexander, 1990; Biswas & Rati, 1986; De Rouen, 1993).

In order to study how defense spending affects economic growth Benoit (1973, 1978) conducted empirical analysis on 44 developing countries between 1950 and 1965. The first analysis included the whole period, while the second analysis covered only the period 1960 to 1965. Benoit failed to find any relationship between defense spending and economic growth in his first analysis. However Benoit did find that countries with a heavy defense burden generally had the fastest growth rates, and those with lowest growth rates spent little on defense. Benoit (1978, p.276) argues that defense programs in most countries help economic growth by (1) feeding, clothing, and housing a number of people who would otherwise have to be fed, housed, and clothed by the civilian economy; (2) providing education and medical care and technical training; (3) engaging in a variety of public works such as roads, dams, airport, and communication networks

that may serve civilian uses; (4) engaging in scientific and technical specialties such as hydrographic studies, mapping, aerial surveys, metrology, soil conservation, and forestry projects as well as certain quasi-civilian activities such as disaster relief. Ball (1983) criticized Benoit on the ground that the utility of offering goods and services by the military should be evaluated based on the comparative prices of the same goods and services offered by the civilian sector.

Deger and Sen (1983) argue that military expenditures divert resources from other uses and so have direct opportunity costs in terms of investment and consumption. Furthermore, there is a balance of payment costs because the weapon systems require a great amount of import. Nevertheless, when the aggregate demand is shorter than potential supply, military expenditures will increase employment of labor. In their study on less developed countries, Deger and Smith (1983) found that military expenditures have negative effects on growth and thus hinder development.

The apparent contradiction of the impacts of defense spending on economic growth led Cappelen, Gleditsch, and Pjerkholt (1984) to attempt overcoming this dilemma by pooling cross-sectional and longitudinal data within the framework of a model of economic growth. The data are for 17 OECD² countries for the period 1960-1980. The authors found that military spending has positive impact on manufacturing output, but negative effect on investment. These two effects have an opposite impact on

² Organization for Economic Cooperation and Development (OECD): An international organization founded in 1961 to coordinate the economic policies of industrialized nations.

economic growth for the whole sample of countries and for the subgroups, except for the Mediterranean countries.

Frederiksen and Looney (1983, 1985, and 1986) argue that critical determinant in the relationship between defense spending and economic growth depends on the country's financial resources. According to these authors, a country with limited financial resources will always face budget reductions. These reductions will often stop development projects in favor of defense program. Thus, the authors hypothesized that resources constrained countries will have negative relationship between defense spending and economic growth, while defense spending will have positive impact on growth in resources non-constrained countries. They conducted a cluster analysis on 37 developing countries from 1950 to 1965. Their hypotheses were supported in the analysis.

Lim (1983) examined the relationship between defense and growth for 54 developing countries: 21 African, 13 Western Hemisphere, 11 Asian, and 9 Middle Eastern and South European for the period 1965-1973. He conducted an ordinary least squares (OLS) analysis for the 54 countries, and found out that defense spending has a significantly negative effect on growth. However, when the author conducted an analysis based on regions, only African and Western Hemisphere countries showed the negative relationship between defense spending and economic growth.

Faini, Annez, and Taylor (1984) also conducted an empirical test on 69 countries from 1952 to 1970, and concluded that defense spending has a clear negative effect on economic growth. They also found out that export expansion is positively associated

with economic growth. Likewise, population growth except Africa is positively associated with economic growth.

Kinsella (1990) investigated the relationship between defense spending and economic performance in the United States 1943 to 1989 using vector autoregression analysis (VAR). The evidence indicates that there is not substantial relationship, in causal direction, between defense spending and the price level, the unemployment rate, or the interest rate. Nor does there appear to be any substantial lagged relationship between defense spending and output. Kinsella concludes that those arguments which link defense spending to economic performance receive little empirical support.

However, Jeording (1986) argues that although many previous studies assumed that defense spending precede economic performance, the opposite relationship may exist. Thus, he conducted a Granger causality test on 57 developing countries from 1962 to 1977 from SIPRIT, and from 1967 to 1976 from ACDA. Joerding (ibid) found that defense spending does not have any statistically significant causal impact on economic growth. Contrary to Benoit (1978), he found that economic growth causes military spending. In agreement with Joerding about the possibility that economic growth may precede defense spending, Chowdhury (1991) conducted a Granger-Causality analysis between defense spending and economic growth over 55 developing countries. He did not find a causal relationship between defense spending and economic growth across countries.

Biswas & Rati (1986) developed a model employing Feder's growth model to examine the relationship between defense spending and economic growth in 58

developing countries (17 low-income, and 41 middle-income) from 1960 to 1970, and from 1970 to 1977. The coefficient of the ratio of the military expenditures to GDP for 1960-70 in the total pooled sample shows that defense spending has a positive impact on economic growth. However, when the total group was divided into low-income and the middle-income groups, only middle group shows the positive effect. In order to test the externality effect of defense spending, the authors developed an augmented model, which is a two sectors model: defense and civilian. The model allows the size of defense sector to enter the production function for the civilian sector, which indicates the effect of the former on the latter. The model shows no evidence of statistically significant impact of defense spending on growth of total output. Alexander (1990, P. 42), criticized Biswas & Rati on the ground that their model omits relevant variables, which leads to omission of important economic linkages.

Heo (1998) investigates how the changes in defense burden will affect economic growth by testing the economic effects of defense spending on growth in 80 countries using a non-linear defense growth model that includes technological progress. Heo's results reveal that two third of the countries under investigation may expect a "peace dividend" due to the negative relationship between defense spending and economic growth.

This review of the impact of defense spending on economic growth leads me to agree with Smith and Georgiou's observation (1983, p. 15), that "if there can be any single conclusion about the effects of military expenditures on the economy, it must be

that it depends on the nature of the expenditure, the prevailing circumstances, and the concurrent government policies.”

Combining Politics and Economics

John Maynard Keynes was the most prominent political economist who seriously expounded a systemic and fundamental change of the free market economy, and openly adopted an active governmental role in it. Keynes initiated a revolution in the free market economy by suggesting that national economy should function within political determinants. The Keynesian proposition of attaching national economy to political determinants was a retreat from the orthodox traditions of international political economy. The net outcome of the Keynesian iconoclastic economic doctrine was the transformation to a new political economy with which to fortify a far reaching program of sociopolitical reforms. Dillard (1946, p. 123) notes that in Keynes’s later thinking, “he began to question aspects of the fundamental structure of capitalism, even to the point of foreseeing as a condition of its survival the disappearance of all rentier capitalism.” In *A Treatise on Money* (1930) Keynes sought to explain why an economy operates so unevenly, with frequent cycles of booms and depressions. Like other treatments of the subject, his work failed to explain the problem of prolonged depression, a phenomenon that did not conform to the then generally accepted notion that recessions were self-correcting. It was then felt that during recessions savings would accumulate, causing interest rates to fall, and would thereby encourage business to invest and the economy to expand.

Later, Keynes closely examined the problem of prolonged depression in his major work, *The General Theory of Employment, Interest, and Money* (1935). Keynes (ibid) provides a theoretical defense for programs that were already tried in Britain, and by President Franklin D. Roosevelt in the U.S. He proposed that there is no self-correcting mechanism in the free market system to lift an economy out of a depression. Keynes argues since investment necessarily fluctuated, it could not be depended on to maintain a high level of employment and a steady flow of income through the economy. Keynes proposed that government spending must compensate for insufficient business investment in times of recession, and collect tax from citizens when the national economy is booming.

Shortly after Britain entered World War II, Keynes published *How to Pay for the War: A Radical Plan for the Chancellor of the Exchequer* (1940), in which he urged that a portion of every wage earner's pay should automatically be invested in government bonds. Keynes's ideas was a pronouncement, that the free motion of economic factors are not the ultimate determinate of economic growth, instead, the behavior of the political system and its relationship to the economic process is essential to the proper functionality of the economy. The Keynesian approach which established the link between the political system and the economy departed sharply from the orthodox international political economy, which tended to insulate economic affairs from the political contexts.

Numerous works exist on the effect of political variables on growth such as the impact of party control of the polity on defense spending (see Domke, 1992; Stoll, 1992;

Mintz, 1988), the use of force and military actions (Ostrom & Job, 1986), the impact of domestic and international conditions on policy performance (see Borrow, 1992), and the impact of politics on the timing of the use of force (DeRouen, 2000; Fordham, 1998). None of these studies have tested the effects of politics on growth in the context of the production function. More recently, (Heo & Mintz, 2002) tested the effect of the party control of the White House (Republican or Democrat) on economic growth. The authors found that Republican administrations affect growth negatively. However, they admit that further research is needed to cross-validate their findings. It is worth mentioning that Hibbs (1977) was the forerunner in reporting systematic effects of party control of the executive on inflation and unemployment.

The Production Function and Developing Countries

Sen (1999, pp. 3-11) notes that focusing on human freedoms contrasts with narrower views of development such as identifying development with the growth of gross national product, or with the rise in personal incomes, or with industrialization, or with technological advance. Development requires the removal of major sources of unfreedoms: poverty as well as tyranny. Political and civil freedoms are constitutive elements of human freedom, and a necessary condition for scientific and technological creativity. According to Sen (1999, p. 37), “The relevance of the deprivation of basic political freedoms or civil rights, for an adequate understanding of development, does not have to be established through their indirect contribution to other features of development (such as the growth of GNP or the promotion of industrialization). These

freedoms are part and parcel of enriching the process of development.” Although freedom is an essential dimension for better understanding of the process of economic development, other characteristics of the political regime are equally important in understanding this process. The most relevant characteristics of the political regime are: political freedom, institutional freedom, regime type, regime stability, and regime ideological base.

Although many scholars have tested the PF empirically, and found overwhelming evidence that labor, investment, and technological progress have positive impact on economic growth, I do not expect to obtain the same results when applying it within the framework of developing countries because the political contexts of the Third World countries are different from that of the First World. The impact of political contexts of states on the performance of economy is the core theoretical construct of this research. Another important factor is conflict.

The Impact of Conflicts on Economic Growth

Van Raemdonck and Diehl's (1989), identify and classify the major research investigations according to their theoretical perspectives on postwar economic growth and their spatial temporal domain (see also Chan, 1985).

Positive effects: The proponents of the positive impact of war on economic growth led by Sombart (1913), Borton (1941), Schumpeter (1939), Foch (1918), Herring (1941) claim that war improves efficiency and protection of industry because it brings about technological progress. Other scholars such as Dorn's (1940) and Dulles's

(1942) emphasize enhancement of human capital as in the managerial and organizational improvement in the field of decision making process. Gould (1972) suggests that after the termination of war redirecting resources to peacetime industries that were ignored during the war leads to economic growth.

Negative effects: this view is best expressed by Fraser (1926, p. 328): “Destroy the power of one country to produce, and you immediately destroy one side of the reciprocal demand, therefore, causing trade to cease.” Waltz (1959, p. 1) notes, “Asking who won a given war, someone has said, is like asking who won the San Francisco earthquake. That in wars no victory but only varying degrees of defeat is a proposition that has gained increasing acceptance in the twentieth century.” Most of the arguments for the negative economic effects of war are the opposite version of the positive effects’ argument of war on economic growth. Rowthwell (1941) does not see the government control over the economy which was imposed during war as a transient effect, rather, as a permanent effect because of the reluctance of institutions to give up power once it is acquired. Similarly, Ogawa (1926) perceives the negative effects of governments’ mobilization of the credit markets and the distortion of war effort to the consumption and investment processes. Some scholars expect that states that participate in war, especially the losers, will experience immediate economic decline: Wheeler (1975) and Organski & Kugler (1980) referred this impact to the destruction of production facilities that usually is the result of wars. Mendershausen (1943) and Thorp (1941) posit that economic stagnation will take place and human capital will squander in the battle field rather than used properly in economic production. Other scholars argue that the negative

effects of war may only be apparent indirectly as war causes certain changes in the government allocations of resources. Both Russett (1970), and Diehl and Goertz (1985) have found a ‘ratchet effect’³ in allocation to the military as the result of war. A variety of overlapping perspective emphasize the significant influence of war preparation and participation on the long-term capital formation of the system’s most powerful states (Modelski, 1972; Tilly, 1975; Gilpin,1987; Rasler & Thompson, 1985,1988).

Organization of the Study

This dissertation consists of six chapters. In Chapter I, I introduced the problem and the contribution of my research, and I traced the evolution of the production function model and theories of economic growth. In Chapter II, I discuss the theoretical implications of incorporating the political contexts of states in explaining development and growth across countries. In Chapter III, I introduced my models of economic growth and their applications to individual states as well as across regions, followed by a description of the data and methods that I utilize in my empirical analysis. In Chapter IV, I report the empirical results. Chapter V is a case study of the Middle East and North Africa which illustrates my theory. In Chapter VI (conclusion), I discuss the findings of my empirical analysis and the implications of these findings on the economic policies of developing states.

³ A greater concern is the growing pattern of chronic inflation characterized by much higher price increases, at annual rates of 10 to 30 percent in some industrial nations and even 100 percent or more in a few developing countries. Chronic inflation tends to become permanent and ratchets upward to even higher levels as economic distortions and negative expectations accumulate.
1993-2003 Microsoft Corporation.

CHAPTER II

THEORY AND MODEL

Standards of living differ among parts of the world by great amounts. Although precise comparisons are difficult, the best available estimates suggest that the average real incomes in such countries as the United States, Germany and Japan exceeds those in such countries as Bangladesh and Zaire by a factor of twenty or more. Some countries in the Third World, such as South Korea, Turkey, and Singapore appear to be making the transition into the group of relatively wealthy industrialized economies. Others, including many in the Middle East, Latin America, and Africa, have difficulty obtaining positive growth rates of real income per capita. Understanding the problems of economic growth and development in the Third World are very important because they enormously affect the standards of living of human life” (see Romer, 1996, pp 5-7).

This study is applying the defense-growth-political model of Heo and Mintz’s (the H-M model) (2002) to the Third World countries. However, it is hard to learn the insights which the H-M model offers without investigating the series of augmentations that the production function has gone through. As Romer (1996, p.7) notices, “The Solow model is the starting point for almost all analyses of growth. Even a model that departs fundamentally from Solow’s are often best understood through comparison with the Solow model. The Solow model (1970) focuses on four variables: output (Y), capital (K), labor (L), and “knowledge” or the “effectiveness of labor” (A). At any time, the economy has inputs of capital, labor, and knowledge, and these are combined to produce

output. The production function takes the form $Y(t) = F[K(t), A(t), L(t)]$; where t denotes time. Two features of the production function should be noted: first, time does not enter the production function directly, but only through K , L , and A . That is, output changes overtime only if the inputs into the production function change. In particular the amount of output to obtain from given quantities of capital, and labor rises over time only if the amount of knowledge increases. Second, knowledge (A) and Labor (L) enter the production function multiplicatively. The product (AL) is referred to as effective labor, and technological progress which enters in this fashion is known as *labor-augmenting* or *Harrod-neutral* (see Romer, 1996, Ch. 1).⁴

Before the Solow model, growth theories succeeded reasonably well in comparing equilibrium paths for the economy. In doing so however, they failed to come to grips adequately with the right way to deal with deviations from equilibrium growth. Part of this failure as Solow (1988, pp. x-xvi) suggests, comes from the fact that earlier growth theories were mechanical or physical in the sense that they were almost entirely a description of flows and stocks of goods. This mechanical configuration of growth theories was disabling them from detecting and explaining deviations from the equilibrium paths. The advancement of technology by Solow (1957, 1970) made the PF amenable in explaining deviations from equilibrium paths, which opened up growth theory to a wider variety of real world facts and to a closer connection with general economic theories. Robert Solow (1957, 1970) and Edward Denison (1967, 1985) are

⁴ $A \cdot L$ is referred to as effective labor, and technological progress which enters the PF indirectly through A and L is known as *labor-augmenting* or *Harrod-Neutral* (see Romer, 1996, Ch. 1).

credited for having developed an aggregate production function which had become widely accepted in growth economics. Based on the neo-classical production function logic, Ram (1986) develops a two-sector growth (government and private sectors) model to examine the relationship between government spending and economic growth. Ram's equation is:

$$\dot{Y} = \alpha (I/Y) + \beta \dot{L} + (\delta' + C_G) \dot{G}(G/Y) \dots\dots\dots 1$$

Where a dot over the variable indicates its rate of growth, Y is GNP, I is investment, L represents labor, and G denotes government spending.

Cornes and Sandler (1986) propose that there is likely to be an externality effect when government activities influence the private sector's production capacity without being priced on competitive markets. Following Cornes and Sandler, Ram also develops a model incorporating the externality effect of the government sector. Ram's Externality equation is:

$$\dot{Y} = \alpha (I/Y) + \beta \dot{L} + \theta \dot{G} \dots\dots\dots 2$$

Where a dot over G is the externality effects.

According to Mintz and Huang (1990; 1991), the effects of military expenditures on growth may not be the same as those of non-military government spending. Thus, it is theoretically reasonable to separate the military sector from the overall government sector in order to study how various components of public spending affect economic performance differently (see also Heo, 1999; Heo & Mintz, 2002). Mintz and Huang's equation is:

$$\dot{Y}/Y = \alpha(I/Y) + \beta(\dot{L}/L) + (\delta_m - \theta_m)[(\dot{M}/M)(M/Y)] + (\delta_n - \theta_n)[(\dot{N}/N)(N/Y)] \dots\dots\dots 3$$

Where a dot over the variable indicates its rate of growth, Y is GNP, I is investment, L represents labor, and NM denotes non-military government spending.

Huang and Mintz (1991) also examine the externality effects of defense spending on growth, but separately from that of the non-military government sector. According to the authors (ibid, p. 1020), “the externality effect generated by the military sector (e.g. technologic spin-offs) may be different from the one generated by the non-military government sector (e.g., regulations).” Thus, Huang and Mintz (1991) specify the separate externality effects of the defense and non-defense government sector. Huang and Mintz’ s externality equation is:

$$\dot{Y}/Y = \alpha(I/Y) + \beta(\dot{L}/L) + (\delta_n - \theta_n)[(\dot{N}/N)(N/Y)] + \theta_n[(\dot{N}/N)((Y - M)/Y)] \\ + (\delta_m - \theta_m)[(\dot{M}/M)(M/Y)] + \theta_m[(\dot{M}/M)((Y - N)/Y)] \dots\dots\dots 4$$

Where a dot over the variable indicates its rate of growth, Y is GNP, I is investment, L represents labor, and NM denotes non-military government spending.

Ward and Davis (1992), likewise, divide the state activity into two components: military spending and non-military state spending, and test the externality effects of these expenditures. Ward and Davis’ equation is:

$$\frac{\Delta Y}{Y_{-1}} = \alpha_0 + \alpha \frac{I}{Y_{-1}} + \beta \frac{\Delta L}{L_{-1}} + \left(\frac{\delta_M}{1 + \delta_M} - \theta_M \right) \frac{\Delta M}{Y_{-1}} + \left(\frac{\delta_N}{1 + \delta_N} - \theta_N \right) \frac{\Delta N}{Y_{-1}} + \theta_M \frac{\Delta M}{S_{-1}} + \theta_N \frac{\Delta N}{S_{-1}} + \varepsilon \dots\dots 5$$

Where Δ indicates the growth rate, national income is represented by Y , investment by I , labor by L , defense spending by M , non-military government spending by N , and total government spending by S (see also Heo & Mintz, 2002).

Solow (1988, p. 35) wrote that, “labor augmenting form of technological progress is necessary for steady-state growth to be possible.” For this reasons, Mueller and Atesoglu (1993a, 1993b) include technological progress in their model utilizing the concept of the Hicks neutral technological change⁵. In other words, this concept will allow us to measure the effects of technological progress separately without affecting the contribution that labor and capital make to the growth (see Heo, 1999). By assuming that technology progress develops gradually over time period, Mueller and Atesoglu developed their defense- growth model. Mueller and Atesoglu’s equation is:

$$dY/Y = \lambda + e^{\lambda t} \psi_l (L/Y)(dL/L) + e^{\lambda t} \psi_k (I/Y) + [\pi_m (M/Y) + e^{\lambda t} \psi_m (M/Y)](dM/M) + \lambda \pi_m (M/Y) \dots\dots\dots 6$$

Where Y indicates GDP, dM/M represents defense spending growth rate, M/Y is defense share of GDP, ψ_m denotes the externality effects of defense spending and λ represents technological progress. The technological change factor, $e^{\lambda t}$, is always positive even in cases that λ is negative because technology do not digress (see Mueller & Atesoglu, 1993a, 1993b; see Heo & Mintz, 2002).

Heo and DeRouen (1998) further augmented Mueller and Atesoglu’s model (1993a, 1993b). Heo and DeRouen (1998) suggest that, Mueller and Atesoglu (1993a, 1993b) implicitly assume that technological progress, as well as productivity change in

⁵ Hicks neutral technological change means that changes in technology do not change the share of income going to the factors of production and the factor ratios (Mueller and Atesoglu 1993a, p. 261)

the non-military public sector, and those of the private sector are identical. Different from Mueller and Atesoglu (1993a; 1993b), Ward and Davis (1992) showed that the U.S. government sector has a lower productivity than the civilian sector. Thus, Heo and DeRouen (1998) argue that it is theoretically more reasonable to separate the private and the non-military government sector while keeping technological change effects in the model (see also Heo, 1999). They assert that this division of the sectors allows the economic effects of defense spending on growth to be measured more accurately. Heo and DeRouen's (1998) equation is:

$$dY/Y = \lambda + e^{\lambda t} \psi_l (dL/L) + e^{\lambda t} \psi_k (I/Y) + [\pi_m (M/Y) + e^{\lambda t} \psi_m](dM/M) \dots\dots\dots 7 \\ + [\pi_n (N/Y) + e^{\lambda t} \psi_n](dN/N) + \lambda \pi_m (M/Y) + \lambda \pi_n (N/Y)$$

Where dL/L represents the growth rate of employed labor; I/Y is the investment share of GDP; dM/M is the growth rate of defense spending; M/Y indicates defense share of GDP; dN/N is the growth rate of non-defense government spending; and N/Y is non-defense government spending share of GDP.

According to Heo and Mintz (2002, p.10), "The defense-growth production function model has thus far been politically neutral. Labor, capital, technology and defense and non-defense elements govern it. No "political" variable per se has been included in the model. This structure of the model reflects its historical evolution as a supply side economic model of growth." Thus, a political approach to the defense-growth model may therefore add to our understanding of defense-growth tradeoff (see Chan, 1995; Mintz, 1991).

The Heo-Mintz Alternative

Although technology provides more flexibility to the PF, the Solow model failed in rationalizing deviations from the steady state conditions of economic growth. Ignoring the political conditions left the production function operating in isolation from its environment. This dualism of politics and economics hampers any realistic explanation of the problems of economic growth.

The realization that the political contexts grow and accompany the PF over time as its shadow, led some contemporary political economists to put an end to overlooking the impact of political factors on economic growth. The political approach to understand the deviations from the equilibrium paths emphasizes the impact of internal political configuration on economic growth. It becomes evident that the apparent similarities of democratic political systems do not reflect the internal harmony of the domestic forces nor do they reflect the consensus of these forces on economic policies. Accordingly, it becomes infeasible to offer serious explanations to the problems of economic growth without taking into account the configurations of the political forces. The advancement of a political variable (political party) to the production function by Heo and Mintz (2002) was a major development in the research program on economic growth since Solow (1957, 1970) introduced technology to the production function. The value of the Heo-Mintz study derived from the fact of being the first empirical investigation of the structural political economic impact on growth in the context of the production function. Heo and Mintz tested their model within the American political context by considering a dichotomous variable (1, 0) for the Republican Party, and the Democratic Party

respectively. The authors deliberately utilize a dummy variable to capture the effect of politics on economic growth so that they do not destabilize the theoretical construct of the production function. Incorporating the impact of political party on the economy, the Heo-Mintz augmented production function model becomes:

$$dY/Y = \lambda + e^{\lambda t} \psi_i (dL/L) + e^{\lambda t} \psi_k (I/Y) + [\pi_m (M/Y) + e^{\lambda t} \psi_m] (dM/M) \dots 8 \\ + [\pi_n (N/Y) + e^{\lambda t} \psi_n] (dN/N) + \lambda \pi_m (M/Y) + \lambda \pi_n (N/Y) + P * D$$

Where dL/L represents the growth rate of employed labor; I/Y is the investment share of GDP; dM/M is the growth rate of defense spending; M/Y indicates defense share of GDP; dN/N is the growth rate of non-defense government spending; and N/Y is non-defense government spending share of GDP; and P denotes the coefficient of political party variable and D is the dummy variable for political party.

Incorporating the political context into the production function paved the way to investigate the impact of other political variables on economic growth. I have augmented the H-M model by incorporating into it five political regime variables (political freedom, institutional freedom, regime type, regime stability, and regime ideological base) while controlling with conflict variables.

By incorporating political and conflict variables, I extended the applicability of the H-M model to capture most of the fundamental characteristics of the political regimes. Moreover, I extend the applicability of the H-M model to the Third World, which has different level of economic and political development from the First World.

The Models

My models extend the Heo-Mintz (H-M) model, which basically incorporates a political variable into the Production Function model. I developed and tested the H-M model in two forms: first, I incorporate separately one of eight political and conflict variables: political freedom, institutional freedom, regime type, regime stability, ideological base, external conflicts, internal conflicts, and total conflicts to the production function. Consequently, I tested eight models as shown in equations 9, 10, 11, 12, 13, 14, 15, and 16.

$$dY/Y = \lambda + e^{\lambda t} \psi_l (dL/L) + e^{\lambda t} \psi_k (I/Y) + [\pi_m (M/Y) + e^{\lambda t} \psi_m] (dM/M) + [\pi_n (N/Y) + e^{\lambda t} \psi_n] (dN/N) + \lambda \pi_m (M/Y) + \lambda \pi_n (N/Y) + \eta_1 R_{CONF_{ext}} \dots 9$$

$$dY/Y = \lambda + e^{\lambda t} \psi_l (dL/L) + e^{\lambda t} \psi_k (I/Y) + [\pi_m (M/Y) + e^{\lambda t} \psi_m] (dM/M) + [\pi_n (N/Y) + e^{\lambda t} \psi_n] (dN/N) + \lambda \pi_m (M/Y) + \lambda \pi_n (N/Y) + \eta_2 R_{CONF_{int}} \dots 10$$

$$dY/Y = \lambda + e^{\lambda t} \psi_l (dL/L) + e^{\lambda t} \psi_k (I/Y) + [\pi_m (M/Y) + e^{\lambda t} \psi_m] (dM/M) + [\pi_n (N/Y) + e^{\lambda t} \psi_n] (dN/N) + \lambda \pi_m (M/Y) + \lambda \pi_n (N/Y) + \eta_3 R_{CONF_{tot}} \dots 11$$

$$dY/Y = \lambda + e^{\lambda t} \psi_l (dL/L) + e^{\lambda t} \psi_k (I/Y) + [\pi_m (M/Y) + e^{\lambda t} \psi_m] (dM/M) + [\pi_n (N/Y) + e^{\lambda t} \psi_n] (dN/N) + \lambda \pi_m (M/Y) + \lambda \pi_n (N/Y) + \delta R_{FR-POL} \dots 12$$

$$dY/Y = \lambda + e^{\lambda t} \psi_l (dL/L) + e^{\lambda t} \psi_k (I/Y) + [\pi_m (M/Y) + e^{\lambda t} \psi_m] (dM/M) + [\pi_n (N/Y) + e^{\lambda t} \psi_n] (dN/N) + \lambda \pi_m (M/Y) + \lambda \pi_n (N/Y) + \delta R_{FR-INS} \dots 13$$

$$dY/Y = \lambda + e^{\lambda t} \psi_l (dL/L) + e^{\lambda t} \psi_k (I/Y) + [\pi_m (M/Y) + e^{\lambda t} \psi_m] (dM/M) + [\pi_n (N/Y) + e^{\lambda t} \psi_n] (dN/N) + \lambda \pi_m (M/Y) + \lambda \pi_n (N/Y) + \beta R_{TY} \dots 14$$

$$dY/Y = \lambda + e^{\lambda t} \psi_l (dL/L) + e^{\lambda t} \psi_k (I/Y) + [\pi_m (M/Y) + e^{\lambda t} \psi_m] (dM/M) + [\pi_n (N/Y) + e^{\lambda t} \psi_n] (dN/N) + \lambda \pi_m (M/Y) + \lambda \pi_n (N/Y) + \tau R_{St} \dots\dots\dots 15$$

$$dY/Y = \lambda + e^{\lambda t} \psi_l (dL/L) + e^{\lambda t} \psi_k (I/Y) + [\pi_m (M/Y) + e^{\lambda t} \psi_m] (dM/M) + [\pi_n (N/Y) + e^{\lambda t} \psi_n] (dN/N) + \lambda \pi_m (M/Y) + \lambda \pi_n (N/Y) + \xi R_{IB} \dots\dots\dots 16$$

Where Y represents GDP; λ is technological progress; ψ_k , ψ_l , ψ_m , and ψ_n are the externality effects of capital, labor, and defense spending; π_m , π_n represent the military and non-military sectors; dL/L is the growth rate of employed labor; I/Y is the investment share of GDP; M/Y is defense share of GDP; dM/M is defense spending growth rate; and N/Y is non-defense government spending share of GDP; dN/N is the growth rate of non-defense government spending; $R_{CONF_{ext}}$ is external conflicts; $R_{CONF_{int}}$ is the internal conflicts; $R_{CONF_{tot}}$ is total conflicts; R_{FR-POL} is political freedom; R_{FR-INS} is institutional freedom; R_{TY} is regime type; R_{ST} is regime stability; and R_{IB} is ideological base.

I have developed models 17, 18, 19, 20, 21 and 22⁶ by adding two conflict variables: external conflicts and internal conflicts, as control variables to the production function, and incorporating a single political variable to each model. Therefore the general form of this model is: economic growth = PF + internal conflicts + external conflicts + political variable. Below are the models:

⁶ Simplified forms of equations (17 - 21): economic growth = pf + external conflicts + internal conflicts + political freedom; economic growth = pf + external conflicts + internal conflicts + institutional freedom; economic growth = pf + external conflicts + internal conflicts + regime type; economic growth = pf + external conflicts + internal conflicts + regime stability; economic growth = pf + external conflicts + internal conflicts + ideological base.

$$\begin{aligned}
dY/Y &= \lambda + e^{\lambda t} \psi_l (dL/L) + e^{\lambda t} \psi_k (I/Y) + [\pi_m (M/Y) + e^{\lambda t} \psi_m] (dM/M) \\
&+ [\pi_n (N/Y) + e^{\lambda t} \psi_n] (dN/N) + \lambda \pi_m (M/Y) + \lambda \pi_n (N/Y) + \eta_1 R_{CONFext} \\
&+ \eta_2 R_{CONFint} + \delta R_{FR-POL} \dots\dots\dots 17
\end{aligned}$$

$$\begin{aligned}
dY/Y &= \lambda + e^{\lambda t} \psi_l (dL/L) + e^{\lambda t} \psi_k (I/Y) + [\pi_m (M/Y) + e^{\lambda t} \psi_m] (dM/M) \\
&+ [\pi_n (N/Y) + e^{\lambda t} \psi_n] (dN/N) + \lambda \pi_m (M/Y) + \lambda \pi_n (N/Y) + \eta_1 R_{CONFext} \dots\dots\dots 18
\end{aligned}$$

$$\begin{aligned}
&+ \eta_2 R_{CONFint} + \delta R_{FR-INS} \dots\dots\dots 19
\end{aligned}$$

$$\begin{aligned}
dY/Y &= \lambda + e^{\lambda t} \psi_l (dL/L) + e^{\lambda t} \psi_k (I/Y) + [\pi_m (M/Y) + e^{\lambda t} \psi_m] (dM/M) \\
&+ [\pi_n (N/Y) + e^{\lambda t} \psi_n] (dN/N) + \lambda \pi_m (M/Y) + \lambda \pi_n (N/Y) + \eta_1 R_{CONFext} \\
&+ \eta_2 R_{CONFint} + \beta R_{TY} \dots\dots\dots 20
\end{aligned}$$

$$\begin{aligned}
dY/Y &= \lambda + e^{\lambda t} \psi_l (dL/L) + e^{\lambda t} \psi_k (I/Y) + [\pi_m (M/Y) + e^{\lambda t} \psi_m] (dM/M) \\
&+ [\pi_n (N/Y) + e^{\lambda t} \psi_n] (dN/N) + \lambda \pi_m (M/Y) + \lambda \pi_n (N/Y) + \eta_1 R_{CONFext} \\
&+ \eta_2 R_{CONFint} + \tau R_{st} \dots\dots\dots 21
\end{aligned}$$

$$\begin{aligned}
dY/Y &= \lambda + e^{\lambda t} \psi_l (dL/L) + e^{\lambda t} \psi_k (I/Y) + [\pi_m (M/Y) + e^{\lambda t} \psi_m] (dM/M) \\
&+ [\pi_n (N/Y) + e^{\lambda t} \psi_n] (dN/N) + \lambda \pi_m (M/Y) + \lambda \pi_n (N/Y) + \eta_1 R_{CONFext} \\
&+ \eta_2 R_{CONFint} + \xi R_{IB} \dots\dots\dots 22
\end{aligned}$$

Where Y represents GDP; λ is technological progress; ψ_k, ψ_l, ψ_m are the externality effects of capital, labor, and defense spending; π_m, π_n represent the military and non-military sectors; dL/L is the growth rate of employed labor; I/Y is the investment share of GDP; M/Y is defense share of GDP; dM/M is defense spending growth rate; and N/Y is non-defense government spending share of GDP; dN/N is the growth rate of non-

defense government spending; $R_{CONF_{ext}}$ is external conflicts; $R_{CONF_{int}}$ is internal conflicts; R_{FR-POL} is political freedom; R_{FR-INS} is institutional freedom; R_{TY} is regime type; R_{ST} is regime stability; and R_{IB} is ideological base.

Hypotheses

I developed eight hypotheses on the impact of political factors on economic growth. The hypotheses are valid for the non-linear least squares analysis as well as to the cross national time-series analysis.

H1. There is a negative effect of interstate conflict on Economic growth in developing countries.

H2. There is a negative effect of intra-state conflict on economic growth in developing countries.

H3. The effect of total conflict on economic growth in developing countries is negative

H4. The effect of political freedom on economic growth in developing countries is positive.

H5. There is a positive effect of institutional freedom on economic growth in developing countries.

H6. There is a positive effect of democratic political regime on economic growth in developing countries

H7. There is a positive effect of stable political regime on economic growth in developing countries.

H8. There is a positive relationship between liberal ideological base and economic growth in developing countries.

I tested equations 9 to 16⁷ by using nonlinear least squares (NLS) method for sixty individual developing countries, with time-series data from 1960 to 2002. I tested models 17- 22 by using cross national time-series (CNTS) analysis for 69 countries from 1960 to 2002. I conducted the CNTS tests for eight regions plus the entire sample, which encompasses a total of 69 countries. The subsystems are: Middle East and North Africa (MENA), oil producing countries, non-oil producing countries, the Arab World, Latin America, Africa, Asia, the Caribbean region, and the entire sample of the 69 countries.

The followings are the groups of countries included in each region: *The Middle East and North African region* consists of Jordan, Morocco, Saudi Arabia, Algeria, Bahrain, Egypt, Kuwait, Mauritania, Tunisia, United Arab Emirates, Sudan, Pakistan, Turkey, and Iran; the *Asian countries* consist of the Philippines, India, Indonesia, Korea, Malaysia, Nepal, Singapore, Sri Lanka, and Thailand; the *African region* consists of Benin, Burundi, Cameroon, Ethiopia, Gabon, Kenya, Liberia, Mauritius, Malawi, Niger, Nigeria, Rwanda, Senegal, Sierra Leon, Tanzania, Togo, Uganda, Zaire, Zambia, Zimbabwe, and the Sudan; the *Latin American countries* consist of Argentina, Bolivia, Mexico, Brazil, Chile, Colombia, Cost Rica, Salvador, Guatemala, Guyana, Honduras,

⁷ Simplified forms of equations (9 to 16): economic growth = pf + external conflicts; economic growth = pf + internal conflicts; economic growth = pf + total conflicts; economic growth = pf + political freedom; economic growth = pf + institutional freedom; economic growth = pf + regime type; economic growth = pf + regime stability; economic growth = pf + ideological base.

Nicaragua, Panama, Paraguay, Peru, Venezuela, and Uruguay; and the *Caribbean region* consists of Dominican Republic, Ecuador, Guatemala, Haiti, Jamaica, and Trinidad.

The *Total Model* (the entire sample) includes Algeria, Argentina, Benin, Bahrain, Bangladesh, Bolivia, Brazil, Burundi, Cameroon, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Egypt, Ethiopia, Gabon, Ghana, Guatemala, Guyana, Haiti, Honduras, India, Indonesia, Iran, Jamaica, Jordan, Kenya, Kuwait, Liberia, Mauritania, Madagascar, Malawi, Malaysia, Mauritius, Mexico, Mali, Morocco, Nepal, Nicaragua, Nigeria, Niger, Pakistan, Panama, Peru, Paraguay, Philippines, Korea, Rwanda, Salvador, Saudi Arabia, Senegal, Sierra Leone, Singapore, Sri Lanka, Sudan, Tanzania, Thailand, Togo, Trinidad, Tunisia, Turkey, United Arab Emirates, Uganda, Uruguay, Venezuela, Zaire, Zambia, and Zimbabwe.

Iraq, Syria, and Libya, were excluded from the dataset because of doubts about the reliability of their data. Syria and Libya were the most favorite clients of the former Soviet Union among Middle Eastern countries; consequently, this relationship required them to be secretive, especially, in the field of military spending. Moreover, Iraq and Libya were under United Nations sanctions since the early 1990s. I also did not include Lebanon in my dataset because it was a failing state since 1975. The real power in Lebanon until 1982 belonged to the Palestinian Liberation Organization (PLO) and its allies of the Lebanese parties. Since the early 1980s, the real power in Lebanon has been transferred to Syria and its allies of the Lebanese parties: mainly Hezbollah (Party of God) and the Amal movement (Afwaj al Muqawamah al Lubnaniyyah). Likewise

Somalia was excluded from my dataset because it has no central government since 1991. Fighting erupted in Somalia in November 1991 between forces of the Hawiye clan led by Ali Mahdi Mohamed, and the Abgal subclan led by General Muhammed Farah Aidid. The two clans continue to contest for power. Eritrea and Djibouti were excluded from the data analysis because they obtained their independence in 1993 and 1977 respectively—too short of a time frame to produce meaningful statistical results (see Derbyshire & Derbyshire, 1996, pp. 109-582; Microsoft Encarta Reference Library 2004).

I selected the period of my data from 1960 to 2002, because the majority of countries in the Middle East and North Africa, Africa, and Asia began their state formation after 1960s: Algeria 1962, Benin 1960, Bahrain 1971, Bangladesh 1971, Burundi 1962, Cameroon 1960, Gabon 1960, Kenya 1963, Kuwait 1961, Mauritania 1960, Madagascar 1960, Malawi 1964, Mauritius 1968, Mali 1960, Nigeria 1960, Niger 1960, Rwanda 1962, Senegal 1960, Sierra Leon 1961, Singapore 1970, Tanzania 1961, Togo 1960, United Arab Emirates 1971, Uganda 1962, Zaire 1960, Zambia 1964, Zimbabwe 1980 (see Derbyshire & Derbyshire, 1996, pp. 109-582).

CHAPTER III

DATA AND METHODS

This research utilizes time series data on sixty nine developing countries in Asia, the Middle East and North Africa, Africa, Latin America, and the Caribbean region from 1960 to 2002. The data of this research consist of four types: economic, military, political, and conflict data.

Economic Data

Data on economic variables are drawn from the International Financial Statistics Yearbook (IFS) published by the International Monetary Fund (IMF). The economic variables that I obtained from the IFS are Gross Domestic Product (GDP), gross domestic investment, and government expenditures. The IMF values of the variables are in current prices. Current values are non-comparable across countries due to the different amount of inflations across nations over time. I converted all data to constant values with the year 1985 as a base year using the GDP deflator provided by the IFS. For countries that do not have GDP deflators for the period (1960 – 2002), I used the Consumer Price Index (CPI)⁸ provided by the same source. In addition, values of the variables are converted from their respective national currencies to the U.S. dollars. Some countries in Latin America pose problems when I conducted the conversion process because they

⁸ I used the CPI for the following countries: Jordan, Morocco, Turkey, Colombia, Egypt, Ecuador, Gabon, Haiti, Kenya, Malaysia, Mali, Niger, Nigeria, Sri Lanka, Tanzania, Trinidad, UAE, Zimbabwe

arbitrarily changed their national currencies several times from 1960 to 2002. These currency changes made it very difficult in the cases of Argentina, Brazil, Bolivia, and Mexico to draw reliable conclusions out of their empirical analysis. Several countries: Chile, Indonesia, Liberia, Mauritius, Madagascar, the Sudan, Tanzania, Zaire, and Zambia have numerous missing values that made their time-series fall below the required span for appropriate time-series analysis. These nine countries were dropped out from the non-linear least squares (NLS) analysis, which reduced the number of countries involved in the NLS analysis to sixty countries. However, these nine countries were included in the cross national time series (CNTS) analysis.

For labor data, following (Ram, 1986; Alexander, 1990; DeRouen, 1993; Mintz & Stevenson, 1995; Ward & Davis, 1992; Lebovic & Ishaq, 1987; and Heo, 1998), population growth rate data are used as proxy. Ram (1986) points out, that these data are reliable but are not good proxy in some areas. However, there are two reasons for using population as a proxy to labor (1) time-series data on labor force are available only for very few countries and plagued with many missing values (2) the quality of the labor force variable in developing countries is questionable due to inaccurate reporting for political reasons. Nevertheless, Lebovic and Ishaq (1987, p. 118) suggest that “because labor participation rates show little volatility in the short run, the population growth rate may be used instead.”

Military Data

The military expenditure values can be found in the *SIPRI Yearbook: World Armament and Disarmament* (1969, 1974, 1983, 1992, 1996, and 2004) published annually by the Stockholm International Peace Research Institute. The SIPRI publishes long-term annual data of three different types: military expenditures in current prices (local currencies); military expenditure in constant U.S. dollars; and military expenditures as a percentage share of GDP. Although for the purpose of this research I am interested in the constant U.S., Dollar values, it is not possible to use the constant U.S., dollar values of military expenditures of *SIPRI* “as is.” It is possible to convert data to the same base year since the base year changes several times over the period (1960 - 2002).

Many scholars have criticized the quality of military expenditures data suggesting that they may not be comparable across countries (see Brzoska, 1981). All three major sources of military expenditure data (SIPRI, U.S. Arms Control and Disarmament Agency [ACDA], and International Institute of Strategic Studies [IISS]) rely, at least in part, on definition of military expenditure that are different for different countries or group of countries. Thus the comparability of data from countries using different definitions is highly questionable (see Mintz & Stevenson, 1995, p. 290, Lebovic & Ishaq, 1987, p. 683). Therefore I have used *SIPRI* definitions for values across countries, and across group of countries.

The *SIPRI* data have many comparative characteristics that make researchers prefer using them over other datasets. Deger and Smith (1983, p. 348) prefer using *SIPRI*

data over *ACDA* data because, on one hand, *SIPRI* reveals its source of data clearly, uses publicly available information, gives details of military expenditures in national currencies as well as constant U.S. dollars, and also supplies data on military burden. On the other hand, according to Deger and Smith (*ibid*), *ACDA* data have some major problems such as the lack of detailed information regarding sources of data collection and methods of data preparation, thus, it is difficult to have any independent checks on the accuracy of figures. Consequently, Deger and Smith (*ibid*) conclude that *SIPRI* provides the most consistent data for this type of analysis.

According to *SIPRI* (1997, p. 241), “[it] has adopted a definition of military expenditure, based on the NATO definition, as a guideline. Where possible, *SIPRI* military expenditure data include: (a) all current and capital expenditure on the armed forces and on the running of the defense department and other government agencies engaged in defense projects and space activities; (b) the costs of paramilitary forces when they are judged to be trained and equipped for military operations; (c) military research and development, testing and evaluation expenditure; and (d) costs of retirement pensions. Military aid is included in the military expenditure of the donor country and excluded from that of the recipient country. Excluded are civil defense, interest on war debts and veterans’ payments.” As Lebovic (1999, p. 695) notes, the data users should be cautious when drawing even simple conclusions about change and trends in global military spending: the analyst should not attempt to be too subtle in wringing out nuances of meaning from data (see also Fei, 1979). The *SIPRI* data are more useful for the purpose of this dissertation since it has long-term annual data that is more

suitable to this empirical analysis due to the dynamic nature of the defense growth relationship.

Nonmilitary government expenditures are obtained by subtracting defense spending from the total government expenditures of each year. Since the data for government and military expenditures are obtained from different sources (from IFS and SIPRI) respectively, the comparability of the data may not be perfect (see Alexander, 1990).

Political Data

The political variables: political freedom, institutional freedom, regime type, regime stability, and regime ideological base are drawn from *the Polity IV: Political Regime Characteristics and Transitions, 1800-2002*. The Polity data are originally developed by Ted Gurr⁹, and recently investigated and updated by Marshall., Jagers & Gurr (2002)¹⁰. They contain coded annual information on regime and authority characteristics for all independent states (with greater than 500,000 total populations) in the global state system and covers the years 1800-2002.

Institutional and Political Freedoms

Sen (1999, p. 3) admits that the Growth of GNP or of individual incomes can be very important as means to expanding the freedoms enjoyed by the members of the

⁹ <http://data.library.ubc.ca/datalib/survey/icpsr/6695/codebook.html> (accessed on July 30, 2004).

¹⁰ <http://www.cidcm.umd.edu/inscr/polity/#data> (accessed on July 30, 2004).

society. However, Sen (ibid) emphasizes that freedoms depend also on other determinants, such as social and economic arrangements (for example, facilities for education and health care) as well as political and civil rights (for example, the liberty to participate in public discussion and scrutiny).” In other words, Development requires institutional freedom as well as political freedom. According to Sen (ibid), “Development requires the removal of major sources of unfreedom: poverty as well as tyranny, poor economic opportunities as well as systematic social deprivation, neglect of public facilities as well as intolerance or over activity of repressive states.”

Two distinctive types of freedoms are investigated in this empirical study: political freedom, and institutional freedom. The operational indicators of these two types of freedoms as derived from *Polity IV* dataset are:

1. Institutional freedom: the variable PARREG (regulation of participation) means the development of institutional structures for political expression
2. Political freedom is a composite of institutional freedom (PARREG) and competitiveness of participation PARCOMP. The variable PARCOMP is an indicator of the extent to which non-elite are able to access institutional structures for political expression.

Regime Type

In an attempt to make the polity data more compatible with other measure of democracy, it is useful to establish a single summary measure of the institutional characteristics of the political regimes by subtracting a state’s autocracy score from its

democracy score (DEMOC - AUTO) (see Jagers & Gurr, 1995, p. 473). Jagers & Gurr's (1995) approach has three empirical advantages over treating democracy and autocracy as separate indicators. First it makes the polity data more easily compatible with other measures of democracy which conceptualize regime type along a single analytic continuum in which democratic and autocratic systems are assumed to occupy its two extreme ends. Second, DEMOC-AUTO is easily interpretable, ranging from positive ten for states that are purely democratic to negative ten for those which are purely autocratic. The zero to ten scores for both DEMOC and AUTO are not so easily interpretable, especially in situations with 'mixed' authority characteristics. Third, this summary measure of regime type helps lessen the bimodal nature of the democracy and autocracy indicators found in the policy datasets.

The operational indicator of institutionalized democracy (DEMOC) is conceived as three essential elements. One is the presence of institutions and procedures through which citizens can express effective preferences about alternative policies and leaders. Second is the existence of institutionalized constraints on the exercise of power by executive. Third, is the guarantee of civil liberties to all citizens in their daily lives and in acts of political participation. The democracy indicator is an additive eleven point scale (0-10).

In contrast, authoritarian regime in Western political discourse is a pejorative term whose common properties are a lack of regularized political competition and concern of political freedoms. In polity IV dataset the authors use the term "autocracy" as a more neutral term and define it operationally in terms of the presence of a

distinctive set of political participation: The chief executives are chosen in a regularized process of selection within the political elite, and once in office they exercise power with few institutional constraints.

What distinguished the *Polity Dataset* from other datasets are the scholarly efforts to update it, the longer period of time it covers, and the consistency of measuring the variables. Furthermore, *Polity Data*' measurement for democracy are more dynamic and more applicable than other data to different levels of political development. Other datasets such as Vanhanen's¹¹ *Democratization and Power Resources 1850-2000* measure of democracy is constructed exclusively from electoral data which make them difficult to measure political development in the Third World. Bollen dataset¹² *Cross-National Indicators of Liberal Democracy 1950-1990* rely on a combination of objective and subjective data in the construction of his indices, which make the measurement inconsistent (see also Bollen, 1980; 1991; 1993; Jagers & Gurr, 1995; Vanhanen, 2000).

Regime Stability

A stable political system, in this premise, is one whose authority patterns remains similar over a long period of time, and demonstrates a capacity to adapt more or less gradually in response to internal and environmental stress. Durability is the term used here for the distinguished property of systems which both persist and adapt (see Gurr, 1974, p. 1484). Indicator of stability in *Polity Dataset* is the variable DURABLE

¹¹ <http://www.fsd.uta.fi/english/data/catalogue/FSD1216/meF1216e.html> (accessed on October, 8, 2005)

¹² <http://www.nd.edu/~mccoppedg/QPA/BollenCodebook.pdf> (accessed on October 8, 2005)

which is coded from the year of the first regime transition or the first year of independence for all years since 1949.

Ideological Base

Derbyshire and Derbyshire (1996, p. 23) notes, “Identifying the ideology on which a political system is based, or influenced by, will help us penetrate the façade of institutions and slogans, but we must first clarify what we mean by ideology.” The meaning depends on how we construct ideology since the word ‘ideology’ “is a much abused, and overused, word”. In order to lessen the tautological confusion of the word ideology, I check Derbyshire & Derbyshire’s (1996, p. 21) definition against the Polity variables that I think meet the requirements of Derbyshire and Derbyshire definition of liberal ideology.

Derbyshire & Derbyshire (1996) compile a list of markers of liberal ideology as the one which has evidence of constitutionally elected government for assemblies and executives, the active presence of more than one political party and protection of personal liberties, and evidence of an independent judiciary and checks and balances between three elements of government. Parallel to these elements I found that the variable Executive Recruitment (EXREC) in polity IV dataset is the closest to Derbyshire & Derbyshire’s definition. EXREC is a concept variable which combines information presented in three component variables: XRREG (Regulation of Executive Recruitment) indicates institutionalized procedures regarding the transfer of executive power; XCOMP (Competitiveness of Executive Recruitment) indicates the extent to

which executive are chosen through competitive elections; and XROPEN (Openness of Executive Recruitment) indicates opportunity for non-elites to attain executive office. A political system that exhibits opposing characteristics to these elements such as communism, national socialism, authoritarian socialism, military authoritarianism, religious nationalism, and absolutism have conservative ideologies (see Derbyshire & Derbyshire 1996, pp. 23-38)

Conflict Variables

External conflicts, internal conflicts, and total conflicts are drawn from Singer and Small's *the Correlates of War Project: International and Civil War Data, 1816-1992 (COW)*¹³. The *COW* provides the most thorough and influential quantitative dataset on international conflicts. The *COW* dataset were developed by Singer and Small in their effort to understand the root causes of war. These data collection describes international and civil wars for the year 1816 – 1992 and they are divided into two parts: International and extra-systemic wars, and civil wars (see also Singer, Bremmer & Stuckey, 1972; Singer & Small, 1992; Small & Singer, 1982).

International and Extra-Systemic Wars

This part contains 1278 logical records for 426 cases. Each case contains the values for 40 variables that describe the experience of one participant in an international war. The participants are nation-states with at least 500,000 total populations, and either diplomatic

¹³ <http://webapp.icpsr.umich.edu/cocoon/ICPSR-STUDY/09905.xml>

recognition by at least two major powers or membership in the United Nations. This part of the dataset describes two types of international wars: interstate wars, in which a nation-state engages in a war with another member of the interstate system. Extra-systemic wars, in which a nation-state engages in a war with a political entity that is not an interstate system member. The extra-systemic wars are further divided into two sub-types. First, the imperial wars involve an independent political entity, but do not qualify it as a member of the interstate system. Second, the colonial wars include international wars in which the adversary was a colony.

Civil Wars

Describes when and where fighting took place, whether war fought within the boundaries of a major power, or central system member, whether there was outside intervention and if so, whether the intervening state was a major power, on what side they intervene, who won the war, number of battle deaths, total population, and total number of pre-war armed forces.

According to Meredith and Schafer (2000, p. 124), “In 1994 the *COW* began the process of slightly modifying its classification of wars as they originally appear in *the Wages of War 1816-1965: A statistical Handbook*, and *Resort to Arms: International and Civil War, 1816-1980*. A continuation of this process by Meredith and Schafer added a new expanded wars typology which resulted to updating the *COW* to 1997. The period 1998-2002 is covered by *the International Crisis Behavior Project (ICB)*¹⁴. I included conflict based on the *ICB* that meet the criteria of the *COW*. The conflicts of

¹⁴ See online:<http://www.icbnet.org>

Algeria, Ethiopia, Rwanda, the Sudan, Turkey, Uganda, and Zaire/Congo for only few events were coded based on ICB.

Methods

This study is a continuation of the research program which aims at testing the impact of politics on economic growth. Since the production function model is theoretically derived, I used dummy variables to capture the effects of politics on economic growth without affecting the theoretical logic of the production function approach (see Heo & Mintz, 2002, p. 11). I tested the impacts of dichotomous political and conflict variables with the production function in order to avoid any deformation of its theoretical structure. This dissertation involves Non-linear least squares analysis, cross national time series analysis, and an in depth case study of the Middle East and North Africa based on the empirical results with particular focus on Egypt and Algeria.

Each analytical method has relative advantages and disadvantages. There is no singular method that can explain all social phenomena and illuminate all their sides due to the complexity of the political economic world. A method which might be appropriate at a certain level of analysis is not necessarily appropriate at another level of analysis. In order to illuminate different sides of the phenomenon it is necessary to look from different directions, or at different levels of analysis. As Przeworski and Teune (1970, p. 36) note, “comparative research is an inquiry in which more than one level of analysis is possible...”

Along these lines, I employed different methods to investigate economic growth in developing countries. The longitudinal design “comparison of the same unit at different times” is employed. Lijphart (1971, p. 689) argues that the longitudinal analysis offers a solution to the control problem. Dogan and Pelassy (1984, p. 19) suggest that only by examining multiple cases can we locate, rank and build a hierarchy.

The in-depth analysis of the MENA does not intend to form a theory by its own, rather, to serve the general research question of this dissertation. As Eckstein (1963, p.15) points out, “case studies never ‘prove’ anything; their purpose is to illustrate generalizations which are established elsewhere, or to direct attention toward generalizations.”

After Solow (1957; 1970) had incorporated the technological progress to the PF, the economic growth model became more reflective of the dynamic of industrial capitalism. Consequently, it was natural to think of the aggregate model from long-run time series for a real economy. Sartori (1970, p. 103) criticizes the cross-sectional design as being the province of “overconscious thinkers”, and he argues that cross sectional units are not comparable—the apple and orange argument. Macridis & Brown (1986) argues that cross-sectional design represents an oversimplified and arbitrary approach. Likewise, Rostow (1960) argues that this type of research makes it impossible to formulate causal inferences.

On the same vein, Ball (1983) and Chan (1985) have argued, statistical analysis of a cross-sectional sample is not equipped to deal with the diversity existing in different countries in terms of structural variation of economic and political system. Moreover,

many scholars (see Brzoska 1981) have suggested that military expenditure data may not be comparable across countries. Therefore, I will use time-series data for individual countries and cross national time series for regionally based analysis. Following Heo (1998), Heo and Mintz (2002), Heo and DeRouen (1998) I will employ the NLS regression method to test for individual countries.

The estimation of nonlinear models requires the use of a numerical optimization algorithm by using a quasi-Newton method also known as a variable metric method (see Judge., Hill., Griffiths., Lutkepohl., & Lee, 1988, pp. 985-960). Each Updating step of the algorithm requires a gradient (first derivative) estimate for exact evaluation of the gradient. If exact derivatives cannot be computed then a numerical approximation is used to obtain the gradient. Each updating step also requires an approximation of the Hessian (second derivatives). The quasi-Newton family of algorithms obtains a Hessian inverse approximation in each repetition by an updating scheme that involves adding a correction matrix. At model convergence this approximation is then used as the covariance matrix estimate of the estimated parameters.

Since there is no guarantee that the model will converge, it should always be re-estimated with different starting values to verify that the global maximum has probably been achieved. Since the computational time required for nonlinear estimation can be extremely high it is often useful to attempt to get good starting values by first estimation a linear simplification of the model such as ordinary least squares (OLS). The NLS method has two benefits that make it preferred to other methods: first, it allows model restrictions to be used. The model restriction is that Λ (λ), and Π (π) have the

same value in each term in the model. Since the Production Function has been pre-specified (mathematically derived based on the restrictions mentioned above), thus meeting the pre-imposed restrictions is crucial in estimating the parameters. Second, the NLS method allows for the estimation of the values of Lambda (λ), Pi (π), and PSI (ψ) Where: $I = l, k, m, n$ separately.

Since the NLS method provides with separate estimation, It becomes possible to obtain the externality effects of both military and non-military government spending as well as the combined effects of technological progress and productivity changes on economic growth. The time series properties of the data were investigated using Dickey-Fuller tests accounting for both drift and deterministic time trends. All variables that exhibit non-stationary behaviors were differenced and rendered stationary before using them in the analysis. The t-ratio level of significance at (0.01) and (0.05) levels are calculated.

The values of Durbin Watson calculated by NLS analysis are not reliable indicators for the presence or absence of autocorrelation. According to White (1992, p. 370), “Durbin-Watson distribution theory assumes a linear model so the exact F(d) test can not be used with a nonlinear model.” Thus, White (ibid) suggests the method of Approximate Nonlinear Durbin-Watson (A.N.D) test in order to deal with this problem. White (ibid) claims that, “many researchers who continue to compute the d statistic in nonlinear models would like to use this test.” Because the proposed (A.N.D) test has good size and power when compared to other alternatives (see White, 1992). White (1992) theorizes that the general form of the linear regression model is $Y = X\beta + \varepsilon$; where

Y is an $(n \times 1)$ vector of observation on the dependent variable, X is an $(n \times k)$ matrix of independent variable, β is a $(k \times 1)$ parameter vector, and ε is an $(n \times 1)$ normally distributed disturbance vector. Based on this formulation It is common to use Durbin-Watson (1950, 1951, 1971) test statistics (d) which is equal to:

$$\frac{e' Ae}{e' e} = \frac{\sum_{t=2}^n (e_t - e_{t-1})^2}{\sum_{t=1}^n e_t^2}$$

Where (e) is the $(n \times 1)$ vector of least squares residuals and A is $(n \times n)$ error variance-covariance matrix.

$$A = \begin{bmatrix} 1 & -1 & 0 & 0 & \cdot & \cdot & \cdot \\ -1 & 2 & -1 & 0 & \cdot & \cdot & \cdot \\ 0 & -1 & 2 & -1 & \cdot & \cdot & \cdot \\ 0 & 0 & -1 & 2 & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot & \cdot & 2 & -1 \\ \cdot & \cdot & \cdot & \cdot & \cdot & -1 & 1 \end{bmatrix}$$

Following the method in White (1992) it is easy to approximate the exact distribution of the Durbin-Watson statistics using White's (1992) article. The White method is shown in the context of estimation of a CES (constant elasticity substitution) by developing a Z matrix which is described in Judge., Griffiths., Hill., Lutkepohl, & Lee, [1985, Equation 6.2.3]. The Z -matrix is used to store the derivatives of the nonlinear function with respect to each parameter. The nonlinear equation with additive errors has the general form:

$$y_t = f(x_t \beta) + \varepsilon; \quad \text{for } t = 1, \dots, N$$

The residual sum of squares is: $S(\beta) = \sum_{t=1}^N [y_t - f(x_t, \beta)]^2$

With $\varepsilon_t \sim N(0, \sigma^2 I_N)$ the maximum likelihood estimator for σ^2 is approximately equal to $S(\beta)/N$ and the maximum likelihood estimator is the value of β that maximizes the concentrated log-likelihood function (see Judge., Griffiths., Hill., Lutkepohl, & Lee, [1985, Equation 12.2.85]): $L(\beta) = -N/2 \ln(2\pi) - N/2 \ln \{S(\beta)/N\} - N/2$

When the errors are normally distributed the maximum likelihood estimator is identical to the nonlinear least squares estimator which globally minimizes $S(\beta)$. The estimates have an interpretation as estimated from a linearized model that is constructed from a Taylor series approximation. Define the matrix of the first derivatives evaluated the

converged estimates as $Z(\tilde{\beta}) = \left. \frac{\partial f(X, \beta)}{\partial \beta} \right|_{\tilde{\beta}}$

This equation can be transformed into a linear pseudo model (see Judge., Griffiths., Hill., Lutkepohl, & Lee, [1985equation 12.2.14]):

$$\dot{Y}(\tilde{\beta}) = Z(\tilde{\beta})\beta + \varepsilon; \text{ where } \dot{Y}(\tilde{\beta}) = Y - f(x, \tilde{\beta}) + Z(\tilde{\beta})\tilde{\beta}$$

An OLS regression of $\dot{Y}(\tilde{\beta})$ on $Z(\tilde{\beta})$ will reproduce the parameter estimate of β . Following Heo (1998) and Heo and Mintz (2002), I Utilize the A.N.D test in verifying the presence, or absence of autocorrelation. I found autocorrelation in Eleven countries: Iran with external conflicts; Gabon with political freedom; Haiti with external conflicts, internal conflicts, total conflicts, and political freedom variables; Jordan, Trinidad, and Benin with all political and conflict variables; Algeria with external and internal conflicts; and Uganda with external conflicts. For these countries, the generalized non-

linear least squares (GNLS) method suggested by Pagan (1974) is utilized to correct the problem of autocorrelation.

CHAPTER IV

RESULTS

The results of the empirical analysis contain estimation of eleven regression models. Models 9 - 16 consist of the production function (PF) in addition to a political or conflict variable, while models 17 - 22 contain the PF, internal and external conflicts as control variables, and an individual political variable. I tested models 9 - 16 using two methods: first, non-linear least squares (NLS) method on 60 individual countries using time-series data from 1960 to 2002. Second, cross national time-series (CNTS) analysis of nine regions: Middle East and North Africa (MENA), MENA Non-oil producing countries, MENA Oil producing countries, the Arab World, Latin America, Africa, Asia, the Caribbean region, and all states (full model) with a single political or conflict variable.

Models 17-22 were tested by using CNTS analysis with external and internal conflicts as control variables on all states (full model) using pooled data with 2349 observations, and on five regions: the MENA, Latin America, Asia, Africa, the Caribbean region. The number of observations across regions ranges from 178 to 718 observations. The six models were tested with external and internal conflicts as control variables.

Appendix A contains the NLS estimation of models 9 - 16 for 60 countries. Each page of appendix A has the estimates of the production function along one of the political and conflict variables: political freedom, institutional freedom, regime type,

regime stability, ideological base, external conflicts, internal conflicts, and total conflicts. The coefficients of the production function variables: ψ_l (PSIL), ψ_k (PSIK), ψ_m (PSIM), and ψ_n (PSIN) represent the externality effects of labor, capital, military expenditures, and non-military expenditures respectively; π_m (PIEM), and π_n (PIEN) are the coefficients of military and non-military sectors respectively; and λ (Lambda) is a constant representing technological progress. Appendix B contains the empirical results of the CNTS analysis with a single political or conflict variable of the full model (all states), the MENA, Non-Oil producing countries in the MENA (Non-Oil), oil producing countries in the MENA (Oil), the Arab World, Latin America, Africa, Asia, and the Caribbean. Appendix C contains the estimates of equations 17 -22 of the CNTS models with external and internal conflicts as control variables.

In the appendices A, B, and C, I reported the number of cases (N), Durbin-Watson statistics (DW), and the goodness of fit (R-Square). I reported a summary of the NLS empirical results of appendix A in table 1. In this table, I reported information on the impact of economic and military variables, and their externality effects on economic growth along political and conflict variables. In each group of table 1, I reported the numbers of countries that have significant and positive impact on economic growth (+Sig), and their percentages (%+Sig). Likewise, I reported the numbers of countries that have significant and negative impact (- Sig) and their percentages (%-Sig). Also, I included in table 1 the numbers of countries that do not show positive, nor negative significant impact on economic growth (NonSIG) and their percentages (%NonSIG).

Each group in table 1 represents a summary of the production function estimates with the influence of one of the political or conflict variables as elaborated below.

The PF with Political Freedom

Political freedom shows positive and significant impact in 11 countries (25 percent), while they have negative and significant impact in 4 countries (6.67 percent). The estimates of the production function with political freedom are below: technological progress has positive and significant impact on economic growth (EG) in 15 out of 60 countries (25 percent), while it hinders EG in 24 out of 60 countries (40 percent); changes in the labor growth have positive and significant impact on EG in 19 countries (31.67 percent), while they significantly hinder EG in 5 countries (8.33percent); investment has positive and significant impact on EG in 5 countries (8.33 percent), while it has negative and significant impact in 15 countries (25 percent); the combined effects of technological progress and productivity of the military sectors have positive and significant impact on EG in 8 countries (13.33 percent), while they have negative and significant impact in 12 countries (20 percent); the externality effects of defense spending have positive and significant impact in 12 countries (20 percent), while they have negative and significant impact in 4 countries (6.67 percent); the combined effects of technological progress and productivity of the non-military sectors have positive and significant impact in 11 countries (18.33 percent), while they show negative and significant impact in 20 countries (33.33 percent); and the externality effects of non-military government spending show overwhelming positive and significant impact in 32

TABLE 1. Summary of the Non-linear Least Squares Empirical Analysis Results

	+Sig	% +Sig	-Sig	% -Sig	NonSIG	%NonSIG
Technology	13.00	21.00	24.00	40.00	23.00	38.33
Labor	13.00	21.00	11.00	18.00	36.00	60.00
Investment	11.00	18.33	9.00	15.00	40.00	66.00
Mil sector	19.00	31.00	10.00	16.67	31.00	51.67
Military ext	13.00	21.00	6.00	10.00	41.00	68.33
Nmil-sector	21.00	35.00	16.00	21.00	23.00	38.33
Nmil ext	30.00	50.00	5.00	8.33	25.00	41.67
Ext Conf	6.00	10.00	2.00	3.33	52.00	66.00
	+Sig	% +Sig	-Sig	% -Sig	NonSIG	%NonSIG
Technology	15.00	25.00	16.00	26.67	29.00	48.33
Labor	13.00	21.00	8.00	13.33	39.00	65.00
Investment	10.00	16.67	9.00	15.00	41.00	68.33
Mil sector	9.00	15.00	10	16.67	41.00	68.33
Mil ext	12.00	20.00	5.00	8.33	43.00	71.67
Nmil-sector	18.00	30.00	20.00	33.33	22.00	36.67
NMil ext	41.00	68.33	1.00	1.67	18.00	30.00
Int conf	15.00	25.00	6.00	10.00	39.00	65.00

TABLE 1. (Continued)

	+Sig	% +Sig	-Sig	% -Sig	NonSIG	%NonSIG
Technology	17.00	28.00	17.00	28.00	26.00	43.00
Labor	11.00	18.33	11.00	18.33	38.00	63.33
Investment	11.00	18.33	8.00	13.33	41.00	68.33
Mil sector	7.00	11.67	13.00	21.67	40.00	66.67
Mil ext	19.00	31.67	3.00	5.00	38.00	63.33
Nmil-sector	16.00	26.67	19.00	31.67	25.00	41.67
NMil ext	25.00	41.67	2.00	3.33	33.00	55.00
Tot Conf	19.00	31.67	7.00	11.67	34.00	56.00
	+Sig	% +Sig	-Sig	% -Sig	NonSIG	%NonSIG
Technology	15.00	25.00	24.00	40.00	21.00	35.00
Labor	19.00	31.67	5.00	8.33	36.00	60.00
Investment	5.00	8.33	15.00	25.00	40.00	66.67
Mil sector	8.00	13.33	12.00	20.00	40.00	66.67
Mil ext	12.00	20.00	4.00	6.67	44.00	73.33
Nmil-sector	11.00	18.33	20.00	33.33	29.00	48.33
NMil ext	32.00	53.00	3.00	5.00	25.00	41.67
Pol Free	11.00	18.33	4.00	6.67	45.00	75.00

TABLE 1. (Continued)

	+Sig	% +Sig	-Sig	% -Sig	NonSIG	%NonSIG
Technology	14.00	23.00	29.00	48.33	17.00	28.33
Labor	10.00	16.67	7.00	11.67	43.00	71.67
Investment	5.00	8.33	8.00	13.67	47.00	78.33
Mil sector	12.00	20.00	8.00	13.33	39.00	65.00
Mil ext	11.00	18.33	3.00	5.00	46.00	76.00
Nmil-sector	8.00	13.33	25.00	41.67	27.00	45.00
Nmil ext	29.00	48.33	2.00	3.33	29.00	48.33
Inst Free	13.00	21.33	10.00	16.67	37	61.67
	+Sig	% +Sig	-Sig	% -Sig	NonSIG	%NonSIG
Technology	15.00	25.00	20.00	33.00	25.00	33.00
Labor	19.00	31.67	6.00	10.00	35.00	38.00
Investment	8.00	13.67	12.00	20.00	40.00	38.33
Mil sector	8.00	13.33	13.00	21.67	39.00	38.33
Mil ext	13.00	21.67	6.00	10.00	41.00	38.33
Nmil-sector	13.00	21.67	14.00	23.33	33.00	38.33
Nmil ext	32.00	53.33	2.00	3.33	53.33	38.33
Reg type	9.00	15.00	10.00	16.67	38.33	38.33

TABLE 1. (Continued)

	+Sig	% +Sig	-Sig	% -Sig	NonSIG	%NonSIG
Technology	19.00	31.67	18.00	30.00	23.00	38.33
Labor	16.00	26.67	5.00	8.33	39.00	65.00
Investment	9.00	15.00	9.00	15.00	42.00	70.00
Mil sector	11.00	18.33	9.00	15.00	40.00	66.67
Mil ext	13.00	21.67	2.00	3.33	45.00	75.00
Nmil-sector	18.00	30.00	17.00	28.33	25.00	41.67
Nmil ext	30.00	50.00	5.00	8.33	25.00	41.67
Stability	12.00	20.00	12.00	20.00	36.00	60.00
	+Sig	% +Sig	-Sig	% -Sig	NonSIG	%NonSIG
Technology	17.00	28.33	19.00	31.67	24.00	40.00
Labor	15.00	25.00	5.00	8.33	40.00	66.67
Investment	11.00	18.33	12.00	20.00	37.00	61.67
Mil sector	7.00	11.67	12.00	20.00	41.00	68.33
Mil ext	8.00	13.33	6.00	10.00	46.00	76.00
Nmil-sector	15.00	25.00	17.00	28.33	28.00	46.67
Nmil ext	32.00	53.33	2.00	3.33	26.00	43.33
Ideology	16.00	26.67	8.00	13.33	36.00	60.00

countries (53.33 percent), while they significantly hinders EG in 3 countries (5 percent). Figure 1 demonstrates the number of countries that economic or military variables show significant impacts (positive or negative) on their economic growth along political freedom.

The PF with Institutional Freedom

Institutional freedom has positive and significant impact on economic growth (EG) in 13 countries (21.67 percent); while they have negative and significant impact on EG in 10 countries (16.67 percent). The estimates of the production function with institutional freedom are below: technological progress has positive and significant impact on (EG) in 14 out of 60 countries (23.33 percent), while it significantly hinders EG in 29 out of 60 countries (48.33 percent); changes in the labor growth have positive and significant impact on EG in 10 countries (16.67 percent), while they hinder EG in 7 countries (11.67 percent); investment has positive and significant impact on EG in five countries (8.33 percent), while it has negative and significant impact in 8 countries (13.33 percent); the combined effects of technological progress and productivity of the military sectors have positive impact on EG in 12 countries (20 percent), while they have negative and significant impact in 9 countries (15 percent); the externality effects of defense spending have positive and significant impact in 11 countries (18.33 percent), while they have negative and significant impact in 3 countries (5 percent); The combined effects of technological progress and productivity of the non-military sectors have positive and significant impact in 8 countries (13.33 percent), while they show negative

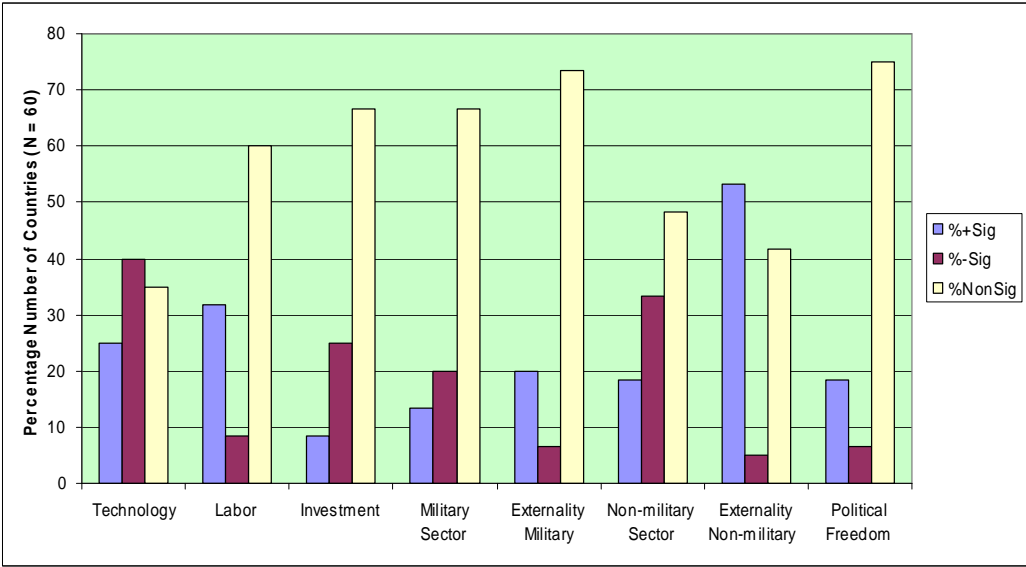


Figure 1. The Impact of Political Freedom, Economic, Military, and Non-military Factors, and Their Externalities on Economic Growth.

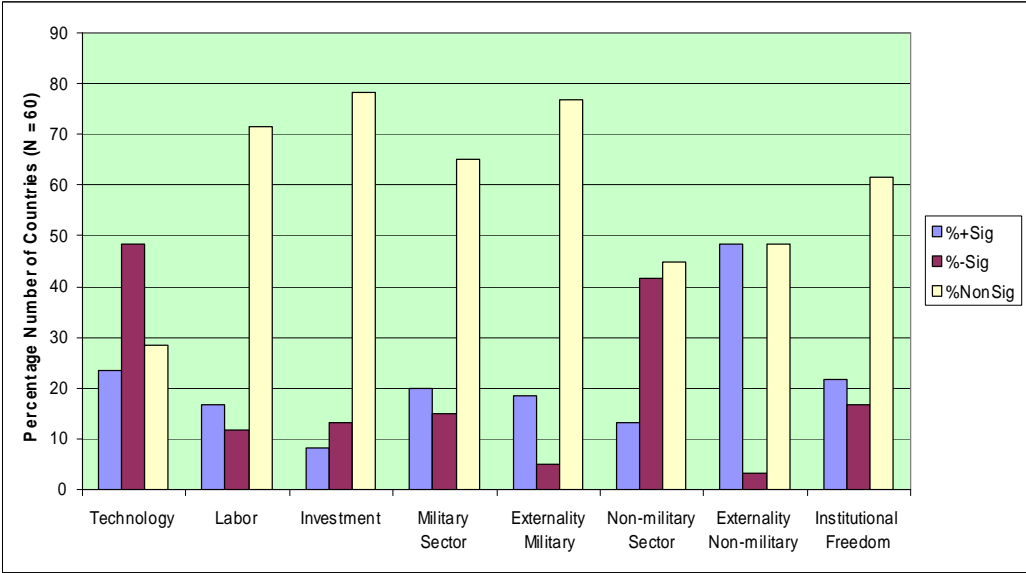


Figure 2. The Impact of Institutional Freedom, Economic, Military, and Non-military Factors, and Their Externalities on Economic Growth.

and significant impact in 25 countries (41.67 percent); and the externality effects of non-military government spending show positive and significant impact in 29 countries (48.33 percent), while they significantly hinders EG in 2 countries (3.33 percent). Figure 2 demonstrates the number of countries that economic or military variables show significant impacts (positive or negative) on their economic growth with institutional freedom.

The PF with Regime Type

Regime type has positive and significant impact on economic growth (EG) in nine countries (15 percent); while they have negative and significant impact on EG in ten countries (16.33 percent). The estimates of the production function with political freedom are below: technological progress has positive and significant impact on EG in 15 out of 60 countries (25 percent), while it significantly hinders EG in 20 out of 60 countries (38.33 percent); changes in labor growth have positive and significant impact on EG in 19 countries (31.67 percent), while they significantly hinder EG in 6 countries (10 percent); investment has positive impact on EG in 8 countries (13.33 percent), while it has negative impact in 12 countries (20 percent); the combined effects of technological progress and productivity of the military sectors have positive and significant impact on EG in eight countries (13.33 percent), while they have negative and significant impact in 13 countries (21.67 percent); the externality effects of defense spending have positive and significant impact in 13 countries (21.67 percent), while they have negative and significant impact in 6 countries (10 percent); the combined effects of technological

progress and productivity of the non-military sectors have positive and significant impact in 13 countries (21.67 percent), while they show negative and significant impact in 14 countries (23.33 percent); and the externality effects of non-military government spending show positive and significant impact in 32 countries (53.33 percent), while they significantly hinders EG in two countries (3.33 percent). Figure 3 on p.68 represents countries of which economic and military variables show significant impacts (positive or negative) on economic growth with regime type.

The PF with Political Stability

Political stability has positive and significant impact in 12 countries (20 percent), while they have negative and significant impact in 5 countries (8.33 percent). The estimates of the production function with political stability are below: technological progress has positive and significant impact on economic growth (EG) in 19 out of 60 countries (31.67 percent), while it significantly hinders EG in 18 out of 60 countries (30 percent); changes in the labor growth have positive and significant impact on EG in 16 countries (26.67 percent), while they significantly hinder EG in 5 countries (8.33 percent); investment has positive and significant impact on EG in 9 countries (15 percent), while it has negative and significant impact in nine countries (15 percent); the combined effects of technological progress and productivity of the military sectors have positive and significant impact on EG in 11 countries (18.33 percent), while they have negative and significant impact in nine countries (15 percent); the externality effects of defense spending have positive and significant impact in 13 countries (21.67 percent),

while they have negative and significant impact in two countries (3.33 percent); The combined effects of technological progress and productivity of the non-military sectors have positive and significant impact in 18 countries (30 percent), while they show negative and significant impact in 17 countries (28.33 percent); The externality effects of non-military government spending show positive and significant impact in 30 countries (50 percent), while they significantly hinders EG in five countries (8.33 percent). Figure 4 represents countries of which economic and military variables show significant impacts (positive or negative) on economic growth with political stability.

The PF with Ideological Base

Regime ideological base has positive and significant impact on economic growth (EG) in 16 countries (26.67 percent); while they have negative and significant impact in eight countries (13.33 percent). The estimates of the production function with ideological base are below: technological progress has positive and significant impact on EG in 17 out of 60 countries (28.33 percent), while it significantly hinders EG in 19 out of 60 countries (31.67 percent); changes in labor growth have positive and significant impact on EG in 15 countries (25 percent), while they significantly hinder EG in five countries (8.33 percent); investment has positive and significant impact on EG in 11 countries (18.33 percent), while it has negative and significant impact in 12 countries (20 percent); the combined effects of technological progress and productivity of the military sectors have positive and significant impact on EG in 7 countries (11.67 percent), while they have negative and significant impact in 12 countries (20 percent); the externality

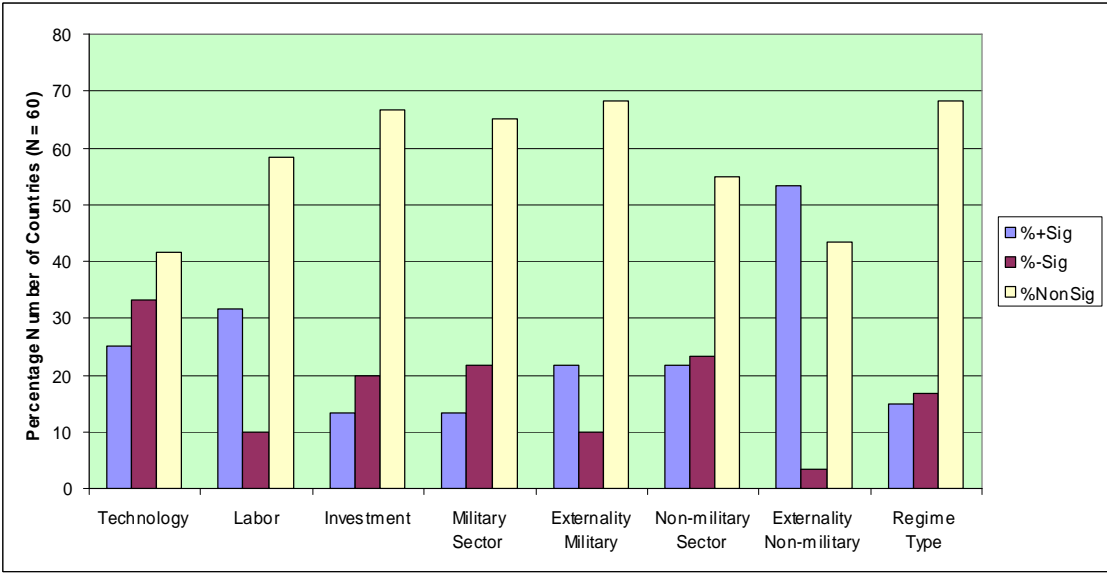


Figure 3. The Impact of Regime Type, Economic, Military, and Non-military Factors, and Their Externalities on Economic Growth.

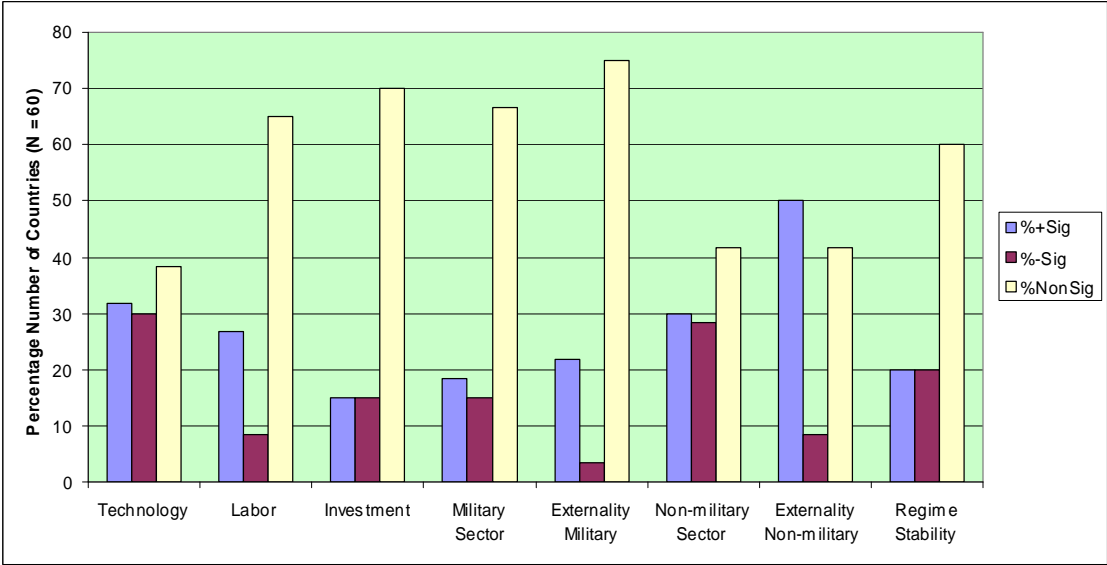


Figure 4. The Impact of Regime Stability, Economic, Military, and Non-military Factors, and Their Externalities on Economic Growth.

effects of defense spending have positive and significant impact in 8 countries (13.33 percent), while they have negative and significant impact in 6 countries (10 percent); the combined effects of technological progress and productivity of the non-military sectors have positive and significant impact in 15 countries (25 percent), while they show negative and significant impact in 17 countries (28.33 percent); and the externality effects of non-military government spending show positive and significant impact in 32 countries (53.33 percent), while they significantly hinder EG in two countries (3.33 percent). Figure 5 on p.71 represents countries of which economic and military variables show significant impacts on economic growth with regime ideological base.

The PF with Internal Conflicts

Internal conflicts have positive and significant impact in 15 countries (25 percent); while they have negative and significant impact in 6 countries (10 percent). The estimates of the production function with internal conflicts are below: technological progress has positive and significant impact on economic growth (EG) in 15 out of 60 countries (25 percent), while it significantly hinders EG in 16 out of 60 countries (26.67 percent); changes in labor growth have positive and significant impact on EG in 13 countries (21 percent), while they significantly hinder EG in 8 countries (13.33 percent); investment has positive and significant impact on EG in 10 countries (16.67 percent), while it has negative and significant impact in 9 countries (15 percent); the combined effects of technological progress and productivity of the military sectors have positive and significant impact on EG in 9 countries (11.67 percent), while they have negative

and significant impact in 10 countries (16.67 percent); the externality effects of defense spending have positive and significant impact in 12 countries (20 percent), while they have negative and significant impact in 5 countries (8.33 percent). technological progress and productivity of the non-military sectors have positive impact in 18 countries (30 percent), while they show negative and significant impact in 20 countries (33.33 percent); the externality effects of non-military government spending show overwhelming positive and significant impact in 41 countries (68.33 percent), while they hinders EG in a single country (1.67 percent). Figure 6 represents countries of which economic and military variables show significant impacts (positive or negative) on economic growth with internal conflicts.

The PF with External Conflicts

External conflicts have positive and significant impact on EG in only 6 countries (10 percent), while only two countries (3.33 percent) show negative and significant impact on EG. The estimates of the production function with internal conflicts are below: there are 13 out of 60 countries (21.67 percent) that have positive and significant impact of technological progress on economic growth (EG), while 24 out of 60 countries (40 percent) have negative and significant impact on EG; changes in labor growth show positive and significant impact in 13 countries (21.67 percent) while they show negative and significant impact in 11 countries (18.33 percent); investment shows that 11 countries (18.33 percent) have positive and significant impact on EG, while 9 countries (15 percent) show negative and significant impact on EG; the combined effects of

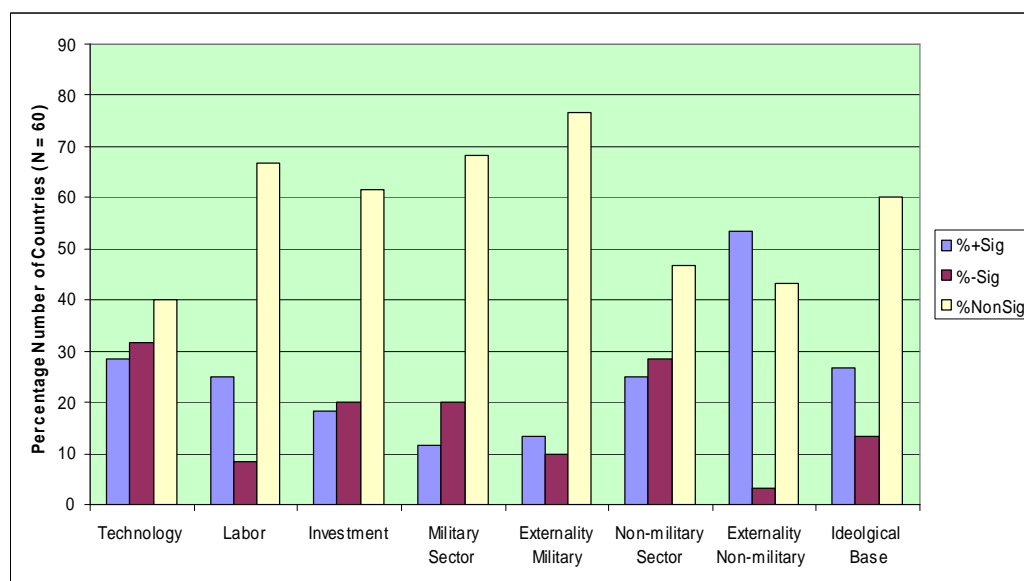


Figure 5. The Impact of Regime Ideological Base, Economic, Military, and Non-military Factors, and Their Externalities on Economic Growth.

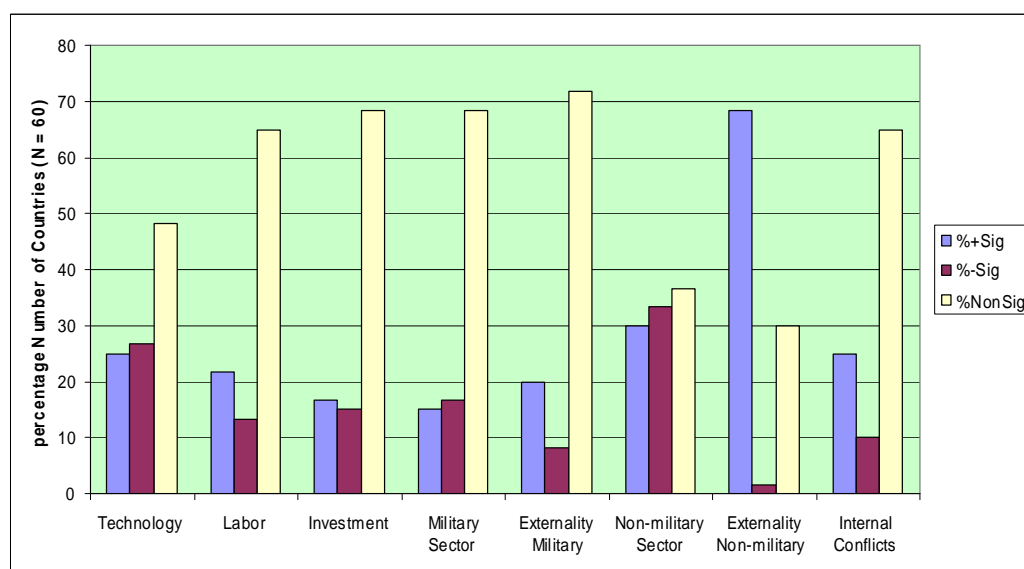


Figure 6. The Impact of Internal Conflicts, Economic, Military, and Non-military Factors, and Their Externalities on Economic Growth.

technological progress and productivity of the military sector has positive and significant impact on EG in 19 countries (31.67 percent), while it hampers EG in 10 countries (16.67 percent); the externality effects of defense spending (EEDS) show positive and significant impact on EG of 13 countries (21.67 percent), while they show negative and significant impact on EG in six countries (10 percent); the combined effects of technological progress and productivity of the non-military sectors show positive and significant impact of 21 countries (35 percent), while 16 countries (26.67 percent) incur negative and significant impact on EG; the externality effects of non-military government spending show overwhelming positive and significant impact of 30 countries (50 percent) on EG, while only five countries (8.33 percent) incur negative and significant impact on EG. Figure 7 represents countries of which economic and military variables show significant impacts, positive or negative, on economic growth along external conflicts.

The PF with Total Conflicts

Total conflicts have positive and significant impact in 19 countries (31.67 percent); while they have negative and significant impact in seven countries (56.67 percent). The estimates of the production function with total conflicts are below: technological progress has positive and significant impact on (EG) in 17 countries out of 60 countries (28 percent), while it significantly hinders EG in 17 countries out of 60 countries (28 percent); changes in the labor growth have positive and significant impact on EG in 11 countries (18.33 percent), while they significantly hinder EG in 11 countries

(18.33 percent); investment has positive and significant impact on EG in 11 countries (18.33 percent), while it has negative and significant impact in 11 countries (13.33 percent); the combined effects of technological progress and productivity of the military sectors have positive and significant impact on EG in 7 countries (11.67 percent), while they have negative impact in 13 countries (21.67 percent); the externality effects of defense spending have positive and significant impact in 19 countries (31.67 percent), while they have negative impact in three countries (5 percent); The combined effects of technological progress and productivity of the non-military sectors have positive and significant impact in 16 countries (26.67 percent), while they show negative and significant impact in 19 countries (31.67 percent); The externality effects of non-military government spending show positive and significant impact in 25 countries (41.67 percent), while they significantly hinders EG in 2 countries (3.33 percent). Figure 8 represents countries of which economic and military variables show significant impacts (positive or negative) on economic growth with total conflicts.

Results of the Cross National Time Series Analysis

I reported a summary of the CNTS empirical results of appendix B in table 2 on p. 76, which demonstrates the direction and significance of the relationships of economic and military variables on economic growth with political variables for nine regions: MENA Non-oil producing countries, MENA Oil producing countries, the Arab World, MENA, Latin America, Africa, Asia, the Caribbean region, and all states (full model).

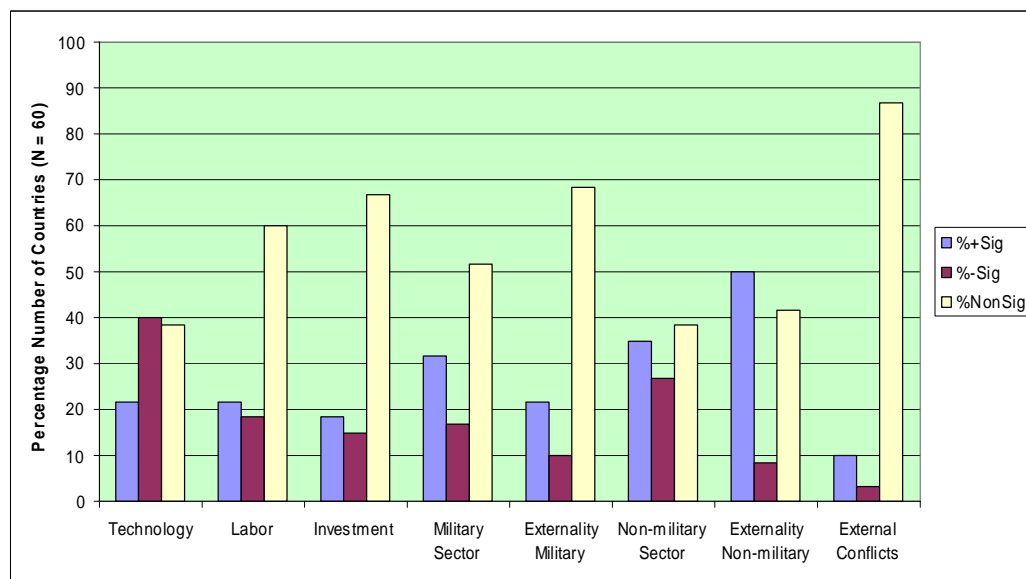


Figure 7. The Impact of External Conflicts, Economic, Military, and Non-military Factors, and Their Externalities on Economic Growth.

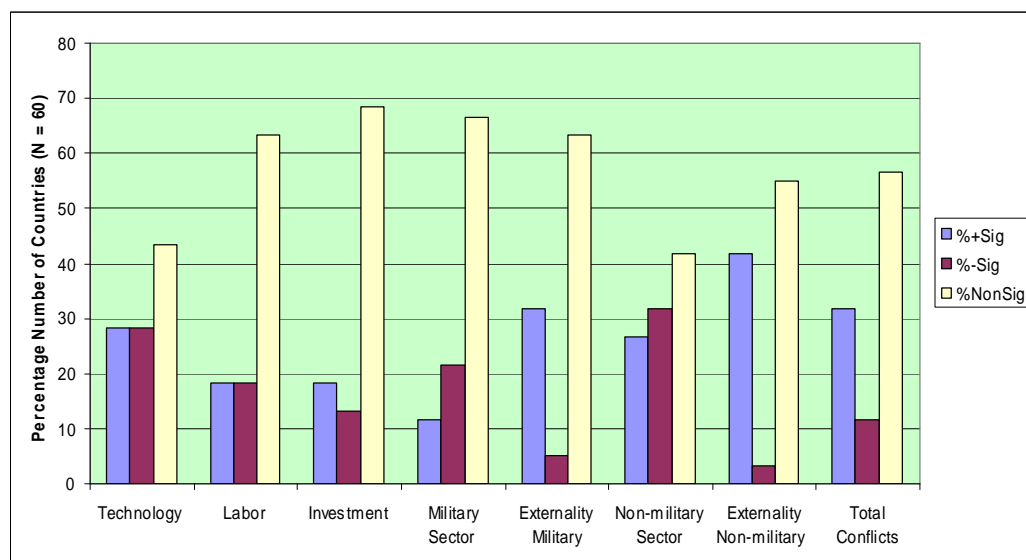


Figure 8. The Impact of Total Conflicts, Economic, Military, and Non-military Factors, and Their Externalities on Economic Growth.

I also reported a summary of the CNTS empirical results of appendix C in Table 3 on p. 81, which demonstrates the direction and significance of the relationships of economic and military variables on economic growth with internal and external conflicts as control variables plus a political variable for six regions: the Middle East and North Africa (MENA), Latin America, Asia, Africa, the Caribbean region, and all states (full model).

The CNTS Analysis with a Single Political Variable

Political freedom in the full model (entire sample) shows insignificant positive impact on EG. The estimates of the production function with political freedom are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG; and the combined effects of technological progress and productivity of the non-military sectors have negative and significant impact on EG.

Institutional freedom shows insignificant positive impact on EG. The estimates of the production function with institutional freedom are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; the externality effects of defense spending have positive and significant impact on

TABLE 2. Summary of the Cross National Time Series Results with Political Variables

	Labor	Invest	Mil	Mil ext	Nmil	Nmil ext
All St	(+)*	(+)	(+)*	(+)*	(-)*	(-)
Non-Oil	(+)*	(-)	(-)*	(+)*	(-)	(-)
Oil	(+)*	(-)*	(-)*	(+)*	(-)*	(-)*
Arabia	(+)*	(-)*	(+)*	(+)*	(+)	(-)
MENA	(+)*	(-)	(+)	(+)*	(+)	(-)
Latinos	(+)*	(+)	(+)*	(+)*	(+)	(+)
Africa	(+)*	(+)	(+)*	(+)*	(-)*	(+)
Asia	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Caribbean	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Ext conf	(-) (+)	(-) (+)	(+) (NA)	(+) (NA)	(-)*	
	Labor	Invest	Mil	Mil ext	Nmil	Nmil ext
All St	(+)*	(+)	(+)*	(+)*	(-)*	(-)
Non-OIL	(+)*	(-)	(-)*	(+)*	(+)	(-)
Oil	(+)*	(-)*	(-)*	(+)*	(-)*	(-)
Arabia	(+)*	(-)*	(+)*	(+)*	(+)	(-)
MENA	(+)*	(-)	(+)	(+)*	(+)	(-)
Latinos	(+)*	(+)	(+)	(+)*	(+)	(-)
Africa	(+)*	(+)	(+)	(+)*	(-)*	(-)
Asia	(+)*	(-)	(-)*	(+)*	(-)	(-)
Caribbean	(+)*	(-)*	(-)*	(+)*	(+)	(-)
Int conf	(-)* (-)	(-)* (+)	(+) (+)	(-) (-)	(-)*	

TABLE 2. (Continued)

	Labor	Invest	Mil	Mil ext	Nmil	Nmil ext
All St	(+)*	(+)	(+)*	(+)*	(-)*	(-)
Non-Oil	(+)*	(-)	(-)*	(+)*	(+)	(+)
Oil	(+)	(-)*	(-)*	(+)*	(-)*	(-)*
Arabia	(+)*	(-)*	(+)	(+)*	(+)	(-)
MENA	(+)*	(-)	(+)	(+)*	(+)	(-)
Latinos	(+)*	(+)	(+)*	(+)*	(+)	(+)
Africa	(+)*	(+)	(+)*	(+)*	(-)*	(+)
Asia	(+)*	(+)	(+)	(+)	(-)	(+)
Caribbean	(+)*	(-)	(+)*	(+)*	(+)	(+)
Tot Conf	(-)* (-)	(-)* (+)*	(+) (+)	(-) (+)	(-)	
	Labor	Invest	Mil	Mil ext	Nmil	Nmil ext
All St	(+)*	(+)	(+)*	(+)*	(-)*	(-)
Non-Oil	(+)*	(-)	(-)*	(+)*	(+)	(-)
Oil	(+)*	(-)*	(-)*	(+)*	(-)*	(-)*
Arabia	(+)*	(-)*	(+)*	(+)*	(+)	(-)
MENA	(+)*	(-)	(-)	(+)*	(+)	(-)
Latinos	(+)	(+)	(+)*	(+)*	(+)	(+)
Africa	(+)*	(+)	(+)	(+)	(-*)	(+)
Asia	(+)*	(-)*	(+)*	(+)*	(-)	(-)*
Caribbean	(+)*	(-)*	(+)*	(+)*	(+)	(+)
Pol free	(+) (+)	(-) (-)	(+) (-)	(-) (-)	(-)	

TABLE 2. (Continued)

	Labor	Invest	Mil	Mil ext	Nmil	Nmil ext
All St	(+)*	(+)	(+)*	(+)*	(-)*	(-)
Non-Oil	(+)*	(-)	(-)*	(+)*	(+)	(-)
Oil	(+)*	(-)	(-)*	(+)*	(-)*	(-)
Arabia	(+)*	(-)	(+)*	(+)*	(+)	(-)
MENA	(+)*	(-)	(+)	(+)*	(+)	(-)
Latinos	(+)*	(+)	(+)*	(+)*	(+)	(+)
Africa	(+)*	(+)	(+)*	(+)	(-)*	(+)
Asia	(+)*	(-)	(+)	(+)*	(-)	(-)
Caribbean	(+)*	(-)	(+)*	(+)*	(+)	(+)
Ins free	(+)* (+)	(+) (+)	(-) (-)	(+) (-)	(+)	
	Labor	Invest	Mil	Mil ext	Nmil	Nmil ext
All St	(+)*	(+)	(+)*	(+)*	()	()
Non-Oil	(+)*	(-)	(-)*	(+)*	()	()
Oil	(+)*	(-)*	(-)*	(+)*	()	()
Arabia	(+)*	(-)*	(+)*	(+)*	()	()
MENA	(+)*	(-)*	(+)	(+)*	()	()
Latinos	(+)*	(+)	(+)*	(+)*	()	()
Africa	(+)*	(+)	(+)*	(+)*	()	()
Asia	(+)*	(-)	(+)	(+)	()	()
Caribbean	(+)*	(-)*	(+)	(+)*	()	()
Type	(-) (-)	(-) (-)	(-) (-)	(-) (-)	(-)	

TABLE 2. (Continued)

	Labor	Invest	Mil	Mil ext	Nmil	Nmil ext
All St	(+)	(+)	(+)*	(+)*	(-)*	(-)
Non-Oil	(+)*	(-)	(-)*	(+)*	(+)	(-)
Oil	(+)*	(-)*	(-)*	(+)*	(-)*	(-)
Arabia	(+)*	(-)*	(+)*	(+)*	(+)	(-)
MENA	(+)*	(-)	(+)*	(+)*	(+)	(-)
Latinos	(+)	(+)	(+)*	(+)*	(+)	(+)
Africa	(+)*	(+)	(+)*	(+)*	(-)*	(+)
Asia	(+)*	(-)	(+)	(+)*	(-)	(-)
Caribbean	(+)*	(-)*	(+)*	(+)*	(+)	(+)
Stability	(-)	(+)	(-)	(+)	(+)	
	(-)	(+)	(+)	(-)		
	Labor	Invest	Mil	Mil ext	Nmil	Nmil ext
All St	(+)*	(+)	(+)*	(+)*	(-)*	(-)
Non-Oil	(+)*	(-)	(-)*	(+)*	(+)	(-)
Oil	(+)*	(-)*	(-)*	(+)*	(-)*	(-)*
Arabia	(+)*	(-)*	(+)*	(+)*	(+)	(-)*
MENA	(+)*	(-)	(+)	(+)*	(+)	(-)*
Latinos	(+)*	(+)	(+)*	(+)*	(+)	(+)
Africa	(+)*	(+)	(+)*	(+)*	(-)*	(+)
Asia	(+)*	(-)*	(+)	(+)*	(-)	(-)*
Caribbean	(+)*	(-)*	(+)*	(+)*	(-)	(+)
Ideology	(-)	(-)	(-)	(-)	(-)	
	(-)	(-)	(-)	(-)		

* Significant at 0.05 level

EG; and the combined effects of technological progress and productivity of the non-military sectors have negative and significant impact on EG.

Regime type shows insignificant negative impact on EG. The estimates of the production function with regime type are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Regime stability shows insignificant negative impact on EG. The estimates of the production function with regime stability are below: the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG; and the combined effects of technological progress and productivity of the non-military sectors have negative and significant impact on EG.

Ideological base shows insignificant negative impact on EG. The estimates of the production function with ideological base are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG; and the combined effects of technological progress and productivity of the non-military sectors have negative and significant impact on EG.

Internal conflicts show negative and significant impact on EG. The estimates of the production function with internal conflicts are below: changes in labor growth have

TABLE 3. Summary of the CNTS Results with Conflicts as Control Variables

	Pol free	Ins free	Type	Stability	Ideology
All States					
Labor	(+)*	(+)*	(+)*	(+)*	(+)*
Investment	(+)	(+)	(+)	(+)	(+)
Mil sector	(+)*	(+)*	(+)*	(+)*	(+)*
Mil ext	(+)*	(+)*	(+)*	(+)*	(-)*
Nmil sect	(-)*	(-)*	(-)*	(-)*	(-)*
NMil ext	(-)	(-)	(-)	(-)	(-)
Pol var	(+)	(+)	(-)	(-)	(-)
Ext conf	(-)	(-)	(-)	(-)	(-)
Int conf	(-)*	(-)*	(-)*	(-)*	(-)*
	Pol free	Ins free	Type	Stability	Ideology
Africa					
Labor	(+)*	(+)*	(+)*	(+)*	(+)*
Investment	(+)	(+)	(+)	(+)	(+)
Mil sector	(+)*	(+)*	(+)*	(+)*	(+)*
Mil ext	(+)*	(+)*	(+)*	(+)*	(+)*
NMil sect	(+)*	(+)*	(+)*	(+)*	(+)*
NMil ext	(+)	(+)	(+)	(+)	(+)
Pol var	(-)	(+)	(-)	(+)	(-)
Ext conf	(-)	(-)	(+)	(-)	(-)
Int conf	(-)	(+)	(-)	(+)	(-)

TABLE 3. (Continued)

	Pol free	Ins free	Type	Stability	Ideology
Asia					
Labor	(+)*	(+)*	(+)*	(+)*	(+)*
Investment	(-)*	(-)*	(-)*	(-)*	(-)*
Mil sector	(+)	(+)	(+)	(+)	(+)
Mil ext	(+)*	(+)*	(+)*	(+)*	(+)*
NMil sect	(-)	(-)	(-)	(-)	(-)
NMil ext	(-)*	(-)*	(-)*	(-)*	(-)*
Pol var	(-)	(+)	(-)	(+)	(-)
Ext conf	(-)	(-)	(-)	(-)	(-)
Int conf	(-)	(+)	(-)	(+)	(-)
	Pol free	Ins free	Type	Stability	Ideology
MENA					
Labor	(+)*	(+)*	(+)*	(+)*	(+)*
Investment	(-)	(-)	(-)	(-)	(-)
Mil sector	(-)	(+)	(+)	(+)	(+)
Mil ext	(+)*	(+)*	(+)*	(+)*	(+)*
NMil sect	(+)	(+)	(+)	(+)	(+)
NMil ext	(-)	(-)	(-)	(-)	(-)
Pol var	(-)	(+)	(-)	(+)	(-)
Ext conf	(-)*	(-)*	(-)*	(-)*	(-)*
Int conf	(-)*	(-)*	(-)*	(-)*	(-)*

TABLE 3(Continued)

	Pol free	Ins free	Type	Stability	Ideology
Latin America					
Labor	(+)*	(+)*	(+)*	(+)*	(+)*
Investment	(+)*	(+)*	(+)*	(+)*	(+)*
Mil sector	(+)	(+)	(+)	(+)	(+)
Mil ext	(+)*	(+)*	(+)*	(+)*	(+)*
NMil sect	(+)	(+)	(+)	(+)	(+)
NMil ext	(+)	(+)	(+)	(+)	(+)
Pol var	(+)	(+)	(-)	(-)	(-)
Ext conf	(-)	(-)	(-)	(-)	(-)
int conf	(-)	(-)	(-)	(-)	(-)
The Caribbean					
Labor	(+)*	(+)*	(+)*	(+)*	(+)*
Investment	(-)*	(-)*	(-)*	(-)*	(-)*
Mil sector	(-)*	(-)*	(-)*	(-)*	(-)*
Mil ext	(+)*	(+)*	(+)*	(+)*	(+)*
NMil sect	(+)	(+)	(+)	(+)	(+)
NMil ext	(+)*	(+)*	(+)*	(+)*	(+)*
Pol var	(-)	(-)	(-)	(-)	(-)
Ext conf	(-)	(-)	(-)	(-)	(-)
int conf	(-)	(-)	(-)	(-)	(-)

* Significant at 0.05 level

positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG; and the combined effects of technological progress and productivity of the non-military sectors have negative and significant impact on EG.

External conflicts show insignificant negative impact on economic growth EG. The estimates of the production function with external conflicts are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG; and the combined effects of technological progress and productivity of the non-military sectors have negative and significant impact on EG.

Total conflicts show negative and significant impact on EG. The estimates of the production function with total conflicts are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG; and the combined effects of technological progress and productivity of the non-military sectors have negative and significant impact on EG.

MENA Non-Oil Producing Countries

Political freedom shows insignificant positive impact on EG. The estimates of the production function with political freedom are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Institutional freedom shows insignificant positive impact on EG. The estimates of the production function with institutional freedom are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG.

Regime type shows insignificant positive impact on EG. The estimates of the production function with regime type are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG.

Regime stability shows insignificant positive impact on EG. The estimates of the production function with regime type are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG.

Ideological base shows insignificant negative impact on economic growth (EG).

The estimates of the production function with ideological base are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG.

Internal conflicts show negative and significant impact on EG. The estimates of the production function with internal conflicts are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG; and the combined effects of technological progress and productivity of the non-military sectors have negative and significant impact on EG.

External conflicts show insignificant negative impact on economic growth EG. The estimates of the production function with external conflicts are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG.

Total conflicts show negative and significant impact on EG. The estimates of the production function with total conflicts are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and

productivity of the military sectors show positive and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG; and the combined effects of technological progress and productivity of the non-military sectors have positive and significant impact on EG.

MENA Oil Producing Countries

Political freedom show insignificant positive impact on economic growth (EG).

The estimates of the production function with political freedom are below: changes in labor growth have positive and significant impact on EG; investment shows negative and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show negative and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG; the combined effects of technological progress and productivity of the non-military sectors have negative and significant impact on EG; and the externality effects of non-military government spending have negative and significant impact on EG.

Institutional freedom shows insignificant positive impact on economic growth EG. The estimates of the production function with institutional freedom are below: changes in labor growth have positive and significant impact on EG; investment shows negative and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show negative and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG; the combined effects of technological progress and productivity of the non-military sectors

have negative and significant impact on EG; and the externality effects of non-military government spending have negative and significant impact on EG.

Regime type shows insignificant negative impact on economic growth EG. The estimates of the production function with regime type are below: changes in labor growth have positive and significant impact on EG; investment shows negative and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show negative and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Regime stability shows insignificant positive impact on economic growth EG. The estimates of the production function with political stability are below: changes in labor growth have positive and significant impact on EG; investment shows negative and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show negative and significant impact on EG; and the externality effects of defense spending have negative and significant impact on EG.

Ideological base shows insignificant negative impact on economic growth EG. The estimates of the production function with ideological base are below: changes in labor growth have positive and significant impact on EG; investment shows negative and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show negative and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG; the combined effects of technological progress and productivity of the non-military sectors

have negative and significant impact on EG; and the externality effects of non-military government spending have negative and significant impact on EG.

Internal conflicts show insignificant positive impact on economic growth EG.

The estimates of the production function with internal conflicts are below: changes in labor growth have positive and significant impact on EG; investment shows negative and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show negative and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG; the combined effects of technological progress and productivity of the non-military sectors have negative and significant impact on EG.

External conflicts show insignificant positive impact on economic growth EG.

The estimates of the production function with external conflicts are below: changes in labor growth have positive and significant impact on EG; investment shows negative and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show negative and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG; the combined effects of technological progress and productivity of the non-military sectors have negative and significant impact on EG; and the externality effects of non-military government spending have negative and significant impact on EG.

Total conflicts show insignificant positive impact on economic growth (EG). The estimates of the production function with total conflicts are below: investment shows negative and significant impact on EG; the combined effects of technological progress

and productivity of the military sectors show negative and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG; the combined effects of technological progress and productivity of the non-military sectors have negative and significant impact on EG; and the externality effects of non-military government spending have negative and significant impact on EG.

The Arab World

Political freedom shows insignificant negative impact on economic growth EG.

The estimates of the production function with political freedom are below: changes in labor growth have positive and significant impact on EG; investment shows negative and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG; and the combined effects of technological progress and productivity of the non-military sectors have negative and significant impact on EG.

Institutional freedom shows insignificant positive impact on economic growth EG. The estimates of the production function with institutional freedom are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Regime type shows insignificant negative impact on economic growth EG. The estimates of the production function with regime type are below: changes in labor growth have positive and significant impact on EG; investment shows negative and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Regime stability shows insignificant positive impact on economic growth EG. The estimates of the production function with political stability are below: changes in labor growth have positive and significant impact on EG; investment shows negative and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Ideological base shows insignificant negative impact on economic growth (EG). The estimates of the production function with ideological base are below: changes in labor growth have positive and significant impact on EG; investment shows negative and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG; and the externality effects of non-military government spending have negative and significant impact on EG.

Internal conflicts show insignificant negative impact on economic growth EG. The estimates of the production function with internal conflicts are below: changes in

labor growth have positive and significant impact on EG; investment shows negative and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

External conflicts show insignificant positive impact on economic growth EG.

The estimates of the production function with external conflicts are below: changes in labor growth have positive and significant impact on EG; investment shows negative and significant impact on EG; and the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG.

Total conflicts show insignificant negative impact on economic growth EG. The estimates of the production function with total conflicts are below: changes in labor growth have positive and significant impact on EG; investment shows negative and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

The Middle East and North Africa

Political freedom shows insignificant negative impact on economic growth EG.

The estimates of the production function with political freedom are below: changes in labor growth have positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Institutional freedom shows insignificant positive impact on economic growth EG. The estimates of the production function with total conflicts are below: changes in

labor growth have positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Regime type shows insignificant negative impact on economic growth EG. The estimates of the production function with regime type are below: changes in labor growth have positive and significant impact on EG; investment shows negative and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Regime stability shows insignificant positive impact on economic growth (EG). The estimates of the production function with political stability are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Ideological base shows insignificant negative impact on economic growth EG. The estimates of the production function with ideological base are below: changes in labor growth have positive and significant impact on EG; and the externality effects of non-military government spending have negative and significant impact on EG.

Internal conflicts show negative and significant impact on economic growth EG. The estimates of the production function with internal conflicts are below: changes in labor growth have positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

External conflicts show negative and significant impact on economic growth EG.

The estimates of the production function with external conflicts are below: changes in labor growth have positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Total conflicts show insignificant negative impact on economic growth (EG).

The estimates of the production function with total conflicts are below: changes in labor growth have positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Latin America

Political freedom shows positive impact on economic growth EG. The estimates of the production function with political freedom are below: the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG and the externality effects of defense spending have positive and significant impact on EG.

Institutional freedom shows insignificant positive impact on economic growth EG. The estimates of the production function with institutional freedom are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Regime type shows insignificant negative impact on economic growth EG. The estimates of the production function with regime type are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sector show positive and significant impact on EG and the externality effects of defense spending have positive and significant impact on EG.

Regime stability shows positive impact on economic growth (EG). The estimates of the production function with political stability are below: the combined effects of technological progress and productivity of the military sector show positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Ideological base shows insignificant negative impact on economic growth (EG). The estimates of the production function with ideological base are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sector show positive and significant impact on EG and the externality effects of non-military government spending have negative and significant impact on EG.

Internal conflicts show negative and significant impact on economic growth (EG). The estimates of the production function with internal conflicts are below: changes in labor growth have positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

External conflicts show insignificant negative impact on economic growth (EG).

The estimates of the production function with external conflicts are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sector show positive and significant impact on EG and the externality effects of defense spending have positive and significant impact on EG.

Total conflicts show insignificant negative impact on economic growth (EG).

The estimates of the production function with total conflicts are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Africa

Political freedom shows insignificant negative impact on EG. The estimates of the production function with political freedom are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; and the externality effects of non-military spending have negative and significant impact on EG.

Institutional freedom shows insignificant positive impact on (EG). The estimates of the production function with institutional freedom are below: changes in labor growth

have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sector shows positive and significant impact on EG; and the externality effects of non-military spending have positive and significant impact on EG.

Regime type shows insignificant negative impact on EG. The estimates of the production function with regime type are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Regime stability shows insignificant positive impact on economic growth (EG). The estimates of the production function with regime stability are below: the combined effects of technological progress and productivity of the military sector shows positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG; and the combined effects of technological progress and productivity of the non-military sectors have positive and significant impact on EG.

Ideological base shows insignificant negative impact on EG. The estimates of the production function with ideological base are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sector shows positive and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG; the

combined effects of technological progress and productivity of the non-military sectors have positive and significant impact on EG; the externality effects of non-military spending have negative and significant impact on EG.

Internal conflicts show positive and significant impact on EG. The estimates of the production function with internal conflicts are below: changes in labor growth have positive and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG; and the combined effects of technological progress and productivity of the non-military sectors have negative and significant impact on EG. There are no results for *External conflicts*.

Total conflicts show positive and significant impact on economic growth (EG). The estimates of the production function with total conflicts are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG; and the combined effects of technological progress and productivity of the non-military sectors have negative and significant impact on EG.

Asia

Political freedom shows insignificant negative impact on EG. The estimates of the production function with political freedom are below: changes in labor growth have positive and significant impact on EG; investment has negative and significant impact on EG; the combined effects of technological progress and productivity of the military

sector shows positive and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG; and the combined effects of technological progress and productivity of the non-military sectors have negative and significant impact on EG.

Institutional freedom shows insignificant negative impact on economic growth (EG). The estimates of the production function with institutional freedom are below: changes in labor growth have positive and significant impact on EG; and the combined effects of technological progress and productivity of the military sectors have positive and significant impact on EG.

Regime type shows insignificant negative impact on economic growth (EG). Labor growth is the only significant variable among the estimates of the production function. Changes in labor growth have positive and significant impact on EG.

Regime stability shows insignificant positive impact on economic growth (EG). The estimates of the production function with regime stability are below: the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Ideological base shows insignificant negative impact on economic growth (EG). The estimates of the production function with ideological base are below: changes in labor growth have positive and significant impact on EG; investment has negative and significant impact on EG; and the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG.

Internal conflicts show positive and significant impact on EG. The estimates of the production function with internal conflicts are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show negative and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG. There are no results for *External conflicts*.

Total conflicts show insignificant positive impact on economic growth (EG). Labor growth is the only significant variable among the estimates of the production function with total conflicts. Changes in labor growth have positive and significant impact on EG.

The Caribbean Region

Political freedom shows insignificant negative impact on EG. The estimates of the production function with political freedom are below: changes in labor growth have positive and significant impact on EG; investment has negative and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Institutional freedom shows insignificant negative impact on EG. The estimates of the production function with institutional freedom are below: changes in labor growth have positive and significant impact on EG; and the combined effects of technological progress and productivity of the military sectors have positive and significant impact on

EG; and the externality effects of defense spending have positive and significant impact on EG.

Regime type shows insignificant negative impact on EG. Changes in labor growth have positive and significant impact on EG; and the combined effects of technological progress and productivity of the military sectors have negative and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Regime stability shows insignificant negative impact on EG. The estimates of the production function with political freedom are below: changes in labor growth have positive and significant impact on EG; investment has negative and significant impact on EG; the combined effects of technological progress and productivity of the military sector shows positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Ideological base shows insignificant negative impact on economic growth (EG). The estimates of the production function with political freedom are below: changes in labor growth have positive and significant impact on EG; investment has negative and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Internal conflicts show insignificant negative impact on economic growth (EG). The estimates of the production function with internal conflicts are below: changes in labor growth have positive and significant impact on EG; investment has negative and

significant impact on EG; the combined effects of technological progress and productivity of the military sectors show negative and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

There are no results for *External conflicts*.

Total conflicts show insignificant negative impact on economic growth (EG).

The estimates of the production function with total conflicts are below: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sector shows positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

The CNTS Analysis with Conflicts as Control Variables

All political variables in the full model (entire sample) show insignificant (positive or negative) impact on economic growth (EG); internal conflicts show significant negative impact on EG; external conflicts show insignificant negative impact on EG. The estimates of the production function with political freedom, and conflicts as control variables, show the same impact with all political contexts: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sectors show positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Africa

Political as well as conflict variables show insignificant impact on economic growth. The estimates of the production function with the political variables, and conflicts as control variables, show the same impact with all political contexts: changes in labor growth have positive and significant impact on EG; the combined effects of technological progress and productivity of the military sector shows positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Asia

Political as well as conflict variables show insignificant impact on economic growth (EG). The estimates of the production function with conflicts as control variables show the same impact with all political contexts: changes in labor growth have positive and significant impact on EG; investment shows negative and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG; and the externality effects of non-military spending have negative and significant impact on EG.

MENA

Political variable show insignificant impact on economic growth (EG); internal conflicts show negative and significant impact on EG; and internal conflict show negative and significant impact on EG. The estimates of the production function with

conflicts as control variables show the same impact with all political contexts: changes in labor growth have positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

Latin America

Both political and conflict variables show insignificant impact on EG. The estimates of the production function with conflicts as control variables show the same impacts with all political contexts: changes in labor growth have positive and significant impact on EG; investment show positive and significant impact on EG; and the externality effects of defense spending have positive and significant impact on EG.

The Caribbean Region

Both political and conflict variables show insignificant impact on economic growth (EG). The estimates of the production function with conflicts as control variables show the same impact with all political contexts: changes in labor growth have positive and significant impact on EG; investment show negative and significant impact on EG; the combined effects of technological progress and productivity of the military sector shows negative and significant impact on EG; the externality effects of defense spending have positive and significant impact on EG; and the externality effects of non-military spending have positive and significant impact on EG. The Main findings of this study are: first, the externality of non-military spending is positive and significant in majority of countries. Second, political variables: political freedom, institutional freedom, regime

type, political stability, and ideological base are at least as significant as the economic variables. Third, defense sector has more significant impact than the private sector on economic growth. Finally, the positive and significant impact of labor on EG reaches its peak with institutionalized and stable political regimes.

CHAPTER V

THE ECONOMICS AND POLITICS OF DEVELOPMENT

IN THE MIDDLE EAST AND NORTH AFRICA

In *Man Makes Himself* (1936) and *What Happened in History* (1942), Gordon Childe developed his theories about the rise and fall of ancient civilizations in the Middle East. Childe argued that these civilizations were shaped by conflicts between progressive groups, which endorsed flexible social structures and embraced technological change, and conservative groups, which favored a rigid social hierarchy and opposed any developments that might undermine the power of the elite. Childe suggested that the increasing dominance of conservative forces ultimately undermined the civilizations of the ancient Middle East.

One wonders whether Childe had ever read Ibn Khaldoun (1967) who considered the conflict between *badu* (nomads) and *hadar* (urbanites) a major category in his sociological analysis. Ibn Khaldoun¹⁵ (1322-1406) analyzes the conflict between the nomads and urbanites in his *Muqaddimah*, and explains the evolution of societies in the Middle East and North Africa (see Ibn Khaldoun 1967, p. 91-123; see also Ayoubi, 1999, pp. 38-86). Ibn Khaldoun, theorizes that the nomads despise agriculture and crafts and

¹⁵ Born in Tunisia. He went into seclusion near modern Frenda, Algeria, taking four years to compose his monumental *Muqaddimah*, the introductory volume to his *Kitab al-Ibar* (Universal History). In the *Muqaddimah*, Ibn Khaldun outlined a philosophy of history and theory of society that are unprecedented in ancient and medieval writing and that are closely reflected in modern sociology. He argued that social change and the rise and fall of societies follow laws that can be empirically discovered.

are disinclined to engage in them (the Arabic word for a 'craft' or profession is derived from the same root of 'humiliation', *imtahan*), but they are at the same time tempered by the riches of the settled people lands and inclined to take them over and control their producers. A cyclical pattern is then often set in motion: nomadic fighters relying on their strength and their group solidarity (*asabia*) take over power, but over time those nomads were softened by the luxury of settled urban life, leading to its weakening and decay. As a result another wave of nomads whose group solidarity still strong attacked and take over power again and the cycle continues (see Ayoubi 1999, pp. 49-50). Ali Al-Wardi (1981) holds that conflict between *badawa* (nomadism) and *hadara* (civilization) characterizes the entire social history of the Arab World.

The most prominent Moroccan thinker Abid Al-Jabiri (1982, pp. 404-31) finds Ibn Khaldoun's theory interestingly indicative of a certain mode of production that he calls a 'conquestal mode of production' or a 'military mode of production.' Al-jabiri (1982) usage of the term 'production' has obviously different meaning from its general economic usage, for this is basically a consumerist or circulationist not producing type of economy. In such political economy, the 'booty' (*al-ghanima*) takes pride of place: it is the source of income reflects itself on distribution (which is based on donation), and it promotes a certain 'rentier mentality' which is averse to production and to work ethics. According to Nazih Ayoubi (1999, p. 41), the idea of the existence of distinct 'orient mode of production' is not entirely new. Adam Smith classed China with Ancient Egypt, and 'Indostan', making the point that the government in these societies paid much attention to the canal system. The idea of 'Oriental society' was put forward some years

later, by James Mill and also by John Stuart Mill. Furthermore, Karl Marx who was familiar with such writers developed a theory about ‘an Asiatic mode of production.’ According to Ayoubi (1999, p. 42), “Oriental society as Marx understood was nevertheless something more complex than a system of canals. It had to do on the one hand, with centralized—i.e., despotic—regulation of the basic economic functions and, on the other, with a self sufficient village economy.” Ayoubi (*ibid*, pp. 49, 51) suggests that the ‘Asiatic mode of production’—inasmuch applies to the Middle East cannot be understood without taking into account another mode of production that was never very far away from any Middle Eastern society: the nomadic kin-ordered mode of production. A nomadic community has not only to be sensitively tuned to nature and its changes, but has also to be critically alert to the movement of other nomadic communities that are trying to use the same limited resources. Thus, the vital rule of social organization is absolute internal solidarity and absolute external antagonism.

The tribal society of the Arabia about a century before Islam was by no means a simple one of autonomous and egalitarian tribes. It has known poverty, wealth, injustice, and tribal warfare. It had also witnessed chiefly authority based on some degree of ownership and elements of control over the means of production. Markets existed both for the interchange of goods and ideas (through poetry in particular), and in Hijaz, especially around Mecca, a commercial semi-aristocracy (mainly Quraishi) was involved in local and distance trade, and was capable of possessing herds, large area of pasture land, slaves, and long trade rout extended to Iraq, the Gulf, Yemen, Ethiopia, and Syria (see Ayoubi, 1999, pp. 54-56; Cleveland, 2000, pp. 4-8). This level of economic

development in Arabia was accompanied by high level of injustice, deep social antagonism, and ultimately deep threat to the internal social cohesion. Islam then came in the seventh century as a unifying force forging most of Arabia into a more integrated society subject to one law, the new Islamic *shari'a*. However, the unifying process was not comprehensive and fixed as evidenced by the ridda¹⁶ (apostasy) wars that followed the death of Prophet Muhammad. The ridda wars (632-634) cost the newly established Islamic state enormous amount of resources, and weakened the internal social cohesion. Thus, through conquest the Islamic state achieved higher level of social integration, and vast economic resources vital to the life of the newly established state.

The origin of the Islamic state as Waddah Sharara (1981, pp. 125-42) points out, can be traced to a process of the traditional conquest (ghazw) practice, and more specifically to the traditional rules of 'distribution' following war. Ayoubi (1999, p. 57) notes, "Distribution of the spoils of war was at first equitable among Arabs regardless of differences; it then became increasingly based on a system of degradation. Abu Baker, the first caliph, related the distribution directly to internal consideration of Arabian society by adopting the (nomadic) principle of equal share of the booty. With Umar, the

¹⁶ Shortly after the news of Prophet Muhammad's death, many Arab tribes renounced their allegiance to Islam in favor of new, local leaders. This was less a religious choice than a political and economic one, since the tribes used this as an excuse to govern themselves and stop paying the zakāt, or alms tax. Though most Arab tribes did not challenge the prophecy of Muhammad, others, apostatized and returned to their pre-Islamic religion and traditions, classified by Muslims as idolatry. The tribes claimed that they had submitted to Prophet Muhammad and that with the Prophet's death, they were again free. Abu Baker insisted that they had not just submitted to a leader but joined the Muslim religious community, of which he was the new head, and Abu Baker declared war on the rebels. The severest struggle was the war with Ibn Habib al-Hanafi, known as Musailimah Al-Khadab (Musailimah the Liar), who claimed to be a prophet and Muhammad's true successor. The Muslim undefeatable general Khalid bin Walid finally defeated al-Hanafi at the Battle of Akraba (see Cleveland 2000, p. 13; Microsoft Encarta Reference Library 2004; http://en.wikipedia.org/wiki/Abu_Bakr#The_Ridda_Wars)

second caliph, however, gradation in compensation was introduced according to Islamic ‘seniority’ (how long in Islam and whether the crucial battle of Bader¹⁷ had been attended or not).” Furthermore, according to (ibid) Umar made the grant to the fighters annual, after accumulating the money, and not occasional with each conquest collection. Umar was assassinated in 644 and he was succeeded by Uthman who faced opposition from the military from the beginning of his reign. In 656 a group of soldiers broke into Uthman’s home and murdered him. They then prevailed upon Ali to accept the caliphate, which was contested by the Umyyad clan. Two major civil wars were erupted between Ali’s partisans (*shaia*) and the Umyyads: the ‘great strife’ (al-fitna al-kubra¹⁸) lasted from 656 to 661 and Siffin¹⁹ in 657. Ali was assassinated by the Kharijites in 661 which marked the end of the first phase of the Islamic community (see Cleveland 2000, pp. 13-16).

Al-Jabiri (1982, pp. 404-31) believes that Ibn Khaldoun’s observation can be generalized to most phases of the history of the Islamic state: monies are collected to be distributed among fighters and the officials for consumption but not for investment. The ‘conquestal’ economy as Al-Jabiri (1982, p. 404-31) suggests is based on wealth accruing to the state, via statist method, to be spent by the statesmen. The main feature

¹⁷ In March 624 Prophet Muhammad and about 300 of his men battled a Meccan force three times their size at the oasis of Badr. It was a great victory for the Muslims, and later generations of Muslims considered it a mark of nobility to have fought at Badr.

¹⁸ Ali went north to Al Baṣrah-Iraq with his loyal troops where, in December 656, he defeated an army of Aisha’s (the wife of Prophet Muhammed) supporters in what is considered the first round of the first Islamic civil war. This war, which lasted from 656 to 661, later became known as the first fitnah because it tested the unity of the Islamic community.

¹⁹ Ali moved from Medina to Al Kūfah-Iraq where he had more support. There he was challenged by Muawiyah, the Umayyad governor of Syria. Muawiyah refused to recognize Ali as caliph and engaged Ali’s forces in a battle at Siffin, in northern Syria, in 657.

of the conquestal economy is the absence of the base of production accompanying by a heavy role of state power exercised through the military. Although the role of the state in the modern MENA had been changed to a different one, the essence of the mode of production remains the same. If conquest is replaced by external aid or oil revenues, we end up with unproductive economy where the state eliminates social economic activities and propose itself as the sole 'entrepreneur'. Ayoubi (1999, p. 3) suggests, "The Arab state is not a natural growth of its own socio-economic history or its own cultural and intellectual tradition. It is a 'fierce' state that has frequently to resort to raw coercion in order to preserve itself." Consequently, the divergence between the people and the state in the Middle East and North Africa (MENA) became a fact of life, and it was increasing as more privileges offered to the military and other state's coercive apparatus. Therefore, it is less likely to understand the problems of development in the MENA without taking into account their political contexts.

Structural Approach to Political Systems

I believe that the structure of the political system approach²⁰ as developed by David Easton is the most appropriate level of analysis to examine the problems of political and economic development in the MENA. I would like to elaborate on some of Eaton's concepts. In this respect it is essential to distinguish between a political regime and a political system: specifically, to what might we refer when speaking of the regime

²⁰ I am more inclined to utilize the system level of analysis as developed by David Easton (1965) because system analysis of political life enables the investigator to look at the whole picture, and understand the interactions among the units of the system and the reasons that make some system ineffective.

of political system? A political system is more comprehensive than a political regime such that within a political system we have political authorities, a political community, and a political regime. A regime refers to the goals or values of a political system, the norms or rules of the game, and the structure of authority” (see Easton, 1965, P. 26; 1990, pp. 12).

Easton (1990, pp. 12 ; 1967, pp. 190-212) theorizes that each of these elements of political regime has its own structure, which typically, draws our attention to the relationships among the political authorities and, in turn, their relationship as political authorities, to other members of the political system. In Easton’s (ibid) words, “it points to the distribution of that kind of power we call authority and the informal political power relationships associated with such authority.” Easton (1990, p. 13) reminds us to bear in mind that the structure of the political regime is narrower than that of the political system as a whole or of the regime itself. Easton (ibid) wrote, “The structure of the political system, for example, would include the structure of nonauthoritative power in a system (elite-mass relationships or class-based power, for example); the patterns of nonauthoritative relationships among interests groups and political parties; various roles such as those of opinion leaders, political bosses, and voters; electoral and other political cleavages; and all those other groups and roles that wield political power (except the kind we call political authority), which is characteristics of the influence exercised through regime.”

The regime as sets of constraints on political interaction in all systems may be broken down into three components: values (goals and principles), norms, and structure

of authority. The values serve as broad limits with regard to what can be taken for granted in the guidance of day-to-day policy without violating deep feelings of an important segment of the community. The norms specify the kind of procedures that are expected and acceptable in the processing and implementation of demands [as well as support and conversion processes]. The structure of authority designates the formal and informal patterns in which power is distributed and organized with regard to the authoritative making and implementing of decisions—the roles and their relationships through which authority is distributed and exercised. The goals, norms, and structure of authority both limit and validate political actions and in this way provide what tends to become a context for political interactions. This context changes more slowly than other kinds of political relationships” (see Easton 1990, pp. 12-3; 1967, pp 259-66).

Easton (1965, p. 138) notes, “if we select political systems for special study, we do so because we believe that they have characteristically important consequences for society, namely, authoritative decisions. These consequences I shall call the outputs. If we judged that political systems did not have important outputs for society, we would probably not be interested in them.” According to Easton(1965), “unless a system is approaching a state of entropy—and we can assume that this is not true for most political systems—it must have continuing inputs to keep it going. Without inputs the system can do no work; without outputs we cannot identify the work done by the system. The typical demands that will find their way into political process will concern the matters in conflict that are labeled important by the culture. Easton (1965) suggests, “We cannot hope to understand the nature of the demands presenting themselves for political

settlement unless we are ready to explore systematically and intensively their connection to the culture.”

Support is fed into the political system in relation to three objects:

1. The political community: no political system can continue to operate unless its members are willing to support the existence of a group that seeks to settle differences or promote decisions through peaceful action in common.

2. The regime: support for the regime helps to keep the system running. This kind of support related to all those arrangements that regulate the way in which demands put into the system are settled and the way in which decisions are put into effects.

3. Converting mechanism: if a political system is going to be able to handle the conflicting demands put into it, the political community must support the government.

Supporting the government is essential because it is the mechanism which converts inputs to outputs, making and interpreting the rules, and representing social interests (See Easton, 1967, pp. 25-33, 155-170, 171-72). The government also provides feedback to various agencies in order to enhance proficiency. Feedback helps the system to persist in the face of stress due information and other influences that return to its actors and decision makers and assist them in rectifying past mistakes (see Easton 1965, p. 25).

Economic Growth Based on Easton Model

Considering Eaton's (1965, p. 112) model as an analytical framework of economic growth in the Middle East and North Africa bring forth a system of economic

growth as in figure 9. The system of economic growth consists of inputs, converting mechanism, and output.

The Input Variables: the system of economic growth as shown in figure.9

receives three different types of inputs:

1. Political input: political freedom, institutional freedom, regime type, regime stability, and ideological base.
2. Conflict input: external conflicts, internal conflicts, and total conflicts
3. Economic input: investment, labor, military spending, non-military spending, and the externality effects of capital, labor, and defense spending.

Converting Mechanism: The production function represents the converting mechanism through which the inputs are transformed to outputs.

Output: the production function transforms the impacts of political, economic and military variables, the externality effects (labor, capital, and defense spending), and the impact of conflict variables to output (economic growth). The output increases if there is a positive impact from the input variables; on the contrary, it decreases if the impacts of the input variables on EG are negative. Utilizing Eaton's (1965, pp. 111-117) terminologies, the positive impact on economic growth provides "support" to the system of economic growth, conversely, the negative impact on economic growth imposes "demand" on the it.

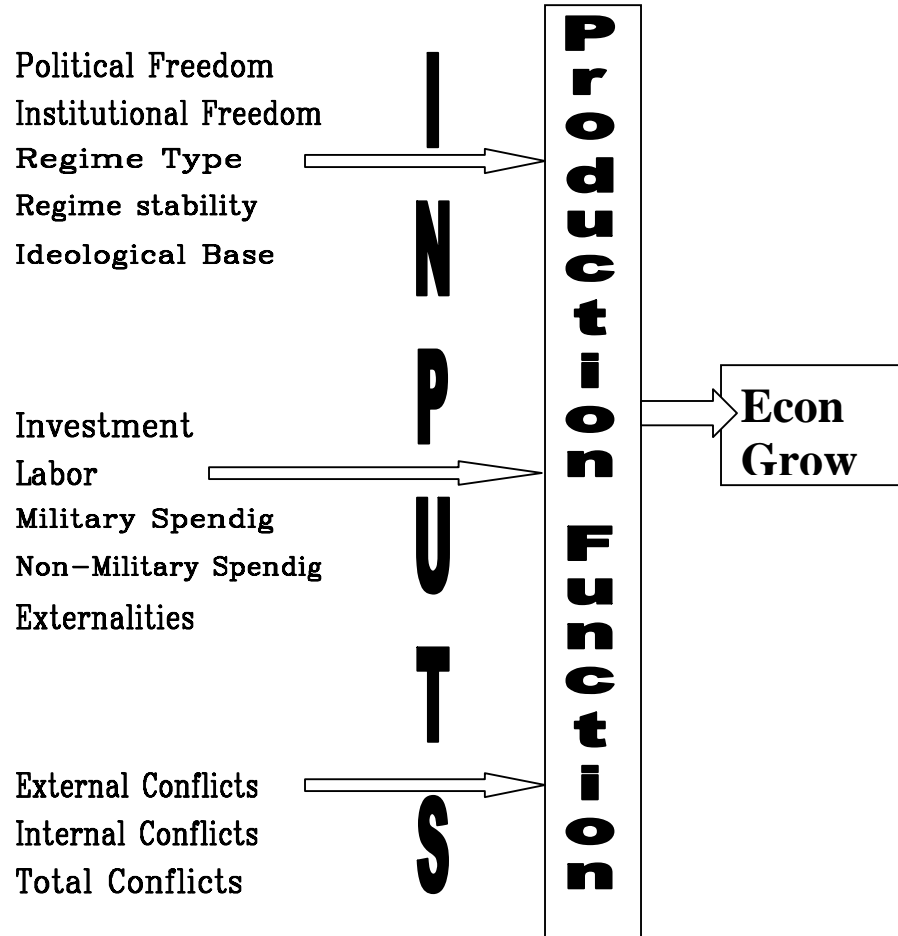


Figure 9. Model of the Production Function Based on Easton (1965, p. 32).

Apply Easton Framework on the MENA

I tested fifteen countries in the Middle East and North Africa: Jordan, Morocco, Saudi Arabia, Algeria, Bahrain, Egypt, Kuwait, Mauritania, Tunisia, United Arab

Emirates, Sudan, Pakistan, Turkey, and Iran by using cross national time-series (CNTS) analysis in two settings:

I. The standard production function, in addition to, external and internal conflict as control variables plus one political variable in each test. The countries' time series ranges from 15 to 42 annual observations, and the total number of observations is (451). The results in table 4 show the impact of the input variables on economic growth (output). In all tables on pp. 118, 120, 124, and 128, I reported the number of cases (N), Durbin Watson Statistics (DW), and the goodness of fit (R-Square).

Political input variables: political freedom has insignificant negative impact on economic growth (EG); institutional freedom has insignificant positive impact on EG; regime type has insignificant negative impact on economic on EG; regime stability has insignificant positive impact on EG; and ideological base has insignificant negative impact on EG.

Conflict input variables: the external conflicts variable has negative and significant impact on economic growth under all political contexts. Likewise, the internal conflict variable has negative and significant impact on economic growth under all political contexts. However, the internal conflict variable shows more significant negative impact on economic growth than the external conflict variable under the contexts of political freedom, institutional freedom, and regime stability. In contrast, the external conflicts variable shows more negative significant impact on economic growth than the internal conflicts variable under the contexts of regime type, and ideological base.

TABLE 4. Cross National Time Series Analysis Results with External and Internal Conflicts as Control Variables –MENA

Parameter	Pol free	Inst free	Type	Stability	Ideology
Labor est.	1.422	1.437	1.422	1.424	1.422
t-stat	4.61**	24.58**	24.62**	24.57**	24.64**
Investment	-1.924	-0.748	-0.797	-0.748	-0.857
	-1.335	-1.093	-1.168	-1.096	-1.254
Mil sector	-0.002	0.003	0.004	0.225	0.004
	-0.050	0.064	0.086	0.047	0.093
Mil ext	0.14E-3	0.14E-3	0.14E-3	0.13E-3	0.14E-3
	20.38**	20.14**	20.27**	20.19**	20.28**
Nmil-sector	0.394	0.675	1.471	0.655	1.081
	0.097	0.166	0.361	0.162	0.268
Nmil ext	-0.899	-0.757	-0.816	-0.743	-0.785
	-0.927	-0.783	-0.845	-0.776	-0.815
Ext conf	-0.44E-5	-0.41E-5	-0.433E-5	-0.40E-5	-0.45E-5
	-2.251*	-2.083*	-2.219*	-2.058*	-2.289*
Int conf	-0.382	-0.396	-0.373	-0.391	-0.358
	-2.625**	-2.341*	-2.206*	-2.293*	-2.111*
Pol vars	-0.163	0.410	-0.319	0.038	-0.383
	-1.474	0.022	-1.440	0.0204	-1.839*
	N=451	N=451	N=451	N=451	N=451
	R-Sq=0.72	R-Sq=0.72	R-Sq=0.72	R-Sq=0.72	R-Sq=0.72
	DW =1.16	DW =1.15	DW =1.16	DW =1.14	DW =1.16

* Significant at 0.05 level

** Significant at 0.01 level

The PF input variables: the changes in the labor growth have positive and significant impact on economic growth (EG) under all political contexts of the MENA; investment shows insignificant negative impact on EG under all political contexts of the MENA; the combined effects of technological progress and productivity of the military sector show insignificant negative impact on EG under the context of political freedom, and insignificant positive impact under institutional freedom, regime type, stability, and ideological base; the externality effects of defense spending have unequivocal positive and significant impact on EG under all political contexts of the MENA; the combined effects of technological progress and productivity of the non-military spending have insignificant positive impact on EG under all the political contexts; the externality effects of non-military government spending show insignificant negative impact on EG under all political contexts.

The results in table 4 show, that the system of economic growth in the Middle East and North Africa receives significant “supports” from the change in labor and the externality effects of military spending. On the contrary, the internal and external conflicts variables impose “demands” on EG, i.e., hamper economic growth.

II. The standard production function plus a single political or conflict variable. The countries’ time series ranges from 15 to 42 annual observations, and the total number of observations is (451). The results in table 5 show the impact of the input variables (political, conflict, and the PF’s independent variables) on economic growth (output).

Political input variables: political freedom has insignificant negative impact on

TABLE 5. Cross National Time Series Analysis Results with a Single Political Variable– MENA

Parameter	Ext conf	int conf	tot conf	pol free
Labor est.	1.427	1.425	1.439	1.426
t-stat	24.55**	24.55**	24.69**	24.45**
Investment	-0.677 -0.989	-0.778 -1.137	-0.940 -1.358	-0.876 -1.255
Mil sector	0.004 0.077	0.269 0.056	0.037 0.077	-0.166 -0.035
Mil ext	0.14E-3 20.28**	0.135 20.24**	0.136 20.34**	0.136 20.22**
Nmil-sector	0.390 0.096	3.812 1.010	3.836 1.015	3.506 0.925
Nmil ext	-1.078 -1.122	-0.834 -0.861	-0.760 -0.779	-1.279 -1.322
Pol vars	-0.409 -2.091*	-0.396 -2.337**	-0.313 -2.219*	-0.149 1.35
	N= 451			
	R-Sq=0.72			
	DW=1.12			

TABLE 5. (Continued)

Parameter	Inst free	Type	Stability	Ideology
Labor est.	1.427	1.426	1.426	1.425
t-stat	24.42**	4.47**	24.40	24.49**
Investment	-0.693 -1.010	-0.766 -1.114	-0.72 -1.043	-0.830 -1.205
Mil sector	0.003 0.062	0.433 0.906	0.38E-3 0.008	0.464 0.097
Mil ext	0.13E-3 20.03**	0.135 20.10	0.13E-3 20.08**	0.13E-3 20.09
Nmil-sector	3.397 0.891	4.541 0.879	3.344 1.122	4.265
Nmil ext	-1.160 -1.202	-1.199 -1.245	-1.082 -1.116	-1.158 -1.205
Pol vars	0.070 0.369	-0.323 -1.452	0.143 0.766	0.386 -1.862

* Significant at 0.05 level

** Significant at 0.01 level

economic growth (EG); institutional freedom has insignificant negative impact on EG; regime type has insignificant negative impact on economic EG; regime stability has insignificant positive impact on EG; and ideological base has insignificant negative impact on EG.

Conflict input variables: the external conflict variable has negative and significant impact on economic growth. Likewise, the internal conflict variable has negative and significant impact on EG. However, the internal conflict variable shows more significant negative impact on economic growth than the external conflict. The total conflict variable shows significant negative impact on EG.

The PF input variables: the changes in the labor growth have positive and significant impact on economic growth (EG) with each political or conflict variable; investment shows insignificant negative impact on EG with each political or conflict variable; The combined effects of technological progress and productivity of the military sector show insignificant positive impact on EG with each political or conflict variable; The externality effects of defense spending have unequivocal positive and significant impact on EG under all political or conflict contexts; The combined effects of technological progress and productivity of the non-military spending show insignificant positive impact on EG under all the political contexts; The externality effects of non-military government spending show insignificant negative impact on EG under all political contexts.

Egypt and Algeria

I consider Egypt and Algeria as the focus of my case study because the two countries are important in terms of their levels of economic growth and developments among the countries of the MENA. Hudson (1977, p. 234) wrote, “Despite its present weaknesses, Egypt is the preeminent country of the Arab World...its history of modernization is the longest, its industrial sector is the most extensive, its educational and cultural institutions are the most prolific its military machine is the biggest.” Similarly, Algeria is one of the most important countries in North Africa due to its natural resources, size of population, and considerable military machine. Algeria and Egypt share similar experiences of economic and political developments such as “economic opening” (infatih), and regime type and stability from the early 1960s to the early 1970s (see Allen & Waterbury 1999, pp. 238, 240, 251-52; Hudson 1977, pp. 238-251, 364-368). I am going to show the impact of political, conflict, and the standard production function variables on economic growth of both cases (Egypt and Algeria) based on the non-linear least squares results.

Egypt

The data on Egypt contains 43 annual observations from 1960 to 2002. I tested Egypt’s model using the NLS method. The Egyptian model constitutes the standard production function plus a single political, or conflict variable. The general format of the equation: Economic growth = PF + political variable; PF + conflict variable. The impact

TABLE 6. NLS Results of Egypt

Parameter	Ext conf	int conf	tot conf	pol free
Technology	0.01	0.009	0.009	0.009
t-stat	4.458**	3.441**	4.458*	3.612**
Labor	-0.326	-0.313	0.326	-0.302
	-5.369**	-4.152**	-5.369**	-4.079**
Investment	0.506	0.007	0.005	0.006
	0.479	0.765	0.476	0.656
Mil sector	0.618	0.763E-3	0.006	0.103
	1.256	0.178	1.256	0.249
Mil ext	0.001	-0.001	0.112	-0.002
	0.545	-0.801	0.545	-0.947
Nmil-sector	-0.402	-0.412	-0.402	-0.413
	-2.651**	-2.564**	-2.651**	-2.759**
Nmil ext	0.021	0.023	0.021	0.023
	7.770**	8.233**	7.770	8.544**
Pol vars	0.003	1.000	0.003	-0.307
	-1.945*	1.000	-1.945	-0.417
	N= 43			
	R-Sq=0.92	0.92	0.92	0.92
	DW=1.89	1.72	1.89	1.77

TABLE 6. (Continued)

Parameter	Inst free	Type	Stability	Ideology
Technology	0.021	0.009	0.011	0.009
t-stat	3.049**	3.441**	2.879**	3.441
Labor	-1.331	-0.313	2.638	-0.313
	-1.076	-4.152**	3.024**	-4.151**
Investment	0.013	0.773	0.104	0.007
	0.082	0.765	0.417	0.765
Mil sector	0.028	0.763	0.055	0.763
	0.384	0.178	0.582	0.178
Mil ext	-0.016	-0.134	-0.263	-0.001
	-0.589	-0.801	-0.062	-0.801
Nmil-sector	-10.084	-0.412	-7.449	-0.412
	-3.099**	-2.564**	-2.341*	-2.564
Nmil ext	0.411	0.023	0.552	0.232
	4.521**	8.233**	6.426**	8.233
Pol vars	0.485	1.000	0.070	1.000
	1.067	1.000	-2.607**	1.000
	N= 43			
	R-Sq=0.94	0.92	0.99	0.92
	DW=1.73	1.72	1.63	1.72

* Significant at 0.05 level

** Significant at 0.01 level

of the political, conflict, and the production function variables are shown in table 6. *The Impact of Political variables:* political freedom has insignificant negative impact on economic growth (EG) ; institutional freedom has insignificant positive impact on EG; regime type has insignificant positive impact on economic on EG; regime stability has significant negative impact on EG; and the ideological base has insignificant positive impact on EG.

Conflict input variables: the external conflicts variable has negative and significant impact on economic growth; the internal conflict variable has insignificant positive impact on EG; however, the total conflict variable shows negative and significant impact on EG.

The PF input variables: the changes in the labor growth have positive and significant impact on economic growth (EG) under political freedom, institutional freedom, regime type, and regime stability. However, the changes in the labor growth show insignificant positive impact on EG; investment shows significant positive impacts on EG under total conflicts and regime stability, while it shows negative impacts under external conflicts, internal conflicts, political freedom, institutional freedom, and ideological base; the combined effects of technological progress and productivity of the military sector show insignificant positive impact on EG with each political or conflict variable; the externality effects of defense spending have insignificant positive impact on EG under external and internal conflict variables, while they show insignificant negative impact on economic growth under internal conflicts and all political variables; the combined effects of technological progress and productivity of the non-military

spending show negative and significant impact on EG under all political and conflict contexts; and the externality effects of non-military government spending show positive and significant impact on EG under all political and conflict's contexts.

Algeria

The data on Algeria contains 41 annual observations from 1962 to 2002. I tested Algeria's model using NLS method. The Algerian model constitutes the standard production function plus a single political, or conflict variable. The general format of the equation: $EG = PF + \text{political variable}$; $EG = PF + \text{conflict variable}$. The impact of the political, conflict, and the production function variables are shown in table 7.

The Impact of Political variables: political freedom has insignificant positive impact on economic growth (EG); institutional freedom has insignificant positive impact on EG; regime type has insignificant positive impact on EG; regime stability has significant positive impact on EG; and ideological base has negative and significant impact on EG.

Conflict input variables: The external and internal conflict variables have positive and significant impact on economic growth; however, the total conflict variable has negative and significant impact on EG.

The PF input variables: the changes in the labor growth have insignificant positive impact on EG under the political freedom and ideological base variables, while they have positive and significant impact under institutional freedom, regime type, and regime stability variables; the changes in labor growth show positive and significant

TABLE 7. NLS Results of Algeria

Parameter	Ext conf	int conf	tot conf	pol free
Technology	0.34E-13	0.34E-13	-0.485E-4	-1.398
t-stat	3.41**	3.471**	-0.838	-21.841**
Labor	-0.21E-20	-0.21E-20	0.821E-11	1.001
	-4.417**	-4.417**	0.352	1.001
Investment	0.14E-13	0.14E-13	0.003	1.010
	1.499	1.499	1.087	1.010
Mil sector	-0.15E-12	-0.15E-12	0.317	0.998
	-7.478**	-0.17E-6	0.955	1.212
Mil ext	1.00	1.00	0.002	0.969
	0.29E+15	0.29E15	2.575**	0.969
Nmil-sector	0.2E-18	2E-17	0.029	0.923E-3
	2.99**	2.99**	1.610	-0.001
Nmil ext	-1.00	-1.000	0.017	0.928
	-0.15E14	1.000	4.447**	0.928
Pol vars	0.250	0.25E13	-0.003	1.000
	3.357**	3.471**	2.293*	1.000
	N= 41			
	R-Sq=1.00	1.00	0.82	0.02
	DW=1.89	1.89	1.23	1.02

TABLE 7. (Continued)

Parameter	Inst free	Type	Stability	Ideology
Technology	-0.033	0.004	-0.033	-0.032
t-sta	-25.767**	4.286**	-24.890**	-25.216
Labor	0.326E-8	-0.196E-9	0.308E-8	0.317E-8
	11.723**	-5.185**	11.322**	1.571
Investment	0.006	0.005	0.006	0.001
	0.992	2.043*	0.976	0.284
Mil sector	0.472E-6	-0.301E-5	0.524E-6	0.493E-6
	2.014*	-2.126*	2.084*	2.126*
Mil ext	0.186	0.483	0.019	0.025
	2.492**	2.153*	2.938**	3.745**
Nmil-sector	0.243	0.270	0.021	0.002
	0.972	1.519	0.980	0.097
Nmil ext	0.353	0.017	0.333	0.022
	4.158**	5.371**	3.834**	2.770**
Pol vars	0.400E-3	1.000	0.002	0.006
	0.230	1.000	1.301	-3.589**
	N= 41			
	R-Sq=0.75	0.85	0.76	0.82
	DW=1.27	1.36	1.36	1.68

* Significant at 0.05 level

** Significant at 0.01 level

positive impact on EG under external and internal conflict variables, while they show negative and significant impact under total conflicts; investment shows significant positive impacts on EG under regime type; while it shows insignificant negative impact under all other political or conflict contexts; the combined effects of technological progress and productivity of the military sector show insignificant positive impact on EG under political freedom, negative and significant impact under regime type, and significant and positive impact under institutional freedom, stability, and ideological base variables; the combined effects of technological progress and productivity of the military sector show negative and significant impact under external conflict, insignificant negative impact under internal conflict, and insignificant positive impact under total conflicts; the externality effects of defense spending have insignificant positive effect on EG under political freedom, and significant positive effect on EG under the remaining political variables; the externality effects of defense spending show insignificant effects under external and internal conflicts on EG, while they show significant effect under total conflicts; the combined effects of technological progress and productivity of the non-military spending show insignificant negative effect on EG under political freedom, while they show insignificant positive impact on EG under the remaining political variables: institutional freedom, regime type, stability, and ideological base; under the conflict variables, the externality effects of defense spending show insignificant positive impact on economic growth; the combined effects of technological progress and productivity of the non-military spending show insignificant negative impact under political freedom, and insignificant impact under the remaining

political variables; the externality effects of non-military spending show positive and significant impact on EG under all political variables but political freedom. Under political freedom the externality effects of the non-military spending show insignificant positive impact on EG; under external and internal conflict variables, the externality effects of non-military defense spending show positive impact, while it show negative and significant effect under the context of total conflict variable.

CHAPTER VI

CONCLUSION

Singer's (1961) argument that both levels of analysis (system and nation-state) are useful to investigate problems of international relations has a great validity. The system level of analysis provides the most comprehensive level at which to study international relations, while the nation-state level of analysis allows more detailed investigation of the conditions and processes within states than does the system level approach.

Accordingly, I conducted the following empirical analysis: first, non-linear least squares (NLS) analysis of sixty individual-states using time series data from 1960 to 2002 with a single political or conflict variable. Second, cross national time-series (CNTS) analysis of five regions: the Middle East and North Africa (MENA), Latin America, Asia, Africa, and the Caribbean region using pool data with annual number of observations ranges from 178 to 718, and with interstate and intra-state conflicts as control variables plus one political variable. Third, I tested the entire sample (all state) model using CNTS analysis and pool data with 2349 observations, and with interstate and intra-state conflicts as control variables plus one political variable. And Finally, I tested nine regions: MENA Non-oil producing countries, MENA oil producing countries, the Arab World, MENA, Latin America, Africa, Asia, the Caribbean region, and the full model with a single political or conflict variable using CNTS analysis and annual number of observations ranges from 178 to 718.

The state level of analysis approach provides me with meticulous information about each state and how economic, conflict, and political variables interplay, and influence economic growth. In contrast, the regional and the full model analysis provide me with comparative empirical information of different regions as well as of the system of the Third World.

The results of the statistical analysis at the state and regional levels offer empirical evidence that the problems of economic growth cannot be understood without bringing in the political contexts to the production function. Therefore, treating economics and politics as two separate realms is not scientifically sound. It is simply infeasible to understand the dynamic of any state without understanding the interrelationship between economic variables and their political contexts. For this reason, it is not surprising that attempts to apply models of economic growth, without taking into account the political contexts failed to predict long-term solutions to the problems of economic growth of nation-states.

Moreover, it is fundamentally infeasible to study the growth of individual states, as well as, regions, and the system of the Third World without taking into account the impact of conflicts on them. Conflicts in its two forms (internal and external) affect economic growth. It is less likely to understand the political economy of the Middle East and North Africa without understanding the development of their conflicts, and their impacts on the national economies of the region.

Contrary to conventional wisdom, not all conflicts are harmful to the economic development of the state. The NLS analysis shows that conflicts are favorable to

economic growth in some countries. It seems that some developing countries follow the ‘wisdom’ of the Duchy of Grand Fenwick in Wimberley’s (2003) satire, *The Mouse that Roared*, who utilizes conflicts as a source of economic utility. However, the impacts of conflicts (intra-state, and Interstates) show negative impact on the model of all states with all political contexts using the CNTS analysis: intra-state conflicts show negative and significant impact on economic growth with all political contexts; while interstate conflicts show insignificant negative effects with all political contexts. The CNTS analysis of the Middle East and North Africa show unequivocally that the impacts of conflicts (intra-state and interstates) are negative and significant with all political contexts.

The dialectic between internal and external conflicts seems to be the engine of economic progression in the Third World. The results of this research lend support to the dialectic of conflicts by showing that a state can maintain economic growth by maintaining internal unity, while external conflicts can be managed to bolster economic growth, or at least minimize its damaging effects on the national economy. It is obvious that this dialectical balance has been lost in the majority of developing countries because their societies have become internally divided into two hostile camps: the ‘haves’ and the ‘haves not,’ which shatters their internal cohesions. Likewise, conflicts protract to the extent that their damaging effects are hard to manage, and much lesser to benefit from them.

The results of this dissertation show that politics does matter in economic growth and development of nations. The results also show that the impacts of economic

and military variables and their externalities' effects on economic growth differ with different political contexts. Furthermore, the empirical evidence indicates damaging effects of conflicts on economic growth.

The PF with Political Freedom

Political freedom has positive and significant impact on economic growth (EG) in 13 countries (21.67 percent), while they have negative and significant on impact on EG in 10 countries (16.67 percent); technological progress has positive and significant impact on EG in 14 out of 60 countries (23.33 percent), while it hinders EG in 29 out of 60 countries (48.33 percent); changes in the labor growth have positive impact on EG in 10 countries (16.67 percent), while they hinder EG in 7 countries (11.67 percent); investment has positive and significant impact on EG in 5 countries (8.33 percent), while it has negative significant and impact in 8 countries (13.33 percent); the combined effects of technological progress and productivity of the military sector have positive impact on EG in 12 countries (20 percent), while they have negative and significant impact in 9 countries (15 percent); the externality effects of defense spending have positive and significant impact in 11 countries (18.33 percent), while they have negative and significant impact in 3 countries (5 percent); the combined effects of technological progress and productivity of the non-military sectors have positive and significant impact in 8 countries (13.33 percent), while they show negative and significant impact in 25 countries (41.67 percent); and the externality effects of non-military government

spending show positive and significant impact in 29 countries (48.33 percent), while they hinder EG in 2 countries (3.33 percent).

The PF with Institutional Freedom

Institutional freedom shows positive and significant impact on economic growth in 11 countries (25 percent), while they have negative and significant impact on EG in 4 countries (6.67 percent); technological progress has positive and significant impact on EG in 15 out of 60 countries (25 percent), while it hinders EG in 24 out of 60 countries (40 percent); changes in labor growth have positive and significant impact on EG in 19 countries (31.67 percent), while they hinder EG in 5 countries (8.33 percent); investment has positive and significant impact on EG in 5 countries (8.33 percent), while it has negative and significant impact in 15 countries (25 percent); the combined effects of technological progress and productivity of the military sector have positive and significant impact on EG in 8 countries (13.33 percent), while they have negative and significant impact in 12 countries (20 percent); the externality effects of defense spending have positive and significant impact in 12 countries (20 percent), while they have negative and significant impact on EG in 4 countries (6.67 percent); the combined effects of technological progress and productivity of the non-military sectors have positive and significant impact in 11 countries (18.33 percent), while they show negative and significant impact in 20 countries (33.33 percent); and the externality effects of non-military government spending show overwhelming positive and significant impact in 32 countries (53.33 percent), while they hinder EG in 3 countries (5 percent).

The PF with Regime Type

Technological progress has positive and significant impact on economic growth (EG) in 15 out of 60 countries (25 percent), while it hinders EG in 20 out of 60 countries (33.33 percent); changes in the labor growth have positive and significant impact on EG in 19 countries (31.67 percent), while they significantly hinder EG in 6 countries (10 percent); investment has positive impact on EG in 8 countries (13.33 percent), while it has negative impact in 12 countries (20 percent); the combined effects of technological progress and productivity of the military sector have positive and significant impact on EG in 8 countries (13.33 percent), while they have negative and significant impact on EG in 13 countries (21.67 percent); the externality effects of defense spending have positive and significant impact on EG in 13 countries (21.67 percent), while they have negative and significant impact in 6 countries (10 percent); The combined effects of technological progress and productivity of the non-military sectors have positive and significant impact in 13 countries (21.67 percent), while they show negative and significant impact on EG in 14 countries (23.33 percent); and the externality effects of non-military government spending show positive and significant impact in 32 countries (53.33 percent), while they significantly hinder EG in 2 countries (3.33 percent).

The PF with Regime Stability

Political freedom has positive and significant impact on economic growth (EG) in 9 countries (15 percent), while they have negative and significant impact on EG in 10

countries (16.33 percent); technological progress has positive and significant impact on economic growth (EG) in 19 out of 60 countries (31.67 percent), while it significantly hinders EG in 18 out of 60 countries (30 percent); changes in the labor growth have positive and significant impact on EG in 16 countries (26.67 percent), while they significantly hinder EG in 5 countries (8.33 percent); investment has positive and significant impact on EG in 9 countries (15 percent), while it has negative and significant impact in 9 countries (15 percent); the combined effects of technological progress and productivity of the military sector have positive and significant impact on EG in 11 countries (18.33 percent), while they have negative and significant impact on EG in 9 countries (15 percent); the externality effects of defense spending have positive and significant impact in 13 countries (21.67 percent), while they have negative and significant impact in 2 countries (3.33 percent); the combined effects of technological progress and productivity of the non-military sectors have positive and significant impact on EG in 18 countries (30 percent), while they show negative and significant impact in 17 countries (28.33 percent); The externality effects of non-military government spending show positive and significant impact on EG in 30 countries (50 percent), while they hinder EG in 5 countries (8.33 percent); finally, the political regime stability has positive and significant impact on EG in 12 countries (20 percent) ; while they have negative and significant impact on EG in 5 countries (8.33 percent).

The PF with Ideological Base

Ideological base has positive and significant impact on economic growth in 16 countries (26.67 percent), while it has negative and significant impact on EG in 8 countries (13.33 percent); technological progress has positive and significant impact on economic growth EG in 17 out of 60 countries (28.33 percent), while it significantly hinders EG in 19 out of 60 countries (31.67 percent); changes in the labor growth have positive and significant impact on EG in 15 countries (25 percent), while they hinder EG in 5 countries (8.33 percent); investment has positive and significant impact on EG in 11 countries (18.33 percent), while it has negative impact in 12 countries (20 percent); the combined effects of technological progress and productivity of the military sector have positive and significant impact on EG in 7 countries (11.67 percent), while they have negative and significant impact on EG in 12 countries (20 percent); the externality effects of defense spending have positive and significant impact on EG in 8 countries (13.33 percent), while they have negative impact in 6 countries (10 percent); the combined effects of technological progress and productivity of the non-military sectors have positive and significant impact in 15 countries (25 percent), while they show negative and significant impact on EG in 17 countries (28.33 percent); and the externality effects of non-military government spending show positive and significant impact on EG in 32 countries (53.33 percent), while they significantly hinders EG in 2 countries (3.33 percent).

The PF with External Conflicts

External conflicts have positive and significant impact on economic growth (EG) in 6 countries (10 percent), while only two countries show negative and significant impact on EG; technological progress has positive and significant impact on EG in 13 out of 60 countries (21.67 percent), while it significantly hampers EG in 24 out of 60 countries (40 percent); changes in labor show positive and significant impact in 13 countries (21.67 percent), while they show negative and positive impact in 11 countries (18.33 percent); investment show that 11 countries (18.33 percent) have positive and significant impact on EG, while 9 countries (15 percent) show negative and significant impact on EG; the combined effects of technological progress and productivity of the military sector has positive and significant impact on EG in 19 countries (31.67 percent), while it significantly hampers EG in 10 countries (16.67 percent); the externality effects of defense spending (EEDS) show positive and significant impact on EG of 13 countries (21.67 percent), while only 6 countries (10 percent) incur negative and significant impact of the EEDS on EG; the combined effects of technological progress and productivity of the non-military sectors show positive and significant impact of 21 countries (35 percent), while 16 countries (26.67 percent) incur negative and significant impact on EG; and the externality effects of non-military government spending show overwhelming positive and significant impact of 30 countries (50 percent) on EG, while only 5 countries (8.33 percent) incur negative and significant impact on EG.

The PF with Internal Conflicts

Internal conflicts have positive and significant impact on EG in 15 (25 percent) countries, while they have negative and significant impact on EG in 6 countries (10 percent); technological progress and productivity of the non-military sectors have positive and significant impact on EG in 18 countries (30 percent), while they show negative and significant impact on EG in 20 countries (33.33 percent); and the externality effects of non-military government spending show overwhelming positive and significant impact in 41 countries (68.33 percent), while they significantly hinders EG in one country (1.67 percent).

The PF with Total Conflicts

Internal conflicts have positive and significant impact on economic growth (EG) in 19 countries (31.67 percent), while they have negative and significant impact in 7 countries (56.67 percent); technological progress has positive and significant impact on EG in 17 countries out of 60 countries (28.33 percent), while it hinders EG in 17 countries out of 60 countries (28.33 percent); changes in labor growth have positive and significant impact on EG in 11 countries (18.33 percent), while they hinder EG in 11 countries (18.33 percent); investment has positive and significant impact on EG in 11 countries (18.33 percent), while it has negative and significant impact on EG in 11 countries (13.33 percent); the combined effects of technological progress and productivity of the military sector has positive and significant impact on EG in 7 countries (11.67 percent), while they have negative impact in 13 countries (21.67

percent); the externality effects of defense spending have positive and significant impact on EG in 19 countries (31.67 percent), while they have negative and significant impact on EG in 3 countries (5 percent); The combined effects of technological progress and productivity of the non-military sectors have positive and significant impact on EG in 16 countries (26.67 percent), while they show negative and significant impact on EG in 19 countries (31.67 percent); and the externality effects of non-military spending show positive and significant impact in 25 countries (41.67 percent), while they significantly hinder EG in 2 countries (3.33 percent).

The CNTS Analysis with Conflicts as Control Variables

In the full model political freedom shows insignificant positive impact on economic growth (EG); institutional freedom has positive and significant impact on EG; regime type shows negative and significant impact on EG; regime stability has insignificant negative impact on EG; and ideological base has insignificant negative impact on EG.

In Africa political freedom shows insignificant negative impact on EG; institutional freedom has insignificant positive impact on EG; regime type has insignificant negative impact on EG; regime stability has insignificant positive impact on EG; and ideological base has insignificant negative impact on EG.

In Asia, political freedom has significant and negative impact on EG; institutional freedom has insignificant positive impact on EG; regime type has

insignificant negative impact on EG; regime stability has insignificant positive impact on EG; and ideological base has insignificant negative impact on EG.

In the MENA political freedom has significant and negative impact on EG; institutional freedom has insignificant positive impact on EG; regime type has insignificant negative impact on EG; regime stability has insignificant positive impact on EG; and ideological base has insignificant negative impact on EG.

In Latin America, political freedom has insignificant positive impact on EG; institutional freedom has insignificant positive impact on EG; regime type has insignificant negative impact on EG; regime stability has insignificant negative impact on EG; and ideological base has insignificant negative impact on EG.

In the Caribbean region, political freedom has insignificant negative impact on EG; institutional freedom has insignificant negative impact on EG; regime type has insignificant negative impact on EG; regime stability has insignificant negative impact on EG; and ideological base has insignificant negative impact on EG.

In the full model, external conflicts have insignificant negative impact on EG with all political contexts; while internal conflicts have negative and significant impact on EG with all political contexts. In Africa, external conflicts have insignificant negative impact with all political contexts but regime type, which has insignificant positive impact; internal conflict has insignificant positive impact on EG with all political contexts. In Asia, external conflicts have insignificant negative impact with political freedom and regime type, while they have insignificant impact on EG under the remaining political variables: institutional freedom, political stability, and ideological

based. In the MENA, external as well as internal conflicts have negative and significant impact on EG. In Latin America, internal as well as external conflicts have insignificant negative impact on EG. Also in the Caribbean region, internal as well as external conflicts have insignificant negative impact on EG.

The CNTS Analysis with a Single Political or Conflict Variables

Political freedom shows insignificant positive effect on EG in all states (full model), the Middle East and North Africa (MENA) and the MENA oil producing countries, while political freedom shows insignificant negative impact in the MENA non-oil producing countries, Arab countries, Latin American, African, Asian, and the Caribbean countries.

Institutional freedom shows positive and significant impact on EG in all states (full model), insignificant positive impact on EG in the MENA Non-oil producing countries, the Arab World, the MENA, and Latin America, while institutional freedom shows insignificant negative impact in Asian and the Caribbean countries.

Regime type shows insignificant negative effects on EG in all the nine regions. Regime stability shows insignificant negative effect on EG in all states (full model), the MENA (oil producing countries), Latin American, and the Caribbean countries, while it shows insignificant positive effect in the MENA (non-oil producing countries), the Arab World, the MENA, Asia, and Africa. Ideology shows negative impact on EG in all the nine regions.

External conflicts show positive and significant effect on EG in the MENA; insignificant positive effect on EG in the MENA (oil producing countries), the Arab countries, and African and Asian regions, while external conflicts show insignificant negative effect on EG in all states (full model) and the MENA.

Internal conflicts show negative and significant effect on EG in all states (full model) and the MENA (non-oil producing countries); insignificant positive impact in the MENA (oil producing countries), African, and Asian regions; while internal conflicts show significant negative impact on EG in the MENA, while they show insignificant negative impact in the Arab countries, Latin America, and the Caribbean countries.

Total conflicts show negative and significant effect in all states (full model), the MENA, and Africa; insignificant positive impact on EG in the MENA oil producing countries, Asia, and the Caribbean countries; while internal conflicts show significant negative impact in the MENA non-oil producing countries, and insignificant negative effect in MENA, Latin America, and Africa.

My results lend empirical evidence to the argument that the non-military sector has more powerful impact than the military sector on economic growth. The empirical results of the NLS analysis offer strong evidence that the combined effects of technological progress and productivity of the non-military sector have positive and significant impacts on EG in the majority of countries. Similarly, there is preponderance of evidence on the positive impact of externality effects of the non-military spending with all political contexts but institutional freedom. On the contrary, the externality

effects of the military spending show positive and significant impact on economic growth in the minority of countries with all political contexts.

The NLS results show that the positive impact of labor on EG reaches its peak under institutionalized, stable, liberal, democratic regimes. However, the change of political context from internal conflicts to external conflict does not affect the positive impact of labor on EG; rather it minimizes its negative effects on EG. In CNTS analysis, the labor shows positive impact on EG regardless the changing of context across five different regions, as well as, the full model.

Compared to the non-military sectors, the empirical results reveal the weaknesses of the private sectors in developing countries. The NLS results show that the impact of investment on EG is not encouraging. The most conspicuous negative impact can be seen with institutional freedom, where investment has negative and significant impact in the majority of countries (13.33 percents), while it shows positive and significant impact on low percentage of countries (8.33 percent). Moreover, investment does not show any significant impact in 78.33 percent of the countries.

The CNTS results show insignificant positive impact of investment on EG in all states (full model), Africa, and Latin America. On the contrary, investment shows negative and significant impact on economic growth with all political contexts in Asia and the Caribbean. The relationship between investment and economic growth remains negative under all political contexts in the MENA, but shows no significance.

The results of investment in Asia are troubling because there were tons of talk about the “Asian Tiger,” and the rise of investment in Asia. In spite of the brouhahas of

the 'Asian Tiger,' the economic reality looks differently. It seems that the plummeting of the Asian currencies in the late 1980s led to capital flight from the Asian countries to other safe havens for capital investment. As a result, investments in Asia suffer a full blow that is still pervading the Asian economies until the present day.

The impact of investment on economic growth with ideological base shows negative and significant impact on economic growth in Asia and the Caribbean regions using the CNTS analysis. Also investment with ideological base shows negative and significant impact on economic growth in oil-producing countries, the Arab world, Asia, and the Caribbean region.

Problems and Issues Concerning the Empirical Analysis

There are several problems concerning my empirical analysis that might be potential sources of estimation bias first, the impact of technological progress on EG within the parameters of developing countries is different from its impact on developed countries. In the developed countries, the advancement of technology made the PF amenable in explaining deviations from equilibrium paths because technology is an intrinsic factor in the advanced societies. However, technology may have different effects in developing countries from that in developed countries. Technology did not accompany the evolution of developing countries and yield its effects on their modes of production over time; rather it was added to developing countries as pulses. Thus, the replication of technological effects on economic growth of the advanced industrialized societies might not be accurate in developing societies.

Second, the identification of the most productive sector in the economy might be a source of estimation bias. The most productive sector in the economy differs in the Third World from that in the First World: the industrial sector is less important in increasing wealth than the agriculture sector in numerous developing countries. Finally, the high level of sub-economies and shadow economies in the Middle East and North Africa may hinder the accuracy of measuring economic growth. These two types of economies bypass the converting mechanism (the production function) and create dislocation in the outputs of national economies.

Sub-economies: the Islamic investment companies illustrate this type of economies, especially, in Egypt and Pakistan. Zubaida (1992, p. 9) observes that “These companies only functioned freely because they recruit influential high-ranking officials, both retired and in post, to their board of directors and consultancies at high fees.” According to Zubaida (ibid), “these companies were involved in all kinds of irregularities and doubtful practices.” What Zubaida alludes to are the infamous investment companies (*sharikat tawzif al-amwal*) that came to prominence in Egypt from 1985 to 1988. They were ‘investment companies’ in the sense of inviting deposits from the public on which they paid very high rates of return, but in form which did not offend against the Islamic interdiction on interest dealing. According to Zubaida’s (1990, p. 154), “The volume of investment attracted by these companies was enormous. Estimates vary between 4.5 and eight billions Egyptian pounds by 1988, deposited by an estimated half a million customers. This represented a movement of capital out of the

banks and saving investments, which caused considerable dislocation in the financial markets.”

The shadow economies: a recent article by Schneider (2005, pp. 114-115) suggests that a shadow economy includes unreported income from the production of legal goods and services from either monetary or barter transactions and, thus, includes all economic activities that would generally be taxable were they reported to state authorities. The Middle East and North African countries reflect a very high degree of shadow economies compared to any region in the world. The average of regional shadow economies of (145 nations) is 33.6 percent of the GDP in 1999/2000: Five MENA countries top the regional average: Tunisia (38.4), Pakistan (36.8 percent), Morocco (36.4 percent), Egypt (35.1 percent), and Algeria have (38.4 percent). The regional average of shadow economies in 2001/2002 of 145 nations is 34.5 percent of GDP: three countries in the MENA top the regional average: Tunisia (39.1 percent), Pakistan (37.9 percent), and Morocco (37.1 percent) (see Schneider 2005, pp. 118-127).

In summary, the empirical results of this dissertation reveal important findings that have practical and theoretical impact on the field of economic growth of developing nations: First, political factors are the key to enhancing economic performance in developing countries. Political variables such as political freedom, institutional freedom, regime type, political stability, and ideological base are at least as significant as economic variables in explaining growth. Second, the externality effects of non-military spending are positive and significant, dominant, and consistent in the majority of countries with all political variables, while the externality effects of military spending

are positive and significant only in the minority of countries with all political variables. This finding is huge because it resolved a long standing debate on the impact of defense spending on economic growth. Third, there is stronger evidence of the damaging effects of conflicts in all developing countries (the entire sample). However, these damaging effects of conflicts on economic growth are more significant in the Middle East and North Africa than in any other region in the Third World. Fourth, the sub-economy and shadow economies in developing countries, in the MENA in particular, might be a source of dislocation to the outputs of national economies. Fifth, the empirical results reveal the weaknesses of the private sector in developing countries, and their inability to stand the challenges of economic development. Sixth, it is not scientifically sound to separate economic factors from politics in studying the process of economic growth and development of Third World nations. Seventh, a qualitative change of the inputs of political regime may enhance economic growth in developing countries; and finally, the defense sector has more significant impact than the private sector on economic growth.

The overwhelming evidence of the positive and significant impact of the externality effects of the non-military spending on economic growth should warn decision makers to reallocate their resources to civilian development programs instead of military programs in order to enhance the economic performance of their countries. Also, pursuing domestic reconciliation as well as international peace is essential to the improvement of the economies of developing nations.

The results of the current study show that political factors are as significant to economic growth as economic factors. Therefore, it is infeasible to achieve economic

progress in the Third World without reforming their political systems. Freedom, democracy, stability, and openness of political system are fundamental factors to the process of economic development in the Third World.

Deger (1986, p. 260) recognized that, “in principle, economic theory should dictate what variable should we include in, for example, the growth equation.” However, “in practice theory is rarely that precise...therefore, relatively ad hoc specifications are necessary.” The results of this dissertation show that incorporating political and conflict variables in the production function model are essential to the theory of economic growth. Furthermore, the fact that this dissertation provides an unequivocal answer that the externalities of military spending hinders economic growth, and non-military spending promotes economic growth with all political contexts provides a theoretical direction in the study of the political economy of defense.

REFERENCES

- Alexander, R. (1990). The impact of defense spending on economic growth. *Defense Economics*, 2, 39-5.
- Al-Jabiri, A. (1982). *Group solidarity and the state: Khaldunian theoretical features of Islamic history*. Casablanca: Dar al-Nashr al-Magribiyya.
- Allen, R., & Waterbury, J. (1990). *A political economy of the Middle East: State, class, and economic development*. Boulder, CO: Westview Press.
- Atesoglu, S., & Mueller, M. J. (1990). Defence spending and economic growth. *Defence Economics* 2, 1, 19-27.
- Ayoubi, N. (1999). *Over-stating the Arab state: Politics and society in the Middle East*. London: I.B. Tauris Publishers.
- Ball, N.(1983). Defense and development: A critique of the Benoit study. *Economic Development and Cultural Change*, 31, 507-524.
- Barro, R. (1999). *Economic growth*. Cambridge, MA: MIT Press.
- Benoit, E. (1973). *Defense and economic growth in developing countries*. Lexington, MA: Lexington Books.
- Benoit, E. (1978). Growth and defense in developing countries. *Economic Development and Cultural Change*, 26, 270-80.
- Biswas, B. (1993). Defense spending and economic growth in developing countries. In J, Payne & P, Anandi (Eds.), *Defense spending and economic growth* (pp. 224-235). Boulder, CO: Westview Press.
- Biswas, B., & Rati. R. (1986). Military expenditures and economic growth in less developed countries: An augmented model and further evidence. *Economic Development and Cultural Change*, 34, 361-372.
- Bollen, K. (1980). Issues in the comparative measurement of political democracy. *American Sociological Review*, 45, 370–90.
- Bollen, K. (1991). Political democracy: Conceptual and methodological traps. In A. Inkeles (Ed.), *On measuring democracy: Its consequences and concomitants* (pp. 1-20). New Brunswick, NJ: Transactions Publishers.

- Bollen, K. (1993). Liberal democracy: Validity and method factors in cross-national measures. *American Journal of Political Science*, 37, 1207–30.
- Borrow, D. (1992). Conclusions: If the times A'changing. In A. Mintz (Ed.), *The political economy of military spending in the United States* (pp. 305-316). London: Routledge.
- Borton, H.(1941). War and the rise of industrialization in Japan. In J. Clarkson & T. Cochran (Eds.), *War as a social institution* (pp. 224-234). New York: Columbia University Press.
- Brzoska, Michael. 1981. The reporting of military expenditure. *Journal of Peace Research*, 18, 260-77.
- Cappelen, A., Gleditsch N., & Bjerkholt, O. (1984). Military spending and economic growth in the OECD countries. *Journal of Peace Research*, 21, 4, 361- 73.
- Chan, S. (1985). The impact of defense spending on economic performance: A survey of evidence and problems. *Orbis*, 29, 2, 403-434.
- Chan, S. (1995). Grasping the peace dividend: Some propositions on the conversion of swords into plowshares. *Mershon International Studies Review*, 39, 1, 53-95
- Chan, S. (1987). Military expenditures and economic performance. *World Military Expenditures and Arm Transfers*, 1986, 29-38.
- Childe, G. (1936). *Man makes himself*. New York: The New American Library.
- Childe, G. (1942). *What happened in history*. Baltimore, MD: Penguin Books.
- Chowdhury, A. (1991). A causal analysis of defense spending and economic growth. *Journal of Conflict Resolution*, 35, 80-97.
- Cleveland, W. (2000). *A history of modern Middle East*. Boulder, CO: Westview Press.
- Cornes, R., & Sandler, T. (1986). *The theory of externalities, public goods, and club goods*. Cambridge: Cambridge University Press.
- Deane, P. (1978). *The evolution of economic ideas*. Cambridge: Cambridge University Press.
- Deger, S. (1986). *Military expenditures in Third World countries*. London: Routledge and Kegan Paul.
- Deger, S., & Sen, S. (1983). Military expenditure, spin-off and economic development. *Journal of Development Economics*, 13, 67-83.

- Deger, S., & Smith, R. (1983). Military expenditure and development: The economic linkages. *IDS Bulletin*, 16, 49-54.
- Denison, E. (1967). *Why growth rates differ*. Washington DC: Brookings Institution.
- Denison, E. (1985). *Trends in American economic growth, 1929-1982*. Washington DC: Brookings Institution.
- Derbyshire, D., & Derbyshire, I. (1996). *Political system of the world*. New York: St. Martin's Press.
- DeRouen, K. (1993). Defense spending and economic growth in Latin America: The externalities effects. *International Interactions*, 19, 193-221.
- DeRouen, K. (2000). Presidents and the discovery use of force: A research note. *International Studies Quarterly*, 44, 2, 317 – 328.
- Diehl, P., & Goertz, G. (1985). Trends in military allocations since 1816: What goes up does not always go down. *Armed Forces and Society*, 12, 1, 134 – 144.
- Dillard, D. (1946): The pragmatic basis of Keynes's political economy. *The Journal of Economic History*, 1, 2, 121-152.
- Dogan, M., & Pelassy, D. (1984). *How to compare nations: Strategies in comparative politics*. London: Chatham House Publishers.
- Domar, E. (1946). Capital expansion, rate of growth, and employment. *Econometrica*, 14, 2, 137-147.
- Domke, W. (1992). Do leaders make a difference? Posture and politics in the defense budget. In A. Mintz (Ed.), *The political economy of military spending in the United States* (pp. 33-50). London: Routledge.
- Dorn, W. (1940). *Competition for empire, 1740-1763*. New York: Harper & Brothers.
- Dulles, E. (1942). War and investment opportunities: A historic analysis. *American Economic Review* (Part 2: Supplement), 32, 1, 112 – 128.
- Durbin, J., & Watson, G. (1950). Testing for serial correlation in Least Squares Regression I, II, III. *Biometrika*, 37, 409-428.
- Durbin, J., & Watson, G. (1951). Testing for serial correlation in Least Squares Regression I, II, III. *Biometrika*, 38, 159-178.

- Durbin, J., & Watson, G. (1971). Testing for serial correlation in Least Squares Regression I, II, III. *Biometrika*, 58, 1-42.
- Easton, D. (1965). *A framework of political analysis*. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Easton, D. (1967). *A system analysis of political life*. New York: Wiley
- Easton, D. (1990). *The analysis of political structure*. New York: Chapman and Hall, Inc.
- Eckstein, H. (1963). A perspective on comparative politics, past and present. In H. Eckstein & D. Apter (Eds.), *Comparative politics: A readers* (pp. 3-22). New York: The Free Press.
- Eltis, W. (1988). The contrasting theories of industrialization of François Quesnay and Adam Smith. *Oxford Economic Papers*, 40, 269-288.
- Faini, R., Annez, P., & Taylor, L. (1984). Defense spending, economic structure and growth: Evidence among countries and over time. *Economic Development and Cultural Change*, 32, 487-498.
- Feder, G. (1982). On export and economic growth. *Journal of Development Economics*, 12,1, 59-73.
- Fei, E. (1979). Understanding arm transfers and military expenditures: Data problems. In S. Neuman & R. Harkavy (Eds.), *Arms transfer in the modern world*. New York: Praeger.
- Foch, F. (1918). *The principles of war*. London: Chapman & Hall.
- Fordham, B. (1998). The politics of threat perception and the use of force: A political economy model of U.S. use of force, 1949-1994. *International Studies Quarterly*, 42, 267-590.
- Fraser, H. (1926). *Foreign trade and world politics*. New York: Alfred A. Knopf.
- Frederiksen, C., & Looney E. (1983). Defense expenditures and economic growth in developing countries. *Armed Forces and Society*, 9, 633 – 45.
- Frederiksen, C., & Looney E. (1985). Another look at defense spending and development hypothesis. *Defense Analysis*, 3, 205 – 10.
- Frederiksen, C., & Looney E. (1986). Defense expenditures, external public debt and growth in developing countries. *Journal of Peace Research*, 23, 329-37.

- Gilpin, R. (1987). *The political economy of international relations*. Princeton, NJ: Princeton University Press.
- Gould, J. (1972). *Economic growth in history: Survey and analysis*. London: Methuen.
- Gurr, T. (1974). Persistence and change in political systems, 1800-1971. *The American Political Science Review*, 68, 1482-1504.
- Harrod, R. (1939). An essay in dynamic theory. *Economic Journal*, March, 14-33.
- Heo, U. (1996). *Modeling the security-prosperity dilemma around the world*. Ph.D. dissertation. College Station: Texas A&M University.
- Heo, U. (1998). Modeling the defense-growth relationship around the globe. *Journal of Conflict Resolution*, 42, 5, 637 – 657.
- Heo, U. (1999). *The political economy of defense spending around the world*. Lewiston, NY: Edwin Mellen Press.
- Heo, U. (2000). The defense growth nexus in the united states revisited. *American Politics Quarterly*, 28, 1, 110 – 27.
- Heo, U., & DeRouen. K. (1998). Military expenditures, technological change, and economic growth in the east Asian NICS. *The Journal of Politics*, 60, 3, 830-46.
- Heo, U., & Mintz. A. (2002). Bringing politics in: The political economy of the defense growth trade-off in the United States. *Prepared for presentation at the annual meeting of the International Studies Association*, New Orleans, LA, March 24-27, 2002.
- Herring, E. (1941). *The impact of war: Our American democracy under arms*. New York: Farrar and Rinehart.
- Hibbs, D. (1977). Political parties and macroeconomic policy. *American Political Science Review*, 71, 4, 1467-1488.
- Huang, C., & Mintz, A. (1990). Ridge regression analysis of the defense-growth tradeoff in the United States. *Defence Economics*, 2, 29 – 37.
- Huang, C., & Mintz, A. (1991). Defense expenditures and economic growth: The externality effect. *Defence Economics*, 3, 1, 35-40.
- Hudson, C. (1977). *Arab politics: The search for legitimacy*. New Haven, CT: Yale University

Press.

Ibn Khaldoun, A. (1967). *The muqaddimah: An introduction to history*. Princeton, NJ: Princeton University Press.

International Crisis Behavior Project: <http://www.icbnet.org/> (accessed on November 5, 2004).

International Financial Statistics: <http://www.imfstatistics.org/imf/logon.aspx> (accessed on July 25, 2004).

Jagers, K., & Gurr, T. (1995). Tracking democracy's third wave with the Polity III data. *Journal of Peace Research*, 32, 4, 469- 482.

Jeording, W. (1986). Economic growth and defense spending. *Journal of Development Economics*, 21, 35 – 40.

Judge, G., Griffiths, W., Hill, R., Lutkepohl, H., & Lee, T. (1985). *The theory and practice of econometrics*. New York: Wiley.

Judge, G., Hill, R., Griffiths, W., Lutkepohl, H., & Lee, T. (1988). *Introduction to the theory and practice of econometrics*. New York: Wiley.

Kaldor, M. (1976). The military in development. *World Development*, 4, 459-82.

Kennedy, G (1983). *Defense economics*. New York: St. Martin's Press.

Keynes, M. (1930). *A treatise on money*. New York: Harcourt, Brace, and Company.

Keynes, M. (1935). *The general theory of employment, interests, and money*. New York: Harcourt, Brace, and World.

Keynes, M. (1940). *How to pay for war: A radical plan for the chancellor of the exchequer*. New York: Harcourt, Brace.

Kinsella, D. (1990). Defense spending and economic performance in the United States. *Defence Economics*, 1, 3, 295-309.

Lebovic, J., & Ishaq, A . (1987). Military burden, security needs, and economic growth in the Middle East. *Journal of Conflict Resolution*, 31, 106-38.

Lebovic, J. (1999). Using military spending data: The complexity of simple inference. *Journal of Peace Research*, 36, 6, 681-97.

- Lijphart, A. (1971). Comparative politics and the comparative method. *American Political Science Review*, 65, 3, 682-93.
- Lim, D. (1983). Another look at growth and defense in less developed countries. *Economic and Cultural Change*, 31, 377-384.
- Marshall, G., Jaggers, K., & Gurr, T. (2002). Polity IV project: Political regime characteristics and transitions, 1800-2002. <http://www.cidcm.umd.edu/polity/index.htm> (accessed on July 30, 2004).
- Meredith, S., & Schafer, P. (2000). The correlates of war data on war: An update to 1997. *Conflict Management and Peace Science*, 18, 1, 123-43.
- Macridis, R., & Brown, B. (1986). *Comparative politics: Notes and readings*. Homewood, IL: Dorsey Press.
- Mendershausen, H. (1943). *The economics of war*. New York: Prentice-Hall.
- Mintz, A. (1988). *The politics of resource allocation in the U.S. Department of Defense: International crises and domestic constraints*. Boulder, CO: Westview Press.
- Mintz, A. (1991). Introduction-Political economy and national Security. In A, Mintz (Ed.), *The political economy of military spending*. London: Harper Collins.
- Mintz, A., & Huang, C. (1990). Defense expenditures, economic growth and the peace dividend. *American Political Science Review*, 84, 4, 1283-1293.
- Mintz, A., & Huang, C. (1991). Guns versus butter: The indirect link," *American Journal of Political Science*, 35, 3.
- Mintz, A., & Stevenson, R. (1995). Defense expenditures, economic growth, and the peace dividend: A longitudinal analysis of 103 countries. *Journal of Conflict Resolution*, 39, 2, 283-305.
- Modelski, G. (1972). *Principles of world politics*. New York: Free Press.
- Mueller, M., & Atesoglu, S. (1993a). Defense spending, technological change and economic growth in the United States. *Defence Economics*, 4, 3, 259-269.
- Mueller, M., & Atesoglu, S. (1993b). A theory of defense spending and economic growth. In J. Payne and A. Sahu (Eds.), *Defense spending and economic growth* (pp. 41-53). Boulder, CO: Westview Press.
- Muller, A. (1978). Quesnay's theory of growth: A comment. *Oxford Economic Papers*, 30,

150-156.

Ogawa, G. (1926). *The effect of the world war upon the commerce and industry in Japan*. New Haven, CT: Yale University Press.

Organski, A., & Kugler, J. (1980). *The war ledger*. Chicago, IL: University of Chicago Press.

Ostrom, C., & Job, B. (1986). The president and the political use of force. *American Political Science Review*, 80, 2, 541 – 566.

Pagan, A. (1974). A generalized approach to the treatment of autocorrelation. *Australian Economic Papers*, 13, 260-80.

Persky, J. (1989). Retrospectives: Adam Smith's invisible hands. *The Journal of Economic Perspectives*, 3, 195-201.

Przeworski, A., & Teune, H. (1970). *The logic of contemporary social inquiry*. New York, NY: Wiley.

Ram, R. (1986). Government size and economic growth: A new framework and some evidence from cross-section and time-series data. *American Economic Review*, 76, 1, 191-203.

Rasler, K., & Thompson, W. (1985). War and the economic growth of major powers. *American Journal of Political Science*, 29, 3, 513-538.

Rasler, K., & Thompson, W. (1988). Defense burden, capital formation, and economic growth: The systemic leader case. *Journal of Conflict Resolution*, 32, 1, 61-86.

Romer, D. (1996). *Advanced macroeconomics*. New York: The McGraw-Hill Companies, Inc.

Ross, A. L. (1991). *The political economy of defense: Issues and perspectives*. New York: Greenwood Press.

Rostow, W. (1960). *The stages of economic growth: A non communist manifesto*. Cambridge: Cambridge University Press.

Rowthwell, C. (1941). War and economic institutions. In J. Clarkson & T. Cochran (Eds.), *War as social institution*. New York: Columbia University Press.

Russett, B. (1970). *What price vigilance? The burden of national defense*. New Haven, CT: Yale University Press.

Samuels, J. (1977). The political economy of Adam Smith. *Ethics*, 87, 189-207.

- Sandler, T., & Hartley, K. (1995). *The economics of defense*. Cambridge: Cambridge University Press.
- Sartori, G. (1970). Concept misformation in comparative research. *American Political Science Review*, 64, 1033-53.
- Schneider, F. (2005). The size of shadow economies in 145 countries from 1999 to 2003. *World Affairs*, XI, II, 113-129.
- Schumpeter, J. H. (1939). *Business cycles: A theoretical, historical, and statistical analysis of the capitalist process*. London: McGraw-Hill.
- Sen, A. (1999). *Development as freedom*. New York: Anchor Books-A Division of Random House, Inc.
- Sharara, W. (1981). *Kin and the booty: The foundation of politics in Saudi Arabia*. Beirut: Dar al-Tali'a.
- Singer, D. (1961). The level of analysis problem in international relations. In K. Klaus & V. Verba. (Eds.), *The international system: Theoretical essays* (pp. 77-92). Princeton, NJ: Princeton University Press.
- Singer, D., & Small, M. (1992). *Correlates of war project: International and civil war data, 1816-1992, ICPSR 9905*. Ann Arbor, MI: Inter-University Consortium for Political and Social Research.
- Singer, D., Bremmer, S., & Stuckey, J. (1972). Capability, distribution, uncertainty and major power war 1820-1965. In B. Russett (Ed.), *Peace war and numbers* (pp. 19-48). Beverly Hills, CA: Sage Publications.
- Small, M., & Singer, D. (1982). *Resort to arms: International and civil wars, 1816-1980*. Beverly Hills, CA: Sage Publications.
- Smith, A. (2000). *The wealth of nations*. New York: The Modern Library.
- Smith, R. (1980). Military expenditure and investment in OECD countries, 1953-1973. *Journal of Comparative Economics*, 4: 19-32.
- Smith, R., & Georgiou, G. (1983). Assessing the effect of military expenditure on OECD economies: A survey. *Arms Control*, 4: 19-32.
- Solow, R. (1957). Technical change and the aggregate production function. *The Review of Economics and Statistics*, 39, 2, 312-20.

Solow, R. (1970). *Growth theory: An exposition*. New York: Oxford University Press.

Solow, R. (1988). *Growth theory: An exposition*. New York: Oxford University Press.

Sombart, W. (1913). *Krieg und kapitalism*. Leipzig: Duncker and Humbot.

Stockholm International Peace Research Institute (SIPRI). (1969). *World armaments and disarmament*. Stockholm: Almqvist & Wiksell.

Stockholm International Peace Research Institute (SIPRI). (1974). *World armaments and disarmament*. Stockholm: Almqvist & Wiksell.

Stockholm International Peace Research Institute(SIPRI) . (1983). *World armaments and disarmament*. New York: International Publications Service.

Stockholm International Peace Research Institute (SIPRI). (1992). *World armaments and disarmament*. New York: Oxford University Press.

Stockholm International Peace Research Institute (SIPRI). (1996). *World armaments and disarmament*. New York: Oxford University Press.

Stockholm International Peace Research Institute (SIPRI). (1997). *World armaments and disarmament*. New York: Oxford University Press.

Stockholm International Peace Research Institute (SIPRI). (2004). *World armaments and disarmament*. New York: Oxford University Press.

Stoll, R. (1992). "Too little" but not for too long: Public attitude in defense spending. In A. Mintz (Ed.), *The political economy of military spending in the United States* (pp. 52-64). London: Routledge.

Thorp, W. (1941). Postwar depression. *American Economic Review* (supplement), 305, 352-361.

Tilly, C (Ed.), (1975). Reflection on the history of European state-making. In *The formation of national states in Western Europe* (pp. 3-83). Princeton, NJ: Princeton University Press.

Vanhanen, T. (2000). A new dataset for measuring democracy, 1810-1998. *Journal of Peace Research*, 3,2, 251-261.

Van Raemdonck, D., & Diehl, P (1989). After shooting stops: Insights on postwar economic growth. *Journal of Peace Research*, 26, 3, 249-264.

Waltz, K. (1959). *Man, the state, and war: A theoretical analysis*. New York: Columbia.

Ward, M., & Davis D. (1992). Sizing up the peace dividend: Economic growth and military spending in the United States, 1948-1996. *American Political Science Review*, 86, 748-55.

Weed, E. (1983). Military participation ratios, human capital formation, and economic growth: A cross-national analysis. *Journal of Political and Military Sociology*, 11, 11-20.

Wheeler, H. (1975). *The effect of war on industrial growth, 1816-1970*. Ph.D. dissertation, University of Michigan.

White, K. (1992). The Durbin-Watson test for autocorrelation in nonlinear models. *The Review of Economics and Statistics*, 74, 2, 370-73.

Wimberley L. (2003). *The mouse that roared*. New York: Four Walls Eight Windows.

Zubaida, S.(1990). The politics of the Islamic investment companies in Egypt. *The British Journal of the Middle Eastern Studies*, 17, 152-161.

Zubaida, S. (1992). Islam, the state & democracy: Contrasting conceptions of society in Egypt. *Middle East Report*. November-December 2-10.

APPENDIX A

NON-LINEAR LEAST SQUARES RESULTS

Parameter	Kenya	Jamaica	Iran	Paraguay	Panama
λ est.	0.187	-1.228	-34E-16	0.008	0.004
t-stat	1.634	-23.943**	-1.90	0.599	0.518
Ψ_l	-0.808	1.606	84E-15	0.530	1.382
	-3.582**	1.578	11.46**	0.103	2.047*
Ψ_k	-0.0570	-44.108	74E-16	-0.018	-0.082
	-0.7335	-3.976**	4.44**	-0.136	-2.472*
Π_m	0.240	-0.112	0.878	-0.206	-0.573E-7
	1.783*	-0.981	25**	-0.272	0.271
Ψ_m	-0.573	1.289	-0.12	0.198	-0.70E-8
	-1.223	0.0753	34E+9**	1.161	0.106
Π_n	0.148	-0.677	-0.878	2.781	-1.429
	0.160	-59.080**	-25E+8**	2.296*	-2.181*
Ψ_n	0.559	-0.039	-22E-16	0.552	0.275
	3.111**	-25.371**	-3.432**	1.896*	3.679**
LR1	1.000	33.820	-22E-16	1.000	1.000
	1.000	56.482**	-3.431**	1.000	1.000
	N = 39	N=37	N=39	N=41	N=38
	R-Sq = 0.90	R-Sq= 0.81	R-Sq=0.98	R-Sq=0.73	R-Sq=0.61
	DW = 2.08	DW= 2.11	DW=1.96	DW=1.39	DW=1.41

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Kenya	Jamaica	Iran	Paraguay	Panama
λ est	0.018	-1020	0.98E-3	0.008	0.004
t-stat	1.634	-14.696**	0.58	0.599	0.518
Ψ_l	-0.808	1.560	-0.053	0.530	1.382
	-3.582**	1.560	-0.975	0.103	2.047*
Ψ_k	-0.057	-39.788	0.002	-0.189	-0.082
	0.735	-23.319**	0.86	-0.136	-2.472*
Π_m	0.240	0.002	0.125E-6	-0.206	-0.573E-7
	1.783*	0.025	1.826*	-0.277	-0.271
Ψ_m	-0.057	0.831	-0.378E-9	0.198	-0.870E-8
	-1.223	0.427	-0.041	1.161	-0.106
Π_n	0.148	-0.770	0.018	2.781	-0.1429
	0.161	-44.002**	1.782*	2.296*	-2.185*
Ψ_n	0.559	0.036	0.026	0.552	0.275
	3.111**	-21.239**	8.063**	1.896*	3.679**
LR2	1.000	38.342	0.003	1.000	1.000
	1.000	43.796**	2.142*	1.000	1.000
	N = 39	N=37	N=39	N=41	N=38
	R-Sq= 0.90	R-Sq=0.83	R-Sq=0.97	R-Sq=1.39	R-Sq=0.61
	DW =2.08	DW=2.11	DW=1.99	DW=1.39	DW=1.41

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Kenya	Jamaica	Iran	Paraguay	Panama
λ est	0.018	-1020	0.002	0.008	0.004
t-stat	1.634	-14.696**	0.935	0.599	0.518
Ψ_l	-0.808	1.560	-0.099	0.530	1.382
	-3.582**	1.560	-1.212	0.103	2.047*
Ψ_k	-0.057	-39.788	0.001	-0.189	-0.082
	0.735	-23.319**	0.569	-0.136	-2.472*
Π_m	0.240	0.002	0.464E-7	-0.206	-0.573E-7
	1.783*	0.025	0.688	-0.277	-0.271
Ψ_m	-0.057	0.831	-0.405E-8	0.198	-0.870E-8
	-1.223	0.427	-0.449	1.161	-0.106
Π_n	0.148	-0.770	0.014	2.781	-1.429
	0.161	-44.002**	1.086	2.296*	-2.181*
Ψ_n	0.559	0.036	0.027	0.552	0.275
	3.111**	-21.239**	7.8894**	1.896*	3.679**
LR3	1.000	38.342	0.003	1.000	1.000
	1.000	43.796**	1.516	1.000	1.000
	N = 39	N=37	N=39	N=41	N=38
	R-Sq= 0.90	R-Sq=0.83	R-Sq=0.96	R-Sq=0.73	R-Sq=0.61
	DW =2.08	DW=2.11	DW=1.90	DW=1.39	DW=1.413

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Kenya	Jamaica	Iran	Paraguay	Panama
λ est	0.019	-4.449	0.028	0.009	0.832E-3
t-stat	1.773*	-36.233**	3.266**	0.667	0.100
Ψ_l	-0.706	1.514	-0.343	-1.572	1.262
	-2.976**	1.514	-0.957	-0.297	1.871*
Ψ_k	-0.649	-55.671	0.042	0.024	-0.773
	-34.816**	1.009	-0.296	0.179	-2.275*
Π_m	0.246	-0.074	0.508E-6	-0.220	-0.202E-7
	1.903*	-1.339	0.287	-0.296	-0.097
Ψ_m	0.060	90.481	0.100E-6	0.191	-0.129E-7
	-1.536	40.932**	0.762	1.171	-0.149
Π_n	0.1609	-0.860	-0.151	2.490	-1.377
	0.174	-22.41**	-0.341	1.938*	-2.099*
Ψ_n	0.558	-0.108	0.471	0.514	0.308
	3.311**	-6.363**	4.147**	1.747*	3.789**
LR4	-0.169	4.483	0.046	0.030	0.015
	-1.068	24.009**	1.521	0.819	1.365
	N = 39	N= 37	N=39	N=41	N=38
	R-Sq = 0.90	R-Sq=0.92	R-Sq=0.97	R-Sq=0.74	R-Sq=0.63
	DW = 2.22	DW=2.09	DW=2.17	DW=1.38	DW=1.37

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Kenya	Jamaica	Iran	Paraguay	Panama
λ est	0.009	-0.971	0.028	0.009	0.071
t-stat	1.177	-14.999**	3.554**	0.703	3.106**
Ψ_l	0.962	1.554	0.710	-2.072	-0.195
	0.662	1.554	0.838	-0.422	-2.322*
Ψ_k	-0.090	-39.090	0.026	0.022	-0.110
	-1.085	-24.794**	0.638	0.168	-1.095
Π_m	0.237	0.066	0.756E-6	-0.323	0.804
	1.768*	0.679	0.410	-0.438	0.003
Ψ_m	-0.628	0.266	0.110E-6	0.153	-0.195E-7
	-1.2660	0.276	0.839	1.013	-1.344
Π_n	0.108	-0.783	-0.179	2.466	-0.543
	0.106	-48.060**	-0.407	2.040*	-1.095
Ψ_n	0.718	-0.0356	0.455	0.527	0.739
	4.521**	-22.347**	4.194**	1.947*	1.806*
LR5	-0.068	38.719	-0.038	0.055	-0.018
	-1.391	47.461**	-0.901	1.519	-0.911
	N = 39	N=37	N=39	N=41	N=38
	R-Sq = 0.91	R-Sq=0.82	R-Sq=0.97	R-Sq=0.74	R-Sq=0.57
	DW = 2.18	DW=2.11	DW=2.20	DW=1.44	DW=1.60

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Kenya	Jamaica	Iran	Paraguay	Panama
λ est	0.022	-4.835	0.034	-0.006	0.832E-3
t-stat	1.836*	-27.674**	4.252**	0.459	0.100
Ψ_l	-0.855	1.550	0.087	-1.982	1.262
	-3.889**	1.550	0.418	-0.361	1.871*
Ψ_k	-0.041	-59.834	0.025	0.068	-0.077
	-0.645	-28.683**	0.746	0.442	-2.275*
Π_m	0.324	--0.090	0.547E-6	-0.266	-0.202E-7
	2.211*	-1.189*	0.304	-0.366	-0.097
Ψ_m	-0.553	97.061	0.115E-6	0.172	-0.129E-7
	-1.428	31.707**	1.068	1.135	-0.149
Π_n	0.066	-0.094	-0.290	2.473	-1.377
	0.069	-20.786**	-0.688	2.155*	-2.099*
Ψ_n	.497	-0.186	0.392	0.567	0.308
	2.878**	-4.33**	4.203**	1.830*	3.789**
LR6	-0.094	4.857	-0.146	-0.610	0.015
	-1.65	21.545**	-2.075*	-1.388	1.365
	N = 39	N=37	N=39	N=41	N=38
	R-Sq = 0.91	R-Sq=0.91	R-Sq=0.97	R-Sq=0.74	R-Sq=0.63
	DW =1.86	DW=2.01	DW=2.13	DW=1.43	DW=1.37

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Kenya	Jamaica	Iran	Paraguay	Panama
λ est	0.017	-4.574	0.027	0.017	0.007
t-stat	1.628	-53.711**	3.420**	1.940*	1.348
Ψ_l	-0.579	1.526	0.564	-0.777	2.151
	-0.817	1.526	1.095	-0.193	2.516*
Ψ_k	-0.536	-57.017	0.023	-0.071	-0.750
	-0.722	-44.468**	0.595	-0.542	-2.901*
Π_m	0.242	-0.085	0.149E-5	-0.717	-0.703E-7
	1.80*	-1.256	0.791	-0.963	0.336
Ψ_m	-0.056	92.609	0.109E-6	0.135	-0.509
	-1.16	57.364**	0.782	1.092	-0.661
Π_n	0.121	-0.089	-0.2590	2.374	-1.399
	0.127	-33.072**	-0.603	1.915*	-2.343*
Ψ_n	0.570	-0.136	0.486	0.360	0.283
	3.303**	-11.018**	4.365**	2.299*	4.404**
LR7	-0.112	4.608	-0.035	0.137	-0.030
	-0.348	38.089**	-1.280	1.988*	-1.245
	N = 39	N=37	N=39	N=41	N=38
	R-Sq = 0.90	R-Sq=0.91	R-Sq=0.97	R-Sq=0.75	R-Sq=0.62
	DW = 2.09	DW=2.09	DW=2.13	DW=1.42	DW=1.53

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Kenya	Jamaica	Iran	Paraguay	Panama
λ est	0.017	-4.527	0.034	0.006	0.004
t-stat	1.536	-36.986**	4.252**	0.459	0.492
Ψ_l	-0.825	1.522	0.087	-1.985	1.327
	-3.621**	1.521	0.418	-0.361	1.732*
Ψ_k	-0.063	-56.509	0.0257	0.068	-0.812
	-0.823	-35.422**	0.746	0.442	-2.370*
Π_m	0.238	-0.089	0.547E-6	-0.266	-0.584E-7
	1.788*	-1.683	0.304	-0.366	0.261
Ψ_m	-0.059	91.806	0.115E-6	0.172	-0.895E-8
	-1.283	41.658**	1.086	1.135	-0.107
Π_n	0.089	0.088	-0.290	2.473	-1.427
	0.912	-22.155**	-0.688	2.155*	-2.106*
Ψ_n	0.572	-0.129	0.392	0.567	0.276
	3.078**	-6.732**	4.203**	1.830*	3.370**
LR8	0.012	4.549	-0.146	-0.061	0.0019
	0.508	23.308*	-2.075*	-1.38	0.167
	N= 39	N=37	N=39	N=41	N=38
	R-SQ= 0.90	R-Sq=0.92	R-Sq=0.97	R-Sq=0.75	R-Sq=0.61
	DW =2.06	DW=2.09	DW=2.13	DW=1.42	DW=1.40

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Sri Lanka	Singapore	Sierra Leon	Senegal	Rwanda
λ est	-0.025	0.088	0.034	-0.359	-.002
t-stat	-1.563	11.746**	3.633**	-0.399	-0.134
Ψ_l	3.228	-0.308	-6.277	0.486	1.656
	2.354*	0.917	-4.393**	0.387	1.834**
Ψ_k	-0.074	0.004	0.039	0.304	-0.426
	-0.340	0.162	0.814	0.094	-0.254
Π_m	-0.397	0.268	1.219	-0.883	-0.243
	-3.864**	0.398	3.610**	-2.741**	-1.351
Ψ_m	0.102	0.027	0.276	0.462	0.146
	1.357	1.278	3.584**	2.837**	1.069
Π_n	1.955	-0.616	0.119E-4	-0.334	-0.267
	3.368**	-3.390**	3.379**	-3.99	-1.661
Ψ_n	0.825	0.431	0.270E-6	0.406	0.258
	2.340**	2.184*	0.879	4.184	2.258*
LR1	1.00	1.00	1.00	1.00	-0.130
	1.00	1.00	1.00	1.00	-1.884*
	N=43	N=36	N=36	N=40	N=32
	R-Sq=0.72	R-Sq=0.99	R-Sq=0.76	R=0.87	R-Sq=0.71
	DW = 2.44	DW=1.40	DW=1.63	DW=2.02	DW=2.12

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Sri Lanka	Singapore	Sierra Leon	Senegal	Rwanda
λ est	-0.025	0.088	0.034	-0.003	0.055
t-stat	-1.515	11.746**	4.038**	-0.399	2.032*
Ψ_l	3.192	-0.308	-6.359	0.486	-0.085
	2.094*	-0.917	-4.948**	0.387	0.860
Ψ_k	-0.068	0.004	0.419	0.304	-0.602
	-0.285	0.162	0.946	0.936	-0.982
Π_m	-0.396	0.268	1.218	-0.884	0.167
	-3.799**	0.398	3.647**	-2.741**	0.810
Ψ_m	0.103	0.027	0.254	0.462	-0.002
	1.388	1.278	3.891**	2.83**	0.034
Π_n	1.952	-0.616	0.127E-4	-0.334	-0.177
	3.56**	-3.390**	3.687**	-3.99**	-1.510
Ψ_n	0.825	0.043	0.249E-6	0.406	0.152
	2.366*	2.184*	0.817	4.184**	2.300*
LR2	-0.001	1.00	-0.157	1.00	-0.195
	-0.053	1.00	-2.068*	1.00	-2.892**
	N= 43	N=36	N=36	N=40	N=32
	R-Sq=0.73	R-Sq=0.99	R-Sq=0.80	R-Sq=0.87	R-Sq=0.72
	DW = 2.44	DW=1.40	DW=1.74	DW=2.02	DW=2.04

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Sri Lanka	Singapore	Sierra Leon	Senegal	Rwanda
λ est	0.025	0.088	0.034	-0.359	0.018
t-stat	-1.515	11.746**	4.037**	0.399	0.542
Ψ_l	3.192	-0.308	-6.359	0.486	0.561
	2.093*	-0.917	-4.948**	0.387	0.754
Ψ_k	0.089	0.004	0.042	0.030	-0.033
	-0.285	0.162	0.946	0.0934	-0.266
Π_m	-0.396	0.026	1.218	-0.883	-0.003
	-3.799**	0.398	3.647**	-2.741**	-0.011
Ψ_m	0.103	0.027	0.254	0.462	0.063
	1.388	1.278	3.89**	2.83**	0.455
Π_n	1.952	-0.616	0.127E-4	-0.334	-0.222
	3.557**	-3.390**	3.687**	-3.99**	-1.593
Ψ_n	0.825	0.043	0.2499	0.406	0.210
	2.367*	2.184*	0.817	4.184**	2.379*
LR3	-0.001	1.00	-0.157	1.00	-0.110
	0.053	1.00	-2.069*	1.00	-2.265*
	N= 43	N=36	N=36	N=40	N=32
	R-Sq=0.73	R-Sq=0.99	R-Sq=0.98	R-Sq=0.87	R-Sq=0.73
	DW = 2.44	DW=1.40	DW=1.74	DW=2.02	DW=1.97

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Sri Lanka	Singapore	Sierra Leon	Senegal	Rwanda
λ est	-0.028	-0.630	-0.442	0.006	-0.009
t-stat	-2.089*	-19.301**	-6.406**	0.580	-0.585
Ψ_l	1.242	45.127	288.18	-0.136	1.248
	0.594	1.304	1.650	-0.131	1.402
Ψ_k	0.255	14.704	15.081	0.241	-0.097
	0.721	1.300	1.139	0.752	-0.472
Π_m	-0.383	0.382	0.449	-0.635	-0.328
	-3.823**	3.477**	1.748*	-2.172*	-1.78*
Ψ_m	0.774	-0.053	69.584	0.332	0.272
	0.931	-0.045	0.891	2.278*	1.697*
Π_n	2.116	0.837	0.100E-4	-0.328	-0.196
	3.648**	4.255**	-0.120E-4	-4.283**	-1.062
Ψ_n	0.959	-26.440**	-1.120E-4	0.370	0.261
	2.760**	-0.997	-0.198	4.252**	1.937*
LR4	-0.030	0.706	0.212	-0.025	0.078
	-1.437*	20.873**	1.695*	-0.774	0.973
	N= 43	N=36	N=36	N=40	N=32
	R-Sq=0.74	R-Sq=0.99	R-Sq=0.39	R-Sq=0.88	R-Sq=0.69
	DW = 2.48	DW=1.34	DW=1.79	DW=2.13	DW=1.97

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Sri Lanka	Singapore	Sierra Leon	Senegal	Rwanda
λ est	-0.028	-0.630	-0.613	-0.913E-3	-0.003
t-stat	-2.089*	-19.301**	-3.785**	0.980E-1	1.196
Ψ_l	1.242	45.727	824.78	1.946	1.435
	0.594	1.304	0.908	1.378	1.196
Ψ_k	0.255	14.704	54.273	-0.148	-0.083
	0.721	1.130	0.782	-0.531	-0.471
Π_m	-0.383	0.382	0.473	-0.761	-0.220
	-3.823**	3.477**	2.146**	-2.583**	-1.129
Ψ_m	0.077	-0.053	440.15	0.449	0.196
	0.931	-0.045	0.706	2.889**	1.345
Π_n	2.116	0.837	0.121	-0.317	-0.167
	3.648**	4.255**	2.204*	-4.169**	-0.948
Ψ_n	0.959	-26.440	-0.249E-3	0.400	0.251
	2.760**	-0.997	-0.602	4.494**	2.002*
LR5	-0.030	0.706	0.254	-0.048	-0.030
	-1.437	20.873**	1.445	-2.046*	-1.125
	N= 43	N=36	N=36	N=40	N=32
	Sq=0.74	R-Sq=0.99	R-Sq=0.37	R-Sq=0.89	R-Sq=0.68
	DW = 2.48	DW=1.34	DW=1.21	DW=2.28	DW=2.06

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Sri Lanka	Singapore	Sierra Leon	Senegal	Rwanda
λ est	-0.022	0.088	0.011	-0.0013	-0.009
t-stat	-1.191	11.746**	1.102	0.142	-0.508
Ψ_l	3.030	-0.308	-3.642**	0.281	1.353
	1.848*	-0.917	-3.283**	0.239	1.284
Ψ_k	-0.252	0.004	0.052	0.072	-0.118
	-0.651	0.162	0.879	0.247	-0.599
Π_m	-0.416	0.026	1.322	-0.804	-0.297
	-3.739**	0.398	6.87**	-2.636	-1.538
Ψ_m	0.101	0.276	0.696	0.416	0.233
	1.430	1.278	3.922**	2.633**	1.529
Π_n	1.853	-0.616	-0.155	-0.340	-0.214
	3.226**	-3.390**	-0.493	-4.051**	-1.174
Ψ_n	0.771	0.431	0.602E-4	0.408	0.294
	2.251*	2.184*	0.214	4.281**	2.174*
LR6	0.227	1.00	0.791	-0.040	1.00
	0.433	1.00	1.506	0.837	1.00
	N=43	N=36	N=36	N=40	N=32
	R-Sq=0.7	R-Sq=0.99	R-Sq=0.92	R-Sq=0.87	R-Sq=0.67
	DW=2.47	DW=1.40	DW=1.62	DW=2.09	DW=2.06

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Sri Lanka	Singapore	Sierra Leon	Senegal	Rwanda
λ est	-0.022	0.630	0.051	-0.002	-0.225
t-stat	-1.191	-19.301**	5.968**	-0.261	-25.795**
Ψ_l	3.030	45.727	-4.432	0.721	-15.969
	1.85*	1.304	-4.577**	0.530	-5.102**
Ψ_k	-0.252	14.704	0.630	0.641	-5.592
	-0.651	1.130	0.229	0.195	-7.042**
Π_m	-0.416	0.382	1.428	-0.888	-0.077
	-3.739**	3.477**	4.318**	-2.893**	-0.196
Ψ_m	0.101	-0.055	0.187	0.452	-0.217
	1.430	-0.450	4.219**	2.883**	-0.348
Π_n	1.853	0.837	-0.190	-0.322	0.564E-4
	3.226**	4.255**	-0.401	-3.614**	222.880**
Ψ_n	0.771	-26.44	0.155	0.390	7.080**
	2.251**	-0.997	0.739	3.65**	234.900**
LR7	0.0227	0.706	0.924	-0.122E-1	0.237
	0.433	20.873**	0.591	-0.348	5.268**
	N= 43	N=36	N=36	N=40	N=32
	R-Sq=0.73	R-Sq=0.99	R=0.84	R=0.87	R-Sq=0.99
	DW = 2.47	DW=1.34	DW=1.30	DW=1.99	DW=1.72

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Sri Lanka	Singapore	Sierra Leon	Senegal	Rwanda
λ est	-0.217	-0.630	-0.398	-0.327E-3	0.052
t-stat	-1.192	-19.301**	-5.923**	-0.035	1.855*
Ψ_l	3.030	45.727	294.68	0.495	-0.073
	1.848*	1.304	1.313	0.438	-0.602
Ψ_k	-0.252	14.704	17.046	0.034	-0.040
	-0.651	1.130	0.958	0.123	-0.608
Π_m	-0.416	0.382	0.508	-0.667	0.074
	-3.739**	3.477**	1.784*	-1.989**	0.367
Ψ_m	0.101	-0.053	70.762	0.377	0.016
	1.430	-0.045	1.032	2.368*	0.233
Π_n	1.853	0.837	0.161E-4	-0.374	0.224
	3.226**	4.255**	1.715*	-4.307**	-1.641
Ψ_n	0.771	-26.440	-0.122E-4	0.442	0.167
	2.251*	-0.997	-0.239	4.427**	2.412*
LR8	0.022	0.706	-0.208	-0.389	-0.176
	0.433	20.873**	-0.470	-1.105	-2.629**
	N=43	N=36	N=36	N=40	N=32
	R-Sq=0.73	R-Sq=0.99	R-Sq=0.33	R-Sq=0.87	R-Sq=0.71
	DW = 2.47	DW=1.34	DW=1.23	DW=2.15	DW=2.10

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Morocco	Mexico	Ethiopia	El-Salvador	Egypt
λ est	0.040	0.005	0.003	-0.303	0.01
t-stat	3.068**	0.919	1.565	-7.685**	4.458**
Ψ_l	-0.614E-7	-1.429	-0.135	1.000	-0.326
	-0.394	-2.768**	-1.797*	1.000	-5.369**
Ψ_k	0.045	-0.277	0.003	1.000	0.506
	0.844	-2.02*	1.251	1.000	0.476
Π_m	0.110E-7	-0.602E-7	-0.018	-0.775E-6	0.618
	0.080	-0.477	-3.136**	-0.775E-6	1.256
Ψ_m	-0.204E-6	-0.356E-6	-0.007	0.984	0.001
	-2.313*	-2.050*	-3.343**	0.984	0.545
Π_n	0.399E-6	-0.229	0.410	1.00	-0.402
	0.112	-0.676	5.109**	1.00	-2.651**
Ψ_n	0.171E-6	0.866	0.035	0.985	0.021
	1.680	6.830**	10.694**	0.985	7.770**
LR1	1.000	1.000	0.921E-3	1.000	-0.003
	1.000	1.000	0.811	1.000	-1.945*
	N= 43	N=43	N=33	N=43	N=43
	R-Sq=0.80	R-Sq=0.99	R-Sq=0.94	R-Sq=0.001	R-Sq=0.92
	DW = 1.49	DW=1.766	DW=2.14	DW=1.77	DW=1.89

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Morocco	Mexico	Ethiopia	El-Salvador	Egypt
λ est	0.052	0.005	0.314	0.022	0.009
t-stat	3.380**	0.919	1.285	2.081*	3.441**
Ψ_l	-0.581	-1.429	-0.124	0.389E-7	-0.313
	-0.547	-2.768**	-1.596	0.286	-4.152**
Ψ_k	0.024	-0.277	0.314	0.185	0.007
	0.592	-2.02*	1.200	0.391	0.765
Π_m	-0.127E-7	-0.602E-7	-0.017	-0.139E-6	0.763E-3
	-0.096	-0.477	-3.049**	-0.129	0.178
Ψ_m	-0.135E-6	-0.356E-6	-0.722	0.966E-7	-0.001
	-1.924*	-2.050*	-3.060**	0.982	-0.801
Π_n	0.893E-6	-0.229	0.403	0.446E-5	-0.412
	0.281	-0.676	5.278*	0.101	-2.564**
Ψ_n	0.116E-6	0.866	0.036	0.213E-7	0.023
	1.525	6.830**	10.604**	0.275	8.233**
LR2	-0.057	1.000	0.988	-0.152	1.000
	-1.705*	1.000	1.095	-3.496**	1.000
	N= 43	N=43	N=33	N=43	N=43
	R-Sq=0.28	R-Sq=0.99	R-Sq=0.94	R=0.27	R=0.92
	DW = 1.62	DW=1.76	DW=2.09	DW=2.64	DW=1.72

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Morocco	Mexico	Ethiopia	El-Salvador	Egypt
λ est	0.520	0.005	0.003	0.026	0.009
t-stat	3.380**	0.919	1.565	2.081*	*4.458
Ψ_l	-0.581E-7 -0.547	-1.429 -2.768**	-0.134 -1.797*	0.389 0.285	-0.326 -5.369**
Ψ_k	0.238E-1 0.591	-0.277 -2.022**	0.003 1.251	0.185 0.391	0.005 0.476
Π_m	-0.127E-7 -0.096	-0.602 -0.477	-0.180 -3.136**	-0.139E-6 -0.128	0.006 1.256
Ψ_m	-0.134E-6 -1.924*	-0.356 -2.050*	-0.007 -3.343**	0.966E-7 0.982	0.112 0.545
Π_n	0.893E-6 0.281	-0.229 -0.676	0.410 5.109**	0.446 0.102	-0.402 -2.651**
Ψ_n	0.445E-6 1.525	0.866 6.830**	0.036 10.694*	0.213E-7 0.275	0.021 7.770
LR3	-0.579 -1.705*	1.00 1.00	0.921 0.811	-0.152 -3.495**	-0.003 -1.945
	N=43 R-Sq=0.28 DW =1.62	N=43 R-Sq=0.99 DW=1.76	N=33 R-Sq=0.94 R-Sq=2.14	N=43 R-Sq=0.28 DW=2.64	N=43 R-Sq=0.92 DW=1.89

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Morocco	Mexico	Ethiopia	El-Salvador	Egypt
λ est	0.008	0.005	0.003	-0.144	0.009
t-stat	0.311	0.906	1.374	-2.946**	3.612**
Ψ_l	-0.120	-1.309	-0.111	0.80E-6	-0.302
	-0.326	-1.464	-1.489	0.218	-4.079**
Ψ_k	0.089	-0.275	0.003	-0.414	0.006
	0.825	-1.996*	1.259	-0.393	0.656
Π_m	0.501E-7	-0.571E-7	-0.017	0.146E-6	0.103
	0.353	-0.431	-3.019**	0.001	0.249
Ψ_m	-0.594E-6	-0.355E-6	-0.007	0.499E-6	-0.002
	-1.117	-2.0537*	-3.034**	0.230	-0.947
Π_n	0.480	-0.227	0.412	-0.189E-4	-0.413
	0.857	-0.678	5.667**	-0.400	-2.759**
Ψ_n	0.463E-6	0.863	0.363	0.304	0.023
	1.062	6.558**	10.391**	0.126	8.544**
LR4	0.041	-0.004	1.000	0.175	-0.307
	1.356	-0.163	1.000	3.160	-0.417
	N=43	N=43	N=33	N=43	N=43
	R-Sq=0.25	R-Sq=0.99	R-Sq=0.94	R-Sq=0.25	R-Sq=0.92
	DW =1.56	DW=1.75	DW=2.23	DW=2.45	DW=1.77

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Morocco	Mexico	Ethiopia	El-Salvador	Egypt
λ est	0.009	0.005	0.009	-0.272	0.021
t-stat	0.396	0.905	3.137**	-6.975**	3.049**
Ψ_l	-0.160E-7	-2.236	-0.096	1.000	-1.331
	-0.052	-2.472**	-1.918*	1.000	-1.076
Ψ_k	0.098	-0.271	0.64E-3	1.000	0.013
	1.048	-1.967*	0.315	1.000	0.082
Π_m	-0.137E-7	-0.1002E-6	-0.228	-0.612E-5	0.028
	-0.103	-0.747	-3.878**	-0.612E-5	0.384
Ψ_m	-0.693E-6	-0.403E-3	-0.006	0.985	-0.016
	-1.441	-2.331*	-3.513**	0.985	-0.589
Π_n	0.46E-5	-0.259	0.411	1.000	-10.084
	0.933	-0.768	6.000**	1.000	-3.099**
Ψ_n	0.429E-6	0.872	0.033	0.986	0.411
	1.260	7.013**	10.465**	0.986	4.521**
LR5	0.044	0.029	-0.006	1.000	0.485
	1.610	1.103	-2.705**	1.000	1.067
	N=43	N=43	N=33	N=43	N=43
	R-Sq=0.25	R-Sq=0.99	R-Sq=0.94	R-Sq=0.00	R-Sq=0.94
	DW =1.61	DW=1.85	DW=2.21	DW=1.46	DW=1.73

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Morocco	Mexico	Ethiopia	El-Salvador	Egypt
λ est	0.046	0.005	0.003	-0.303	0.009
t-stat	3.303**	0.929	1.374	-7.685**	3.441**
Ψ_l	-0.235-6 -1.0762	-1.416 -2.682**	-0.111 -1.489	1.000 1.000	-0.313 -4.152**
Ψ_k	0.052 0.998	-0.276 -1.993*	0.312 1.259	1.000 1.000	0.773 0.765
Π_m	0.101E-5 0.577	-0.640E-7 -0.506	-0.178 -3.019**	-0.775E-6 -0.775E-6	0.763 0.178
Ψ_m	-0.174E-6 -1.760*	-0.366E-6 -2.025*	-0.007 -3.034**	0.984 0.984	-0.134 -0.801
Π_n	-0.825E-6 -0.213	-0.229 -0.689	0.412 5.668**	1.000 1.000	-0.412 -2.564**
Ψ_n	0.119E-6 1.285	0.867 7.014	0.363 10.391**	0.985 0.985	0.023 8.233**
LR6	1.000 1.000	-0.005 -0.230	1.000 1.000	1.000 1.000	1.000 1000
	N=43 R-Sq=0.24 DW =1.53	N=43 R-Sq=0.99 DW==1.78	N=33 R-Sq=0.94 DW=2.23	N=43 R-Sq=0.001 DW=1.77	N=43 R-Sq=0.92 DW=1.72

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Morocco	Mexico	Ethiopia	El-Salvador	Egypt
λ est	0.021	0.006	0.005	-0.303	0.011
t-stat	0.757	1.450	1.518	-7.685**	2.879**
Ψ_l	-0.122E-7	0.494	-0.119	1.000	2.638
	-0.044	0.572	-1.773*	1.000	3.024**
Ψ_k	0.802	-0.267	0.003	1.000	0.104
	0.925	-2.192*	1.413	1.000	0.417
Π_m	-0.854	-0.18E-7	-0.020	-0.775E-6	0.055
	-0.061	-0.153	-2.886**	-0.775E-6	0.582
Ψ_m	-0.446E-6	-0.32E-6	-0.006	0.984	-0.263
	-0.945	-2.028*	-2.793**	0.984	-0.062
Π_n	0.299E-5	-0.223	0.428	1.000	-7.449
	0.761	-0.682	5.595**	1.000	-2.341*
Ψ_n	0.297E-6	0.828	0.003	0.985	0.552
	1.147	8.149**	8.953**	0.985	6.426**
LR7	0.028	-0.060	-0.001	1.000	-0.070
	0.787	2.653**	-0.676	1.000	-2.607**
	N=43	N=43	N=33	N=43	N=43
	R-Sq=0.24	R-Sq=0.99	R-Sq=0.94	R-Sq=0.001	R-Sq=0.99
	W = 1.61	DW=1.88	DW=2.23	DW=1.77	DW=1.63

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Morocco	Mexico	Ethiopia	El-Salvador	Egypt
λ est	0.046	0.005	0.336	-0.303	0.009
t-stat	3.302**	0.929	1.374	-7.685**	3.441**
Ψ_l	-0.235E-6 -1.076	-1.416 -2.682**	-0.111 -1.489	1.000 1.000	-0.313 -4.151**
Ψ_k	0.051 0.998	-0.276 -1.993*	0.003 1.259	1.000 1.000	0.007 0.765
Π_m	0.101E-5 0.577	-0.640E-7 -0.506	-0.178 -3.019**	-0.775E-6 -0.775E-6	0.763 0.178
Ψ_m	-0.175E-6 -1.760*	-0.366 -2.025*	-0.688 -3.034**	0.985 0.985	-0.001 -0.801
Π_n	-0.825E-6 -0.213	-0.229 -0.689	0.412 5.667**	1.000 1.000	-0.412 -2.564
Ψ_n	0.119E-6 1.285	0.867 7.014**	0.036 1.03391**	0.985 0.985	0.232 8.233
LR8	1.00 1.00	-0.005 -0.230	1.000 1.000	1.000 1.000	1.000 1.000
	N=43 R-Sq=0.24 DW=1.60	N=43 R-Sq=0.99 DW=1.78	N=33 R-Sq=0.94 DW=2.23	N=43 R-Sq=0.001 DW=1.77	N=43 R-Sq=0.92 DW=1.72

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Honduras	Gabon	Zimbabwe	Zair	Uruguay
λ est	0.060	-0.083	-0.040	-0.006	0.436
t-stat	5.237**	-2.443*	-2.290*	-0.192	0.241
Ψ_l	-0.196	19.076	8.157	5.603	-2.855
	-2.812**	2.511*	1.551	2.134*	-0.579
Ψ_k	0.107E-3	-0.411	-1.627	-0.679	0.285
	0.008	-1.211	-1.740*	-2.932**	0.010
Π_m	-0.022	-0.801	-0.739	0.152	0.301
	0.543	-3.651**	-0.934	2.162*	3.53**
Ψ_m	-0.642	0.101	-0.125	-0.034	0.23
	-0.921	0.331	-0.812	-0.388	3.445**
Π_n	-2.366	0.267	5.857	0.35	0.257
	-3.325**	0.841	4.032**	1.288	1.595
Ψ_n	0.096	0.296	1.633	0.158	0.755
	2.374*	0.551	3.623**	1.466	12.677**
LR1	1.00	1.00	-0.903	1.00	1.00
	1.00	1.00	-1.195	1.00	1.00
	N= 37	N=22	N=31	N=26	N=41
	R-Sq=0.92	R-Sq=0.82	R-s=S0.85	R-Sq=0.9	R-Sq=0.99
	DW = 2.54	DW=2.05	R-Sq=2.01	DW=1.76	DW=1.91

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Honduras	Gabon	Zimbabwe	Zair	Uruguay
λ est	0.060	-0.830	-0.029	-0.007	0.043
t-stat	5.237**	-2.443*	-1.675	-0.259	0.241
Ψ_l	-0.196	19.076	6.412	5.73	-2.85
	-2.812**	2.511*	1.345	2.410*	-0.58
Ψ_k	0.107E-3	-0.411	-1.387	-0.700	0.286
	0.008	-1.211	-1.602	-3.078**	0.010
Π_m	-0.022	-0.801	-0.806	0.157	0.301
	0.543	-3.651**	-0.919	2.146*	3.535**
Ψ_m	-0.006	0.101	-0.123	-0.458	0.235
	-0.921	0.331	-0.787	-0.483	3.445**
Π_n	-2.366	0.267	6.631	0.012	0.257
	-3.325**	0.841	4.790**	0.317	1.595
Ψ_n	0.962	0.296	1.386	0.162	0.755
	2.374*	0.551	3.214**	1.599	12.677
LR2	1.00	1.00	0.204	0.012	1.00
	1.00	1.00	0.423	0.317	1.00
	N= 37	N=22	N=31	N=26	N=41
	R-Sq=0.92	R-Sq=22	R-Sq=0.85	R-Sq=0.69	0.99
	DW =2.54	DW=2.05	DW=1.94	DW=1.79	DW=1.91

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Honduras	Gabon	Zimbabwe	Zair	Uruguay
λ est	0.609	-0.083	-0.317	-0.705	0.436E-3
t-stat	5.237**	-2.443*	-1.701*	-0.259	0.242
Ψ_l	-0.196	19.076	6.756	5.731	-2.854
	-2.812**	2.511*	1.352	2.41*	-0.579
Ψ_k	0.107E-3	-0.411	-1.390	-0.700	0.003
	0.872	-1.211	-1.599	-3.078**	0.010
Π_m	-0.022	-0.801	-0.090	0.157	0.030
	-0.543	-3.651**	-1.069	2.146*	3.535**
Ψ_m	-0.642	0.101	-0.082	-0.458	0.236
	0.921	0.330	-0.525	-0.483	3.445
Π_n	-2.366*	0.267	6.552	0.377	0.257
	-3.325**	0.841	4.539**	1.373	1.595
Ψ_n	0.962	0.296	1.479	0.162	0.755
	2.374*	0.551	3.120**	1.559	12.677**
LR3	1.00	1.00	-0.011	0.012	1.00
	1.00	1.00	-0.257	0.317	1.00
	N= 37	N=22	N=31	N=26	N=41
	R-Sq=0.92	R-Sq=0.82	R-Sq=0.85	R-Sq=0.69	R-Sq=0.99
	DW =2.54	DW=2.05	DW=2.03	DW=1.80	DW=1.96

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Honduras	Gabon	Zimbabwe	Zair	Uruguay
λ est	0.055	-0.122	-0.345	-0.005	-0.11E-3
t-stat	4.374**	-4.238**	-2.173*	-0.192	0.062
Ψ_l	-0.280	33.384	6.620	5.603	-6.874
	-2.279**	3.146**	1.441	2.134*	-1.156
Ψ_k	-0.001	-1.074	-1.121	-0.6790	0.014
	-0.088	-1.869*	-1.269	-2.932**	0.050
Π_m	-0.027	-0.624	-0.082	0.152	0.029
	0.742	-3.06**	-1.021	2.162*	3.652**
Ψ_m	-0.009	-0.424	-0.133	-0.034	0.240
	-1.030	-0.811	-0.857	0.388	3.615**
Π_n	-2.359	0.534	6.784	0.347	0.220
	-3.386**	2.08*	5.043**	1.289	1.375
Ψ_n	0.119	0.968	1.563	0.158	0.755
	2.268*	1.170	3.818**	1.466	13.179**
LR4	0.015	0.217	-0.037	1.00	0.036
	1.021	1.717*	-0.808	1.00	1.113
	N=37	N=22	N=31	N=26	N=41
	R-Sq=0.92	R=0.86	R-Sq=0.85	R-Sq=0.69	R-Sq=0.99
	DW =2.60	DW=2.62	DW=2.02	DW=1.77	DW=2.04

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Honduras	Gabon	Zimbabwe	Zair	Uruguay
λ est	0.055	-547.07	-1.999	0.010	-0.473E-3
t-stat	3.547**	-0.435	-20.390**	0.392	-0.247
Ψ_l	-0.224	135.29	50.123	4.768	-3.993
	-2.146*	0.435	2.317*	2.472**	-0.805
Ψ_k	0.735	1017.7	3305	-0.510	-0.620
	0.512	0.432	2.974**	-2.444*	-0.872
Π_m	-0.025	0.145E-3	0.370	0.122	0.032
	-0.647	0.308	8.364**	1.732*	3.971
Ψ_m	-0.856	3.2.52	2116	-0.041	0.261
	-0.965	0.433	3.208**	-0.553	3.748**
Π_n	-2.341	0.001	0.432	0.366	0.175
	-3.077**	0.409	0.201	1.316	1.015
Ψ_n	0.114	748.770	-5254.1	0.136	0.737
	1.87	0.433	-2.924**	1.580	12.510
LR5	0.090	547.15	2.050	-0.044	0.087
	0.541	0.435	21.232**	-1.065	0.978
	N= 37	N=22	N=31	N=26	N=41
	R-Sq=0.92	R-Sq=0.51	R-Sq=0.864	R-Sq=0.70	R-Sq=0.99
	DW = 2.60	DW=1.70	DW=1.95	DW=1.78	DW=2.03

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Honduras	Gabon	Zimbabwe	Zair	Uruguay
λ est	0.065	-0.083	-0.026	-0.006	-0.11E-3
t-stat	4.197**	-2.443*	-1.588	-0.197	-0.062
Ψ_l	-0.441	19.076	2.384	5.603	-6.874
	-0.302	2.511**	0.567	2.134*	-1.156
Ψ_k	0.9E-3	-0.411	-1.013	-0.679	0.014
	0.067	-1.211	-1.422	-2.932**	0.050
Π_m	-0.023	-0.801	-0.072	0.152	0.029
	-0.636	-3.651**	-0.858	2.162*	3.652**
Ψ_m	-0.009	0.101	-0.110	-0.345	0.240
	-1.214	0.330	-0.765	-0.388	3.615
Π_n	-2.316	0.267	7.185	0.347	0.220
	-3.317**	0.841	5.834**	1.288	1.375
Ψ_n	0.111	0.296	1.329	0.158	0.755
	2.210*	0.551	3.224**	1.466	13.179
LR6	-0.343	1.00	0.734	1.00	0.362
	-1.512	1.00	1.398	1.00	1.113
	N=37	N=22	N=31	N=26	N=41
	R-Sq=0.92	R-Sq=0.82	R-Sq=0.86	R-Sq	R-Sq=0.99
	DW = 2.67	DW=2.05	DW=1.95	DW=1.76	DW=2.04

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Honduras	Gabon	Zimbabwe	Zair	Uruguay
λ est	0.568	-0.061	0.033	0.009	0.056
t-stat	3.993**	-2.143*	-1.936*	0.403	3.993**
Ψ_l	-0.253	17.281	6.977	4.920	-0.253
	-1.623	3.147**	1.435	2.687**	-1.623
Ψ_k	-0.680	-0.158	-1.303	-0.537	-0.680
	-0.492	-0.452	-1.507	-2.823**	-0.049
Π_m	-0.024	-0.774	-0.980	0.137	-0.024
	-0.673	-3.861**	-1.207	2.054*	-0.673
Ψ_m	-0.007	0.089	-0.092	-0.058	-0.007
	0.945	0.367	-0.629	0.759	-0.945
Π_n	-2.346	0.285	6.485	0.432	-2.346
	-3.351**	0.94	4.691**	1.518	-3.351
Ψ_n	0.108	0.206	1.487	0.136	0.108
	2.093*	0.519	3.686**	1.686*	2.093
LR7	0.009	-0.963	-0.022	-0.045	0.008
	0.462	-1.029	-0.543	-1.180	0.462
	N= 37	N=22	N=31	N=26	N=41
	R-Sq=0.92	R-Sq=0.82	R-Sq=0.85	R-Sq=0.71	R-Sq=0.92
	DW = 2.57	DW=1.96	DW=1.99	DW=1.80	DW=2.57

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Honduras	Gabon	Zimbabwe	Zair	Uruguay
λ est	0.058	-0.083	0.026	0.011	-0.11E-3
t-stat	4.572**	-2.44*	-1.588	0.392	-0.062
Ψ_l	-0.880	19.076	2.384	4.768	-6.874
	0.757	2.511*	0.567	2.47*	-1.156
Ψ_k	0.7E-6	-0.411	-1.013	-0.510	0.013
	0.5E-4	-1.211	-1.422	-2.444*	0.050
Π_m	-0.015	-0.801	-0.727	0.122	0.029
	-0.419	-3.651**	-0.852	1.732	3.652**
Ψ_m	-0.0070	0.101	-0.110	-0.412	0.240
	-1.035	0.331	-0.765	-0.553	3.615**
Π_n	-2.397	0.267	7.185	0.366	0.220
	-3.348**	0.841*	5.834**	1.316	1.375
Ψ_n	0.101	0.296	1.329	0.136	0.755
	2.273*	0.551	3.224**	1.580	13.179**
LR8	-0.025	1.00	0.734	-0.044	0.036
	-1.236	1.00	1.398	-1.065	1.11
	N= 37	N=22	N=31	N=26	N=41
	R-Sq=0.92	R-Sq=0.82	R-Sq=0.86	R-Sq=0.70	R-Sq=0.99
	DW = 2.60	DW=2.05	DW=1.96	DW=1.77	DW=2.04

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Ecuador	Dominican	Cost Rica	India	Haiti
λ est	-0.022	-0.004	0.001	-0.855E-3	-0.499
t-stat	-6.658**	-2.572**	0.382	-0.539	-50.181**
Ψ_l	0.995	-0.873	0.017	0.044	10.675
	4.813**	-0.815	0.308	0.543	6.765**
Ψ_k	0.022	0.968	-0.118	0.009	6.925
	1.333	0.827	-1.425	2.112*	5.256**
Π_m	0.672E-8	-50.471	0.517	-0.007	0.423E-10
	0.039	-52.383**	2.194*	-0.572	1.912*
Ψ_m	-0.172E-8	-0.004	0.228E-7	0.002	-0.311E-4
	-0.528	-31.327**	2.472**	0.616	-0.866
Π_n	0.254E-5	7.948	0.256	-0.911	-0.742E-7
	2.841**	1.900*	4.003**	-1.228	-30.221**
Ψ_n	0.080	0.641	0.030	0.206	0.403
	14.696**	6.132**	12.580**	4.362**	21.317**
LR1	1.000	1.000	1.000	1.000	1.000
	1.000	1.000	1.000	1.000	1.000
	N=39	N=43	N=43	N=43	N=43
	R-Sq=0.90	R-Sq=0.62	R-Sq=0.96	R-Sq=0.80	R-Sq=0.01
	DW=1.39	DW=1.90	DW=1.71	DW=2.10	DW=0.28

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Ecuador	Dominican	Cost Rica	India	Haiti
λ est	0.022	-0.004	0.001	0.020	-0.499
t-stat	-6.658**	-2.572**	0.382	2.852**	-50.181**
Ψ_l	0.995	-0.873	0.017	-0.166	10.675
	4.813**	-0.814	0.308	-0.547	6.765**
Ψ_k	0.022	0.968	-0.012	0.108	6.925
	1.333	0.827	-1.425	1.267	5.256**
Π_m	0.675E-8	-50.471	0.517	0.598	0.423E-10
	0.039	-52.383**	2.194*	1.644	1.912*
Ψ_m	-0.172	-0.004	0.228E-7	-0.433	-0.311E-4
	-0.528	-31.327**	2.472**	-0.006	-0.866
Π_n	0.254E-5	7.948	0.256	-77.519	-0.742E-7
	2.841**	1.900*	4.003**	-3.471**	-30.221**
Ψ_n	0.80	0.641	0.305	0.509	0.403
	14.696**	6.132**	12.580**	4.626**	21.317**
LR2	1.000	1.000	1.000	-0.013	1.000
	1.000	1.000	1.000	-1.026	1000
	N=39	N=43	N=43	N=43	N=43
	R-Sq=0.90	R-Sq=0.62	R-Sq=0.96	R-Sq=0.83	R-Sq=0.01
	DW = 1.38	DW=1.90	DW=1.71	DW=2.09	DW=0.28

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Ecuador	Dominican	Cost Rica	India	Haiti
λ est	-0.022	-0.004	0.001	0.020	-0.499
t-stat	-6.658**	-2.572**	0.382	2.849**	-50.181**
Ψ_l	0.995	-0.873	0.018	-0.220	10.675
	4.813**	-0.814	0.308	-0.711	6.765**
Ψ_k	0.022	0.968	-0.012	0.107	6.925
	1.333	0.827	-1.425	1.221	5.256**
Π_m	0.675E-8	-50.471	0.517	0.635	0.423E-10
	0.039	-52.383**	2.194*	1.664	1.912*
Ψ_m	-0.172E-8	-0.004	0.228E-7	-0.295	-0.311E-4
	-0.053	-31.327**	2.472**	-0.363	-0.866
Π_n	0.254E-5	7.948	0.256	-75.69	-0.742E-7
	2.841**	1.900*	4.003**	-3.190**	-30.221**
Ψ_n	0.080	0.641	0.030	0.537	0.403
	14.696**	6.131**	12.580**	4.328**	21.317**
LR3	1.000	1.000	1.000	-0.015	1.000
	1.000	1.000	1.000	-1.097	1.000
	N=39	N=43	N=43	N=43	N=43
	R-Sq=0.90	R-Sq=0.62	R-Sq=0.96	R-Sq=0.83	R-Sq=0.01
	DW=1.38	DW=1.90	DW=1.71	DW=1.99	DW=0.28

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Ecuador	Dominican	Cost Rica	India	Haiti
λ est	-0.45E-3	0.162E-7	-1.049	0.020	-0.499
t-stat	-0.695	0.517	-6.057**	2.849**	-50.181**
Ψ_l	-0.247	0.073	-0.641	-0.436	10.675
	-0.164	2.845**	-0.650	-1.654	6.765**
Ψ_k	0.163	0.057	-0.016	0.102	6.953
	1.105	2.91**	-0.035	1.162	5.265**
Π_m	0.129E-5	473.59	0.166	0.633	0.423E-10
	0.452	10.285**	0.242	1.693*	1.912*
Ψ_m	0.321E-6	0.030	0.233	-0.003	-0.311E-4
	0.898	10.285**	0.150	-0.036	-0.866
Π_n	0.193	-0.051	-0.230	-80.600	-0.742
	0.800	-0.456	-7.745**	-3.377**	-30.221**
Ψ_n	0.891	0.203E-3	0.101	0.519	0.403
	18.700**	0.067	0.066	4.459**	21.317**
LR4	-0.002	-0.61E-3	1.047	0.546	1.000
	-0.499	0.679	6.050**	0.460	1.000
	N=39	N=43	N=43	N=43	N=43
	R-Sq=0.94	R-Sq=0.90	R-Sq=0.42	R-Sq=0.82	R-Sq=0.01
	DW =1.71	DW=2.26	DW=1.31	DW=2.11	DW=0.28

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Ecuador	Dominican	Cost Rica	India	Haiti
λ est	-0.506	-0.004	-1.049	0.020	-0.499
t-stat	-7.956**	-2.572**	-6.057**	2.875**	-50.181**
Ψ_l	-12.026	-0.873	-0.641	-0.372	10.675
	-0.223	-0.814	-0.650	-1.662	6.765**
Ψ_k	-4.022	0.968	-0.016	0.107	6.952
	-0.113	0.827	-0.035	1.232	5.256**
Π_m	-0.550E-6	-50.471	0.166	0.615	0.423
	-0.317	-52.383**	0.242	1.657	1.912*
Ψ_m	0.537E-5	-0.004	0.233	0.248	-0.311E-4
	0.187	-31.33**	0.150	0.035	-0.866
Π_n	-0.732E-6	7.948	-0.230	-77.826	-0.742E-7
	-0.440	1.900*	-7.745**	-3.387**	-30.221**
Ψ_n	-2.185	0.641	0.101	0.512	0.403
	-0.089	6.132**	0.066	4.446**	21.317**
LR5	0.540	1.000	1.047	1.000	1.000
	5.137**	1.000	6.050**	1.000	1.000
	N=39	N=43	N=43	N=43	N=43
	R-Sq=0.46	R-Sq=0.62	R-Sq=0.42	R-Sq=0.822	R-Sq=0.01
	DW =1.07	DW=1.90	DW=1.31	DW=2.05	DW=2.22

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Ecuador	Dominican	Cost Rica	India	Haiti
λ est	0.004	-0.492E-3	-1.049	0.018	-0.013
t-stat	0.489	-0.186	-6.057**	2.955**	-2.178*
Ψ_l	0.007	1.215	-0.641	-1.824	1.188
	0.086	1.013	-0.650	-0.980	2.839**
Ψ_k	0.164	0.918	-0.016	0.119	-0.077
	1.235	1.114	-0.035	1.381	-2.498**
Π_m	0.114E-5	-28.949	0.166	0.580	-0.135E-6
	0.453	-29.798**	0.242	1.608	-1.402
Ψ_m	0.380E-6	-0.002	0.233	0.014	0.160E-7
	1.413	-18.452**	0.150	0.206	1.226
Π_n	-0.192E-3	7.776	-0.230	-81.992	0.037
	-0.465	1.918*	-7.745**	-3.595**	2.417*
Ψ_n	0.753	0.584	0.101	0.525	0.018
	4.93**	7.789**	0.066	-3.595**	3.925**
LR6	-0.075	-0.098	1.047	0.048	-0.017
	-1.889*	-2.882**	6.050**	0.856	-4.203**
	N=39	N=43	N=43	N=43	N=43
	R-Sq=0.95	R-Sq=0.71	R-Sq=0.42	R-Sq=0.83	R-Sq=0.84
	DW =1.87	DW=2.20	DW=1.31	DW=2.12	DW=2.22

* Significant at 0.05 level

** Significant a t 0.01 level

Parameter	Ecuador	Dominican	Cost Rica	India	Haiti
λ est	-0.623E-3	-0.008	-1.049	-0.676E-4	-0.027
t-stat	-0.752	-1.789*	-6.057**	0.058	-6.61**
Ψ_l	0.195	0.294	-0.641	6.435	2.51
	0.202	2.118*	-0.650	1.611	6.44**
Ψ_k	0.165	0.007	-0.016	0.312	-0.099
	1.010	2.814**	-0.035	2.121*	-0.784
Π_m	0.209E-5	0.999	0.166	-0.075	-0.123
	0.751	0.999	0.242	-0.178	-1.140
Ψ_m	0.337E-6	0.034	0.233	0.019	0.262
	0.887	7.402**	0.150	0.139	1.444
Π_n	0.001	0.013	-0.230	-40.226	0.042
	0.842	0.094	-7.745**	-1.524	2.368*
Ψ_n	0.893	0.002	0.101	0.735	0.246
	17.564**	0.349	0.066	3.976**	3.468**
LR7	-0.037	0.281	1.047	-0.133	-0.007
	-1.197	1.366	6.050**	-1.634	-2.909**
	N=39	N=43	N=43	N=43	N=43
	R-Sq=0.94	R-Sq=0.91	R-Sq=0.42	R-Sq=0.80	R-Sq=0.78
	DW =1.82	DW=2.20	DW=1.31	DW=2.09	DW=1.96

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Ecuador	Dominican	Cost Rica	India	Haiti
λ est	-0.507E-3	-0.342E-3	-1.049	0.186	-0.772
t-stat	-0.690	-0.124	-6.057**	2.955**	-50.757**
Ψ_l	0.696	0.996	-0.641	-1.824	3.399
	0.745	0.866	-0.650	-0.980	3.101**
Ψ_k	0.143	0.821	-0.016	0.119	1.561
	1.047	0.946	-0.035	1.380	1.547
Π_m	-0.175E-6	-20.799	0.166	0.580	0.439E-10
	0.066	-3.797**	0.242	1.608	0.955
Ψ_m	0.279	-0.001	0.233	0.144E-3	-0.149E-3
	0.779	-3.424**	0.150	0.206	-0.668
Π_n	0.001	8.119	-0.230	-81.992	-0.477E-7
	0.800	1.891*	-7.745**	-3.595**	-21.543**
Ψ_n	0.839	0.581	0.101	0.525	2.045
	18.097**	7.448**	0.066	4.757**	13.036**
LR8	-0.090	-0.009	1.047	0.048	0.646
	-2.523**	-2.961**	6.050**	0.857	1.742*
	N=39	N=43	N=43	N=43	N=43
	R-Sq=0.95	R-Sq=0.71	R-Sq=0.42	R-Sq=0.82	R-Sq=0.02
	DW =1.81	DW=2.20	DW=1.31	DW=2.12	DW=1.31

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Nigeria	Niger	Nepal	Mauritius	Malaysia
λ est	0.114	0.046	0.055	0.035	0.004
t-stat	7.125**	27.685**	3.238**	2.689**	0.380
Ψ_l	0.253	0.123E-4	-0.839	3.858	0.115
	2.513*	0.318	-3.962**	2.549**	0.104
Ψ_k	-0.113	-1.007	-0.060	-0.196	0.078
	-2.676*	-0.743	-1.118	-3.045**	0.620
Π_m	-0.107	-0.065	-2.109	-0.196	0.063
	-1.226	-0.221	-2.651**	-3.045**	2.590**
Ψ_m	0.002	-0.225E-5	0.155	-0.009	-0.022
	1.012	-0.169*	3.397**	0.024	-1.015
Π_n	-0.744	-0.904E-4	-1.020	-2.680	-3.468
	-3.890**	-260.410**	-1.590	-2.308*	-5.012**
Ψ_n	0.011	8.3462	0.070	0.372	0.582
	1.614	310.880**	1.656	3.576**	3.064**
LR1	1.000	1.000	1.00	1.00	1.00
	1.000	1.000	1.00	1.00	1.00
	N= 43	N=28	N=28	N=33	N=43
	R-Sq=0.72	R-Sq=1.000	R-Sq=0.57	R-Sq=0.81	R-Sq=0.725
	DW =1.48	DW=1.46	DW=1.96	DW=1.80	DW=2.11

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Nigeria	Niger	Nepal	Mauritius	Malaysia
λ est	0.112	0.0461	0.055	0.035	0.004
t-stat	6.771**	27.685**	3.238**	2.689**	0.380
Ψ_l	0.288	0.123E-4	-0.839	3.858	0.115
	2.466**	0.318	-3.962**	2.549**	0.104
Ψ_k	-0.129	-1.007	-0.060	-0.196	0.077
	-2.578**	-0.747	-1.118	-3.045**	0.620
Π_m	-0.161	-0.654	-2.109	-0.354	0.063
	-1.797*	-0.221	-2.651**	-3.932**	2.590*
Ψ_m	0.003	-0.225E-5	0.155	-0.009	-0.022
	1.095	-0.169	3.397**	-0.350	-1.015
Π_n	-0.685	-0.904	-1.020	-2.680	-3.468
	-3.120**	-260.410**	-1.590	-2.308**	-5.012**
Ψ_n	0.012	8.346	0.070	0.372	0.582
	1.570	310.880**	1.656	3.576**	3.064**
LR2	0.101	1.000	1.000	1.00	1.00
	1.413	1.000	1.000	1.00	1.00
	N= 43	N=28	N=28	N=33	N=43
	R-Sq=0.73	R-Sq=1.00	R-Sq=1.00	R-Sq=0.81	R-Sq=0.72
	DW = 1.50	DW=1.46	DW=1.96	DW=1.81	DW=2.11

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Nigeria	Niger	Nepal	Mauritius	Malaysia
λ est	0.112	0.046	0.055	0.035	0.004
t-stat	6.771**	27.685**	3.238**	2.689**	0.380
Ψ_l	0.288	0.123E-4	-0.839	3.858	0.115
	2.466**	0.319	-3.962**	2.549**	0.104
Ψ_k	-0.129	-1.006	-0.060	-0.196	0.077
	-2.578**	-0.743	-1.118	-3.045**	0.620
Π_m	-0.161	-0.654E-10	-2.109	-0.354	0.063
	-1.797**	-0.221	-2.651**	-3.932**	2.590**
Ψ_m	0.003	-0.224	0.155	-0.009	-0.022
	1.095	-0.169	3.975**	-0.350	-1.015
Π_n	-0.685	-0.904E-4	-1.020	-2.680	-3.468
	-3.120**	-260.41**	-1.590	-2.308*	-5.012**
Ψ_n	0.012	8.346	0.070	0.372	0.582
	1.570	310.880**	1.656	3.576**	3.064**
LR3	0.101	1.000	1.000	1.00	1.00
	1.413	1.000	1.000	1.00	1.00
	N= 43	N=28	N=28	N=33	N=43
	R-Sq=0.73	R-Sq=1.00	R-Sq=1.00	R-Sq=0.81	R-Sq=0.72
	DW = 1.50	DW=1.46	DW=1.96	DW=1.81	DW=2.11

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Nigeria	Niger	Nepal	Mauritius	Malaysia
λ est	0.117	0.053	0.086	3.59	-1.230
t-stat	5.972**	9.211**	5.538**	2.543**	-1.012
Ψ_l	0.241	-0.366E-6	-0.449	3.599	6710.6
	2.089*	-0.178	-3.623**	2.265*	0.170
Ψ_k	-0.107	0.009	-0.035	-0.211	-1552.9
	-2.071*	0.159	-1.212	-2.582**	0.170
Π_m	-0.111	-0.598E-11	-2.968	-0.366	0.042
	-1.188	-0.335	-4.134**	-3.856**	0.962
Ψ_m	0.248	-0.237E-6	0.109	-0.001	-37.22
	0.908	-0.325	3.665**	-0.383	-0.164
Π_n	-0.752	0.121E-4	-1.343	-2.888	0.220
	3.213**	468.86**	-2.623**	-2.345*	0.887
Ψ_n	0.010	-0.171	0.060	0.382	490.40
	1.434	-90.139**	2.394*	3.476**	0.173
LR4	-0.016	1.000	-0.045	0.016	1.276
	-0.256	1.000	-2.433*	0.343	1.045
	N= 43	N=28	N=28	N=33	N=43
	R-Sq=1.00	R-Sq=0.66	R-Sq=0.81	R-Sq=0.14	R-Sq=0.14
	DW = 1.48	DW=1.20	DW=2.34	DW=1.87	DW=0.92

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Nigeria	Niger	Nepal	Mauritius	Malaysia
λ est	0.108	0.357	0.085	0.030	-1.230
t-stat	4.464**	906.950**	5.157**	2.435*	-1.012
Ψ_l	0.305	-0.283E-3	-0.508	4.809	6710.6
	1.558	-0.581	-3.717**	2.841**	0.170
Ψ_k	-0.139	-0.169E-3	-0.038	-0.285	-1552.9
	-1.509	-3.847**	-1.295	-2.660**	-0.170
Π_m	-0.112	-0.539E-11	-2.682	-0.340	0.042
	-1.159	-0.603	-3.780**	-3.686**	0.962
Ψ_m	0.003	-0.343E-8	0.107	0.002	-37.228
	0.832	-0.551	3.104**	0.066	-0.164
Π_n	-0.753	0.999E-5	-1.036	-2.252	0.220
	-3.518**	10490**	-1.915*	-1.944*	0.173
Ψ_n	0.141	0.129E-3	0.058	0.402	490.400
	1.077	5.684**	2.381*	3.715**	0173
LR5	0.021	-0.024	-0.036	0.309	1.276
	0.394	-12.195**	-2.094*	1.183	1.045
	N= 43	N=28	N=28	N=33	N=43
	R-Sq=0.72	R-Sq=1.000	R-Sq=0.62	R-Sq=0.81	R-Sq=0.72
	DW = 1.52	DW=1.88	DW=2.13	DW=1.86	DW=2.11

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Nigeria	Niger	Nepal	Mauritius	Malaysia
λ est	0.113	-0.897	0.060	0.034	-1.230
t-stat	6.580**	-30.889**	3.044**	2.543**	-1.012
Ψ_l	0.260	-0.104E-3	-0.874	3.56	6710
	2.39*	-1.368	-2.633**	2.265*	0.170
Ψ_k	-0.118	15.887	-0.050	-0.211	-1552.9
	-2.425*	3.526**	-0.909	-2.582**	-0.170
Π_m	-0.106	0.952E-10	-2.433	-0.366	0.042
	-1.150	1.964*	-2.582**	-3.856**	0.962
Ψ_m	0.002	0.436E-5	0.516	-0.007	-37.228
	0.999	0.077	3.524**	-0.383	-0.164
Π_n	-0.734	0.986E-5	-1.079	-2.888	0.220
	-3.162**	1594.500**	-1.573	-2.345*	0.887
Ψ_n	0.011	0.447	0.068	0.382	490.400
	1.511	0.771	1.542	3.476**	0.173
LR6	0.012	0.945	0.010	0.164	1.276
	1.251	0.950	0.361	0.434	1.0455
	N= 43	N=28	N=28	N=33	N=43
	R-Sq=0.72	R-Sq=1.00	R-Sq=0.57	R-Sq=0.80	R-Sq=0.14
	DW = 1.47	DW=0.49	DW=1.78	DW=1.87	DW=2.02

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Nigeria	Niger	Nepal	Mauritius	Malaysia
λ est	0.098	0.345	0.076	0.034	0.004
t-stat	4.535**	509.560**	4.762**	2.543**	0.475
Ψ_l	0.369	0.161E-6	-0.35	3.599	0.955
	2.225*	0.247	-2.018*	2.265*	0.607
Ψ_k	-0.185	-0.475E-4	-0.025	-0.211	0.090
	-1.990*	-0.951	-0.756	-2.583**	0.702
Π_m	-0.132	-0.365E-11	-2.735	-0.366	0.067
	-1.492	0.306	-3.846**	-3.856**	2.664**
Ψ_m	0.005	-0.716E-8	0.103	-0.001	-0.023
	0.889	-0.445	2.662**	-0.383	-1.145
Π_n	-0.742	0.999E-5	-0.908	-2.888	-3.373
	-3.164**	5374.400**	-1.593*	-2.345*	-5.149**
Ψ_n	0.019	0.713E-4	0.062	0.382	0.583
	1.241	1.355	2.16*	3.476**	3.640**
LR7	0.069	-0.324	-0.041	0.016	-0.305
	1.310	-5.065**	-2.070*	0.434	-0.713
	N= 43	N=28	N=28	N=33	N=43
	R-Sq=0.73	R-Sq=1.00	R-Sq=0.61	R-Sq=0.80	R-Sq=0.73
	DW =1.57	DW=1.40	DW=2.00	DW=1.87	DW=2.14

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Nigeria	Niger	Nepal	Mauritius	Malaysia
λ est	0.113	0.366	0.092	0.034	-1.230
t-stat	6.580**	146.610**	6.885**	2.543**	-1.012
Ψ_l	0.260	-0.182E-5	-0.045	-0.211	6710.60
	2.393*	-1.186	-0.406	2.265*	0.1706
Ψ_k	-0.118	-0.779E-4	-0.012	-0.211	-1552.9
	-2.425*	-1.973*	-0.63	-2.582**	-0.170
Π_m	-0.106	-0.310E-10	-3.506	-0.366	0.043
	-1.150	0.876	-6.123**	-3.856**	0.962
Ψ_m	0.002	-0.938E-8	0.073	-0.001	-37.229
	0.999	-0.388	3.184**	-0.383	-0.162
Π_n	-0.734	0.998E-5	-0.97	-2.888	0.220
	-3.162**	6546**	-2.21*	-2.345*	0.173
Ψ_n	0.011	0.498E-4	0.044	0.382	490.40
	1.511	1.435	2.348*	3.476**	0.173
LR8	0.012	-0.373	-0.863	0.016	1.276
	1.251	-1.863*	-4.409**	0.434	1.045
	N= 43	N=28	N=28	N=33	N=43
	R-Sq=0.72	R-Sq=1.00	R-Sq=0.74	R-Sq=0.80	R-Sq=0.14
	DW =1.49	DW=0.72	DW=1.99	DW=1.87	DW=0.92

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Jordan	Chile	Cameron	Burundi	Pakistan
λ est	-63E-4	-0.096	-1.832	-0.115	-0.001
t-stat	-8.34**	-7.344**	-29.887**	-6.897**	-0.073
Ψ_l	0.166	11.763	1.010	16.648	-0.698
	80.19**	1.717*	1.010	2.678**	-1.484
Ψ_k	0.065	-20.684	1.004	-0.098	1.881
	2.889**	-1.487	1.004	-0.252	1.492
Π_m	22EE-4	0.116	0.998	-0.57E-3	1.00
	0.601	9.409**	0.998	-0.103	1.00
Ψ_m	0.999	3.371	0.966	0.332E-5	0.259
	79E+3**	4.884**	0.967	1.505	1.978*
Π_n	218.65	-0.141	1.179	-1.598	13.890
	0.592	-2.235*	1.269	-0.802	1.693*
Ψ_n	-3.656	0.894E-5	0.469	0.039	0.275
	-71.43**	2.254*	1.212	-0.108	1.783*
LR1	-82E-4	2.254	1.00	1.00	-0.031
	-2.30**	1.499	1.00	1.00	-0.424
	N= 43	N=43	N=30	N=30	N=43
	R-Sq=1.00	R-Sq=0.99	R-Sq=0.48	R-Sq=0.31	R-Sq=0.68
	DW =1.97	DW=1.38	DW=2.08	DW=1.76	DW=2.02

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Jordan	Chile	Cameron	Burundi	Pakistan
λ est	-63E-4	-0.082	-1.832	-0.099	-0.715E-3
t-stat	-8.34**	-6.575**	-29.887**	-4.938**	-0.063
Ψ_l	0.166	-0.476	1.010	1.3.007	-0.944
	80.19**	-0.406	1.010	2.130*	-2.145*
Ψ_k	0.065	-2.666	1.004	-0.090	1.458
	2.889**	-0.217	1.004	-0.281	1.328
Π_m	22EE-4	0.094	0.998	-0.88E-3	1.00
	0.601	6.535**	0.998	-0.166	1.00
Ψ_m	0.999	2.272	0.966	0.255E-51	0.256
	79E+3**	4.525**	0.967	1.293	2.207*
Π_n	218.65	-0.123E-3	1.179	-1.301	10.558
	0.592	-1.927*	1.269	-0.743	1.343
Ψ_n	-82E-4	0.519E-5	0.469	0.042	0.326
	-71.43**	1.572	1.212	0.171	2.300*
LR2	-82E-4	-0.572	1.001	-0.079	0.041
	-2.30**	-1.763*	1.001	-1.790*	1.508
	N= 43	N=43	N=30	N=30	N=43
	R-Sq=1.00	R-Sq=0.99	R-Sq=0.47	R-Sq=0.36	R-Sq=0.70
	DW = 1.97	DW=1.50	DW=2.08	DW=1.89	DW=1.80

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Jordan	Chile	Cameron	Burundi	Pakistan
λ est	-62E-4	-0.080	-1.832	0.099	-0.002
t-stat	-7.955**	-6.446**	-29.887**	-4.938**	-0.186
Ψ_l	0.167	-0.472	1.007	13.007	-0.950
	76.54**	-0.407	1.010	2.130*	-1.912*
Ψ_k	0.063	-2.662	1.004	-0.090	1.671
	2.73**	-0.221	1.004	0.281	1.391
Π_m	0.98E-3	0.941	0.998	-0.88E-3	1.00
	0.256	6.544**	0.998	-0.166	1.00
Ψ_m	0.999	2.273	0.966	0.255E-5	0.232
	0.76E+5**	4.420**	0.967	1.294	1.916*
Π_n	94.489	-0.124E-3	1.179	-1.301	12.818
	0.247	-1.921*	1.269	-0.743	1.648
Ψ_n	-3.66	0.519E-5	0.469	0.042	0.331
	-70.01**	1.544	1.212	0.171	2.151
LR3	-55E-4	-0.575	1.00	-0.079	0.305
	-2.04*	-1.782*	1.00	-1.790*	1.177
	N=43	N=43	N=30	N=30	N=43
	R-Sq=1.00	R-Sq=1.00	R-Sq=0.47	R-Sq=0.37	R-Sq=0.70
	DW=1.96	DW=1.50	DW=2.08	DW=1.90	DW=1.78

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Jordan	Chile	Cameron	Burundi	Pakistan
λ est	-55E-4	-0.021	-1.832	-0.087	-0.002
t-stat	-3.24**	-5.193**	-29.685**	-4.215**	-0.116
Ψ_l	0.165	1.007	1.010	9.991	-0.686
	77.98	3.134**	1.010	1.703*	-1.298
Ψ_k	0.07	-0.147	1.004	-0.159	1.942
	2.78**	-1.309	1.004	-0.626	1.479
Π_m	25E-4	0.002	0.998	-0.002	1.00
	0.658	4.522**	0.998	-0.478	1.00
Ψ_m	0.999	0.018	0.966	0.252E-5	0.241
	74E+3	6.319**	0.967	1.663	2.052*
Π_n	255.40	-0.948	1.179	-2.653	15.086
	-66.22**	-0.367	1.270	-1.796*	1.975*
Ψ_n	-3.653	-0.47E-7	0.469	0.172	0.287
	-66.22**	-1.028	1.217	0.771	1.977*
LR4	14E-4	0.118	1.001	-0.174	-0.005
	-0.72	3.282**	1.001	-3.467**	-0.207
	N=43	N=43	N=30	N=30	N=43
	R-Sq=1.00	R-Sq=0.68	R-Sq=0.07	R-Sq=0.49	R-Sq=0.68
	DW=1.97	DW=1.51	DW=2.01	DW=2.02	DW=1.95

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Jordan	Chile	Cameron	Burundi	Pakistan
λ est	-55E-4	-0.084	-0.636	-0.235	-0.055
t-stat	-3.24**	-7.634**	-1.842*	-3.265**	-2.180*
Ψ_l	0.165	0.958	-20.952	-46.721	-2.195
	77.98	3.765**	-0.325	-0.945	-1.117
Ψ_k	0.07	-11.840	65.576	-3.341	4.797
	2.78**	-1.143	0.451	-0.789	2.715**
Π_m	25E-4	0.103	1.129	1.001	1.00
	0.658	9.353**	1.632	0.972	1.00
Ψ_m	0.999	2.473	7.168	0.419	-0.854
	74E+3	0.512	1.446	-0.292	-0.292
Π_n	255.40	-0.121	-11.561	4.648	31.668
	-66.22**	-2.087*	-3.636**	0.947	4.080**
Ψ_n	-3.653	0.603E-5	-1.381	7.003	0.567
	-66.22**	1.895*	-0.131	0.732	1.750*
LR5	14E-4	-0.184	0.663	0.225	0.071
	-0.72	-3.223**	1.909*	2.801*	2.721**
	N=43	N=43	N=30	N=38	N=43
	R-Sq=1.00	R-Sq=0.99	R-Sq=0.71	R-Sq=0.65	R-Sq=0.71
	DW=1.97	DW=1.50	DW=1.40	DW=2.23	DW=2.13

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Jordan	Chile	Cameron	Burundi	Pakistan
λ est	-55E-4	-0.012	-0.002	-0.115	-0.047
t-stat	-3.24**	-3.099**	-0.119	-6.897**	-3.581**
Ψ_l	0.165	0.144	0.866	16.648	3.252
	77.98	0.476	0.941	2.678*	1.605
Ψ_k	0.07	-0.017	0.949	-0.098	4.329
	2.78**	-0.186	1.794*	-0.252	2.707**
Π_m	25E-4	0.02	-1.050	-0.57E-3	1.00
	0.658	4.334**	-1.125	-0.104	1.00
Ψ_m	0.999	0.015	0.262	0.332E-5	-0.157
	74E+3	5.593**	1.543	1.505	-0.582
Π_n	255.40	0.263E-3	1.978	-1.598	37.814
	-66.22**	0.102	0.641	-0.802	4.054**
Ψ_n	-3.653	-0.434E-7	0.474	-0.295	0.630
	-66.22**	0.982	2.083	-0.108	2.389*
LR6	14E-4	0.088	1.00	1.00	-0.506
	-0.72	2.698**	1.00	1.00	-2.178*
	N=43	N=43	N=30	N=30	N=43
	R-Sq=1.00	R-Sq=0.65	R-Sq=0.91	R-Sq=0.31	R-Sq=0.70
	DW=1.97	DW=1.73	DW=1.56	DW=1.76	DW=2.04

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Jordan	Chile	Cameron	Burundi	Pakistan
λ est	31E-4	-0.001	-0.010	-0.171	-0.259E-3
t-stat	0.482	-0.243	-1.291	-4.318**	-0.018
Ψ_l	0.16	0649	5.231	13.94	-1.050
	71.39**	2.002*	2.071*	1.824*	-1.195
Ψ_k	0.069	-0.083	1.591	-0.163	1.753
	2.75**	-1.078	2.582**	-0.281	1.363
Π_m	39E-4	0.001	-1.048	-0.001	1.00
	0.89	2.408*	-1.140	-0.273	1.00
Ψ_m	0.99	0.013	0.276	0.548E-5	0.235
	69E+7**	4.592**	1.470	1.448	2.129*
Π_n	391.54	-0.917E-7	1.132	-0.278	13.830
	0.883	-0.338	0.489	-0.156	1.674
Ψ_n	-3.654	-0.372E-7	0.555	0.285	0.287
	-66.61**	-1.029	3.057**	0.095	2.199*
LR7	35E-4	-0.014	-0.096	0.104	0.011
	-0.529	-1.662	-1.698*	1.88*	0.380
	N=43	N=43	N=30	N=30	N=43
	R-Sq=1.00	R-Sq=0.60	R-Sq=0.91	R-Sq=0.37	R-Sq=0.68
	DW =1.97	DW=1.52	DW=1.60	2.04	DW=1.995

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Jordan	Chile	Cameron	Burundi	Pakistan
λ est	31E-4	-0.016	-0.002	-0.120	-0.035
t-stat	0.482	-5.642**	-0.119	-6.650**	-2.391*
Ψ_l	0.482	0.104	0.865	17.434	3.092
	71.39**	9.839**	0.941	2.696**	1.568
Ψ_k	0.069	-0.036	0.949	-0.776	3.944
	2.75**	-0.392	1.795*	-0.196	2.705**
Π_m	39E-4	0.002	-1.050	-0.258E-3	1.00
	0.89	4.711**	-1.125	-0.046	1.00
Ψ_m	0.99	0.015	0.262	0.349E-5	0.002
	69E+7**	6.871**	1.543	1.519	0.011
Π_n	391.54	-0.128E-5	1.978	-1.480	31.282
	0.883	-0.577	0.641	-0.819	3.655**
Ψ_n	-3.654	-0.356E-7	0.474	-0.516	0.454
	-66.61**	0.860	2.083*	-0.184	2.246*
LR8	35E-4	0.013	1.00	0.355	-0.057
	-0.529	4.243**	1.00	0.616	-2.557**
	N=43	N=43	N=30	N=30	N=43
	R-Sq=1.00	R=0.99	R-Sq=0.91	R-Sq=0.32	R-Sq=0.72
	DW=1.97	DW=1.52	DW=1.60	DW=1.786	DW=2.09

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Guyana	Guatemala	Kuwait	Korea	Colombia
λ est	0.021	0.020	-0.018	0.002	-0.005
t-stat	1.255	1.31	-0.877	1.313	-3.729**
Ψ_l	-6.218	-0.449	0.713	-0.213	0.149
	-1.356	-1.427	1.011	-0.294	2.355*
Ψ_k	0.004	0.091	0.439	0.047	0.037
	0.050	1.581	2.460**	0.409	1.553
Π_m	0.327	0.131	0.076	-0.299	1.000
	1.358	1.041	0.696	-1.650	1.000
Ψ_m	0.154	-0.016	-0.132	0.305	0.16E-3
	1.69*	0.423	-1.244	2.183*	1.003
Π_n	-0.396	0.496	-0.315	0.803	0.201
	-0.301	1.276	-1.294	1.453	1.022
Ψ_n	0.497	0.496	0.431	0.493	0.177
	2.778**	2.328*	2.377*	2.915**	5.166**
LR1	1.000	1.000	1.000	1.000	1.000
	1.000	1.000	1.000	1.000	1.000
	N= 23	N=39	N=31	N=43	N=43
	R-Sq=0.96	R-Sq=0.81	R-Sq=0.99	R-Sq=0.99	R-Sq=0.77
	DW = 2.00	DW=1.88	DW=1.64	DW=2.08	DW=1.88

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Guyana	Guatemala	Kuwait	Korea	Colombia
λ est	0.021	0.021	-0.018	0.008	0.016
t-stat	1.255	1.353	-0.877	1.313	2.201*
Ψ_l	-6.218	-0.338	0.713	-0.213	-1.933
	-1.356	-0.990	1.011	-0.294	-4.700**
Ψ_k	0.004	0.106	0.439	0.047	0.381
	0.050	1.718*	2.460**	0.409	0.894
Π_m	0.327	0.147	0.076	-0.299	1.000
	1.358	1.138	0.696	-1.651	1.000
Ψ_m	0.154	-0.107	-0.132	0.304	0.030
	1.69*	-0.284	-1.244	2.194*	1.048
Π_n	-0.396	12.865	-0.315	0.803	3.279
	-0.301	1.345	-1.294	1.145	0.536
Ψ_n	0.497	0.478	0.431	0.492	0.325
	2.778**	2.205*	2.377*	2.915**	2.766**
LR2	1.000	-0.014	1.000	1.000	-0.325
	1.000	-0.596	1.000	1.000	2.766**
	N= 23	N=39	N=31	N=43	N=43
	R-Sq=0.96	R-Sq=0.80	R-Sq=0.99	R-Sq=0.99	R-Sq=0.77
	DW = 2.00	DW=1.91	DW=1.64	DW=2.08	DW=2.22

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Guyana	Guatemala	Kuwait	Korea	Colombia
λ est	0.021	0.021	-0.018	0.008	0.016
t-stat	1.255	1.353	-0.877	1.313	2.201*
Ψ_l	-6.218	-0.338	0.713	-0.213	-1.932
	-1.356	-0.990	1.011	-0.294	-4.700**
Ψ_k	0.004	0.106	0.439	0.047	0.381
	0.050	1.718*	2.460**	0.409	0.894
Π_m	0.327	0.147	0.076	-0.299	1.000
	1.358	1.138	0.696	-1.651	1.000
Ψ_m	0.154	-0.012	-0.132	0.304	0.030
	1.69*	-0.284	-1.244	2.184*	1.047
Π_n	-0.396	12.865	-0.315	0.803	3.279
	-0.301	1.345	-1.294	1.145	0.536
Ψ_n	0.497	0.478	0.431	0.492	0.325
	2.778**	2.205*	2.377*	2.915**	2.766**
LR3	1.000	-0.014	1.000	1.000	-0.039
	1.000	-0.596	1.000	1.000	-2.214*
	N= 23	N=39	N=31	N=43	N=43
	R-Sq=0.96	R-Sq=0.81	R-Sq=0.99	R-Sq=0.99	R-Sq=0.76
	DW = 2.00	DW=1.91	DW=1.64	DW=2.08	DW=2.22

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Guyana	Guatemala	Kuwait	Korea	Colombia
λ est	0.076	0.021	-0.024	0.008	-0.014
t-stat	2.886**	1.416	-1.244	1.484	-1.070
Ψ_l	-0.792	-0.659	0.741	1.368	4.059
	-0.494	-2.037*	1.176	1.076	1.829*
Ψ_k	0.023	0.092	0.463	0.551	1.396
	0.782	1.758*	2.786**	0.506	0.962
Π_m	0.375	0.052	0.064	-0.143	1.000
	1.915*	0.366	0.591	-0.699	1.000
Ψ_m	0.029	-0.018	-0.123	0.256	0.001
	0.850	-0.505	-1.056	1.843*	0.027
Π_n	-1.017	12.361	-0.275	0.702	7.971
	-1.017	1.342	-1.081	1.030	0.912
Ψ_n	0.192	0.472	0.431	0.550	0.653
	1.949*	2.367*	2.280*	3.180**	5.305**
LR4	-0.167	0.306	0.032	-0.038	-0.128
	-4.824**	1.260	0.887	-1.491	-3.355**
	N=23	N=39	N=31	N=43	N=43
	R-Sq=0.967	R-Sq=0.81	R-Sq=0.99	R-Sq=0.99	R-Sq=0.76
	DW = 2.00	DW=1.91	DW=1.64	DW=2.10	DW=1.77

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Guyana	Guatemala	Kuwait	Korea	Colombia
λ est	0.076	0.016	-2.293	0.008	-0.014
t-stat	2.886**	1.159	-4.299**	1.470	-1.070
Ψ_l	-0.792	-0.616	-281.62	0.284	4.059
	-0.494	-1.554	-0.547	0.303	1.829*
Ψ_k	0.023	0.806	178.27	0.056	1.396
	0.782	1.315	0.602	0.515	0.962
Π_m	0.375	0.087	0.088	0.224	1.000
	1.915*	0.598	1.934*	-1.051	1.000
Ψ_m	0.029	-0.029	561.62	0.282	0.001
	0.850	-0.645	0.558	1.753*	0.027
Π_n	-1.017	11.487	0.010	0.673	7.971
	-1.017	1.227	0.208	0.896	0.912
Ψ_n	0.192	0.539	3.736	0.512	0.653
	1.949*	2.524**	1.068	2.894	5.305**
LR5	-0.167	0.016	2.293	-0.163	0.323
	-4.824**	0.731	4.276**	-0.809	2.761**
	N=23	N=39	N=31	N=43	N=43
	R-Sq=0.967	R-Sq=0.81	R-Sq=0.99	R-Sq=0.99	R-Sq=0.74
	DW = 2.00	DW=1.88	DW=1.82	DW=2.06	DW=2.16

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Guyana	Guatemala	Kuwait	Korea	Colombia
λ est	0.076	-0.006	-0.018	0.005	-0.004
t-stat	2.886**	-2.829**	-0.877	0.889	-0.429
Ψ_l	-0.792	0.274	0.713	-1.185	4.971
	-0.494	2.590**	1.011	-1.365	2.407
Ψ_k	0.023	0.004	0.439	0.006	0.796
	0.782	1.047	2.460**	0.059	0.786
Π_m	0.375	-0.007	0.076	1.576	1.000
	1.915*	1.321	0.695	2.013*	1.000
Ψ_m	0.029	-0.003	-0.315	0.246	0.007
	0.850	-0.861	-1.243	1.540	0.156
Π_n	-1.017	0.362	-0.315	0.112	4.866
	-1.017	0.896	-1.295	0.157	0.710
Ψ_n	0.192	0.041	0.431	0.609	0.566
	1.949*	8.006**	2.377*	3.086**	3.751**
LR6	-0.167	-0.565	1.000	0.142	-0.167
	-4.824**	-0.605	1.000	0.723	-2.799**
	N=23	N=33	N=31	N=43	N=43
	R-Sq=0.967	R-Sq=0.79	R-Sq=0.99	R-Sq=0.86	R-Sq=0.76
	DW = 2.00	DW=1.96	DW=1.64	DW=1.96	DW=2.03

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Guyana	Guatemala	Kuwait	Korea	Colombia
λ est	0.076	0.019	-0.449	0.006	-0.004
t-stat	2.886**	1.518	-7.024**	1.109	-0.429
Ψ_l	-0.792	-0.897	-0.404	1.344	4.971
	-0.494	-1.381	-0.134	1.024	2.407*
Ψ_k	0.023	0.095	0.434	0.806	0.796
	0.782	1.641	0.522	0.729	0.786
Π_m	0.375	0.136	0.194	-0.177	1.000
	1.915*	1.084	1.867*	-0.870	1.000
Ψ_m	0.029	-0.029	-0.137	0.277	0.008
	0.850	-0.635	-0.219	1.876*	0.156
Π_n	-1.017	10.017	0.308	0.842	4.866
	-1.017	1.043	1.134	1.222	0.711
Ψ_n	0.192	0.495	4.376	0.581	-0.566
	1.949*	2.679	2.132*	3.102**	3.754**
LR7	-0.167	0.022	0.433	-0.032	0.167
	-4.824**	0.789	6.393**	-1.382	-2.799**
	N=23	N=39	N=31	N=43	N=43
	R-Sq=0.967	R-Sq=0.80	R-Sq=0.99	R-Sq=0.99	R-Sq=0.76
	DW = 2.00	DW=1.84	DW=1.88	DW=2.08	DW=2.04

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Guyana	Guatemala	Kuwait	Korea	Colombia
λ est	0.076	-0.006	0.018	0.005	-0.004
t-stat	2.886**	-2.422*	-0.877	0.889	-0.429
Ψ_l	-0.792	0.272	0.713	-1.185	4.971
	-0.494	2.217*	1.011	-1.365	2.407*
Ψ_k	0.023	0.472	0.439	0.006	0.796
	0.782	1.053	2.460*	0.059	0.786
Π_m	0.375	0.007	0.076	1.576	1.000
	1.915*	1.296	0.696	2.013	1.000
Ψ_m	0.029	-0.002	-0.132	0.246	0.007
	0.850	-0.803	-1.243	1.540	0.156
Π_n	-1.017	0.357	-0.315	0.112	4.866
	-1.017	0.892	-1.294	0.157	0.710
Ψ_n	0.192	0.041	0.431	0.609	0.566
	1.949*	7.132	2.377**	3.086**	3.754
LR8	-0.167	-0.240	1.000	0.014	-0.167
	-4.824**	0.218	1.000	0.723	-2.799
	N=23	N=39	N=31	N=43	N=43
	R-Sq=0.967	R-Sq=0.79	R-Sq=0.99	R-Sq=0.86	R-Sq=0.76
	DW = 2.00	DW=1.95	DW=1.89	DW=1.95	DW=2.05

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Malawi	Tunisia	Trinidad	Togo	Thailand
λ est	0.611	0.033	18E-11	-0.882	0.323
t-stat	4.332**	3.653**	-1.69*	-0.504	2.616**
Ψ_l	0.263	0.260	31E-10	-2.128	0.142
	0.835	0.347	28.55**	-1.383	0.517
Ψ_k	-0.228	-0.430	-11E-10	0.293	0.109
	-2.590**	-0.865	-2.27*	1.600	1.790*
Π_m	0.052	-0.291	1.000	0.001	-0.357
	0.376	-2.991**	15E+12	0.395	-1.180
Ψ_m	0.094	0.010	25E-10	0.015	0788
	2.233*	0.484	4.1**	0.98	2.640**
Π_n	2.308	-2.598	-1.000	-0.912	-1.837
	1.567	-2.535**	-16E+12	-2.773**	-2.118*
Ψ_n	-0.106	0.408	-14E+10	0.744	0.175
	-0.361	3.656**	-29.15**	2.962**	1.594
LR1	1.00	1.00	14E+16	1.00	1.00
	1.00	1.00	-1.69	1.00	1.00
	N= 36	N=41	N=21	N=25	N=43
	R-Sq=0.84	R-Sq=0.76	R-Sq=1.00	R-Sq=0.74	R-Sq=0.90
	DW =1.83	DW=1.93	DW=1.60	DW=2.40	DW=1.25

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Malawi	Tunisia	Trinidad	Togo	Thailand
λ est	0.061	0.033	18E-11	-0.008	0.029
t-stat	4.33**	3.653**	-1.69	0.504	3.067**
Ψ_l	0.263	0.260	31E+10	-2.882	0.098
	0.835	0.347	28.55**	-1.383	0.426
Ψ_k	-0.228	-0.430	-11E-10	0.293	0.125
	-2.590*	-0.65	-2.27*	1.600	2.265*
Π_m	0.051	0.291	1.000	0.001	-0.390
	0.376	-2.991**	15E+8**	0.395	-1.408
Ψ_m	0.094	0.010	25E-10	0.015	0.727
	2.233*	0.484	4.106**	0.798	2.725**
Π_n	2.308	-2.598	-1.000	-0.912	-1.81
	1.567	-2.535**	-16E11**	-2.773**	-2.27*
Ψ_n	-0.011	0.408	-14E-10	0.744	0.207
	-0.361	3.656**	-29.15**	2.962**	2.047*
LR2	1.00	1.00	14E-16	1.00	0.029
	1.00	1.00	-0.596	1.00	1.845*
	N= 36	N=41	N=21	N=25	N=43
	R-Sq=0.83	R-Sq=0.76	R-Sq=1.00	R-Sq=0.74	R-Sq=0.83
	DW =1.83	R-Sq=1.93	DW=1.60	DW=2.40	DW=1.27

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Malawi	Tunisia	Trinidad	Togo	Thailand
λ est	0.061	0.0339	0.18E-9	-0.008	0.029
t-stat	4.332**	3.653**	-1.69	0.504	3.067**
Ψ_l	0.263	0.260	31E-10	-2.128	0.098
	0.835	0.347	28.55**	-1.383	0.426
Ψ_k	-0.228	-0.043	-11E-10	0.293	0.125
	-2.590**	-0.865	-2.27*	1.60	2.265*
Π_m	0.517	-0.291	1.000	0.137	-0.390
	-2.991**	15E+8**	0.395	-1.408	
Ψ_m	0.094	0.010	25E10	0.014	0.727
	2.233*	0.484	4.10**	0.798	2.725**
Π_n	2.308	-2.598	-0.354	-0.912	-1.817
	1.567	-2.535**	-2.059*	-2.773**	-2.277*
Ψ_n	-0.011	0.408	-1.000	0.744	0.207
	-0.361	3.656**	-16EE+10	2.962**	2.047*
LR3	1.00	1.00	0.416E-16	1.00	0.298
	1.00	1.00	0.596	1.00	1.845*
	N= 36	N=41	N=21	N=25	N=43
	R-Sq=0.84	R-Sq=0.76	R-Sq=1.00	R-Sq=0.74	R-Sq=0.83
	DW = 1.82	DW=1.93	DW=1.60	DW=2.40	DW=1.27

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Malawi	Tunisia	Trinidad	Togo	Thailand
λ est	0.052	0.034	-17E-11	-0.163	0.033
t-stat	3.220**	3.584**	-1.26	-0986	3.432**
Ψ_l	0.168	-0.061	47E-10	-1.478	0.254
	0.471	-0.081	4.085**	-0.955	0.994
Ψ_k	-0.199	-0.002	-12E-10	0.273	0.957
	-2.263*	-0.038	-3.81**	1.473	2.114*
Π_m	-0.046	-0.257	1.000	0.120	-0.405
	-0.262	-2.486**	68E+11**	0.397	-1.441*
Ψ_m	-0.142	0.007	68E+11**	0.127	0.068
	1.861*	0.358	4.10**	0807	2.573**
Π_n	2.286	-2.665	-0.354	-0.782	-1.887
	1.576	-2.583**	-2.059*	-2.522*	-2.253*
Ψ_n	-0.056	0.387	-1.000	0.713	0.189
	-0.960	3.503**	-16EE+10	3.313**	2.101*
LR4	-0.099	-0.026	0.416E-16	-0.162	-0.016
	-1.222	-1.129	0.596	-2.324*	-1.509
	N= 36	N=41	N=21	N=25	N=43
	R-Sq=0.84	R-Sq=0.77	R-Sq=1.00	R-Sq=0.78	R-Sq=0.90
	DW = 2.01	DW=1.86	DW=1.60	DW=1.90	DW=1.31

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Malawi	Tunisia	Trinidad	Togo	Thailand
λ est	-0.344	0.028	-17E-11	0.001	0.046
t-stat	-6.465**	3.290**	-1.26	0.055	4.084**
Ψ_l	23.325	-0.594	47E-10	-0.626	-0.283
	0.414	-0.712	4.085**	-0.325	-2.426*
Ψ_k	-3.880	-0.802	-12E-10	0.390	0.058
	-0.399	-1.050	-3.81**	2.046*	1.919*
Π_m	-0.948	-0.290	1.000	0.002	-0.411
	-3.918**	-3.202**	-1.478	0.651	-1.632
Ψ_m	11.182	0.001	0.167E-4	0.011	0.036
	2.086*	0.426	0.244	0.750	1.945*
Π_n	5.313	-2.936	0.354E-4	0.709	-1.537
	4.226**	-2.998**	-2.059*	-1.722*	-2.271**
Ψ_n	-11.567	0.447	-0.808	0.606	0.115
	-1.533	4.258**	-1.446	2.367*	1.958*
LR5	0.344	0.057	0.416E-5	-0.827	0.330
	5.144**	1.850*	1.372	-0.870	3.452**
	N= 36	N=41	N=21	N=25	N=43
	R-Sq=0.64	R-Sq=0.79	R-Sq=1.00	R-Sq=0.74	R-Sq=0.92
	DW= 1.36	2.12	DW=1.46	DW=2.35	DW=1.44

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Malawi	Tunisia	Trinidad	Togo	Thailand
λ est	0.046	0.339	16E-11	0.008	0.034
t-stat	3.171**	3.653**	1.20	0.504	4.426**
Ψ_l	0.302	0.260	33E-10	-2.128	0.545
	0.761	0.347	-3.36**	-1.383	1.944*
Ψ_k	-0.228	-0.431	0.9E-9	0.293	0.095
	-2.466**	-0.866	31.81**	1.600	2.839**
Π_m	-0.060	-0.291	1.000	0.001	-0.483
	-0.359	-2.991**	91E+7	0.395	-1.795*
Ψ_m	0.163	0.010	3E-9	0.014	0.053
	2.175*	0.484	-4.68**	0.798	2.416*
Π_n	2.571	-2.598	-1.000	-0.912	-1.754
	1.806*	-2.535**	-9E+8**	-2.773**	-2.386*
Ψ_n	-0.057	0.408	15E-10	0.744	0.182
	-1.047	3.656**	3.61**	2.962**	2.450**
LR6	-0.125	1.00	11E-16	1.00	-0.027
	-1.883*	1.00	0.41	1.00	-2.446**
	N= 36	N=41	N=21	N=25	N=43
	R-Sq=0.82	R-Sq=0.76	R-Sq=1.00	R-Sq=0.74	R-Sq=0.91
	DW =1.77	DW=1.93	DW=1.80	DW=2.40	DW=1.35

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Malawi	Tunisia	Trinidad	Togo	Thailand
λ est	-0.390	0.032	16E-11	-0.011	0.026
t-stat	-3.114**	3.637**	1.20	-0.558	4.171**
Ψ_l	48.512	-0.063	-3E-10	-2.411	0.771
	0.452	-0.081	-3.36**	-1.399	1.816*
Ψ_k	-6.397	-0.063	9E-9	0.231	0.145
	-0.348	-1.027	31.81**	0.943	3.052**
Π_m	-0.886	-0.290	-1.000	0.001	-0.607
	-3.212**	-3.095**	91E+7**	0.293	-2.093*
Ψ_m	16.129	0.007	-30E-10	0.015	0.059
	1.309	0.332	-4.684**	0.903	1.834*
Π_n	3.553	-2.785	-1.000	0.977	-2.0811
	2.478**	-2.772**	-9E8**	-2.424*	-2.580**
Ψ_n	-18.616	0.421	15E-10	0.786	0.244
	-1.085	3.949**	3.61**	2.681**	2.736**
LR7	0.345	0.028	11E-16	0.026	-0.216
	2.450**	1.244	0.413	0.395	-1.735*
	N= 36	N=41	N=21	N=25	N=43
	R-Sq=0.48	R-Sq=0.77	R-Sq=1.00	R-Sq=0.74	R-Sq=0.90
	DW = 1.56	DW=2.07	DW=1.79	DW=2.38	DW1.36

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Malawi	Tunisia	Trinidad	Togo	Thailand
λ est	0.046	0.033	0.417	-0.015	0.034
t-stat	3.17**	3.653**	229.29**	0.6999	4.426**
Ψ_l	0.302	0.260	0.005	-2.715	0.545
	0.761	0.347	67.78**	-1.295	1.944*
Ψ_k	-0.228	-0.430	-0.451E-3	0.305	0.951
	-2.466**	0.865	-9.504**	1.487	2.839**
Π_m	-0.599	-0.291	-0.251	0.002	-0.483
	-0.359	-2.991**	-4.286**	0.591	-1.795*
Ψ_m	0.163	0.010	0.475E-4	0.018	0.530
	2.175*	0.484	0.770	1.021	2.416*
Π_n	2.571	-2.598	-0.584E-4	-1.008	-1.754
	1.806*	-2.535**	-5.171**	-2.487*	-2.386*
Ψ_n	-0.573	0.107	-0.109E-3	0.852	0.182
	-1.048	3.656**	-1.860*	2.348*	2.450**
LR8	-0.124	1.00	1.00	0.024	-0.274
	-1.884*	1.00	1.00	0.480	-2.446**
	N=36	N=41	N=21	N=25	N=43
	R-Sq=0.85	R-Sq=0.76	R-Sq=1.00	R-Sq=0.74	R-Sq=0.91
	DW=1.77	DW=1.93	DW=1.79	DW=1.90	DW=1.35

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	UAE	Venezuela	Uganda	Benin	Bangladesh
λ est	0.007	0.002	-0.235	0.095	-0.035
t-stat	1.065	0.287	-3.259**	5.356**	-1.728*
Ψ_l	1.165	-0.226	-0.180	-0.379E-8	0.514
	2.045*	-0.556	-2.197*	-0.634	0.379
Ψ_k	-0.324	-0.203	0.286	0.092	0.005
	-1.735*	-2.652**	2.196*	0.482	0.538
Π_m	0.167	-0.364	1.649	-4.094	-0.484
	0.021	-1.854*	2.388*	-0.709	-1.575
Ψ_m	-0.147	-0.041	-0.811	-0.972E-9	0.212
	-1.535	-0.671	-2.440*	-0.1002E-1	0.971
Π_n	-4.952	0.803	-0.131E-7	-0.509	0.166
	-4.773**	2.598**	-3.021**	-3.192**	2.987**
Ψ_n	0.998	0.868	0.456	0.089	0.219
	11.875**	5.681**	14.859**	2.321*	1.142
LR1	2.105	1.00	0.275	1.00	1.00
	0.412	1.00	1.913*		1.00
	N= 26	N=43	N=20	N=33	N=30
	R-Sq=0.99	R-Sq=0.93	R-Sq=0.97	R-Sq=0.69	R-Sq=0.46
	DW = 1.52	DW=1.89	DW=2.37	DW=2.52	DW=1.96

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	UAE	Venezuela	Uganda	Benin	Bangladesh
λ est	0.007	0.002	0.001	0.095	-0.035
t-stat	1.065	0.287	0.117	5.356**	-1.728*
Ψ_l	1.165	-0.226	-22.856**	-0.379E-8	0.514
	2.045*	-0.556	-3.964	-0.634	0.379
Ψ_k	-03.24	-0.202	3.637**	0.091	0.056
	-1.735*	-2.652**	3.964**	0.482	0.538
Π_m	0.167	-0.364	2.401	-4.095	-0.484
	0.021	-1.854*	2.769**	-0.709	-1.575*
Ψ_m	-0.147	-0.041	-0.093	-0.971E-9	0.166
	-1.535	-0.671	-3.975	-0.010	0.971
Π_n	-4.952	0.803	-0.175E-3	-0.509	0.166
	-4.773**	2.598**	-3.345**	-3.192**	2.987**
Ψ_n	0.998	0.868	0.222E-3	0.088	0.219
	11.875**	5.681**	8.674**	2.322*	1.142
LR2	2.105	1.00	-0.086	1.00	1.00
	0.412	1.00	-1.116	1.00	1.00
	N= 26	N=43	N=20	N=33	N=30
	R-Sq=0.99	R-Sq=0.93	R-Sq=0.98	R-Sq=0.69	R-Sq=0.46
	DW =1.53	DW=1.89	DW=2.37	DW=2.52	DW=1.96

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	UAE	Venezuela	Uganda	Benin	Bangladesh
λ est	0.007	0.002	0.001	0.095	-0.035
t-stat	1.065	0.287	0.117	5.356**	-1.728*
Ψ_l	1.165	-0.226	-22.856	-0.379	0.515
	2.045*	-0.556	-3.964**	-0.633	0.379
Ψ_k	-0.324	-0.202	3.637	0.092	0.056
	-1.735*	-2.652**	3.964**	0.482	0.538
Π_m	0.167	-0.364	-0.092	-4.094	-0.484
	0.021	-1.854*	-3.975**	-0.709	-1.575
Ψ_m	-0.147	-0.041	-0.175E-7	-0.971	0.212
	-1.535	-0.671	-3.345**	-0.010	0.971
Π_n	-4.952	0.803	-0.175E-7	-0.509	0.166
	-4.773**	2.598**	-3.345**	-3.192**	2.987**
Ψ_n	0.998	0.868	0.222E-3	0.088	0.219
	11.875**	5.681**	8.674**	2.324*	1.141
LR3	2.105	1.00	-0.085	1.00	1.00
	0.412	1.00	-1.116	1.00	1.00
	N= 26	N=43	N=20	N=33	N=30
	R-Sq=0.99	R-Sq=0.93	R-Sq=0.98	R-Sq=0.69	R-Sq=1.96
	DW =1.53	DW=1.89	DW=1.47	DW=2.52	DW=1.96

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	UAE	Venezuela	Uganda	Benin	Bangladesh
λ est	0.007	0.57E-3	-0.393	0.053	-0.035
t-stat	1.08	0.103	-3.876**	1.536	-1.758*
Ψ_l	1.165	0.787	-0.003	-0.37E-8	0.683
	2.079*	0.506	-0.004	-0.562	0.486
Ψ_k	-0.324	-0.208	0.642E-3	0.160	0.065
	-1.745*	-2.671	0.005	1.14	0.600
Π_m	0.167	-0.370	2.090	-17E-7	-0.500
	0.022	-1.996*	4.032**	-1.82*	-1.581
Ψ_m	-0.147	-0.044	-0.287E-3	0.877	0.218
	-1.553	-0.697	0.090	29.74**	1.012
Π_n	-4.925	0.808	-0.143E-7	0.19E+7	0.186
	-4.741	2.643**	-4.423**	1.894*	2.504**
Ψ_n	0.998	0.891	0.186E-3	-0.87	0.233
	12.113**	5.581**	11.322**	-24.74**	1.207
LR4	2.379	-0.031	0.388	69E-2	-0.016
	0.425	-0.687	2.859**	0.42	-0.419
	N= 26	N=43	N=20	N=33	N=30
	R-Sq=0.99	R-Sq=0.93	R-Sq=0.98	R-Sq=0.97	R-Sq=0.46
	DW =1.53	DW=1.94	DW=1.41	DW=2.04	DW=2.03

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	UAE	Venezuela	Uganda	Benin	Bangladesh
λ est	-9.448	0.003	0.515	0.069	-0.455
t-stat	-5.486**	0.444	4.806**	1.570	-3.013**
Ψ_l	-17.921	-0.844	0.022	-0.37E-8	4.649
	-5.319**	-0.642	0.702	0.714	1.482
Ψ_k	5.310	-0.196	-0.003	-0.162	0.033
	3.641**	-2.571**	-0.700	-1.169	0.305
Π_m	6.145	-0.264	0.290	-18E-7	-0.354
	14.030**	-0.927	0.279	-1.95	-1.188
Ψ_m	8.210	-0.032	0.773E-4	0.876	0.055
	2.846*	-0.535	0.609	30.28**	0.229
Π_n	-1.547	0.709	-0.236E-8	0.20E+7	0.197
	-1.664	1.912*	-0.382	-2.037**	3.648**
Ψ_n	0.192	0.824	-0.312E-5	0.877	0.375
	0.112	4.532**	-0.708	-24.76**	1.731*
LR5	9.504	0.203	-0.759	0.007	-0.074
	5.477**	0.482	-5.705**	-0.584	1.825*
	N= 26	N=43	N=20	N=33	N=30
	R-Sq=0.90	R-Sq=0.93	R-Sq=0.96	R-Sq=0.97	R-Sq=0.5
	DW =2.27	DW=1.87	DW=1.33	DW=2.05	DW=2.36

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	UAE	Venezuela	Uganda	Benin	Bangladesh
λ est	0.704	0.003	-0.048	0.053	-0.106
t-stat	1.100	0.714	-0.603	1.531	-6.573**
Ψ_l	1.165 2.040*	7.097 2.922**	-0.159 -0.965	-0.37E-8 -0.562	4.907 2.016*
Ψ_k	-0.324 -1.776*	-0.196 -3.102**	0.025 0.954	0.16 -1.14	0.054 0.485
Π_m	0.167 0.021	0.011 0.059	-2.512 -1.082	-0.17E-5 -1.87	0.182 0.642
Ψ_m	-0.147 -1.514	0.045 -0.916	-0.489E-3 -0.720	0.877 29.74**	-0.582 -1.918*
Π_n	-4.952 -4.735**	0.330 1.125	0.133E-7 0.949	0.19E+7 1.894	0.123 2.879**
Ψ_n	0.998 11.646**	0.764 7.005**	0.134E-3 5.307**	0.905 2.391*	1.077 3.609**
LR6	2.062 0.408	-0.241 -2.696**	-1.635 -2.492*	0.69E-2 0.422	0.100 4.682**
	N=26 R-Sq=0.99 DW =1.53	N=43 R-Sq=0.94 DW=2.17	N=20 R-Sq=0.97 DW=1.57	N=33 R-Sq=0.97 DW=2.04	N=30 R-Sq=0.67 DW=1.97

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	UAE	Venezuela	Uganda	Benin	Bangladesh
λ est	-10.172	0.557E-3	0.353	0.043	-0.110
t-stat	-5.3664**	0.125	-1.929*	1.55	-3.764**
Ψ_l	-30.293	2.686	1.046	-12E-10	-0.198
	-4.652**	2.416*	3.173**	-0.369	-0.093
Ψ_k	6.097	-0.226	-0.166	0.141	0.318
	3.796**	-3.215**	-3.165**	-0.938	1.964*
Π_m	5.709	-0.181	1.363	-16E-7	0.279
	14.655**	-0.991	2.049*	-1.657	0.750
Ψ_m	3.359	-0.035	0.006	0.875	-0.373
	1.939*	-0.607	3.145**	29.77**	-1.040
Π_n	-1.440	0.578	-0.925E-8	18E+5	0.342
	-1.701*	1.944*	-2.264*	-24.23**	0.542
Ψ_n	-10.378	0.850	0.176E-4	25E-4	0.733
	-6.308**	6.748**	6.127**	-0.165	2.297*
LR7	10.226	-0.097	0.223	-0.439	0.094
	5.350**	-2.724**	1.116	1.555	3.193**
	N=26	N=43	N=20	N=33	N=30
	R-Sq=0.90	R-Sq=0.94	R-Sq=0.97	R-Sq=0.97	R-Sq=0.60
	DW=2.27	DW=2.02	DW=1.36	DW=2.02	DW=1.97

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	UAE	Venezuela	Uganda	Benin	Bangladesh
λ est	0.070	0.557E-3	0.245	0.043	0.117
t-stat	1.087	0.125	-2.975**	1.566	-5.387**
Ψ_l	1.165	2.68	1.340	-069E-11	1.501
	2.070*	2.417*	3.267**	-0.148	0.711
Ψ_k	-0.324	-0.226	-0.214	-0.155	-0.073
	-1.793*	-3.216**	-3.263**	-1.080	-0.578
Π_m	0.167	-0.182	2.000	-17E-7	0.111
	0.022	-0.991	2.795**	-1.812	0.397
Ψ_m	-0.147	-0.035	0.007	0.875	-0.333
	-1.540	-0.607	3.183**	29.47**	-1.189
Π_n	-4.952	0.578	-0.141E-3	-0.442	0.314
	-4.785**	1.943*	-3.189**	-2.789**	0.700
Ψ_n	0.998	0.851	0.227E-3	0.876	0.75
	12.027**	6.748**	11.737**	23.82	2.894**
LR8	2.30	-0.097	0.192	-20E-4	0.107
	0.421	-2.724**	1.276	-0.165	4.791**
	N= 26	N=43	N=20	N=33	N=30
	R-Sq=0.99	R-Sq=0.94	R-Sq=0.97	R-Sq=0.97	R-Sq=0.71
	DW =1.53	DW=2.02	DW=1.45	DW=2.02	DW=1.97

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Bahrain	Argentina	Algeria	Brazil	Bolivia
λ est	-0.729	-0.686	0.34E-13	-0.174	-1.30
t-stat	-16.189**	-12.595**	3.41**	-4.726**	-22.207**
Ψ_l	0.997	1.000	-0.21E-20	0.999	1.001
	0.997	1.000	-4.417**	0.999	1.001
Ψ_k	0.990	1.000	0.14E-13	0.990	1.010
	0.990	1.000	1.499	0.990	1.010
Π_m	1.000	1.000	-0.15E-12	0.999	0.998
	1.000	1.000	-7.478**	0.999	1.150
Ψ_m	0.988	0.999	1.00	1.000	0.969
	0.988	0.999	0.29E+15	1.000	0.969
Π_n	0.404E-5	-0.604E-5	0.2E-18	-0.235E-3	-0.923E-3
	0.404E-5	-0.605E-5	2.99	-0.235E-3	-0.177E-3
Ψ_n	0.984	0.950	-1.000	0.983	0.928
	0.984	0.950	-0.15E+14	0.983	0.929
LR1	1.000	1.000	0.25	1.000	1.000
	1.000	1.000	3.357	1.000	1.000
	N=32	N=41	N=41	N=43	N=37
	R-Sq=0.99	R-Sq=0.00	R-Sq=1.00	R-Sq=0.05	R-Sq=0.30
	DW = 1.88	DW=1.73	DW=1.89	DW=2.04	DW= 1.36

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Bahrain	Argentina	Algeria	Brazil	Bolivia
λ est	-0.729	-0.686	0.34E-13	-0.174	-1.30
t-stat	-16.189**	-12.595**	3.471**	-4.726**	-22.207**
Ψ_l	0.997	1.000	-0.21E-20	0.999	1.001
	0.997	1.000	-4.417**	0.999	1.001
Ψ_k	0.990	1.000	0.14E-13	0.990	1.010
	0.990	1.000	1.499	0.990	1.010
Π_m	1.000	1.000	-0.15E-12	0.999	1.001
	1.000	1.000	-0.17E-6	0.999	1.001
Ψ_m	0.988	0.999	1.00	1.001	0.998
	0.988	0.999	0.29E15	1.001	1.150
Π_n	0.404E-5	-0.604E-5	2E-17	-0.235E-3	-0.923E-3
	0.404E-5	-0.605E-5	2.99**	-0.232E-3	-0.002
Ψ_n	0.984	0.950	-1.000	0.982	0.928
	0.984	0.950	1.000	0.982	0.928
LR2	1.000	1.000	0.25E-13	1.000	1.000
	1.000	1.000	3.471**	1.000	1.000
	N=32	N=41	N=41	N=2.42	N=37
	R-Sq=0.99	R-Sq=0.00	R-Sq=1.00	R-Sq=0.05	R-Sq=0.02
	DW = 1.44	DW=1.73	DW=1.89	DW=2.04	DW= 1.36

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Bahrain	Argentina	Algeria	Brazil	Bolivia
λ est	-0.729	-0.686	-0.485E-4	-0.174	-1.30
t-stat	-16.189**	-12.595**	-0.838	-5.726**	-22.207**
Ψ_l	0.997	1.000	0.821E-11	0.999	1.001
	0.997	1.000	0.352	1.019	1.001
Ψ_k	0.990	1.000	0.003	0.990	1.001
	0.990	1.000	1.087	0.990	1.001
Π_m	1.000	1.000	0.317	0.999	0.998
	1.000	1.000	0.955	1.008	1.150
Ψ_m	0.988	0.999	0.002	1.000	0.969
	0.988	0.999	2.575**	1.032	0.969
Π_n	0.404E-5	-0.604E-5	0.029	-0.32E-3	0.923
	0.404E-5	-0.605E-5	1.610	-0.629E-3	-0.002
Ψ_n	0.984	0.950	0.017	0.982	-0.928
	0.984	0.950	4.447**	0.984	-0.928
LR3	1.000	1.000	-0.003	1.000	1.000
	1.000	1.000	-2.293*	1.000	1.000
	N=32	N=41	N=41	N=43	N=37
	R-Sq=0.99	R-Sq=0.00	R-Sq=0.82	R-Sq=0.07	R-Sq=0.30
	DW = 1.44	DW=1.73	DW=1.23	DW=2.04	DW= 1.36

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Bahrain	Argentina	Algeria	Brazil	Bolivia
λ est	-0.729	-0.686	-0.035	-0.174	-1.398
t-stat	-16.189**	-12.595**	-28.752**	-5.726**	-21.841**
Ψ_l	0.997	1.000	0.366	0.999	1.001
	0.997	1.000	17.416**	1.019	1.001
Ψ_k	0.990	1.000	0.670	0.990	1.010
	0.990	1.000	1.136	0.990	1.010
Π_m	1.000	1.000	0.329E-6	0.999	0.998
	1.000	1.000	1.534	1.008	1.212
Ψ_m	0.988	0.999	0.181	1.000	0.969
	0.988	0.999	2.681**	1.000	0.969
Π_n	0.404E-5	-0.604E-5	0.021	-0.232	-0.923E-3
	0.404E-5	-0.605E-5	1.035	-0.629	-0.001
Ψ_n	0.984	0.950	0.036	0.982	0.928
	0.984	0.950	4.054**	0.984	0.928
LR4	1.000	1.000	0.413	1.000	1.000
	1.000	1.000	3.007**	1.000	1.000
	N=32	N=41	N=41	N=43	N=37
	R-Sq=0.99	R-Sq=0.00	R-Sq=0.80	R-Sq=0.07	R-Sq=0.02
	DW = 1.44	DW=1.72	DW=1.53	DW=1.39	DW=1.02

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Bahrain	Argentina	Algeria	Brazil	Bolivia
λ est	-0.729	-0.686	-0.033	-0.174	-1.398
t-stat	-16.189**	-12.595**	-25.767**	-5.726**	-21.266**
Ψ_l	0.997	1.000	0.326E-8	0.999	1.001
	0.997	1.000	11.723**	1.019	1.001
Ψ_k	0.990	1.000	0.006	0.990	1.010
	0.990	1.000	0.992	0.990	1.010
Π_m	1.000	1.000	0.472E-6	0.999	0.998
	1.000	1.000	2.014*	1.008	1.371
Ψ_m	0.988	0.999	0.186	1.000	0.969
	0.988	0.999	2.492**	1.031	0.969
Π_n	0.404E-5	-0.604E-5	0.243	-0.232E-3	-0.92E-3
	0.404E-5	-0.605E-5	0.972	-0.629E-3	-0.13E-2
Ψ_n	0.984	0.950	0.353	0.982	0.928
	0.984	0.950	4.158**	0.984	0.929
LR5	1.000	1.000	0.4E-3	1.000	1.000
	1.000	1.000	0.230	1.000	1.002
	N=32	N=41	N=41	N=43	N=37
	R-Sq=0.99	R-Sq=0.00	R-Sq=0.75	R-Sq=0.07	R-Sq=0.02
	DW = 1.44	DW=1.78	DW=1.27	DW=1.44	DW=1.94

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Bahrain	Argentina	Algeria	Brazil	Bolivia
λ est	-0.729	-0.686	0.004	-0.174	-1.398
t-stat	-16.189**	-12.595**	4.286**	-4.726**	-22.049**
Ψ_l	0.997	1.000	-0.196E-9	0.999	1.001
	0.997	1.000	-5.185**	0.999	1.001
Ψ_k	0.990	1.000	0.005	0.990	1.010
	0.990	1.000	2.043*	0.990	1.010
Π_m	1.000	1.000	-0.301E-5	0.999	0.998
	1.000	1.000	-2.126*	0.999	1.169
Ψ_m	0.988	0.999	0.483	1.000	0.962
	0.988	0.999	2.153*	1.000	0.969
Π_n	0.404E-5	-0.604E-5	0.270	-0.234E-3	-0.001
	0.404E-5	-0.605E-5	1.519	-0.232E-3	-0.19
Ψ_n	0.984	0.950	0.017	0.982	0.928
	0.984	0.950	5.371**	0.982	0.929
LR6	1.000	1.000	1.000	1.000	0.999
	1.000	1.000	1.000	1.000	1.005
	N=32	N=41	N=41	N=43	N=37
	R-Sq=0.99	R-Sq=0.00	R-Sq=0.85	R-Sq=0.00	R-Sq=0.03
	DW = 1.44	DW=1.73	DW=1.36	DW=2.16	DW=1.47

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Bahrain	Argentina	Algeria	Brazil	Bolivia
λ est	-0.729	-0.686	-0.033	-0.174	-1.398
t-stat	-16.189**	-12.595**	-24.890**	-5.755**	-21.423**
Ψ_l	0.997	1.000	0.308E-8	0.999	1.001
	0.997	1.000	11.322**	1.016	1.001
Ψ_k	0.990	1.000	0.006	0.990	1.001
	0.990	1.000	0.976	0.990	1.001
Π_m	1.000	1.000	0.524E-6	0.999	0.998
	1.000	1.000	2.084*	0.990	0.998
Ψ_m	0.988	0.999	0.019	1.008	0.969
	0.988	0.999	2.938**	1.026	0.969
Π_n	0.404E-5	-0.604E-5	0.021	-0.23E-3	-0.001
	0.404E-5	-0.605E-5	0.980	-0.67E-3	-0.155
Ψ_n	0.984	0.950	0.333	0.982	0.928
	0.984	0.950	3.834**	0.984	0.928
LR7	1.000	1.000	0.002	1.000	0.999
	1.000	1.000	1.301	1.000	1.002
	N=32	N=41	N=41	N=43	N=37
	R-Sq=0.99	R-Sq=0.00	R-Sq=0.76	R-Sq=0.00	R-Sq=0.02
	DW = 1.44	DW=1.79	DW=1.36	DW=1.48	DW=1.42

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Bahrain	Argentina	Algeria	Brazil	Bolivia
λ est	-0.729	-0.686	-0.032	-0.174	-0.139
t-stat	-16.189**	-12.595**	-25.216**	-5.674**	-21.897**
Ψ_l	0.997	1.000	0.317E-8	0.999	1.001
	0.997	1.000	15.571**	1.025	1.001
Ψ_k	0.990	1.000	0.001	0.990	1.010
	0.990	1.000	0.284	0.990	1.010
Π_m	1.000	1.000	0.493E-6	0.999	0.998
	1.000	1.000	2.126*	1.014	1.198
Ψ_m	0.988	0.999	0.025	1.001	0.969
	0.988	0.999	3.745**	1.040	0.969
Π_n	0.404E-5	-0.604E-5	0.002	-0.23E-3	-0.104
	0.404E-5	-0.605E-5	0.097	-0.55E-3	-0.002
Ψ_n	0.984	0.950	0.022	0.982	0.928
	0.984	0.950	2.770**	0.984	0.929
LR8	1.000	1.000	-0.006	1.000	0.999
	1.000	1.000	-3.589**	1.000	1.001
	N=32	N=41	N=43	N=43	N=37
	R-Sq=0.99	R-Sq=0.00	R-Sq=0.82	R-Sq=0.00	R-Sq=0.32
	DW = 1.44	DW=1.72	DW=1.68	DW=1.82	DW=1.17

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Ghana	Mali	Nicaragua	Saudi Arabia	Turkey
λ est	-0.930	0.103	-2.561	-0.458	25E-6
t-stat	-16.033**	0.933	-26.862**	-9.429**	0.72
Ψ_l	1.000	1.000	1.000	1.000	49E-5
	1.000	1.000	1.000	1.000	-2.32
Ψ_k	1.000	1.000	1.000	1.000	27E-5
	1.000	1.000	1.000	1.000	1.366
Π_m	0.229E-6	1.000	1.000	1.000	86E-6
	0.229E-6	1.000	1.000	1.000	2.742
Ψ_m	0.943	0.965	1.000	0.960	1.000
	0.943	0.965	1.000	0.961	1.000
Π_n	1.000	0.56E-5	0.502E-6	0.5E-5	-0.1E-3
	1.000	0.56E-5	0.505E-6	0.5E-5	-2.47**
Ψ_n	1.000	0.965	0.851	0.999	1.000
	1.000	0.965	0.851	0.999	-1.23
LR1	1.000	1.000	1.000	1.000	25E-6
	1.000	1.000	1.000	1.000	-1.235
	N=36	N=22	N=27	N=43	N=43
	R-Sq=0.00	R-Sq=0.99	R-Sq=0.01	R-Sq=0.33	R-Sq=1.00
	DW =1.91	DW=1.99	DW=2.00	DW=1.70	DW=1.67

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Ghana	Mali	Nicaragua	Saudi Arabia	Turkey
λ est	-0.930	0.103	-2.561	-0.458	-0.269
t-stat	-16.033**	0.933	-26.862**	-9.429**	-7.047**
Ψ_l	1.000	1.000	1.000	1.000	1.001
	1.000	1.000	1.000	1.000	1.001
Ψ_k	1.000	1.000	1.000	1.000	1.001
	1.000	1.000	1.000	1.000	1.001
Π_m	0.229E-6	1.000	1.000	1.000	1.119
	0.229E-6	1.000	1.000	1.000	1.119
Ψ_m	0.943	0.965	1.000	0.960	0.974
	0.943	0.965	1.000	0.961	0.974
Π_n	1.000	0.56E-5	0.502E-6	0.5E-5	-0.300
	1.000	0.56E-5	0.505E-6	0.5E-5	-0.300
Ψ_n	1.000	0.965	0.851	0.999	0.974
	1.000	0.965	0.851	0.999	0.974
LR2	1.000	1.000	1.000	1.000	1.000
	1.000	1.000	1.000	1.000	1.000
	N=36	N=22	N=27	N=43	N=43
	R-Sq=0.00	R-Sq=0.99	R-Sq=0.01	R-Sq=0.33	R-Sq=1.00
	DW =2.00	DW=1.99	DW=2.00	DW=1.70	DW=1.80

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Ghana	Mali	Nicaragua	Saudi Arabia	Turkey
λ est	-0.930	0.103	-2.561	-0.458	-0.269
t-stat	-16.033**	0.933	-26.862**	-9.429**	-7.047**
Ψ_l	1.000	1.000	1.000	1.000	1.001
	1.000	1.000	1.000	1.000	1.001
Ψ_k	1.000	1.000	1.000	1.000	1.008
	1.000	1.000	1.000	1.000	1.008
Π_m	0.229E-6	1.000	1.000	1.000	1.119
	0.229E-6	1.000	1.000	1.000	1.119
Ψ_m	0.943	0.965	1.000	0.960	0.974
	0.943	0.965	1.000	0.961	0.974
Π_n	1.000	0.56E-5	0.502E-6	0.5E-5	-0.3000
	1.000	0.56E-5	0.505E-6	0.5E-5	-0.3000
Ψ_n	1.000	0.965	0.851	0.999	0.974
	1.000	0.965	0.851	0.999	0.974
LR3	1.000	1.000	1.000	1.000	1.000
	1.000	1.000	1.000	1.000	1.000
	N=36	N=22	N=27	N=43	N=43
	R-Sq=0.00	R-Sq=0.99	R-Sq=0.01	R-Sq=0.33	R-Sq=1.00
	DW =1.85	DW=1.99	DW=2.23	DW=1.70	DW=1.69

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Ghana	Mali	Nicaragua	Saudi Arabia	Turkey
λ est	-0.930	0.103	-2.561	-0.458	-0.269
t-stat	-16.033**	0.933	-26.862**	-9.429**	-7.047**
Ψ_l	1.000	1.000	1.000	1.000	1.001
	1.000	1.000	1.000	1.000	1.001
Ψ_k	1.000	1.000	1.000	1.000	1.001
	1.000	1.000	1.000	1.000	1.001
Π_m	0.229E-6	1.000	1.000	1.000	1.119
	0.229E-6	1.000	1.000	1.000	1.119
Ψ_m	0.943	0.965	1.000	0.960	0.974
	0.943	0.965	1.000	0.961	0.974
Π_n	1.000	0.56E-5	0.502E-6	0.5E-5	-0.300
	1.000	0.56E-5	0.505E-6	0.5E-5	-0.300
Ψ_n	1.000	0.965	0.851	0.999	0.974
	1.000	0.965	0.851	0.999	0.974
LR4	1.000	1.000	1.000	1.000	1.000
	1.000	1.000	1.000	1.000	1.000
	N=36	N=22	N=27	N=43	N=43
	R-Sq=0.00	R-Sq=0.99	R-Sq=0.01	R-Sq=0.33	R-Sq=1.00
	DW =2.00	DW=1.2	DW=1.72	DW=1.70	DW=1.80

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Ghana	Mali	Nicaragua	Saudi Arabia	Turkey
λ est	-0.930	0.103	-2.561	-0.458	-0.269
t-stat	-16.033**	0.933	-26.862**	-9.429**	-7.047**
Ψ_l	1.000	1.000	1.000	1.000	1.001
	1.000	1.000	1.000	1.000	1.001
Ψ_k	1.000	1.000	1.000	1.000	1.008
	1.000	1.000	1.000	1.000	1.008
Π_m	0.229E-6	1.000	1.000	1.000	1.119
	0.229E-6	1.000	1.000	1.000	1.119
Ψ_m	0.943	0.965	1.000	0.960	0.974
	0.943	0.965	1.000	0.961	0.974
Π_n	1.000	0.56E-5	0.502E-6	0.5E-5	-0.300
	1.000	0.56E-5	0.505E-6	0.5E-5	-0.300
Ψ_n	1.000	0.965	0.851	0.999	0.974
	1.000	0.965	0.851	0.999	0.974
LR5	1.000	1.000	1.000	1.000	1.000
	1.000	1.000	1.000	1.000	1.000
	N=36	N=22	N=27	N=43	N=43
	R-Sq=0.00	R-Sq=0.99	R-Sq=0.01	R-Sq=0.33	R-Sq=1.00
	DW =2.15	DW=1.95	DW=1.72	DW=1.70	DW=1.80

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Ghana	Mali	Nicaragua	Saudi Arabia	Turkey
λ est	-0.930	0.103	-2.561	-0.458	-0.269
stat	-16.033**	0.933	-26.862**	-9.429**	-7.047**
Ψ_l	1.000	1.000	1.000	1.000	1.001
	1.000	1.000	1.000	1.000	1.001
Ψ_k	1.000	1.000	1.000	1.000	1.008
	1.000	1.000	1.000	1.000	1.008
Π_m	0.229E-6	1.000	1.000	1.000	1.119
	0.229E-6	1.000	1.000	1.000	1.119
Ψ_m	0.943	0.965	1.000	0.960	0.974
	0.943	0.965	1.000	0.961	0.974
Π_n	1.000	0.56E-5	0.502E-6	0.5E-5	-0.300
	1.000	0.56E-5	0.505E-6	0.5E-5	-0.300
Ψ_n	1.000	0.965	0.851	0.999	0.974
	1.000	0.965	0.851	0.999	0.974
LR6	1.000	1.000	1.000	1.000	1.000
	1.000	1.000	1.000	1.000	1.000
	N=36	N=22	N=27	N=43	N=43
	R-Sq=0.00	R-Sq=0.99	R-Sq=0.01	R-Sq=0.33	R-Sq=1.00
	DW =1.97	DW=1.33	DW=2.00	DW=1.70	DW=1.80

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Ghana	Mali	Nicaragua	Saudi Arabia	Turkey
λ est	-0.930	0.103	-2.561	-0.458	-0.269
t-stat	-16.033**	0.933	-26.862**	-9.429**	-7.047**
Ψ_l	1.000	1.000	1.000	1.000	1.001
	1.000	1.000	1.000	1.000	1.001
Ψ_k	1.000	1.000	1.000	1.000	1.008
	1.000	1.000	1.000	1.000	1.008
Π_m	0.229E-6	1.000	1.000	1.000	1.119
	0.229E-6	1.000	1.000	1.000	1.119
Ψ_m	0.943	0.965	1.000	0.960	0.974
	0.943	0.965	1.000	0.961	.0974
Π_n	1.000	0.56E-5	0.502E-6	0.5E-5	-0.300
	1.000	0.56E-5	0.505E-6	0.5E-5	-0.300
Ψ_n	1.000	0.965	0.851	0.999	0.974
	1.000	0.965	0.851	0.999	0.974
LR7	1.000	1.000	1.000	1.000	1.000
	1.000	1.000	1.000	1.000	1.000
	N=36	N=22	N=27	N=43	N=43
	R-Sq=0.00	R-Sq=0.99	R-Sq=0.01	R-Sq=0.33	R-Sq=1.00
	DW =2.05	DW=2.14	DW=1.72	DW=1.70	DW=1.85

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	Ghana	Mali	Nicaragua	Saudi Arabia	Turkey
λ est	-0.930	0.103	-2.561	-0.458	-0.269
t-stat	-16.033**	0.933	-26.862**	-9.429**	-7.047**
Ψ_l	1.000	1.000	1.000	1.000	1.001
	1.000	1.000	1.000	1.000	1.001
Ψ_k	1.000	1.000	1.000	1.000	1.008
	1.000	1.000	1.000	1.000	1.008
Π_m	0.229E-6	1.000	1.000	1.000	1.119
	0.229E-6	1.000	1.000	1.000	1.119
Ψ_m	0.943	0.965	1.000	0.960	0.974
	0.943	0.965	1.000	0.961	0.974
Π_n	1.000	0.56E-5	0.502E-6	0.5E-5	-0.300
	1.000	0.56E-5	0.505E-6	0.5E-5	-0.300
Ψ_n	1.000	0.965	0.851	0.999	0.974
	1.000	0.965	0.851	0.999	0.974
LR8	1.000	1.000	1.000	1.000	1.000
	1.000	1.000	1.000	1.000	1.000
	N=36	N=22	N=27	N=43	N=43
	R-Sq=0.00	R-Sq=0.99	R-Sq=0.01	R-Sq=0.33	R-Sq=1.00
	DW =2.13	DW=2.12	DW=1.85	DW=1.70	DW=1.85

* Significant at 0.05 level

** Significant at 0.01 level

APPENDIX B

**CROSS NATIONAL TIME SERIES RESULTS WITH A SINGLE POLITICAL
VARIABLE**

Parameter	All States	MENA-N/OI	MENA-OI	Arab World	MENA
Ψ_l est	0.403	1.875	0.209	1.278	1.427
t-stat	28.08**	25.15**	7.646**	26.42**	24.55**
Ψ_k	0.7E-10	-0.327	-0.365	-1.144	-0.677
	0.217	-0.360	-2.251**	-2.045*	-0.989
Π_m	0.596	-0.759	-0.774	0.370	0.004
	41.48**	-7.873**	-3.334**	5.849**	0.077
Ψ_m	0.93E-4	0.167	0.958	0.529	0.14E-3
	18.90**	27.17**	93.60**	6.721**	20.28**
Π_n	-0.689	-1.764	-3.946	4.677	0.390
	-2.547**	-0.397	-2.744**	1.518	0.096
Ψ_n	-0.2E-9	-0.580	-0.653	-0.577	-1.078
	-0.283	-0.357	-3.215**	-0.757	-1.122
LR1	-0.38E-6	-0.295E-5	0.015	0.572	-0.409
	-0.122	-1.68*	0.280	0.378	-2.091*
	N=2349	N=251	N=200	N=350	N=451
	R-Sq=1.00	R-SQ=0.88	R-Sq=0.99	R-Sq=0.79	R-Sq=0.72
	DW=1.23	DW=-1.679	DW=1.78	DW=1.13	DW=1.12

Significant at 0.05 level

** Significant at 0.01 level

Parameter	All States	MEAN-N/O	MENA-OI	Arab World	MENA
Ψ_l est	0.403	1.864	0.210	1.278	1.425
t-stat	28.100**	25.09**	7.748**	26.48**	24.55**
Ψ_k	0.78E-10	-0.300	-0.369	-1.165	-0.778
	0.217	-0.332	-2.263**	-2.082*	-1.137
Π_m	0.597	-0.739	-0.784	0.366	0.269
	41.59**	-7.692**	-3.409**	5.790**	0.056
Ψ_m	0.935	0.16E-3	0.958	0.54E-4	0.135
	19.08**	27.48**	94.04**	7.156**	20.24**
Π_n	-0.685	1.624	-3.945	4.310	3.812
	-2.544**	0.398	-2.743**	1.512	1.010
Ψ_n	-0.192	-0.305	-0.648	-0.487	-0.834
	-0.283	-0.018	-3.176**	-0.636	-0.861
LR2	-0.312	-0.426	0.002	-0.156	-0.396
	-2.462**	-2.216*	0.037	-0.921	-2.337**
	N=2349	N=251	N=200	N=350	N=451
	R-Sq=1.00	R-Sq=0.88	R-Sq=0.99	R-Sq=0.79	R-Sq=0.72
	DW =1.24	DW=1.33	DW=1.78	DW=1.13	DW=1.14

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	All States	MEAN-N/O	MENA-OI	Arab World	MENA
Ψ_l est	0.402	1.882	0.210	1.281	1.439
t-stat	28.08**	25.16**	7.730	26.33**	24.69**
Ψ_k	0.78E-10	-0.578	-0.368	-1.168	-0.940
	0.217	-0.632	-2.241**	-2.064*	-1.358
Π_m	0.597	-0.747	-0.078	0.004	0.037
	41.63**	-7.745**	-3.410**	5.836**	0.077
Ψ_m	0.94E-4	0.17E-3	0.958	0.54E-4	0.136
	19.12**	27.41**	93.82**	7.142**	20.34**
Π_n	-0.69E-5	1.853	-3.946	4.271	3.836
	-2.568**	0.450	-2.743**	1.496	1.015
Ψ_n	-0.19E-9	0.633	-0.649	-0.522	-0.760
	-0.283	0.039	-3.179**	-0.676	-0.779
LR3	-0.345	-0.263	0.003	-0.048	-0.313
	-2.869**	-1.628*	0.079	-0.353	-2.219*
	N=2349	N=251	N=200	N=350	N=451
	R-Sq=1.00	R-Sq=0.88	R-Sq=0.99	R-Sq=0.79	R-Sq=0.72
	DW =1.24	DW=1.32	DW=1.78	DW=1.13	DW=1.14

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	All States	MEAN-N/O	MENA-OI	Arab World	MENA
Ψ_l est	0.404	1.871	0.209	1.279	1.426
t-stat	28.11**	25.000**	7.720**	26.44**	24.45**
Ψ_k	0.84E-10	-0.509	-0.355	-1.139	-0.876
	0.232	-0.555	-2.113*	-2.016*	-1.255
Π_m	0.596	-0.755	-0.078	0.368	-0.166
	41.45**	-7.803**	-3.424**	5.827**	-0.035
Ψ_m	0.930	0.165	0.958	0.538	0.136
	18.96**	27.26**	93.65**	7.124**	20.22**
Π_n	-0.675	0.440	-3.955	4.237	3.506
	-2.496**	0.106	-2.749**	1.485	0.925
Ψ_n	-0.205	-1.357	-0.658`	-0.567	-1.279
	-0.302	-0.161	-3.209**	-0.743	-1.322
LR4	0.533	-0.129	0.011	-0.002	-0.149
	0.619	-1.013	0.311	-0.020	1.35
	N=2349	N=251	N=200	N=350	N=451
	R-Sq=1.00	R-Sq=0.88	R-Sq=0.99	R-Sq=0.79	R-Sq=0.72
	DW =1.23	DW=1.30	DW=1.78	DW=1.13	DW=1.12

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	All States	MEAN-N/O	MENA-OI	Arab World	MENA
Ψ_l est	0.404	1.871	0.210	1.278	1.427
t-stat	28.20**	24.94**	7.757**	26.42**	24.42**
Ψ_k	0.78E-10	-0.370	-0.368	-1.13	-0.693
	0.217	-0.403	-2.277*	-2.019*	-1.010
Π_m	0.595	-0.753	-0.078	0.368	0.003
	41.52**	-7.772**	-3.412**	5.834**	0.062
Ψ_m	0.93E-4	0.16E-3	0.958	0.537	0.13E-3
	19.07**	27.05**	94.15**	7.107**	20.03**
Π_n	-0.767	0.971	-3.946	4.188	3.397
	-2.835**	0.234	-2.743**	1.453	0.891
Ψ_n	-0.192E-9	-0.644	-0.647	-0.573	-1.160
	-0.283	-0.394	-3.203**	-0.750	-1.202
LR5	0.274	0.589	-0.016	0.024	0.070
	2.808**	0.326	-0.165	0.125	0.369
	N=2349	N=251	N=200	N=350	N=451
	R-Sq=1.00	R-Sq=0.88	R-Sq=0.99	R-Sq=0.79	R-Sq=0.86
	DW =1.23	DW=1.30	DW=1.78	DW=1.13	DW=1.12

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	All States	MEAN-N/O	MENA-OI	Arab World	MENA
Ψ_l est	0.403	1.872	0.210	1.277	1.426
t-stat	28.11**	24.99**	7.773**	26.44**	24.47**
Ψ_k	0.78E-10	-0.464	-0.370	-1.203	-0.766
	0.217	-0.507	-2.292**	-2.137*	-1.114
Π_m	0.596	-0.755	-0.078	0.370	0.433
	41.55**	-7.797**	-3.408**	5.868**	0.906
Ψ_m	0.93	0.16E-3	0.958	0.55E-4	0.135
	19.01**	27.12**	94.19**	4.210**	20.10**
Π_n	-0.752	1.886	-3.943	5.572	4.541
	-2.771**	0.445	-2.740**	1.745*	1.179
Ψ_n	-0.19E-9	-0.570	-0.649	-0.594	-1.199
	-0.283	-0.349	-3.197**	-0.779	-1.245
LR6	-0.201	-0.160	-0.007	-0.413	-0.323
	-1.971*	-0.704	0.094	-0.927	-1.452
	N=2349	N=251	N=200	N=350	N=451
	R-Sq=1.00	R-Sq=0.88	R-Sq=0.99	R-Sq=0.79	R-Sq=0.72
	DW =1.23	DW=1.30	DW=1.78	DW=1.36	DW=1.28

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	All States	MEAN-N/O	MENA-OI	Arab World	MENA
Ψ_l est	0.403	1.873	0.209	1.277	1.426
t-stat	28.11**	25.00**	7.744**	26.42**	24.40**
Ψ_k	0.814E-10	-0.388	-0.367	-1.124	-0.72
	0.225	-0.425	-2.273**	-2.011*	-1.043
Π_m	0.596	-0.755	-0.769	0.363	0.38E-3
	41.49**	-7.797**	-3.330**	5.723**	0.008
Ψ_m	0.929	0.165	0.958	0.53E-4	0.13E-3
	18.95**	27.01**	94.20**	7.071**	20.08**
Π_n	-0.687	0.767	-3.936	3.963	3.344
	-2.551**	0.185	-2.737**	1.383	0.879
Ψ_n	-0.19E-9	-0.678	-0.668	-0.492	-1.082
	-0.293	-0.415	-3.237*	-0.643	-1.116
LR7	-0.331	0.147	-0.026	0.180	0.143
	-0.286	0.704	-0.488	0.926	0.766
	N=2349	N=251	N=200	N=350	N=451
	R-Sq=1.00	R-Sq=0.88	R-Sq=0.99	R-Sq=0.79	R-Sq=0.72
	DW =1.23	DW=1.30	DW=1.79	DW=1.13	DW=1.12

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	All States	MEAN-N/O	MENA-OI	Arab World	MENA
Ψ_l est	0.403	1.872	0.210	1.278	1.425
t-stat	28.10**	25.03**	7.767**	26.45**	24.49**
Ψ_k	0.949	-0.542	-0.375	-1.186	-0.830
	0.262	-0.588	-2.321*	-2.103*	-1.205
Π_m	0.596	-0.758	-0.772	0.369	0.464
	41.53**	-7.829**	-3.366**	5.847**	0.097
Ψ_m	0.930	0.16E-3	0.958	0.543	0.13E-3
	18.98**	27.07**	94.26**	7.174**	20.09**
Π_n	-0.709	1.912	-3.929	4.588	4.265
	-2.627**	0.458	-2.733**	1.581	1.122
Ψ_n	-0.194	-0.495	-0.654	-0.564	-1.158
	-0.286	0.303	-3.233**	-0.740	-1.205
LR8	-0.122	-0.242	-0.345	-0.179	-0.386
	-1.276	-1.054	0.566	-0.655	-1.862**
	N= 2349	N=251	N=200	N=350	N=451
	R-Sq=1.00	R-Sq=0.88	R-Sq=0.99	R-Sq=0.79	R-Sq=0.72
	DW =1.23	DW=1.30	DW=1.78	DW=1.13	DW=1.13

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	L. America	Africa	Asia	Caribbean
Ψ_l	0.339 17.45**	0.157 2.934**		
Ψ_k	0.57E-6 0.134	0.194 0.178		
Π_m	0.661 33.99**	0.842 15.65**		
Ψ_m	0.95E-4 13.18**	0.10E-3 6.980**		
Π_n	0.007 0.034	-1.732 -2.793**		
Ψ_n	0.756 0.034	0.119 1.253		
LR1	-1.085 -0.594	-0.14E-5 -0.334		
	N=649 R-Sq=1.00 DW = 1.45	N=718 R-Sq=1.00 DW=1.22		

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	L. America	Africa	Asia	Caribbean
Ψ_l	0.340 17.52**	0.162 3.00**	0.183 13.94**	0.277 6.263**
Ψ_k	0.50E-6 0.118	0.961 0.187	-0.173 -2.028**	-0.266 -3.481**
Π_m	0.659 33.93**	0.837 15.53**	0.002 0.325	0.096 2.748**
Ψ_m	0.95E-4 1.3.25**	0.10E-3 6.985**	0.974 118.8**	0.875 24.18**
Π_n	0.050 0.228	-1.769 -2.846**	-91415 -0.330	2258.7 0.3140
Ψ_n	0.050 0.229	0.2E-8 1.248	-1.401 -4.399**	0.129 1.670
LR2	-0.363 -1.346	0.218 0.657	0.001 0.077	-0.746 -0.634
	N=649 R-Sq=1.00 DW = 1.45	N=718 R-Sq=1.00 DW=1.22	N=346 R-Sq=0.99 DW=1.63	N=178 R-Sq=0.97 DW=1.93

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	L. America	Africa	Asia	Caribbean
Ψ_l	0.340 17.53**	0.162 2.99**	0.183 13.94**	0.277 6.263**
Ψ_k	0.49E-6 0.117	0.96E-10 0.187	-0.174 -2.028*	-0.266 -3.481**
Π_m	0.659 33.94**	0.838 15.52**	0.003 0.325	0.096 2.748**
Ψ_m	0.95E-4 13.25**	0.10E-3 6.95**	0.975 118.8**	0.874 24.18**
Π_n	0.052 0.235	-1.765 -2.837**	-91415 -0.330	2258.7 0.314
Ψ_n	0.523 0.235	0.12E-8 1.248	-1.401 -4.399**	0.129 1.670
LR3	-0.378 -1.418	0.158 0.505	0.001 0.077	-0.074 -0.634
	N=649 R-Sq=1.00 DW =1.45	N=718 R-Sq=1.00 DW=1.22	N=346 R-Sq=0.99 DW=1.62	N=178 R-Sq=0.97 DW=1.93

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	L. America	Africa	Asia	Caribbean
Ψ_l	0.339 17.47**	0.159 2.959**	0.183 14.02**	0.27596 6.224**
Ψ_k	0.14E-6 0.032	0.88E-10 0.175	-0.155 -1.857*	-0.267 -3.481**
Π_m	0.660 33.95**	0.841 15.65**	0.003 0.385	0.962 2.744**
Ψ_m	0.95E-4 13.18**	0.10E-3 7.022	0.975 119.5**	0.876 24.21**
Π_n	0.009 0.043	-1.736 -2.798**	-25726 -0.930	2350.2 0.3253
Ψ_n	0.967 0.044	0.12E-8 1.255	-1.449 -4.559**	0.12895 1.672
LR4	0.092 0.548	-0.021 -0.090	-0.023 -1.907*	-0.865 -0.097
	N=679 R-Sq=1.00 DW =1.11	N=718 R-Sq=1.000 DW=1.21	N=346 R-Sq=0.99 DW=1.63	N=178 R-Sq=0.97 DW=1.92

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	L. America	Africa	Asia	Caribbean
Ψ_l	0.340 17.53**	0.158 2.953**	0.182 13.93**	0.257 6.215**
Ψ_k	0.17E-5 0.403	0.920 0.179	-0.169 -2.019*	-0.267 -3.789**
Π_m	0.659 33.89**	0.841 15.67**	0.003 0.328	0.098 2.783**
Ψ_m	0.953 13.25**	0.10E-3 7.042**	0.975 119.1**	0.876 24.23**
Π_n	0.680 0.031	-1.737 -2.803**	-15175 0.054	1580 0.2136
Ψ_n	0.007 0.030	0.20E-8 1.252	-1.551 -4.620**	0.12919 1.676
LR5	0.235 1.377	0.132 0.526	-0.019 -1.378	-0.036 -0.420
	N=649 R-Sq=1.00 DW =1.45	N=718 R-Sq=1.00 DW=1.21	N=346 R-Sq=0.99 DW=1.62	N=178 R-Sq=0.97 DW=1.92

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	L. America	Africa	Asia	Caribbean
Ψ_l	0.339 17.46**	0.158 2.954**	0.183 13.97**	0.275 6.236**
Ψ_k	0.64E-6 0.147	0.81E-10 0.157	-0.166 -1.976*	-0.265 -3.468**
Π_m	0.660 33.98**	0.841 15.68**	0.317 0.344	0.094 2.665**
Ψ_m	0.95E-4 13.17**	0.10E-3 7.032**	0.975 118.9	0.876 24.24**
Π_n	0.863 0.039	-1.638 -2.612**	-94265 -0.3419	3325.1 0.457
Ψ_n	0.008 0.039	0.12E-8 1.260	-1.374 -4.282**	0.127 1.658
LR6	-0.146 0.039	-0.289 -1.038	-0.010 -0.682	-0.064 -0.886
	N=649 R-Sq=1.00 DW=1.44	N=718 R-Sq=1.00 DW=1.22	N=346 R-Sq=0.99 DW=1.64	N=178 R-Sq=0.97 DW=1.92

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	L. America	Africa	Asia	Caribbean
Ψ_l	0.339 17.48**	0.158 2.952**	0.183 13.91**	0.275 6.217**
Ψ_k	0.87E-6 0.206	0.87E-10 0.171	-0.170 -2.095*	-0.266 -3.481**
Π_m	0.660 34.01**	0.841 15.66**	0.312 0.339	0.096 2.747**
Ψ_m	0.94E-4 13.20**	0.10E-3 7.027**	0.974 118.90**	0.876 24.22**
Π_n	0.014 0.063	-1.740 -2.807**	-71887 -0.258	2398.1 0.331
Ψ_n	0.014 0.063	0.12E-8 1.262	-1.422 -4.423**	0.129 1.671
LR7	-0.276 -1.166	0.052 0.205	0.008 0.469	-0.157 -0.158
	N=649 R-Sq=1.00 DW =1.43	N=718 R-Sq=1.00 DW=1.21	N=346 R-Sq=0.99 DW=1.63	N=178 R-Sq=0.97 DW=1.92

* Significant at 0.05 level

** Significant at 0.01 level

Parameter	L. America	Africa	Asia	Caribbean
Ψ_l	0.339 17.45**	0.161 2.994**	0.184 14.04**	0.276 6.236**
Ψ_k	0.60E-6 0.141	0.12E-9 0.228	-0.163 -1.952*	-0.266 -3.468**
Π_m	0.660 33.98**	0.839 15.62**	0.003 0.357	0.095 2.719**
Ψ_m	0.949 13.17**	0.10E-3 7.010**	0.974 119.20**	0.875 24.18**
Π_n	0.008 0.038	-1.688 -2.717**	-99704 0.363	2777.6 0.382
Ψ_n	0.008 0.038	0.12E-8 1.251	-1.337 -4.177**	0.128 1.66
LR8	-0.009 -0.052	-0.223 -1.009	-0.002 -1.517	-0.035 -0.490
	N=649 R-Sq=1.00 DW=1.44	N=718 R-Sq=1.00 DW=1.22	N=346 R-Sq=0.99 DW=1.64	N=178 R-Sq=0.97 DW=1.92

* Significant at 0.05 level

** Significant at 0.01 level

APPENDIX C

**CROSS NATIONAL TIME SERIES ANALYSIS RESULTS WITH EXTERNAL AND
INTERNAL CONFLICTS AS CONTROL VARIABLES – ALL STATES**

Parameter	LR4	LR5	LR6	LR7	LR8
Ψ_l est.	0.403	0.403	0.402	0.402	0.403
t-stat	28.07**	28.16**	28.07**	28.03**	28.06**
Ψ_k	0.08E-10 0.230	0.78E-10 0.218	0.78E-10 0.217	0.842 0.233	0.95E-10 0.262
Π_m	0.597 41.49**	0.597 41.56**	0.598 41.60**	0.597 41.54**	0.597 41.57**
Ψ_m	0.94E-4 19.01**	0.94E-4 19.12**	0.94E-4 19.07**	0.94E-4 19.00**	-0.94E-10 19.04**
Π_n	-0.67E-5 -2.497**	-0.77E-5 -2.831**	-0.75E-5 -2.765**	-0.69E-5 -2.542**	-0.71E-5 -2.620**
Ψ_n	-0.20E-9 -0.299	-0.19E-9 -0.284	-0.19E-9 -0.284	-0.21E-9 -0.304	-0.19E-9 -0.287
LR1	-0.33E-6 -0.108	-0.92E-7 -0.289	-0.68E-6 -0.219	-0.487E-6 -0.157	-0.563E-5 -0.181
LR2	-0.310 -2.442**	-0.313 -2.746**	-0.311 -2.454**	0.319 -2.505**	-0.310 -2.448**
LR4-8	0.050 0.533	0.276 2.817**	-0.201 -1.968*	-0.064 -0.548	-0.119 -1.254
	N=2349 R-Sq=1.00 DW=1.24	N=2349 R-Sq=1.00 DW=1.24	N=2349 R-Sq=1.00 DW=1.24	N=2349 R-Sq=1.00 DW=1.24	N=2349 R-Sq=1.00 DW=1.24

- Significant at 0.05 level
- ** Significant at 0.01 level

**CROSS NATIONAL TIME SERIES ANALYSIS RESULTS WITH EXTERNAL
AND INTERNAL CONFLICTS AS CONTROL VARIABLES – AFRICA**

Parameter	LR4	LR5	LR6	LR7	LR8
Ψ_l est.	0.161	0.160	0.160	0.161	0.163
t-stat	2.983**	2.981	2.976**	2.977**	3.018**
Ψ_k	0.91E-10 0.177	0.95E-10 0.186	0.832E-10 0.162	0.894 0.174	0.12E-9 0.237
Π_m	0.839 15.49**	0.839 15.50**	0.11E-3 6.950**	0.839 15.50**	0.837 15.47**
Ψ_m	0.10E-3 6.929**	0.10E-3 6.944**	1.656 -2.631**	0.10E-3 6.935**	0.103 6.925**
Π_n	-1.759 -2.822**	-1.764 -2.833**	0.12E-8 1.256	-1.766 -2.837**	-1.711 -2.742**
Ψ_n	0.12E-8 1.254	0.119E-8 1.248	-0.18E-5 -0.415	0.12E-8 1.261	0.12E-8 1.246
LR1	-0.15E-5 -0.379	-0.129E-5 -0.292	0.236 0.709	-0.13E-5 -0.350	-0.12E-5 -0.424
LR2	0.220 0.660	0.230 0.689	0.359 0.535	0.228 0.262	0.172 -0.388
LR4-8	-0.034 -0.149	0.139 0.552	-0.308 -1.101	0.067 0.262	-0.234 -1.052
	N=718 R-Sq=1.00 DW =1.22	N=718 R-Sq=1.00 DW =1.22	N=718 R-Sq=1.00 DW =1.22	N=718 R-Sq=1.00 DW =1.22	N=718 R-Sq=1.00 DW =1.22

* Significant at 0.05 level

** Significant at 0.01 level

**CROSS NATIONAL TIME SERIES ANALYSIS RESULTS WITH EXTERNAL
AND INTERNAL CONFLICTS AS CONTROL VARIABLES – ASIA**

Parameter	LR4	LR5	LR6	LR7	LR8
Ψ_l est.	0.183	0.183	0.184	0.183	0.184
t-stat	13.98**	13.92**	13.94**	13.89**	14.01**
Ψ_k	-0.153	-0.178	-0.164	-0.179	-0.151
	-1.774*	-2.079*	-1.89*	-2.071**	-1.747*
Π_m	0.036	0.003	0.003	0.003	0.003
	0.391	0.308	0.349	0.335	0.387
Ψ_m	0.975	0.975	0.974	0.975	0.975
	119.3**	118.9**	118.7*	118.7**	119.00**
Π_n	-20629	-19812	-91519	-74542	-91919
	-0.074	-0.070	-0.330	-0.267	-0.3327
Ψ_n	-1.449	-1.568	-1.372	-1.423	-1.325
	-4.553**	-4.644**	-4.268**	-4.418**	-4.121**
LR1	-0.003	0.008	-0.002	0.002	-0.006
	-0.173	0.515	-0.115	0.125	-0.377
LR2	-0.003	0.008	-0.002	0.002	-0.006
	-0.173	0.515	0.535	0.125	-0.377
LR4-8	-0.238	0.008	-0.010	0.008	-0.025
	-1.910*	0.515	-0.687	0.479	-1.601
	N= 347	N= 347	N= 347	N= 347	N= 347
	R-Sq=0.99	R-Sq=0.99	R-Sq=0.99	R-Sq=0.99	R-Sq=0.99
	DW =1.63	DW =1.63	DW =1.63	DW =1.63	DW =1.63

* Significant at 0.05 level

** Significant at 0.01 level

**CROSS NATIONAL TIME SERIES ANALYSIS RESULTS WITH EXTERNAL
AND INTERNAL CONFLICTS AS CONTROL VARIABLES – MENA**

Parameter	LR4	LR5	LR6	LR7	LR8
Ψ_l est.	1.422	1.437	1.422	1.424	1.422
t-stat	24.61**	24.58**	24.62**	24.57**	24.64**
Ψ_k	-1.924	-0.748	-0.797	-0.748	-0.857
	-1.335	-1.093	-1.168	-1.096	-1.254
Π_m	-0.002	0.003	0.004	0.225	0.004
	-0.050	0.064	0.086	0.047	0.093
Ψ_m	0.14E-3	0.14E-3	0.14E-3	0.13E-3	0.14E-3
	20.38**	20.14**	20.27**	20.19**	20.28**
Π_n	0.394	0.675	1.471	0.655	1.081
	0.097	0.166	0.361	0.162	0.268
Ψ_n	-0.899	-0.757	-0.816	-0.743	-0.785
	-0.927	-0.783	-0.845	-0.776	-0.815
LR1	-0.44E-5	-0.41E-5	-0.433E-5	-0.40E-5	-0.45E-5
	-2.251*	-2.083*	-2.219*	-2.058*	-2.289*
LR2	-0.382	-0.396	-0.373	-0.391	
	-2.625**	-2.341*	-2.206*	-2.293*	-2.111*
LR4-8	-0.163	0.410	-0.319	0.038	-0.383
	-1.474	0.022	-1.440	0.0204	-1.839*
	N=451	N=451	N=451	N=451	N=451
	R-Sq=0.72	R-Sq=0.72	R-Sq=0.72	R-Sq=0.72	R-Sq=0.72
	DW =1.16	DW =1.15	DW =1.16	DW =1.14	DW =1.16

* Significant at 0.05 level

** Significant at 0.01 level

**CROSS NATIONAL TIME SERIES ANALYSIS RESULTS WITH EXTERNAL
AND INTERNAL CONFLICTS AS CONTROL VARIABLES – LATIN**

AMERICA

Parameter	LR4	LR5	LR6	LR7	LR8
Ψ_l est.	0.341	0.342	0.340	0.341	0.340
t-stat	17.50**	17.560**	17.49**	17.52**	17.49**
Ψ_k	0.18E-6	0.16E-5	0.54E-6	0.83E-6	0.67E-6
	0.042	0.383	0.124	0.196	0.157
Π_m	0.659	0.658	0.659	0.659	0.659
	33.87**	33.81**	33.89**	33.92**	33.88**
Ψ_m	0.95E-4	0.96E-4	0.95E-4	0.95E-4	0.95E-4
	13.21**	13.28**	13.20**	13.24**	13.21**
Π_n	0.49E-9	0.045	0.049	0.058	0.055
	0.219	0.202	0.223	0.262	0.246
Ψ_n	0.049	0.045	0.050	0.058	0.055
	0.220	0.202	0.223	0.262	0.246
LR1	-1.105	-1.261	-1.083	-1.054	-1.114
	-0.605	-0.690	-0.592	-0.578	-0.609
LR2	-0.349	-0.338	-0.362	-0.388	-0.360
	-1.284	-1.252	-1.336	-1.433	-1.330
LR4-8	0.070	0.223	-0.007	-0.300	-0.046
	0.414	1.339	0.172	-1.263	-0.567
	N=694	N=694	N=694	N=694	N=694
	R-Sq=1.00	R-Sq=1.00	R-Sq=1.00	R-Sq=1.00	R-Sq=1.00
	DW =1.45	DW =1.45	DW =1.45	DW =1.44	DW =1.45

* Significant at 0.05 level

** Significant at 0.01 level

**CROSS NATIONAL TIME SERIES ANALYSIS RESULTS WITH EXTERNAL
AND INTERNAL CONFLICTS AS CONTROL VARIABLES – CARIBBEAN**

Parameter	LR4	LR5	LR6	LR7	LR8
Ψ_l est.	0.277	0.277	0.277	0.277	0.278
t-stat	6.240**	6.227**	6.225**	6.235**	6.261**
Ψ_k	-0.267	-0.267	-0.265	-0.267	-0.565
	-3.471**	-3.477**	-3.459**	-3.471**	-3.456**
Π_m	0.096	0.098	0.093	0.096	0.095
	2.736**	2.754**	2.656**	2.737**	2.703**
Ψ_m	0.875	0.875	0.874	0.875	0.873
	24.09**	24.11**	24.12**	24.09**	24.04**
Π_n	2293.5	1719.80	3278	2358.1	2841.5
	0.3168	0.2319	0.449	0.325	0.3905
Ψ_n	0.128	0.129	0.127	0.128	0.127
	1.666*	1.670*	1.653*	1.666*	1.652*
LR1	-0.074	-0.068	-0.072	-0.074	-0.085
	-0.627	-0.568	-0.618	-0.631	-0.712
LR2	-0.074	-0.068	-0.072	-0.074	-0.085
	-0.627	-0.568	-0.618	-0.631	-0.712
LR4-8	-0.005	-0.027	-0.063	-0.015	-0.043
	-0.059	-0.314	-0.873	-0.149	-0.587
	N=178	N=178	N=178	N=178	N=178
	R-Sq=0.97	R-Sq=0.97	R-Sq=0.97	R-Sq=0.97	R-Sq=0.97
	DW =1.93	DW =1.93	DW =1.93	DW =1.93	DW =1.93

* Significant at 0.05 level

** Significant at 0.01 level

VITA

Riad A. Attar

Home:

24245 Wilderness
Oak, Apt 209
San Antonio, Texas, 78258
(210) 497-6386 Home
(210) 488-0569
attarriad@hotmail.com

Academic History:

2006	Ph.D., Political Science, Texas A&M University
1997	M.A., Political Science, Midwestern State University, Wichita Falls, Texas
1992	B.S., Physics, Yarmouk University, Jordan
1988	B.S., Electrical Engineering, Far Eastern University, Manila, Philippines

Courses Taught at Texas A&M University

Introduction to International Politics (POLS 331)
Political Economy of the Middle East (POLS 306)
Teaching Evaluation Scores: 4.69, and 4.86 (on a 5 point scale)

Awards and Grants

1996 Award of the National Council of US Arab Relations for outstanding, debate, and representation conducted at Southwest Texas State University, San Marcos, Texas

1996 Awarded a \$ 1,000 scholarship from Midwestern State University, Wichita Falls, Texas.

1998 Awarded a \$ 1000 from the graduate studies program at the University of North Texas based on academic performance.

Conference Paper

The Determinants of the Liberalization Process in the Middle East. Presented at the Annual International Studies Association Meeting, March, 2002, New Orleans, LA.