

---

Theses and Dissertations

---

2013

# Variations in homicide: assessing the effects of inward foreign direct investment and international non-governmental organizations on cross-national homicide rates

Philip John Levchak  
*University of Iowa*

Copyright 2013 Philip John Levchak

This dissertation is available at Iowa Research Online: <http://ir.uiowa.edu/etd/1871>

---

## Recommended Citation

Levchak, Philip John. "Variations in homicide: assessing the effects of inward foreign direct investment and international non-governmental organizations on cross-national homicide rates." PhD (Doctor of Philosophy) thesis, University of Iowa, 2013. <http://ir.uiowa.edu/etd/1871>.

---

Follow this and additional works at: <http://ir.uiowa.edu/etd>



Part of the [Sociology Commons](#)

VARIATIONS IN HOMICIDE: ASSESSING THE EFFECTS  
OF INWARD FOREIGN DIRECT INVESTMENT AND  
INTERNATIONAL NON-GOVERNMENTAL  
ORGANIZATIONS ON CROSS-NATIONAL  
HOMICIDE RATES

by

Philip John Levchak

A thesis submitted in partial fulfillment of the  
requirements for the Doctor of Philosophy  
degree in Sociology in the Graduate College of  
The University of Iowa

August 2013

Thesis Supervisor: Professor Karen Heimer

Copyright by

PHILIP JOHN LEVCHAK

2013

All Rights Reserved

Graduate College  
The University of Iowa  
Iowa City, Iowa

CERTIFICATE OF APPROVAL

---

PH.D THESIS

---

This is to certify that the Ph. D. thesis of

Philip John Levchak

has been approved by the Examining Committee for the thesis requirement for the Doctor of Philosophy degree in Sociology at the August 2013 graduation.

Thesis Committee:

\_\_\_\_\_  
Karen Heimer, Thesis Supervisor

\_\_\_\_\_  
Kevin T. Leicht

\_\_\_\_\_  
Michael Sauder

\_\_\_\_\_  
Joseph B. Lang

\_\_\_\_\_  
Richard Rosenfeld

## ACKNOWLEDGMENTS

I would like to thank my wife, Charisse, for her love and support throughout this process. I would also like to thank my advisor, Dr. Karen Heimer, for her guidance and support throughout graduate school. Finally, I would like to thank Dr. Joseph Lang, Dr. Kevin Leicht, Dr. Michael Sauder, and Dr. Richard Rosenfeld for their support and assistance through the dissertation process.

## ABSTRACT

Modernization theorists posit that rapid economic development can produce increased rates of homicide (Durkheim 1951 [1897]; 1984 [1902]; 1997 [1893]; Shelley 1981). As nations develop, individuals migrate to regions that have greater opportunities for employment. Here, they may experience conflicting norms, a lack of adequate housing and education, and possible underemployment. While modernization theory has been tested extensively, it has not accounted for the way in which nations currently develop. Many nations are recipients of inward foreign direct investment. This form of investment, by multi-national corporations, has produced economic growth, inequality, and urbanization in many countries (Bengoa and Sanchez-Robles 2003; Blomström et al. 1994; Campos and Kinoshita 2002; Sit and Yang 1997). These correlates, economic growth, inequality, and urbanization, have all been linked to homicide (Cole and Gramajo 2009; Nivette 2011).

In an examination of up to 62 nations, inward foreign direct investment is found to promote urbanization and inequality. In separate analyses, urbanization is found to increase homicide – suggesting that foreign investment may produce homicide by increasing urbanization.

Several scholars have suggested that a strong civil society can mitigate societal ills (Currie 1997; Messner and Rosenfeld 1997). Analyses show that a

strong civil society, represented by the presence of international-non-governmental organizations, is associated with decreased rates of homicide.

The results suggest that nations should be cautious when receiving foreign investment. City infrastructure should be monitored to keep up with the needs of a rapidly growing population. International organizations that deal with issues of rapid growth, including those that provide access to housing and education and those that work at reducing inequality and poverty, should be sought after.

## TABLE OF CONTENTS

LIST OF TABLES .....	viii
LIST OF FIGURES .....	ix
CHAPTER	
I. INTRODUCTION .....	1
1.1 Statement of the Problem .....	1
1.1.1 Modernization Theory's Missing Link .....	2
1.1.2 Why we need to look at Civil Society .....	6
1.2 Research Strategy .....	7
1.3 Plan of Dissertation .....	8
II. HOMICIDE AND MODERNIZATION – TRENDS, EXPLANATIONS, AND EMPIRICAL ANALYSES .....	12
2.1 Trending Patterns of Crime and Modernization .....	13
2.1.1 Early European Patterns of Crime and Modernization .....	13
2.1.2 20 <sup>th</sup> Century Patterns of Crime and Modernization .....	17
2.2 Homicide as a Response to Modernization .....	21
2.2.1 Disparate Expectations of the Relationship between Development and Homicide .....	22
2.2.2 Stages of Development .....	25
2.2.3 The Collective Consciousness and Mechanical and Organic Society and Solidarity .....	28
2.2.4 Development and Homicide .....	34
2.2.5 Rate of Development and Homicide .....	37
2.2.6 Shelley's Modernization Theory .....	40
2.2.7 Empirical Research on Modernization Theory .....	44
2.2.8 Cross-Sectional Research on Modernization Theory .....	48
2.2.9 Longitudinal Research on Modernization Theory .....	50
2.3 Alternative Theories to Explain Cross-National Variation in Homicide .....	52
2.3.1 Ecological/Opportunity Theory .....	53
2.3.2 Deprivation and Economic Stress Theory .....	56
2.3.3 Other Cultural and Structural Perspectives .....	58
2.4 Weakness of Existing Studies and Conclusions .....	64



III. FOREIGN DIRECT INVESTMENT – WHAT IS IT AND HOW IS IT RELEVANT TO HOMICIDE? .....	68
3.1 What is Inward Foreign Direct Investment? .....	68
3.2 Trends in Inward Foreign Direct Investment .....	74
3.3 The Relationship between Inward Foreign Direct Investment and Economic Growth .....	77
3.3.1 Firm-Level Analyses .....	78
3.3.2 Macro-Level Analyses .....	81
3.4 The Relationship between Inward Foreign Direct Investment and Inequality .....	88
3.5 The Relationship between Inward Foreign Direct Investment and Urbanization .....	94
IV. INTERNATIONAL NON-GOVERNMENTAL ORGANIZATIONS (INGOS) – THE RELATIONSHIP BETWEEN INGOS AND HOMICIDE .....	99
4.1 Defining INGOs and Civil Society .....	99
4.2 INGO Trends and Examples of INGO Activities .....	104
4.2.1 INGOs over Time .....	105
4.2.2 INGO Activities .....	109
4.2.3 Case Study: ATD Fourth World .....	112
4.3 Empirical Studies of INGOs .....	117
V. DATA AND METHODS .....	120
5.1 Hypotheses .....	120
5.2 Dependent Variable: Homicide Rate per 100,000 .....	124
5.3 Independent Variables .....	128
5.3.1 Inward Foreign Direct Investment (FDI) per capita .....	129
5.3.2 International Non-Governmental Organizations (INGOs) per Capita .....	130
5.3.3 Gross Domestic Product (GDP) per capita .....	131
5.3.4 Urban Population .....	132
5.3.5 Income Inequality .....	132
5.3.6 Age Structure .....	135
5.3.7 Female Labor Force Participation .....	136
5.3.8 Percent Female .....	136
5.3.9 Democracy Scale .....	136

5.3.10 Political Terror Scale . . . . .	137
5.3.11 Population Density . . . . .	138
5.3.12 Percent in Agriculture . . . . .	138
5.4 Analytic framework . . . . .	140
5.4.1 Specific Estimation Methods . . . . .	143
5.4.1.1 Arellano and Bond Estimator . . . . .	147
VI. RESULTS AND DISCUSSION . . . . .	150
6.1 Results . . . . .	150
6.1.1 Homicide . . . . .	150
6.1.2 Economic Growth . . . . .	154
6.1.3 Inequality . . . . .	156
6.1.4 Urbanization . . . . .	159
6.1.5 Interactions . . . . .	159
6.2 Discussion . . . . .	166
VII. CONCLUSION . . . . .	175
7.1 Summary . . . . .	175
7.2 Limitations . . . . .	183
7.3 Recommendations for Future Research . . . . .	185
7.4 Policy Implications . . . . .	188
REFERENCES . . . . .	192
APPENDIX A. Cross-National Homicide Studies including Measures of GDP or Economic Growth . . . . .	210
APPENDIX B. Summary of Cross-National Homicide Studies and the Relationship with GDP, Development, and Urbanization . . . . .	223
APPENDIX C. Nations in Analyses . . . . .	227
APPENDIX D. List of International Non-Governmental Organizations . . . . .	228

## LIST OF TABLES

### Table

1. Descriptive Statistics 1993-2005 .....	139
2. Chi-Square and F-Tests for Heteroscedasticity and Serial Correlation .....	144
3. Estimates of WIID Cross-National Homicide Rates – 1993-2005 .....	151
4. Estimates of EHII Cross-National Homicide Rates – 1993-2005 .....	152
5. Arellano-Bond Estimates of Economic Growth .....	155
6. Arellano-Bond Estimates of WIID Inequality .....	157
7. Arellano-Bond Estimates of Urbanization .....	158
8. PCSE Interaction Models .....	161
9. Effect sizes of Homicide and Arellano-Bond Estimates .....	171
10. Percent Changes in Key Covariates for Similar Nations (1993-2000) ..	182
A1. Cross-National Homicide Studies including Measures of GDP or Economic Growth .....	211
B1. Summary of Cross-National Homicide Studies and the Relationship with GDP, Development, and Urbanization .....	224

## LIST OF FIGURES

### Figure

1. Inward Foreign Direct Investment (1970-2011) in Trillions of Dollars . . 76
2. International Non-Governmental Organizations (1985-2004) –  
Thousands . . . . . 107
3. International Non-Governmental Organizations per 100,000  
(1985-2004) . . . . . 108
4. Effect of INGOs on Homicide at varying Levels of Inequality . . . . . 162
5. Effect of INGOs on Homicide at varying Levels of GDP . . . . . 163
6. Effect of INGOs on Homicide at varying Levels of Urbanization . . . . . 164

## CHAPTER I

### INTRODUCTION

#### 1.1 Statement of the Problem

Between 1985 and 2000, a number of nations saw dramatic decreases in violent crimes such as homicide. Developed nations, including the United States and the United Kingdom, experienced reductions in their homicide rate of up to 50%. During that same period, however, many developing nations saw 100-200% *increases* in their homicide rate. These observations produce two questions: (1) why have many developing nations been enduring elevated rates of homicide and (2) what can be done to decrease the number of homicides occurring in all nations? To answer these questions, I argue that economists and criminologists have been studying separate components of what should be a unified whole – all the while ignoring a crucial link.

I address this link by examining the effects of inward foreign direct investment (FDI) and the presence of international non-governmental organizations (INGOs) on cross-national homicide rates. While inward FDI increases economic growth and improves the well-being of a nation's citizens, rapid increases of inward FDI and rapid economic growth can have the unintended consequence of raising a nation's homicide rate. While previous

criminological studies have examined a number of determinants of homicide – including income inequality, ethnic heterogeneity, and age structure – none have considered how the globalized nature of economic investment can inadvertently increase homicide while spurring economic growth. While economic growth can be detrimental in this respect, one approach by which a nation may protect against increased rates of homicide is by promoting the establishment of INGOs.

### *1.1.1 Modernization Theory's Missing Link*

The link between economics and criminology can be bridged by incorporating the global nature of development into the existing sociological theory of modernization set forth by Durkheim (1951 [1897]; 1984 [1902]; 1997 [1893]) and expanded on by Shelley (1981). To date, several studies have used modernization theory to explain variation in cross-national homicide rates (Messner 1980; Shelley 1981; Ortega et al. 1992; Huang 1995). Modernization theorists suggest that rapid economic development produces a period of violent criminal activity that later declines as the developmental trajectory of a nation continues.

Durkheim (1951 [1897]) further argues that rapid economic growth can produce a state of normlessness where 'traditional rules have lost their authority... [a] state of deregulation' (253). In this state, normative expectations of appropriate behavior exist in a state of confusion. A society 'disturbed by

some painful crisis or by a beneficent but abrupt transition is momentarily incapable of exercising [restraint]' (Durkheim 1951 [1897]: 252). Thus, in the case of an abrupt transition such as rapid economic growth, a temporary state of normlessness can arise. This state is produced by the disruption of traditional forms of informal social control that occurs as individuals – including large numbers of youth – migrate from rural to urban areas and as greater numbers of women join the labor force. In this new environment, individuals lack the social support and kinship networks that they were previously familiar with. Furthermore, they may lack the necessary monetary resources to acclimate to a new environment (Shelley 1981). Weakened social control, an absence of social support networks and community ties, reduced parental supervision, and a lack of monetary resources free individuals to engage in criminal activities such as homicide (Hirschi 1969). The resulting state of normlessness is temporary, lasting until new norms are absorbed, new social networks are created, and new resources are acquired (Shelley 1981).

One potential catalyst of rapid economic growth is inward foreign direct investment. While Durkheim (1951 [1897]; 1984 [1902]; 1997 [1893]) witnessed the effects of economic development/industrialization during the nineteenth century, when nations developed in relative independence of one another – or through colonial expansionism, he was unable to anticipate the nature of

globalized economic trade that occurs today. Over the last several decades, trans-national corporations have invested in the corporations and infrastructures of foreign economies – this is inward foreign direct investment.

A brief glance at the data on inward FDI and homicide suggests a link between the two. Brazil, for example, received 1.5 billion U.S. dollars in FDI and had a homicide rate of 14 per 100,000 in 1985. By 2000, Brazil received 32 billion in FDI and had a homicide rate of 26 per 100,000. Worldwide, inward FDI flows increased from approximately 10 billion U.S dollars in 1970 to over 1.3 trillion in 2000. Between 1998 and 1999 alone, inward FDI flows increased by approximately 68 percent. Economists have found support for the proposition that inward FDI produces rapid economic growth. For higher income developing nations, Blomström et al. (1994) found the ratio of inward FDI to gross domestic product in a five year period to be associated with economic growth in the following five year period. Campos and Kinoshita (2002) found a strong, positive association between inward FDI and economic growth for Central and Eastern European nations and for nations that were formerly part of the Soviet Union, while Balasubramanayam et al. (1996) found that inward FDI produced rapid economic growth in nations with strong export policies.

Inward FDI can also affect cross-national homicide rates by increasing inequality – which is consistently found by criminologists to predict homicide.



Because corporations from foreign nations tend to pay higher wages than domestic firms, they tend to attract the most educated and productive employees. This leaves less qualified or poorly qualified employees to work in domestic firms. The result is stagnant or lower wages paid to employees of domestic firms – termed negative spillover (Lipsev and Sjöholm 2005).

In addition to promoting economic growth and increasing inequality, inward FDI can also increase urbanization (London and Smith 1988; De Gregorio 1992; Blomström et al. 1994; Balasubramanyam et al. 1996; Sit and Yang 1997; Borensztein et al. 1998; Alderson and Nielsen 1999; Alfaro et al. 2000; Kentor 2001; Beer and Boswell 2002; Carkovic and Levine 2005; Hermes and Lensink 2003; Li and Liu 2004; Zhu et al. 2012).

These three factors have been associated with homicide in tests stemming from the modernization perspective – as well as from other criminological perspectives (Durkheim 1951 [1897]; 1984 [1902]; 1997 [1893]; Wolf 1971; Shelley 1981; Conklin and Simpson 1985; Bennett 1991; Ortega et al. 1992; Neumayer 2003; Pratt and Godsey 2003; Van Wilsem 2004; Chamlin and Cochran 2006; Cole and Gramajo 2009; Nivette 2011). It follows that an examination of FDI in a study of cross-national homicide makes good theoretical sense, particularly considering the global nature of economic trade and development. No current studies, however, examine this link. This research addresses the deficiency.

### 1.1.2 *Why we need to look at Civil Society*

In addition to identifying a potential cause of homicide – foreign direct investment – this dissertation also addresses ways to decrease the number of homicides occurring across nations. Sociologists have suggested that a strong civil society is fundamental in addressing moral issues such as poverty, inequality, and social integration – issues that are unintended consequences of inward FDI (Wolfe 1989; Boli and Thomas 1997; Currie 1997; Shandra et al. 2004; Shandra 2007; Jorgenson 2009; Wright and Rogers 2011). One indicator of a strong civil society is the degree to which international non-governmental organizations (INGOs) are present in a nation.

Often, the goal of INGOs is to improve the lives of individuals by changing elements of the economic or political structure. This can happen by engaging in collaborative efforts with national governments, by bringing certain issues to the attention of national governments, or by taking legitimate, non-violent action against national governments (Shandra et al. 2004). Other INGOs focus on grass-roots methods that help individuals find employment and housing. Some advocate for political change by attempting to introduce legislation that will provide cash transfers to individuals living in poverty. Still others work to improve education and skills training so that individuals can gain access to better job opportunities. In some instances, INGOs focus on providing

micro-financing to those who are unable to receive loans from banking institutions (Sparr and Moser 2007).

INGOs that attempt to address the negative consequences of rapid economic change are those that seek to reduce poverty and inequality, those that help individuals find housing, and those that promote social inclusion. Because there is a logical connection between INGOs and reduced levels of violence, it is important to test this relationship empirically. Again, no previous study of cross-national homicide has examined this link.

## **1.2 Research Strategy**

The first step in examining the relationship between inward foreign direct investment, international non-governmental organizations, and homicide was to obtain the data. Data was gathered from a variety of sources, including the World Health Organization, the United Nations, and the World Bank. Homicide data was collected from the World Health Organization, while inward foreign direct investment and a number of control variables were collected from the World Bank. Data on the number of INGOs in each nation was available from the *Yearbook of International Associations*. The *Yearbook of International Associations* has been collecting information on the number of INGOs around the world since 1910. Data from this source was gathered from annual texts that are publically available.

To empirically test the relationship between inward FDI, INGOs, and homicide, a series of time-series cross-sectional (TSCS) models are estimated. The TSCS data consists of observations for multiple nations over multiple years. Because the data contains both discrete geographic units and a time component, heteroscedasticity and autocorrelation are two issues that needed to be dealt with. Panel-corrected standard errors (PCSE) were used to correct for this (Beck 2001). Pooled OLS, feasible generalized least square (FGLS), fixed-effects, and random-effects estimation methods were then compared. For models with persistent autocorrelation, the lagged dependent variable was included as an independent variable (Arellano and Bond 1991).

### **1.3 Plan of Dissertation**

Chapter II of the dissertation begins with a discussion of historical crime trends – specifically examining the trends within the context of national development and industrialization trajectories. Next, I present a detailed review of Durkheim’s (1951 [1897]; 1984 [1902]; 1997 [1893]) writing on social and economic change and homicide. Although I draw primarily from *Suicide*, *The Division of Labor in Society*, and *Professional Ethics and Civic Morality*, I also address important articles on modernization theory that were influenced by or are expansions of the Durkheimian perspective (e.g. Shelley 1981). Most important to the research undertaken in this dissertation, I focus on how economic change

at the macro-level can increase urbanization and reduce social integration. I also address how these consequences of economic growth can impact homicide rates.

Chapter II concludes with a literature review of studies attempting to explain homicide from a cross-national perspective. I review cross-national theories of criminality including, institutional anomie theory, cultural theory, ecological/opportunity theory, relative deprivation/economic stress theory, and modernization theory. I note the significant findings from each and suggest that modernization theory (Durkheim 1951 [1897]; 1984 [1902]; 1997 [1893]) and the impact of rapid economic change and development on homicide rates has not received adequate attention. Chapter II concludes with hypotheses derived from modernization theory.

Chapter III develops the argument that cross-national studies of homicide should include a measure of economic globalization. I argue that inward foreign direct investment is an important correlate of homicide. Chapter III begins by defining FDI and evaluating historical changes in foreign direct investment inflows. Chapter III also explicates three mechanisms through which inward FDI can impact homicide: 1.) by increasing economic growth; 2.) by increasing inequality; and 3.) by increasing urbanization. These three mechanisms are theorized as important correlates of homicide. Chapter III concludes with hypotheses relating FDI to various outcomes.

Chapter IV discusses ways that homicide rates can be reduced. I argue that the presence of international non-governmental organizations is a key component of a strong civil society. When they focus on reducing poverty and inequality through provisions of social welfare and inclusion, they have the potential to lessen homicide. Chapter IV provides a definition of INGOs and civil society. It then traces the trend of INGO presence and formation over time. Next, the activities of INGOs are discussed. A case study of ATD Fourth World – an international non-governmental organization – is presented to illustrate how their activities can result in reduced rates of homicide. Chapter IV concludes by examining the empirical relationship between INGOs and various societal outcomes and discussing several hypotheses.

Chapter V describes the data and methods. It describes the dependent variables and the independent variables used in the longitudinal analyses. It concludes by describing the models and estimation methods – pooled OLS, feasible generalized least squares, panel corrected standard errors, fixed effects, and random effects – used in the analyses. It also describes the Arellano-Bond estimator and explains why it was used in models that have high levels of autocorrelation.

Chapter VI presents a discussion of the empirical results from the analyses of Chapter V. Tables of results are presented and the results are highlighted in terms of the hypotheses derived throughout the dissertation.

Chapter VII concludes the dissertation with a summary of the main findings and a discussion of how they relate to the theory and hypotheses. It also includes limitations, policy recommendations, and directions for future research.

No previous study has examined the relationships addressed in this dissertation. The research outlined above will provide policymakers and scholars with a better understanding of the negative and unintended consequences of inward FDI, rapid economic growth, inequality, and urbanization. It will also provide scholars and policymakers with a potential way to reduce homicide.

## CHAPTER II

### HOMICIDE AND MODERNIZATION – TRENDS, EXPLANATIONS, AND EMPIRICAL ANALYSES

The relationship between crime and modernization has been studied by scholars since the beginning of the industrialization process (Engels 1845; Tarde 1890; Durkheim 1951 [1897]; 1984 [1902]; 1997 [1893]). The industrial revolutions of nineteenth century Europe – particularly those of France, England, and Germany – provided scholars such as Engels, Durkheim, and Tarde with the unique opportunity to observe massive historical transformations as they were occurring. Witnessing the rapid industrialization and urbanization that was spreading throughout Europe, Marx, Durkheim, and other scholars of the time sought to explore the consequences of such dramatic change. While we have ultimately seen the benefits for nations that have industrialized, including better nutrition, lower rates of infant mortality, and higher life expectancies for both males and females (see Firebaugh and Beck 1994; Brady et al. 2007), the process of modernizing is inherently disruptive to social life. It brings with it the mass migration of individuals from rural to urban settings, the weakening or loss of social support networks, the emergence of conflicting social norms, and the potential for a lack of adequate employment and housing within the urban



environment (Shelley 1981). These correlates of modernization led scholars of the period to recognize the negative, unintended consequences that accompanied development – including suicide, theft, and violent crimes of assault and homicide. Subsequent scholars have explicated the causal mechanisms linking development with homicide, and they have empirically tested the tenets of what is commonly referred to as modernization theory (Shelley 1981; Neuman and Berger 1988; Bennett 1991; Ortega et al. 1992; Huang 1995; Neapolitan 1997).

## **2.1 Trending Patterns of Crime and Modernization**

### *2.1.1 Early European Patterns of Crime and Modernization*

While current scholars have conducted extensive studies on long term crime trends (see Beattie 1974; Gurr 1981; Eisner 2003), the first-hand accounts of those writing during the Industrial Revolution – or shortly thereafter – constitute the starting point of academic thought on modernization and crime. Writing in 1845, Engels decried the criminality that diffused through English life, ultimately attributing it to the industrialization process, urbanization, and the concomitant lack of adequate residential living space. Through an examination of England's criminal tables provided by its Home Secretary, he observed an increase of over 700 percent in the number of arrests for criminal offences during the period of 1805-1842. Although the rate of arrest for criminal offenses increased throughout

England during this period, a disproportionate number of the arrests took place in the Lancashire and Middlesex districts – largely urban areas. When looking at only violent offences against the person, Engels found further evidence that criminality was more prevalent in urban areas. At a rate of 1 arrest per 1043 individuals, agricultural districts had a lower average rate of arrest than did manufacturing districts at a rate of 1 per 840 individuals. These higher arrest rates in urban areas – particularly the Middlesex district that contained London within its boundaries – coupled with the rapid increase in the number of arrests for criminal offenses, led Engels to conclude that crimes against property and the person were a damaging byproduct of English industrialization and growth in urban populations.

Outside of England, Durkheim reached similar conclusions, attributing increases in criminality on the European mainland to the industrialization process. Characterized by periods of rapid economic advancement and mass urbanization, French industrialization birthed dramatic increases in criminality of all types. At the time of his writing, Durkheim noted that official statistics from the beginning of the nineteenth century showed increases in French criminality of nearly 300 percent. Meanwhile, Engels noted that Belgian society was also becoming increasingly criminal as it developed during the mid-nineteenth century.

In a contemporary study of historical crime trends, Zehr (1975) noted that violent crimes of homicide and assault increased in Germany and France during the early stages of industrialization. These increases in criminality paralleled the migration of individuals from rural to urban environments. After initial spikes in each nation, however, the rate of violent criminal offending began to fall. Germany experienced a rise in violent crime for several decades following 1880, while French society exhibited dramatic increases prior to 1870. Once the industrialization process reached its later stages and urbanization stabilized, the rates of offending dropped off.

While the previous studies support the proposition that criminality increases with industrialization, several analyses show long-term declines in rates of violent offending – suggesting an overall inverse relationship between modernization and homicide (Beattie 1974; Gurr 1981; Eisner 2003). Reporting on the works of several scholars, Eisner (2003) notes the presence of a long-term decline in violent offending throughout most of Europe between the sixteenth and twentieth centuries. Such a trend suggests the opposite of what Engels and Durkheim wrote of the increased criminality in England, France, and Belgium during the nineteenth century. These positions, however, are not irreconcilable. Within each nation's individual series of data points, there exists a degree of variation in the overall downtrend. This variation includes both spikes and dips

that can be attributed to measurement error, including unrecorded homicides or poor estimates of population size, as well as actual changes in the commission of violent offenses. Some of this variability can also be attributed to regional conditions such as food shortages, local conflict, or banditry (Eisner 2003).

However, some of the spikes within the trend correspond to periods of emerging industrialization. Averaged national series of homicide rates for England and Wales, Italy, Sweden, and Switzerland show rising rates between 1800 and 1850. Various estimates from local data show a spike in English homicides from 1800 to 1840 (Eisner 2003). In particular, London was found to have unusually high rates of violent crime in the early nineteenth century (Beattie 1974; Gurr 1981).

National data from Sweden indicates increasing homicide between 1800 and 1860, while national data from the Netherlands shows an increasing rate of homicide in the latter half of the nineteenth century (Eisner 2003). Outside of Europe, Russia underwent a period of development during the beginning of the twentieth century. With industrialization, came the related migration of millions to the cities of Moscow and Leningrad. This influx of individuals into already overcrowded cities brought with it high rates of violence – particularly for homicide. Unfortunately, however, the development of Russia cannot be traced in its entirety due to the repression of criminological and other forms of social research (Shelley 1981).

The previous longitudinal studies suggest that industrialization increases urbanization and violent crime. Cross-sectional comparisons, however, allow for the examination of violent crime between nations at different levels of development. Early work by Durkheim and Tarde finds that nations which have already undergone the industrialization process, or are well into it, have lower rates of violent crime and homicide than nations that are beginning to industrialize or have not yet begun the process. By 1880, after the Industrial Revolution had spread through much of Europe, England and Wales, Belgium, France, Germany, the Netherlands, Norway, and Sweden had the lowest rates of homicide. The developing nations of Finland, Greece, Italy, Portugal, Russia, and Spain had much higher rates of homicide. Near the end of the twentieth century, when industrialization had spread through the remainder of Europe, the homicide rates of Greece, Italy, Portugal, and Spain declined to levels similar to those of northern Europe. The homicide rate of Russia remained elevated; however, this would be expected as it had not yet progressed industrially (Eisner 2003; Shelley 1981).

### *2.1.2 20<sup>th</sup> Century Patterns of Crime and Modernization*

The above trends indicate that homicide increases during the beginning stages of the industrialization process. As the process progresses and

development takes root, industrialized nations exhibit lower rates of homicide than developing nations. While this relationship holds during the nineteenth century, can it also be found in the twentieth century? Writing nearly 100 years after Durkheim and Tarde, Shelly (1981) published her seminal book *Crime and Modernization*. In it, she studied whether the relationship between development and crime that manifested during the industrial revolutions of Europe could be found in the developing nations of the twentieth century. Examining countries from all regions of the world, Shelley (1981) was able to compare how crime rates differed between developing and developed capitalist and socialist nations.

The dispersion of violent crime in the mid-twentieth century closely followed the pattern of crime that was exhibited in nineteenth century Europe. During the first half of the 1970s, Shelley (1981) found that developing nations were experiencing average annual increases in overall crime rates of 2.5 percent per year. While developed nations were also experiencing increased rates of crime at this point (1 percent), the year over year percentage increase was higher for developing nations. The distribution in types of crime was also marked. Although developed nations had higher overall rates of crime (2,000 offenses per 100,000) than developing nations (800 offenses per 100,000), the majority of crimes in developed nations were non-violent property offenses (82%). Developing nations exhibited an opposite pattern. In an examination of the 25

countries with the highest rates of homicide in the 1960's, 4 were classified as developed, while 21 were developing. The bulk of the developing nations exhibiting high rates of homicide were located in Latin America and Africa (Shelley 1981). Latin American countries continued to have high rates of homicide through the latter half of the twentieth century (Neapolitan 1994; Shaw et al. 2003; Cole and Gramajo 2009). Like Durkheim, Engels, and Tarde, Shelley (1981) attributed the rise in criminal offending – particularly violent offending – to the increased migration of citizens from rural regions to urban environments. After societies experience the initial upheaval of industrialization and urbanization, a stabilizing process where urbanization slows, overcrowding of urban centers decreases, and crime patterns shift from violent to non-violent occurs. These patterns of developed and developing nations closely follow the patterns of homicide summarized by Eisner (2003).

While the trends previously discussed have been found in capitalist nations, Shelley (1981) improves the rigor of her study by also examining crime in socialist countries. Following World War II, many of the socialist nations of Eastern Europe experienced a period of urbanization and development. Violent crime in Poland increased 250 percent between 1954 and 1963, and violent crime in Bulgaria vacillated between high and low rates from the end of World War II until the latter half of the 1970s. Unfortunately, it is difficult to determine the

root cause of increased violence in the socialist states. Whether it is a response to post-war tension, a reaction to socialist state policy, or a consequence of economic revival following the war, the source of increased crime is difficult to parse out. However, as socialist nations developed, they too underwent periods of declining criminality. By 1975, violent crime in Poland represented less than 6 percent of total crime and was at a level comparable to the early 1950s. Violent crime in East Germany experienced a decline in the 1960s, and violent crime rates in Hungary fell between 1960 and 1976. By 1975, crime in East Germany, Hungary, and Poland was primarily against property. Regardless of the level of development, however, crime rates during the 1960s and 1970s were lower in socialist countries than in capitalist ones. The likely cause of these reduced rates compared to capitalist countries is the large size of police forces in socialist nations and the general repressive nature of the political and social structure (Shelley 1981).

At the close of the twentieth century, there was little change in the distribution of homicide across nations. Average homicide rates between 1980 and 2000 were in excess of 10 per 100,000 inhabitants in South Africa, Swaziland, Jamaica, Lesotho, Albania, the Bahamas, Estonia, the Russian Federation, Guyana, Rwanda, Kazakhstan, and Papua New Guinea – all developing or middle income nations. The Latin American nations of Columbia, Guatemala,



Venezuela, Mexico, Nicaragua, and Peru also had homicide rates above 10 per 100,000 inhabitants. Indeed, the only developed nation with an average homicide rate above the global average was the United States – an issue of concern to many scholars (Messner and Rosenfeld 2001). Developed nations, including the majority of European Union member states and Asian nations such as Japan, had rates of homicide that were lower than the global average (Shaw et al. 2003).

The rates and trends of violent crime discussed above suggest the following general patterns of offending: (1) urbanization and violent crime increase during the initial stages of development; (2) violent crime decreases as the development process progresses; and (3) developed nations have lower rates of violent crime than developing nations. While these patterns provide insight into the relationship between modernization and crime, both violent and non-violent, they lack a rigorous explanation of the causal mechanisms relating development to homicide.

## **2.2 Homicide as a Response to Modernization**

Cross-national studies of homicide often use the concept of modernization to explain variation in homicide rates (Groves et al. 1985; Bennett 1991; Ortega et al. 1992; Li 1995; Liu 2006). Studies that attempt to explain homicide from

alternative theoretical perspectives control for modernization as an important correlate of homicide (Messner 1989; Chamlin and Cochran 2006; Jacobs and Richardson 2008; Stamatel 2009; Schaible and Hughes 2011). While the majority of studies cite and attribute the refinement of modernization theory to Shelley (1981), Durkheim (1951 [1897]; 1984 [1902]; 1997 [1893]) formulated an initial theoretical framework to explain the lower rate of homicide prevalent in developed nations as well as the increased rate of homicide that rapidly developing nations experience. The causal mechanisms linking development to levels of homicide are explicated through Durkheim's (1951 [1897]; 1984 [1902]; 1997 [1893]) writing on the stages of societal development. He also addresses the relationship between the rate of development and homicide, although the causal mechanisms linking these are less refined. Before examining Durkheim's (1951 [1897]; 1984 [1902]; 1997 [1893]) theory of societal development and homicide, several of the misconceptions surrounding the theory must be addressed.

### *2.2.1 Disparate Expectations of the Relationship between*

#### *Development and Homicide*

Emile Durkheim's (1951 [1897]; 1997 [1893]) work on the relationship between societal development and homicide has generated some confusion among academics. According to DiCristina (2004):

When a researcher conducts an empirical study to test a theory, the study can go wrong in at least three general ways. The theory may be misrepresented, methods of data collection may yield incomplete or inaccurate information or methods of data analysis may be misused or misunderstood. To the extent that these problems exist, the study's value is reduced. Moreover, while the first problem may be the least problematic, it is occasionally neglected. Empirical studies of Emile Durkheim's theory of the relationship between societal development and homicide provide an illustration of such neglect (57-58).

This confusion is reflected in the disparate expectations that researchers have for the relationship between societal development and homicide. Several researchers suggest a negative association between societal development and homicide (Quinney 1965; Kick and LaFree 1985; Huang 1995). Under this perspective, development brings about lower homicide rates as the collective conscience of a mechanical society is transformed into a state of moral individualism within organic society. Moral individualism is characterized by a high level of regard given to individual ethics and rights – such as the right to life and property (Durkheim (1951 [1897]; Huang 1995).

Alternatively, some suggest the presence of a positive association between the two (Krohn 1978; Leavitt 1992; Ortega et al. 1992). With increasing levels of development, a society experiences a sudden migration of its population from rural, agrarian areas to urban, industrial ones. Roles and statuses that were traditionally associated with rural life are destroyed with this move (Shelley 1981). Upon relocation to urban centers, individuals are often subject to poverty,

unemployment, increased strain from a lack of social integration, and a lack of social capital. This transition leads to a breakdown in social control and increased rates of crime as old family and community ties and traditional, religious beliefs are weakened or destroyed (Neuman and Berger 1988).

Further complicating empirical tests of Durkheim's theory is the suggestion that there may be no theoretical reason to expect a direct relationship – either positive or negative – between societal development and homicide (Messner 1982). Messner (1982) argues that higher levels of social development bring higher levels of social equality. This should counterbalance the positive effect of development on homicide – producing an overall effect of zero.

Finally, an important component of Durkheim's theory is the *rate* of societal development. Largely ignored by scholars (for exceptions see Bennett 1991; Ortega et al. 1992; Messner et al. 2002), the pace at which society achieves higher levels of development may be an important determinant of homicide rates. When a society changes rapidly, the normative system that characterizes organic society cannot develop at the rate necessary to insure that a lack of social integration – anomie – does not result in increased crime.

Despite these disparate interpretations on the relationship between development and homicide, an evaluation of Durkheim's writings can provide some indication on the expected nature of the relationship between the two.

Although he did not set out a formal theory of homicide or even write at length about the subject, a Durkheimian theory of homicide can be gleaned from three primary works – *Suicide* (1951 [1897]), *Professional Ethics and Civic Morals* (1984 [1902]), and *The Division of Labor in Society* (1997 [1893]). In addition to clarifying the expected nature of the relationship between development and society, they also make evident the importance of examining the relationship between the rate of development and homicide and the relationship between urbanization and homicide.

### 2.2.2 *Stages of Development*

In *The Division of Labor in Society*, Durkheim identifies four stages of societal development: hordes, segmentary societies based upon clans, segmentary societies based upon territories, and organized societies based upon professions (1997 [1893]: 127; 135-137). Commonly, these four stages are reduced down to two – mechanical societies and organic societies. Correspondingly, each form of society is held together by a different form of solidarity – shared living experiences and similarities in terms of morality being ascribed to mechanical solidarity and mutual interdependence upon one another to organic solidarity.

A horde is the most simplistic form of society – it is comprised entirely of like individuals who cannot be differentiated from one another. Durkheim

characterizes its organizational state as that of 'an absolutely homogenous mass whose parts would not be distinguished from one another and consequently [can] not be arranged in any order in relation to one another' (1997 [1893]): 126). Posited as an ideal type, a society that entirely corresponds to the horde does not exist. Durkheim suggests, however, that the social group most closely falling under the rubric of the horde is that of the Iroquois Native American tribe of nineteenth century America. Within the Iroquois tribe, females and males were equal to one another and leaders were accorded no special status – 'all individuals of the same age [were] linked to one another in the same degree of kinship (Durkheim 1997 [1893]): 127). Familial, kinship ties and shared similarities united individuals with one another.

The second stage of development is based upon clans. A horde becomes a clan when it loses its independence and becomes part of a larger group. Just as hordes can aggregate into clans, clans can aggregate into a collection of multiple clans. Within and between clans, individuals consider themselves to be kin to one another – particularly within a clan where blood relationships are present. Much like the horde, these strong familial ties and shared similarities serve to unite members of the clan(s) – their nature as 'homogenous segments similar to one another' (Durkheim 1997 [1893]: 131). Despite this great importance of family ties, there is now significance placed on the ties between the individual

and the body politic. As an aggregate of hordes, the clan can reach significant sizes – up to several thousand members. Because of the large size, clan chiefs are the ultimate unilateral authority of clan society.

Advancing further through the stages of societal development, organization based upon clans is superseded by societies that are based upon territories. These territories develop as the number of individuals encompassed under the society increases and as the common origin of the society's members – the horde – fades. When the relationships that were common within a society comprised of either hordes or clans 'have themselves vanished, the clan has no longer any consciousness of itself save as a group of individuals who occupy the same parcel of territory; [i]t becomes the village proper' (Durkheim 1997 [1893]: 135). Because territories – such as nation states - can cover large land areas of land, 'the ties that arise from living together have not their source so deeply in men's hearts as those arising from blood relationship (Durkheim 1997 [1893]: 136). The importance of organization based upon similarities is weakened as individuals are able to travel freely between various territories where they inevitably encounter those who are dissimilar from themselves. While society is somewhat united by territorial ties at this stage, the mutual inter-dependence of individuals upon one another begins to unite the members of society.

The fourth and final stage of societal development identified by Durkheim (1997 [1893]) is that of a society based upon professions. At this stage, the division of labor develops between territories and regions. The division of labor unites society as individuals come to depend upon one another for their needs. As a simple example, individuals around the world depend upon the laborers of the Ivory Coast to produce cocoa, and individuals throughout the United States depend upon the laborers of the Eastern Appalachians to mine coal. For society to function correctly, each individual must effectively perform his or her duty – while relying on other individuals to do the same.

### *2.2.3 The Collective Consciousness and Mechanical and Organic Society and Solidarity*

Of the preceding four stages of societal development, hordes and segmentary societies based upon clans are held together by mechanical solidarity – they are subcategories of mechanical societies. Segmentary societies based upon territories and organized societies based upon professions are held together by organic solidarity – they are subcategories of organic societies.

Mechanical solidarity is based upon the shared similarities of the members of society. A defining characteristic of mechanical societies is the collective consciousness – a moral phenomenon that expresses the collective



sentiments of society. In *The Division of Labor in Society*, Durkheim (1997 [1893])

writes the following:

The totality of beliefs and sentiments common to the average members of a society forms a determinate system with a life of its own. It can be termed the collective or common consciousness. It is in fact independent of the particular conditions in which individuals find themselves. Individuals pass on, but it abides. It is the same in north and south, in large towns and in small, and in different professions. Likewise, it does not change with every generation but, on the contrary, links successive generations to one another (38-39).

This is the basis of solidarity present in mechanical societies. It is common to most average individuals within society, and it perseveres even as individuals pass on. The collective consciousness, however, is internal to the members of society and cannot be quantified. An external, observable phenomenon must be used as a proxy for it – Durkheim (1997 [1893]) suggests the law as a suitable symbolization of the strongest held collective sentiments. Because an act is criminal when it goes against the statutes stipulated by the law, '[a]n act is criminal when it offends the strong, well-defined states of the collective consciousness' (Durkheim 1997 [1893]: 39) – they do not offend the collective consciousness because they are criminal.

Because a mechanical society is small and limited in geographic mobility, its collective environment is concrete in nature – the individuals comprising it have shared life experiences and have similar relationships with other members

of society. With such homogeneity in terms of life experiences and relationships, there is a strong consensus around what is right and what is wrong. Beliefs of right and wrong are deeply held by the members of society and are taken for granted. Because these beliefs are so ingrained in individuals, any violation of them is shocking, viewed as an offense against the group, and, if left unpunished, threatening to the collective. For this reason, the violation of such sentiments is punished with repressive sanctions that are often brutal in nature. They are often carried out in public to reestablish the moral sentiments of the society (Durkheim 1997 [1893] and Turkel 1979). For this reason, the offenses that are most often punished in mechanical societies are those that are an affront to the collective and not those such as homicide which are an affront to the individual alone.

Those acts which are most offensive to the collective consciousness include crimes against religion, long held customs and traditions, and political authority. For example, ancient Egyptian law had few regulations to protect individual rights but many to punish those who fail to complete essential religious obligations or participate in ceremonies deemed necessary for society. Any offenses deemed to be sacrilegious were punishable by death. Within Jewish society, the crimes most offensive to the collective were those against religion. Ancient German society punished treason and desertion by death, and

ancient Chinese society viewed impiety as a graver violation than assassination (Durkheim 1997 [1893]).

Within mechanical societies, murder was viewed as an offense against the individual – not the collective. In early Greek society, murder was punished only if it was sought by the family of the deceased – with compensation often taking a monetary form. The same was true in Rome and Judea. Incidences of homicide were not believed to be severe enough for the State to intervene – ‘the society did not itself feel immediately involved or threatened by these outrages that are repellent to us’ (Durkheim 1984 [1902]: 111). This lack of state intervention lies in stark contrast to the punishment of homicide in organic societies.

Organic societies and organic solidarity develop as societies grow in size and include more individuals and cover a larger geographic space. As people spread out, the collective consciousness does as well. With it diffusing to envelop a greater number of individuals, it becomes more and more abstract – where only a small number of very general things can be common to all regions. Once a more general and abstract collective consciousness exists, legal rules become less determinate creating greater opportunity for variation in individual behavior (Durkheim 1997 [1893]). Therefore, mechanical solidarity – based upon similarities – is no longer sufficient to unite the individual members of society.

A new form of solidarity to encompass a society filled with individual variation arises – organic solidarity. This form of solidarity ‘assumes that [individuals] are different from one another’ (Durkheim 1997 [1893]: 85). It is based upon a complex division of labor in society where individuals are held together by their mutual inter-dependence. Implicit within organic society is the assumption that organic solidarity can only exist ‘if each [individual] has a sphere of action that is peculiarly [his or her] own, and consequently a personality’ (Durkheim 1997 [1893]: 85). The collective consciousness that repressed individual expression and personality in mechanical societies loses dominance to the extent that the individual consciousness is not entirely subsumed by it. The proliferation of the individual consciousness originates from the expansion of society and, with it, simultaneously ‘[establishes] in it those special functions it cannot regulate. The more extensive [the gap between the common consciousness and the individual consciousness is], the stronger the cohesion that arises from this [organic] solidarity’ (Durkheim 1997 [1893]: 85).

The key characteristic of organic solidarity and the division of labor is the cooperation between individuals that exists as a result of each person acting in his or her own self-interest. With a highly complex division of labor, each individual will dedicate his or herself to a specific and generally unique function in society, only ‘to discover that inevitably he is solidly linked to other people’

(Durkheim 1997 [1893]: 149). The inter-dependence between individuals created as a result of the division of labor produces a sense of moral individualism within society. This gives high regard to individual rights and ethics, including the rights to life, property, and contractual fulfillment (Durkheim 1997 [1893]; Huang 1995). Individual sentiments become very strong and 'the morals of individual man come to transcend all others' (Durkheim 1984 [1902]: 112). Within an organic society, the purpose of law shifts from repressing acts that offend the common consciousness to 'prevent[ing] individuals from encroaching upon one another and from doing one another mutual harm' (Durkheim 1997 [1893]: 149). In addition to preventing individual harm, the law takes on a restitutive nature in order to restore the necessary relationships of mutual dependence that arise in organic societies.

Mechanical and organic societies are held together by different forms of solidarity – mechanical which is based upon similarities and organic which is based upon differences that arise from a complex division of labor. Different acts are considered criminal within each type of society. In organic societies, acts against the individual are considered criminal while in mechanical societies, acts against the long held traditions and customs of the collective are deemed criminal. The relationship between societal/economic development and

homicide will depend on the form of solidarity that binds society together (Durkheim 1997 [1893]; 1951 [1897]; 1984 [1902]).

#### 2.2.4 *Development and Homicide*

In mechanical societies, the strength of the collective consciousness and its presence over the entire society creates an environment where any violation of strongly held sentiments can result in a passionate response such as homicide.

Durkheim (1951 [1897]) writes the following on the relationship between mechanical societies and homicide:

[Whenever] society is integrated in such a way that the individuation of its parts is weakly emphasized, the intensity of collective states of conscience raises the general level of the life of the passions; it is even true that no soil is so favorable to the development of the specifically homicidal passions. Where family spirit has retained its ancient strength, offenses against the family are regarded as sacrileges which cannot be too cruelly avenged... Where religious faith is very intense, it often inspires murders and this is also true of political faith (356).

A weak individuation of society's parts indicates that individual personality is at a minimum. Rather, the collective consciousness is the individual consciousness. This 'impels homicides; [it] is why they are both frequent and little repressed in lower societies' (Durkheim 1951 [1897]: 356). Where the collective consciousness is so imbued with the importance of family spirit, religious faith, and political faith, offensive acts committed against the family, religious institutions, or the

political authority can result in murder. When an offense is considered to be so severe, 'it may lead [one] touched closely by the offense to destroy his adversary' (Durkheim 1984 [1902]: 115). Indeed, Durkheim (1984 [1902]) suggests that an act against any of these three entities is a potential harbinger of homicide.

Consistent with his writing in *Suicide*, he states:

When it is a matter of defending a father or of avenging a God, can the life of a man count in the scale? It counts indeed very little when offset against objects of such value and weight. This is why political beliefs, the sentiment of family [honor], the sentiment of the caste, and religious faith – all these may often in themselves carry the seeds of homicide (115-116).

It is evident that Durkheim (1951 [1897]; 1984 [1902]) posits a relatively high rate of homicide in mechanical societies. Any violation of collective sentiments toward revered institutions can result in vengeful homicide. An individual's life is minimally valued when such a premium is placed upon the life of the collective. This contrasts sharply with the value placed upon the individual in organic societies and with the relationship that exists between organic societies and homicide.

Durkheim (1984 [1902]) suggests that organic societies have lower rates of homicide than mechanical societies as a result of a rise in respect given to the individual and a weakening of the strong collective sentiments that members of mechanical societies possessed. In *Professional Ethics and Civic Morals*, he writes:

The decline in the rate of homicide at the present day has not come about because respect for the human person acts as a brake on the motives for homicide or on the stimulants to murder, but because these motives and these stimulants grow fewer in number and have less intensity. These stimulants are the very collective sentiments that bind us to objects which are alien to humanity and the individual, that is, which bind us to groups or to things that are a symbol of these groups. At the same time, I do not mean to say that the sentiments which formerly lay at the base of moral consciousness are destined to pass away; they will persist and must persist but they will be fewer and have far less strength than they had formerly. And this is what causes the rate of mortality by homicide to have a downward trend in civilized countries (1984 [1902]: 117).

Despite the suggestion here that respect for the individual – moral individualism – has no depressant effect on the number of homicides committed; Durkheim's earlier work indicates that a respect for humanity should indeed reduce the prevalence of homicides. If one has a respect for the life of others, why would he or she take another's life? For an individual to refrain from homicide, '[h]e need only love and respect human personality generally' (Durkheim 1951 [1897]: 359). Yet this love and respect of the human personality does not arise from nothing. It is a direct result of the increasing complexity of the division of labor within organic societies. As the division of labor in society increases, the collective consciousness becomes more abstract, and it must encompass a greater number of individuals across a larger society. Individuals become more dependent upon one another – generating a necessary level of



respect for others in order to ensure their own survival. Therefore, the decreased rate of homicide in organic societies is a result of three simultaneously occurring processes: an increasing complexity in the division of labor, a weakening of the collective sentiments that were strongly held in mechanical societies, and a concomitant strengthening of individual respect for the life of another.

#### 2.2.5 *Rate of Development and Homicide*

Based upon the preceding discussion, Durkheim's (1951 [1897]; 1984 [1902]; 1997 [1893]) theory of homicide can be summarized by the following proposition: organic societies will have lower rates of homicide than mechanical societies – stated otherwise, as societies become more socially and economically developed, they will experience lower rates of homicide. Despite this seemingly straightforward proposition, Durkheim also suggests that the rate at which a society experiences social and economic change can be an important determinant of homicide. When a society undergoes a sudden, abrupt change in its economic sphere, it can experience a state of anomie (Durkheim 1951 [1897]).

Durkheim (1951 [1897]) describes anomie as a condition '[where] traditional rules have lost their authority... [a] state of deregulation' (253). In this state, normative expectations of appropriate behaviors exist in a state of

confusion. This is generally thought to imply the emergence of conflicting normative patterns that arise when large numbers of rural residents migrate to urban centers in a short period of time. In urban areas, low levels of violence are present when individuals enter into inter-dependent relationships with others and depend on others for survival and well-being – this is representative of an increased division of labor. However, the large influx of rural residents who migrate to cities during times of rapid economic change bring with them conflicting patterns of normative behavior (Neuman and Berger 1988). In rural regions, solidarity was reflected in a strong collective consciousness. Offenses to strongly held values and beliefs relating to family, religion, or various political structures could result in violence – particularly if legitimized, non-violent means of adjudication were absent. Individuals migrating from rural regions brought this violent response to affronts to urban centers. The rise of conflict between residents in the city could result in violent resolution until new urban dwellers acclimated to city life by integrating into the inter-dependent relationships characteristic of the division of labor (Shelley 1981; Neuman and Berger 1988). At this point, the ‘state of deregulation’ (Durkheim 1951 [1897]: 253) is lifted, and new norms are internalized and practiced by most members of society.

To this point, the analysis of Durkheim's theory of homicide and societal change points to several propositions. First, comparative rates of homicide will be lower in developed societies than in developing societies. Second, rates of homicide over time will be higher when economic change is rapid – particularly when societies experience rapid economic development. Economic development produces greater opportunities for employment in urban areas and a subsequent migration of individuals from rural to urban areas. As citizens of rural areas become accommodated to urban life, they develop an increase in moral individualism – a respect for the life and well-being of others. This sense of moral individualism is a result of the increased division of labor that arises as societies develop. Within urban centers, residents are more reliant upon others for continued survival than are residents of rural areas.

While other scholars (see Shelley 1981; Neuman and Berger 1988) have explained Durkheim's (1951 [1897]; 1984 [1902]; 1997 [1893]) concept of anomie in terms of increased urbanization and the emergence of conflicting social norms, Durkheim makes little explication beyond his statement that increased industrialization produces an increased division of labor and an increased sense of moral individualism. Further refinement of the relationship between modernization and homicide was made by Shelley (1981) who posited that urbanization could also produce homicide by increasing social disorganization.

### 2.2.6 *Shelley's Modernization Theory*

In her analysis of crime trends, Shelley (1981) concluded that homicide and other violent offenses are more frequent in developing nations than in developed nations. Subsequent scholars have also found this relationship to be true (Shaw et al. 2003). Shelley (1981) also concluded that nations in the early stages of the development process experienced large-scale migration from rural to urban settings. Increases in homicide paralleled increases in industrialization and urbanization. From these conclusions, she developed a refined thesis of modernization. Her thesis focused less on the moral individualism that accompanied development and more on the structural characteristics, such as urbanization, that were not fully explicated by Durkheim (1951 [1897]; 1984 [1902]).

In support of Durkheim's (1951 [1897]; 1984 [1902]) proposition that the rate of homicide declines as the division of labor increases, Shelley (1981) found rural areas of developing nations to be more violent than urban areas. Within these rural areas, individuals are less dependent on one another for survival. This contrasts with the increased division of labor and interdependence of urban dwellers that theoretically reduces occurrences of homicide. Durkheim primarily attributed these high levels of rural violence to offensive acts against family, religion, or political authority. Shelley views rural violence similarly, suggesting

that it is a legitimized method of resolving disputes against various offenders – particularly when state bureaucratic forms of social control are absent or weak. Within Latin America, a region with particularly high levels of homicide, Shelley (1981) attributes the high rate of rural and urban violence to the cultural concept of machismo – an aggressive display of masculinity that encourages young men not to back down from conflicts or disputes and to rely on violence if necessary (Neapolitan 1994).

As nations industrialize, relying less on agriculture and more on manufacturing and service industries, rural residents migrate to urban centers in search of employment. These cities are often unprepared for the mass influx of migrants, lacking the means to provide adequate housing, education, and employment. As the urban population increases and becomes more concentrated, greater competition for scarce resources occurs. Rapid urbanization, that is often a consequence of the search for better employment and more employment, often produces the unintended effects of both higher unemployment and greater urban poverty (Cole and Gramajo 2009).

Straying from the structural correlates of homicide that comprise the bulk of her modernization thesis Shelley (1981) argues that as individuals migrate out of rural regions and into urban centers, they bring with them their traditional, violent forms of dispute resolution. As they interact with residents of the city

already accustomed to urban life, disputes often arise. Until the new city residents become acclimated, disputes are often resolved violently. This produces higher levels of homicide during the initial stages of industrialization.

In some instances, acclimatization and a reduction in violence may be unwanted. For those engaging in violence in rural areas, the city brings with it a greater level of anonymity that may actually increase the commission of violent acts such as homicide (Cole and Gramajo 2009; Wilson and Herrnstein 1985).

Wilson and Herrnstein argue that:

[a] migrant from the countryside with any preexisting tendency to commit crime will find the tendency strengthened when the risk of recognition is slight, and where he finds property owned by people he does not know (1985: 445).

While Wilson and Herrnstein (1995) speak to property crime specifically, the notion that anonymity will also foster an increase in violent confrontations and homicide does not seem unfounded. However, where acclimatization to urban life occurs and migration slows, a different relationship between urbanization and homicide occurs (Shelley 1981).

As industrialization progresses and urbanization slows, most early migrants to the city have already adjusted to urban life and there are fewer individuals moving into the city who will need to adjust to urban life. The infrastructure of urban environments also has the opportunity to accommodate the increased population as development and urbanization slows – improving

residential housing and educational availability. These factors combine to produce declining levels of homicide as development progresses.

Increases in violent crime during the initial stages of the industrialization process can also be attributed to the migration of young males to urban centers. When employment opportunities in urban regions begin to increase, young males often leave rural areas for these opportunities that can provide for themselves and their families. This concentration of young males in the close confines of the urban environment can encourage conflict and violent resolution (Shelley 1981). Shelley (1981) suggests that many young males spend their time on the streets as a response to overcrowded and unsuitable residential conditions. It is also a carryover of traditional rural behavior where youth spent much of their time outdoors. The subsequent lack of parental supervision and informal social controls – such as those exerted by the family institution – can be detrimental to youth, leading them to engage in criminal behaviors (Shaw and McKay 1942; Shelley 1981; Sampson and Groves 1989; Gartner 1990; Sampson et al. 1997). Alternatively, reduced parental supervision can arise when families migrate to urban areas, and women enter the labor force (Gartner 1990). While not often included in empirical analyses, there is some evidence of a positive relationship between female labor force participation and homicide (Huang 1995; Pampel and Gartner 1995; Neumayer 2003).

Because young males are responsible for the majority of criminal activity, modernization may also produce homicide through the mediating mechanism of an increased percentage of young males residing in urban areas. In partial support of this, Neumayer (2003) finds the percent of the population that is male, aged 15 to 64, to be positively associated with homicide rates. However, as the migration of young males to urban areas subsides and males age out of crime or become accustomed to city life and the necessity of having interdependent relationships with others, nations should experience declines in their homicide rates (Shelley 1981; Gottfredson and Hirschi 1990). The relationship between age structure and homicide may be country specific, however. Where the availability of firearms is greater and the consumption of alcohol accorded importance, the relationship may be stronger (Cole and Gramajo 2009).

### *2.2.7 Empirical Research on Modernization Theory*

The refined propositions of Shelley's modernization theory are commonly tested by including measures of gross domestic product (GDP) or gross national product (GNP) and urbanization in empirical analyses (Neapolitan 1997). In many instances, a composite measure – including components such as GDP, life expectancy, infant mortality, population growth, and urbanization – is used as an index of development (see Messner and Rosenfeld 1997; Savolainen 2000).



However, the central proposition of Durkheim's (1951 [1897]; 1984 [1902]; 1997 [1893]) theory of development and homicide is based upon the relationship between moral individualism and homicide. He proposes that as society develops and the division of labor increases, an individual develops a greater sense of moral individualism – or respect for the individual rights and life of others. This occurs as a consequence of the interdependent relationships that necessarily arise as a result of industrialized life where urban dwellers are unable to provide for all their needs. Out of necessity, each person must rely on others to satisfy their needs for survival. This suggests that moral individualism should exhibit an inverse relationship with homicide rates. While most studies neglect the concept of moral individualism, studies by Messner (1982) and Huang (1995) do account for it. The empirical evidence is mixed, although Huang (1995) does find moral individualism to be associated with lower rates of homicide.

In a cross-national study of 50 nations, Messner (1982) examines the effect of moral individualism on homicide rates. While operationalizing a concept as abstract as moral individualism is often difficult, he relies on Durkheim's (1951 [1897]) *Suicide* to guide the process. In his seminal book, Durkheim refers to the respect accorded to individual life under Protestantism – as a result, Messner (1982) employs the percent Protestant of a nation as one measure of moral individualism. As a second measure, Messner (1982) uses the school enrollment

ratio (SER) – a measure of primary and secondary school enrollment divided by the relevant school age populations. The rationale for this variable as a measure of moral individualism is weaker than the inclusion of percent Protestant; however, Durkheim does refer to education as an individual pursuit. Ultimately, the SER is problematic because primary and secondary education is now compulsory in most nations, while it was not at the time of Durkheim's writing. Therefore, tertiary education may better represent such an individual pursuit due to its voluntary nature. Results of path models show that neither percent Protestant nor the secondary enrollment ratio has a significant effect on homicide. In partial support of Durkheim's theory of development, however, Messner (1982) does find an increasing division of labor, as measured by a nation's gross domestic product (GDP), to be associated with increased moral individualism (i.e. percent Protestant and SER). Unfortunately, percent Protestant also proves to be problematic. It is unlikely that increased GDP is producing moral individualism in the form of more Protestants; rather predominately Protestant nations merely have higher GDPs as a result of being the first nations to undergo the industrialization process.

With the availability of better data, Huang (1995) was able to conduct a more rigorous analysis examining the effect of moral individualism. Like Messner (1982), Huang (1995) operationalized moral individualism in two ways:

individualism and communitarianism. Individualism was a factor measuring concern for individual rights and personal dignity, and communitarianism was operationalized as the sum of the percent of government expenditures on health care and social security. Both individualism and communitarianism possess face validity as measures of moral individualism. Individualism reflects respect for oneself and, subsequently, others, while communitarianism reflects care and concern for others – as well as oneself due to the individual benefits of health care and social security. In partial support of Durkheim (1951 [1897]), Huang (1995) found individualism to have a significant, negative effect on homicide and communitarianism to have a weak, non-significant effect on homicide.

Messner (1980) and Huang (1995) provide some support for the core tenets of Durkheim's (1951 [1897]; 1984 [1902]; 1997 [1893]) theory of homicide and development. Other core propositions include the prevalence of lower homicide rates in developed nations and increased rates of homicide in rapidly transitioning societies. The latter can only be addressed through the use of longitudinal research designs, while the former can be examined with cross-sectional designs.

### 2.2.8 *Cross-Sectional Research on Modernization Theory*

Cross-sectional studies of modernization theory examine the relationship between the level of development and homicide and the level of urbanization and homicide. The expected relationship between both is negative. As nations industrialize and urbanize, individuals migrate to urban centers in search of employment opportunities. While homicide may surge initially, an increasing division of labor and increasing moral individualism will ultimately cause homicide rates to decline (Durkheim 1951 [1897]; 1984 [1902]; 1997 [1893]; Shelley 1981; Neuman and Berger 1988). Because the division of labor is difficult to measure, a nation's gross domestic product (GDP) is often used as a proxy. Since the division of labor and economic development are theorized to experience parallel increases, GDP, indicating a nation's level of development, is considered a suitable substitute (Messner 1982). As an alternative, gross national product (GNP) has been used in place of GDP (Ortega et al. 1992; Neapolitan 1997). Other scholars have used a composite measure – including components such as GDP, life expectancy, infant mortality, population growth, and urbanization – to proxy the division of labor (Messner and Rosenfeld 1997; Savolainen 2000; Messner et al. 2002).

The empirical research on the relationship between the level of development and homicide is mixed – with scholars sometimes finding the

expected, negative relationship (Krohn and Wellford 1988; Neapolitan 1994; Lim et al. 1995; Neapolitan 1998; Altheimer 2008; Bjerregaard and Cochran 2008; Pridemore 2008). Others have failed to find a significant relationship (Groves et al. 1985; Lee and Bankston 1999; Huang 2001). The lack of a significant relationship, however, is not surprising as any relationship between economic development and homicide will depend on the distribution of nations selected into the sample. All else being equal, a sample consisting of developing and developed nations – where developing nations have higher rates of homicide – will produce a negative relationship between development and homicide. A sample consisting of nations with similar rates of homicide will fail to find an association between development and homicide. A sample consisting of only developing nations at various levels of development is likely to find a positive relationship between development and homicide, as development and homicide should both theoretically increase. Unfortunately, it is not possible to empirically analyze all nations due to a lack of available data. Therefore, to some degree, all empirical analyses will be subject to this problem.

Analyzed in both cross-sectional and longitudinal studies, the proposed negative relationship between urbanization and homicide has also received mixed support. Some scholars have observed the negative relationship (Messner 1989; Ortega et al. 1992; Lin 2007; Altheimer 2008), while others have found a

positive relationship (Wolf 1971; Conklin and Simpson 1985; Neumayer 2003; Pratt and Godsey 2003). In most cases, no relationship between urbanization and homicide has been found (Messner 1980; Huang 1995; Neapolitan 1997; Van Wilsem 2004; Cole and Gramajo 2009). While cross-sectional studies have provided partial support for modernization theory, longitudinal studies are necessary to analyze the relationship between rate of change and homicide.

### 2.2.9 *Longitudinal Research on Modernization Theory*

Modernization theory is based on two aspects of development: the level of development and the rate of development (Durkheim 1951 [1897]; 1984 [1902]; 1997 [1893]; Shelley 1981; Bennett 1991). While the relationship between the *level* of development and homicide can be tested using a cross-sectional research design, the relationship between the *rate* of development and homicide can only be tested by using a longitudinal design. Although most examinations of modernization theory are cross-sectional, a small number of longitudinal studies have tested the propositions of the theory (Bennett 1991; Fajnzylber et al. 2002; Lederman et al. 2002; Messner et al. 2002; Neumayer 2003; Lin 2007). The primary propositions that should be tested are: (1) the rate of development – generally measured by GDP – will have a positive association with homicide

rates and (2) the rate of urbanization will have a positive association with homicide rates.

In a fixed-effects analysis of 38 nations over 25 years, Bennett (1991) examines the relationship between both the rate and level of development and homicide. He defines the level of development as 1984 GDP per capita and the rate of development as differences between five year averages of GDP per capita. Additionally, he examines the relationship between the ratio of a nation's GDP derived from manufacturing to that derived from agriculture – a nation's form of development. This ratio indicates an increased dependence on manufacturing and proxies increased industrialization and development. His analysis finds no significant relationship between the rate of development and homicide or the level of development and homicide. However, Bennett (1991) does find that the form of development has a curvilinear relationship with homicide. Homicide increases as nations began to switch from an agrarian based economy to a manufacturing based economy. As nations become increasingly industrialized, the rate of homicide begins to decline. This supports Durkheim's (1951 [1897]; 1984 [1902]; 1997 [1893]) and Shelley's (1981) proposition that homicide increases during the initial stages of development, declining thereafter.

Lin (2007) also failed to find a relationship between the rate of development and homicide. Analyzing 46 nations from 1971 to 1996, he finds no

significant relationship between GDP growth and homicide. Bjerregaard and Cochran (2008) also fail to find a significant relationship between GDP growth and homicide. However, the relationship is in the expected, positive direction. Contrary to modernization theory, Fajnzylber et al. (2002), Lederman et al. (2002), Messner et al. (2002), and Neumayer (2003) find GDP growth to have a significant, negative relationship with homicide rates. This indicates that nations experiencing growth are exhibiting reduced rates of homicide, while nations enduring periods of stagnant economic growth are characterized by higher rates of homicide (Messner et al. 2002).

In support of modernization theory, Ortega et al. (1992) find a positive association between changes in GNP and changes in homicide rates. This suggests that nations experiencing rapid development and change also experience greater increases in homicide. However, their analysis of 234 nation-years between 1969 and 1982 fails to find a relationship between changes in urbanization and changes in homicide rates.

### **2.3 Alternative Theories to Explain Cross-National**

#### **Variation in Homicide**

Modern cross national studies of homicide are numerous (e.g. Avison and Loring 1986; Krahn et al. 1986; Messner 1989; Jacobs and Richardson 1995;



Messner and Rosenfeld 1997; Neapolitan 1997; Neapolitan 1998; LaFree 1999; Savolainen 2000; Jenson 2002; LaFree and Drass 2002; Messner et al. 2002; LaFree and Tseloni 2006; Antonaccio and Tittle 2007; Babones 2008; Pridemore 2008; Savage, Bennett, and Danner 2008; Cole and Gramajo 2009; Cochran and Bjerregaard 2011). While all extant studies seek to explain variation in homicide as a result of a specific set of correlates, the theoretical explanations of variation can be classified into several categories. They include: the previously discussed modernization theory (Durkheim 1951 [1897]; 1984 [1902]; 1997 [1893]; Shelley 1981; Ortega et al. 1992), ecological/opportunity theory (Kick and LaFree 1985; LaFree and Kick 1986), deprivation and economic stress theory (Messner 1980; Currie 1997; Pridemore 2008), and a number of other cultural/structural perspectives (Groves et al. 1985; Braithwaite 1989; Messner and Rosenfeld 1994; 2001). While each of the aforementioned represents a distinct theoretical perspective, studies often analyze the correlates of more than one (Neapolitan 1997; Cole and Gramajo 2009).

### *2.3.1 Ecological/Opportunity Theory*

Ecological/opportunity theory explains cross-national variation in homicide rates as a function of the size of the potential offending population and the presence of opportunities to commit murder (Cohen and Felson 1979; Cohen

et al. 1980; Kick and LaFree 1985; LaFree and Kick 1986). Two general characteristics about homicide shape ecological theory. First, most homicides are committed by young males (Gottfredson and Hirschi 1990). Therefore, as the percentage of young males in a nation increases, the potential pool of offenders also increases – this proposition is also found in modernization theory. Second, offenders and victims of homicide generally know each other – the relationship most often being that of family, friend, or acquaintance (Wolfgang 1966; Zimring 1972; Messner 1986). Based upon these characteristics, Kick and LaFree (1985) suggest that the opportunity to murder is at its highest when individuals are subject to frequent and long lasting interactions with many friends and acquaintances. To test the ecological perspective, household size, population density, the percentage of youths, and the percentage of males in a nation are commonly used variables in analyses (Neapolitan 1997). The inclusion of population density in models testing ecological theory assumes that it brings with it frequent, inter-personal contact with others that has the potential to result in interpersonal violence (Krahn et al. 1986). It has also been suggested that close contact with others can make inequalities more apparent – resulting in strain and the possibility of outward forms of aggression (Gillis 1974). Such an argument rests on the assumption that relatively frequent contact between individuals of various classes is common – which may or may not be true and is likely to be

country dependent. Structural segregation, isolation, and the existence of caste systems or other forms of exclusion would limit the degree of inequality observed in certain densely populated areas. This does not, however, suggest that homicide would be less likely. It may be, if social controls are strong, or there may be no weakened effect if the competition for existing resources produces violent acts. Such ambiguity of the causal mechanisms relating population density to homicide make it unsurprising that little evidence of a relationship between the two is found.

Despite the majority of analyses finding no significant association between key variables and homicide rates, some studies have been supportive of ecological theory. The most widely supported proposition stemming from the theory is that the relationship between the percentage of youth and a nation's rate of homicide is positive (see Hansmann and Quigley 1982; Bennett 1991; Ortega et al. 1992; Pampel and Gartner 1995; Neumayer 2003; Pratt and Godsey 2003; LaFree and Tseloni 2006; Jacobs and Richardson 2008). Kick and LaFree (1985) find that household size is positively associated with homicide rates – supporting the hypothesis that frequent and close contact increases opportunity for murder. Counter to the theoretical claims of ecological theory, population density generally has no effect on homicide. Where an effect is found, results are

mixed (see Conklin and Simpson 1985; Huang 1995; Neumayer 2003; Stamatel 2009).

### 2.3.2 *Deprivation and Economic Stress Theory*

Following the Marxist tradition, many scholars – Marxist and non-Marxist – view relative deprivation and inequality as a consequence of a free market, capitalist system that enriches few while impoverishing many (Bonger 1916; Chambliss 1975; Quinney 1980; Greenberg 1993; Currie 1997). Both have been used to explain cross-national variation in crime rates. Relative deprivation and inequality create poverty, and individuals become geographically clustered in areas of concentrated disadvantage (Currie 1997; Neumayer 2003). This can cause strain, frustration, anger, and a weakening of informal social controls (Merton 1938; Messner 1980; Agnew 1985; MacKellar 2003). All of these are conducive to violent acts, leading some scholars to suggest that homicide and other violent crimes are an unintended consequence of income inequality (Blau and Blau 1982).

Despite the seemingly negative consequences of capitalism, not all free market societies are destined to experience high rates of crime. Currie (1997) distinguishes between harsh and compassionate capitalistic, free markets. Harsh market societies, such as the United States, do little to restrain rampant

inequality, while compassionate market societies, such as the social welfare states of Scandinavia, have social protection programs and policies to ensure that inequality does not become too severe. Thus, the projected positive association of income inequality and homicide may be attenuated by strong social policies. Savolainen (2000) finds support for this, noting that the effect of inequality on homicide is weaker in societies with strong social entitlement policies (Esping-Andersen 1990).

Overall, there is wide support for the proposition that inequality is positively associated with homicide (see Messner 1980; Avison and Loring 1986; Gartner 1990; Neapolitan 1998; Messner et al. 2002; Pratt and Godsey 2003; Van Wilsem 2004; Chamlin and Cochran 2006; Cole and Gramajo 2009). Despite the robustness of this relationship, Pridemore (2008) suggests that poverty is a more important predictor of homicide than inequality. In an analysis of 46 nations, he finds that the positive relationship of inequality on homicide is reduced to insignificance with the addition of poverty in the empirical model. In addition to inequality, infant mortality and unemployment are often included in empirical analyses testing deprivation/economic stress theory (Neapolitan 1997). Both infant mortality and unemployment correlate with inequality and poverty and sometimes serve as proxies for resource deprivation (Neapolitan 1997; Frey and Field 2000; Pridemore 2008). A small number of studies have found a positive

relationship between infant mortality and homicide (see Wolf 1971; Conklin and Simpson 1985; Jacobs and Richardson 2008; Pridemore 2008). The same holds for the relationship between unemployment and homicide (see Krohn 1976; Huang 2001; Jacobs and Richardson 2008).

While poverty has been included in several recent studies, inequality remains a standard control variable in comparative homicide analyses. Chapter 3 will address the relationship between inward foreign direct investment and inequality, explaining how increased FDI can produce greater inequality.

### 2.3.3 *Other Cultural and Structural Perspectives*

John Braithwaite (1989) introduced his theory of reintegrative shaming in *Crime, Shame, and Reintegration*. He suggests that rates of criminal activity are low in societies characterized by communitarianism – a state in which individuals relate to each other with trust and the desire to help others. When individuals who live in a communitarian society commit a criminal act, they experience a process of reintegrative shaming. This process serves to both express disapproval for the act that was committed and reintegrate an individual back into society – removing the label of ‘deviant’ or ‘criminal’ from the individual. When individuals are stigmatized as criminal but not reintegrated into society, Braithwaite suggests that they will form criminal subcultures with

like individuals. Although evidence for the theory is minimal, Braithwaite asserts that the low rate of criminality in Japan compared to other nations is a result of its communitarian society. In *Crime and Modernization*, Shelley (1981) also suggests that communitarianism kept Japan's rate of homicide low through the course of its industrialization process.

Institutional anomie theory was introduced in Messner and Rosenfeld's (1994, 2001) *Crime and the American Dream* – its purpose was to explain the high rate of criminality found in the United States. They argue that the 'American Dream' is universal, cultural, and structural, proscribing economic success as an end in itself. It defines monetary success and the continued acquisition of money as the ultimate metric of success. This creates an environment in which the value of an individual is based upon what he or she achieves. The result is an anomic state where individuals may resort to criminal means to attain such success. At a structural level, Messner and Rosenfeld (1994, 2001) suggest that the economic sphere gains dominance over non-economic institutions such as the family and educational system. These institutions become devalued and co-opted by the economic institution as they are forced to accommodate to it. This institutional imbalance, tipped toward the economic realm, lessens the ability of non-economic institutions to enforce informal social controls. Instead, the logic of the market, economic success, individualism, and an emphasis on goals as opposed

to the means of achieving them, creates a social atmosphere conducive to criminality.

Institutional anomie theory has received mixed support (see Chamlin and Cochran 1995; Messner and Rosenfeld 1997; Savolainen 2000; Batton and Jensen 2002; Jensen 2002; Cao 2004). Messner and Rosenfeld (1997) and Savolainen (2000) find that the strength of non-economic institutions, decommodification, explains variation in cross-national homicide rates – with decommodification having a negative relationship with homicide rates. Savolainen (2000) also notes that the effect of income inequality on homicide is weaker in nations that have stronger social welfare policies. However, Jensen (2002) and Cao (2004) question whether the ‘American Dream’ is uniquely American or whether other nations have a similar cultural proscription. Both find that the United States is not particularly materialistic or willing to forgo legitimate means in an attempt to reach a goal.

While not explicitly a cultural theory of crime, institutional anomie theory has an important cultural component to it. Much like Braithwaite (1989) suggests that the cultural orientation of communitarianism produces lower rates of crime in Japan, and Komiya (1999) suggests that Japanese culture promotes high levels of self-control and low levels of crime, Messner and Rosenfeld (1994, 2001) assert that the culture of the United States is a key component to explaining



America's high rates of crime. Similarly, Neapolitan (1994, 1997) has associated the high rates of crime in Latin America and Sub-Saharan Africa with a culture of violence stemming from machismo in Latin America and a history of colonialism and slavery that destroyed traditional forms of life and social control in Sub-Saharan Africa. Notably, Latin America and Sub-Saharan African nations exhibit some of the highest rates of homicide in the world (Shaw et al. 2003).

Religion has also been suggested as an important cultural factor that may relate to homicide (see Durkheim 1984 [1902]; Messner 1982; Groves et al. 1985). Durkheim (1984 [1902]) explains the low rate of homicide in predominately Protestant nations as a result of the importance accorded to the individual and the value placed upon life within the Protestant tradition. Groves et al. (1985) find that predominately Protestant and Catholic nations are associated with higher rates of homicide, while Islamic nations are associated with lower rates. Neumayer (2003) suggests that the strong social controls exerted by Islamic societies prevent individuals from engaging in violent acts such as homicide.

The preceding summary of cross-national studies suggests that little consensus exists regarding what macro-level variables will be associated with homicide rates. Not only are theoretically expected relationships often non-significant, as is true in the case of urbanization, but, there is often disagreement as to what the relationship should actually be (i.e. should GDP/economic

development be positively or negatively associated with homicide?). For those drawing from the modernization thesis, this question cannot be resolved without a thorough reading of the foundational theoretical propositions. Despite the somewhat disparate results presented to this point, there is an empirical method by which one can examine the overall importance of macro-level covariates in explaining cross-national variation in homicide rates.

Perhaps the best way to obtain an accurate picture of the empirical relationships tested in cross-national homicide research is to perform a meta-analysis – a statistical summarization of published scholarly work on the subject. By transforming the effect sizes of the relationships in the studies into  $z$  values, the mean effect size of the relationship across all studies can be calculated. Nivette's (2011) meta-analysis of fifty-four extant cross-national homicide studies calculated the mean effect sizes of the relationships between standard explanatory variables and homicide rates.

Those variables that exhibited the strongest mean effects included: income inequality, the Decommodification Index, and regional dummy variables for Latin America. Both income inequality and Latin American regional dummy variables had positive, significant effects. Thus, relative deprivation, as measured by the GINI Index, exhibits a robust relationship with homicide rates – lending support to the notion that an inability to achieve culturally proscribed

goals produces strain, aggression, and homicide (Merton 1938; Agnew 1985; Chamlin and Cochran 2006). Neapolitan (1994, 1997) has argued that a culture of machismo has created elevated homicide rates in Latin America compared to other regions, while Ayres (1998) suggests that the historical use of legitimized political violence and revolution has created a culture for contemporary violence. The presence of the drug trade within Latin America may also contribute to elevated homicide rates (UNODC 2010; Nivette 2011). Decommodification, meanwhile, had a relatively large significant, negative effect – suggesting that social safety nets help reduce homicide (Messner and Rosenfeld 1997). Regional dummy variables for Eastern nations such as Japan, as well as a number of Islamic nations, also exhibited significant, negative effects. This suggests that the high levels of communitarianism found in Japan, as well as the strict controls imposed by Islamic nations, may reduce incidences of homicide (Komiya 1999; Neumayer 2003; Antonaccio and Tittle 2007).

Those variables that had the smallest mean effects included measures of democracy, measures of economic development, and relatively stable population indicators such as youth population proportion, sex ratio, urbanization, and population density. One of the largest weaknesses of the study is its reliance on cross-sectional as opposed to longitudinal studies. This is no fault of Nivette's (2011), as the majority of studies that focus on cross-national variation in

homicide are of a cross-sectional design. Indeed, “the overwhelming use of cross-sectional design to test the effects of *social change* on homicide seems rather unproductive and ineffectual” (Nivette 2011:123-124). The use of cross-sectional designs and other weaknesses limits the utility of current cross-national studies to some degree.

## 2.4 Weakness of Existing Studies and Conclusions

Existing studies of modernization theory suffer from several shortcomings. First, most tests of the modernization thesis are cross-sectional in design. This only allows scholars to look at how differences in levels of development affect rates of homicide. This may, for example, allow one to conclude that nations with higher levels of development have lower rates of homicide (Krohn and Wellford 1988; Lim et al. 1995; Neapolitan 1998; Altheimer 2008). Concomitantly, it allows scholars to examine how differences in levels of urbanization affect homicide rates. While these relationships are worth discovering, and may partially support modernization theory, they do not adequately test the other main propositions of the modernization thesis – nations undergoing rapid *changes* in development and urbanization are likely to experience higher homicide rates than nations that are developing at a slower pace (Shelley 1981).

While a nation may be classified as either modern/developed or developing or urban or rural based upon some external set of criteria, modernization and urbanization are not static concepts and cannot be treated as such. Each is a process that occurs over time. For a study to correctly test the modernization and urbanization processes, it must be longitudinal – measuring development, urbanization, homicide, and a set of relevant covariates at multiple points in time. While a longitudinal study cannot capture the entire processes of modernization and urbanization – it will necessarily be limited in the length of time that can be analyzed – it will capture a period of time where change can occur.

Additionally, scholars have, to date, treated modernization as something that occurs in isolation. This, however, is a myopic view of the process. Globalization has transformed the process of development; nations do not develop independently of each other. The development of one nation often occurs in conjunction with the development of others. Within the economic sphere, globalization is characterized by the transfer of money, resources, technical skills, and knowledge by corporate firms into foreign economies. This transfer spurs rapid economic growth in the form of increased GDP and, according to modernization theory, homicide (Balasubramanyam et al. 1996; Campos and Kinoshita 2002). The monetary transfer of resources is captured by

inward flows of foreign direct investment (FDI) into foreign firms. As such, the tenets of modernization theory suggest that inward FDI flows will exhibit a positive association with cross-national homicide rates by increasing GDP and urbanization. A refined version of the modernization thesis will therefore account for the globalized nature of economic development by including a measure of inward FDI flows and testing how it impacts key covariates of modernization theory – including economic growth, inequality, and urbanization.

Additionally, samples used in cross-national studies are often small and, therefore, biased. Many studies examine a small number of nations or only industrialized nations (Bjerregaard and Cochran 2008; Pampel and Gartner 1995; Pratt and Godsey 2002; Pridemore 2008). In fact, the average study consists of a sample that covers an average of only 20% of the global population (Nivette 2011). While the ideal sample would have a large number of nations covering an adequate number of years – say, ten to twenty – this is often difficult to implement in practice. The availability of data limits both the number of nations that can be studied and the number of years that can be covered. Data sources that contain all the necessary information for an ideal cross-national study of homicide are non-existent. When a large number of nations can be examined, a longitudinal design must often be sacrificed. When data is available for an

adequate number of years, the number of nations included in the analysis is then sacrificed. One of the more representative samples – with models including between 75 and 111 nations – was analyzed by Neumayer (2003). Such studies, however, are rare and often rely on sources of data that are considered to be of lower reliability.

The preceding discussion of modernization theory suggests several hypotheses. First, changes in economic development will be associated with changing homicide rates. Second, changing levels of urbanization will be associated with changes in homicide rates.

Next, in Chapter III, inward foreign direct investment will be addressed. This form of cross-national, monetary investment has increased dramatically through the latter half of the twentieth century. Such increases have the ability to increase economic growth, inequality, and urbanization— three covariates theoretically linked to homicide (Balasubramanayam et al. 1996; Campos and Kinoshita 2002; Fajnzylber et al. 2002; Huang 1995; Jacobs and Richardson 2008; Ortega et al. 1992; Shelley 1981; Wolf 1971).

## CHAPTER III

### FOREIGN DIRECT INVESTMENT – WHAT IS IT

### AND HOW IS IT RELEVANT TO HOMICIDE?

#### **3.1 What is Inward Foreign Direct Investment?**

To date, no studies analyzing cross-national homicide rates have incorporated a measure of globalization that captures a form of economic transfer capable of spurring economic growth. Yet, to place importance upon the economic growth and development of a nation while ignoring the mechanisms by which the inter-connectedness of nations and the resultant transfer of money, people, and other resources can influence such growth and development is problematic (Romer 1993; Jensen 2003; Borensztein et al. 1998; Bengoa and Sanchez-Robles 2003). Modernization theory makes implicit assumptions about the relationship between economic development and nation-state inter-relationships, yet the explicit mechanisms through which such relationships can increase economic growth – and homicide – have not been summarized or tested by previous scholars of crime.

While Durkheim's (1951 [1897]; 1984 [1902]; 1997 [1893]) modernization theory did not explicitly account for the inter-relationships that can be seen between nations and multi-national corporations today, the development of



nations during the early to mid-nineteenth century did not occur in complete isolation. Both colonialism and imperialism in the nineteenth century created relationships between expansionist nations and those experiencing the effects of imperialism. The implicit assumption of modernization theory suggests that regions subject to colonialism and imperialism would improve their economic standing as a result of the economic investment they received from expansionist nations.

This view of economic development maintained its popularity until the end of World War II. Throughout the 1960's and 1970's, however, there was a decline in the belief that the economic investment by prosperous nations into those that were less prosperous was beneficial. As a response to modernization theory, the tenets of both dependency theory and world-systems theory argue that the economic transfer of resources results not in development but in exploitation and dependency. According to theorists of these perspectives, the consequence of expansionism is not the modernization of less developed nations, but the intentional suppression of emerging trade markets and the exploitation of raw commodities, labor, and other local resources (Wallerstein 1974; Ferraro 2008). Dependency theory had a profound impact during the post-World War II period, shaping several revolutionary movements. Indeed, the perceived detrimental impact of cross-national economic transfers is exemplified below:

Since the end of the last century this, aggressive expansionist trend has been manifested in countless attacks on various countries on the more underdeveloped continents. Today, however, it mainly takes the form of control exercised by the developed powers over the production of and trade in raw materials in the dependent countries. In general it is shown by the dependence of a given country on a single primary commodity, which sells only in a specific market in quantities restricted to the needs of that market. The inflow of capital from the developed countries is the prerequisite for the establishment of economic dependence. This inflow takes various forms: loans granted on onerous terms; investments that place a given country in the power of the investors; almost total technological subordination of the dependent country to the developed country; control of a country's foreign trade by the big international monopolies; and in extreme cases, the use of force as an economic weapon in support of the other forms of exploitation (Guevara 1964).

Empirical studies, however, have lessened the popularity of dependency and world-systems theory. If anything, evidence has shown that investing in other nations has both positive and negative effects – increasing economic growth, infrastructure, and inequality at the macro-level (Borensztein et al. 1998; Lipsey 2000; Görg and Strobl 2001; Lipsey and Sjöholm 2005).

While much has been written on the subject of cross-national investment, a measure that adequately captures such a form of investment must be used in empirical analyses. Within the econometric literature, this form of investment is captured by inward foreign direct investment (FDI). Most studies that examine inward FDI include it as either a

dependent variable, assessing how the political structure and openness of a nation to trade with others impacts the foreign direct investment that it receives, or studies include it as a covariate – assessing the relationship between inward FDI and economic growth or between inward FDI and inequality or urbanization (Alfaro et al. 2000; Balasubramanayam et al. 1996; Basu and Guariglia 2007; Boswell and Dixon 1990; Chase-Dunn 1975; Bengoa and Sanchez-Robles 2003; Borensztein et al. 1998; Jenson 2002; Jenson 2003; Kentor 2001; Li and Liu 1994; Romer 1993).

Interestingly, inward foreign direct investment has not been analyzed in any previous studies of cross-national homicide – despite the fact that it has been linked with economic growth, increased inequality, and increased urbanization – three theoretically important correlates of homicide (Currie 1997; Neumayer 2003; Ortega et al. 1992; Shelley 1981). To test the implicit assumption of modernization theory as it relates to homicide – that cross-national investment will produce economic development – inward foreign direct investment should be included as an explanatory variable in cross-national studies of homicide.

Data on the amount of money a nation receives as foreign direct investment is routinely compiled and published by the World Bank (2012). It is defined as follows:

Foreign direct investment are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments.

As a 10 percent or more investment into the voting stock of a foreign corporation, foreign direct investment implies a long-term investment into another nation. It is not speculative; instead, the primary function is to provide goods and services for domestic and foreign markets or to acquire natural resources – for the benefit of the investing corporation (Jensen 2003). Romer (1993) suggests that inward FDI is particularly important to developing countries as it allows for the transfer of technological skills and ideas from more economically advanced, industrial nations. Romer (1993) posits that developing nations lack the ability to quickly innovate new technologies on their own. However, new technologies, skills, and ideas can be transferred from developed nations to less developed nations. They can then be put to use with the available domestic resources and domestic labor to encourage economic growth.

This transmission of skills and knowledge from developed to developing nations is important for other reasons as well. Not only can these resources fuel economic growth, they may do so when the necessary infrastructure to innovate new technologies and markets for growth is absent. Dependent upon the nation, developing countries may lack in one or more of the following areas – a large

educated population, adequate infrastructure (e.g. transportation, manufacturing, electricity/power, and telecommunications), and liberalized markets that make innovation, profit, and growth easier. Thus, inward foreign direct investment may produce technological innovation and economic growth in the absence of a thoroughly developed infrastructure (Balasubramanayam et al. 1996; Bengoa and Sanchez-Robles 2003; Borensztein et al. 1998; Herman et al. 2004; Li and Liu 1994; Romer 1993).

It is also possible that inward FDI can promote the development of infrastructure. In the case where a nation is selling its resources to a multinational corporation, there may be several benefits to the nation. To move the resources, a transportation network must be established. This may result in the construction of roads and ports aided by the multinational when no pre-existing network exists. The advancement of such infrastructure can be beneficial in connecting other local industries and advancing the economic growth of the nation (Bengoa and Sanchez-Robles 2003).

While the use of FDI to create transportation networks is one of the more evident ways that it can be used to develop a nation's infrastructure, multinational corporations invest in a multitude of other infrastructure projects as well. Those that are most essential to economic growth in developing nations – water, sanitation, electrical power, transportation, and telecommunications – are

also invested in heavily. By 1999, 37% of FDI inflows were directed toward the abovementioned services. Between 1990 and 2001, over \$750 billion was invested by firms into approximately 2,500 infrastructure projects in developing nations (Kirkpatrick et al. 2006). Nations of the Caribbean and Latin America have been the largest recipients of foreign investment in infrastructure projects. East Asian and Pacific nations were also relatively large receivers of infrastructure investment between 1990 and 2001. Much of the investment has been used to develop nations' telecommunications (44%) industries and energy (28%) industries (Kirkpatrick et al. 2006; World Bank 2003). Investment in telecommunications, energy, and other infrastructure can be risky for corporations. Long-term costs are high, particularly in nations with unstable regulatory policies. However, long-term rewards are also high when nations provide a stable environment in which the firms can operate. Foreign investment in these infrastructure projects can create jobs, promote economic growth, raise the living standards of a nation's citizens, and provide firms with large profits in the long-run (Bengoa and Sanchez-Robles 2003; Kirkpatrick et al. 2006).

### **3.2 Trends in Inward Foreign Direct Investment**

While nations and companies have invested money into other nations for centuries, inward foreign direct investment was not measured until

the World Bank began recording annual inward FDI flows in 1970. In 1970, the amount of money invested across nations was negligible. Since that time, the increase in FDI flows by multi-national corporations has been rapid.

Prior to the global recessions of the 2000's, worldwide inflows of foreign direct investment increased exponentially. Inward FDI flows increased from approximately 10 billion U.S dollars in 1970 to approximately 1.3 trillion in 2000 – an increase of 13,000%. Figure 1 on the following page shows the worldwide trend in flows of inward foreign direct investment.

Throughout the latter half of the 1980's and the 1990's, year over year increases of 30% were not uncommon. The beginning of the twenty-first century saw reductions in worldwide FDI inflows. Inflows began falling in 2001, bottoming out in 2003 before experiencing a nearly 50% increase between 2004 and 2005. FDI inflows bottomed out again in 2009 – at the height of the global recession – after having peaked in 2007 at nearly 2.5 trillion U.S. dollars. Early periods exhibit more stable growth in inward FDI. Between 1970 and 1985, inward flows increased only 550% - from 10 billion U.S. dollars to 55 billion U.S. dollars. The period 1986 through 2000 brought with it the beginning of the large year over year increases in FDI inflows – from 80 billion in 1986 to 320 billion in 1995 to 1.3 trillion in 2000.

Regardless of theoretical grounding, the exponential increases in inward

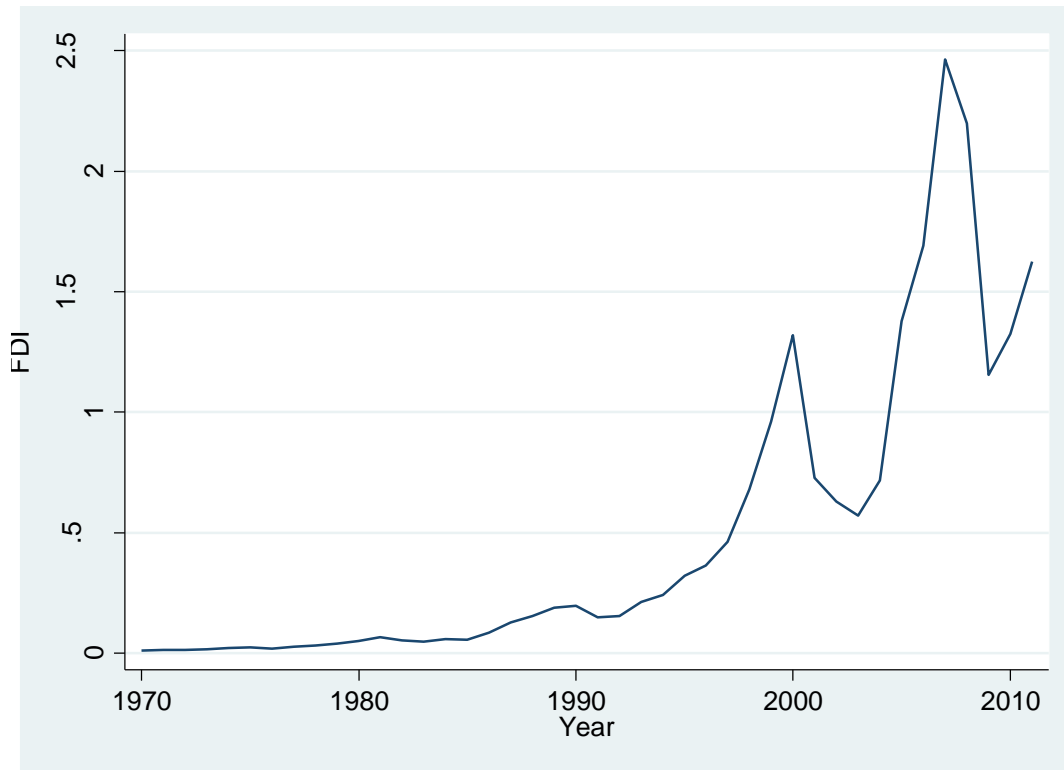


Figure 1. Inward Foreign Direct Investment (1970-2011) in Trillions of Dollars  
Source: World Bank (2012)



foreign direct investment flows around the world suggest that it is an important component of the economic realm with a multitude of consequences for the societies of receiving nations.

### **3.3 The Relationship between Foreign Direct**

#### **Investment and Economic Growth**

Theory, however, suggests that foreign direct investment can positively affect cross-national homicide rates through three mechanisms. The first is by promoting rapid economic growth. Much like any explanatory variable in empirical analyses, inward FDI does not have a universal relationship with economic growth – particularly over the short term (Lipsey 2003). Much of the relationship also appears to depend on the level of analysis (Carkovic and Levine 2005). Firm-level studies often fail to support the proposition that foreign direct investment creates economic growth. Between 1979 and 1989, Aitken and Harrison (1999) find no evidence that technology introduced by foreign firms spills over to domestic firms. Similarly, Haddad and Harrison (1993) and Mansfield and Romero (1980) fail to find evidence that foreign direct investment increases economic growth.

### 3.3.1 *Firm-Level Analyses*

In an analysis of over 40,000 Venezuelan firms between 1976 and 1989, Aitken and Harrison (1999) find that foreign direct investment has no appreciable effect on economic growth. While FDI does increase productivity and growth in the firms receiving the investment, those firms tended to be the most productive prior to the investment. They also find the foreign direct investment reduces the productivity of domestic firms. In other words, FDI produces negative spillover – damaging the efficacy of domestic firms. Aitken and Harrison (1999) interpret this as a “market-stealing effect (606).” Firms receiving FDI are able to take business away from domestic firms within the same industry – with their product taking up a larger proportion of the market share. There are several reasons why domestic firms may not experience technological spillover. Firms receiving FDI may higher few domestic employees in high-level positions. This can limit the transmission of knowledge and ideas between firms. Firms receiving FDI also may limit subcontracting to local, domestic firms. Additionally, there is very little motivation for FDI receiving firms to share technology with local firms. Without a willingness by multi-national corporations to share their technology and knowledge, there is little chance for domestic firms to benefit (Germdis 1977).

A similar lack of increased growth and productivity was found in Moroccan firms receiving foreign direct investment (Haddad and Harrison 1993). While investment benefitted those firms receiving it, domestic firms failed to benefit. In some cases, a nation's level of development may prevent useful technological transference. Some newly introduced technologies may be between five and ten years old and of little use to the receiving nation. Qualitative interviews of firm managers have suggested that only a small percentage of innovation can be attributed to technology transfers (Mansfield and Romero 1980).

Despite the general lack of support for a relationship between FDI and technology transfer/economic growth at the firm-level, a small number of studies suggest that FDI can promote technological innovation when certain conditions are present (Liu and Wang 2003; Nguyen and Aoyama 2012). Liu and Wang (2003) note the benefits of FDI inflows to a variety of Chinese industrial sectors. Firm productivity increases in the presence of foreign investment. When combined with intensive research and development in the domestic sector, FDI produces greater benefits for firm productivity – utilizing existing human capital to greater advantage.

The impact of existing human capital is also enhanced when foreign investors work closely with their subsidiaries. Qualitative interviews of

managers in Vietnamese subsidiaries of Japanese manufacturers suggest that FDI is most effective when interaction between firms is frequent and when occupational training across firms is consistent. Furthermore, a familiarity with the cultural practices of the receiving nation and a willingness to incorporate such issues into managerial policy can enhance the technological transfer and productivity that is intended to result from foreign investment (Nguyen and Aoyama 2012).

One of the more effective ways that foreign firms can use FDI to promote growth is by investing in technology-intensive industries (UNCTAD 1999). Industries, such as specific types of electronics manufacturing, requiring a high degree of skill invest more in training their employees and pay higher wages than low-skilled occupations. Nations that are only able to attract low-skilled industries through foreign investment are unlikely to keep the industries within their country as wages rise. They are also unlikely to benefit much from technological spillover. The United Nations Conference on Trade and Development (UNCTAD) exemplifies the limitations of gaining investment in the garment industry.

FDI in the garment industry is based on the exploitation of one static advantage – low cost [labour]. As soon as wages rise, the garments industry will relocate, as it did first in the 1960s to the East Asian newly [industrialised] countries, and later since the 1980s, to other countries in Asia, Latin America, and parts of Africa. Most of the industry's technology is embodied in the equipment,

and training is low as workers can be trained elementary skills in a few weeks. Only those countries that used finance generated to develop local skills and capabilities were able to diversify into other activities... The search for cheaper locations (notably China) has not ended. Costa Rica has begun to target more long-lasting sources of competitiveness and human capital formation, such as high-tech manufacturing (UNCTAD 1999; Velde 2001:13).

To achieve the greatest benefits from foreign direct investment, nations are best served by attracting investment in industries that provide extensive job training and in industries that can produce useful transfers to domestic industries.

### 3.2.2 *Macro-Level Analyses*

Despite a lack of support in the majority of firm-level analyses, macro-level studies tend to find that foreign direct investment has a positive effect on economic growth under certain conditions (Alfaro et al. 2000; Balasubramanyam et al. 1996; Blomström et al. 1994; Borensztein et al. 1998; Carkovic and Levine 2005; De Gregorio 1992; Hermes and Lensink 2003; Li and Liu 2004). Such conditions include a sufficiently educated labor force, an adequate level of pre-FDI development, sufficiently developed financial markets, and high levels of trade openness. When these conditions are met, either independently or simultaneously, foreign direct investment can promote economic growth and job creation.

In an analysis of 69 nations between 1970 and 1989, Borensztein et al. (1998) find that inward FDI has a modest effect on economic growth. Not only

does foreign direct investment increase economic growth directly, through firms receiving the investment, it also increases growth by increasing the investment in domestic firms. The effect of the investment, however, is dependent on the level of human capital stock possessed by a nation. Borensztein et al. (1998) measure human capital stock as the average years of male secondary schooling (Barro and Lee 1993; Barro and Lee 1994). At higher levels of mean schooling, FDI has a greater effect on economic growth. Interestingly, at low levels of human capital stock, FDI actually has a negative effect on growth. However, at the mean educational level, a modest increase in the FDI to GDP ratio of .005 was associated with an increase of 0.3 percentage points per year in per capita GDP. This held true for the majority of nations included in the sample – 46 of 49. For nations with both high levels of FDI and human capital, economic growth occurred at an average rate of 4.3% per year. Nations that were low on both, however, only experienced an average growth rate of 0.64%. A higher rate of growth in nations with higher levels of human capital stock is attributed to a greater capacity to absorb technological transfers and spillovers from foreign to domestic firms.

Similar results are reported by Li and Liu (2004). The ability to absorb technological spillover is dependent on a nation's stock of human capital.

Examining 84 nations for the period 1970 to 1999, Li and Liu (2004) find that FDI

flows have an independent effect on economic growth. The effect is also conditioned by the level of human capital stock, measured by mean educational attainment (Barro and Lee 1993; Barro and Lee 1994). Inward FDI flows are associated with increased GDP per capita in both developed and developing nations. Once again, the level of human capital stock is an important determinant of economic growth. The effects of FDI are pronounced when nations have high levels of mean educational attainment.

In an analysis of 18 Latin American nations between 1970 and 1999, Bengoa and Sanchez-Robles (2003) find that FDI has a positive effect on economic growth. This study is interesting for several reasons. First, the sample consists of only developing nations. Second, the findings refute the arguments made by many economists that foreign direct investment is harmful to Latin American economies (Amin 1974; Emmanuel 1972; Furtado 1970; Wallerstein 1974). Bengoa and Sanchez-Robles (2003) also find that economic growth is dependent on a minimum threshold of human capital stock, and they argue that FDI should be a sought after form of investment for a nation's economic growth plan.

The policy implications of our analysis are clear: to spur and to finance growth policymakers should encourage FDI. Our investigation indicates that this means that governments should strive to achieve a sound degree of political and economic stability, together with a market-oriented environment. Economic freedom enhances growth in [less-developed countries] LDCs by two

channels: directly, as it has already been shown in the literature, and indirectly, by increasing the FDI that a country attracts. Increasing economic freedom should therefore be a key priority of policy makers (543).

Campos and Kinoshita (2002) find foreign direct investment to be crucial to the economic growth of 25 Eastern and Central European former Soviet states. Human capital, however, does not increase growth. Like Bengoa and Sanchez-Robles (2003), Campos and Kinoshita (2002) argue for FDI to be a sought after component of economic growth.

Our results show that FDI is a crucially important explanatory variable for growth in transition economies, an issue that has been largely ignored by the empirical literature. The policy implications from our results should not be overlooked. So far, transition economies have by and large been shy in their attempts to attract FDI and we believe our results invite re-thinking the prevalent attitude (417).

Not only can FDI be more effective when human capital stock is high, foreign investment has also been found to have a greater effect when pre-FDI technological development is relatively high (Blomström et al. 1994; Li and Liu 2004). Blomström et al. (1994) find the ratio of inward FDI to GDP in a five year period to be positively associated with economic growth in the following five year period for higher income, developing nations. Li and Liu (2004) find that a nation's technology gap – indexing a nation's GDP to the GDP of the United States – has a negative effect on economic growth. However, a large technology gap in developed nations does not influence the effect of FDI on economic



growth. This is likely due to the fact that developed nations have some minimum threshold in their ability to absorb technological spillovers derived from FDI. Developing nations, however, generally have low absorptive capacity. Li and Liu (2004) also find a negative interaction effect between FDI and the technology gap of a nation – suggesting that FDI is a relatively wasted enterprise in nations where initial technology stock is low.

The impact of FDI may also be dependent on the fiscal state of receiving nations' financial markets (Alfaro et al. 2004). When markets have low financing capabilities, entrepreneurs are impeded in their ability to create new businesses. This can be particularly problematic in developing nations where employees in firms receiving foreign investment want to create their own businesses after acquiring technological knowledge. This spillover was evident in the textile industry in Bangladesh in the early 1980s. In 1979, 130 Bangladeshi employees were trained on textile technology in Korea. Over the course of the next several years, 115 employees began their own textile plants. This process was made easier by a relatively strong financial market that was able to provide loans to many of the 115 former employees. Alfaro et al. (2004) suggest that this was a contributing factor in increasing the export value of the Bangladeshi textile industry from \$55,000 in 1980 to over \$2 billion by the year 2000. In their own

analysis, they find that nations only benefit from FDI when they have strong financial markets capable of lending activities.

Finally, the effect of FDI on economic growth may depend on the degree to which nations export their goods (Balasubramanayam et al. 1996). According to Bhagwati (1978), nations can follow either an export promoting (EP) strategy or an import substituting (IS) strategy. An EP strategy is relatively market neutral, having little to no regulatory provisions. Nations relying on an IS strategy intervene into free-market mechanisms, relying on tariffs and trade quotas to regulate the market. Therefore, because corporations in EP nations have greater ability to control the production and export of their goods, EP nations may attract a higher volume of FDI (Bhagwati 1978; Balasubramanayam and Salisu 1991; Balasubramanayam et al. 1996). Import substitution nations, however, seek FDI in order to lessen their reliance on imports. While this can appear beneficial from the IS nation's perspective, the investors of FDI are constrained in where the completed goods can be sold. By being limited to the domestic market where the FDI is invested, the investors are subjected to the potential inefficiencies and instabilities of the domestic market. When negative changes in the domestic market occur, FDI investors are limited in how much of their product they can export. Therefore, not only are IS nations less likely to receive FDI, the manner in which it may be used is less likely to result in

promoting growth (Bhagwati 1978; Bhagwati and Srinivasan 1975; Balasubramanayam and Salisu 1991; Balasubramanayam et al. 1996; Greenaway and Nam 1988). However, because free market forces are at work in EP nations, FDI can encourage research and development and investment in human capital as competition between foreign and domestic firms is likely to occur (Balasubramanayam et al. 1996). This, in turn, can promote economic growth (Balasubramanayam et al. 1996; Romer 1993). In an analysis of 46 nations, Balasubramanayam et al. (1996) find that FDI promotes economic growth in EP nations. Import substituting nations, however, do not receive this benefit. Receiving FDI has no impact on the economic growth of IS nations. Although economic growth is more likely to occur under export promoting policies, both export promoting and import substituting policies have held prominent roles in nation's economic development plans (Sit 2001)

Foreign direct investment has been linked with economic growth under several conditions. It has been found to spur growth when the receiving nation has an educated population, when the technology gap between the sending nation and the receiving nation is at a minimum, when the receiving nation has an adequate financial market with the ability to engage in lending activity, and when the economic policy of receiving nations does not limit the ability of firms to export their products (Alfaro et al. 2000; Balasubramanyam et al. 1996;

Blomström et al. 1994; Borensztein et al. 1998; Carkovic and Levine 2005; De Gregorio 1992; Hermes and Lensink 2003; Li and Liu 2004). Some scholars, however, have found that FDI has an overall positive effect on economic growth regardless of the conditions under which FDI investment occurs (Bengoa and Sanchez-Robles 2003; Campos and Kinoshita 2002). The promotion of economic growth is one mechanism through which foreign direct investment can impact homicide rates according to the propositions of modernization theory (Durkheim 1951 [1897]; 1984 [1902]; 1997 [1893]; Shelley 1981). Other mechanisms through which foreign direct investment can impact homicide rates include increased inequality and increased urbanization.

### **3.4 The Relationship between Foreign Direct**

#### **Investment and Inequality**

The second mechanism through which inward FDI can positively affect cross-national homicide rates is by increasing inequality (Messner 1980; Avison and Loring 1986; Gartner 1990; Neapolitan 1998; Messner et al. 2002; Pratt and Godsey 2003; Van Wilsem 2004; Chamlin and Cochran 2006; Cole and Gramajo 2009; Nivette 2011). While the relationship between foreign direct investment and inequality has only begun to receive attention over the past 30 years, the relationship between a nation's level of development and inequality has a longer

history (Kuznets 1955; Kuznets 1963; Kuznets 1976). In Kuznets' (1955; 1963; 1976) early work on inequality in industrial societies (the United States, Great Britain, and Germany), he found a curvilinear, inverted-U relationship between development and inequality. At low levels of development, nations were characterized by low levels of inequality. As nations proceed through the development process, inequality begins to increase. By the time nations reach an advanced level of development, their level of inequality is again low. While much attention has been focused on the nature of the relationship between development and inequality – as an inverted-U – it has been found that the relationship may actually be better characterized by a wave pattern. After inequality declined in industrial nations, reaching the bottom right hand side of the inverted-U, it began to increase again – rising as industrialized nations continued in their development (Nielsen and Alderson 1997).

Several factors may account for the rising inequality that nations experience as they develop (Evans and Timberlake 1980; Sullivan 1983; Alderson and Nielson 1999; Beer and Boswell 2002; Lipsey and Sjöholm 2005; Henisz 2011). Foreign investment can bring many pressures with it. Investors may pressure policymakers for laws limiting the rights and wages of domestic employees. They may also limit the degree to which they invest in infrastructure – focusing only on a narrow range of projects beneficial to the investing firms. It is also

possible that large scale production from firms receiving foreign investment can crowd out production from domestic firms. In many instances, profits are repatriated rather than reinvested in domestic economies. Finally, firms receiving foreign investment may pay higher wages than domestic firms (Girma et al. 2001; Görg and Greenaway 2003; Lipsey and Sjöholm 2005). All of these may contribute to increased inequality (Henisz 2011).

In the case where a firm is partially owned by a corporation from a foreign nation, it tends to pay higher wages than a domestic firm. Economic literature expects this to result in either positive or negative wage spillover. Positive wage spillover occurs when the higher wages paid to employees of foreign owned firms spread and raise the wages of domestic firm employees. Negative wage spillover occurs when foreign owned firms attract the most educated and productive employees, leaving less qualified or poorly qualified employees to work in domestic firms. This can result in stagnant or lower wages paid to employees of domestic firms (Lipsey and Sjöholm 2005).

Empirical evidence on wage spillover is somewhat mixed. In an analysis of 21 studies, Görg and Strobl (2001) find that studies employing cross-sectional designs generally find evidence of positive wage spillover. However, studies based on a longitudinal design tend to find evidence of negative wage spillover. This does not seem unusual, however, as it would take time for any spillover to

occur. As time progresses, firms receiving foreign investment attract educated employees, while domestic firms become concentrated with low-skilled employees. This suggests that negative wage spillover and increased inequality may be greater with increased flows of inward foreign direct investment (Görg and Strobl 2001; Lipsey and Sjöholm 2005).

In an examination of the overall effect of foreign investment on inequality, Tsai (1995) finds that FDI is associated with greater levels of inequality in 60 less-developed countries. Interestingly, the effect of regional variation in inequality drives the relationship. After including dummy indicators for Latin-American nations and East/Southeast Asian nations, the relationship between inequality and FDI disappears for Latin-American nations. However, the relationship remains for East/Southeast Asian nations. Much like the analysis by Bengoa and Sanchez-Robles (2003) on the relationship between foreign investment and economic growth, the findings by Tsai (1995) also refute the arguments made by many economists that FDI is most harmful to Latin-American nations (Amin 1974; Emmanuel 1972; Furtado 1970; Wallerstein 1974). Tsai (1995), however, attributes the non-significant effect for Latin-American nations to the long-term presence of inequality that has resulted from concentrated land ownership. Because ordinary least squares regression coefficients are only capturing the marginal effect of the relevant explanatory variables, the significant impact of

FDI on inequality in Latin-American nations may not be captured within the time-period analyzed. While the initial impact of FDI on inequality may have been large in Latin-American nations, the current marginal effect is small. The impact of FDI on inequality in East/Southeast Asian nations can be explained similarly. Because East/Southeast Asian nations have historically had lower levels of inequality than Latin-American nations, the marginal effect of FDI on inequality that is being captured in the analysis actually constitutes a significant impact from low to high levels. The driving force behind this is the fact that inequality in East/Southeast Asian nations has the ability to increase more than it does in Latin-American nations.

While Tsai's (1995) findings suggest that the impact of FDI is spurious and dependent on regional differences, Alderson and Nielsen (1999) reach a different conclusion. Analyzing data on 88 nations from 1967 to 1994, they find that foreign investment has a robust relationship with inequality. Although inequality is higher in Latin-American nations, foreign investment still exerts a significant and positive effect on inequality when regional indicators are included.

Using a sample of 88 less developed nations, with gross domestic products below \$10,000, Kentor (2001) examines the relationship between FDI and inequality. In a series of structural equation models, he finds that the ratio of



foreign direct investment to gross domestic product in 1980 increases inequality between 1980 and 1990. Beer and Boswell (2002) also find a positive association between foreign investment and inequality. While the previous studies have relied on the GINI coefficient or some similar method of measuring inequality, Beer and Boswell (2002) measure inequality as the income share held by the top quintile of the population. They find that foreign investment comes at the expense of the bottom 80% of the population, with FDI significantly increasing the income share held by the top 20% of the population.

The preceding discussion suggests that it is important to examine the effect of inward FDI on homicide rates. To this point, economic literature suggests that inward foreign direct investment increases both rapid economic growth and inequality. Both economic growth and inequality are important predictors of homicide. Modernization theory suggests that rapid growth will be associated with homicide, while economic deprivation theory suggests that inequality will be associated with homicide. However, there is one final mechanism through which foreign investment can increase homicide. This is by increasing urbanization.

### 3.5 The Relationship between Foreign Direct

#### Investment and Urbanization

Foreign investment can increase urbanization by attracting individuals into cities in search of employment. The rural-urban migration pattern that characterizes many less-developed nations has been attributed to political and economic causes since the mid-nineteenth century. Marx (1967) suggested that the industrialization of the mid-1800's promoted migration. The rise of factories produced numerous job opportunities for individuals. Laws that limited land use and appropriated land away from agricultural workers further contributed to population shifts. Marx (1967) suggests that such policies were intentionally created to limit individuals' ability to maintain their livelihood through agricultural means and to create a proletariat class of laborers dependent on the capitalist class and industrial production. This suggests that urbanization was an intended consequence of economic development. Durkheim (1951 [1897]; 1984 [1902]; 1997 [1893]) and Shelley (1981) also suggest that urbanization is a consequence of modernization. According to Shelley (1981), when nations industrialize they rely less on agriculture and more on manufacturing and service industries. This causes rural residents to migrate to urban centers in search of employment. Indeed, Hoselitz (1960) suggests that urbanization is an inevitable result of modernization and foreign investment.

Empirical evidence suggests that foreign investment and foreign dependence increases urbanization (London 1987; London and Smith 1988; Sit and Yang 1997; Zhu et al. 2012; Sit 2001). London (1987) finds that the economic penetration by multi-national corporations into domestic markets is associated with greater urbanization – measured as the percentage of the population residing in urban areas.

In a later analysis, London and Smith (1988) again examine the relationship between foreign investment/dependency (multi-national penetration) and development. They define foreign investment as the ratio of capital controlled by FDI to the total capital multiplied by the population. In their analysis of 103 nations, London and Smith (1988) find that multi-national penetration increases urban bias. Urban bias measures the ratio of the output of workers in non-agricultural sectors of the economy to the output of workers in agricultural sectors of the economy. While urban bias is not an explicit measure of urbanization, it does capture the degree to which multi-national penetration shifts the economic output of a nation from the agricultural to the non-agricultural/industrial sector. Concomitant with greater output in non-agricultural sectors is the transition from agrarian to non-agrarian forms of production. The greater output can be attributed to the migration of individuals

from rural to urban areas where non-agricultural industries are predominately located.

Recent studies on FDI and urbanization focus on the manifestation of this relationship in the People's Republic of China (PRC). Sit and Yang (1997) argue that foreign investment is an important correlate of urbanization – one that has only recently began with the expansion of economic globalization. They label the new form of FDI dependent urbanization exo(genous)-urbanization and examine how exo-urbanization occurs in the Pearl River Delta of the PRC. Located in Guangdong province and bordering the South China Sea, the Pearl River delta has been the recipient of large amounts of foreign investment since the PRC instituted a series of economic reforms in 1978. These reforms introduced capitalist market principles and allowed foreign investment into the PRC. Since then, the effects on the Pearl River Delta have been dramatic. Sit and Yang (1997) note that much of the early foreign investment has been placed in export oriented manufacturing. This has transitioned the region from agrarian to industrial and urban – with high rates of rural to urban migration. In 1978, only 13.2 percent of the population in the Pearl River Delta lived in an urban area. By 1993, the percentage had increased to over 40%. While early FDI was placed in manufacturing, much of the investment is now placed in infrastructure, transport, energy, and real estate. The expansion of foreign investment into

more sectors provided more employment opportunities and produced greater migration. As a result of their analysis, Sit and Yang (1997) conclude that foreign investment is the most important determinant of urbanization in the Pearl River Delta. Investment from Macau and Hong Kong into the mainland of Guangdong province has resulted in rapid industrialization, economic growth, and exo-urbanization.

Since Sit and Yang's (1997) paper introducing exo-urbanization was published, the Pearl River Delta region of the PRC has continued to experience exponential growth. Between 1997 and 2010, cities within Guangdong province have experienced between 50% and 100% increases in their population. By 2010, 3 cities in the delta had a population of over 5 million people. Between 1980 and 2010, Shenzhen experienced the most dramatic growth. In 1980, its urban population was 60,000. In 1990, it was 880,000. By 2000, it had increased to 6.07 million, and, in 2010, it was 9.83 million. The rise of the city has been almost entirely attributed to regional migration – exo-urbanization.

Zhu et al. (2012) also find that foreign investment is strongly associated with urbanization in the PRC. They attribute this to the process of exo-urbanization introduced by Sit and Yang (1997). Foreign capital draws individuals seeking employment into locales where foreign investment is concentrated – prompting rapid growth.

The preceding sections suggest that foreign direct investment can increase economic growth, inequality, and urbanization – sometimes rapidly. These three factors have been associated with homicide in criminological literature (Durkheim 1951 [1897]; 1984 [1902]; 1997 [1893]; Wolf 1971; Shelley 1981; Conklin and Simpson 1985; Bennett 1991; Ortega et al. 1992; Neumayer 2003; Pratt and Godsey 2003; Van Wilsem 2004; Chamlin and Cochran 2006; Cole and Gramajo 2009; Nivette 2011). The stifling of economic growth, however, is not a solution to reducing homicide – particularly because economic growth in the long term increases the well-being of a nation’s citizens and reduces homicide (Firebaugh and Beck 1994; Brady et al. 2007). Rather, an approach to mitigate the negative consequences that may occur during rapid change is optimal. Such an approach can work to reduce poverty and inequality while integrating individuals into a different form of social life. Theoretically, a strong civil society in the form of international non-governmental organizations (INGOs) focusing on poverty reduction and social welfare can alleviate the negative consequences of rapid economic growth.

The preceding paragraph summarizes the hypotheses relating foreign direct investment to homicide. First, FDI will be associated with increased economic growth, increased inequality, and increased urbanization. The relationship between INGO’s and homicide will be addressed next in Chapter IV.

## CHAPTER IV

### INTERNATIONAL NON-GOVERNMENTAL ORGANIZATIONS (INGOS) – THE RELATIONSHIP BETWEEN INGOS AND HOMICIDE

#### 4.1 Defining INGOs and Civil Society

International non-governmental organizations (INGOs) are, by definition, international in their scope. This contrasts with non-governmental organizations (NGOs) which are limited by national boundaries. An NGO has a presence in one nation; an INGO has a presence in multiple nations. Furthermore, an INGO is non-governmental – operating independently of national governments. While an INGO may receive the support of a national government and participate in supra-national governmental bodies – such as the United Nations, it is not a part of any government and should not be pressured by the political parties that are in power (Turner 2010). According to the United Nations and the *Yearbook of International Associations*, international non-governmental organizations can be defined as:

[The] transnational organizational manifestations of what is now increasingly called "civil society" -- which, in the words of UN Under-Secretary-General Nitin Desai, is "the sphere in which social movements organize themselves around objectives, constituencies, and thematic interests". Civil society, thus defined, is itself composed (in the language of Agenda 21 of the UN Conference on Environment and Development) of "major groups" who reflect

those various interests (Yearbook of International Associations 2013.)

This definition of INGOs is interesting for several reasons. First, it places these organizations within the realm of civil society. Second, it provides a tentative definition of civil society. Finally, it states the role of INGOs within civil society. Civil society is based on the individual – to some degree, it exists and acts apart from national governments. While the actions of individuals and groups that occur in the realm of civil society are constrained by the systems that exist outside of it, civil society itself is a place for voluntary human action guided toward an end goal – whether that goal is a goal of the governing nation in which the INGO is working or not. It is a social realm where collective action occurs. In this sphere, individuals come together to advance various goals that may range from securing employment for historically disadvantaged groups, to promoting better methods of food production and distribution, to reducing poverty and inequality.

While the characteristics of civil society may vary by nation, it is helpful to understand that with the rise of globalization, civil society is no longer constrained by national borders. Indeed, globalization has brought with it a multitude of changes. Nowhere is this more evident than in cultural, economic, and political arenas. Globalization has become so ubiquitous in recent years that Western culture has spread to politically Communist nations (i.e. the People's



Republic of China) and to partially closed nations (i.e. Iran). Similarly, cultural ideas of non-western nations (i.e. Japan; South Korea) have become common in the United States and other countries. Writing on globalization, Waters (1995) defines it as “a social process in which the constraints of geography on economic, political, social and cultural arrangements recede, in which people become increasingly aware that they are receding and in which people act accordingly (Waters 1995:5).”

With this in mind, it is evident that the ideas and goals comprising certain civil societies can spread supra-nationally. It may therefore be more useful to speak of a global civil society as opposed to just a civil society. Keane (2003) writes the following on global civil society.

It refers to a vast, sprawling non-governmental constellation of many institutionalized structures, associations, and networks within which individual and group actors are interrelated and functionally independent. As a society of societies, it is ‘bigger’ and ‘weightier’ than any individual actor or organization or combined sum of its thousands of constituent parts – most of whom, paradoxically, neither ‘know’ each other nor have any chance of ever meeting face-to-face. Global civil society is a highly complex ensemble of different sized, overlapping forms of structured social action (11).

This statement places INGOs strictly in the realm of global civil society.

However, despite the fact that INGOs are interrelated, they are independent. For example, members of ATD Fourth World in Guatemala, Peru, and Brazil are all working toward eradicating poverty. While they are working toward the same

goal and working within the same international organization, their work proceeds in relative autonomy – focusing on the necessary conditions that need to be addressed in each nation. While delegates from various nations have had the opportunity to meet and discuss issues at the United Nations, most members will never meet. Keane's (2003) definition is, thus, apt. INGOs are societies within a society – national chapters of ATD Fourth World in Guatemala, Peru, and Brazil, for example, are separate societies within the larger society of ATD Fourth World.

Boli and Thomas (1997) write similarly of INGO's ability to address social injustices and improve the lives of individuals, stating:

The cultural principles [represented] by INGOs are ... integral to the world economy and state system, but INGOs push them to extremes. Their discourse is often critical of economic and political structures, stigmatizing "ethnocentric" (nonuniversalistic) nationalism and "exploitative" (inegalitarian) capitalism (182).

The goal of INGOs is to improve the lives of individuals; often, this is accomplished by changing elements of the economic or political structure.

According to Boli and Thomas (1997), INGOs involved in "individuals rights and welfare" and INGOs that are "world-polity oriented" are of "special interest (183)." Organizations that focus on individual rights and welfare primarily work toward improving universal rights – as well as the rights of minorities, women, and indigenous peoples. With this comes improvement in several areas: living

conditions, education, opportunities for employment, social welfare policies at the governmental level, and greater equality. Organizations working toward world-polity goals often focus on promoting world peace, improved food production and distribution methods in less developing countries, and environmental conservation.

Wolfe (1989) suggests that the presence of a strong civil society is fundamental in addressing moral issues such as poverty, inequality, and social integration. When a civil society is strong, individuals are not eternally bound to the rules and injustices of an unkind state. Civil society provides individuals with a space to make moral rules with which they agree – ‘families, communities, friendship networks, voluntary organizations, and social movements’ (Wolfe 1989: 233) can change individual lives and lead to the enactment of egalitarian social policies within nations.

Therefore, several scholars suggest that a strong civil society is important to improving societal conditions and individual life (Wolfe 1989; Boli and Thomas 1997; Currie 1997; Shandra et al. 2004; Shandra 2007; Jorgenson 2009; Wright and Rogers 2011). Although current empirical studies do not examine the impact of international non-governmental organizations on homicide rates, they do focus on how INGOs are working toward a variety of world-polity goals. Existing studies examine the impact of INGOs on carbon dioxide emissions,

deforestation, and water pollution (Shandra et al. 2004; Shandra 2007; Jorgenson 2009).

However, it is important to consider the role that international non-governmental organizations may play in reducing homicide. INGOs have the ability to advance a multitude of societal goals. When they focus on reducing conditions that are associated with violent criminal behavior and homicide, they have the potential to exert an independent effect that actually produces a decline in a nation's homicide rate. According to modernization theory, there are several conditions that may be associated with homicide (Durkheim 1951 [1897]; 1984 [1902]; 1997 [1893]; Shelley 1981; Neuman and Berger 1988; Bennett 1991; Ortega et al. 1992; Huang 1995; Neapolitan 1997). INGOs may reduce violence and homicide when they focus on reducing poverty, reducing inequality, providing social welfare services, and integrating individuals into communities – as well as when they engage in more direct methods of crime reduction. This may occur by creating treatment and rehabilitation programs for offenders and creating programs aimed at preventing offending for individuals who are subject to an array of risk factors.

#### **4.2 INGOs over Time and INGO Activities**

While the public has a general knowledge of the existence of international non-governmental organizations and a general idea of what they may do,

INGOs, like foreign investment, have increased dramatically over the past several decades. This brings greater attention to the causes of various INGOs, allows for greater participation in INGOs by individuals, and increases the role of INGOs – as a component of civil society – within society as a whole.

#### 4.2.1 *INGOs over Time*

The exponential growth of international non-governmental organizations has often been attributed to globalization and/or a rise in global social issues (Turner 2010). Of course, globalization and global social issues co-exist and are, in fact, dependent on one another. Globalization compresses space and time resulting in a phenomenological shrinking of the world that allows for the recognition of social issues that: 1.) affect global civil society and: 2.) can be resolved through the voluntary participation of global civil society (Mittelman 1996; Keane 2003).

Worldwide, there were fewer than 1,000 INGOs in 1950. By 1975, this number had increased to approximately 5,000. By 1980, there were almost 10,000, and by 1985, there were approximately 15,000 INGOs. As of 2005, there were 27,472 INGOs worldwide. Between 1950 and 2005, there was approximately a 3,200% increase in the number of INGOs worldwide (Turner 2010). The number of INGOs pertinent to this study (e.g. poverty reducing and social welfare promoting) has also increased dramatically during the period of

study that is analyzed. Figure 2 (page 108) shows the number of INGOs worldwide between 1985 and 2004, while Figure 3 (page 109) shows the number of INGOs per 100,000.

In addition to examining the number of INGO's over time, it is also useful to look at when INGOs were founded. Despite the fact that the number of INGOs worldwide has been increasing steadily, the number of INGOs founded each year has not exhibited the same degree of consistency. In 1950, nearly 600 new INGOs were founded. In 1970, over 1,000 were founded. The number of new INGOs founded peaked at 2,992 in 1995. Between 1995 and 2005, the number of new INGOs founded decreased substantially – from 2,275 in 2000 to 1,280 in 2005 (Turner 2010).

The lifespan of international non-governmental organizations is also tenuous. While some INGOs maintain their livelihood and achieve consultative status with the United Nations, others cease to exist shortly after they begin operating (Boli and Thomas 1997; Turner 2010). In an analysis of 5,983 INGOs, Boli and Thomas (1997) found that nineteen organizations dissolved during the same year they were founded. 260 were non-existent after three years, and 502 were no longer operating after five years. They were also able to examine the founding of INGOs from 1875 onward. The most dramatic increases in INGO formation occurred in the periods following World War I and World War II –

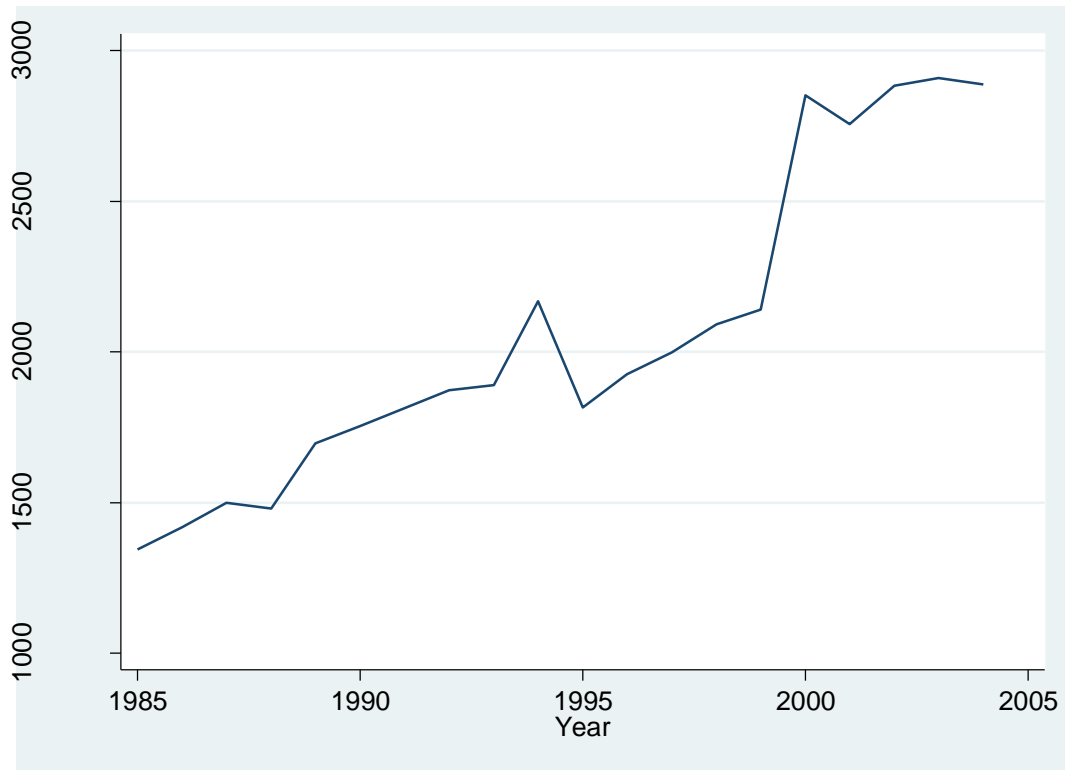


Figure 2. International Non-Governmental Organizations (1985-2004) – Thousands

---

Source: International Yearbook of International Associations (1985-2004)

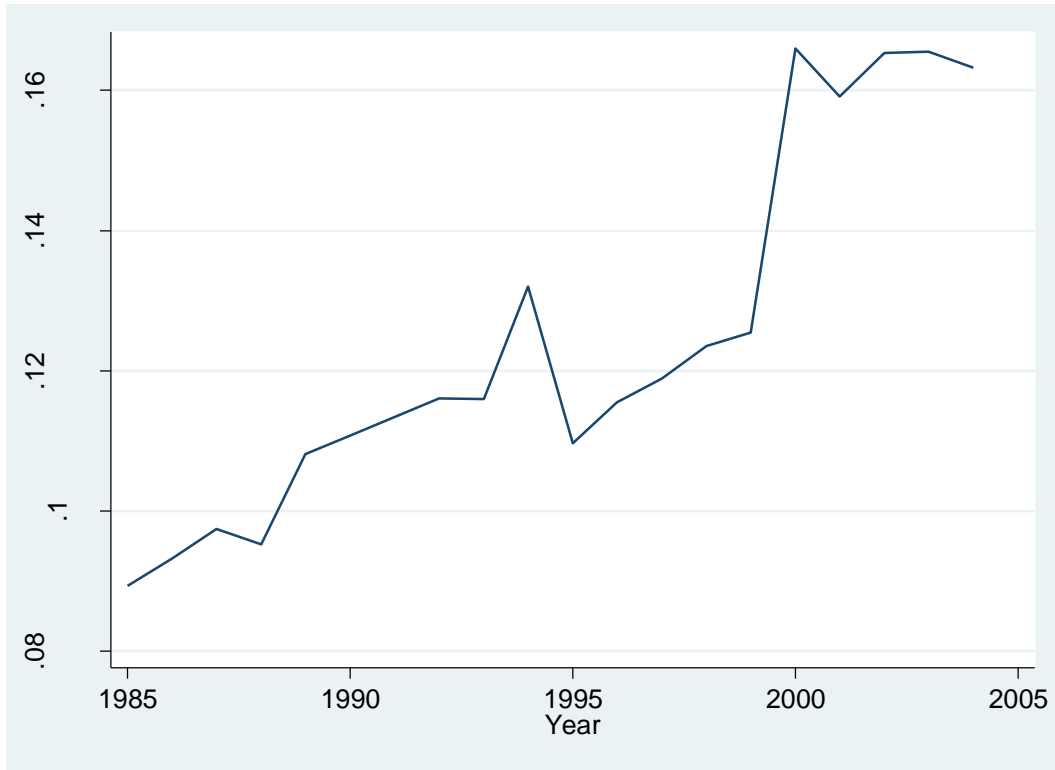


Figure 3. International Non-Governmental Organizations per 100,000 (1985-2004)

---

Source: International Yearbook of International Associations (1985-2004)



likely to deal with post-war development. While the creation of INGOs can clearly be limited by extreme turmoil, cyclical patterns of economic development can also impact the existence of INGOs. Boli and Thomas (1997) note that INGOs tend to be created at a faster pace during periods of worldwide development. During downturns, INGO creation contracts and existing INGOs may be more likely to dissolve. Like Turner (2010), Boli and Thomas (1997) note that there has been an overall increase in both the number of INGOs and in the number of INGOs founded each year.

#### 4.2.2 *INGO Activities*

Generally, international non-governmental organizations that attempt to address the negative consequences of rapid economic change are those that seek to reduce poverty and inequality while promoting social welfare and social integration.

These INGOs may utilize several methods to reduce poverty and inequality. Some advocate for political change by introducing legislation that would provide cash transfers to individuals living in poverty. Other INGOs provide for basic needs including food, health care, and housing. Still others work to improve education and skills training so that individuals can gain access to better job opportunities. In some instances, INGOs focus on providing micro-financing to those who are unable to receive loans from banking institutions.

This is done in hopes of reducing poverty by providing individuals with money when needed and allowing entrepreneurs to fund small businesses – creating jobs for individuals (Sparr and Moser 2007).

INGOs, such as Save the Children Alliance, recently met with supra-national bodies in an effort to intensify efforts at reducing inequality. On September 9<sup>th</sup>, 2011, 27 participants from INGOs, national governments, and the United Nations held a roundtable to address increasing global and national inequality. The bulk of the agenda focused on developing policies to reduce both poverty and inequality. Several recommendations came from the roundtable. The recommendations represent a course of action that a number of INGOs will take in the future. First, INGOs should focus on investing in socially and economically marginalized groups. This can occur by investing in the infrastructure servicing these groups (e.g. access to potable water) and providing them with greater resources (e.g. greater educational opportunities and access to health care). The roundtable recommended the implementation of social welfare programs, a progressive system of taxation, and economic growth based on intensive labor.

Reducing economic inequality, however, is only one component of a larger set of policies aimed at social justice. The elimination and illegalization of discrimination were also recommended to decrease inequality (te Lintelo 2011).

Not only can this policy assist in reducing economic inequality, it can reduce violence. The elimination of discrimination based upon ascribed characteristics is a central tenet in several studies of violence and homicide (Blau and Blau 1982; Gartner 1990; Altheimer 2008). Blau and Blau (1982) argue that discrimination along racial and ethnic lines often produces economic inequality when racial and ethnic minorities are excluded from educational and employment opportunities. This produces clear group distinctions that can lead to conflict. Alternatively, it may isolate racial and ethnic minorities in clusters of concentrated disadvantage (Currie 1997; Neumayer 2003). This can lead to strain and frustration – potential causes of violent behavior (Merton 1938; Messner 1980; Agnew 1985; MacKellar 2003).

These approaches by international non-governmental organizations, national governments, and supra-national bodies can greatly benefit society. While the main function of these efforts is to reduce inequalities, promote economic and political inclusion, and integrate social groups into intra-racial and ethnic relationships, they may have outcomes that were never intended. When efforts at reducing inequality are successful in improving individuals' lives, they also have the potential to improve individuals and society by decreasing incidences of violence and homicide. *Ceteris paribus*, when INGOs and national governments are working toward the same goal, the ultimate impact is likely to

be made by national governments – particularly when they result in social protection policies. However, the work of INGOs can be instrumental in advancing the interests of minority status groups and bringing them to the attention of national governments so that policies can be enacted. For this reason, a greater presence of INGOs in a nation may be associated with a variety of positive societal outcomes.

#### *4.2.3 Case Study: ATD Fourth World*

A brief case study of an international non-governmental organization can further clarify the link between INGO activities and homicide. Founded in 1974, ATD Fourth World is an INGO that focuses on eradicating extreme poverty and social exclusion. It is an internationally recognized organization, having received general consultative status with the Economic and Social Council of the United Nations (ECOSOC) in 1991.

According to ATD Fourth World, their focus is:

supporting families and individuals through its grass-roots presence and involvement in disadvantaged communities, in both urban and rural areas, creating public awareness of extreme poverty and influencing policies to address it. . . [by] bring[ing] together people from all walks of life, starting with the poorest, through cultural activities and the defense of human rights (International Movement ATD Fourth World 2006-2009).

ATD Fourth World carries out these goals by becoming involved in the policies of local and national governments and by creating grass-roots programs to increase employment.

In 2006, ATD Fourth World filed a complaint against France for violating Articles 16, 30, 31, and E of the Revised European Social Charter. Article 16 states that political parties must provide adequate social protection for families through social benefits, various fiscal arrangements, and the provision of housing. Article 30 states that all citizens have the right to be protected against social exclusion. Social exclusion occurs when individuals are cut off from important components of society, including health care, public housing, and educational opportunities (Musterd and Murie 2006). Article 31 states that all citizens have the right to housing, while Article E states that the rights outlined in the other articles cannot be applied in a manner that discriminates against various social groups (International Movement ATD Fourth World Youth v. France 2006). According to the complaint by ATD Fourth World, France is failing to provide adequate housing in a timely manner to citizens who are living in conditions of extreme poverty.

While the French government does provide social housing to its citizens, the process by which housing is allocated has been criticized severely by ATD Fourth World and others. Selection criteria for social housing fails to account for

the urgency of housing needs and fails to ensure that those facing extreme disadvantage and poverty are guaranteed housing. Often, families in social housing face dangerous or overcrowded living conditions – one man was placed in a youth hostel for a five year period. While they may appeal for a change in housing, the appeals process has been criticized for moving too slowly. It is not uncommon for appeals to take between two and three years – cases in Paris often take six to ten years. Even when families receive social housing, there is no guarantee that they will be able to make the minimum payments necessary to remain in their homes. Evictions have become increasingly common as individuals fall behind on their rent (International Movement ATD Fourth World Youth v. France 2006). The following experience has been shared by many individuals.

Mrs. J occupied a five-room dwelling with her four children from 1987 to 2001. She fell behind in her rent and therefore requested smaller accommodation, particularly as three of the children had left home. The request was not granted. She was evicted for rent arrears. Before her eviction, she placed her youngest son, aged 12, with her elder brother. She was placed under supervision. After several months of moving around, the supervision authorities found her a furnished room and then two furnished rooms (€ 475 per month), where she is currently living, but without her son as there is no room for him. Mrs. J works as a cleaning lady for € 300 per month. She applied several months ago for a threeroom dwelling to CORAL, which comprises the letting organizations Foyer Rémois, Effort Rémois, OPAC, but CORAL turned down her application because of her previous rent arrears. She does not know whether the supervision authorities have drawn up a debt repayment plan because the supervisor says nothing to her on the

subject, despite repeated requests. Mrs. J has very close relations with her son, who is now 17, and keeps track of his schooling. But she still cannot live with him because her accommodation is unsuitable. She has had numerous contacts with associations concerned with the right to housing but so far with no success (International Movement ATD Fourth World Youth v. France 2006).

The experience outlined above is not unique. Many individuals residing in social housing experience residential instability, being forced to move from place to place. This instability can hinder the formation of informal social controls and collective efficacy – two correlates of criminal behavior (Shaw and McKay 1942; Bellair 1997; Sampson et al. 1997; Sampson and Raudenbush 1999; Velez 2001). It can also reduce parental supervision – another correlate of crime (Gartner 1990; Gottfredson and Hirschi 1990). Thus, while improving the living conditions of French citizens is not explicitly intended to reduce crime, it may have that unintended effect.

In addition to their efforts at the governmental level, ATD Fourth World also works at a grass-roots level to assist individuals in gaining employment. In France, volunteers have helped individuals in poverty gain the skills necessary to repair and sell used computers. In Guatemala, they have assisted individuals living around landfills create and sell art that is made out of recycled materials. In Madagascar, they have helped individuals sell a variety of handmade goods – including linens, toys, games, and handbags. Also in Madagascar, they have set up a program that provides computer training to individuals living in extreme

poverty. Individuals participating in this program have made the commitment to work closely with one another and to assist and encourage each other in completing the program. This program has successfully placed individuals in numerous employment positions. ATD Fourth World has also set up a number of street libraries, where individuals in poverty have the opportunity to engage in reading, view and take part in art projects, and use computers. These activities take part within the larger community and encourage people to work and learn together (International Movement ATD Fourth World 2011).

Like the national based programs, the grass-roots programs also have the potential to inadvertently decrease crime. Community programs that encourage involvement and stress the importance of getting to know other individuals address two specific correlates of crime – informal social control and collective efficacy (Bellair 1997; Sampson et al. 1997; Sampson and Raudenbush 1999; Velez 2001). Taking into account the two levels of programming, it is evident that the actions of ATD Fourth World play an important role in civil society. Not only do they focus heavily on eradicating poverty and improving the life opportunities of individuals, their actions can indirectly decrease crime. Other international non-governmental organizations that focus on similar issues can also reduce a nation's level of crime.



### 4.3 Empirical Studies of INGOs

Currently, the impact of INGOs on crime – specifically on homicide – has not been examined. However, INGO presence has been included in cross-national studies by environmental sociologists (Shandra et al. 2004; Shandra 2007; Jorgenson 2009).

Environmental INGOs (EINGOs) can benefit the environment in several ways. First, they can lobby governmental bodies to enact environmentally protective policies. They can also lobby the government to restrict aid to nations that do not have such policies. Second, EINGOs may support localized environmental programs (e.g. those aimed at limiting the harm done by logging and mining). They often have the technical knowledge and financial ability to support a variety of projects. Third, EINGOs may have the means to sponsor public campaigns such as television ads or boycotts against corporations that do not adequately protect the environment. Finally, EINGOs host and attend national and global conferences aimed at improving environmental conditions. These conferences are often attended by national leaders or representatives who then come into contact with EINGO members and gain access to new ideas about how the environment can be protected (Shandra et al. 2004).

In an analysis of 61 nations, Shandra et al. (2004) find that the presence of EINGOs in a nation is significantly associated with lower levels of carbon

dioxide emissions per capita. In a later analysis of 70 nations, Shandra (2007) finds that EINGO presence is significantly associated with reduced deforestation. Likewise, Jorgenson (2009) notes a negative association between EINGO presence and reduced levels of water pollution.

The case study of ATD Fourth World and the supportive evidence for the effect of EINGO presence on improving environmental conditions suggest that the presence of international non-governmental organizations may be associated with improvement in a number of social areas. Theoretically, the presence of poverty reducing INGOs, INGOs focused on improving social welfare, and INGOs that aid individuals in finding employment should serve to reduce incidences of homicide by reducing both poverty and inequality, as well as by increasing social integration.

This chapter produces several hypotheses. First, international non-governmental organizations will have a direct effect on reducing homicide. However, INGOs may also be pivotal in mitigating the harmful effects of key correlates. For example, the presence of INGOs in a nation may reduce the effect of economic growth on homicide, it may reduce the effect of inward foreign direct investment on homicide, and it may reduce the effects of urbanization and inequality on homicide.

Next, Chapter V will briefly summarize the hypotheses derived from the preceding chapters. It will then describe the data and the analytical plan used to test the hypotheses.

## CHAPTER V

### DATA AND METHODS

#### 5.1 Hypotheses

Based upon the preceding review of literature from criminology, sociology, and economics, I proceed to test eleven interrelated hypotheses. They are grounded in the Durkheimian (1951 [1897]; 1984 [1902]; 1997 [1893]) tradition of modernization theory and follow the theoretical insights from previous cross-national tests of homicide (Shelley 1981; Conklin and Simpson 1985; Bennett 1991; Ortega et al. 1992; Neumayer 2003; Pratt and Godsey 2003; Van Wilsem 2004; Chamlin and Cochran 2006; Cole and Gramajo 2009; Nivette 2011). Durkheim (1951 [1897]; 1984 [1902]; 1997 [1893]) and Shelley (1981) suggest that strongly held beliefs (e.g. those relating to family, religion, or political structures) of rural residents may be offended when they migrate to urban centers. Without an awareness of the inter-relationship between individuals and the necessity of those relationships, offenses may be resolved violently – indicating that development may produce higher rates of homicide for a short period of time. Shelley (1981) argues that rapid development produces urbanization and homicide through several mechanisms. As individuals are drawn to urban areas, cities are unable to meet the needs of all citizens. There may be a lack of

adequate housing, poor access to education, and a lack of employment for some.

If this occurs, individuals may compete for scarce resources and become concentrated in areas of high unemployment, poverty, and inequality – correlates of homicide (Blau and Blau 1982; Currie 1997; Cole and Gramajo 2009).

Following from this, the first two hypotheses are:

*H<sub>1</sub>*. Economic development will have a positive association with homicide rates.

*H<sub>2</sub>*. Urbanization will have a positive association with homicide rates.

In addition to relating economic and societal development to homicide through the mechanisms specified by modernization theory, the hypotheses also account for the current nature of globalized development that Durkheim (1951 [1897]; 1984 [1902]; 1997 [1893]) could not account for at the time. Nations no longer develop in isolation; the developmental trajectory of one nation is often influenced by the degree of investment it receives from multi-national corporations. This form of investment is captured by inward foreign direct investment – the amount of money invested by foreign firms into a domestic economy.

Inward foreign direct investment can impact three distinct outcomes – economic growth, inequality, and urbanization. Inward FDI can produce

economic growth by introducing new technology and knowledge into emerging markets. This can benefit the recipients and may also be transferred to non-FDI receiving firms. In turn, this spurs economic growth. Inward FDI increases inequality through negative wage spillover. This occurs when firms receiving foreign investment pay higher wages than domestic firms. When domestic firms do not increase or match the higher wages of those firms, inequality increases. Finally, inward FDI increases urbanization. Regions that have numerous firms receiving foreign investment experience rapid urbanization as individuals migrate to these areas to search for employment (Alfaro et al. 2000; Balasubramanyam et al. 1996; Bengoa and Sanchez-Robles 2003; Blomström et al. 1994; Borensztein et al. 1998; Campos and Kinoshita 2002; Carkovic and Levine 2005; De Gregorio 1992; Hermes and Lensink 2003; Li and Liu 2004; Sit and Yang 1997; Zhu et al. 2012). These correlates, economic growth, inequality, and urbanization, have all been linked to homicide (1951 [1897]; 1984 [1902]; 1997 [1893]; Van Wilsem 2004; Chamlin and Cochran 2006; Cole and Gramajo 2009; Nivette 2011). This leads to the following four hypotheses:

- H<sub>3</sub>*. Inward foreign direct investment will have a positive association with homicide rates.
- H<sub>4</sub>*. Inward foreign direct investment will have a positive association with economic growth.

*H<sub>5</sub>*. Inward foreign direct investment will have a positive association with inequality.

*H<sub>6</sub>*. Inward foreign direct investment will have a positive association with urbanization.

Finally, I test a series of hypotheses to determine if a strong civil society – measured by the presence of international non-governmental organizations in a nation – can reduce homicide and mitigate some of the unintended, negative consequences of economic development. A strong civil society can produce many social changes and can correct social injustices (Wolfe 1989; Boli and Thomas 1997). INGOs that focus on reducing poverty, inequality, and social exclusion may benefit society in this way (Sparr and Moser 2007). In addition to directly reducing homicide, INGO presence may also mitigate the effects of inward FDI, economic growth, inequality, and urbanization on homicide. This leads to the following five hypotheses.

*H<sub>7</sub>*. The degree to which INGOs focused on reducing poverty inequality, and social exclusion are present in a nation will have a negative association with homicide rates.

*H<sub>8</sub>*. The association of FDI with homicide rates will be mitigated by the presence of INGOs.

*H<sub>9</sub>*. The association of GDP with homicide rates will be mitigated by the presence of INGOs.

*H<sub>10</sub>*. The association of inequality with homicide rates will be mitigated by the presence of INGOs.

*H<sub>11</sub>*. The association of urbanization with homicide rates will be mitigated by the presence of INGOs.

Before discussing the method used to analyze the data and test the eleven hypotheses, the dependent and independent variables are described. Some variables will be analyzed as both dependent and independent variables – the primary dependent variable, however, is the homicide rate per 100,000.

## **5.2 Dependent Variable: Homicide Rate per 100,000**

Three primary sources of cross-national homicide data exist. They are the International Criminal Police Organization (Interpol), the United Nations Crime Survey (UNCS), and the World Health Organization (WHO). Interpol publishes data on murder in *International Crime Statistics*. This information is reported to Interpol by national police organizations. They define murder as “any act performed with the purpose of taking human life, no matter under what circumstances.” By this definition, data published by Interpol includes both



completed and attempted murders, although some nations report only completed murders (Neapolitan 1996). Also, despite having many member nations, not all report data to Interpol – providing an incomplete picture of murder around the world. The United Nations intermittently collects and publishes data on homicide. The UN defines homicide as “death purposely inflicted by another person, including infanticide (Neapolitan 1996).” They also include information on attempted murders (Huang 2001). Data is obtained by sending a request to national governments for information on the number of intentional homicides. While this data is likely collected by police forces throughout the country, it is possible that the data may be altered at the governmental level to portray the nation in a more positive light (Neumayer 2003). A final source of homicide data is the World Health Organization (WHO), which is generally regarded to be the best source of homicide data (Kalish 1988; Neapolitan 1996; Huang 2001). The WHO routinely collects and publishes data on mortality. At the national level, this data is collected by various health agencies and is based on official death certificates (Huang 2001). The WHO defines homicide as “homicide and injury purposely inflicted by other persons.” Unlike Interpol or the UN, WHO data represents only completed homicides. Unfortunately, however, WHO data under-represents developing nations (Krahn et al. 1986).

The choice of which data source to use is of fundamental importance to any scholar wishing to examine cross-national homicide rates. Comparing the regression coefficients of common covariates used in cross-national homicide research, Huang (2001) found that the choice of the data source impacted both the significance and the direction of the relationship. For example, gross national product – one of the most widely used explanatory variables in cross-national research – exhibited a positive relationship with homicide rates when using Interpol and UNCS data but a negative relationship when using WHO data. Similarly, population growth exhibited a positive relationship when using both Interpol and UNCS data but a negative relationship when using WHO data. Like GDP and population growth, female labor force participation behaved similarly – exhibiting a positive relationship within the Interpol data and negative relationships within both the UNCS and WHO data. Perhaps the most stable covariate across data sources was the percent of the population residing in urban areas – exhibiting a negative relationship with homicide rates across all three data sources (Huang 2001). Such differences across data sources must be weighed appropriately by scholars seeking to use any of the three sources within their analyses. If one is interested in studying nations that are underrepresented by the WHO, necessity would suggest the use of data from either Interpol or the UNCS. If a researcher is more interested in conducting an analysis on the ‘true’

homicide rates of a sample of nations – true in the sense that it is likely to contain the least measurement error and be closest to the actual homicide rate – then it would be more appropriate to use data collected by the WHO.

Ultimately, the detailed and objective collection of mortality statistics by the World Health Organization leads most scholars to agree that its homicide data is of superior quality and reliability to that published by Interpol or the UN (Huang and Wellford 1989; Neapolitan 1996; Huang 2001). Based upon the objective collection of homicide data by the WHO, the above discussion, and the recommendation of previous scholars, only data from the WHO is used in the analyses. The World Health Organization collects mortality data and codes it based on the manner of death. The code for homicide comprises mortality categories X85-Y09 of the International Classification of Diseases (ICD) codes – the coding scheme by which the WHO categorizes mortality. Categories X85-Y09 of the ICD are specifically defined as “homicide and injury purposely inflicted by other persons (World Health Organization 2012).”

The dependent variable for the analyses is the homicide rate per 100,000 for sixty-one nations (see Appendix C for the list of nations included in the analyses). Data for these nations was obtained from the WHO for the years 1993-2005. This produced a sample size of up to 610 observations (nation-years) for

the primary analysis. The natural log of the homicide rate was used to reduce skewness.

### **5.3 Independent Variables**

The analyses conducted make use of a relatively standard set of covariates that have been tested across a number of cross-national studies of homicide.

Some of the data is available to download from the internet, while other data was gathered from library reference texts. The important contribution of this study lies in the inclusion of two key, theoretically relevant variables – inward foreign direct investment and international non-governmental organization presence.

The following set of independent variables is included in the analyses that follow: foreign direct investment as a percentage of gross domestic product, international non-governmental organizations per capita, gross domestic product in constant 2005 international dollars per capita, urban population as a percentage of the total population, income inequality, the percentage of the total population age 0 to 14, the percentage of the total population age 15 to 24, the female labor force participation rate of women age 15 and older, the percent of the total population that is female, an indicator of a nation's level of democracy, a measure of political terror, and population density (Conklin and Simpson 1985;

Bennett 1991; Ortega et al. 1992; Neumayer 2003; Pratt and Godsey 2003; Van Wilsem 2004; Chamlin and Cochran 2006; Cole and Gramajo 2009; Nivette 2011).

### 5.3.1 *Inward Foreign Direct Investment (FDI) as a*

#### *Percentage of GDP*

Data on inward foreign direct investment (FDI) as a percentage of gross domestic product (GDP) was collected from the World Bank's World Development Indicators (2012) online database for the sixty-two nations included in the analyses. This data is available for most periods between 1993 and 2005. The World Bank (2012) defines inward foreign direct investment as:

[N]et inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments (World Bank 2012).

Inward FDI is characterized as a long-term investment by a firm into a foreign economy, the outcome of which is often economic growth, inequality, and urbanization (Balasubramanayam et al. 1996; Campos and Kinoshita 2002; Jensen 2003; Sit and Yang 1997). Data on inward FDI are included in the analyses to examine the unintended and unstudied effects of global inter-dependence on cross-national homicide rates. This variable is also included as an independent variable modeling its effects on

economic growth, inequality, and urbanization. For all analyses, inward FDI was logged to reduce skewness.

### 5.3.2 *International Non-Governmental Organizations*

#### *(INGOs) per Capita*

Data on the total number of international non-governmental organizations in each nation was gathered from the *Yearbook of International Associations*. The *Yearbook of International Associations* has been collecting information on civil society organizations of all types since 1910 and currently has entries for over 65,000 organizations. Reference texts were available for each year of analysis. Types of organizations include international non-governmental organizations and international-governmental organizations (IGOs); information on for-profit organizations is not included in the *Yearbook of International Associations*. Because IGOs are not part of civil society and can be subject to the interests of political parties, IGOs are not included in the analyses. To create the INGO variable, a list of INGOs classified by the *Yearbook of International Associations* as focusing on poverty, social welfare, unemployment, and underemployment was created. This was done for each year included in the analyses. The complete list of these INGOs can be found in Appendix D. Once the list of organizations was created, a country by organization matrix was created. If an INGO was present in a

nation, it was assigned a value of one. If an INGO was not present, it received a value of zero. These data were then aggregated to determine the total number of INGOs present in each country. Country by organization matrices were created for each year of analysis. The number of INGOs in each nation was then transformed into the number of INGOs per 100,000.

### 5.3.3 *Gross Domestic Product (GDP) per Capita*

Gross domestic product (GDP) per capita is included in the analyses as a measure of a nation's economic development. Data on GDP per capita is available from the World Bank (2012) for a large number of countries for the years of analysis, 1993-2005. The World Bank measures GDP per capita as the gross domestic product in constant 2005 international dollars based on purchasing power parities divided by the midyear population. It is important to use a measure of GDP adjusted for purchasing power parity because non-adjusted measures underestimate the ability of income to purchase goods and services in less-developed countries (Neumayer 2003). To reduce skewness, GDP was logged for all analyses.

#### 5.3.4 *Urban Population*

Urban population as a percentage of the total population is also included in the analyses. This data is available from the World Bank for all nations in the years of analysis, 1993-2005.

#### 5.3.5 *Income Inequality*

As a measure of inequality, the Gini coefficient is included in the analyses. Values for the Gini coefficient range from 0 (maximum equality) to 100 (maximum inequality). Data is available from the commonly used World Income Inequality Database (WIID). The WIID is published by the United Nations University – World Institute for Development Economics Research (UNI-WIDER) and contains data for over 150 nations between 1960 and 2006. All told, the database contains over 5000 observations on income inequality. This database is a follow up to the often used Deininger-Squire database published by the World Bank (Deininger and Squire 1996). It includes data from the original Deininger-Squire database as well as data compiled by UNI-WIDER from various sources such as the Luxembourg Income Study (LIS) and the UNICEF-ICDC. Data on inequality is available for many country-year combinations between 1993 and 2005.



Despite the general availability of inequality data, the quality of the data varies. To account for this, the WIID provides a system, numbered from one to four, to rank the quality. Data receiving a score of one is considered to be the highest quality. Several factors may reduce the quality of the inequality rating. Data based on surveys that do not clarify whether income is measured at the individual level or the household level receives a lower rating. Data based on limited coverage also receives a lower rating. While national coverage is ideal, surveys based on only rural or urban regions may still receive a high quality rating. Very limited coverage, however, results in lower reliability ratings. Finally, the quality of the data is also based on the data collection methodology. For example, if inequality measures were derived from expenditure surveys that required respondents to remember expenditures for a long period of time, the quality of the data was considered to be less reliable. In some cases the methodology of data collection was unknown. This also produced a lower reliability rating. In many cases, each nation has multiple data points of varying quality for each year.

Two measures of inequality are used in the analyses. The first is constructed from the WIID. GINI coefficients were averaged for each nation for each year. When multiple points of varying quality were available, all of the available observations were averaged together. To reduce the amount of missing

observations, data was linearly interpolated for the years that were missing. This produced sufficient observations for analyses.

The second measure of inequality comes from the Estimated Household Income Inequality (EHII) dataset. This dataset was developed by the University of Texas Inequality Project to address several shortcomings of the WIID (UTIP 2008). While the WIID has been extensively used, comparison of inequality across time and place is problematic because observations often reflect different levels of quality (Galbraith 2009). The EHII, however, is comparable across time and place (Galbraith and Kum 2005). Data from the EHII is obtained by regressing inequality values from the Deininger-Squire (1996) dataset on Thiel inequality values created from the United Nations Industrial Development Organization (UNIDO) and a set of control variables. The predicted values from the regression are then used as GINI coefficients in the EHII dataset. While the EHII has been seen by some as more accurate than the WIID, it has several shortcomings (Galbraith and Kum 2005; Galbraith 2009; Herzer and Nunnenkamp 2012). First, the EHII GINI coefficients are estimated and are likely subject to some degree of bias. Second, the EHII is limited in its number of observations – containing only slightly more than half of what is in the WIID. Despite this, the EHII will provide a robustness check to the first measure of inequality used in the analyses.

### 5.3.6 *Age Structure*

The age structure of a population is commonly included as a control in cross-national analyses of homicide. The age structure will be controlled for by including the percentage of the total population between the ages of 0-14 and the percentage of the population ages 15-24. This effectively treats those 25 years of age and older as the reference category. The percent of the population age 0-14 is available from the World Bank's (2012) World Development Indicators dataset. This data is available for all nations in the analysis for the period 1993-2005. The total population age 15-24 was obtained from the United Nations Statistics Division of the Department of Economic and Social Affairs. This data is publicly available through the United Nations online database – UNdata. Unfortunately, the total number of individuals between the ages of 15 and 24 is only available at five year intervals (e.g. for 1985, 1990, etc.). To obtain an adequate number of observations for inclusion in the analyses, data was linearly interpolated for the years that were missing. After interpolating the population size of the age category for the years on which it was missing, the percentage of individuals age 15-24 was calculated for inclusion in the analyses.

### *5.3.7 Female Labor Force Participation*

The female labor force participate rate of women age 15 and older is included in the analyses to control for lessened parental care of children and the disruption of traditional sex roles in male dominated nations – each theorized to cause crime. Data on the female labor force participation rate is available from the World Bank (2012) for a large number of countries during the period 1993-2005.

### *5.3.8 Percent Female*

The percent of the population that is female is included in the analyses as a control variable. Because most criminal offenders are male, a larger percentage of females may reduce the homicide rate (Gottfredson and Hirschi 1990). Data is taken from the World Bank (2012) and is available for all country-year combinations.

### *5.3.9 Democracy Scale*

Because democratic policies may reduce homicide, a scale measuring a nation's level of democracy is included as a control variable (Neumayer 2003). This data is taken from the Freedom House (2012) and contains information on two components of democracy – respect for political rights and respect for civil

liberties. Each component is scaled from one (least democratic) to seven (most democratic). For the analyses, the two indices were summed to produce a composite measure of democracy ranging from 2 to 14.

#### *5.3.10 Political Terror Scale*

To control for human rights violations, data from the Political Terror Scale (PTS) is included in the analyses (Gibney et al. 2012). Human rights violations signify an insecure environment where violent means are legitimated. Data in the PTS comes from two sources: the United States State Department and Amnesty International. For some nation-years, data was available from both the State Department and Amnesty International. In other instances, data was only available from one. If data was only available from one source, that source was used. If data was available from both sources, the two scores were averaged. Values range from 1 to 5 and are defined by the PTS (Gibney et al. 2012) as follows:

Level 5: Terror has expanded to the whole population. The leaders of these societies place no limits on the means or thoroughness with which they pursue personal or ideological goals.

Level 4: Civil and political rights violations have expanded to large numbers of the population. Murders, disappearances, and torture are a common part of life. In spite of its generality, on this level terror affects those who interest themselves in politics or ideas.

Level 3: There is extensive political imprisonment, or a recent history of such imprisonment. Execution or other political murders and brutality may be common. Unlimited detention, with or without a trial, for political views is accepted.

Level 2: There is a limited amount of imprisonment for nonviolent political activity. However, few persons are affected, torture and beatings are exceptional. Political murder is rare.

Level 1: Countries under a secure rule of law, people are not imprisoned for their views, and torture is rare or exceptional. Political murders are extremely rare.

#### *5.3.11 Population Density*

Population density is included to control for close contact with others that may result in homicide (Cohen and Felson 1979; Krahn et al. 1986; Gillis 1974).

Population density data is available from the World Bank (2012) for all country-year combinations.

#### *5.3.12 Percent in Agriculture*

The percent of the population employed in agriculture, as a percentage of the total labor force, is included as a control in analyses of economic growth and inequality. This data is available for a large number of country-year combinations for the period 1993-2005. Descriptive statistics are presented in Table 1 on the following page. Because the N's presented in the table are untransformed, some observations drop out with first differencing. This results

Table 1. Descriptive Statistics 1993-2005

Variable	Mean	SD	Min	Max	N
Homicide	7.51	10.51	0.01	84.07	862
FDI	8.06	37.67	0.00	564.92	890
GDP	15.05	12.06	0.85	68.32	897
Urban	67.09	20.14	9.16	100.00	949
Inequality – WIID	38.69	9.96	23.00	62.8	748
Inequality – EHII	39.95	5.57	27.26	58.48	418
INGO	2.23	5.46	.01	36.13	876
PTS	2.02	0.98	1.00	5.00	854
Democracy	11.16	3.21	2.00	14.00	884
% 0 to 14	25.12	8.16	13.73	45.02	884
% 15 to 24	16.32	2.85	10.33	22.35	884
Female	51.01	1.08	49.16	54.10	884
Density	3.00	9.94	0.02	65.39	949
Female labor force	41.92	5.29	27.86	51.09	884
Percent Agriculture	14.28	14.60	0.20	72.20	831

in Table 1 having slightly larger  $N$ 's for each covariate than the  $N$ 's in the subsequent analyses.

#### 5.4 Analytic framework

To address the theoretical relationships specified in the previously stated hypotheses, panel, or time-series cross-sectional (TSCS), data is used. A combination of both time-series and cross-sectional data structures, panel data is characterized by having repeated observations of a specified set of covariates on fixed units.

In criminological literature, panel data generally takes the form of annual observations on countries, states, or counties. Econometric literature also frequently uses panel data when estimating models of economic growth (Wooldridge 2002). The emphasis of this dissertation, combining both criminological and economic theory, suggests that panel data is most appropriate from a theoretical perspective.

The basic panel data model is as follows:

$$(1) \quad y_{it} = \mathbf{x}_{it} \beta + e_{it} \quad i = 1, \dots, N; \quad t = 1, \dots, T$$

where  $i$  refers to the unit of observation (country for this analysis) and  $t$  refers to the time period (year for this analysis). The dependent variable is indicated by  $y_{it}$ , while  $\mathbf{x}_{it}$  is a vector of explanatory variables. The error term for country  $i$  at



time  $t$  is indicated as  $e_{it}$ . Dependent on the hypothesis being tested, the outcome  $y_{it}$  will be the homicide rate per 100,000 (logged), GDP per capita (logged), percent urban, or inequality.

Any time TSCS data is analyzed, two issues must be considered – heteroscedasticity within panels and serially correlated (autoregressive) errors within panels. Heteroscedasticity occurs when the errors are not constant across observations. While this does not bias the estimates, it is inefficient – rendering standard errors and t-statistics suspect. Standard errors and t-statistics may be either too large or too small, leading researchers to falsely reject a null hypothesis of no association or falsely accept a null hypothesis of no association.

Heteroscedasticity within panels can be assessed by performing a simple likelihood-ratio test comparing estimates with standard errors fully robust to heteroscedasticity to those that assume homoscedasticity. A significant Chi-square from the likelihood ratio test indicates within-panel heteroscedasticity.

The next concern of most panel analyses is the potentially autoregressive nature of the data. Regarding homicide, the homicide rate at time  $t$  may be correlated with the homicide rate at time  $t-1$ . This results in correlation of the residual errors over time periods. Failure to account for autocorrelation will produce incorrect standard errors either inflating or deflating t-statistics. The presence of within-panel autocorrelation is assessed using Wooldridge's (2002)

test for panel data autocorrelation. The test is performed by first differencing the data and regressing first differenced values of the dependent variable on first differenced values of the explanatory variables. First differencing involves subtracting values at time  $t-1$  from values at time  $t$ . First differencing Equation 1 yields the following:

$$(2) \quad y_{it} - y_{it-1} = \mathbf{x}_{it} - \mathbf{x}_{it-1} \beta + e_{it} - e_{it-1} \quad i = 1, \dots, N; \quad t = 2, \dots, T$$

This can be rewritten as Equation 3. First differencing data often reduces serial correlation. While errors in untransformed variables are often correlated,

$$(3) \quad \Delta y_{it} = \Delta \mathbf{x}_{it} \beta + \Delta e_{it} \quad i = 1, \dots, N; \quad t = 2, \dots, T$$

changes between values at two time periods are less likely to be correlated (Wooldridge 2002). First differencing also removes country-specific effects because they do not vary with time. After first differencing the data, residuals are obtained so the correlation between periods can be examined. Wooldridge (2002) shows that if the idiosyncratic errors are not serially correlated, then the correlation between the first differenced residuals –  $\text{Corr}(\Delta e_{it}, \Delta e_{it-1}) = -0.5$ . This procedure is easily implemented in STATA with the 'xtserial' command. A significant F-test indicates serial correlation. The test is robust to both homoscedastic and heteroscedastic errors. In a series of Monte Carlo simulations, Drukker (2003) shows that Wooldridge's (2002) test loses a small amount of power in detecting serial correlation when heteroscedasticity is

present. However, in large sample sizes (500 – 1000) Wooldridge's test performs well under homoscedastic and heteroscedastic conditions. Results of the Chi-square and F-tests are presented in Table 2 on the following page.

The Chi-Square tests indicate within-panel heteroscedasticity when homicide, economic growth, urbanization, WWID inequality, or EHII inequality is analyzed as a dependent variable. To correct for this, standard errors robust to heteroscedastic errors are used in all analyses. Table 2 also indicates serial correlation in the analyses of economic growth, urbanization and inequality using WIID data. Serial correlation is not present in the homicide regression. Because within-panel serial correlation is present in three of the four dependent variables, dynamic panel models that include a lagged dependent variable on the right hand side of the equation will prove superior to static models. To appropriately model this, the Arellano and Bond (1991) generalized method of moments (GMM) estimator is used.

#### *5.4.1 Specific Estimation Methods*

Five estimation methods are used to analyze homicide as a dependent variable: (1.) pooled OLS; (2.) Parks-Kmenta Feasible Generalized Least Squares (FGLS); (3.) panel corrected standard errors (PCSE); (4.) fixed-effects estimation; and (5.) random-effects estimation. Pooled OLS estimation involves combining

Table 2. Chi-Square and F-Tests for Heteroscedasticity and Serial Correlation

Dependent Variable	Heteroscedasticity – Chi-Square
Δ Homicide	548.30***
Δ Economic growth (GDP)	1338.40***
Δ Urbanization	599.66***
Δ Inequality – WIID	1040.03***
Δ Inequality – EHII	654.70***
Dependent Variable	Serial Correlation – F-Test
Δ Homicide	.70
Δ Economic growth (GDP)	66.171***
Δ Urbanization	1089.874***
Δ Inequality – WIID	3.47†
Δ Inequality – EHII	1.07

†<.10; \* p<.05; \* p<.01; \*\*\* p<.001

observations across nations and years and using robust standard errors to account for heteroscedasticity and serial correlation. The Parks-Kmenta method of estimation was used widely in both political science and sociology panel analyses until Beck and Katz (1995) published their article on panel corrected standard errors. In it, they showed that FGLS is likely to underestimate variability, inflate t-statistics, and lead researchers to find significant relationships when none exist. Beck and Katz (1995) further suggest that estimates obtained from FGLS are inferior to those obtained from OLS. However, they develop a method to 'correct' standard errors for panel data. They call these panel corrected standard errors. They are better able to estimate variability and produce more accurate standard errors. However, in order for PCSE to be accurate, serial correlation must be removed prior to obtaining them. Table 2 indicates the absence of serial correlation in the homicide regression – suggesting that PCSE can be used.

However, PCSE have been questioned in recent years (Reed and Webb 2010; Reed and Ye 2011). Reed and Ye (2011) claim that in practical situations with real-life data, PCSE do not perform as well as Beck and Katz (1994) claim. In some instances, the method is less efficient than FGLS. Reed and Webb (2010) find that PCSE do not perform well when serial correlation is persistent. They also find that as  $\rho$  approaches .20 when  $T=10$ , PCSE often underestimate standard

errors. Thus, while FGLS leads researchers to find more significant relationships than likely exist, the use of PCSE lead researchers to find fewer. It is optimal to employ both FGLS and PCSE to see what relationships are consistently significant. It is also important to pay attention to relationships that are significant in FGLS analyses but not in PCSE analyses as their standard errors may be underestimated by the Beck and Katz (1994) method.

Fixed effects and random effects estimators will be used to check the robustness of FGLS and PCSE estimates. The following fixed effects model will be tested:

$$(4) \quad y_{it} = \alpha + x_{it} \beta + \lambda_t + a_i + e_{it} \quad i = 1, \dots, N; \quad t = 1, \dots, T$$

Above,  $y_{it}$  represents the homicide rate per 100,000 of country  $i$  at time  $t$ ,  $\alpha$  is the intercept,  $x_{it}$  is a matrix of explanatory variables, and  $\beta$  is its vector of coefficients.  $\lambda_t$  controls for period specific effects, and  $a_i$  allows for individual country effects. The inclusion of  $a_i$  captures any country level heterogeneity not accounted for by the independent variables. Fixed effects estimation eliminates period and country effects by demeaning the dependent and independent variables using the within transformation shown below:

$$(5) \quad y_{it} - y_{iMEAN} = \alpha + (x_{it} - x_{iMEAN}) \beta + \lambda_t - \lambda_t + a_i - a_i + e_{it} - e_i$$

This can be rewritten as follows with the country and period effects dropping out:

$$(6) \quad y_{itDEMEANED} = \alpha + x_{itDEMEANED} \beta + e_{itDEMEANED}$$

An alternative to fixed effects estimation is random effects estimation. In this case, random effects estimation is constrained by the assumption that the countries included in the analysis are randomly selected. Country level differences in homicide rates are captured by the following intercept parameter:

$$(7) \quad \beta_{1i} = \beta_1 + u_i$$

Above, each country's intercept is a function of a fixed component,  $\beta_1$ , and a random country specific component –  $u_i$ . Substituting  $\beta_{1i} = \beta_1 + u_i$ , where  $\beta_{1i} = \alpha$ , the following random effects model will be tested:

$$(8) \quad y_{it} = \alpha + \beta X_{it} + \lambda_t + e_{it} + u_i$$

In large samples, the coefficient estimates obtained from fixed effects will be consistent – converging to their parameter values. The same should be true for random effects estimation in cases where the random component,  $u_i$  is uncorrelated with the independent variables. If they are correlated, the estimates obtained from using random effects will be inconsistent.

#### 5.4.1.1 Arellano and Bond Estimator

The Arellano and Bond (1991) estimator is used when autocorrelation is persistent and the lagged dependent variable (LDV) is included on the right hand side of the regression equation. The basic panel model can be rewritten as follows to incorporate the LDV:

$$(9) \quad y_{it} = y_{it-1} \beta + \mathbf{x}_{it} \beta + e_{it} \quad i = 1, \dots, N; \quad t = 1, \dots, T$$

In the results presented in Chapter VI, the Arellano and Bond (1991) estimator is used when the dependent variable is economic growth, urbanization, and inequality. Logically, current values of these three processes should be highly dependent on their past values. Incorporating an LDV then becomes necessary to adequately explain these processes. OLS, however, is problematic when estimating models with a LDV. Because  $y_{it}$  is a function of  $e_{it}$ ,  $y_{it-1}$  will be correlated with  $e_{it}$ . This violates the assumption of exogeneity – that the explanatory variables should be uncorrelated with the disturbances –  $E(e_{it}X_{it})$ . In the presence of a correlation between the explanatory variables and the disturbances – endogeneity – the estimates will be biased and inconsistent when using traditional regression techniques.

To use the Arellano and Bond (1991) estimator, the data must be first differenced to eliminate any country-specific effects. Then, to eliminate the endogeneity introduced by the lagged dependent variable, the LDV is instrumented with its own lags. An instrument is a variable that takes the place of, or ‘instruments’, the endogenous variable. For example, an instrument of  $y_{it-1}$  would be highly correlated with  $y_{it-1}$  but uncorrelated with  $e_{it}$ . Because the instrument is highly correlated with  $y_{it-1}$ , it can take the place of  $y_{it-1}$  in the analyses – this removes the endogeneity. The LDV is instrumented with its own



lags for several reasons. First, lags of  $y_{it}$  will be highly correlated with  $y_{it}$ . While close lags, such as  $y_{it-1}$  will be correlated with  $e_{it}$ , further lags are less likely to be correlated to  $e_{it}$ .

Post estimation that checks for serial correlation and the robustness of instruments is important when using the Arellano and Bond (1991) estimator. When implemented in STATA using the 'xtabond2' command, serial correlation in the first and second order residuals is examined. Non-significant z-statistics suggest an absence of serial correlation. Additionally, the Sargan test checks for over-identifying restrictions in the model. Essentially, this indicates whether the instruments chosen are exogenous. If they are exogenous, they will be uncorrelated with the residuals. A non-significant Sargan test (Chi-square) suggests that the instrumental variables are exogenous.

The preceding estimators are employed to test the hypotheses listed at the beginning of this chapter. Chapter VI presents the results of the analyses. The results will be discussed in terms of the estimator used and in terms of support – or lack of support – for the hypotheses.

## CHAPTER VI

### RESULTS AND DISCUSSION

#### 6.1 Results

The results of the analyses are presented in this chapter. Results for each dependent variable are presented separately. Results are first presented on homicide, then economic growth, followed by inequality, and concluding with urbanization. Several hypotheses suggest that INGO presence can mitigate the negative effects of FDI, economic growth, and urbanization. These interaction models will be presented last. The chapter concludes with a discussion of the results.

##### 6.1.1 Homicide

Tables 3 and 4 on the following two pages present the results of the homicide analysis. The first table uses the WIID inequality data, while the second uses the EHII inequality data. Both tables present results from pooled OLS, Parks-Kmenta FGLS AR-1, PCSE AR-1, fixed effects, and random effects estimators. Data estimated by pooled OLS, Parks-Kmenta FGLS AR-1, and PCSE AR-1 are first differenced. Data estimated by fixed and random effects are not. Data are also weighted by population size. In Table 3, the pooled OLS estimates show that the percent of the population that is urban is the only variable

Table 3. Estimates of WIID Cross-National Homicide Rates – Non-Annual Growth Models, 1993-2005

	<u>Pooled OLS</u>		<u>Parks-AR1</u>		<u>PCSE-AR1</u>		<u>Fixed Effects</u>		<u>Random Effects</u>	
	b	se	b	se	b	se	b	se	b	se
FDI	-0.00	.01	-0.01	.01	-0.00	.02	-0.02	.03	-0.01	.02
GDP	-0.14	.14	-.24**	.08	-.15	.13	-.52**	.18	-.50***	.13
Urban	.07***	.02	.08***	.01	.07**	.03	.05†	.03	.04***	.01
Inequality – WIID	-0.00	.00	.00*	.00	.00	.00	-0.00	.01	.01	.00
INGO	-0.09	.14	-.13†	.07	-.06	.13	-.31†	.16	-.27	.21
PTS	-0.00	.01	-0.00	.01	.01	.02	-.05†	.03	-.03	.03
Democracy	-0.03	.02	-.01†	.01	-.03†	.01	-.06**	.02	-.06***	.02
% 0 to 14	-0.04	.04	-.03	.02	-.04	.04	.04†	.02	.06***	.01
% 15 to 24	.00	.03	.01	.01	-.01	.04	.03	.04	.04*	.02
% Female	.11	.25	.00	.13	.14	.21	.56*	.26	.49***	.10
Density	.00	.00	.00	.00	.00	.00	-0.00	.00	-0.00†	.00
Female labor force	.03	.02	.02	.01	.02	.02	.01	.02	.02	.01
Constant	-.05***	.01	-.05***	.01	-.06***	.02	-26.02†	13.87	-24.03***	5.71
Observations	610		609		610		705		705	
Countries	60		59		60		62		62	
$\rho$			-.19		-.18		.98		.86	

Note: Variables are first differenced ( $\Delta$ ) in pooled OLS, Parks-AR1 and PCSE-AR1 analyses

† < .10; \* p < .05; \*\* p < .01; \*\*\* p < .001

Table 4. Estimates of EHII Cross-National Homicide Rates – Non-Annual Growth Models, 1993-2005

	<u>Pooled OLS</u>		<u>Parks-AR1</u>		<u>PCSE-AR1</u>		<u>Fixed Effects</u>		<u>Random Effects</u>	
	b	se	b	se	b	se	b	se	b	se
FDI	-.06	.04	-.03*	.01	-.06†	.03	-.00	.02	-.03	.02
GDP	.11	.20	-.06**	.14	-.10	.20	.16	.21	-.28*	.12
Urban	.07†	.03	.07**	.02	.07	.03	.01	.01	.03**	.01
Inequality – EHII	.01	.01	.00	.00	.01	.01	-.01	.01	-.01*	.01
INGO	.02	.23	-.10	.10	.05	.18	.01	.14	.12	.21
PTS	.01	.02	-.00	.01	.02	.02	.04	.06	-.00	.02
Democracy	-.04	.03	-.03*	.01	-.04	.03	-.05	.03	-.05**	.01
% 0 to 14	-.01	.03	.01	.03	-.01	.07	.06*	.03	.05***	.01
% 15 to 24	.05	.04	.05	.03	.05	.06	.07†	.04	.06***	.02
% Female	-.06	.33	-.12	.23	-.04	.45	.30	.21	.57***	.11
Density	.00	.00	.00	.00	.00	.00	-.00†	.00	-.00	.00
Female labor force	.03	.02	.01	.01	.02	.03	.06*	.03	.01	.01
Constant	-.03	.02	-.02	.01	-.03	.03	-20.93†	11.80	-28.13***	6.01
Observations	300		299		300		412		412	
Countries	47		46		47		51		51	
$\rho$			-.06		-.08		.95		.97	

Note: Variables are first differenced ( $\Delta$ ) in pooled OLS, Parks-AR1 and PCSE-AR1 analyses

†<.10; \* p<.05; \*\* p<.01; \*\*\* p<.001

reaching significance. The FGLS estimates, however, support several hypotheses. First, percent urban and inequality are associated with higher homicide rates. INGO presence and democracy are associated with lower rates of homicide. Contrary to modernization theory, GDP is associated with lower rates of homicide. The PCSE estimates show fewer significant relationships. Once again, the percent of the population that is urban is positively associated with homicide. Democracy is negatively associated with homicide. Comparisons between FGLS and PCSE are important. While FGLS may overestimate the t-statistics, PSCE may underestimate them. Reed and Webb (2010) note that as  $\rho$  approaches .20 when  $T=10$ , PCSE often underestimates standard errors. In this analysis,  $\rho = -.18$  and, averaged across nations,  $T=10.2$ . This suggests that results from both FGLS and PCSE should be considered. The fixed effects estimates show that urbanization has a marginally significant, positive relationship with homicide rates, while INGO presence has a marginally significant, negative association with homicide rates. Again, GDP has a strong negative association with homicide rates. The random effects estimates find significant relationships between GPD (negative), urbanization (positive), and an array of demographic indicators and homicide.

As a check of robustness, Table 4 runs the same analyses using inequality data from the EHII. The primary concern of the EHII data is that they are

empirically estimated. Of secondary concern is the availability of the data.

Comparing Table 3 to Table 4, the sample size is cut in half. However, the EHII data do provide a comparison to the WIID data used in Table 3. Urbanization retains a significant, positive relationship with homicide using most estimators, and GDP retains a significant, negative relationship with homicide in most. Interestingly, FDI becomes significant when using FGLS and PCSE estimators. INGO presence is not significant using any of the estimation methods. The economic growth model is presented next.

#### 6.1.2 *Economic Growth*

Table 5 presents the Arellano-Bond estimates of economic growth. The LDV is included as a regressor on the right-hand side of the equation. To reduce serial correlation, lagged values of GDP's lag are used to instrument the LDV. The Sargan test also suggests that democracy, % of the population 0 to 14, and % of the population 15 to 24 are exogenous. Second-order serial correlation is not significant. Although first-order serial correlation is present, this does not pose a problem. The GMM estimator is consistent as long as there is no second-order autocorrelation.

Two variables reach significance in the model. Both inequality and greater agricultural employment are marginally associated with reduced

Table 5. Arellano-Bond Estimates of Economic Growth

$\Delta$ GDP	b	se
$\Delta$ GDP lagged	-.39	.35
$\Delta$ FDI	.01	.01
$\Delta$ Urban	.01	.01
$\Delta$ Inequality – WIID	-.01†	.00
$\Delta$ PTS	-.02	.02
$\Delta$ Democracy	-.01	.02
$\Delta$ % 0 to 14	-.05	.05
$\Delta$ % 15 to 24	-.04	.08
$\Delta$ Agriculture	-.05†	.02
Observations		785
Countries		59
AR(1) z-statistic		-1.73*
AR(2) z-statistic		.69
Sargan test Chi-square		5.92

Note: GDP lagged is instrumented with prior lags; Sargan test suggests that democracy, % 0 to 14, and % 15 to 24 are exogenous

†<.10; \* p<.05; \* p<.01; \*\*\* p<.001

economic growth. Contrary to the hypothesis and theory, FDI is not associated with increased growth. This may be a result of the sample of nations being analyzed. Because both developed and developing nations are included, the effect may be masked by highly developed nations with low rates of economic growth. While many developed nations receive substantial amounts of inward FDI, it is less likely to promote growth.

### 6.1.3 *Inequality*

Arellano-Bond estimates of WIID inequality are presented in Table 6. Like the model of economic growth, first-order autocorrelation is marginally significant while second-order is not. To reduce serial correlation, lagged values of inequality's lag are used to instrument the LDV. Additionally, the Sargan test suggests that FDI, GDP, democracy, and agriculture are exogenous.

As theory and the hypothesis suggest, inward foreign direct investment is associated with increased inequality. Considering the number of studies that have found inward FDI to increase inequality, this is not surprising. Firms receiving FDI tend to pay higher wage than domestic firms – resulting in increased inequality (Girma et al. 2001; Görg and Greenaway 2003; Lipsey and Sjöholm 2005).



Table 6. Arellano-Bond Estimates of WIID Inequality

$\Delta$ WIID Inequality	b	se
$\Delta$ Inequality - WIID lagged	-.15	.15
$\Delta$ FDI	1.51*	.63
$\Delta$ FDI $t-1$	2.10†	1.25
$\Delta$ FDI $t-2$	1.61	1.34
$\Delta$ GDP	462.99	293.55
$\Delta$ GDP squared	-25.80	16.17
$\Delta$ GDP growth	-.13	.18
$\Delta$ Democracy	-.28	.26
$\Delta$ Agriculture	-.01	.07
$\Delta$ Density	2.30	3.01
Observations		661
Countries		57
AR(1) z-statistic		-1.74†
AR(2) z-statistic		.70
Sargan test Chi-square		10.16

Note: Inequality lagged is instrumented with prior lags; Sargan test suggests that FDI, GDP, democracy, and agriculture are exogenous  
 †<.10; \* p<.05; \* p<.01; \*\*\* p<.001

Table 7. Arellano-Bond Estimates of Urbanization

$\Delta$ Urbanization	b	se
$\Delta$ Urbanization - lagged	.65***	.08
$\Delta$ Inequality - WIID	-.00	.00
$\Delta$ FDI	.01†	.00
$\Delta$ GDP	7.46	6.61
$\Delta$ GDP squared	-.42	.36
$\Delta$ GDP growth	.00	.00
$\Delta$ Agriculture	.01	.01
$\Delta$ % 0 to 14	-.13	.18
$\Delta$ % 15 to 24	-.12*	.06
Observations		491
Countries		56
AR(1) z-statistic		-1.27
AR(2) z-statistic		.96
Sargan test Chi-square		194.26***
Hansen test Chi-square		14.43

Note: Urbanization lagged is instrumented with prior lags; Hansen test suggests that inequality – WIID, FDI, GDP, GDP squared, GDP growth, % 0 to 14, and % 15 to 24 are exogenous

†<.10; \* p<.05; \* p<.01; \*\*\* p<.001

#### 6.1.4 *Urbanization*

Table 7 displays Arellano-Bond estimates of urbanization. Neither first nor second-order autocorrelation is present in the urbanization model after including lagged urbanization as a right-hand side variable. Additional instruments include: inequality – WIID, FDI, GDP, GDP squared, GDP growth, % 0 to 14, and % 15 to 24. While the Sargan test is significant, suggesting the instruments may not be robust; the Hansen test of over-riding restrictions suggests that they are exogenous.

Current urbanization is strongly predicted by past values of urbanization. FDI is also positively associated with urbanization. While indirect effects are not tested in these analyses, they may exist. Because Tables 3 and 4 show a positive relationship between urbanization and homicide, these results suggest that FDI may affect homicide through urbanization.

#### 6.1.5 *Interactions*

Table 8 presents four interactions: INGO presence by FDI; INGO presence by inequality; INGO presence by GDP; and INGO presence by urbanization. All coefficients were obtained from PCSE estimation. Although urbanization was the only variable to be consistently associated with homicide in Tables 3 and 4, the hypotheses suggest that the interaction terms may have significant effects –

even if no main effect was found. Table 8 shows that three of the four interaction terms are significant: INGO presence by inequality, GDP, and urbanization. All three interaction effects are positive. This suggests that INGOs may be more effective in nations with low levels of inequality, less-developed nations, and nations with low levels of urbanization. To make interpretation of the interactions easier, the effects are graphically displayed in Figures 4, 5, and 6. While INGO presence has a strong, negative effect on homicide rates at low levels of inequality, the effect weakens as inequality rises. At high levels of inequality (GINI > ~45), the confidence interval includes zero, and the effect of INGO presence becomes non-significant. Similarly, as GDP rises, the effect of INGO presence weakens; the effect also weakens as urbanization increases. However, the effect of INGO presence remains significant throughout the ranges of GDP and urbanization. Although it was hypothesized that INGO interactions would be more effective in developing nations, the results are mixed. INGOs are more effective in nations with low GDPs and low level of urbanization but less effective in nations with high levels of inequality. Because nations that are developed – in terms of GDP – have lower homicide rates than developing nations, it is more difficult to reduce homicide by a large percentage. For example, it would be easier for a nation with a high homicide rate to experience a reduction of ten percent than it would be for a nation with a low homicide rate.

Table 8. PCSE Interaction Models

	b(se)	b(se)	b(se)	b(se)	b(se)
$\Delta$ FDI	-0.00 (.02)	-0.01 (.02)	-0.00 (.02)	-0.00 (.02)	-0.00 (.02)
$\Delta$ GDP	-0.15 (.14)	-0.14 (.14)	-0.08 (.14)	-0.03 (.14)	-0.07 (.14)
$\Delta$ Urban	.08** (.03)	.08** (.03)	.08*** (.03)	.08*** (.03)	.08*** (.03)
$\Delta$ Inequality – WIID	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)
$\Delta$ INGO	-0.06 (.13)	-0.05 (.14)	-.32* (.15)	-.35* (.15)	-.34* (.14)
$\Delta$ PTS	.01 (.02)	.01 (.02)	.01 (.02)	.01 (.02)	.01 (.02)
$\Delta$ Democracy	-.03† (.01)	-.03† (.01)	-.03* (.01)	-.03† (.01)	-.03† (.01)
$\Delta$ % 0 to 14	-.04 (.04)	-.04 (.04)	-.04 (.04)	-.04 (.04)	-.04 (.04)
$\Delta$ % 15 to 24	-.01 (.04)	-.01 (.04)	-.01 (.04)	-.02 (.04)	-.02 (.04)
$\Delta$ % Female	.14 (.21)	.14 (.21)	.14 (.21)	.14 (.21)	.14 (.21)
$\Delta$ Density	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)
$\Delta$ Female labor force	.02 (.02)	.02 (.02)	.02 (.02)	.02 (.02)	.02 (.02)
$\Delta$ INGO x FDI		-0.00 (.01)			
$\Delta$ INGO x Inequality			.02* (.01)		
$\Delta$ INGO x GDP				.01* (.00)	
$\Delta$ INGO x Urban					.02* (.01)
Constant	-.06*** (.02)	-.06*** (.02)	-.06*** (.02)	-.06*** (.02)	-.06*** (.02)
Observations	610	610	610	610	610
Countries	60	60	60	60	60
$\rho$	-.18	-.17	-.16	-.16	-.16

†&lt;.10; \* p&lt;.05; \* p&lt;.01; \*\*\* p&lt;.001

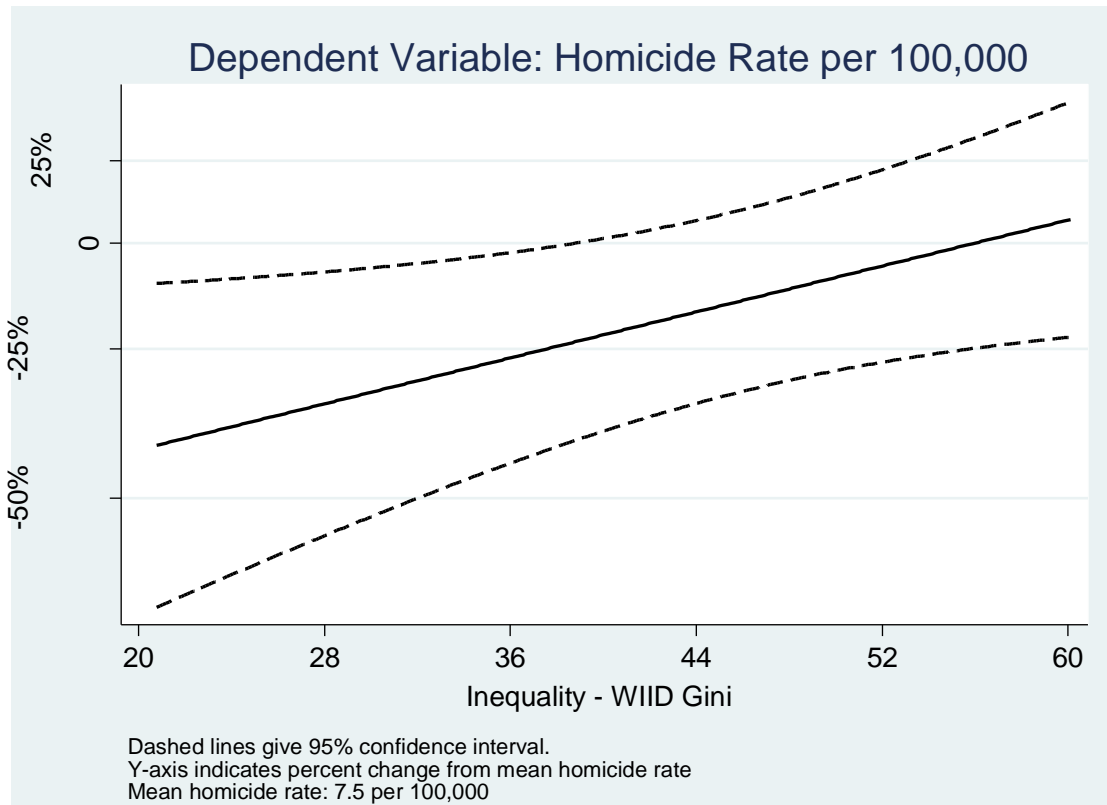


Figure 4. Effect of INGOs on Homicide at varying Levels of Inequality

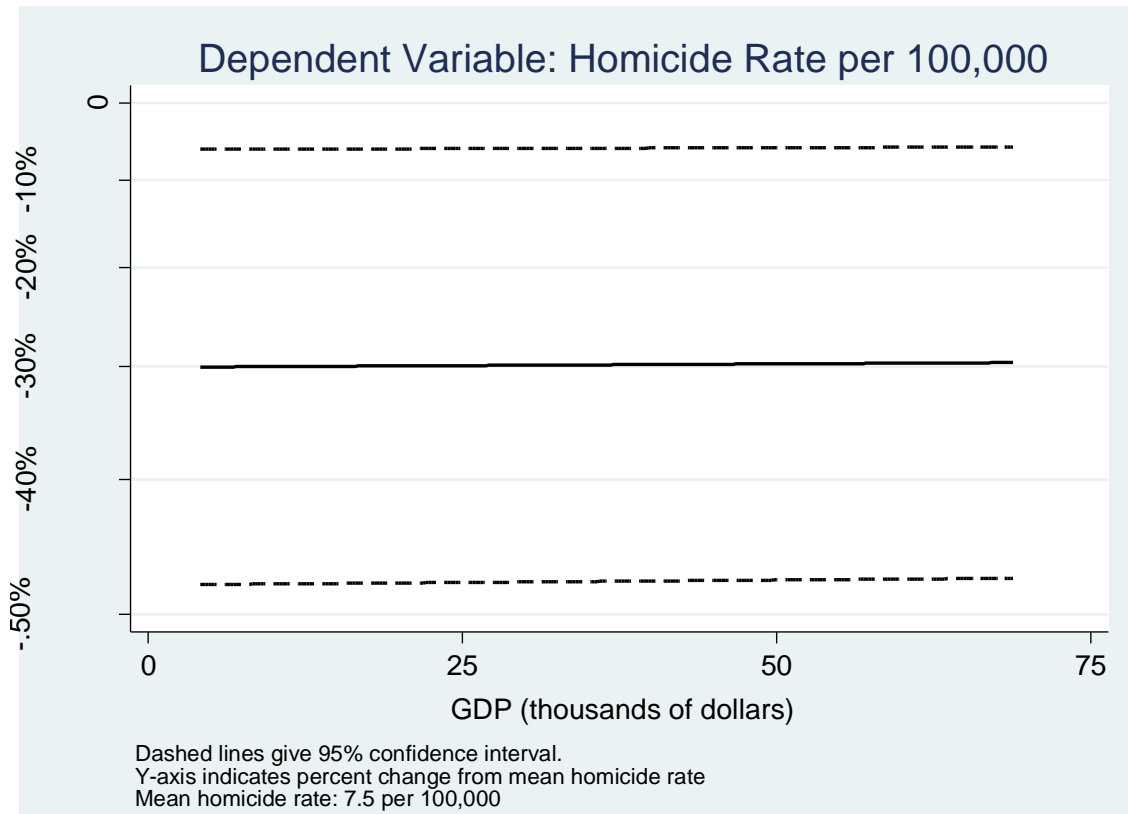


Figure 5. Effect of INGOs on Homicide at varying Levels of GDP

---

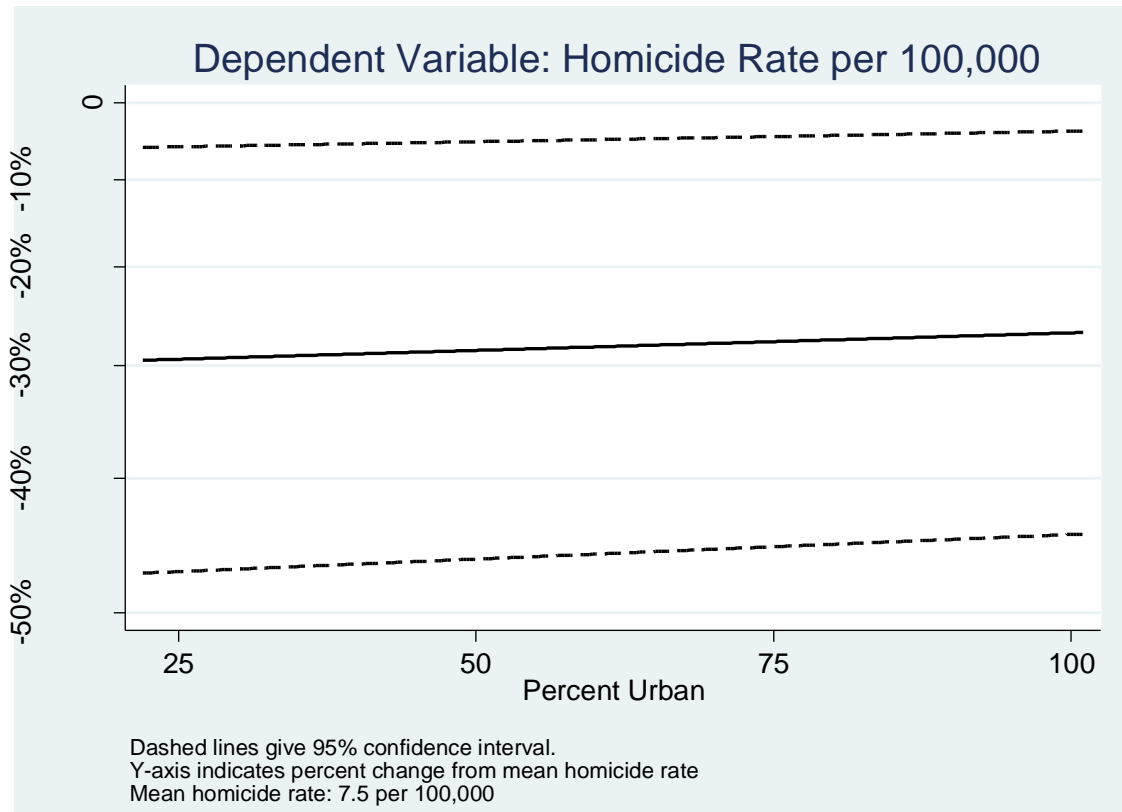


Figure 6. Effect of INGOs on Homicide at varying Levels of Urbanization



Therefore, it is not surprising that the effect of INGO presence is weaker in nations with high GDPs.

The effect of INGOs is also weaker in highly urbanized nations. Because highly urban nations have higher homicide rates than their less urban counterparts, it is possible that these nations are urbanizing at a pace the national infrastructure is incapable of keeping up with. Accordingly, this may lead to homicide (Shelley 1981). While INGO presence was hypothesized to reduce homicide – and indeed it does in highly urban nations – it does so less effectively than it does in less urban nations.

The effect of the interaction between INGO presence and inequality is less clear. While INGOs are more likely to locate in nations with high levels of inequality (an average of 2.9 INGOs per 100,000 are located in nations with inequality above the mean of 37, while an average of .70 per 100,000 are found in nations with low levels of inequality), their impact on homicide rates is zero when inequality is greater than ~45.

However, high inequality nations have higher homicide rates than low inequality nations. Similar to the interaction between INGO presence and inequality, it is difficult to reduce the homicide rates of low and high homicide nations by the same percentage. However, this does not explain the non-significant effect for high inequality nations. In nations with extremely high

levels of inequality, INGOs may have to take on unintended roles that are generally carried out by governmental bodies in low inequality nations. Many high inequality nations rank poorly in terms of government effectiveness and rule of law (World Bank 2012).

## **6.2 Discussion**

The series of analyses suggests that urbanization is one of the most important components of modernization theory. According to Shelley (1981), urbanization draws many individuals from rural to urban areas in search of employment. Often times, the individuals migrating are young males – the group most prone to criminal behavior (Gottfredson and Hirschi 1990). Upon entering the city, migrants may be faced with several situations. They may find a lack of jobs when many were expected. They may find a lack of adequate housing and a lack of educational opportunities. Furthermore, they may find that they are isolated in areas of concentrated disadvantage – along with other migrants who may or may not be able to find employment (Shelley 1981). Greater urbanization also brings individuals into greater contact with others, increasing the likelihood of criminal activity (Cohen and Felson 1979). In pooled OLS, Parks-Kmenta FGLS, PCSE, fixed-effects, and random effects analyses, urbanization exhibits a positive and significant association with homicide.

While the tenets of modernization theory suggest that economic growth leads to urbanization, economic literature suggests that inward foreign direct investment can lead to urbanization. This occurs because individuals migrate to urban centers where firms are receiving FDI. Here, they seek employment (London 1987; London and Smith 1988; Sit and Yang 1997; Zhu et al. 2012; Sit 2001). Using the Arellano-Bond estimator for lagged dependent variables, the analysis reveals that FDI is associated with increased urbanization. This suggests that FDI may have an indirect relationship with homicide that works through urbanization (note that indirect effects were not tested). FDI increases urbanization; urbanization then increases homicide. This indicates that FDI may be an important contributor to homicide – specifically when examined through a modernization lens. While Durkheim (1951 [1897]; 1984 [1902]; 1997 [1893]) wrote of the traumatic effects of rapid growth and industrialization that were occurring relatively independently, the economic development of the global world does not proceed in the same manner it did 150 years ago. The economic development of nations is often tied up in the investment they receive from trans-national corporations. Therefore, modernization theory should consider how FDI mimics the same mechanisms of producing crime that Durkheim (1951 [1897]; 1984 [1902]; 1997 [1893]) and Shelley (1981) suggested industrialization and economic growth did.

While this provides some support for the hypotheses, others did not receive support. Regardless of the estimation method used, inequality generally did not have a significant relationship with homicide. WIID inequality did have a positive association with homicide using FGLS estimation, while EHII inequality had a negative association using random effects estimation. Both effects are significant only at the  $p < .10$  level, and, in most analyses, they are absent – suggesting they are not robust. This is likely a function of the sample of nations and the inequality data. Across studies, inequality is one of the strongest predictors of homicide (Nivette 2011). The analyses here make use of inequality data of varying quality. Additionally, the data is interpolated to reduce missing observations.

Inward foreign direct investment also failed to exhibit a significant relationship with homicide. This only means that FDI has no direct effect on homicide. However, Arellano-Bond estimates show that FDI may have an indirect effect on homicide. FDI increases urbanization – likely due to rural-urban migration that occurs as individuals look for employment in FDI invested firms and projects. Pooled OLS, FGLS, PCSE, fixed-effects, and random-effects estimation then show that urbanization has a robust relationship with homicide. Several things may be happening. First, city infrastructures may be unable to keep up with the demands of an increasing population – creating strain and

competition for scarce resources. Second, increased populations of crime prone young males may be increasing the rate of homicide. Finally, as suggested by modernization theory, individuals from rural environments may have conflicting beliefs about when violence can be used and in what situations it is legitimated (1951 [1897]; 1984 [1902]; 1997 [1893]; Shelley 1981). This may lead to increased homicide when conflict between individuals arises.

What is interesting is that GDP had a negative relationship with homicide in half of the analyses. While modernization theory suggests that changes in GDP should increase homicide, little evidence of this exists here or in other studies (Krohn and Wellford 1988; Neapolitan 1994; Lim et al. 1995; Neapolitan 1998; Alzheimer 2008; Bjerregaard and Cochran 2008; Pridemore 2008). The economic growth and industrialization written about by Durkheim (1951 [1897]; 1984 [1902]; 1997 [1893]) was much greater than what is experienced today. Mean economic growth for the nations in the sample was only 1.8%. Such modest growth is unlikely to produce widespread societal changes capable of producing crime. It is also possible that the source of the data is responsible for the negative association between GDP and homicide. In an analysis of multiple data sources, Huang (2001) found that data from the World Health Organization produces a negative relationship between GDP and homicide, while Interpol and United Nations data produces a positive relationship.

It is also interesting to note that non-governmental interventions may reduce homicide. While Messner and Rosenfeld (1997) and Savolainen (2000) found that state social safety policies – decommodification – reduce homicide, the results presented earlier suggest that a strong civil society, in the form of INGO presence, can also reduce homicide. Using WIID data, INGO presence exhibits a negative relationship with homicide in FGLS, fixed-effect, and random-effect analyses. The relationship is absent when EHII data is used. EHII data, however, is not without its problems (Herzer and Nunnenkamp 2012). EHII values are estimated and available for a smaller number of nations than WIID data.

Because the scale of the variables produces small coefficients, it can be difficult to see the magnitude of the effect sizes. Table 9 displays the magnitude of the change in homicide rates and inequality for a variety of conditions. For example, a 25% increase in GDP (e.g. from 12,000 to 15,000) produces a 5.4% decrease in the predicted homicide rate. Holding all other covariates constant, this would reduce the mean homicide rate from 7.5 per 100,000 to 7.1 per 100,000. A three percentage point increase in percent urban (e.g. from 75% to 78%) results in an increase of the homicide rate from 7.5 to 9.4. Because INGO presence is measured as a rate per 100,000, and mean INGO presence is quite low (.8), a one point increase in the covariate is large. While a one point increase is displayed in

Table 9. Effect sizes of Homicide and Arellano-Bond Estimates

Effect	Increase in Covariate	Estimated Change	95% CI		Expected value of outcome
			Lower	Upper	
<i>Homicide</i>					
GDP	25%	-5.4%	-8.7	-1.9	7.1
	50%	-9.6%	-15.3	-3.4	6.8
	75%	-15.8%	-24.8	-5.7	6.3
Urban	1 percentage point	8.5%	5.6	11.2	8.2
	3 percentage points	25.5%	16.9	34.1	9.4
	5 percentage points	42.5%	28.4	56.8	10.7
Inequality	1 point	0.4%	0.0	0.7	7.5
	3 points	1.1%	0.1	2.0	7.6
	5 points	1.8%	0.2	3.4	7.7
INGO	.3 points	-3.8%	-7.6	0.0	7.2
	.5 points	-6.3%	-12.7	0.0	7.0
	1 point	-12.5%	-25.5	0.0	6.6
<i>Inequality</i>					
FDI	100%	1.1	0.2	1.9	39.8
	500%	2.7	0.5	5.0	41.4
	1000%	3.6	0.6	6.4	42.3

Note: Mean homicide rate: 7.5; mean inequality: 38.7

the table, more common increases of .3 and .5 are also reported in the table.

Growth of this magnitude was not uncommon for nations to experience between 1993 and 2005. The table shows that a .3 increase in INGO presence reduces homicide from a rate of 7.5 to 7.2.

The final rows of Table 9 show the effect sizes of inward foreign direct investment on inequality. These estimates were produced from the Arellano-Bond coefficients of Table 6. It is important to note that the 100, 500, and 1000% increases in FDI shown in the table are not uncommon and were experienced by many nations. A 500% increase in FDI, for example, produces a 2.7 point increase in inequality – from 38.7, at the mean, to 41.4.

As mentioned earlier, Arellano-Bond estimates show that foreign direct investment exhibits a significant, positive relationship with urbanization. This supports previous literature that examines the relationship between the two (London 1987; London and Smith 1988; Sit and Yang 1997; Zhu et al. 2012; Sit 2001). However, Arellano-Bond estimates fail to find significant relationships between FDI and GDP growth and FDI and inequality – relationships that have been found in some previous studies (Blomström et al. 1994; Balasubramanyam et al. 1996; Borensztein et al. 1998; Alderson and Nielsen 1999; Kentor 2001; Beer and Boswell 2002; Carkovic and Levine 2005; Hermes and Lensink 2003; Li and Liu 2004). In addition to not supporting several of the hypotheses, this also



shows that an indirect relationship between FDI and homicide via GDP growth or between FDI and homicide via inequality would be unlikely.

Finally, the interaction terms between INGOs and GDP, INGOs and inequality, and INGOs and urbanization are positive and significant. This suggests that when inequality, GDP, and urbanization are high, the effect of INGO presence is weakened. Figures 4, 5, and 6 show that the effect of INGO presence is less in nations with high levels of inequality, nations with high GDPs, and nations with high levels of urbanization. Because developed nations – with high GDPs – have lower homicide rates, the effect of INGOs is likely weaker because homicide rates have a smaller range by which they can move lower. While nations with high levels of inequality have the potential to dramatically reduce their rates of homicide, the effect of INGO presence is insignificant when inequality is greater than ~45. This may be a result of INGOs having to redirect their planned goals in order to ameliorate government inefficiencies. Many high inequality nations rank poorly in terms of governmental effectiveness and rule of law (World Bank 2012).

Overall, the analyses show that foreign direct investment increases urbanization and urbanization increases homicide. The results are confirmed through a variety of estimation methods – including pooled OLS, FGLS, PCSE, fixed-effects, and random-effects estimation. Furthermore, INGO presence is

shown to be associated with reduced homicide in several of the analyses. PCSE estimation is preferable due to the conservative standard errors. PCSE main effect and interaction models indicate that urbanization increases homicide, while INGO presence reduces homicide. Interestingly, GDP shows a negative relationship with homicide when using most estimation methods, suggesting the expectation of a positive relationship between the two is unlikely to be found. Chapter VII will conclude the research presented here. Additionally, it will address potential policy implications and directions for future research.

## CHAPTER VII

### CONCLUSION

#### 7.1 Summary

Modernization theory states that economic growth and development can result in increased rates of homicide (Durkheim (1951 [1897]; 1984 [1902]; 1997 [1893]; Shelley 1981). This occurs for several reasons. First, migration from rural to urban areas can bring individuals with conflicting norms into conflict with one another. If violence is seen as a legitimate means of dispute resolution by those migrating into urban centers, homicide can increase for a period of time. Once new norms are absorbed, homicide should decrease. Individuals may also encounter a variety of situations that produce strain and the potential for violence. These include a lack of anticipated employment, overcrowding and a lack of adequate housing, and a lack of educational opportunities (Shelley 1981). Furthermore, individuals migrating into urban centers are often young males – the group most prone to criminal behavior (Shelley 1981; Gottfredson and Hirschi 1990).

Modernization theory, however, relied on the fact that crime appeared to increase during periods of economic growth and industrialization in Europe during the nineteenth century. At this time, nations tended to develop in relative

isolation of others – or through the exploitation of colonial/imperial resources.

Economic development occurs differently today. Nations often experience foreign investment - inward foreign direct investment – into their firms and infrastructure. This has several potential consequences including increased economic growth, increased urbanization, and increased inequality (London and Smith 1988; De Gregorio 1992; Blomström et al. 1994; Balasubramanyam et al. 1996; Sit and Yang 1997; Borensztein et al. 1998; Alderson and Nielsen 1999; Alfaro et al. 2000; Kentor 2001; Beer and Boswell 2002; Carkovic and Levine 2005; Hermes and Lensink 2003; Li and Liu 2004; Zhu et al. 2012).

Inward FDI may increase economic growth by introducing new and innovative technologies to developing nations. By combining new technology with the available domestic resources and labor force, economic growth can result (Romer 1993). In addition to transforming the equipment used in domestic firms, foreign investment also alters the wage structure of firms. Firms receiving investment from foreign multi-nationals often pay their employees higher wages than are paid by domestic firms (Girma et al 2001; Lipsey and Sjöholm 2005). This increases the wage gap between employees of foreign investment receiving firms and domestic firms and sizably increases a nation's inequality (Henisz 2011). Finally, inward FDI often increases urbanization by attracting rural

residents to city centers where foreign investment is concentrated (Sit and Yang 1997; Zhu et al. 2012).

These three outcomes (economic growth, inequality, and urbanization) of inward FDI have all been examined in criminological literature. However, the antecedent, FDI has been ignored (Durkheim 1951 [1897]; 1984 [1902]; 1997 [1893]; Wolf 1971; Shelley 1981; Conklin and Simpson 1985; Bennett 1991; Ortega et al. 1992; Neumayer 2003; Pratt and Godsey 2003; Van Wilsem 2004; Chamlin and Cochran 2006; Cole and Gramajo 2009; Nivette 2011).

Analyses presented in Chapter VI tested a series of hypotheses stemming from modernization theory. First, they examined whether increased economic growth was associated with higher rates of homicide. Contrary to modernization theory, economic growth, measured as GDP per capita, exhibited a negative relationship with homicide. Such a relationship is not surprising considering the number of extant studies that also found a negative relationship between GDP and homicide (Krohn and Wellford 1988; Neapolitan 1994; Lim et al. 1995; Neapolitan 1998; Altheimer 2008; Bjerregaard and Cochran 2008; Pridemore 2008). Substantial economic growth appears to be a phenomenon of the past, relegated to the age of Durkheim and Engels when mass industrialization spread throughout Europe. While the developing world lags behind the developed world in terms of GDP per capita, they are still not

experiencing the degree of growth that Durkheim wrote of. Prior to the year 2000, nations below the sample median GDP per capita of 10,075 dollars experienced average annual growth of .2% compared to a growth rate of 2.2% for nations above the median. However, from the year 2000 onward, nations below the median GDP outpaced developed nations in GDP growth (4.4% v. 3.1%). Had the global recession of 2008 not occurred, perhaps GDP could have grown at a pace sufficient to produce the societal ills described by Durkheim (1951 [1897]; 1984 [1902]; 1997 [1893]) and other modernization theorists (Shelley 1981). However, it seems more plausible that economic growth itself does not raise homicide rates in contemporary times. Indeed, increasing GDP can provide societal benefits that include better education, more opportunities for employment, and greater police protection and surveillance (Firebaugh and Beck 1994; Brady et al. 2007).

However, a non-significant or negative relationship between economic growth and homicide does not mean that modernization theory is inadequate for explaining variation in homicide rates. Instead, the theory must be reformulated to consider how nations currently develop and how different components of modernization, such as urbanization, may have a greater effect on homicide rates than do other covariates. Additionally, the direct and indirect role of foreign influenced economic development on homicide rates is important to consider.

These effects were analyzed in a series of models that examined the direct effect of inward FDI on homicide as well as the direct effects of inward FDI on economic growth, urbanization, and inequality.

A final possibility for the negative relationship between gross domestic product and homicide rates is the source of the data and the nations included in the analyses. Huang's (2001) analyses using homicide data from Interpol and the United Nations showed a positive relationship between GDP and homicide. However, his analyses of WHO data showed a negative association between the two. While Interpol and the UN have data on a larger number of nations, the quality of those data is not on par with WHO data (Kalish 1988; Huang and Wellford 1989; Neapolitan 1996; Huang 2001).

In an examination of inward foreign direct investment, analyses in Chapter VI show that inward FDI does not have a direct relationship with homicide. The results also show that inward FDI does not have an effect on homicide via economic growth. While other studies have found that inward FDI significantly increases economic growth (see Bengoa and Sanchez-Robles 2003; Campos and Kinoshita 2002), the sample of nations-years in these analyses cannot confirm this relationship.

However, inward FDI does have a strong, positive relationship with inequality and a weaker, positive relationship with urbanization. While

inequality only increases homicide significantly in one estimation specification, urbanization has a consistently positive and significant relationship with homicide across specifications. This suggests that inward foreign direct investment may impact homicide via urbanization (note that indirect effects were not analyzed).

The analyses in Chapter VI also examine the effect of international non-governmental organizations on homicide. INGOs represent a component of civil society that can prove vital in the reduction of national homicide rates. While the presence of INGOs has been included in analyses by environmental sociologists (see Shandra et al. 2004; Shandra 2007; Jorgenson 2009), it has been neglected by criminologists and others studying homicide. However, a strong civil society is essential in addressing moral issues (see Wolfe 1989; Boli and Thomas 1997; Currie 1997) such as poverty, inequality, poor education, inadequate housing, and social integration – issues that are unintended consequences of inward FDI and urbanization. The presence of INGOs that focus on these issues has a marginally significant, negative effect on homicide rates. This suggests that the strengthening of civil society can have a multitude of immediate effects, such as improved education and housing, as well as more long-term positive effects such as the reduction of homicide rates.



Finally, the analyses in Chapter VI examined interaction terms between INGO presence and FDI, GDP, inequality, and urbanization. All three interactions were positive and significant. This suggests that the negative effect of INGO presence on homicide rates is weaker in nations with high levels of inequality, high GDPs, and high levels of urbanization.

In addition to the empirical analyses presented, it is useful to examine several nations that are similar on a number of covariates yet diverge in key areas. Table 10 compares Brazil and Bulgaria – two nations that differ markedly in their homicide rate and INGO presence. Between 1993 and 2000, both experienced substantial increases in inward FDI. Each experienced similar growth in GDP. Both also experienced moderate increases in urbanization and smaller increases in inequality. However, while Brazil experienced a 22% increase in INGO presence, Bulgaria experienced a 143% increase. Interestingly, while Brazil experienced a 33% *increase* in their homicide rate, Bulgaria experienced a 27% *decrease*. Based upon the comparison of Brazil and Bulgaria, as well as the empirical analyses presented earlier, Table 10 further shows how a greater presence of INGOs can reduce homicide when other covariates have similar values.

While the results of the analyses support several hypotheses, they also suggest that modernization theory should be thought about differently by future

Table 10. Percent Changes in Key Covariates for Similar Nations (1993-2000)

	Brazil	Bulgaria
Homicide	33.2	-27.0
FDI	1651.7	2003.0
GDP	9.3	11.3
Urban	6.0	2.5
Inequality	.4	6.2
INGO	22.0	143.3

researchers wanting to examine homicide rates from the perspective. In addition to thinking more closely about the relationship between economic growth and homicide, scholars should also consider alternative, indirect ways – such as inward FDI – through which nations develop. Before suggesting directions for future research, several of the limitations of this research will be addressed.

## **7.2 Limitations**

While this dissertation advances modernization theory by considering the role of global economic investment, several limitations to the current study exist. First, while the sample size is relatively large due to the use of longitudinal data, the number of nations in the sample is somewhat small, ranging between 59 and 62 in the main analyses and 46 and 51 in analyses checking the robustness of relationships. The number of nations in the analyses is small because data on homicide rates was taken from the World Health Organization. While the World Health Organization is generally considered the best source of homicide data (see Kalish 1988; Huang and Wellford 1989; Neapolitan 1996; Huang 2001), it does not have data for a large number of African nations and a small number of South American nations – as well as a number of central and east Asian countries. Unfortunately, many of the nations for which homicide data is unavailable from the WHO have also been experiencing rapid economic growth. This may be one reason why the anticipated positive association of economic

development and inward FDI with homicide was not found. While the exclusion of these nations from the analyses was an intentional choice made so that only the highest quality homicide data was examined, an analysis using lesser quality homicide data from Interpol or the United Nations – or a combination of Interpol, UN, and WHO data – would be fruitful in order to examine a larger number of nations. Additionally, Huang (2001) noted that the relationships between homicide and key variables of modernization theory, deprivation and economic stress theory, and ecological/opportunity theory depend on the source of the data.

A second limitation of this research is the quality of the inequality data. While the analyses make use of the World Income Inequality Database (WIID), the varying quality required several categories to be combined – averaging together low and high quality data. To further reduce the degree of missing data, linear interpolation was used to fill missing data. To examine the robustness of the relationships found using the WIID data, an alternative source of inequality data, the Estimated Household Income Inequality (EHII) was used. While data from the EHII is of high quality and comparable across time and place (see Galbraith and Kum 2005 and Galbraith 2009), use of the EHII dataset significantly reduced the size of the sample. While no relationship was found between inequality and homicide in most of the analyses, contradictory findings

in two of the analyses may be explained by the different sources of data. Using Parks-AR1 estimation, WIID data exhibited a positive association with homicide. However, using random-effects estimation, a negative association was observed between WIID inequality and homicide.

A final limitation of the research is the data on international non-governmental organizations obtained from the *Yearbook of International Associations*. While the goal of the research was to include INGOs that work toward strengthening civil society and reducing homicide through indirect means, there is no way to measure how effective INGOs are at reaching their stated goals. While the analyses included INGOs that focus on poverty, social welfare, unemployment, and underemployment, there is no guarantee that they are adequately providing their intended services. Additionally, INGOs that focus on other goals, not included in the analyses, may engage in activities that strengthen civil society – and indirectly reduce homicide.

### **7.3 Implications for Future Research**

Future research should consider the role of economic growth/GDP in a different light. While it should remain an important control in cross-national studies of homicide, its role as a covariate in modernization theory should be reconsidered. The economic growth experienced in the nineteenth century is not experienced by nations today. The extreme levels of growth that are theoretically

associated with increased homicide do not exist in the modern world – and will likely never exist again. While the research in this dissertation examined the effects of inward foreign direct investment on homicide rates, as well as on several variables that may mediate the relationship, future research may want to examine other measures of economic trade and investment. While they may not have an effect on homicide rates, they may impact urbanization and other correlates of homicide.

Others may also want to consider an alternative measure of economic growth. This study, like many others, relied exclusively on gross domestic product to capture economic growth/development (Bennett 1991; Neapolitan 1994; Huang 1995; Neumayer 2003; Altheimer 2008; Jacobs and Richardson 2008; Pridemore 2008). Other scholars have used a composite measure of economic development that includes components such as GDP, life expectancy, infant mortality, population growth, and urbanization (Messner and Rosenfeld 1997; Savolainen 2000; Messner et al. 2002). Future researchers may want to consider using alternative measures of economic development – such as a development index comprised of multiple variables to better capture development.

Future research should examine a wider variety of INGOs. The analyses presented here only examined INGOs that focused on poverty, social welfare, unemployment, and underemployment. While these types of INGOs have a

small but statistically significant negative effect on homicide rates, it is possible that other categories of INGOs may produce a similar effect. If these organizations were included with the ones used in the analyses presented earlier, the relationship between INGO presence and homicide may become stronger. Because some INGOs may be more effective than others, it is also important that future scholars look more closely at the stated goals and actions of each INGO. By looking at what each INGO does, only those that effectively accomplish their goals can be included in future analyses. This will produce the most reliable association between INGO presence and homicide rates. The association between INGO presence and reduced rates of homicide suggests that scholars should further consider the role of INGOs. Alternative specifications may produce a more robust relationship between the two. A greater focus on the examination of alternative forms of civil society would also be prudent.

It would also benefit future researchers if more measures of inequality existed. While the analyses presented here employ two sources – the World Income Inequality Database (WIID) and the Estimated Household Income Inequality (EHII) data, future researchers may want to examine the relationship between homicide and inequality using the Standardized World Income Inequality Database (Solt 2009). Although, like the EHII, SWIID data is estimated and missing values are imputed, it can serve as an additional check for

the robustness of the relationship between inequality and homicide rates.

Combining EHII and SWIID data could also serve to increase the availability of inequality data and increase sample size for researchers.

By taking the above mentioned suggestions into consideration, future research will better clarify the relationship between economic investment, growth, and homicide. Examining a greater variety of INGOs and utilizing a third source of inequality data will allow future scholars to further examine the theorized relationships specified in this research and to see if the findings presented here can be replicated under alternative specifications.

#### **7.4 Policy Implications**

A number of policy implications can be suggested based on the results of this dissertation's analyses. First, counter to what may have been typical in nineteenth century Europe, it appears that economic growth does not harm society by increasing homicide. Rather, most nations experience long-term benefits from greater economic growth. This includes increased caloric consumption, lower rates of infant mortality, higher life expectancies, improved health care, and greater police presence (Firebaugh and Beck 1994; Brady et al. 2007). Because of this, it seems that economic growth should be encouraged, since the long-term effects will be more beneficial than detrimental.



It is also important that policy makers consider the role of inward foreign direct investment in the global economy. While inward FDI is theorized to provide several benefits to society, including lower unemployment and increased economic growth, the results presented in this dissertation cannot confirm that inward FDI promotes growth. However, a number of studies have found an association between FDI and growth (Bengoa and Sanchez-Robles 2003; Campos and Kinoshita 2002). Because inward FDI may produce economic growth and there is no direct effect of FDI on homicide, inward FDI should be encouraged. The promotion of FDI has already been advocated by other scholars. Campos and Kinoshita (2002), who find a positive association between FDI and economic growth, conclude that:

The policy implications from our results should not be overlooked. So far, transition economies have by and large been shy in their attempts to attract FDI and we believe our results invite re-thinking the prevalent attitude (417).

While there is no main effect of inward FDI on homicide, FDI is associated with increased inequality and increased urbanization. In turn, the results of these analyses show that urbanization has a positive association with homicide. While others have found that inequality increases homicide, this study cannot confirm that relationship (Avison and Loring 1986; Gartner 1990; Neapolitan 1998; Messner et al. 2002; Pratt and Godsey 2003; Van Wilsem 2004; Chamlin and Cochran 2006; Cole and Gramajo 2009).

Despite this, it appears that FDI should be promoted. However, its effects must be monitored and nations should seek to lessen the inequality that comes along with it. Regardless of whether inequality is associated with homicide or not, the effects of inequality are harmful to society. Because companies receiving FDI tend to pay higher wages than domestic firms that do not receive foreign investment, domestic firms should be encouraged to pay higher wages.

It is most important to protect against the harmful effects of urbanization. The analyses in this dissertation show that urbanization has a robust, positive association with homicide. Programs that improve the infrastructure of cities, increase affordable housing, increase employment opportunities, and increase social inclusion for all urban residents are most likely to reduce the harmful effects of rapid urbanization. While some multi-nationals invest in foreign infrastructure, including transportation and housing, governments should seek similar investment from all multi-nationals. Also, as nations receive FDI, governments should commit to providing money for programs aimed at improving social conditions.

Finally, policymakers should consider the impact of INGOs on homicide. Analyses show that INGOs exhibit a modest, negative association with homicide rates across several specifications. Therefore, the promotion of INGOs should be encouraged. Many INGOs already provide citizens with access to education, job

training, and housing assistance (Sparr and Moser 2007; International Movement ATD Fourth World 2011). By increasing the number of INGOs present in a nation, the beneficial effects of a strong civil society can manifest.

## REFERENCES

- Agnew, Robert. 1985. A Revised Strain Theory of Delinquency. *Social Forces*. 64:151-167.
- Aitken, Brian J. and Ann E. Harrison. 1999. Do Domestic Firms Benefit from Direct Foreign Investment? Evidence from Venezuela. *The Annual Economic Review*. 89:605-618.
- Alderson, Arthur S. and Francois Neilson. 1999. Income Inequality, Development, and Dependence: A Reconsideration. *American Sociological Review*. 64:606-631.
- Alfaro, Laura, Arrendam Chanda, Sebnem Kalemli-Ozcan, and Selin Sayek. 2004. FDI and Economic Growth: The Role of Local Financial Markets. *Journal of International Economics*. 64:89-112.
- Alzheimer, Irshad. 2008. Social Support, Ethnic Heterogeneity, and Homicide: A Cross-National Approach. *Journal of Criminal Justice*. 36:103-114.
- Amin, Samir. 1974. *Accumulation on a World Scale: A Critique of the Theory of Underdevelopment*. New York: Monthly Review Press.
- Antonaccio, Olena and Charles R. Tittle. 2007. A Cross-National Test of Bonger's Theory of Criminality and Economic Conditions. *Criminology*. 45:925-958.
- Arellano, Manuel and Stephen Bond. 1991. Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations. *The Review of Economic Studies*. 58:277-297.
- Avison, William R. and Pamela L. Loring. 1986. Population Diversity and Cross-National Homicide: The Effects of Inequality and Heterogeneity. *Criminology*. 24:733-749.
- Babones, Salvatore J. 2008. Income Inequality and Population Health: Correlation and Causality. *Social Science and Medicine*. 66:1614-1626.

- Balasubramanayam, V. N. and M. Salisu. 1991. EP, IS and Direct Foreign Investment in LCD's in A. Koekkoek and L. B. M. Barnes (eds.), *International Trade and Global Development*. London: Routledge.
- Balasubramanyam, V. N., M. Salisu, and David Sapsford. 1996. Foreign Direct Investment and Growth in EP and IS Countries. *Economic Journal*. 106:92-105.
- Barro, Robert and Jong-What Lee. 1993. International Comparisons of Educational Attainment. *Journal of Monetary Economics*. 32:361-394.
- Barro, Robert and Jong-What Lee. 1994. Sources of Economic Growth. *Carnegie Rochester Conference Series on Public Policy*. 40:1-46.
- Basu, Parantap and Alessandra Guariglia. 2007. Foreign Direct Investment, Inequality, and Growth. *Journal of Macroeconomics*. 29:824-839.
- Beck, Nathaniel. 2001. Time-Series Cross-Section Data: What have we Learned in the Past Few Years? *Annual Review of Political Science*. 4:271-293.
- Beer, Linda and Terry Boswell. 2002. The Resilience of Dependency Effects in Explaining Income Inequality in the Global Economy: A Cross-National Analysis, 1975-1995. *Journal of World Systems Research*. 8:30-59.
- Bellair, Paul E. 1997. Social Interaction and Community Crime: Examining the Importance of Neighbor Networks. *Criminology*. 35:677-701.
- Bengoa, Marta and Blanca Sanchez-Robles. 2003. Foreign Direct Investment, Economic Freedom and Growth: New Evidence from Latin America. *European Journal of Political Economy*. 19:529-545.
- Bennett, Richard R. 1991. Development and Crime: A Cross-national Time Series Analysis of Competing Models. *Sociological Quarterly*. 32:343-363.
- Bhagwati, Jagdish. 1978. *Foreign Trade Regimes and Economic Development: Anatomy and Consequences of Exchange Contrast Regimes*. Cambridge, MA: Ballinger Publishing Company.
- Bhagwati, Jagdish and T.N. Srinivasan. 1975. *Foreign Trade Regimes and Economic Development: India*. New York: Columbia University Press.

Bjerregaard, Beth and John K. Cochran. 2008. A Cross-National Test of Institutional Anomie Theory: Do the Strength of other Social Institutions Mediate or Moderate the Effects of the Economy on the Rate of Crime. *Western Criminology Review*. 9:31-48.

Bjerregaard, Beth and John K. Cochran. 2008. Want Amid Plenty: Developing and Testing a Cross-National Measure of Anomie. *International Journal of Conflict and Violence*. 2:182-193.

Blau, Peter M. and Judith R. Blau. 1982. Cost of Inequality: Metropolitan Structure and Violent Crime. *American Sociological Review*. 47:114-129.

Blomström, Magnus, Robert E. Lipsey, and Mario Zejan. 1994. What Explains the Growth of Developing Countries? Pp. 243-259 in William J. Baumol, Richard R. Nelson, and Edward N. Wolff (eds.), *Convergence of Productivity: Cross-National Studies and Historical Evidence*. New York: Oxford University Press.

Boli, John and George M. Thomas. 1997. World Culture in the World Polity: A Century of International Non-Governmental Organization. *American Sociological Review*. 62:171-190.

Bonger, William Adrian. 1916. *Criminality and Economic Conditions*. Translated by Henry P. Horton. Boston, MA: Little, Brown.

Borensztein, Eduardo, Jose De Gregorio, and Jong-Wha Lee. 1998. How Does Foreign Direct Investment Affect Economic Growth? *Journal of International Economics*. 45:115-135.

Boswell, Terry and William J. Dixon. 1990. Dependency and Rebellion: A Cross-National Analysis. *American Sociological Review*. 55:540-559.

Brady, David, Yunus Kaya, and Jason Beckfield. 2007. Reassessing the Effect of Economic Growth on Well-being in Less-developed Countries, 1980-2003. *Studies in Comparative International Development*. 42:1-35.

Briar, Scott and Irving Piliavin. 1965. Delinquency, Situational Inducements, and Commitment to Conformity. *Social Problems*. 8:35-45.

Braithwaite, John. 1979. *Inequality, Crime and Public Policy*. London: Routledge & Kegan Paul.

Braithwaite, John. 1989. *Crime, Shame, and Reintegration*. Cambridge: Cambridge University Press.

Braithwaite, John and Valerie Braithwaite. 1980. The Effect of Income Inequality and Social Democracy on Homicide. *British Journal of Criminology*. 20:45-57.

Bursik, Robert J. Jr., and Harold G. Grasmick. 1993. *Neighborhoods and Crime: The Dimensions of Effective Community Control*. New York: Lexington Books.

Campos, Nauro F. and Yuko Kinoshita. 2002. Foreign Direct Investment as Technology Transferred: Some Panel Evidence from the Transition Economies. *The Manchester School*. 70:398-419.

Carkovic, Maria and Ross Levine. 2005. Does Foreign Direct Investment Accelerate Economic Growth? In T.H. Moran, E.M. Graham, and M. Blomström. *Does Foreign Direct Investment Promote Development?* Washington DC: Institute for International Economics and Center for Global Development.

Chambliss, William J. 1975. Toward a Political Economy of Crime. *Theory and Society*. 2:152-170.

Chamlin, Mitchell B. and John K. Cochran. 2006. Economic Inequality, Legitimacy, and Cross-National Homicide Rates. *Homicide Studies*. 10:231-252.

Chase-Dunn, Christopher. 1975. The Effects of International Economic Dependence and Inequality: A Cross-National Study. *American Sociological Review*. 40:720-738.

Chung, Yuet W. 1997. Family, School, Peer, and Media Predictors of Adolescent Deviant Behavior in Hong Kong. *Journal of Youth and Adolescence*. 26:569-596.

Cochran, John K. and Beth Bjerregaard. 2011. Structural Anomie and Crime: A Cross-National Test. *International Journal of Offender Therapy and Comparative Criminology*.

Cohen, Lawrence E. and Marcus Felson. 1979. Social Change and Crime Rate Trends: A Routine Activity Approach. *American Sociological Review*. 44:588-608.

Cohen, Lawrence E., Marcus Felson, and Kenneth Land. 1980. Property Crime Rates in the United States: A Macrodynamical Analysis 1947-1977 with *Ex Ante* Forecasts for the Mid-1980's. *American Journal of Sociology*. 86:90-118.

Cole, Julio H. and Andres Marroquin Gramajo. 2009. Homicide Rates in a Cross-Section of Countries: Evidence and Interpretations. *Population and Development Review*. 35:749-776.

Conklin, George H. and Miles E. Simpson. 1985. A Demographic Approach to the Cross-National Study of Homicide. *Comparative Social Research*. 8:171-185.

Currie, Elliott. 1997. Market, Crime and Community: Toward a Mid-Range Theory of Post-Industrial Violence. *Theoretical Criminology*. 1:147-172.

De Gregorio, Jose. 1992. Economic Growth in Latin America *Journal of Development Economics*. 39:58-84.

Deiningner, Klaus and Lyn Squire. 1996. A New Data Set Measuring Income Inequality. *World Bank Economic Review*. 10:565-591.

DiCristina, Bruce. 2004. Durkheim's Theory of Homicide and the Confusion of the Empirical Literature. *Theoretical Criminology*. 8:57-91.

Drukker, David M. 2003. Testing for Serial Correlation in Linear Panel-Data Models. *The Stata Journal*. 3:168-177.

Durkheim, Emile. 1951 [1897]. *Suicide*. London: Routledge.

Durkheim, Emile. 1984 [1902]. *Professional Ethics and Civil Morals*. New York: Routledge.

Durkheim, Emile. 1997 [1893]. *The Division of Labor in Society*. New York: The Free Press.

Emmanuel, Arghiri. 1972. *Unequal Exchange: A Study of the Imperialism of Trade*. Translated by B. Pearce. New York: Monthly Review Press.

Esping-Andersen, Gosta. 1990. *The Three Worlds of Welfare Capitalism*. New Jersey: Princeton University Press.



Evans, Peter B. and Michael Timberlake. 1980. Dependence, Inequality, and the Growth of the Tertiary: A Comparative Analysis of Less Developed Countries. *American Sociological Review*. 45:531-552.

Fajnzylber, Pablo, Daniel Lederman, and Norman Loayza. 2002. Inequality and Violent Crime. *Journal of Law and Economics*. 45:1-40.

Ferraro, Vincent. 2008. Dependency Theory: An Introduction. Pp. 58-64. In *The Development Economics Reader*, ed. Georgio Secondi. Routledge: London.

Firebaugh, Glenn and Frank D. Beck. 1994. Does Economic Growth Benefit the Masses? Growth, Dependence, and Welfare in the Third World. *American Sociological Review*. 59:631-653.

Freedman, David A. and Stephen C. Peters. 1984. Bootstrapping a Regression Equation: Some Empirical Results. *Journal of the American Statistical Association*. 79:97-106.

Furtado, Celso 1970. *Economic Development of Latin America*. Cambridge: Cambridge University Press.

Galbraith, James K. 2009. Inequality, Unemployment and Growth: New Measures for Old Controversies. *Journal of Economic Inequality*. 7:189-206.

Galbraith, James K. and Hyunsub Kum. 2005. Estimating the Inequality of Household Incomes: A Statistical Approach to the Creation of a Dense and Consistent Global Data Set. *Review of Income and Wealth*. 51:115-143.

Gartner, Rosemary. 1990. The Victims of Homicide: A Temporal and Cross-National Comparison. *American Sociological Review*. 55:92-106.

Germidis, Dimitri. 1977. *Transfer of Technology by Multinational Corporations*. Paris: Development Centre of the Organization for Economic Cooperation and Development.

Gibney, M., L. Cornett, and R. Wood. 2012. *Political Terror Scale 1976-2011*. <http://www.politicalterrorsscale.org/>.

Gillis, Ronald A. 1974. Population Density and Social Pathology. *Social Forces*. 53: 306-314.

Girma, Sourafel, David Greenaway, and Katharine Wakelin. 2001. Who Benefits from Foreign Direct Investment in the UK? *Scottish Journal of Political Economy*. 48:119-133

Görg, Holger and Eric Strobl. 2001. Multinational Companies and Productivity Spillovers: A Meta-Analysis. *Economic Journal*. 111:723-739.

Görg, Holger and David Greenaway. 2003. Much Ado About Nothing? Do Domestic Firms Really Benefit from Foreign Direct Investment? Germany: Institute for the Study of Labor.

Gottfredson, Michael R. and Travis Hirschi. 1990. *A General Theory of Crime*. Stanford, CA: Stanford.

Greenaway, David and Chong Hyn Nam. 1988. Industrialization and Macroeconomic Performance in Developing Countries under Alternative Trade Strategies. *Kyklos*. 41:419-435.

Greenberg, David. 1993. *Crime and Capitalism: Readings in Marxist Criminology*. Philadelphia: Temple University Press.

Groves, Walter B., Richard McCleary, and Graeme R. Newman. 1985. Religion, Modernization, and World Crime. *Comparative Social Research*. 8:59-78.

Haddad, Mona and Ann Harrison. 1993. Are there Positive Spillovers from Direct Foreign Investment? Evidence from Panel Data for Morocco. *Journal of Development Economics*. 42:51-74.

Hansmann, Henry B. and John M. Quigley. 1982. Population Heterogeneity and the Sociogenesis of Homicide. *Social Forces*. 61:206-224.

He, Ni, Liqun Cao, William Wells, and Edward Maguire. 2003. Forces of Production and Direction: A Test of an Expanded Model of Suicide and Homicide. *Homicide Studies*. 7:36-57.

Herman, Michelle, Darla Chisholm, and Hadley Leavell. 2004. FDI and the Effects on Society. *Proceedings of the Academy for Studies in International Business*.. 4:15-18.

Hermes, Niels and Robert Lensink. 2003. Foreign Direct Investment, Financial Development and Economic Growth. *Journal of Development Studies*. 40:142-163.

Herzer, Dierk and Peter Nunnenkamp. 2012. *The Effect of Foreign Aid on Income Inequality: Evidence from Panel Cointegration*. Germany: Kiel Institute for the World Economy.

Hirschi, Travis. 1969. *Causes of Delinquency*. Berkley and Los Angeles: University of California Press.

Hoselitz, Bert F. 1960. *Theories of Stages of Economic Growth*. New York: The Free Press.

Huang, W. S. Wilson. 1995. A Cross-national Analysis on the Effect of Moral Individualism on Murder Rates. *International Journal of Offender Therapy and Comparative Criminology*. 39:63-75.

Huang, W. S. Wilson. 2001. A Research note on Reporting Discrepancies in International Homicide Data. *International Journal of Comparative and Applied Criminal Justice*. 25:167-181.

Huang, W. S. Wilson and Charles F. Wellford. 1989. Assessing Indicators of Crime among International Crime Data Series. *Criminal Justice Policy Review*. 3:28-47.

International Movement ATD Fourth World. 2009. *International Report 2006-2009*. France: International Movement ATD Fourth World.

International Movement ATD Fourth World. 2011. *International Report 2010-2011*. France: International Movement ATD Fourth World.

International Movement ATD Fourth World v. France. 2006. *Submissions of the International Movement ATD Fourth World: In Response to the Observations of the French Government*. Complaint n° 33/2006: Case Document n°5.

Jacobs, David and Amber M. Richardson. 1995. Economic Inequality and Homicide in the Developed Nations from 1975 to 1995. *Homicide Studies*. 12:28-45.

Jenson, Gary. 2002. Institutional Anomie and Societal Variations in Crime: A Critical Appraisal. *The International Journal of Sociology and Social Policy*. 22:45-74.

Jensen, Nathan M. 2003. Democratic Governance and Multinational Corporations: Political Regimes and Inflows of Foreign Direct Investment. *International Organizations*. 57:587-616.

Jorgenson, Andrew K. 2009. Foreign Direct Investment and the Environment, the Mitigating Influence of Institutional and Civil Society Factors, and Relationships Between Industrial Pollution and Human Health. *Organization and Environment*. 22:135-157.

Kalish, Carol B. 1988. *International Crime Rates*. U.S. Department of Justice.

Keane, John. 2003. *Global Civil Society?* Cambridge: Cambridge University Press.

Kentor, Jeffrey. 2001. The Long Term Effects of Globalization on Population Growth, Inequality, and Economic Development. *Social Problems*. 48:435-455.

Kick, Edward and Gary LaFree. 1985. Development and the Social Context of Murder and Theft. *Comparative Social Research*. 8:37-58.

Kirkpatrick, Colin, David Parker, and Yin-Fang Zhang. 2006. Foreign Direct Investment in Infrastructure in Developing Countries: Does Regulation make a Difference? *Transnational Corporations*. 15:143-171.

Komiya, Nobuo. 1999. A Cultural Study of the Low Crime Rate in Japan. *The British Journal of Criminology*. 39:369-390.

Krahn, Harvey, Timothy F. Hartnagel, and John W. Gartrell. 1986. Income Inequality and Homicide Rates: Cross-National Data and Criminological Theories. *Criminology*. 24:269-295.

Krohn, Marvin D. 1976. Inequality, Unemployment and Crime: A Cross-National Analysis. *Sociological Quarterly*. 17:303-313.

Krohn, Marvin D. 1978. A Durkheimian Analysis of International Crime Rates. *Social Forces*. 57:654-670.

Krohn, Marvin D. and Charles F. Wellford. 1988. A Static and Dynamic Analysis of Crime and Primary Dimensions of Nations. *International Journal of Criminology and Penology*. 5:1-16.

Kuznets, Simon. 1955. Economic Growth and Income Inequality. *The American Economic Review*. 45:1-28.

Kuznets, Simon. 1963. Quantitative Aspects of the Economic Growth of Nations. *Economic Development and Cultural Change*. 11:1-80.

Kuznets, Simon. 1976. Demographic Aspects of the Size Distribution of Income. *Economic Development and Cultural Change*. 25:1-94.

LaFree, Gary. 1999. A Summary and Review of Cross-National Comparative Studies of Homicide. In *Homicide: A Sourcebook of Social Research*, eds. M. Dwayne Smith and Margaret A. Zahn. Thousand Oaks, CA: Sage.

LaFree, Gary and Kriss A. Drass. 2002. Counting Crime Booms among Nations: Evidence for Homicide Victimization Rates, 1956-1998. *Criminology*. 40:769-800.

LaFree, Gary and Edward Kick. 1986. Cross-National Effects of Developmental, Distributional, and Demographic Variables on Crime: A Review and Analysis. *International Annals of Criminology*. 24:213-236.

LaFree, Gary and Andromachi Tseloni. 2006. Democracy and Crime: A Multilevel Analysis of Homicide Trends in Forty-Four Countries, 1950-2000. *The ANNALS of the American Academy of Political and Social Science*. 605:26-49.

Lederman, David, Norman Loayza, and Ana Maria Menendez. 2002. Violent Crime: Does Social Capital Matter? *Economic Development and Cultural Change*. 50:509-539.

Lee, Matthew R. 2001. Population Growth, Economic Inequality, and Homicide. *Deviant Behavior*. 22:491-516.

Lee, Matthew R. and William B. Bankston. 1999. Political Structure, Economic Inequality, and Homicide: A Cross-National Analysis. *Deviant Behavior*. 19:27-55.

Li, De. 1995. Economic Development, Social Control, and Murder Rates: A Cross-National Approach. *Cross-Cultural Research*. 29:361-382.

Li, Xiaoying and Xiaming Liu. 2004. Foreign Direct Investment and Economic Growth: An Increasingly Endogenous Relationship

Lim, Flora, Michael Harris Bond and Mieko Kuchar Bond. 2005. Linking Societal and Psychological Factors to Homicide Rates across Nations. *Journal of Cross-Cultural Psychology*. 36:515-536.

Lin, Ming-Jen. 2007. Does Democracy Increase Crime? The Evidence from International Data. *Journal of Comparative Economics*. 35:467-483.

Lipsey, Robert E. 2002. Affiliates of U.S. and Japanese Multinationals in East Asian Production and Trade. Pp. 147-190 in Takatoshi Ito and Anne O. Krueger (eds.), *The Role of Foreign Direct Investment in East Asian Development and Trade, NBER East Asian Seminar on Economics*. Chicago: The University of Chicago Press.

Lipsey, Robert E. 2003. Foreign Direct Investment, Growth, and Competitiveness in Developing Countries. Peter K. Cornelius (eds.), *The Global Competitiveness Report, 2002-2003*. New York: Oxford University Press.

Lipsey, Robert E. and Fredrik Sjöholm. 2005. The Impact of Inward FDI on Host Countries: Why Such Different Answers? Pp. 23-43 in Theodore H. Moran, Edward M. Graham, and Magnus Blomström (eds.) *Does Foreign Direct Investment Promote Development?* Washington D.C.: Peterson Institute.

London, Bruce. 1987. Structural Determinants of Third World Urban Change: An Ecological and Political Analysis. *American Sociological Review*. 52:28-43.

London, Bruce and David A. Smith. 1988. Urban Bias, Dependence, and Economic Stagnation in Noncore Nations. *American Sociological Review*. 53:454-463.

MacKeller, Landis F. 2003. Homicide and Suicide. Pp. 496-499 in Paul Demeny and Geoffret McNicoll (eds.) *Encyclopedia of Population*, vol. 1. New York: Thomson Gale.

Mansfield, Edwin and Anthony Romero. 1980. Technology Transfer to Overseas Subsidiaries by U.S. Based Firms. *Quarterly Journal of Economics*. 9:737-749.

Marx, Karl. 1967. *Capital: A Critique of Political Economy*. New York, NY: International Publishers.

McDonald, Lynn. 1976. *The Sociology of Law and Order*. Boulder, CO: Westview.

Merton, Robert K. 1938. Social Structure and Anomie. *American Sociological Review*. 3:672-682.

Messner, Steven F. 1980. Income Inequality and Murder Rates: Some Cross-national Findings. *Comparative Social Research*. 3:185-198.

Messner, Steven F. 1982. Societal Development, Social Equality, and Homicide: A Cross-national Test of a Durkheimian Model. *Social Forces*. 61:225-240.

Messner, Steven F. 1985. Sex Differences in Arrest Rates for Homicide: An Application of the General Theory of Structural Strain. *Comparative Social Research*. 8:187-201.

Messner, Steven F. 1986. Modernization, Structural Characteristics, and Societal Rates of Crime: An Application of Blau's Macrosociological Theory. *The Sociological Quarterly*. 27:27-41.

Messner, Steven F. 1989. Economic Discrimination and Societal Homicide Rates: Further Evidence on the Cost of Inequality. *American Sociological Review*. 54:597-611.

Messner, Steven F. 2012. Morality, Markets, and the ASC: 2011 Presidential Address to the American Society of Criminology. *Criminology*. 50:5-25.

Messner, Steven F. and Richard Rosenfeld. 1994. *Crime and the American Dream*. Belmont, CA: Wadsworth.

Messner, Steven F. and Richard Rosenfeld. 1997. Political Restraint of the Market and Levels of Criminal Homicide: A Cross-National Application of Institutional-Anomie Theory. *Social Forces*. 75:1393-1416.

- Messner, Steven F., Lawrence E. Raffalovich, and Peter Shrock. 2002. Reassessing the Cross-National Relationship between Income Inequality and Homicide Rates: Implications of Data Quality Control in the Measurement of Income Distribution. *Journal of Quantitative Criminology*. 18:377-395.
- Messner, Steven F. and Richard Rosenfeld. 2007. *Crime and the American Dream* (4<sup>th</sup> ed.). Belmont, CA: Thomson Wadsworth.
- Musterd, Sako and Alan Murie. 2006. The Spatial Dimensions of Urban Social Exclusion and Integration. *URBEX Series, No. 22*.
- Neapolitan, Jerome L. 1994. Cross-national Variation in Homicides: The Case of Latin America. *International Criminal Justice Review*. 4:4-22.
- Neapolitan, Jerome. 1996. Cross-National Crime Data: Some Unaddressed Problems. *Journal of Crime and Justice*. 19:95-112.
- Neapolitan, Jerome L. 1997. Homicides in Developing Nations: Results of Research Using a Large and Representative Sample. *International Journal of Offender Therapy and Comparative Criminology*. 41:358-374.
- Neapolitan, Jerome L. 1998. Cross-National Variation in Homicides: Is Race a Factor? *Criminology*. 36:139-156.
- Neuman, W. Lawrence and Ronald J. Berger. 1988. Competing Perspectives on Cross-National Crime: An Evaluation of Theory and Evidence. *Sociological Quarterly*. 29:281-313.
- Neumayer, Eric. 2003. Good Policy can lower Violent Crime: Evidence from a Cross-National Panel of Homicide Rates, 1980-1997. *Journal of Peace Research*. 40:619-640.
- Nguyen, Nguyen Thi Duc and Atsushi Aoyama. 2012. Does the Hybridizing of Intercultural Potential Facilitate Efficient Technology Transfer? An Empirical Study on Japanese Manufacturing Subsidiaries in Vietnam. *Asian Social Science*. 8:26-43.
- Nivette, Amy E. 2011. Cross-National Predictors of Crime: A Meta-Analysis. *Homicide Studies*. 15:103-131.



Oizumi, Keiichiro. 2011. The Emergence of the Pearl River Delta Economic Zone – Challenges on the Path to Megaregion Status and Sustainable Growth. *Pacific Business and Industries*. 11:2-20.

Ortega, Suzanne T., Jay Corzone, Cathleen Burnett and Tracey Poyer. 1992. Modernization, Age Structure, and Regional Context: A Cross-National Study of Crime. *Sociological Spectrum*. 12:257-277.

Pampel, Fred C. and Rosemary Gartner. 1995. Age Structure, Socio-political Institutions, and National Homicide Rates. *European Sociological Review*. 11:243-260.

Pratt, Travis C. and Timothy W. Godsey. 2002. Social Support and Homicide: A Cross-National Test of an Emerging Criminological Theory. *Journal of Criminal Justice*. 30:589-601.

Pratt, Travis C. and Timothy W. Godsey. 2003. Social Support, Inequality, and Homicide: A Cross-National Test of an Integrated Theoretical Model. *Criminology*. 41:611-643.

Pridemore, William Alex. 2008. A Methodological Addition to the Cross-National Empirical Literature on Social Structure and Homicide: A First Test of the Poverty-Homicide Thesis. *Criminology*. 46:133-154.

Quinney, Richard. 1965. Suicide, Homicide, and Economic Development. *Social Forces*. 43:401-406.

Quinney, Richard. 1977. *Class, State and Crime*. New York: David McKay.

Raudenbush, Stephen W. and Anthony S. Bryk. 2001. *Hierarchical Linear Models: Applications and Data Analysis Methods*. Thousand Oaks, CA: Sage Publications Inc.

Reed, W. Robert and Rachel Webb. 2010. The PCSE is Good – Just not As Good as you Think. *Working Papers in Economics*. 10/53. University of Canterbury: Department of Economics and Finance.

Reed, W. Robert and Haichun Ye. 2011. Which Panel Data Estimator should I Use? *Applied Economics*. 43:985-1000.

- Romer, Paul M. 1993. Idea Gaps and Object Gaps in Economic Development. *Journal of Monetary Economics*. 32:543-573.
- Rosenfeld, Richard. 2011. The Big Picture: 2010 Presidential Address to the American Society of Criminology. *Criminology*. 49:1-26.
- Sampson, Robert J. and W. Byron Groves. 1989. Community Structure and Crime: Testing Social Disorganization Theory. *American Journal of Sociology*. 94:774-802.
- Sampson, Robert J., Stephen Raudenbush, and Felton Earls. 1997. Neighborhoods and Violent Crime: A Multi-Level Study of Collective Efficacy. *Science*. 93:348-382.
- Sampson, Robert J. and Stephen Raudenbush. 1999. Systematic Social Observation of Public Spaces: A New Look at Disorder in Urban Neighborhoods. *American Journal of Sociology*. 105:603-651.
- Savage, Joanne, Richard R. Bennett, and Mona Danner. 2008. Economic Assistance and Crime: A Cross-National Investigation. *European Journal of Criminology*. 5:217-238.
- Savolainen, Jukka. 2000. Inequality, Welfare State, and Homicide: Further Support for the Institutional Anomie Theory. *Criminology*. 38:1021-1042.
- Shandra, John M., Bruce London, Owen P. Whooley, and John B. Williamson. 2004. International Nongovernmental Organizations and Carbon Dioxide Emissions in the Developing World: A Quantitative, Cross-National Analysis. *Sociological Inquiry*. 74:520-545.
- Shandra, John. 2007. International Nongovernmental Organizations and Deforestation: Good, Bad, or Irrelevant? *Social Science Quarterly*. 88:665-689.
- Shaw, Clifford and Henry H. McKay. 1942. *Juvenile Delinquency and Urban Areas*. Chicago: University of Chicago Press.
- Shelley, Louise. 1981. *Crime and Modernization*. Carbondale, Illinois: Southern Illinois University.
- Sit, Victor F. S. 2001. Globalization, Foreign Direct Investment, and Urbanization in Developing Countries. *World Bank Discussion Papers*.

- Sit, Victor F. S. and Chun Yang. 1997. Foreign Investment Induced Exo-Urbanization in the Pearl River Delta, China. *Urban Studies*. 34:647-677.
- Solt, Frederick. 2009. Standardizing the World Income Inequality Database. *Social Science Quarterly*. 90:231-242. SWIID Version 3.1, December 2011.
- Sparr, Pamela and Caroline Moser. 2007. *International NGOs and Poverty Reduction Strategies: The Contribution of an Asset-based Approach*. The Brookings Institute. Global Economy and Development: Working Paper #08.
- Stamatel, Janet P. 2009. Correlates of National-Level Homicide Variation in Post-Communist East-Central Europe. *Social Forces*. 87:1423-1448.
- Sullivan, Gerard. 1983. Uneven Development and National Income Inequality in Third World Countries: A Cross-National Study of the Effects of External Economic Dependence. *Sociological Perspectives*. 26:201-231.
- Turner, Edward A. L. 2010. Why Has the Number of International Non-Governmental Organizations Exploded since 1960? *Cliodynamics: The Journal of Theoretical and Mathematical History*. 1:81-91.
- UNCTAD. 1999. *Foreign Direct Investment and Development*. Switzerland: United Nations.
- UNdata. 2012. United Nations Statistics Division of the Department of Economic and Social Affairs.
- United Nations office on Drugs and Crime. 2010. *The Globalization of Crime: A Transnational Organized Crime Threat Assessment*. Vienna: UNODC.
- Unnithan, Prabha N. and High P. Whitt. 1992. Inequality, Economic Development and Lethal Violence: A Cross-National Analysis of Suicide and Homicide. *International Journal of Comparative Sociology*. 33:182-196.
- Van Wilsem, Johan. 2004. Criminal Victimization in Cross-National Perspective: An Analysis of Theft, Violence, and Vandalism across 27 Countries. *European Journal of Criminology*. 1:89-109.

- Velde Dirk Willem te. 2001. Government Policies Towards Inward Foreign Direct Investment in Developing Countries: Implications for Human Capital Formation and Income Inequality. *FDI, Human Capital and Education in Developing Countries, Technical Meeting*. Paris: OECD Development Center.
- Velez, Maria B. 2001. The Role of Public Social Control in Urban Neighborhoods: A Multilevel Analysis of Victimization Risk. *Criminology*. 39:837-864.
- Wallerstein, Immanuel. 1974. *The Modern World System, vol. I: Capitalist Agriculture and the Origins of the European World Economy in the Sixteenth Century*. New York, NY: Academic Press.
- Wellford, Charles F. 1974. Crime and the Dimensions of Nations. *International Journal of Criminology and Penology*. 2:1-10.
- Wilson, James Q. and Richard J. Herrnstein. 1985. *Crime and Human Nature*. New York: Simon & Schuster.
- World Bank. 2012. *World Development Indicators*. Washington DC: World Bank.
- World Health Organization. 2012. *World Health Statistics*. World Health Organization.
- Wolf, Preben. 1971. Crime and Development: An International Comparison of Crime Rates. *Scandinavian Studies in Criminology*. 3:107-120.
- Wolfe, Alan. 1989. *Whose Keeper? Social Science and Moral Obligation*. University of California Press.
- Wolfgang, Marvin E. 1966. *Patterns in Criminal Homicide*. New York: John Wiley.
- Woolridge, Jeffrey M. 2002. *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: MIT Press.
- Wright, Erik Olin and Joel Rogers. 2011. *American Society: How it really Works*. New York: W. W. Norton and Company.

Union of International Associations. Various Years. *Yearbook of International Organizations*. Brussels: Union of International Associations.

Zhang, Lening and Steven F. Messner. 2006. Family Deviance and Delinquency in China. *Criminology*. 33:359-387.

Zhu, Nong, Xubei Luo, and Heng-fu Zou. 2012. Regional Differences in China's Urbanization and its Determinants. *CEMA Working Papers 535*. China Economics and Management Academy: Central University of Finance and Economics.

APPENDIX A  
CROSS-NATIONAL HOMICIDE STUDIES INCLUDING  
MEASURES OF GDP OR ECONOMIC GROWTH

Table A1. Cross-National Homicide Studies including Measures of GDP or Economic Growth

Author(s) and Publication date	Data year(s)	Sample size - Nations	GDP or GDP per capita	Economic/ GDP growth	Other variables
Altheimer (2008)	1996-1999	51	GDP per capita (-)*		Economic inequality (+)* Urbanization (-) % population 15-34 (-) Sex ratio (-)* Education expenditure (-) General social support (-)* Health care expenditure (-)* Human development index (-)* Decommodification (-)* Ethnic heterogeneity (+)*
Bennett (1991)	1960-1984	38	GDP per capita (-)	Difference in GDP per capita between a year and its previous year (-)	Form of development (+/-)* (becomes negative with shift to manufacturing) Urbanization (+) Proportion of juveniles (+)* Inequality (-)*

Table A1. Continued

Author(s) and Publication date	Data year(s)	Sample size - Nations	GDP or GDP per capita	Economic/ GDP growth	Other variables
Bjerregaard and Cochran (2008)	1997-1999	49	GDP logged (-)*	Annual & growth in GDP from 1995-1997 (+)	Gini coefficient (+)* Divorce rate (-) Low voter turnout (+)* Education expenditure as a % of GDP (-) Economic freedom (+)
Braithwaite and Braithwaite (1980)	1955-1974	31	GDP per capita (+)		Gini coefficient (+) Protein grams per capita (+) Political freedom (-)* Ethnic fractionalization (+)*
Braithwaite and Braithwaite (1980)	1955-1974	31	GDP per capita (+)		Gini coefficient (+) Protein grams per capita (+) Political freedom (-)* Ethnic fractionalization (+)*



Table A1. Continued

Author(s) and Publication date	Data year(s)	Sample size - Nations	GDP or GDP per capita	Economic/ GDP growth	Other variables
Fajnzylber et al. (2002)	1965-1994	39		Annual change in GDP (-)*	Gini coefficient (+)* GNP per capita logged (-) # of years of schooling (-)* Urbanization (-) Ethno-linguistic fractionalization (+)* Police per 100,000 (-) Latin America dummy (+) % population 15-29 (-)
Groves et al. (1985)	1970-1975	50	GDP per capita (-)		Gini coefficient – reverse coded (+) Judges ratio (-) Religious ecology (+/-) (negative for Muslim) Infant mortality – reverse Coded (+) % labor force in agriculture (+) School enrollment ratio (-)

Table A1. Continued

Author(s) and Publication date	Data year(s)	Sample size - Nations	GDP or GDP per capita	Economic/ GDP growth	Other variables
Huang (1995)	1975-1980	29	GDP per capita (+)* (significant in model with communitarianism but not individualism)		Individualism (-)* (political and civil rights) Communitarianism (-) (% of government expenditures for social security and health care) Urbanization (+/-) Population growth (+) Population density (-) % of labor force composed of women (+) Ray and Stinger's (1973) coefficient of concentration for inequality (-)

Table A1. Continued

Author(s) and Publication date	Data year(s)	Sample size - Nations	GDP or GDP per capita	Economic/ GDP growth	Other variables
Huang (2001)	1975-1980		GDP per capita (+/-) (+ for Interpol and UNCS data; - for WHO data)		Unemployment rate (+)* % enrolled in college (+) Urbanization (-) Female labor force participation (+/-) (negative for Interpol data) Population size (+) Population density (+) Population growth (+)
Jacobs and Richardson (2008)	1975-1995	14	GDP per capita logged (+)*		Gini coefficient lagged (+)* % minorities (+) % unemployed (+)* Infant mortality lagged (+)* Urbanization (+)* % 15-29 lagged (+)* Nation specific dummies

Table A1. Continued

Author(s) and Publication date	Data year(s)	Sample size - Nations	GDP or GDP per capita	Economic/ GDP growth	Other variables
Krahn et al. (1986)	1960, 1965 1971, 1975	44-65	GDP per capita logged (-)		Population growth (+)* Gini coefficient (+) Democracy index (+)
Lederman et al. (2002)	1980-1994	25-39		GDP per capita growth (-)*	Gini coefficient (+)* Trust (-) Membership in voluntary organizations (-) Membership in secular organizations (-) Participation in voluntary organizations (+) Religiosity (-)* Church attendance (-)

Table A1. Continued

Author(s) and Publication date	Data year(s)	Sample size - Nations	GDP or GDP per capita	Economic/ GDP growth	Other variables
Lee and Bankston (1999)	1987-1993	50	GDP per capita (-)		% males 15-29 (-)* Infant mortality (+) Political rights (-) Civil liberties (+) Status of freedom (+) Urbanization (+) % of wealth held by richest 20% (+) Population size (-) Population density (-) Population growth (+)
Lin (2007)	1971-1996	101	GDP per capita logged (-)*	GDP growth rate (-)	Democracy (-)* Urbanization (-)* Gini coefficient (+)* Inflation (+)* Homicide clearance rate (-)* Nation and year dummies

Table A1. Continued

Author(s) and Publication date	Data year(s)	Sample size - Nations	GDP or GDP per capita	Economic/ GDP growth	Other variables
Messner (1980)	1952-1970	39	GDP per capita (-)		Gini coefficient (+)* Urbanization (+) Population size (+) Population density (-)
Messner (1982)	1960s	50	GDP per capita Logged (+/- positive in equation with % Protestant)		% Protestant (-) School enrollment ratio (+) Gini coefficient – reversed to indicate equality (-)* % Urban Population size Population growth (+)* Population density
Messner (1985)	1960s 1970-1974 1976	29	GDP per capita (+)		Gini coefficient (+)* (male only) % never married (+)* (female only) Population size (+)

Table A1. Continued

Author(s) and Publication date	Data year(s)	Sample size - Nations	GDP or GDP per capita	Economic/ GDP growth	Other variables
Messner et al. (2002)	1975-1994 (cross- sectional)	27-65		GDP growth rate (-) (Significant in panel regressions; 30-43 nations; 47-87 obs.)	Gini coefficient (+)* Development index (-)* Decommodification (-) Population density (-) Total population (+) Sex ratio (-)* (males per 100 females)
Neapolitan (1994)	1986-1990 (Interpol)	106	GDP per capita (-)		Latin America dummy (+)* % of income that goes to richest 10% minus % that goes to poorest 20% (-) Economic discrimination (+)
	1978-1980 (WHO/UN)	67			Population size (+/- negative for Interpol data)* Population density (-) % urban (-)

Table A1. Continued

Author(s) and Publication date	Data year(s)	Sample size - Nations	GDP or GDP per capita	Economic/ GDP growth	Other variables
Neumayer (2003)	1980-1997	117	GDP per capita GDP per capita (-)*	GDP per capita growth rate (-)*	% urban (+) Female labor force participation (+) % population male 15-64 (+) Population density (+) Average household size (-) Gini coefficient (+) Economic discrimination (+) Democracy index (+/- curvilinear)* Human rights violations (+)* Death penalty dummy (+)* Social welfare expenditures (-)



Table A1. Continued

Author(s) and Publication date	Data year(s)	Sample size - Nations	GDP or GDP per capita	Economic/ GDP growth	Other variables
Pampel and Gartner (1995)	1951-1986	18	GDP per capita (-)*		% population 15-29 (+)* Social security spending (-) Divorce rate (+)* Female LFP rate (+)* Unemployment rate (+) Collectivism (-)*
Pridemore (2008)	2000	46	GDP per capita (-)		Infant mortality rate (+)* Gini coefficient (+)* % population male 15-29 (-) Education (-) Urbanization (-)

Table A1. Continued

Author(s) and Publication date	Data year(s)	Sample size - Nations	GDP or GDP per capita	Economic/ GDP growth	Other variables
Stamatel (2009)	1990-2003	9	GDP per capita (-)*		Gini coefficient (+) Divorce rate (-) Ethnic diversity (+) Population density (+) % population 15-24 (-)* Political violence (+)* Level of democracy (-)* Economic reform (-)*
Van Wilsem (2004)	1996-2000	27	GDP per capita (-)*		Gini coefficient (+)* Urbanization (+) Japan (-)

Note: Directional signs indicate either a positive or negative relationship; asterisks indicate a statistically significant relationship.

APPENDIX B  
SUMMARY OF CROSS-NATIONAL HOMICIDE STUDIES  
AND RELATIONSHIP WITH GDP, DEVELOPMENT,  
AND URBANIZATION

Table B1. Summary of Cross-National Homicide Studies and Relationship with GDP, Development, and Urbanization

<b>GDP/GNP</b>		
Positive Association	Negative Association	Zero Association
<p>Wolf (1971) Ortega et al. (1992) Huang (1995) Jacobs and Richardson (2008)</p>	<p>Wellford (1974) Krohn (1976) McDonald (1976) Krohn and Wellford (1988) Unnithan and Whitt (1992) Neapolitan (1994) Neapolitan (1996) Neapolitan (1998) Savolainen (2000) Fajnzylber et al. (2002) Lederman et al. (2002) – GDP growth Messner et al. (2002) – GDP growth Neumayer (2003) Van Wilsem (2004) Lim et al. (2005) Lin (2007) Alzheimer (2008) Bjerregaard and Cochran (2008) Stamatel (2009)</p>	<p>Braithwaite (1979) Braithwaite and Braithwaite (1980) Messner (1980) Hansmann and Quigley (1982) Messner (1982) Groves et al. (1985) Messner (1985) Bennett (1991) Pampel and Gartner (1995) Neapolitan (1997) Lee and Bankston (1999) Huang (2001) He et al. (2003) Lin (2007) – GDP growth Pridemore (2008)</p>

Table B1. Continued

<b>Development</b>		
Positive Association	Negative Association	Zero Association
Messner (1986)	Krohn (1976) Krohn (1978) Kick and LaFree (1985) LaFree and Kick (1986) Messner (1989) Messner and Rosenfeld (1997) Messner et al. (2002) Antonaccio and Tittle (2007) Altheimer (2008) Bjerregaard and Cochran (2008)	Conklin and Simpson (1985) Avison and Loring (1986) Li (1995) Neapolitan (1998) Savolainen (2000) Lee (2001) Pratt and Godsey (2002) Pratt and Godsey (2003) Chamlin and Cochran (2006)

Table B1. Continued

<b>Urbanization</b>		
Positive Association	Negative Association	Zero Association
<p>Wolf (1971)</p> <p>Conklin and Simpson (1985)</p> <p>Neumayer (2003)</p> <p>Pratt and Godsey (2003)</p> <p>Jacobs and Richardson (2008)</p>	<p>Quinney (1965)</p> <p>Krohn (1978)</p> <p>Messner (1989)</p> <p>Ortega et al. (1992)</p> <p>Fajnzylber et al. (2002)</p> <p>Lin (2007)</p> <p>Alzheimer (2008)</p>	<p>McDonald (1976)</p> <p>Braithwaite and Braithwaite (1980)</p> <p>Messner (1980)</p> <p>Hansmann and Quigley (1982)</p> <p>Messner (1982)</p> <p>Kick and LaFree (1985)</p> <p>LaFree and Kick (1986)</p> <p>Bennett (1991)</p> <p>Huang (1995)</p> <p>Li (1995)</p> <p>Neapolitan (1997)</p> <p>Neapolitan (1998)</p> <p>Lee and Bankston (1999)</p> <p>Huang (2001)</p> <p>Pratt and Godsey (2002)</p> <p>Pridemore (2008)</p> <p>Cole and Gramajo (2009)</p>

## APPENDIX C

## NATIONS IN ANALYSES

Albania	Greece	Poland
Argentina	Guatemala	Portugal
Armenia	Guyana	Puerto Rico
Australia	Hong Kong	Republic of Korea
Austria	Hungary	Republic of Moldova
Azerbaijan	Iceland	Russian Federation
Belarus	Ireland	Saint Kitts and Nevis
Belgium	Israel	Saint Lucia
Belize	Italy	Singapore
Bermuda	Japan	Slovenia
Brazil	Kazakhstan	Spain
Bulgaria	Kyrgyzstan	Suriname
Canada	Latvia	Sweden
Cayman Islands	Lithuania	Tajikistan
Chile	Luxembourg	Thailand
Columbia	Malta	Trinidad and Tobago
Costa Rica	Mauritius	Turkmenistan
Croatia	Mexico	Turks and Caicos
Czech Republic	Netherlands	Ukraine
Dominica	New Zealand	United Kingdom
Dominican Republic	Nicaragua	United States
Ecuador	Norway	Uruguay
Estonia	Paraguay	Uzbekistan
Finland	Peru	Venezuela
France		

## APPENDIX D

## LIST OF INTERNATIONAL NON-GOVERNMENTAL ORGANIZATIONS

## ACROSS

Administrative Centre of Social Security for Rhine Boatmen  
 African Caritas  
 African Regional Centre for Labour Administration  
 Afro-Asian Rural Reconstruction Organization  
 Aid to Displaced Persons and its European Villages  
 All India Women's Conference  
 AMDA International  
 Arab Council for Childhood and Development  
 Arab Labour Organization  
 Arab Organization for Human Rights  
 Armenian Relief Society  
 Asia NGO Coalition for Agrarian Reform and Rural Development  
 Asia Pacific Relief Organization Network  
 Asia-Europe Child Welfare Initiative Resource Centre  
 Asian Alliance of Appropriate Technology Practitioners  
 Asian Association for Occupational Health  
 Asian Association of Agricultural Colleges and Universities  
 Asian Baptist Fellowship  
 Asian Council for People's Culture  
 Asian Health Institute  
 Asian Pan-Pacific Society for Pediatric Gastroenterology and Nutrition  
 Asian Vegetable Research and Development Centre  
 Asian Youth Center  
 Association de Universidades Confiadas a la Compania de Jesus en America Latina  
 Association for the Security and Independence of International Civil Servants  
 Association Iberoamericana de Derecho del Trabajo y de la Seguridad Social  
 Association Internationale aphasie  
 Association Internationale dela Mutualite  
 Association Internationale Ensemble contre la douleur  
 Association of African Development Finance Institutions  
 Association of Asian Confederation of Credit Unions  
 Association of Caribbean Media Workers  
 Association of Christian Institutes for Social Concern in Asia



Association of Christian Lay Centres in Africa  
Association of Development Financing Institutions in Asia and the Pacific  
Association of Evangelical Relief and Development Organizations  
Association of Member Episcopal Conferences in Eastern Africa  
Association of Social Security Institutions of Central America and Panama  
Befrienders International  
CAB International  
Caribbean Association for Mental Retardation  
Caribbean Conference of Churches  
Caribbean People's Development Agency  
Caritas Europe  
Caritas Internationalis  
Caritas Internationalis - Africa Region  
Center for the Development of Human Resources in Rural Asia  
Center on Housing Rights and Evictions  
Central American Association of Families of Missing Detainees  
Central American Council of Social Security Institutions  
ChildHope Asia  
ChildHope Northern Latin America  
ChildHope Southern Latin America  
ChildHope UK  
Christian Life Community  
Comision Latinoamericana de Pobladores Marginados  
Comision Latinoamericana de Seguridad Social Higiene Industrial y Medio Ambiente del Trabajo  
Commission Justice and Peace  
Confederation of European Firms Employment Initiatives and Cooperatives for Physically Disabled  
Consultive Group on International Agricultural Research  
Consultive Group to Assist the Poorest  
Consumers International  
Continental Organization of Latin American and Caribbean Students  
Cooperative Programme for Rural Development of the Southern Countries from Latin America  
Cooperative Programme for the Development of Rural Agroindustry in Latin America and the Caribbean  
Council of Nordic Trade Unions  
Dickens Fellowship  
East Africa Association of Grantmakers  
Ecumenical Association of Third World Theologians

Emergency Preparedness and Disaster Relief Coordination  
Emmaus International  
Euro-Atlantic Disaster Relief Coordination Centre  
Euro-Caritas  
Euro-CIDSE  
European Association for Interregional Cooperation  
European Association for Special Education  
European Association of Schools of Social Work  
European Blind Union  
European Center for Missing and Sexually Exploited Children  
European Center for the Validation of Alternative Testing Methods  
European Center for Work and Society  
European Centre for Social Welfare Policy and Research  
European Centre for Social Welfare Training and Research  
European Christian Organizations in Relief and Development  
European Cities on Drug Policy  
European Committee for Rural Reconstruction  
European Committee for Young Farmers and 4H Clubs  
European Confederation of Independent Trade Unions  
European Contact Group on Urban Industrial Mission  
European Districts of Lions International  
European Federation for Missing and Sexually Exploited Children  
European Federation for Retirement Provision  
European Federation for Social Assistance and Integration through Housing Provision  
European Federation of Diaconia  
European Federation of Food Banks  
European Federation of National Organizations Working with the Homeless  
European Federation of the Community of Sant'Egidio  
European Federation of the Welfare of the Elderly  
European Federation of Youth Service Organizations  
European Foundation Centre  
European Group for Worker Pastoral  
European Institute for Futures Studies  
European Institute for Social Security  
European Institute of Education and Social Policy  
European Judges for Democracy and Liberties  
European NGO Confederation for Relief and Development  
European Pentecostal Relief Organization  
European Round Table of Charitable Social Welfare Associations

European Social Security Committee  
European Union of Insurance and Safety Medicine  
European Welfare Catering Association  
European Young Homeless Group  
EUROPHIL Trust  
FAO Investment Center  
FAO Regional Office for Asia and the Pacific  
Federation de Municipios del Istmo Centroamericano  
Federation Europeenne d'associations nationales travaillant avec les sans-abri  
Federation europeenne des banques alimentaires  
Federation internationale des associations catholiques pour les aveugles  
Federation Internationale des professionnels de l'assistance  
Food Aid Committee  
Food and Agriculture Organization of the United Nations  
Fourth World Youth  
Future Generations Programme  
General Committee for Relief  
Global Campaign for Good Urban Governance  
Group Action Planning for International Philanthropy  
Habitat International Coalition  
Heavily Indebted Poor Countries Initiative  
Help Age International Europe  
Ibero-American Social Security Organization  
IBO Development Cooperation  
IFCW International Center for Child Welfare  
IGLOO  
Institute for Applied International Studies  
Institute of Appropriate Technology Transfer to Marginal Sectors  
Inter Church Relief and Development Agency  
Interagency Group on Breastfeeding Monitoring  
Inter-American Center for Social Security Studies  
Inter-American Children Institute  
Inter-American Council for Integral Development  
Inter-American Institute for Social Deveopment  
Inter-American Regional Organization of Workers of the ICFTU  
Inter-Church Aid Refugee and World Service  
Inter-Church Relief and Development Alliance  
International Action against Hunger  
International Association for Adolescent Health

International Association for Child and Adolescent Psychiatry and Allied Professions  
International Association of Building Companions  
International Association of Workers for Maladjusted Children  
International Center for Information on Palestinian and Lebanese Prisoners Deportees and Missing Persons  
International Center for Missing and Exploited Children  
International Center for Peace and Development  
International Center for Research in Agroforestry  
International Center for Tropical Agriculture  
International Centre for Research on Delinquency Marginality and Social Relationships  
International Centre for the Research and the Application of Earth Construction  
International Children's Care  
International China Concern  
International Christian Maritime Association  
International Christian Peace Service  
International Commission of Missing Persons in Former Yugoslavia  
International Committee of Catholic Nurses  
International Committee of the Order of Malta For Leprosy Relief  
International Committee on Science and Technology  
International Committee on Seafarer's Welfare Office  
International Confederation of Arab Trade Unions  
International Confederation of Catholic Organizations for Charitable and Social Action  
International Confederation of Family Support  
International Confederation of Free Trade Unions  
International Council of Women  
International Council on Jewish Social and Welfare Services  
International Council on Social Welfare  
International Development Association  
International Falcon Movement - Socialist Educational International  
International Federation for Catholic Associations of the Blind  
International Federation for Family Health  
International Federation of Alternative Trade  
International Federation of Educative Communities  
International Federation of Red Cross and Red Crescent Societies  
International Federation of Social Workers  
International Food Policy Research Institute  
International Institute of Rural Reconstruction

International Islamic Charitable Organization  
International Islamic Relief Organization  
International Jute Study Group  
International Kolping Society  
International Labour Organization  
International Labour Welfare Organization  
International League of Societies for Persons with Mental Handicap  
International Liason Committee for Food Corps Programmes  
International Maize and Wheat Improvement Center  
International NGO Forum on Indonesian Development  
International Ocean Institute  
International Pension and Employee Benefits Lawyers Association  
International Relief Union  
International Senior Citizen's Association  
International Social Security Administration  
International Society for Labour Law and Social Security  
International Society of Disaster Medicine  
International Society of Oriental Medicine  
International Society of Third Sector Research  
International Standing Conference on Philanthropy  
International Transport Workers Federation  
International Union for Child Welfare  
International Union for Public Welfare  
International Union of Family Organizations  
International Union of Local Authorities  
International Union of War Orphans  
International Water Management Alliance  
International Workers Aid  
Inter-University European Institute on Social Welfare  
Latin American Association of National Academies of Medicine  
Latin American Blind Union  
Latin American Centre for Local Government Training and Development  
Latin American Organization for the Welfare of the Blind and Visually Handicapped  
Licross/Volags Steering Committee for Disasters  
Maghreb-Mashreq Alliance for Water  
Mennonite Central Committee  
Mondcivitan Republic  
Munazzamat Al-Dawa Al-Islami  
NGO Committee on Housing and Shelter for the Homeless

NGO Committee on the Family  
NGO Committee on the Family New York  
NGO Forum for Health  
NGO World Bank Committee  
Nordens Blakors-och Blabandsrad  
Nordic Association of Former Civil Servants  
Nordic Child and Youth Welfare Alliance  
Nordic Social Statistics Committee  
Office for Special Relief Operations  
Office for the Coordination of the United Nations Humanitarian Assistance  
Relating to Afghanistan  
Office of the United Nations Disaster Relief Coordinator  
Organization for Economic Co-operation and Development  
Organization for Global Assistance and Relief  
Organization Iberoamerica de Prestadores Privados de la Seguridad Social  
Organization of American States  
Pan-American Medical Women's Alliance  
Preinvestment Organization for Latin America and the Caribbean  
Project Five-0  
Public Services International  
Red Cross EU Liason Bureau  
Rehabilitation International  
Research Organization on African Alimentation and Nutrition  
Save the Children Alliance  
Scandanavian Association for Social Medicine  
Social Information and Research Centre  
SOS Children's Villages  
Southern Africa Labour Commission  
Special Relief Operations Service  
Steering Committee for Humanitarian Response  
Steering Committee for Social Security  
Technical Centre for Agricultural and Rural Cooperation  
Trade Union Advisory Committee to the Organization for Economic Cooperation  
and Development  
UN Drylands Development Centre  
UN Interim Administration Mission in Kosovo  
United Nations Border Relief Operations  
United Nations Centre for Human Settlements  
United Nations Development Programme  
United Nations Economic and Social Commission for Asia and the Pacific

United Nations High Commissioner for Refugees  
United Nations Latin American Institute for the Prevention of Crime and the  
Treatment of Offenders  
United Nations Office for the Coordination of Humanitarian Assistance to  
Mozambique  
United Nations Relief and Works Agency for Palestine Refugees in the Near East  
United Nations Research Institute for Social Development  
United Nations Working Group on Enforced or Involuntary Disappearances  
UNSECO Jakarta Office  
Urban Management Programme for Asia and the Pacific  
VIVAT International  
Water Supply and Sanitation Collaborative Council  
West Africa Rice Development Association  
Women's International Zionist Organization  
World Agroforestry Centre  
World Bank Institute  
World Council for the Welfare of the Blind  
World Family Organization  
World Federation of Trade Unions  
World Federation of UNESCO Clubs Centres and Associations  
World Health Organization  
World Kashmir Awareness and Relief Centre  
World Movement of Christian Workers