ORGANIZED CRIME, CULTURE, AND SOCIAL INSTITUTIONS IN EUROPE:
AN APPLICATION OF INSTITUTIONAL ANOMIE THEORY

A research presented

by

Diana Summers Dolliver

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In partial fulfillment of the requirements for the degree of
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ABSTRACT OF RESEARCH

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Organized crime activity is one form of transnational crime that is at the forefront of concerns for the global community. Organized crime quickly adapts to new social environments, illustrating its flexible and dynamic qualities. As the United Nation’s Organized Crime Threat Assessment (2011) noted, “More than ever before, strong levels of cooperation exist between different organized crime groups, transcending national, ethnic, and business differences” (8). Despite these alarming global trends, criminologists have not routinely applied a socio-cultural approach to an empirical study of organized crime. With Europe identified as the global “hotspot” for consumption of illicit goods and services provided by criminal organizations around the world, this study conducts an empirical assessment of macro-level organized crime trends in Europe through the theoretical guidance of Institutional Anomie Theory. Official and annually reported data were collected from fourteen countries in Europe from 1995 to 2009. Organized crime was operationalized using four measures of drug seizures (cannabis, heroin, cocaine, amphetamines). The fourteen countries were grouped into six country clusters representing different national contexts, in addition to being divided into two groups representing developed countries and countries in transition. The single country of Poland was further examined due to its international recognition as a source country for amphetamine production (DEA, 2004). The main findings indicate that: 1) Institutional Anomie Theory was not found to predict high levels of organized crime or homicides in this sample as well as originally anticipated; 2) cultural-institutional configurations were found to vary between countries and groups of countries, and each configuration differentially impacted the four measures of organized crime in Europe; 3) the four
proxies for organized crime were found to behave differently from each other in the given settings in this study; 4) intentional homicide rates (i.e., the traditional dependent variable that has been used in the majority of past empirical studies of Institutional Anomie Theory) did not operate well under the theory’s restrictions; and 5) some combinations of variables were found to be connected through common elements, which indicate policies aimed at one of the variables will have a similar impact on other variables. This will arm policymakers with additional tools to combat organized crime prevalence in this region. These findings have several implications for future studies of organized crime, as well as future applications of Institutional Anomie Theory in criminology, which include maximizing the scope and applicability of this criminological theory in different cultural-institutional settings.
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CHAPTER 1: INTRODUCTION

Organized crime activity is one form of transnational crime that is at the forefront of concerns for the global community. “The transnational nature of organized crime means that criminal networks forge bonds across borders as well as overcome cultural and linguistic differences in the commission of their crime” (UNODC, 2012b). Organized crime quickly adapts to new social environments, illustrating its flexible and dynamic qualities. The United Nations and the Council of Europe have identified the most common global illicit activity of organized crime as drug trafficking, with secondary participation in trafficking in persons, cybercrime, smuggling of migrants, firearms trafficking, trafficking in environmental resources and counterfeit products, and maritime piracy (Council of Europe, 2000; 2005; OCTA, 2011).

The broad range of most common illicit activities and even broader scope of global trafficking patterns have complicated law enforcement responses, particularly since the United Nation’s Organized Crime Threat Assessment (2011) noted “More than ever before, strong levels of cooperation exist between different organized crime groups, transcending national, ethnic, and business differences” (8). Other official reports have identified Europe as the global “hotspot” for consumption of illicit goods and services provided by criminal organizations around the world, while simultaneously noting the general ineffectiveness of national and regional policies (OCTA, 2011; UNODC, 2010).

The Central and Eastern European countries within the larger European region have further proven problematic, with the country of Poland experiencing multiple complications in the battle to reduce levels of organized crime. Not only does there exist a high demand market for illicit goods and services in Poland, but the country also houses
well-established trafficking routes into Western Europe from Asiatic and Middle Eastern regions, and has been identified as one of the leading producers of amphetamines in Europe (DEA, 2004; EUROPOL, 2011; Krawczyk et al., 2009; Reitox National Focal Point, 2005; 2011).

Importantly, the markets for organized crime activities have also remained lucrative outside of Central and Eastern Europe, corresponding with the increase in prevalence of criminal organizations worldwide, costing nations billions in lost revenues and enforcement expenses. For instance, the United States government (including local, state, and federal levels) spent (domestically) over 480 billion USD in 2011 combating drug trafficking organizations, while the revenue denied these organizations (through arrests and drug seizures) was approximately 19.3 billion (DEA, 2012). By comparison, the estimated annual market value of cocaine shipments from South America to North America is estimated at 38 billion USD, the estimated annual global market value for Afghan-produced heroin is 55 billion USD, and the estimated market value for smuggled migrants from Mexico to the U.S. is 6.6 billion USD (UNODC, 2010).

These alarming trends have received criminological attention, and in studying organized crime criminologists have employed a range of criminological and economic theories to help understand such criminality. That is, scholars have in part turned to the work of economists who view organized crime groups as “firms” competing in the illicit market against other “firms” (Garoupa, 1997; Grossman, 1991; Scaperdas, 2001). Criminologists who have studied organized crime most often draw theoretical guidance from Rational Choice Theory, Routine Activities Theory, and Situational Crime Prevention to better understand why members of criminal organizations “rationally”
decide to engage in this crime-type. The influence of the economic paradigm in criminology has also led researchers to produce copious amounts of research on various aspects of organized crime activity, such as drug market operations, to explain how criminals, as rational actors, decide when and where to buy and sell their illicit goods and services (e.g., Reuter and Haaga, 1989). Finally, much work has been conducted on case studies and qualitative accounts of particular organized crime groups (e.g., Albini, 1971; Arlacchi, 1988; Catanazaro, 1988; Paoli, 2003; 2008).

One theoretical orientation that has not been routinely applied to the study of organized crime, but would be beneficial for criminologists to consider is sociocultural theories. These theories are rooted in sociological concepts concerning societies and social organization, which are composed of culture and social institutions. Sociologists have developed ideas of social organization, studying them from comparative frameworks at both the micro- and macro-levels (e.g., Durkheim, 1956/1922; Marsh, 1967; Bennett, 2004). Applying socio-cultural theories to the study of organized crime would be a useful extension of the current body of knowledge.

In the early 1900s, Robert K. Merton (1938) first applied these concepts of social organization to the study of crime, developing Merton’s Anomie Theory. Building on the previous work of Durkheim (1956/1922; 1962/1895), Merton’s Anomie Theory emphasizes equally the importance of culture and social institutions in explanations of crime, describing how universal cultural goals are generated by societies, but societies often fail in regulating the institutional means for individuals to achieve these goals (Merton, 1957; 1968). This, in turn, results in a state of social Anomie, or “normlessness,” causing crime rates to subsequently increase.

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1 This refers to the assumption of hedonism, where decisions to act are based on cost-benefit analyses.
More recently, criminologists expanded on Merton’s Anomie Theory, maintaining the theoretical foundation of culture and social institutions, developing Institutional Anomie Theory (Messner and Rosenfeld, 1994) and Global Anomie Theory (Passas, 1999; 2000). Global Anomie Theory extends Merton’s Anomie Theory by accounting for relative deprivation (i.e., individuals may feel subjectively deprived, even if they are not considered objectively deprived) and the importance of reference-group analysis.²

Institutional Anomie Theory also expands Merton’s Anomie Theory by elaborating on the social organizational element of social institutions. For Merton, social institutions were only composed of class stratification. However, for Messner and Rosenfeld (1994), the creators of Institutional Anomie Theory, social institutions are best explicated through four main institutions relevant to the explanation of crime: the economy, the polity, the family, and education. This theory maintains Merton’s (1938) equal emphasis (and interconnectedness) on the elements of social organization, while modeling Anomic cultural pressures and institutional configurations most conducive to high rates of serious crime (Messner and Rosenfeld, 2009).

This research proposes a return to the use of socio-cultural aspects of societies to gain insight into the highly complex and multifaceted criminal phenomenon of crime, and more specifically organized crime given its international significance. This will be accomplished through a quantitative study that tests the fundamental theoretical elements of Institutional Anomie as the theory was originally designed in 1994 by Messner and Rosenfeld. The findings from this research will shed light on how and to what degree socio-cultural forces influence organized crime prevalence in European countries, and to

² Reference-group analysis discerns between normative reference groups that set the standards, or group norms, for those seeking acceptance into the group, and comparative reference groups, which are used by others as “a yardstick in making self-evaluations or in judging others” (Passas, 1997: 64).
determine how countries in various regions of Europe experience differential levels of organized crime activity. To this end this study extends the use of Institutional Anomie Theory to a new crime type (organized crime) and to a broader range of countries, while also offering new measurements for “Anomic culture” and “social institutions.” By forming a more conceptually whole understanding of not only what constitutes “organized crime” but also what socio-cultural factors may impact organized crime levels, this research will have the potential to positively impact national and international policy.

In the chapters that follow, Chapter 2 provides a brief review of the sociological concepts of culture, institutions, and Anomie. This chapter discusses how these concepts have become the basis for modern sociological and criminological thought, most especially through the lenses of Merton’s Anomie Theory and Institutional Anomie Theory. The chapter concludes with a detailed review of past studies of Institutional Anomie Theory. Chapter 3 provides a detailed review of “organized crime,” beginning first with its theoretical and definitional challenges as viewed from academic and legal perspectives. This chapter then describes the geographic significance of organized crime presence and activity levels in all regions of the world, and concludes by focusing on the prevalence of organized crime activities in European countries. The last section of Chapter 3 addresses the current issues in criminology that this research intends to address. Chapter 4 explains the research questions, methodology, data, and analytic strategies utilized by this research endeavor, concluding with its limitations. Chapter 5 discusses the findings of the quantitative analyses in detail, and the final chapter (6) concludes this research.
CHAPTER 2: CULTURE, SOCIAL INSTITUTIONS, AND ANOMIE: AN HISTORICAL REVIEW

Over the past century, modern criminology has developed a wide range of explanations for the causes of crime in societies. Some explanations involve theories about personal encounters and relationships, while others deal with societal patterns and multiple levels of social reality (Messner and Rosenfeld, 2009). Macro-level criminological theories, those informing this research, seek to understand social forces affecting crime at national, international, and global levels (Aas, 2007; Messner and Rosenfeld, 1994; Passas, 1990; 1995; 1997; 1999; 2000; Pridemore, 2005). At this level, these theoretical orientations contain the common elements of society and social organization that underlie much of the sociological theoretical discourse.

Societies and social organization are multifaceted, abstract concepts that scholars have struggled to define and comprehend. However, scholars (e.g., Merton, 1938) have recognized that while human societies and “social organization” are comprised of various components, one main elements – culture and social institutions – are identifiable. For instance, culture and social institutions play as much a role in the development of a peer group (Sutherland, 1947) as they do in the formation of global relative deprivation (Passas, 1997; 1999; 2000). Such an assertion led social scientists to debate the many aspects of social organization, including uncovering the meaning of “culture” and “social institutions,” the various roles these concepts play in theoretical development, and their

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3 Other, more secondary, elements of human societies are population (i.e., the members of a society considered collectively), material products (i.e., the things societies produce), and technology (i.e., information about how to use the material resources of the environment to satisfy human needs and desires) (Lenski, Lenski, and Nolan, 1991: 42). These secondary elements are related to the cultural and institutional contexts of the society.

4 This is because these aspects of social organization permeate all levels of human interaction, from the formation of friendships to collective, societal needs and wants.
associated impact on crime (e.g., Merton, 1938; 1968; Parsons, 1951; 1970; Durkheim, 1962/1895; Reuter and Haaga, 1989; Lenski, Lenski and Nolan, 1991; Aas, 2007).\(^5\)

In macro-sociological usage, *culture* refers to the emergent web of representations that encompass deep-seated values,\(^6\) beliefs, goals, and norms\(^7\) of a natural collectivity\(^8\) (Lincoln and Guillot, 2006). It is the symbolic system that allows a society to extract information from experiences, share information and meaning between members, and develop new innovations (Lenski, Lenski and Nolan, 1991). Cultures represent value orientations of societies that are built on their unique histories, resulting in unique cultural configurations.

Yet, the role of cultural forces in a society cannot be fully understood without considering the second element in social organization: *social institutions*. Social institutions are as complex a construct as “culture.” “Institutions are comprised of regulative, normative, and cultural-cognitive elements that, together with associated activities and resources, provide stability and meaning to social life” (Scott, 2008: 48). In other words, institutions are complex social structures “made up of symbolic elements, social activities, and material resources” (Scott, 2008: 48) that serve to regulate society through commonly shared cultural beliefs and expectations.

These two elements of social organization form the basic components of human society and “give rise to the sociological paradigm” (Messner and Rosenfeld, 1994: 49).

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\(^5\) Moreover, these components of social organization have been the focus of scholarly work across social science disciplines impacting the fields of economics (Granovetter, 2005), cultural anthropology (Goodenough, 1969), sociology (Durkheim, 1962/1895; Marsh, 1967), as well as criminology (Merton, 1938; Messner and Rosenfeld, 1994).

\(^6\) Values are “conceptions of the preferred or the desirable, together with the construction of standards to which existing structures or behaviors can be compared and assessed” (Scott, 2008: 54).

\(^7\) Norms “specify how things should be done; they define legitimate means to pursue valued ends” (Scott, 2008: 54-55).

\(^8\) Natural collectivities are groups of people that are bound together by these deep-set values, beliefs, goals, and norms, such as tribal societies (Durkheim, 1956/1982).
Scholars of this sociological paradigm, both sociologists and criminologists alike, have continued to study culture and social institutions both separately and together in examinations of the roles and functions of social systems. It should be noted, however, that institutional scholars in these fields are not the only ones to examine these complex issues. Indeed, these components of social organization have been the focus of scholarly work across multiple disciplines, impacting the fields of economics (Granovetter, 2005), cultural anthropology (Goodenough, 1969), and psychology (Hyman, 1942). However, for the purposes of this study, this discussion largely centers on the institutional scholars in criminology and sociology and how these views have shaped the formation of theories in these fields.

As such, this chapter examines how these two elements of social organization inform this particular criminological inquiry. First, the development of the sociological concept of “Anomie” is discussed, which occurs when culture and social institutions are misaligned. Here the focus is on Anomie’s conceptual development, as well as its major theoretical influences, followed by an in-depth synthesis of Anomie and the elements of social organization that combine to form Merton’s Anomie Theory and Institutional Anomie Theory. Finally, this chapter concludes by summarizing the developments in Institutional Anomie Theory after its original conception in 1994, emphasizing the importance and usefulness of this theory and the need for further macro-level criminological investigation, such as the one conducted in this research.

The Historical Development of Anomie
As the elements of societies and social organization developed in sociological inquiry, a concept emerged that set in motion a new direction for sociological and criminological thought. This concept is known as “Anomie.” Anomie is not only rooted within the larger discussions of culture and social institutions, but it also forms the nucleus for one major branch of criminology: Anomie/Strain theories of crime. The macro-level criminological theories including Institutional Anomie find their foundations here.

**Conceptual Development**

The social construct of “Anomie” was first introduced by Emile Durkheim (1962/1895). Durkheim used the term to describe a state of normlessness in society that often occurs during times of social crises. That is, he noticed rates of deviance increase during both periods of economic expansion and decline. These “crises” unhinged individuals from the social fabric of society; suddenly in times of great prosperity or great decline, societal boundaries fell away and individuals found themselves in unanticipated situations. The unexpected situations served to uproot families and cause a certain level of disruption. For Durkheim, this disruption is key; “human beings cannot be happy unless their needs and desires are under some sort of [social] regulation” (Patternoster and Bachman, 2001: 142). Further, since these needs and desires are the products of a reflective social consciousness, individuals themselves are insufficient controls. In other words, people are unable to regulate their own behavior; instead, they require regulation from an external source.

This insatiable level of needs and desires of society uncovers Durkheim’s underlying assumptions about human nature and the nature of crime; that is, humans are
compelled to search for gratification and are never fulfilled unless restricted or regulated by social controls, implying that crime or deviance is a normal and regular element of society. Society acts as the external regulatory function, a “moral agency superior to the individual” (Jones, 1986: 86). If societies did not provide a regulatory function during times of crises, any societal limits on a person’s needs and desires that existed under normal conditions would disappear. Thus, the society becomes temporarily incapable of exercising effective social controls, illustrating in an increase in levels of Anomie and resulting in heightened rates of deviance.

Durkheim further explains that the causes of societal normlessness can be institutionally based. High levels of Anomie can be caused by temporary economic shocks, such as expansion or depressions. However, Anomic states can also result from more personal tragedies, such as the death of a loved one or divorce. In some cases Anomic conditions may even become more stable. Thus, at times Anomie may be a chronic condition of a society rather than a temporary one, existing “in a persistent state within the economic realm of modern society” (Durkheim, 1951/1897: 254). Figure 1 below illustrates this relationship: temporary shocks or more persistent sources of strain in a social system produce Anomie, which in turn produces deviance within society.

![Figure 1. Durkheim’s Anomie Theory](image)

When societies find themselves in an Anomic state, Durkheim (1951/1897) argued that prosperity will increase individuals’ drive and desires for “more;” “the richer

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9 Paternoster and Bachman (2001: 143).
prize offered these appetites stimulates them and makes them…more impatient of control” (253). Interestingly, Durkheim also noticed that the poverty stricken members of society appeared immune to high levels of Anomie. He rationalized that “the less one has, the less he is tempted to extend the range of his needs indefinitely… The less limited one feels, the more intolerable all limitation appears” (Durkheim, 1951/1897: 254). In other words, the more limited and regulated societal members feel, the more structure is consequently provided to limit and control their wants and desires. In this case, high levels of Anomic strain are not experienced and are followed by lower rates of deviance.

In terms of the impact of social institutions on Anomie and subsequent deviance rates, Durkheim (1951/1897) noted that economic progression in modern society has been largely in the direction of releasing industrial relations from “all regulations” (254). This increases prosperity and desires by increasing salaries, goods and services produced by society, meaning economic functions begin taking temporal supremacy over other institutions. Durkheim recognized that this dominance of the modern capitalist economy results in a state of deregulation. That is, capitalist societies lack moral regulation. Industrialization caused a disconnection of traditional social controls on aspirations. This, in turn, led to egoistic individualism, which he viewed as a temporary but “pathological” cultural aberration that accompanied the rapid transition of a traditional society to an industrial society (Messner and Rosenfeld, 2001). Importantly, Durkheim (1951/1897) stresses this is not the only model for social organization, but that economic dominance in modern capitalist nations does exist, is highly influential, and “nothing today has come to take its place” (255). The political institutions, which include governments, have failed to regulate economic influences and instead have become subservient, as have the
religious institutions and domestic (familial) aspects of society. Durkheim believed that “the only existing institution that could provide a social foundation for modern morality” (Ritzer, 2008a: 217) was education. Education provides individuals with physical, intellectual, and moral tools necessary to function in society. Durkheim hypothesized that deviance will vary inversely with the degree of integration of religious society, domestic society, educational society, and political society. In other words, the more strongly (non-economic) social institutions are integrated, the more control is exercised over its members.

Durkheim’s social construct of Anomie went largely unnoticed in the decades directly following its introduction. It did, however, eventually become a focal point for criminologists as macro-level researchers developed theories to describe and better understand societies, cultures, and social institutions, and their relation to crime and deviance. Durkheim’s original conception of Anomie has been interpreted and reinterpreted over the past century, with social scientists enhancing and applying the concept of Anomie to many different macro-social settings.

Theoretical Application in Criminology

Merton’s Anomie Theory

The first criminologist to develop an explicit theory of crime based on the concept of Anomie was Robert K. Merton. Merton (1938) adopted and shared Durkheim’s ideas on social organization and Anomie, and incorporated them into his criminological theory on structural strain. This theory, known as Merton’s Anomie Theory, sought to promote sociological explanations across larger macro-level units. Merton believed that societies
endure various stressors that can lead them into Anomic states, thus differentially impacting crime rates at the macro-level. While he did diverge in some key ways from Durkheim, Merton (1938; 1957) also maintained continuity with some of Durkheim’s central notions.

In maintaining some continuity with Durkheim, Merton shared his common assumptions of human nature. Both scholars assumed that human beings are “basically social and compliant… under normal conditions” (Paternoster and Bachman, 2001: 141, emphasis in original), thus implying a collective strive for conformity. When societies experience Anomie, a weakness in the normative order of a society causing a breakdown in conformity, its members are more likely to react with crime. Merton also built upon the Durkheimian notion “that ‘normal’ levels and forms of criminal activity in any society reflect the fundamental features of social organization” (Messner, Thome and Rosenfeld, 2008). These basic features of social organization are the prevailing social structures and culture orientations that are encapsulated in major social institutions.

Using these commonalities as the basis for his theory, Merton’s Anomie Theory then diverged quite considerably from Durkheim’s theoretical conceptions (Agnew, 1997). Much of the divergence from Durkheim centered on the role of Anomie in the social system, but also in the individual-level implications for deviance (Passas, 1997).

In terms of the role of the social system, recall Durkheim’s Anomie Theory presented in Figure 1 above. It took a temporary or chronic form of societal crisis to produce Anomie that led to deviant acts. In other words, Anomie (for Durkheim) is the failure to regulate the goals that societal members aspire to achieve in society (Agnew, 1997; Kornhauser, 1978). For Merton, however, society generates universal and
collective goals, but fails to regulate the means individuals use to achieve these goals. This failure of society to regulate the means introduces Merton’s additional interest in individual-level factors and how people cope with institutional pressures, as it is the macro-social environment that contributes to individual strain. Anomie, then, is the resulting contradiction between a society’s culturally ascribed goals and the social structure’s ability to regulate the means. Cultural pressures at the societal level coerce or strain members of that society to break rules in order to secure those goals, sometimes resulting in deviance. This relationship is reflected in Figure 2 below.

![Figure 2. Merton’s Anomie Theory](image)

If a society were “healthy” or in equilibrium, one would see an “equal emphasis placed on both the attainment of collectively held goals as well as the use of culturally defined appropriate means to attain those goals” (Paternoster and Bachman, 2001: 143). These healthy and balanced societies experience less strain and more individual satisfaction because, even without successful achievement of the collective goals, they have culturally accepted means to try to achieve the goals. However, Merton did not

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10 It is important to note here that criticisms of Merton have been leveled at his inability to clearly articulate the definition of “Anomie” in his theory. Scholars such as Marco Orru (1987) have interpreted Merton’s idea of Anomie to be an important product of culture. “Specifically, Anomie may be seen as a ‘value’ to be inculcated along with others by the culture of modern capitalism – one that prescribes a high level of normative flexibility in the pursuit of dominant cultural goals” (Messner and Rosenfeld, 2012: 64). Merton hints at this meaning of Anomie as well as the Durkheimian notion of normlessness in his writings.

develop his theory to explain balanced societies. Rather, he was more interested in explaining how societies vary in their balance between culturally accepted goals and the means by which to attain the goals.

Like Durkheim, Merton’s macro-level focus begins with social organization as the starting point for understanding the socio-cultural aspects of deviant behavior. In maintaining sociological continuity, the elements of culture and social institutions are at the forefront. Merton acknowledges that these two elements are “analytically separable although they merge imperceptibly in concrete situations” (Merton, 1938: 672). From his perspective, culture consists of goals, purposes, and interests. It comprises a “frame of aspirational reference. These goals are more or less integrated and involve varying degrees of prestige and sentiment…. Some of these cultural aspirations are related to the original drives of man, but they are not determined by them” (Merton, 1938: 672). The cultural structure, then, is the organized set of normative values governing behavior common to society. In this sense, Merton’s theory points to deviance caused in part by a “cultural overemphasis on success combined with structurally limited opportunities” (Passas, 1997).

Social institutions comprise the social structure of society that define, regulate, and control the acceptable modes of achieving culturally defined goals (Merton, 1968). “Every social group invariably couples its scale of desired ends with moral or institutional regulation of permissible and required procedures for attaining these ends…. The choice of expedients is limited by the institutional norms” (Merton, 1938: 672-673). Social institutions are part of the larger social organization, which ultimately describes the components of a social system and the distribution of deviant behavior within that
social collectivity. These elements are what determine societies to be balanced or imbalanced. Imbalanced societies, which Merton refers to as “malintegrated,” mean that the subcomponents of culture (e.g., societal goals, norms) are out of equilibrium and the messages emanating from the larger culture are at odds with the realities of the social structure (Messner and Rosenfeld, 2009).

In malintegrated societies, such as the United States, the cultural system encourages all members of society to place a high relative emphasis on monetary success, and a low relative emphasis on the legitimate norms to achieve this success (Agnew, 1997). Consequentially, these Anomic societies will experience a higher crime rate than others because its members will employ the most expedient means, including crime, to achieve their goals. Furthermore, in these societies even more strain and pressure is placed on lower-class individuals. Cultural goals “transcend class lines” and are not bound by them, “yet the actual social organization is such that there exist class differentials in the accessibility of these common success-symbols” (Merton, 1938: 680). Class stratification differentially prevents members of society from achieving the collective goal of monetary success through legitimate means, and as a result some may turn to criminal activities. It is here that Merton again breaks with Durkheim. Merton does not extend his idea of social structure beyond the class system, and for him the structure of society functions mainly to distribute opportunities to achieve cultural goals (Messner and Rosenfeld, 2012). However, Durkheim recognized there were more dimensions to the concept of social structure – society also functions to place limits on cultural aspirations. In general, Merton devoted less attention to social institutions.
beyond class-stratification and instead focused his attention on defining the cultural aspects of social organization.

Merton’s Anomie Theory also includes a more micro-level focus, shifting the level of analysis from macro-social forces to individual-level reasons for strained members of society to engage or desist from illegal behavior. While this particular aspect of Merton’s theory remains outside of the scope of this research, it is interesting to note that prior tests of Merton’s Anomie Theory have largely investigated these individual factors and methods of adaptation to strain and Anomie, while organizational level empirical examinations of the theory are rare (Messner, 1988).

This has led some scholars to push for further inquiry into social organizational aspects of Merton’s theory (Messner, 1988; Messner and Rosenfeld, 1994; Passas, 2000). Other criminologists have critiqued existing studies claiming current tests of Merton’s theory have been incomplete and misspecified (Passas and Agnew, 1997). As the debate continues, contemporary researchers remain guided by Durkheim and Merton’s interpretations of society and social organization. It should be noted that although theories of Durkheim and Merton differ in their fundamental emphases, these theories are best viewed as complementary rather than contradictory (Agnew, 1997). This point becomes evident as theorists have employed aspects of both perspectives in the formation of related criminological theories.¹³

¹² This resulted from the realization that most individuals in society who are unable to achieve monetary success do not turn to deviance (Agnew, 1997). Merton (1968) explains that conformity is in fact the most common adaptation to strain. Deviance is simply a different adaptation in which there is no satisfaction to be gained from pursuing non-monetary goals or from the adherence to legitimate norms (Agnew, 1997).

¹³ One such noteworthy theory is Global Anomie, developed by Nikos Passas, a student of Merton who believed there to be room for further development of Merton’s Anomie Theory (1990; 1995; 1997). Global Anomie Theory expands on Merton (1938) by integrating Merton’s Strain, relative deprivation, and reference-group analysis with Globalization Theory (Passas, 1999; 2000). Drawing from Globalization Theory’s inherently comparative nature and focus on macro-level flows of capital (Aas, 2007), Passas
Institutional Anomie Theory

Steven Messner and Richard Rosenfeld (1994; 1997; 2001a; 2006; 2012) synthesized the theoretical concepts of social organization and Anomie that had been developed through Durkheim, Merton, and other noted scholars\(^{14}\) in their macro-level criminological theory, Institutional Anomie. This theory is in some ways an important extension of macro-level Merton’s Anomie Theory, largely because Messner and Rosenfeld feared existing perspectives on crime overemphasize culture or social institutions, rather than place equal weight on their importance. In developing their theory, they equally emphasize the importance of culture and social institutions in relation to crime at the comparative national and international levels. Messner and Rosenfeld draw their assumptions of human nature and underlying concepts of culture, social institutions and social organization from the extensive swath of key theoretical and historical developments by Durkheim, Merton, Parsons, and other comparative scholars in order to build the foundation for Institutional Anomie Theory.

Messner and Rosenfeld begin to build their foundations in some of Durkheim’s most important constructs of Anomie and the nature of crime. They accept and utilize Durkheim’s concept of Anomie, conceptualized by Durkheim to represent a weak, normative environment (Messner and Rosenfeld, 2012: 88). Moreover, Messner and Rosenfeld accept Durkheim’s notion that crime is a normal and regular element of

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\(^{14}\) For instance, Talcott Parsons and Karl Polyani (Messner and Rosenfeld, 2009).
society; “crime is normal, in a word, because it is social, and it is no less social than conformity” (Messner and Rosenfeld, 1994: 51). Members of societies have insatiable levels of needs and desires that require the structure of society to act as an external regulatory function (Durkheim, 1962/1895). Thus, a society without crime is not possible, because societies will always have needs and desires that require regulation.

Crime and deviance are necessary elements of societies, and may even prove useful to the society by generating social change. That is, crime is functional to a healthy society. In this sense, collective morality and resulting laws must be dynamic and constantly evolving; otherwise, society becomes stagnant and ceases to progress (Durkheim, 1962/1895). This represents a structural functionalist perspective, from which Messner and Rosenfeld draw from Durkheim, but also Talcott Parsons (1951).

For Parsons (1937; 1951; 1970; 1990), structural functionalism describes the need of social systems to regulate society. That is, functionalism asserts, “all recurrent social activities have the function of maintaining a social system” (Whitaker, 1965: 127). This perspective begins with the concept of functions, defined as “a complex [set] of activities directed towards meeting a need or needs of the system” (Rocher, 1975: 40). Parsons (1951) believed that there are four functional imperatives present in all systems, and these functional imperatives are used in all levels of his Action System. His Action System was composed of four elements: the behavioral organism (responsible for adaptation to and transformation of the external world), the personality system (defines

15 The four functional imperatives: Adaptation refers to the system coping with external situational exigencies. It must adapt to its environment and adapt the environment to its needs. Goal attainment describes how a system must define and achieve its primary goals. Integration describes how a system must regulate the interrelationship of its component parts. It must also manage the relationship among the other three functional imperatives. Latency describes how a system must furnish, maintain and renew both the motivation of individuals and the cultural patterns that create and sustain that motivation (Ritzer, 2008b: 101).
the system goals and mobilizes resources to attain them), the social system (controls the other elements), and the cultural system (provides the norms and values that motivate societal members) (Parsons, 1951; 1970; Ritzer, 2008b). These four elements defined the functions of social structures necessary and present in each society for it to function properly.

Each element is composed of multiple systems and subsystems, but Messner and Rosenfeld (1994) largely drew from two: the social system and the cultural system. For Parsons, the social system represented “society,” and was composed of four subsystems: the economy, the polity, the fiduciary system (e.g., education, family), and the societal community (e.g., law) (Parsons and Platt, 1973). The cultural system for Parsons (1951) was “the major force binding the various elements of the social world, or, in his terms, the action system” (Ritzer, 2008b: 108). However, Messner and Rosenfeld (1994) did not agree with Parson’s (1951) envision that culture existed separately and preeminentely above the other elements in the Action System. This view gave too much weight to the role of culture, overshadowing other aspects of society (i.e., social institutions).

Further, Parsons (1951) believed, as do Messner and Rosenfeld, that the two dimensions of social organization (i.e., culture and social institutions) should be distinctively of each other, yet both present, in order to prevent “semantic confusion” (Kroeber and Parsons, 1958). Social structure, the regulatory function of society, should be limited in scope to the “interactional component of social systems. Culture should be limited to the dimension of value, belief, and knowledge” (Messner and Rosenfeld, 2012:

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16 “Society” for Parsons is defined as “a relatively self sufficient collectivity, the members of which are able to satisfy all their individual and collective needs and to live entirely within its framework (Rocher, 1975: 60).
Messner and Rosenfeld (1994) argued that each concept of culture and social structure contain elements of the truth; yet, the field needs a criminological perspective that comprehensively, and equally, emphasizes both culture and social structure. These two dimensions of social organization cannot be combined or singularly emphasized. Much in the tradition of Parsons (1951):

The meanings of *culture* and *social structure* must be kept unambiguously distinct precisely because they are empirically inseparable. Culture and social structure are not “things” that can be neatly separated. They are analytical constructs that call attention to different aspects of the same underlying social phenomena. They are different ways of perceiving and understanding the nature of social reality and the causes of social behavior. They are, in brief, points of view for analyzing the social world. (Messner and Rosenfeld, 1994: 55)

Messner and Rosenfeld found that while the field of criminology needs a theory that equally emphasizes culture and social institutions, existing criminological theories did not suffice. For instance, what they labeled “cultural-learning” explanations of crime served to more fully develop the concept of culture, but the perspective understated the importance of social structure. This perspective begins with assumptions of human nature congruent with Messner and Rosenfeld’s, rooted in Durkheim’s notion of normative crime. Individuals conform to the norms and standards of groups to which they belong, therefore violating the normative standards of groups to which they do not belong. Crime becomes the product of cultural or subcultural values and norms; but this reasoning creates the problem of why some individuals violate the norms of their own group. To respond to this problem, culture conflict theories suggest that members in

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17 Messner and Rosenfeld (1994; 2012) felt it beneficial to present perspectives of criminology in this fashion to represent the composite nature of micro- and macro-level theories. In this sense, many macro-level explanations of crime commonly contain references to individual behavior. Thus, Messner and Rosenfeld (2012) suggest presenting dominant criminological approaches as hybrids; for example, “cultural-learning” combines notions of the individual-level theory of Social Learning with notions of the macro-level Subcultural theories (52).
society belong to multiple normative groups. Thus, the natural complexity of culture lends itself to contradictions and violations of some group’s normative system because to conform to one group is to violate another. Therefore, the cultural-learning perspective maintains “deviance remains but the residual consequence of conformity. Without conformity, there is no (cultural) deviance” (Messner and Rosenfeld, 1994: 51). Crime is conformity (Sutherland, 1947). Messner and Rosenfeld (1997) note that while this perspective is useful in “showing how the extraordinary results from the ordinary, how the very conspiracy of the normal… produces the abnormal” (47), it is not without serious theoretical concerns. Namely, they point out the problem of tautology they see within the cultural-learning paradigm. For instance, if one assumes that all behavior is consistent with underlying values, then delinquent acts themselves must be regarded as evidence of delinquent values. This circular reasoning becomes nonfalsifiable, in part due to an overly broad conception of culture (Kornhauser, 1978). To avoid trivializing cultural differences between criminals and non-criminals, Messner and Rosenfeld (1994) emphasize that what is needed is an incorporation of the second dimension of social organization – social structure.

Messner and Rosenfeld (1994) next consider “disorganization-control” explanations of crime. This perspective omits culture from the equation completely, focusing sole attention on the social structural dimension of social organization. This perspective adopts some elements from the structural functionalist approach, in the sense that it is up to the regulatory function of society to control the behavior of its individuals (Durkheim, 1962/1895; Parsons, 1951). From the micro-level position, disorganization-control explanations view individuals as hedonistic and predisposed to crime. Everyone
would commit crimes if they could, so why do most people refrain from engaging in delinquency? From this perspective, the answer lies in the ability of various social controls to restrain behavior; thus, there is no need to account for any cultural motivations to violate the rules. Criminals simply lack the controls necessary to avoid committing crimes. In some cases, social controls can be internal or external to the individual. Hirschi’s (1969) version of Control Theory focuses on external controls formed through bonds that individuals develop that attaches them to society. These bonds connect individuals to conventional lines of action and activities, and to beliefs in “obey[ing] the rules of society” (Hirschi, 1969: 26). The “belief” element is the most controversial because beliefs or “definitions” are central to cultural-learning explanations of crime. However, Hirschi (1969) noted that control theorists focus on beliefs that prohibit crime; “delinquency is not caused by beliefs that require delinquency, but rather made possible by the absence of (effective) beliefs that forbid delinquency” (198).

Gottfredson and Hirschi (1990) present another version of Control theories that focuses on internal controls, deemphasizing the importance of societal controls. They focus on a single trait of individual behavior – self-control – and argue that individuals with low self-control are unable to form meaningful attachments to others or other conventional groups and activities (Messner and Rosenfeld, 2012). These theories have been cited for failing to explain how or why bonds with society weaken or fail to originally develop – most likely a result of their aversion to cultural aspects of social organization (Messner and Rosenfeld, 1994).

The theory of Social Disorganization partially responds to this critique by placing social controls at the meso-level, and presents an ecologically based neighborhood
perspective of crime. A socially disorganized neighborhood is one in which the neighborhood is unable to “control itself” by managing its boundaries and prevent delinquency and crime (Bursik, 1988; Bursik and Grasmik, 1993; Shaw and McKay, 1942). This idea has been expanded into concepts of “collective efficacy,” in which neighborhoods are able to exercise control through a combination of social cohesion and shared expectations for collective action (Sampson, Raudenbush and Earls, 1997). While conceptual integration of Control theories and Disorganization theories has not been seen in the literature, the perspectives unite in their separate efforts to focus on social structural aspects of social organization absent culture (Messner and Rosenfeld, 2012). This perspective is successful in addressing why some people violate rules and regulations of society. However, disorganization-control explanations of crime fall prey to the opposite end of the spectrum from cultural-learning theories (Messner and Rosenfeld, 1994). That is, instead of defining “culture” too broadly and excluding social structure as the cultural-learning perspective has done, the disorganization-control perspective of crime has defined “social structure” in equally broad terms, omitting culture. The pendulum has swung too far in the other direction.

Finally, Messner and Rosenfeld (1994) turn to a theoretical perspective – anomie-strain explanations of crime – that has incorporated both culture and institutions. By doing so, anomie-strain explanations of crime address deficiencies highlighted by cultural-learning theories and disorganization-control explanations. Anomie-strain theories are rooted in Durkheim and Merton, and to a lesser extent Passas, all of which have been introduced and previously discussed. Merton has been the most notable contributor to contemporary Anomie theory, and Messner and Rosenfeld (1994) (similar
to Passas, 1990; 1999) identify their theory of Institutional Anomie as a “variant of Anomie theory associated with the work of… Robert K. Merton” (11). However, Messner and Rosenfeld point out several deficiencies in Merton’s Anomie Theory that they find lacking in conceptual stability, in line with previous critiques (e.g., Passas, 1990; 1997; Thio, 1975; Tittle, 1995). For instance, Merton does articulate the elements of culture (the institutionalized means to attain culturally defined goals based on the society’s central value orientations) and social structure (the legitimate means for attaining the goals). However, for Merton, social structure equates only to social stratification when determining access to legitimate means (Messner and Rosenfeld, 2009). Messner and Rosenfeld (1994) felt that basing social structure on the single dimension of class stratification was too narrow of a conceptualization, and that amendments must be made to account for social institutions and their interrelationships.

Additionally, Messner and Rosenfeld (2009) felt that the causes of crime for Merton were too a narrow range of social factors (i.e., the role of norms acting as inhibitors of misbehavior), failing to account for other social controls recognized by the disorganization-control perspective. Incorporating other social controls (e.g., collective efficacy, bonds and attachments to society) would underscore how ties to conventional order, as established through performance of institutional roles, encourage socially approved behavior (Messner and Rosenfeld, 2009).

Lastly, Messner and Rosenfeld (2009) noted that Merton’s theory was not grounded in any historical or comparative context. Instead, Merton focused solely on the United States and the American Dream at stagnant points in time, and failed to more fully develop notions of social structure. Messner and Rosenfeld (2009) believed Merton’s
theory could be improved on by expanding the historical context to include the
development of various social institutions over time (drawing from the institutions
outlined by Parsons (1951)), and place the study of macro-level crime in a comparative
context.

The comparative context was one of significance for Messner and Rosenfeld.
They found value in not only understanding crime rates at the national and international
levels, but they also believed criminological theories should be able to explain why some
countries experience higher rates of crime than others. Noticing that the United States had
a higher rate of homicide than any other developed nation in the world, Messner and
Rosenfeld turned to the comparative sociological perspectives of the modernization
process (Heiland and Shelley, 1992) and the civilizing process (Elias, 2000; Gurr, 1989)
for guidance. Messner and Rosenfeld felt that both perspectives presented valid
arguments, but they ultimately lacked empirical support. As such, Messner and Rosenfeld
next examined comparative studies that considered elements of the modernization thesis
and the civilizing process, which include culture and social organization. They felt the
greatest value was added by comparative studies that focused on the role of culture and
values in explaining variations in both long-term and short-term crime rates, such as
studies conducted by Eisner (2008), Murdock (1957), and Etzioni (1961). This is
because, similar to the disorganization-control perspectives on crime, social institutions
had received the most attention in comparative sociology (e.g., Almond and Coleman,

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18 Briefly recall: the modernization thesis noticed that as societies develop, or modernize, long-term violent
crime trends decrease significantly in comparison to less developed nations (Heiland and Shelley, 1992).
The civilization perspective suggests that these long-term declines in violence among more advanced
nations are the result of a strengthening in institutional controls (both internal and external) and in certain
cultural values that condemn such behavior (Gurr, 1989).
19 Interestingly, Messner and Rosenfeld did not turn to Globalization Theory for guidance as Passas (1999, 2000) did.
1960; Collver, 1963; Cutright, 1963; Scott, 2008), resulting in cultural elements becoming lost in the minutiae. Messner and Rosenfeld (1994) conceded that empirical separation and measurement of these elements is difficult enough for researchers at the national level, and the problem only compounds itself at the international comparative level. Yet, the comparative context is necessary to derive meaning from crime-related findings (Marshall and Summers, 2012). Thus, Messner and Rosenfeld felt strongly that macro-level explanations of crime should consider both culture and social institutions, placing them in the ever-important comparative context.

After fusing these historical influences and developments of key foundational concepts (i.e., culture, Anomie, comparative sociology, social institutions, functionalism) drawn from Parsons (1937; 1951; 1970), Merton (1938; 1968), and Durkheim (1962/1895), Messner and Rosenfeld (1994) introduced their new etiological theoretical perspective known as Institutional Anomie Theory. This theory was designed to explain macro-level crime rates by integrating aspects of society and social organization, synthesizing historical assumptions and concepts from past noted scholars, while also considering the related hybrid explanations of crime (e.g., cultural-learning).

The United States serves as the setting for Institutional Anomie Theory, due to the high rates of serious crimes experienced in the country compared with other advanced, developed nations. Therefore, Institutional Anomie largely discusses conditions in the United States, but the theory in general is designed to explain conditions cross-nationally.

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20 Messner and Rosenfeld (1994) emphasize that their theory operates best in developed nations due to the combination of an economically oriented institutional balance and a culture that pressures society to succeed in terms of pecuniary materialism, universalism, individualism, and achievement. Because of this, the authors argue that transitioning nations, or countries in transition, are more likely to have different configurations and therefore lower rates of serious crime. Thus, it is not necessary to consider these countries in comparative research based on Institutional Anomie Theory (Messner and Rosenfeld, 2009).
Messner and Rosenfeld (1994) first defined the elements of culture and social institutions separately as they pertain to Institutional Anomie Theory. The relationship of these elements in Institutional Anomie Theory is presented in Figure 3 below. Here, Messner and Rosenfeld (2012) maintain continuity with Merton’s Anomie Theory by implying that Anomie is embedded within culture,21 and as Orru (1987) points out, may even be a product of culture. Also in line with Merton (1938; 1968), Figure 3 illustrates that crime and deviance occur when society’s central values and goal orientations (i.e., culture) are malintegrated with institutionalized means for attaining these goals, and the prevailing cultural structure deemphasizes legitimate means for attaining these highly valued goals.

Figure 3. Schematic Representation of Institutional Anomie Theory22

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21 See also Passas (1997).
Institutional Anomie Theory considers the element of culture to be much embedded in Merton’s concept of the American Dream. “The American Dream itself exerts pressures toward crime by encouraging an anomic cultural environment, an environment in which people are encouraged to adopt an ‘anything goes’ mentality in the pursuit of personal goals” (Messner and Rosenfeld, 1994: 68). For Messner and Rosenfeld (1994), the American Dream embodies “a commitment to the goal of material success, to be pursued by everyone in society, under conditions of open, individual competition” (69), and is composed of four values that serve to anchor this cultural concept: achievement, individualism, universalism, and a fetishism of money.

“Achievement” is one concept the authors argue is most central to the American culture. Each member of society is encouraged to succeed “by any means necessary,” to “pull themselves up by their bootstraps” and make something of themselves. This success is, to a large extent, the defining measure of a person’s value. “Given such a value orientation, the failure to achieve is readily equated with a failure to make any meaningful contribution to society at large” (Messner and Rosenfeld, 1994: 70).

Closely related to the idea of “achievement” is “individualism.” Rooted in American history and culture is the drive for individual autonomy. The decentralized nature of our governing bodies (e.g., state and local governments) reinforces the notion of individualism and individual achievement. Messner and Rosenfeld (1994) claimed that this combination of “individualism” and “achievement” ultimately “exacerbates the tendency towards anomie” (70). Survival of the fittest becomes the name of the game, pitting members of society against each other in attempts to gain status and succeed.
Cultural values, such as “individualism” and “achievement,” are universally emphasized and become the basis of individual social reform. This “universalism” of success may be equally emphasized among community members, but Messner and Rosenfeld (1994) pointed out that concepts of “failure” are also universally inherent in American society. Because cultural values are essentially universal, “the Anomic pressures associated with an individualistic achievement orientation permeate the entire social structure” (Messner and Rosenfeld, 1994: 71; Passas, 2000).

The fourth value that anchors the American Dream is the “fetishism of money,” later renamed “pecuniary materialism” (Messner and Rosenfeld, 2012). This concept fits in well with the other cultural values of “individualism,” “achievement,” and “universalism,” as it is the tangible “thing” that binds the cultural values together. Messner and Rosenfeld (1994) are quick to point out, however, that in emphasizing the importance Americans place on monetary wealth is not to say “that Americans are uniquely materialistic, for a strong interest in material well-being can be found in most societies” (71). Instead, monetary gain is simply held as the “metric” or “measuring rod” of success in American society.\footnote{This is related to Merton (1938) and Passas’s (1997) concept of a comparative reference group, in which the cultural values of this comparative reference group are used as a measuring-rod for others.} This maintains continuity with Merton (1938), as Messner and Rosenfeld (1994) explain that Merton did not intend for his theory to be about “simple economic deprivation, or poverty” (59), but rather it was designed to illustrate how cultural elements can condition the impact of social structure on crime. Monetary success is simply one of the principal cultural goals as prescribed by the American Dream, and Messner and Rosenfeld (1994) agree.
These four values of (American) culture (illustrated in Figure 3 above) combine together to form the founding principles and “distinctive cultural ethos” of the American Dream (Messner and Rosenfeld, 1994: 71). In turn, the cultural environment that is created based on these values and ethos becomes more conducive to criminal behavior as the pressure to succeed in society increases. These elements of culture are particularly important to Institutional Anomie Theory because, like Merton, the notion of Anomie itself is embedded within the culture. When the pressure to succeed (as defined by high levels achievement, individualism, universalism, and a fetishism of money) occurs with a corresponding lack of legitimate (institutional) means to attain the culturally prescribed goals, Messner and Rosenfeld (2012) conclude that the society is Anomic (88).\footnote{This presents a potential fallacy in logic. Messner and Rosenfeld (1994; 1997; 2001; 2006; 2009; 2012) are not clear on an explicit definition of “Anomie,” but do reference Durkheim’s notion of Anomie as a state of “weakened norms,” and commonly reference the point that American society as defined by the American Dream is Anomic. However, their model (see Figure 3) illustrates that a culture is considered highly anomic when there is a strong desire to achieve, be individualistic, hold universal goals, and seek monetary rewards. This would represent a set of cultural norms that are clearly defined and represent cultural imperatives that members of society are driven towards, thus conflicting with Durkheim’s conceptualization of “normlessness.” It might be more useful to differentiate between comparative reference groups and normative reference groups, as Passas (1997) suggested, but apply them to the national level to better understand cultural Anomie. Thus, American (anomic) culture becomes the comparative group for other nations, but within its own reference group the cultural aspects are normative.}

In line with Parsons (1951; Kroeber and Parsons, 1958) and other noted sociologists (e.g., Marsh, 1967; Merton, 1938; Passas, 2000) culture composes only half of the equation. For Messner and Rosenfeld (1994), the elements of the American Dream embodied American culture, but social structure is as equally important to the explanation of crime. As illustrated in Figure 3 above, Messner and Rosenfeld (2012) expanded on Merton’s concept of social structure, equating Merton’s lack of legitimate means to succeed with the institutional balance of power. “Social institutions are the building blocks of whole societies… Institutions can be defined as ‘relatively stable sets...
of norms and values, statuses and roles, and groups and organizations’ that regulate human conduct to meet the basic needs of a society” (Messner and Rosenfeld, 1994: 72; see also Kroeber and Parsons, 1958; Parsons, 1951). Moreover, Messner and Rosenfeld (2012) explain that institutions are what allow a society to endure over time, and these institutions are necessary for the individual and collective survival of the society. It is the levels or configurations of institutional dependence that have “profound implications for the motivation and control of human social behavior, including criminal behavior” (Messner and Rosenfeld, 2012: 75).

Based on Parsons’s (1951) development of the four functional imperatives present in all societies (i.e., adaptation, goal attainment, integration, and latency), Institutional Anomie Theory outlines three basic social needs around which societal institutions develop: adaptation to the environment, mobilization and deployment of resources necessary for the achievement of collective goals, and socialization of members to accept society’s fundamental normative patterns (Messner and Rosenfeld, 1994). The level of each social need in a particular society will determine the strength of development in certain institutions. Messner and Rosenfeld (1994) identified four key institutions that develop differentially based on these social needs (again, drawing from Parsonian elements of the Action System): the economy, the polity, family, and education. Take, for instance, the economic institution. In the United States, the economic institution strongly supports the cultural values of the American Dream. Thus, Messner and Rosenfeld (1994) claimed that adaptation to the environment is primarily responsible for the strong development of this institution in the United States. The economic institution is

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25 Messner and Rosenfeld (1994) diverge from Parsons here by restricting the social needs to three, placing the legal realm (i.e., latency) composed of the criminal justice system within the political system (i.e., integration).
reinforced by the emphasis on cultural goals of money and wealth (Merton, 1938; 1968; Messner and Rosenfeld, 2012), therefore responding to the other basic social needs by mobilizing and deploying economic resources necessary for the achievement of these cultural goals and socializing members of society to accept the normative patterns of capitalism. These economic resources include the basic human necessities of food, clothing, shelter, but also include material possessions and other nonessential goods and services/commodities. For Messner and Rosenfeld (1994), dominance of the economic institution in societies is a key indicator of potential “widespread Anomie, weak social controls, and ultimately, high levels of crime” (68), and can be identified through the devaluation of non-economic institutional functions and roles, the accommodation to economic requirements by other institutions, and the penetration of economic norms into other institutional domains. That is, societies characterized by economic institutional dominance may find its members working late, consequentially missing their child’s soccer practice, regarding educational achievement as a means to attain a better job or salary instead of valuing the acquisition of knowledge or learning for its own sake, or their politicians may believe that government works best if it were run more like a business (Messner and Rosenfeld, 1994).

In countries with a different configuration of social needs and cultural goals than highly developed nations like the United States, non-economic institutions become more developed than the economic institution (Messner and Rosenfeld, 2006). For instance, in societies with cultural goals other than economic prosperity, the political institution may more strongly develop in order to meet the second basic social need of mobilizing and deploying resources. Political institutions are designed to maintain public safety, and
therefore include all elements of the civil system and criminal justice system, such as the police, court system, and correctional system (Messner and Rosenfeld, 1994). The polity is often closely related to the economy, as illustrated by democratic politics and capitalist economics, or socialist political agendas and communist economic principles (Passas, 1997). But, for Messner and Rosenfeld (2009), it depends on one institution driving the other(s). In the United States, the cultural ethos of the American Dream coupled with the superior strength of the economic institution result in the dominance of the economic institution over the polity (i.e., capitalism is driving democratic politics).

In some cases, societies may place priority on socialization of its members to accept society’s fundamental normative patterns. Here, the familial and educational institutions become most developed. The familial institution acts on socializing societal members by “regulating sexual activity” and maintaining the society through reproduction (Messner and Rosenfeld, 1994: 73). Other familial duties include physical care and nurturing of children, “socializing children into the values, goals and beliefs of the dominant culture,” and to “serve as a refuge from the tensions and stresses generated in other institutional domains” (Messner and Rosenfeld, 2012: 75). The educational institution socializes its members of society by transmitting basic cultural standards to new generations through schooling, which develops individual human potential, but also advances “the general ‘knowledge base’ of the culture” (Messner and Rosenfeld, 1994: 73). This advancement in the general knowledge base of societies has been shown to improve individual income levels and serve as a “precondition for long-term economic growth” in transitioning countries (IIASA, 2008: 1). In modern industrial societies, the
educational institution is also responsible for “preparing youth for the demands of adult [occupational] roles” (Messner and Rosenfeld, 1997: 66).

These four institutions create an institutional balance of power within each existing society. Depending on the society’s basic social needs will in turn reflect the differential development of the economy, polity, familial, and educational institutions. Therefore, each society may vary in their distinctive configuration of their institutional balance of power, but Messner and Rosenfeld (1994) explain it is when the economic institution dominates over non-economic institutions the society is more likely to experience high rates of crime. Moreover, while the primary activities of each institution are fundamentally different, “the functioning of each institution has consequences for the functioning of the others” (Messner and Rosenfeld, 1994: 66). In other words, the institutions should be considered interdependent, not independent of each other. This is not to say that each institution will seamlessly coordinate and cooperate with the others; Messner and Rosenfeld (1994) acknowledge that conflict is created between institutions based on the disparity in their fundamental cultural values. It is this interaction between core cultural values leading to levels of Anomie and the unique institutional balance of power that results in varying levels and types of crime between nations (Messner and Rosenfeld, 2009).

Additionally, Messner and Rosenfeld (2006; 2009) theorized that if non-economic institutions were valued equally or more so than the economy in a given society, serious

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26 Messner and Rosenfeld (2012) are careful to note that the four institutions central to Institutional Anomie Theory do not “exhaust the institutional structure of modern societies, nor are they the only institutions with relevance to crime” (75). In fact, the authors offer religion and mass communications as examples of other societal institutions that have been the focus for some criminologists. However, for Institutional Anomie Theory, the economy, the polity, the family, and education are the only four institutions relevant to having an “institutional understanding” of crime” (Messner and Rosenfeld, 2012: 76).
crime rates would potentially decrease because the cultural values of the society would produce more cohesion and social control. For instance, some developing countries may place greater emphasis on family and educational institutions. In this situation, a strong educational institution has been linked to improvements in economic conditions by past research (Brinton, 2005; IIASA, 2008; Klasen, 2002). However, even with improvements in economic conditions, the cultural values are still placed on the importance of education and other non-economic institutions, using improved economic conditions as a means of survival rather than tipping the institutional balance towards economic dominance.

Messner and Rosenfeld also focused their attention to the issue of types of crimes that can be explained by Institutional Anomie Theory. Messner and Rosenfeld (1994) proposed that their theory is best suited to explain what they consider to be “serious crimes,” and felt that criminologists had largely ignored this category of crime. They sought to avoid presenting serious crimes as a false dichotomy with non-serious crimes by defining them as “violations of criminal law involving significant bodily injury, the threat of bodily injury, or, in the case of nonviolent offenses, significant economic harm to victims, both individual and collective” (46) that fall along the “serious end” of the crime continuum. Messner and Rosenfeld (1994) proposed looking at homicide and robbery as two examples of serious crime. What perplexed Messner and Rosenfeld (1994) about these particular crime-types was the fact that homicide and robbery rates in the United States have been comparatively higher than any other developed nation. From a more practical perspective, Messner and Rosenfeld (1994) were also aware of problems inherent with cross-national comparisons of crime rates. These problems include

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27 This particular suggestion by Messner and Rosenfeld has resulted in criminologists only considering these two crime-types in the vast majority of investigations of Institutional Anomie Theory.
recording practices and definitional differences between countries, as well as the reliability of comparing cross-national data for a single year (Smit et al., 2012; Spierenburg, 2012). In line with past research (e.g., LaFree and Drass, 2002), Messner and Rosenfeld (1994) argued that homicide and to a lesser extent, robbery, enjoy a more harmonious cross-national interpretation, thus making these data more reliable. While the features of culture in developed capitalist nations are not uniquely experienced by any particular society alone, the United States distinctly experiences an “exaggerated emphasis” on monetary success and an “unrestrained receptivity to innovation” (Messner and Rosenfeld, 1994: 76). This particular balance of culture and social institutions, Messner and Rosenfeld argue, is what will ultimately lead to high rates of homicide and robbery.

In sum, Messner and Rosenfeld synthesized major sociological concepts of Anomie and social organization, largely drawn from sociological foundations in Durkheim, Merton, and Parsons, into a new macro-level explanation for serious crime. Institutional Anomie extends Merton’s Strain with similar foundations in Merton (1938) as Global Anomie (Passas, 1995; 1999; 2000), and draws from Durkheimian notions of Anomie representing normlessness caused by unheeded cultural desires, requiring the social structure to externally regulate society (Durkheim, 1962/1895). Equally emphasizing both aspects of social organization, Institutional Anomie also adopts Parsonian elements of Social Action that integrate functional imperatives with cultural values and institutions comprising the social structure (Parsons, 1937; 1951; 1970; 1990). Finally, Messner and Rosenfeld frame Institutional Anomie and all its synthesized elements in an international comparative context to explain variation in crime rates
between nations. This comparative perspective further allows Institutional Anomie to address historical contexts to account for changes in levels of Anomie, culture, and social institutions over time.

*Developments in Institutional Anomie Theory After 1994*

Even though scholars have found Institutional Anomie Theory to be “intuitively appealing” (Chamlin and Cochran, 2007: 39) critics in criminology have identified problems associated with Messner and Rosenfeld’s (1994) original articulation of the theory. One such criticism claims the theory is not “readily amenable to direct falsification” (Chamlin and Cochran, 2007: 41) because of the inability to measure the main concepts of Anomie, culture, and institutional balance of power (Chamlin and Cochran, 1995; Jensen, 2002). “Messner and Rosenfeld [1994] describe a rather complex model of relationships among highly abstract concepts,” providing “little guidance on how their theory might be tested or how their key theoretical constructs might be operationalized” (Chamlin and Cochran, 1995: 414-415).28 According to the critics, Messner and Rosenfeld (1994; 2012) not only offer vague ideas of how to measure “cultural ethos” in various countries, but also are unclear as to what the role of Anomie actually plays in their model of Institutional Anomie Theory.29 For instance, Figure 4 below illustrates the schematic representation of Institutional Anomie Theory as published in Messner and Rosenfeld’s (2012: 88) most recent edition of *Crime and the American Dream.*

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28 Operationalization is a term used to describe empirical measurements of a latent construct, which is some concept that is not directly observable. Examples of latent constructs inherent in Institutional Anomie Theory are social organization, culture, and social institutions. Operationalization represents the process of defining these abstract concepts so as to make the construct measurable. Operationalized variables are representative of the latent construct, and are therefore not direct measures of the construct.

29 Indeed, some sociologists would argue that “culture” is not able to be quantified or operationalized, but rather exists as a qualitative concept that is embedded within the social elements (Messner and Rosenfeld, 2001).
In the “Culture: The American Dream” box, the four elements of culture (achievement orientation, individualism, universalism, and pecuniary materialism) all display two-way interactions between each element. Also appearing in the same “Culture” box is Anomie, described as “intense pressures for monetary success” and “weak emphasis on means.” There is no indication from this model whether Anomie is a product of the interaction between the four cultural elements (Orru, 1987), or if it is a separate concept within the “Culture” box. However, it is clear from Figure 4 that Anomie is certainly embedded within the cultural aspect and is not a part of the separate large box in the model labeled “Social Structure: Economic Dominance.” The “Social Structure” box displays the four major institutions (economy, polity, family, schools) and the two-way

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31 In other words, A not only affects B, but that B also affects A.
interactions between each element. Within the same box appear the phrases “weak institutional controls” and “meager institutional support.” Two-way arrows are drawn between the “Culture” box and the “Social Structure” box to illustrate that the concepts of culture and social structure are indeed separate concepts, but are themselves interdependent. One-way arrows are drawn from each “Culture” and “Social Structure” to a smaller box labeled “High levels of crime.”\footnote{Compare Figure 4 with Messner and Rosenfeld’s (1994) original model of Institutional Anomie Theory in Appendix B. The models have changed very little, with Anomie consistently remaining an element of “culture.”} Messner and Rosenfeld (2012) describe the relationship in the following terms:

> At the cultural level, the dominant ethos of the American Dream stimulates criminal motivations and at the same time promotes a weak normative environment (anomie). At the institutional level, the dominance of the economy in the institutional balance of power undermines the vitality of non-economic institutions, reducing their capacity to control disapproved behavior and support approved behavior. (88)

Even though Messner and Rosenfeld (2012) do emphasize that the concepts of culture and social structure are separate but interdependent, they offer no suggestions on how to operationalize the elements of culture illustrated in Figure 4. In fact, in they originally stated that culture and social structure might be “empirically inseparable” (Messner and Rosenfeld, 1994: 55). This ambiguous wording has left researchers to interpret and debate the associations of cultural aspects (including Anomie) with the institutional aspects of this theory themselves.

For example, the more cryptic definitions of Anomie provided by Messner and Rosenfeld (1994; 1997c; 2001a; 2007, 2012) have led some criminologists to conclude that Anomie is a major element representative of the institutional balance of power (e.g., Chamlin and Cochran, 1995). This assumption overlooks or omits the cultural elements
of the theory and instead focuses on “how the emergence of Anomie is related to specific institutional arrangements of contemporary society” (Bernburg, 2002: 731).

By doing so, the theory creates a conceptual framework that renders contemporary changes in industrial societies – declining political restraints on market economy, globalization, decline of the welfare state…, and so on – relevant to the study of crime and deviance. (Bernburg, 2002: 731)

Thus, empirical tests of Institutional Anomie Theory have largely involved defining and measuring Anomie in direct relation to social institutions, which is not what Messner and Rosenfeld (1994) originally intended.

Examples of this claim can be found in the majority of empirical and theoretical research conducted on Institutional Anomie Theory. For instance, Chamlin and Cochran (1995) were the first criminologists to examine the theory and attempt to define the major concepts of Anomie, culture, and social institutions based on Messner and Rosenfeld’s (1994) guidance. More specifically, Chamlin and Cochran (1995) tested claims that culturally and structurally produced pressures to achieve goals, coupled with weak controls from non-economic social institutions led to high levels of crime. These authors sought to confirm whether the effects of economic conditions on profit-related crime depended on the strength of non-economic institutions. While these hypotheses were developed in the spirit of the theory, Chamlin and Cochran (1995) conducted a partial test of Institutional Anomie by using cross-sectional data from the fifty states in the U.S. In other words, because of a lack of guidance from Messner and Rosenfeld (1994) on how to measure Anomie and the elements of culture, Chamlin and Cochran (1995) focused their efforts on operationalizing the institutional balance of power.

In doing so, Chamlin and Cochran (1995) used aggregate-level, cross-sectional data from 1980 for all 50 states in the U.S. to uncover whether an improvement in
economic conditions, coupled with a simultaneous strengthening of non-economic institutions, led to a decrease in crime. They acknowledge while “there is some concern that states are too heterogeneous to allow for an assessment of macrosocial theory, we [Chamlin and Cochran] believe that they are adequate for the task at hand” because Institutional Anomie Theory uniquely focuses on “social dynamics that are likely to operate across various levels of social aggregation” (Chamlin and Cochran, 1995: 416-417). Chamlin and Cochran (1995) test their model against “instrumental crimes,” or property crimes, because they interpreted Messner and Rosenfeld’s (1994) theory to pertain largely to profit-motivated crime.

Thus, Chamlin and Cochran (1995) operationalized the social institutions in each U.S. state as such: Economic deprivation was measured by the percentage of families below the poverty level. Familial strength was measured by the ratio of yearly divorce rate per 1,000 population to the yearly marriage rate per 1,000 population. The political institution was measured as the percentage of voting age individuals who actually voted in 1980. Additionally, Chamlin and Cochran (1995) added a measure of the religious institutional strength into their model, largely because Messner and Rosenfeld (1994) mentioned that this institution could potentially be important. Chamlin and Cochran (1995) operationalized the religious institution as the adjusted rate of church membership per 1,000 population. The authors did not employ any indirect measures of the educational strength. It is important to note that Chamlin and Cochran (1995) did not have a separate measure of Anomie in their model, assuming that states with strong

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33 Property crimes were measured as the total number of reported robbery, burglary, larceny and auto theft offenses per 1,000 population.
34 Yet, Messner and Rosenfeld (1994) conclude considering the religious institution was not needed to constitute an “institutional understanding’ of crime” (74).
economic institutions are indicative of high levels of anomic stress. By omitting this distinction of Anomie, the authors ignore Messner and Rosenfeld’s (1994) theoretical model illustrated in Figure 3 (pg. 41), thus confounding the constructs of culture and social institutions.

Using weighted least squares regression procedures, Chamlin and Cochran (1995) found limited support for Institutional Anomie Theory. In their first equation, the only institutions that were statistically significant predictors of instrumental crimes were the familial and religious institutions. The authors conducted three more tests, each time testing a multiplicative variable that represented the multiplied effects of poverty with each non-economic institutional variable (church membership, family structure, and percent voting). Only the final equation that included a multiplicative variable between poverty and percent voting found all institutions to be statistically significant predictors of crime. However, no tests for multicollinearity were conducted to determine if any of the variables were themselves highly correlated.

Chamlin and Cochran (1995) admitted that this study was an indirect evaluation of Institutional Anomie Theory that omitted “direct measures of Anomie and institutional controls” (425). Yet, the authors concluded that their study did lend support for the theory to the extent that (weak) empirical relationships among the institutions in relation to crime were uncovered (in other words, there is some kind of relationship among the variables). The findings also suggested that inclusion of a measure of the religious institution could prove helpful in predicting high rates of institutional crime by strengthening the overall model, even though there was no included measure of the
educational institution. Despite these deficiencies, this study represented the first effort to operationalize core assumptions of Institutional Anomie Theory.

Messner and Rosenfeld (1997c) tested their own theoretical assumptions by examining the ability of the political institution to “insulate personal well-being from market forces,” (1393) or in other words, rates of decommodification, on homicide rates in forty-five nations. The authors hypothesized that the higher the level of political protection from the fluctuations and influences of the market, the lower the national homicide rate will be. This relationship represents the domination of a non-economic institution, which Messner and Rosenfeld (1994) originally claimed would reduce levels of serious crime. However, again the focus of this study is on a partial test of Institutional Anomie Theory. The cultural aspects of Institutional Anomie are omitted from this research endeavor in favor of developing a better understanding of the relationship between the basic elements of the economic and political systems of societies with levels of serious crime. That is, Messner and Rosenfeld (1997c) hope to uncover the extent to which the capitalist market, the primary mechanism for distributing material resources in society, dominates the welfare, or non-economic institutions.

To do this, the authors created several proxies, or indirect, measures to operationalize decommodification and the four social institutions. Decommodification encompasses dimensions of access to welfare benefits (e.g., pension, sickness benefits, unemployment compensation), expansiveness of welfare coverage, absolute and relative

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35 The ability of policies that provide protection from “pure market forces” – an ideal type capitalist environment that promotes and distributes material resources for personal gain – refers to a term Esping-Anderson (1990) defined as the “decommodification of labor.” “Decommodification refers in the most general sense to the empowerment of the citizenry against the forces of the market. Decommodified social policies permit actions and choices by citizens – to get married, have children, seek higher education, engage in political activity – that are, in principle, unconstrained by market considerations. Decommodification frees people from the market” (Messner and Rosenfeld, 1997c: 1394). In other words, decommodification allows citizens to rely on non-economic institutions within their social organization.
levels of expenditures for social security programs, and expenditures across different program types (e.g., pension, sickness benefits, unemployment compensation). These indicators incorporate the following features of national social security systems: priority given to social welfare spending (expenditures as a percent of total gross domestic product), generosity of welfare spending (average annual expenditures per capita), financing of social security systems, and range of entitlements (percent distribution across different program types) (Messner and Rosenfeld, 1997c: 1399). The Gini coefficient of income inequality was also included in their models, as well as an index of economic discrimination against social groups (based on “expert judgments about the extent to which groups experience objective economic disadvantages that are attributable to deliberate discrimination” (Messner and Rosenfeld, 1997c: 1403), compiled from Gurr and Scarritt’s (1989) preexisting dataset). These two economic indicators were included, because “to the degree that decommodified social welfare practices reflect the broader balance of power between the polity and the economy… decommodification is expected to have an effect on the level of crime independent on its relationship with inequality” (Messner and Rosenfeld, 1997c: 1402).

Using OLS multivariate regression techniques, Messner and Rosenfeld (1997c) found that the decommodification proxy measure negatively and significantly impacted homicide rates across the countries included in the study. In other words, the nations that scored higher on the decommodification measure, indicating reduced dependence on the market for personal well being, experienced lower levels of lethal violence than countries with lower decommodification scores. These findings supported the general claims of Institutional Anomie Theory in that higher levels of decommodification translated to a
higher societal emphasis on non-economic institutions; thus, as Institutional Anomie Theory predicts, societies with more emphasis on non-economic institutions than economic wealth should experience lower rates of serious crime (Messner and Rosenfeld, 1994). This study further supported key elements of Institutional Anomie Theory by showing empirical support for broadening the structural focus of economic deprivation (e.g., the limited (Merton, 1968) or limitless (Durkheim, 1897/1951) wants or needs of society) beyond the stratification system that defined Merton’s Anomie Theory.

However, aspects of culture and Anomie remain absent from this research endeavor.

Maume and Lee (2003) continued the tradition of further investigating the institutional balance of power relation in Institutional Anomie Theory absent any discussion or inclusion of cultural elements or Anomie. These authors examined Messner and Rosenfeld’s (1994) central tenet that higher crime rates in the United States are due to two factors: the overwhelming dominance of the economic institution in the country, and the depression of non-economic institutions. A main goal for Maume and Lee (2003) was not to necessarily focus on how or why the economic institution may dominate the balance of power in some cases, but rather they used Institutional Anomie Theory as a framework to examine different types of crime and their relationship to the institutions. More specifically, Maume and Lee (2003) disaggregated homicide by motivation (i.e., instrumental homicide or expressive) and considered both mediating and moderating relationships between economically motivated pressures and instrumental violence. Instrumental homicides result from lethal violence applied in the pursuit of material gain. In other words, lethal violence was a means to a material end, whereas expressive

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36 See also Bjerregaard and Cochran (2008b) for similar research on mediating and moderating effects of social institutions on rates of serious crime.
homicides are more emotional in origin, resulting from “a lover’s quarrel or a fit of rage” (Maume and Lee, 2003: 1144). The authors hypothesized that Institutional Anomie Theory will be best suited to explain instrumental violent crimes rather than expressive, and that non-economic institutions will primarily mediate (account for the relation between the predictor variable and criterion) the effects of the economy on instrumental violence rather than moderate (affect the direction and/or strength of the relation between variables) the economic effects (Maume and Lee, 2003).

Maume and Lee (2003) used standard measures for social institutions as developed in previous research. The polity was measured by average voter turnout for the 1988 and 1992 presidential elections; the familial institution was measured as the divorce rate among citizens fifteen and older; and the educational institution was measured through the average expenditures per person of school age for 1987 and 1992. The authors also included an indicator of the religious institution, measured as the rate of adherence to civically engaged religious denominations, and a measure of welfare generosity, measured as an index of average monthly welfare payments per indigent person adjusted for the cost of living and the proportion of poor families receiving welfare. The measure of welfare generosity was included because “some recent research has suggested that the level of social welfare generosity varies inversely with crime rates across macrosocial units” (Maume and Lee, 2003: 1156), referencing Messner and Rosenfeld’s (1997c) past work. The economy was measured as the Gini coefficient of family income inequality.

Maume and Lee (2003) used negative binomial regressions with data from U.S. 454 counties and county equivalents with populations of 100,000 or greater, based on the
Census in 1990. Their models indicated that the county-level income inequality was a strong predictor of variation in rates of both instrumental and expressive homicide, voter turnout, the divorce rate, and welfare expenditures. Aside from welfare expenditures, the other indicators of non-economic institutions were found to more strongly mediate the relationship between the economic indicator and institutional homicide. According to Maume and Lee (2003), this is what they expected to find given their interpretation of Institutional Anomie Theory. Non-economic institutions matter in their ability to curb serious crime, particularly instrumental homicide. However, this study remains a partial test of Institutional Anomie Theory as it omitted any measurement or consideration of culture. One could argue that since the test is sub-national (considering only counties in the United States), all counties experience the same cultural influences (achievement, individualism, universalism, pecuniary materialism) of the American Dream. Yet, this remains a major assumption of all studies that do not include any measure of culture (i.e., that culture is held constant). This sub-national consideration further diverges from Messner and Rosenfeld’s (1994) original conceptualization of Institutional Anomie Theory, as they developed Institutional Anomie Theory to be comparative in nature, requiring multiple societies (including cultures) to be represented (Bjerregaard and Cochran, 2008a).

One of the first empirical endeavors to incorporate both aspects of culture and social institutions was a study by Cullen, Parboteeah and Hoegl (2004). These authors expanded the scope of Institutional Anomie to investigate managerial ethics in the context of globalization. These authors explained that prior research (e.g., Chamlin and Cochran, 1995; Messner and Rosenfeld, 1997c) involving Institutional Anomie Theory

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37 As other studies have done – for instance, Piquero and Piquero (1998).
focused on outcomes determined to be deviant behaviors, such as homicide and property crimes, instead of focusing on steps in the ethical reasoning process that leads to such behavior. Cullen, Parboteeah and Hoegl (2004) believed that Institutional Anomie Theory might be useful in uncovering cultural and institutional factors that “propagate more egoistic rather than principled or benevolent ethical reasoning in a society. These cultural and institutional systems enable cognitive separation from traditional social rules and norms, based, for example, on education and the family” (412). Thus, this separation increases the willingness of individuals to choose any means necessary to achieve their goals. Therefore, Cullen, Parboteeah and Hoegl (2004) developed a set of hypotheses centering on the central tenets of Institutional Anomie Theory. In terms of the cultural aspects, the authors hypothesized that the stronger the four cultural values (achievement, individualism, universalism, pecuniary materialism) are in a nation, the greater the willingness of its managers to justify ethically suspect behaviors (Cullen, Parboteeah and Hoegl, 2004: 413). In terms of the institutional aspects, the authors hypothesized that the more industrialized a nation is, the greater the willingness of its managers to justify ethically suspect behavior. Additionally, they hypothesized that the lower the family strength, the less welfare socialist a nation’s political system is, and the weaker a nation’s educational attainment level is, the greater the willingness of managers to justify ethically suspect behaviors will be (Cullen, Parboteeah and Hoegl, 2004: 414-415). These hypotheses represent a more comprehensive inclusion of the major fundamental elements of Institutional Anomie Theory. However, the challenge for Cullen, Parboteeah and Hoegl (2004) was in operationalizing these elements.
The authors began measuring the latent construct of “culture” by forming an index of survey responses regarding cultural achievement, individualism, universalism, and pecuniary materialism. Achievement was measured with three indicators. The first two used percentages of people in each country who disagreed with statements such as “The respect a person gets is highly dependent on their family background,” while the third indicator was an item from the World Values Survey (Cullen, Parboteeah and Hoegl, 2004: 415). Individualism also consisted of three items that used the percentage of respondents in each country regarding quality of life issues, typical jobs, and negligence of a team member. Universalism was measured by the percentage of respondents in each country answering questions regarding universalistic choices (e.g., “testifying truthfully regarding the driving speed of a friend involved in a car accident” (Cullen, Parboteeah and Hoegl, 200: 416)) versus particularistic choices (e.g., “whether a journalist should write a positive review for a friend’s restaurant” (Cullen, Parboteeah and Hoegl, 2004: 416). Finally, pecuniary materialism was measured based on survey responses regarding prioritizing goals for their nation from a given list.

Cullen, Parboteeah and Hoegl (2004) operationalized “social institutions” by forming composite measures of the four institutions. The economic institution was measured as a composite measure representing the degree of industrialization (containing variables such as percentage of urban population, energy use, and demographic distribution of the workforce into non-agricultural sectors). The polity (recognized by Cullen, Parboteeah, and Hoegl (2004) as “welfare socialism”) was measured using three items: tax collected as a percentage of gross domestic product, government expenditure as a percentage of gross domestic product, and government revenues as a percentage of
The authors reasoned that “countries whose political systems are more welfare socialist have more governmental intervention, which will be reflected in government expenditures and revenues” (Cullen, Parboteeah and Hoegl, 2004: 416). The familial institution was measured using the traditional measure of the ratio marriages to divorces per 1,000 population, and educational attainment was measured using the United Nations Development Program’s educational attainment score (an index composed of adult literacy rates and mean years of schooling).

The authors employed hierarchical linear modeling for individual-level data collected from a sample of 3,450 managers and national-level data from 28 nations. Cullen, Parboteeah and Hoegl (2004) found that their empirical results maintained general continuity with the predictions of Institutional Anomie Theory. More specifically, they found that in societies with weaker familial and educational institutions, social integration and emotional support were also weakened. “Thus, managers in such societies… seem more willing to justify ethically suspect behaviors” (Cullen, Parboteeah, and Hoegl, 2004: 418-419), such as encouraging the pursuit of egoistic goals (e.g., affluence, pecuniary materialism) knowing that attempts to attain these goals may lead to deviance and further unethical behaviors. In countries with stronger non-economic institutions, on the other hand, Cullen, Parboteeah and Hoegl (2004) found that managers “have a more benevolent orientation towards others… [with] quality of life tak[ing] precedence over more materialistic values” (419). By including measures of national culture and social institutions, this study’s comprehensive approach illustrated the flexibility and applicability of Institutional Anomie Theory to not only criminal or

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38 Austria, Belgium, Britain, Bulgaria, Canada, China, Denmark, France, Germany, Hungary, Iceland, India, Italy, Ireland, Japan, Mexico, The Netherlands, Nigeria, Norway, Portugal, Romania, The Russian Federation, South Korea, Spain, Sweden, Switzerland, Turkey, and the United States.
deviant behavior outcomes, but also to ethical decision-making processes leading to these outcomes.

Criminologists, such as Chamlin and Cochran (2007), further recognized the challenges in interpreting Messner and Rosenfeld’s (1994) original conception of Institutional Anomie and saw these emerging partial tests (i.e., considering only aspects of the theory instead of comprehensively including all concepts) of the theory as evidence of these challenges faced by researchers. For Chamlin and Cochran (2007), the major difficulties lie within the definition of Anomie and culture. If each researcher is left to define these concepts on their own given limited guidance from Messner and Rosenfeld (1994), measurements of the construct will remain inconsistent from study to study. Therefore, key variables “must be defined in an operationally unambiguous manner” (Lenski, 1988: 166). Thus, Chamlin and Cochran (2007) offer their own interpretation of the most elusive constructs of Institutional Anomie Theory:

When the social structure fails to provide sufficient means to achieve success goals in the prescribed fashion, an increase in the rate of crime is the anticipated result. In the context of blocked opportunities, the contradictions between the values concerning the means and ends produce a state of anomie, which, in turn, motivates some segments of society to engage in criminal activities to procure monetary goals. (40)

This interpretation follows closely with the model in Figure 3 (p. 50). However, the challenges studies face become compounded when the constructs are operationalized. Chamlin and Cochran (2007) conceded this to be a major problem, but offered some solutions by locating new sources of data to measure the elusive constructs. Messner and Rosenfeld (1994), in line with Merton, distinguished American culture from other advanced capitalist nations based on the demand placed on the country’s occupants to accrue income, wealth, and status. Money is the “metric of success” (Messner, 2003: 99).
In other words, preoccupation with material success is the “distal, catalytic [cultural] agent” that is responsible for high levels of Anomie and serious crime in the United States (Chamlin and Cochran, 2007: 49). Chamlin and Cochran (2007) did acknowledge that the causal processes inherent in the cultural elements of Institutional Anomie Theory are not “readily amenable to operationalizing” (49). Yet, the authors were able to locate items in the World Values Survey (WVS) that contain cross-national measures of the cultural acceptance of pecuniary success goals.

Thus, while we are unable to directly examine the extent to which [countries] experience the consequences of the adherence to [cultural values in line with the American Dream], we can, at a minimum, determine whether or not [countries] disproportionately embrace material success goals. (Chamlin and Cochran, 2007: 49).

While the use of survey instruments, to include the WVS, provided more reliable measures of key constructs in Institutional Anomie Theory, the data were limited to the scope of participating countries and only provided cross-sectional data for selected years (as opposed to longitudinal data). This would limit any study from utilizing other types of analyses (e.g., time series) to test central tenets of Institutional Anomie Theory. However, Chamlin and Cochran (2007) concluded that Institutional Anomie Theory is informative and useful, as long as researchers strive to formulate and employ more explicit definitions of key concepts within the theory, offering their own operationalizations as a launching point.

Heeding these calls by Chamlin and Cochran (2007) to develop better indicators of central tenets of Institutional Anomie Theory, Bjerregaard and Cochran (2008a) attempted to further refine and operationalized key concepts of Institutional Anomie Theory by providing a separate, empirical measure of Anomie. Noting the challenges
recognized by previous research endeavors on testing Institutional Anomie Theory (e.g., Chalmin and Cochran, 1995; 2007; Cullen, Parboteeah and Hoegl, 2004; Messner, 2003), Bjerregaard and Cochran (2008a) pointed out that to-date, no study has been able to isolate “Anomie” as a single measure. Moreover, past research has relied on considering the economic institution through proxy or surrogate measures, typically relying on single indicators of economic strength (GDP), or deprivation/economic inequality (Gini coefficient). With this in mind, Bjerregaard and Cochran (2008a)39 sought to test the basic principles of Institutional Anomie Theory: whether the institutional balance of power dominated by the economy adversely impacts crime rates; the degree to which economic conditions influence non-economic institutions and are associated with the amount of control or political restraint the state exerts over the economy; and the extent to which non-economic institutions mediate the effects of economic conditions (186).

Maintaining consistency with Messner and Rosenfeld (1994; 1997c; 2001a; 2007, 2012), Bjerregaard and Cochran (2008a) explore these hypotheses using homicide rates in forty-nine countries.40

In defining Anomie for their study, the authors drew from Messner and Rosenfeld (1994; 2001). Institutional Anomie Theory stresses:

… that the core values expressed in the American Dream are supported by the economy and that the most important characteristic of the American economy is its capitalistic nature… Anomie should be greatest in situations where the American Dream is emphasized under conditions of open, individual competition. These conditions should have more of an impact when state regulation and control are reduced. (Bjerregaard and Cochran, 2008a: 186)

39 For a replication of Bjerregaard and Cochran (2008a) using data from this research, see Appendix D.
40 Albania, Austria, Azerbaijan, Bahamas, Bangladesh, Bulgaria, Canada, Columbia, Costa Rica, Croatia, Czech Republic, Denmark, Dominican Republic, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Israel, Italy, Jamaica, Japan, South Korea, Kyrgyzstan, Latvia, Lithuania, Luxembourg, Maldives, Moldova, Netherlands, New Zealand, Norway, Panama, Poland, Portugal, Romania, Singapore, Slovenia, South Africa, Spain, Sweden, Switzerland, Trinidad, Tunisia, Turkey, Ukraine, and the United States.
Thus, Bjerregaard and Cochran (2008a) interpreted the concept of Anomie to be representative of the modern, capitalist economy. The authors proposed using three measures to operationalize this construct: the degree of economic freedom or regulation within a nation; the strength of the economy to sustain opportunities for the accrual of wealth; and the nature of economic conditions (i.e., weather opportunities for wealth accrual are available for all members of society) (Bjerregaard and Cochran, 2008a: 187). To measure the degree of economic freedom within a nation, Bjerregaard and Cochran (2008a) used an index of economic freedom developed by the Heritage Foundation. The strength of the economy was measured by the Gross Domestic Product for each country (not per capita), and the ability of the economy to provide sustained opportunities was measured by the Gini coefficient. Bjerregaard and Cochran (2008a) combined these three variables to create one multiplicative term representing levels of Anomie in each country. This can arguably represent the separate element of “culture,” but the authors fail to take this extra step in identifying it as such.

Bjerregaard and Cochran (2008a) measured non-economic institutions using similar measure as previous studies (e.g., Chamlin and Cochran, 1995; Maume and Lee, 2003; Messner and Rosenfeld, 1997c). The polity was operationalized as voter turnout as a percent of registered voters; the educational institution was measured as the percent of educational government expenditures; and the familial institution was measured by divorce rates.

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41 The Heritage Foundation is a conservative “think tank” whose “mission is to formulate and promote conservative public policies based on the principles of free enterprise, limited government, individual freedom, traditional American values, and a strong national defense” (Heritage Foundation, 2012). The index of economic freedom is composed of the following: “each country is rated by examining fifty economic variables classified into ten broad categories including trade policy, fiscal burden of government, government intervention in the economy… High schools on this index are indicative of institutional policies that are most conducive to economic freedom” (Bjerregaard and Cochran, 2008a: 187).
 Though this study was the first to attempt to isolate a measure of Anomie, Bjerregaard and Cochran (2008a) have confused the concept of Anomie and “culture” (see Figure 3, pg. 41) by using the same measure for the economic institution in their measure of Anomie. This separate variable representing economic growth (measured by the annual percentage growth of GDP averaged for three years) is also included in the measurement of “Anomie” (as GDP itself); thus there remain concerns of multicollinearity. Briefly acknowledging Messner and Rosenfeld’s (1994) four elements of culture (individualism, universalism, achievement, and materialism), Bjerregaard and Cochran (2008a) take no further steps in identifying their measure of Anomie as one of culture in their own model.

The authors then conducted a series of multiple OLS regression analyses to address whether an economically dominated institutional balance of power positively impacts homicide rates cross-nationally. Bjerregaard and Cochran (2008a) did find more support in their multiplicative measure of Anomie than when economic variables were considered individually, demonstrating that a multidimensional measurement of “Anomie” (i.e., the economy) was a better predictor of high rates of homicide. Yet, Bjerregaard and Cochran (2008a) failed to remove the single measure of “Anomie” (measured as GDP) from the same model that also included the multiplicative measure of “Anomie” (which included GDP) and the measure of economic growth (also measured as GDP), bringing their findings into question.

Bjerregaard and Cochran (2008a) did concede, “Without question, one of the most vexing problems facing researchers trying to test structural or institutional anomie theories is the operationalization of anomie” (190). However, they believe that they have
provided the field with “a more theoretically sound operationalization of structural/institutional anomie” (Bjerregaard and Cochran, 2008a: 190; see also Cochran and Bjerregaard, 2011; Bjerregaard and Cochran, 2008b). This conclusion may be seen as premature or perhaps confounded by the fact that the measure of the economic institution was not empirically separated from that of Anomie (because the same measure was used), therefore confusing or combining measures of culture with social institutions in their evaluation of Institutional Anomie Theory.

Indeed, Messner (2003) himself agrees that the falsification of Institutional Anomie Theory awaits the “formulation of more explicit definitions of key concepts and the specification of appropriate measurement strategies” (107). From this review of studies employing Institutional Anomie, it is clear that scholars have struggled to advance the understanding of underlying concepts of culture and institutions and their interactions. Yet, much meaningful work has been done on developing the roles of various institutions and their impacts on crime sub-nationally (Chamlin and Cochran, 1995; Maume and Lee, 2003), nationally (Piquero and Piquero, 1998), and internationally (Bjerregaard and Cochran, 2008a; 2008b; Chamlin and Cochran, 2007; Cochran and Bjerregaard, 2011; Cullen, Parboteeah and Hoegl; 2004; Messner and Rosenfeld, 1997c). The range of crimes that Institutional Anomie Theory has been applied to is limited, with the majority of studies focusing on homicide rates (e.g., Bjerregaard and Cochran, 2008a; 2008b; Messner and Rosenfeld, 1997c) or property crimes (e.g., Chamlin and Cochran, 1995). Thus, there are identifiable gaps between Messner and Rosenfeld’s (1994) original conception of the theory and how it has been applied by criminologists. The shortcomings in existing research include failing to provide equal emphasis on the roles
and definitions of culture and social institutions (and their interdependence), the
application of Anomie as part of culture (rather than embedded in social institutions), and
considering variations in levels of Institutional Anomie over time. As research endeavors
continue to develop the fundamental theoretical constructs inherent in Institutional
Anomie and test the theory’s explanatory power in international, comparative settings
that consider other criminal phenomena, it is hoped that many of these concerns will be
addressed. Yet, Institutional Anomie Theory is relatively young and has not received the
same level of attention as more mainstream criminological theories (e.g., Self-Control,
Social Disorganization), leaving much room for future development. Institutional
Anomie Theory currently stands as the most detailed and exhaustive macro-level
criminological theory that unites the multifaceted sociological constructs of Anomie and
social organization with explanations of national and international levels of serious crime
rates.

Summary

Sociologists (among other disciplines) have struggled to conceive and define the
extremely complex and abstract nature of sociocultural systems. (e.g., Durkheim,
1962/1895; Goodenough, 1969; Lenski, Lenski and Nolan, 1991; Lincoln and Guillot,
2006; Marsh, 1967; Merton, 1938; Parsons, 1937; 1951; 1970). Similarly, scholars have
debated over the importance of certain institutions in relation to crime. In the process,
numerous sets of institutions or “subsystems” have been identified (Lenski, Lenski and

These fundamental sociological concepts of culture and social institutions have
also informed the development of another important concept: Anomie. First introduced
by Emile Durkheim (1962/1895), Anomie is a term to describe a state of normlessness in society that often occurs during times of social crises. Durkheim noticed that the culturally prescribed needs and wants of societal members were limitless; thus, social institutions were required to provide structure and conformity to regulate these insatiable needs. When social crises arose, such as periods of great economic prosperity or decline, members of society were disrupted. Therefore, if the larger social institutions failed to provide regulation during these times of crises, chaos and Anomie ensued.

Together, the elements of Anomie, culture, and social institutions have informed the development of additional major theoretical perspectives in criminology, to include Merton’s Anomie Theory (Merton, 1938; 1968) and Institutional Anomie (Messner and Rosenfeld, 1994; 2012). Messner and Rosenfeld (1994; 1997; 2001a; 2006; 2012) utilize Merton’s (1938) framework for social organization, highlighting the equal emphasis placed on both culture and social institutions, yet maintaining the elements be considered separately to avoid “semantic confusion” (Kroeber and Parsons, 1958: 582). However, the authors (drawing largely from Parsons (1951)) significantly expand on Merton’s conception of social institutions. Whereas Merton (1938) only considered class stratification as evidence of social institutions, Messner and Rosenfeld (1994) considered the most important institutions related to crime to be the polity, the economy, the family, and education. Further, Messner and Rosenfeld (1994) take an inherently comparative stance with Institutional Anomie, claiming its purpose is to explain cross-national rates of serious crime. Messner and Rosenfeld (1994) maintain continuity with Merton (1939) by embedding Anomie within culture, but largely fail to offer solid definitions of these concepts. This has, in turn, left scholars unable to operationalize the terms, resulting in
partial tests of Institutional Anomie Theory’s ability to explain high rates of serious crime.

Overall, the concept of social organization has a lengthy and convoluted history in sociological and criminological traditions (Baumer and Gustafson, 2007). The elements composing social organization, namely culture and social institutions, are difficult to describe and interpret across and within nations and at global levels. However, Institutional Anomie Theory, as an extension of Merton’s Anomie Theory, has created a theoretically grounded framework (e.g., Figure 3, pg. 41) from which to begin interpretation of these concepts. Even though Messner and Rosenfeld (1994) have thus far been unable to formulate “more explicit definitions of key concepts” or specify “appropriate measurement strategies” (Messner, 2003: 107), Institutional Anomie Theory is, to-date, the most comprehensive theory in criminology that synthesizes the major sociological concepts of Anomie and social organization into one theory that is designed to explain macro-level crime. The shortcomings of existing research centered on testing and clarifying the central tenets of Institutional Anomie leave ample room for future inquiries, and thus demands further attention from criminology.
CHAPTER 3: ORGANIZED CRIME

Macro-level criminal phenomena have captured the attention of criminologists and comparative scholars alike, as they utilize sociological concepts embedded in social organization to understand aggregate trends in crimes such as homicide (e.g., Maume and Lee, 2003; Messner et al., 2011), property crimes (e.g., Chamlin and Cochran, 1995, Cochran and Bjerregaard, 2011; FBI, 2012a), and street crimes (e.g., Sampson and Groves, 1989). Homicide trends are one of the most common crime-types examined cross-nationally, principally because of the likelihood of an incident being reported to police (due to the seriousness of the offense), and the continuity of cross-national legal definitions of “homicide” (LaFree and Drass, 2002; Messner and Rosenfeld, 1994). However, there is one macro-level crime-type that has struggled to receive the same level of attention from criminologists: organized crime.

Organized crime is a complex, multifaceted concept that scholars have struggled to define (Maltz, 1985), resulting in fragmented research and policies. Yet, within this criminal phenomenon are embedded the same elements of social organization that may prove crucial in understanding its larger, aggregate movements and patterns. Criminologists have largely struggled to routinely apply theoretical guidance from socio-culturally centered theories, yet have employed a range of other theoretical orientations (i.e., economic theories of crime, Rational Choice Theory, Routine Activities Theory, and Situational Crime Prevention) to the empirical context of organized crime.

Further, the impact of transnational crime has been felt on a global scale for decades (Council of Europe, 2005; FBI, 2012b; OCTA, 2011; Passas, 1999; Plywaczewski and Filipkowski, 2004; UNODC, 2010), but nations have not been able to
effectively combat this problem. Policies have been created by national and international governing bodies, and a multitude of reports have been published documenting descriptive accounts of organized crime activity and involvement in various regions of the world. However, these policies have been mostly informed by the economic based research of academics, which, in turn, has resulted in largely ineffective legislation. This chapter details these and related complications, beginning first with theoretical and definitional aspects related to transnational organized crime from the academic perspective and from the legal perspective. Next, the chapter examines geographic areas most affected by organized crime activity from a global perspective before taking a particular focus on organized crime levels in Europe and Central and Eastern Europe. Finally, this discussion concludes by addressing the current issues in criminology that this research has address.

*Theoretical and Definitional Aspects*

Organized crime is “clearly not an obscure or esoteric topic” (Finckenauer, 2005: 63); yet, basic definitional issues render this criminal phenomenon problematic (Hagan, 1983; 2006; Levi, 2002; Small and Taylor, 2006). Currently there does not exist a universal definition of “organized crime” in either an international legal setting or an academic one. This often results in unstructured research with underdeveloped theoretical foundations. For instance, academic research tends to focus on aspects of organized crime groups that may or may not match a country’s legal definition. These incongruities speak to the complexity and diversity of the criminal phenomenon itself, leaving some criminologists to liken “organized crime” to a psychiatrist’s Rorschach inkblot because
“one can read almost anything into it” (Levi, 2002: 887). Other scholars claim that organized crime is best conceptualized as “a phantom that can only be interpreted through the use of metaphors” (Arsovska and Kostakos, 2008: 356; see also Albanese, 2007; Paoli, 2002). In the early 1980s, researchers conducted content analyses on criminological publications about organized crime and found “a large number of works, including textbooks, fail[ed] to offer a clear definition” (Hagan, 1983: 52). More recent research has shown the problem has not improved much (Albanese, 2007; Hagan, 2006; Smart and Taylor, 2006).

The differences in definitional approaches have led to a fractured theoretical basis for understanding “organized crime.” In other words, how scholars define organized crime often relates directly to the theories they employ to explore the criminal phenomenon or some aspect of it. This has led researchers to inconsistently seek guidance from multiple criminological perspectives/paradigms. Additionally, the vast majority of government reports, national and international legislation, and other official documents are descriptive in nature and do not take advantage of theoretically informed research provided by criminologists. This has resulted in largely enforcement-based directives that are void of theoretical guidance and also have problems developing consistent and conceptually whole definitions of “organized crime.”

*The Academic Perspective*

There continues to be an ongoing struggle to reach a consensus on what constitutes “organized crime” from the academic perspective (Hagan, 1983), which has led researchers to attempt to explain the abstract criminal phenomenon through multiple theoretical lenses. In the course of academic research, organized crime “inconsistently
incorporates the following two notions: a) the provision of illegal goods and services; b) a criminal organization, understood as a large-scale entity primarily engaged in illegal activities” (Paoli and Fijnaut, 2006: 308; Paoli, 2002; 2008).

The first perspective identifies organized crime groups through their participation in providing, manufacturing, and transporting illegal goods and services (Hobbs, 1994). This has been a popular approach, with researchers surmising: “What is organized crime without organizing some kind of criminal trade; without selling and buying of forbidden goods and services in an organizational context? The answer is simply nothing” (van Duyne, 1997: 203). Therefore, this point of view has led a large group of criminologists and other social scientists to take an economic and Rational Choice approach to both define and explain the development and trends in organized crime activity at local, regional, national, and international levels. These theoretical paradigms have “dominated the field of [organized crime] study from the first building blocks of academic literature” (Arsovska and Kostakos, 2008: 356). Additionally, smaller group of criminologists have examined both perspectives on organized crime (Paoli and Fijnaut, 2006) by employing the same theoretical paradigms.

Political scientists, economists, and criminologists alike have long taken an economic theoretical approach to crime (Allum and Sands, 2004; Arsovska and Kostakos, 2008; Becker, 1968; Gambetta and Reuter, 1995; Naylor, 2002; Reuter, 1983; Reuter and Haaga, 1989; Reuter and Rubinstein, 1978; Schelling, 1967; 1984; Sullivan, 1973), believing that organized crime trends, development, and activity can be explained by better understanding how illegal criminal markets are organized and operate.
Economic models of criminal behavior have strong roots in utilitarian philosophy, using this philosophy to predict human behavior “by asserting that actors’ choices are motivated by an expected utility” (Arsovka and Kostakos, 2008: 356; Becker, 1968), which translate into profits and economic gains. Indeed, “organized crime is often conceptualized as a business enterprise formed by actors motivated by profits” (Arsovka and Kostakos, 2008: 352). Thus, economic theory:

… could help in identifying the incentives and limitations that apply to organized crime, in evaluating the different kinds of costs and losses due to crime, in restructuring laws and programs to minimize the costs, wastes, and injustices that crime entails, and in restructuring the business environment in which organized crime occurs with a view to reducing crime, or at least, its worst consequences. (Schelling, 1967: 114)

This view separates the legitimate economy from the illegitimate, defining organized crime as operating in the “criminal underworld.” Thus, “other criminal businesses, such as robbery, operate in the ‘organized economy’ but they do not meet the definition of organized crime” (Allum and Sands, 2004: 135; see also Arsovka and Kostakos, 2008).

Economists have long utilized this theoretical framework to examine the relationship between organized crime and the structure and functioning of the drug market (Reuter, 1979; 1989; Reuter and Haaga, 1989; Reuter and Kleiman, 1986). For

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42 “Utilitarianism is the ethical doctrine that the moral worth of an action is solely determined by its contribution to overall utility. It is thus a form of consequentialism, meaning that the moral worth of an action is determined by its outcome” (Arsovka and Kostakos, 2008: 356).

43 For Schelling (1984), organized crime “has the characteristic [of] exclusivity, or, to use a more focused term, monopoly. From all accounts, organized crime does not just extend itself broadly, but brooks no competition. It seeks not only influence, but exclusive influence” (182). Other social scientists have disagreed with Schelling’s (1967; 1984) view that organized crime establishes a monopoly in the underground economy (Adler, 1985; Reuter, 1983) or has to be highly organized (Haller, 1997), but are in general agreement that the answer to curbing organized crime is through studies of economic motivations. That is, if organized crime operates within the illicit market for goods and services, these groups are therefore subject to economic and market theories that include matters of supply, demand, mobility, market saturation, and price fluctuations (Arsovka and Kostakos, 2008; Fiorentini and Peltzman, 1995).
example, Reuter and Haaga (1989) considered the economic inner workings of high-level drug markets in regions of the United States, and exploited the organization of the drug markets and the nature of organized persons involved. The study found that the prices of drugs were not moving in the expected direction; economic theory suggests that as demand rises, prices should also increase if there is not an increase in supply. However, Reuter and Haaga (1989) found that cocaine prices were falling significantly in some regional markets in the 1980s despite the increase in popularity of the drug. In terms of the supply-side of the drug market controlled by organized crime groups, which is targeted by law enforcement efforts, economic theory suggests wholesale prices “will increase as a result of interdiction and targeted enforcement” (Reuter and Haaga, 1989: 3). Yet, evidence again pointed to the contrary; the price of retail cocaine continued to decline despite a large increase in drug enforcement efforts. This led the authors to shift their attention from a simple, local or regional market analysis to the national level, while also investigating the organizations themselves to uncover their structure, size, and nature of the persons involved (Reuter and Haaga, 1989). The study found that the barriers to entry into higher-level drug markets were minimal, successful operation did not require the creation of a large or enduring organization, and the wholesale market appeared national rather than regional. In other words, wholesale markets were not bound by their particular local or regional locations, and instead were driven by an entrepreneurial ambition at the national level.\footnote{However, this set of findings is debated in the literature. For example, other research has suggested that categories of organized crime activity are best studied at the sub-national level, because using global assessments of organized crime activity (e.g., political bribes, human trafficking) are meaningful for drawing attention to the problem, but are not useful for actually studying or combating the problem (Albanese, 2008).}
The economic theoretical perspective has proven helpful in providing a framework for understanding these inner workings of illicit market operations, hierarchical structures, and rational (cost-benefit) motivations of organized crime (Becker, 1968; Reuter and Haaga, 1989; Schelling, 1967; 1984), but the overall perspective has faced a barrage of criticism from criminology (Clarke and Felson, 1993). Clarke (1997: 9) points out four main criticisms of economic theories of crime:

(i) economic models mostly ignore rewards of crime that cannot easily be translated into cash equivalents; (ii) economic theories have not been sensitive to the great variety of behaviors falling under the general label of crime, with their variety of costs and benefits, and instead have tended to lump them together as a single variable in their equations; (iii) the formal mathematical modeling of criminal choices in economic theories often demands data that are unavailable or can only be pressed into service by making unrealistic assumptions about what they represent; and, finally, (iv) the image in economic theory of the self-maximizing decision maker, carefully calculating his or her advantage, does not fit the opportunistic and reckless nature of much crime.

These criticisms have led criminologists to, in some cases, modify this perspective in varying degrees, not fully rejecting the underlying assumptions of economic theory. Indeed, rational, economic notions have become the fundamental basis for an entire school of thought in criminology (i.e., the Rational Choice perspective). In other cases, criminologists have fully rejected the rational philosophy of economic theories of crime, turning instead to different theoretical orientations.

Criminologists that have accepted some underlying economic philosophies have since expanded on Schelling’s (1967; 1984) definition of organized crime to include those crime groups that operate in the both licit and illicit markets (Braithwaite, 1989; Chambliss, 1988; Paternoster and Simpson, 1996; Reiss and Biderman, 1980; Shover and Hochstetler, 2002), and have applied economically oriented criminological theories to this expanded conceptualization of organized crime. Theories including Rational Choice
Theory, Routine Activities Theory, and Situational Crime Prevention, adopt similar assumptions to the economic approach and have been utilized by criminologists as theoretical frameworks from which to study the decision-making process of organized crime syndicates.

Rational Choice Theory “is the mainstay of economics and has been applied widely in sociology” (Clarke and Cornish, 2001: 23), and assumes that people or groups will rationally choose to engage in crime because “of the benefits it brings to the offender” (Clarke and Cornish, 2001: 23). In other words, the Rational Choice paradigm considers criminals and people in general to be hedonistic in their decision-making. Similar to economic theory, Rational Choice Theory assumes that “criminal activities are rational alternatives to legitimate activities, undertaken by actors motivated by expected economic gains” (Arsovska and Kostakos, 2008: 357). This theory believes that most criminal acts involve some element of planning (if even for a moment) and foresight, seeking to explain not only crime, but also criminality (Clarke and Cornish, 1985; Cornish and Clarke, 1986; 2003; Pratt, 2008). The immediate influences of situational variables trigger the actual decision of whether or not to commit a particular crime, which is termed the “subjective expected utility” (Paternoster and Simpson, 1996: 553). If the influence of situational variables poses too great a consequence for the would-be criminal without reaping enough benefit from commission of the act, Rational Choice Theory predicts the individual will be deterred from engaging in the criminal act.

Some criminologists have employed this Rational Choice framework to better understand the decision to engage in illicit arms trafficking by organized crime groups in the Balkans (Arsovska and Kostakos, 2008). Noting the fight against illegal arms
trafficking remains a low priority at a European level, Arsovska and Kostakos (2008) investigate this criminal phenomenon through the lenses of both economic theory and Rational Choice Theory. Both theories are employed for guidance in whether the “rule of supply and demand…can be applied in the case of arms trafficking” and whether the Rational Choice approach is “the appropriate method to combat this phenomenon” (354). Following Rational Choice “protocol” (Mouzelis, 1995), the authors began by developing a basic framework that accounts for legal market forces in the Balkans, the assumed specific needs of organized crime (e.g., physical and material resources), and the potential situational factors that may influence the organization’s decision-making (Arsovska and Kostakos, 2008; Clarke and Cornish, 2001). Assuming the goals of the organizations are to maximize profit and economic gain, Arsovska and Kostakos (2008) made basic predictions regarding the dynamics of the illicit arms trafficking market in the Balkans. The authors found that economic conditions were favorable for organized crime to become increasingly involved in this illicit market, yet they also uncovered evidence that is contrary to market rationality. Arsovska and Kostakos (2008) found that the decision to engage in illegal arms trafficking was not always solely profit-driven, and was at times more strongly influenced by the “political, historical, and socio-cultural context” of the various groups (370). This stands in contrast to the traditional assumptions of Rational Choice Theory, which traditionally did not consider bounded or limited aspects of rationality (Arsovska and Kostakos, 2008). The authors concluded that it is important

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45 Bounded rationality is situationally based, and takes into account variations in perceptions about the probable consequences of a particular behavior. “This is to say that criminal decision making is inevitably less than perfect, because it reflects imperfect conditions under which it naturally occurs… Offenders are rarely in possession of all the necessary facts about costs and benefits (the risks, efforts, and rewards)” of crime (Clarke and Cornish, 2001: 25). Thus, offenders are said to be “bounded” or limited in their ability to make a “rational” decision.
to consider “rationality” in terms of the cultural context and the existing social structures when “trying to understand how [criminal organizations] make decisions and formulate goals” (Arsovska and Kostakos, 2008: 376).

Two other criminological perspectives, Routine Activities Theory and Situational Crime Prevention, follow similar assumptions as Rational Choice Theory. These perspectives also assume for rational actors who will make calculated cost-benefit decisions to engage in crime based on situational factors (Clarke, 1997; Cohen and Felson, 1979; 1993; Felson, 2001). However, Routine Activities Theory shifts the focus from the offender (i.e., the individual making the rational decision to engage in crime) to the target,\(^\text{46}\) and from illegal intentions to the ability to carry out the criminal act (Cohen and Felson, 1979; Felson, 2001). Therefore, Routine Activities Theory examines “changes in larger society that might provide crime opportunity” (Felson, 2001: 43).

Similarly, the Situational Crime Prevention approach borrows from both Routine Activities and Rational Choice theories, focusing largely on methods of reducing criminal opportunities (Clarke, 1997; Clarke and Felson, 1993). Situational Crime Prevention and Routine Activities Theory are often employed together by criminologists, as these perspectives demonstrate how to “identify circumstances which facilitate crime as well as viable opportunity-reducing measures” (Kleemans, et al., 2012: 87). By altering the physical environment, Situational Crime Prevention “seeks to forestall the occurrence of crime, rather than to detect and sanction offenders” (Clarke, 1997: 2).

In past decades, criminologists have begun applying the Situational Crime Prevention and Routine Activities frameworks to the study of organized crime, with the

\(^{46}\) Felson (2001) notes “Using the impersonal word target rather than victim emphasizes the physical nature of each criminal act” (43).
specific purpose of preventing crimes committed by organized syndicates (Bullock et al., 2010; Kleemans, et al., 2010; 2012; Levi and Maguire, 2004; Von Lampe, 2011). These situational analyses are crime specific, meaning they are “not focused upon organized crime in general, yet [they] concentrate on, for example, cocaine smuggling or preferably even more specific activities or events” (Kleemans, et al., 2012: 88). For instance, some criminologists have focused on removing excuses for organized crime involvement in money laundering and other transnational crimes (Bullock, et al., 2010; Soudijn, 2012). More specifically, Soudijn (2012) targeted financial specialists that have “expertise and unique capabilities” (146) within organized crime groups that facilitate the laundering of illegally obtained money. Soudijn (2012) outlined cases of rule-setting in relation to money laundering by organized crime, to include a duty to report wire transfers exceeding a set amount, legislative bans, and targeted law enforcement operations against instances of money laundering. These create “guardians” under Routine Activities Theory, but Soudijn (2012) noted situational rule-setting needed to be supplemented with other situational prevention techniques. These other techniques were identified as alerting the conscience (ensuring that financial facilitators in organized crime groups change their mind before laundering illegal proceeds by increasing communication between bank employees and management), controlling disinhibitors (controlling all specific aspects of money laundering, such as ceasing to print 500 Euro bills), and assisting compliance (making it easier for financial facilitators of organized crime groups to leave the criminal underworld, such as allowing them to become informants) (Soudijn, 2012).

Also from the Situational Crime Prevention perspective, Rengelink (2012) analyzed a unique type of organized crime in the form of Somali pirating, proposing
preventative and alternative measures to make it “unattractive for [pirates] to attack passing ships” (180). Citing the ineffectiveness of the Somali government due to internal conflict, Rengelink (2012) details other forms of guardianship and Situational Crime Prevention techniques necessary to prevent future attacks.47

Additionally, Kleemans et al. (2010) explored opportunities for situational crime prevention in the Netherlands of four specific transnational organized crime activities: ecstasy trafficking, cocaine trafficking, money laundering, and human smuggling. Each crime-type exhibited aspects of mobility and transportation, either coming into or exiting the country. These authors believed through employing situational crime prevention techniques to tackle the aspects of mobility and transit, they could prevent organized crime from partaking in these illegal activities (Kleemans, et al., 2010).

Situational Crime Prevention and Routine Activities Theory have proven popular theoretical frameworks for criminologists studying organized crime. However, these measures are limited in scope, applying only to organized crime activity under specific circumstances. Moreover, these rationally based perspectives do not consider the “other so-called ‘irrational’ and holistic sociocultural explanations” of crime (Arsovska and Kostakos, 2008: 356), thus leaving some criminologists to seek guidance from other schools of criminological thought.

Criminologists wary of the Rational Choice paradigm noticed that “organized crime” was not always as rationally organized as commonly assumed, and groups were

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47 These measures include creating fortified ‘safe rooms’ in ships designed for the captain and crew to retreat to during an attack. The crew would be able to cut the engines and send alarm signals to nearby vessels, thus reducing the “attractiveness” or “suitability” of the target for piracy (Kleemans, et al., 2012; Rengelink, 2012).
often more opportunistic than business-like (Barlow, 1981; Passas, 2003). Research was uncovering varying degrees of organization between and within organized crime groups:

While some crime families or syndicates exhibit many of the elements found in highly rationalized bureaucratic structures… others do not… To exclude these loosely organized groups from discussions of organized crime is to ignore an important facet of organized crime. (Barlow, 1981: 253)

Some criminologists also criticized the Rational Choice perspective for the “disturbing bias” of focusing solely on the behavior of individuals or groups of individuals (Gross, 1978: 55; Braithwaite, 1989), thus excluding any potential macro-level influences on organized criminal groups.

As such, a much smaller group of criminologists have employed other theoretical perspectives to investigate the multiple facets of organized crime. Conceptualizing and defining organized crime in more macro-level terms has led researchers to notice, “the individuals, structures, and events associated with organized crime do not exist in a social vacuum” (von Lampe, 2005: 85). This observation has led a smaller group of criminologists to attempt to account for socio-cultural factors associated with organized crime. One such faction has investigated organized crime through the lens of Globalization Theory.

The study of globalization focuses on “not only the intensity of transnational connections, but also the paradoxes, unevenness, concrete modalities, and disconnections” (Aas, 2007: 13) of global transformations and structural inequalities (Passas, 2000). Global interconnections are viewed as cultural processes (Robertson, 48

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48 *Globalization* is defined as “the growing interconnectedness of states and societies and the progressive enmeshment of human communities with each other” (Held, 2000: 42).
1995) and institutional processes that examine economic and political “glocal”49 expansions and contractions (Aas, 2007; Appadurai, 1996; Castells, 2004; Held and McGrew, 2003; Naim, 2006; Passas, 2000). Aas (2007) examined macro-level transnational organized crime that takes multiple forms, to include terrorism and drug trafficking organizations, in the context of “the dark side of globalization” (102). That is, as global connectivity increases, “the emerging world of global networks and flows are creating new challenges for the national, local and international authorities” (Aas, 2007: 102),50 because transnational organized crime groups have taken increasing advantage of these new connections and rapidly expanding illicit markets. Scholars of Globalization Theory have also noted that national and local organized crime groups “have gone through a process of internationalization” that resemble business networks (Aas, 2007: 123; Castells, 2000). These groups are now able to connect with criminal groups in low-risk locations “where they have relative control of the institutional environment” (Castells, 2000: 171) and establish international networks for the production, management, financing and distribution of their illicit products and services. Moreover, scholars have argued that globalization has caused previously formal, rigid hierarchies of criminal organizations to transform into many “smaller, more flexible groups or ‘networks’” (UNODC, 2010: 28). Overall, Globalization Theory has aided criminologists in describing the (global) conditions that facilitate the development and movement of organized crime involvement in cross-border illicit activities.

49 Glocalization is a term used to describe the intertwining of the global and the local that “cannot be treated as two distinct entities: they are a new synthesis, involving both transnational and local elements” (Aas, 2007: 6; Robertson, 1995).
50 Passas (2000) has termed this “dysnomie.”
Aside from this theoretical application, few other criminological theories that are not economically based have been applied to an empirical study of organized crime. This conversation has largely been restricted to undergraduate textbooks that briefly summarize a handful of criminological theories the books suggest may be helpful to understanding this criminal phenomenon. For instance, Mallory (2012) briefly outlines “Durkheim and Merton’s Anomie Theory and Anomie” in a few short paragraphs, likening organized crime group members to Merton’s (1938) conception of “innovators.” Organized crime groups are seen as seizing every legitimate and illegitimate opportunity to gain material wealth with little regard for societal norms. Within the same discussion, concepts of subcultures and culture conflict\(^5\) are introduced to suggest that the phenomenon of organized crime might be a result of ethnic clashes in relation to blocked legitimate opportunities to achieve goals, thus creating pockets of organized “subcultural” groups (Mallory, 2012). Often, similar discussions draw from Merton’s emphasis on universal goals of *material* wealth and *economic* success, thus leading most discussions back towards economic theories of crime (Abadinsky, 2010). Following an extensive search of existing literature, no academic studies were uncovered that applied Merton’s Anomie Theory to the problem of organized crime.

Moreover, these brief theoretical summaries fail to elaborate on newer extensions of Merton’s Anomie Theory, such as Institutional Anomie Theory (Messner and Rosenfeld, 1994) and Global Anomie Theory (Passas, 2000), which may have more to offer the study of organized crime than Merton’s original conception. For instance, Institutional Anomie frames elements of social organization, in line with Merton’s

\[^5\] *Culture conflict* describes situations in which “crime is the result of different cultures having different norms about what to believe or value” (Mallory, 2012: 38).
Anomie Theory, into a macro-level framework to explain shifts in serious forms of crime (Messner and Rosenfeld, 1994). In terms of organized crime, this theory might shed light on the various institutional and Anomic pressures guiding organized crime development and involvement at the national and international levels.

The handful of studies that have employed other criminological theories as frameworks have been successful in their endeavors. For example, Kleemans and de Poot (2008) applied developmental and Life-Course criminological frameworks to better understand the development of criminal careers of organized crime members prosecuted in the Netherlands. Braithwaite (1989) applied an integrated theoretical model to the study of organizational crime. The model

... consider[ed] the insights of strain theories on the distribution of legitimate and illegitimate opportunities, of labeling theory on the way stigmatization can foster criminal subcultural formation, of subcultural theory as applied to organized business subcultures of resistance to regulation, and of control theory. (Braithwaite, 1989: 333).

Finally, Shover and Hochstetler (2002) drew from Neutralization theory (Sykes and Matza, 1957) and organizational cultural theory to investigate techniques of neutralization within organizational crime.

This discussion illustrates that the vast majority of academic research on organized crime has been limited in theoretical applications. Criminologists have largely conducted descriptive studies of organized crime, either conducting case studies of particular ethnic or “Mafia” group(s) (Albini, 1971; Arlacchi, 1988; Catanzarito, 1988; Dorn, et al., 2005; La Spina, 2008; Paoli, 2003; 2008), describing the characteristics of and differences in hierarchical structures and levels of organization (Becucci, 2008;

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52 Organizational crime is defined as “crime perpetrated by organizations or by individuals acting on behalf of organizations” (Braithwaite, 334).
Hagan, 1983; Smith, 1975; 1978), document law enforcement and legal approaches to combating organized crime (Plywaczewski and Filipkowski, 2012), or trying to define what really constitutes “organized crime” (Fijnaut and Paoli, 2004; Finckenauer, 2005, Hagan, 1983; 2006; Passas, 2003; Small and Taylor, 2006; von Lampe, 2012). Without question these publications are both necessary and useful for understanding specific details of particular organized crime groups and for building a general concept of “organized crime.” Yet, the gap in literature utilizing other theoretical orientations from criminology is quite substantial, thus creating fertile ground for criminologists to seek guidance from other theoretical perspectives that can inform researchers on socio-cultural elements of societies and social organization that may impact organized crime (Plywaczewski and Filipkowski, 2012). Doing so will advance a more dynamic and conceptually whole theoretical understanding of the phenomenon of organized crime.

**The Legal Perspective**

Despite a plethora of definitional issues, national and international councils across the globe have recognized “organized crime” in its many forms as one of the most pressing threats to global communities (Council of Europe, 2005; FBI, 2012b). The Organized Crime Threat Assessment (2011) noted that organized crime “is changing and becoming increasingly diverse in its methods, group structure, and impact on society,” warning that “a new criminal landscape is emerging” (8). However, governments have struggled between viewing and thus defining organized crime as “multi-crime groups of professional criminals, [or as illegal activities] on illicit markets” (UNODC, 2010). The latter are classified as *mala prohibita*, with governments generally focusing enforcement

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53 Moreover, in a recently published edited volume on international organized crime (i.e., Siegel and Nelen, 2008), all fifteen chapters were void of criminological theory.
efforts on curbing drug trafficking, human trafficking, fraud, cigarette smuggling, counterfeiting, weapons trafficking, organized property crime, cyber crime, money laundering, and environmental crime (Council of Europe, 2005; OCTA, 2011). The former has resulted in the formation of common stereotypes in North America and Europe, largely because the concept is often seen as synonymous with the also ambiguous “Mafia” (Hagan, 2006; FBI, 2012b; Paoli and Fijnaut, 2006; Peak, 2012). From this perspective, organized crime is generally pictured and often romanticized by the media as the Russian mafia (Finckenauer and Waring, 1998; Varese, 1994), the Italian mob, or even Columbian and Mexican drug cartels (Finckenauer, 2005). For instance, the legal definition of “organized crime” in America first developed in the 1920s with the rise of criminal groups in Chicago (Landesco, 1968/1929), and throughout the mid-1900s U.S. legislative bodies defined organized crime activity with an Italian Mafia-centered view (Bloq, 2008; Hagan, 2006; Paoli and Fijnaut, 2006). That is, “organized crime” meant a “centralized criminal organization… allegedly derived from an analogous parallel Sicilian organization and was headed by and… consisted of migrants of Italian (and specifically Sicilian) origin” (Paoli and Fijnaut, 2006: 309). Since the 1970s-1980s, however, the political atmosphere shifted towards defining organized crime in terms of illegal activities.

European government officials and law enforcement agencies have closely monitored both aspects of organized crime within its borders, though the United Nations Office of Drugs and Crime (UNODC) (2010) suggested that “most of the attention has been given to… addressing transnational organized crime groups” (v; for instance,
Council of Europe, 2000). Instead, the UNODC (2010: v) proposed shifting the attention to illicit activities:

Most organized crime problems today seem to be less a matter of a group of individuals who are involved in a range of illicit activities, and more a matter of a group of illicit activities in which some individuals and groups are presently involved: strategies aimed at the groups will not stop the illicit activities if the dynamics of the market remain unaddressed.

These varying legal definitions and foci differentially impact law enforcement responses to combating organized crime. That is, should law enforcement focus on reducing the supply of illegal goods and services provided by organized crime groups, or should their efforts focus more on arresting and removing specific organized crime groups? The European Union Organized Crime Threat Assessment (2011), which “is the basis for the identification of EU crime priorities” (7), has suggested a more holistic approach. The report details three perspectives on organized crime: criminal commodities, criminal groups, and their geographic areas of operation (OCTA, 2011: 7). This report has identified five “criminal hubs,” or hotspots, in the European Union that vary in intensity depending on the criminal activity in question. This intelligence is designed to aid countries in or close to the criminal hubs in targeting the illegal activities and the groups involved in each geographical location.

How each governing body approaches and defines organized crime within their borders has dictated subsequent legislature formation and law enforcement responses (EICPC, 1998). The European Institute for Crime Prevention and Control, affiliated with the U.N. (EICPC, 1998), noted that for the large part, the countries that have refined their legislation specific to organized crime were those most seriously threatened by its presence. One such example is the United States. In the United States under the Mafia-
centered definitions of the mid-1900s, popular law enforcement initiatives included the expanded use of wiretaps and confidential informants to target specific organized crime groups (Peak, 2012). As the country shifted away from viewing organized crime as Mafia groups, new legislation designed to curb organized crime activities emerged. One such set of legislation, the Organized Crime Control Act of 1970, became known as “the single most effective piece of legislation ever passed” (Hagan, 1983: 55), mostly because of a provision known as RICO, or Racketeer Influenced and Corrupt Organizations (18 USCA § 1961). This complex provision prohibits the proceeds from “patterns of racketeering” to be used to either obtain or maintain an illegitimate business through illegal activity, or from using these illegal proceeds to maintain a legitimate business or enterprise (Hagan, 1983; Jacobs, 2008). The RICO provision also made it a “separate and serious federal crime to conspire to” maintain or acquire an illegitimate or legitimate business or enterprise (Jacobs, 2008: 187). Those prosecuted under RICO face “very heavy prison terms” if found criminally liable, and face the possibility of civil lawsuits by RICO victims for compensation (Jacobs, 2008: 186). Further, RICO broadened the legal definition of “organized crime” to include political corruption and white-collar crime, which in turn expanded the scope of law enforcement involvement. RICO has proven so successful because “it was designed to take racketeers out of business” (Mitchell, 1981:

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54 A confidential informant is an individual who provides the police with intelligence information and/or evidence about a particular crime in exchange for some form of compensation (e.g., money, prosecutorial immunity). In this case, informants were typically relatives of older Mafia group members who would provide information to the police in exchange for prosecutorial immunity and witness protection (Peak, 2012).
55 “Racketeering” constitutes over twenty-five crimes defined in 18 USCA § 1961, Title 18 of US Code, and Title 29 of US Code, including bribery, extortion, fraud offenses, gambling, money laundering, murder for hire, and sexual exploitation of children. To be charged under RICO, an offender must commit any two of the listed racketeering crimes in a ten-year period, thus establishing a “pattern of racketeering.”
meaning, it was designed to remove all forms of organized crime from both legitimate and illegitimate markets.

A second notable example is Italian legislation. In 1982, Italy enacted a series of laws designed to combat organized crime that mirrored aspects of the U.S. Organized Crime Control Act of 1970. For instance, the 1982 Act in Italy created the new offense of “participation in organized criminal associations,” in which it became a crime to conspire with known organized crime syndicates (EICPC, 1998: 132). These “criminal associations” were defined as embodying three types: common associated crime, drug trafficking associated crime, and mafia-type associated crime. Under Italian criminal code Article 416bis:

An association is mafia-type when its members systematically exploit a situation of environmental intimidation and the widespread condition of duress deriving therefrom, not only in order to commit crimes but also to acquire control of economic activities, or at any rate to gain unlawful advantages. (EICPC, 1998: 132-133)

Both the controversy and the effectiveness of the 1982 Act has come from the stipulation that “each specific crime committed within the association is to be punished separately” (EICPC, 1998: 133). For instance, a mafia-type association commonly includes drug trafficking associations. In this case, both association incriminations will be considered separate criminal charges each carrying harsh imprisonment requirements. The controversy is embedded in the assumption of the “membership of an organized crime association” provision, in which it is assumed that “the members of criminal organizations commit crimes,” thus allowing courts to “convict a person upon sole proof of his/her membership of a certain type of organization” (EICPC, 1998: 133). However,

56 Penalties for each association are as follows: “a minimum of four years’ imprisonment, which in particularly aggravating circumstances is increased to fifteen years for ordinary members and twenty-two years for bosses and managers” (EICPC, 1998).
the success of this 1982 Act in Italy has come from the countless trials, convictions, and sentencing of top-ranked mafia leaders.

Countries that have not experienced high levels of organized crime involvement have been hesitant to follow the harshness and specificity of U.S. and Italian legislation, “convinced that the category of ‘conspiracy crime’ suffices to deal with new types of organized crime” (EICPC, 1998: 136). Thus, these countries have developed legislation based on their perception of organized crime. For example, Germany provides a legal standard for determining when a criminal group can be identified as “organized crime,” which focuses largely on business crime (BKA, 2010). Yet, German law does not consider “organized crime” to be a punishable offense (BKA, 2012). Canadian Criminal Code C-24 has criminalized “participation in activities of a criminal organization,” which had to be composed of three or more persons for the purpose of engaging in multiple illegal activities designed to gain material or financial wealth (Skinnider, 2006). Article 210 of the Argentinean criminal code stipulates that organized crime groups must consist of three or more people forming an association created for the purpose of committing crimes (INTERPOL, 2012), but the law does not specify which crimes are necessary. Similarly, under Hungarian Criminal Code Section 98, any person “who has knowingly committed a criminal act in affiliation with organized crime… shall be subject to double the punishment specified for the crime in question” (BTK, 2005: 24), but again the law does not specify any particular crime. These examples illustrate the broad nature of what “organized crime” can legally constitute, the lack of specificity in the wording of legal statutes, and the variation in viewing “organized crime” as a punishable offense.
To overcome these fragmented definitional and legal gaps between countries, international governing bodies and regional organizations, including the Organization of American States (OAS), the European Union, INTERPOL, the Council of Europe, and UNODC, have joined forces in addressing the transnational nature of organized crime. These international organizations have devised numerous treaties outlining policies and protocols, setting “basic minimum standards for countries which are able to contribute to the global effort to control organized crime” (Skinnider, 2006: 5). The “main international instrument in the fight against transnational organized crime” is the United Nations Convention Against Transnational Organised Crime, which was adopted by the General Assembly resolution 55/25 in November 2000 (UNODC, 2012b).

States that ratify this instrument commit themselves to taking a series of measures against transnational organized crime, including the creation of domestic criminal offences (participation in an organized criminal group, money laundering, corruption and obstruction of justice); the adoption of new and sweeping frameworks for extradition, mutual legal assistance and law enforcement cooperation; and the promotion of training and technical assistance for building or upgrading the necessary capacity of national authorities. (UNODC, 2012b)

This Convention provides detailed definitions of ambiguous terms related to organized crime, such as “organized criminal group,” “serious crime,” “proceeds of crime,” and “participation in an organized criminal group” (UN Convention, 2004). In ratifying this Convention, each U.N. Member State agrees to adopt compatible legislature as needed to establish criminal offences outlined and defined in the Convention. These include criminalizing the laundering of proceeds gained from organized criminal activities and criminalizing corruption (UN Convention, 2004). Importantly, the Convention Against Transnational Organised Crime emphasizes international cooperation between Member States. In other words, once ratified, the Member States agree to share any intelligence
gathered in a timely manner, share jurisdiction in the event of seized property or currency, provide mutual legal assistance, and provide extradition of any organized crime group members upon request (UN Convention, 2004). Each element of this Convention is designed to create a unified starting point for all of the ratified Member States in terms of definitions, legislations, and cooperation in the battle against transnational organized crime.

In 2006, the Organization of American States (OAS)\(^{57}\) adopted the Hemispheric Plan of Action against Transnational Organized Crime, which directly promoted the U.N. Convention Against Transnational Organized Crime. The four objectives of the Plan of Action are to:

1) Prevent and combat transnational organized crime in full observance of human rights… in accordance with the principles of sovereign equality and territorial integrity of states and of nonintervention in the internal affairs of other states;
2) Enhance cooperation in the areas of prevention, investigation, and prosecution of, and judicial decisions related to, transnational organized crime;
3) Encourage coordination among OAS bodies…and cooperation among those bodies with the U.N. Office on Drugs and Crime (UNODC); and
4) Strengthen national, sub-regional, and regional capacities and capabilities to deal with transitional organized crime. (OAS, 2006)

The OAS Plan of Action lays out similar stipulations to the U.N. Convention in terms of jurisdiction, information sharing, funding, and adopting effective domestic criminal sanctions (OAS, 2006). The purpose in creating this separate Plan of Action was to reach out to countries that are not members of the U.N. and encourage them to join the international collaboration against transnational organized crime by ensuring their

\(^{57}\) There are 35 Member States of the OAS: Antigua and Barbuda, Argentina, Barbados, Belize, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Dominica (Commonwealth of), Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, The Bahamas (Commonwealth of), Trinidad and Tobago, United States of America, Uruguay, Venezuela (Bolivarian Republic of)
policies and training are modernized, but also to ensure countries requiring help
combating corruption in relation to organized crime are able to receive the necessary aid.

Other collaborative efforts have been made by regional organizations such as the
Council of the European Union, and have devised similar initiatives to address more
specific aspects surrounding transnational organized crime. These include the Internal
Security Strategy (ISS) of the European Union and the Stockholm Programme, “a plan of
the EU’s activities for the years 2010-2014, intended to promote the growth of the area of
freedom, security, and justice” (Plywaczewski and Filipkowski, 2012: 3). These
strategies were part of a larger collaborative initiative by the Council of Europe to devise
a multidisciplinary approach to combating organized crime that emphasized identifying
members of organized crime enterprises through Passenger Name Records systems,
confiscate all criminal assets, and establish a cybercrime center by 2013, operated by the
European Union (European Commission, 2010; Plywaczewski and Filipkowski, 2012).

These international proposals of cooperation, along with individual national
initiatives, have established the shared consternation of the threat of transnational
organized crime among the global community. Indeed, these treaties, conventions, and
national policies largely reflect a focus (of varying degree) on the members of organized
crime groups, as well as the illicit activities of the groups. However, considering
membership in an organized crime group alone does not constitute a crime in a number of
countries (e.g., Germany), recent criminal statutes largely emphasize the illicit activities

Among countless others, including: UN Single Convention on Narcotic Drugs (1961), amended by its
1972 protocol; UN Convention on Psychotropic Substances (1971); United Nations Convention against
Illicit Traffic in Narcotic Drugs and Psychotropic Substances (1988); Inter-American Convention against
the Illicit Manufacturing of and Trafficking in Firearms, Ammunition, Explosives, and Other Related
Materials (CIFTA); United Nations Convention against Corruption; Inter-American Convention against
Corruption; and Inter-American Convention on Mutual Legal Assistance in Criminal Matters
of these groups (OCTA, 2011; UNODC, 2010). This has led policymakers to view organized crime from a more economic perspective, investigating the local, national, and international flows of illicit markets. For instance, the Council of Europe’s (2005) most recent Situation Report was a special edition focusing on the convergence of “economic crime” with organized crime activities. The Organized Crime Threat Assessment (2011) concluded that the impact of transnational organized crime has led to a “global economic crisis,” the effects of which “are likely to be felt in the EU for some time to come” (48). This sentiment is shared across the global community as governments have come to view the operation of organized crime as businesses, thus resulting in the creation of specialized task forces in various countries like the Integrated Market Enforcement Teams in Canada (Skinnider, 2006: 36; CISC, 2012). These sentiments have come to shape the way organized crime is legally defined, conceptualized, and enforced.

Nonetheless, the general belief among the international community is that the current state of existing policies are predominantly ineffective, with the few exceptions of harsher policies targeting organized group members in some countries (i.e., the U.S. and Italy) (EICPC, 1998; Hagan, 1983; Jacobs, 2008). What is needed is a marrying of the academic perspective with the legal perspective. Criminologists have long argued about their lack of influence in the policymaking arena, believing that the “policy development process seems to run on a track independent from the path of evidence” (Clear, 2010: 1). Even though academic research has become increasingly funded by government agencies (Canton and Yates, 2008), scholars have been under pressure to deliver “evidence” on a wide range of crimes and criminal behaviors that will lead to the development of effective, practical policies that “work.” However, organized crime policies do seem to
parallel the work that has been done in criminology. The largely economic approaches that government agencies and international organizations have adopted are compatible with the past four decades of studies on organized crime by academics (Shelling, 1967; 1984; Reuter, 1979; Reuter and Kleiman, 1986; Reuter and Haaga, 1989; Grossman, 1991; Dick, 1995; Paternoster and Simpson, 1996; Garoupa, 1997; Haller, 1997; Scaperdas, 2001; Levi and Maguire, 2004; Arsovska and Kostakos, 2008; Bullock et al., 2010; Von Lampe, 2011; Kleemans, et al., 2012; Soudijn, 2012). There is a handful of research that has ventured away from the economic and Rational Choice paradigms (Braithwaite, 1989; Kleemans and de Poot, 2008; Shover and Hochstetler, 2002), but the vast majority of academic research on organized crime remains in these traditional paradigms.

As the predominance of nations and international organizations have stated in countless publications over the past decade (e.g., Council of Europe, 2005, FBI, 2012b; Skinnider, 2006; UNODC, 2010), the problem of transnational organized crime (in all of its varying definitions and conceptions) is only growing and intensifying. This presents the prime opportunity for criminologists to step back from purely economic-based research or studies based on the Rational Choice perspective and seek direction from other theoretical frameworks that could present original insight into the socio-cultural aspects of organized crime. “Undeniably, the policy world is complicated – too often sullied by the hard edge of politics and ideology” (Clear, 2010: 20); yet, in order to activate change within the policy arenas, criminologists need to take the first step toward broadening the basic understanding of this complex criminal phenomenon.
Geographical Significance

As previously discussed, the threat of organized crime facing nations across the world has reached elevated levels (OCTA, 2011; UNODC, 2010). The United Nations Office on Drugs and Crime (2010) keeps a constant pulse on organized crime activity throughout the world, indicating geographic areas most at risk for being used or corrupted by organized crime syndicates for natural resources or trafficking routes, and those areas most at risk of becoming destination countries for organized crime.\(^{59}\) Additionally, the UNODC (2010) has identified the most prevalent activities of organized crime that vary depending on the geographic location.

The United Nations and the Council of Europe, among other organizations, have identified the most common global illicit activities of organized crime as trafficking in persons, smuggling of migrants, cocaine trafficking, heroin trafficking, firearms trafficking, trafficking in environmental resources and counterfeit products, maritime piracy, and cybercrime (Council of Europe, 2000; 2005; OCTA, 2011). To better understand the factors associated with organized crime activities, such as regional stability, resources, and trafficking routes, these international organizations have broken the world down into various regions. The regions that have been identified as problematic (UNODC, 2010) are the Andean region, Central America, Mexico, United States of America, Caribbean, Brazil, West Africa, Southern Africa, DR of the Congo, Central and East Africa, The Horn of Africa, North Africa, Middle East, Southeast Europe, Western and Central Europe, Ukraine, Russian Federation, Central Asia, Afghanistan, India, India, India.

\(^{59}\) Destination countries are those countries where the markets are prime opportunities for organized crime to either sell their illicit goods or operate illegal businesses. For instance, heroin cultivation generally takes place in the Middle East, but it is trafficked to destination countries in Western Europe where heroin and its derivatives are sold.
Myanmar, China, Japan, and Southeast Asia. Appendix A illustrates the global and directional flows of illicit organized crime activities with these associated regions of the world.

The Council of Europe (2005: 7) has identified drug trafficking as “one of the most significant activities of organized crime groups,” noting that while most groups are increasingly “multi-commodity,” the global common denominator between criminal organizations is drug involvement (Council of Europe, 2000; OCTA, 2011). In reviewing Appendix A, these observations are compatible with the most recent global threat assessment that has identified cocaine and heroin trafficking to be the most dominant activities of organized crime (UNODC, 2010). The Andean region has been identified as the world’s main source region for cultivating coca plants that are then harvested and made into cocaine. This region does not face any threats from organized crime other than cocaine trafficking and subsequent corruption of local officials. Once the cocaine leaves the Andean region, it is trafficked north through Central America and east largely through Venezuela, with the main destination countries being the United States, West Africa, and Western and Central Europe (UNODC, 2010). Organized crime groups, such as the FARC and ELN, have used this cocaine source region to finance further illegal enterprises, with these groups making over 70% of their total income (an estimated US$6.6 billion) from cocaine related activities (UNODC, 2010: 229).

Afghanistan, Myanmar, and Central Asia are the main source regions for cultivating poppy plants, from which opium and heroin are derived. Heroin has been recognized as “the world’s most problematic drug” (UNODC, 2010: 109) for its high

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60 “Multi-commodity” indicates that single criminal organizations are becoming involved in multiple illicit activities, such as drug trafficking, human trafficking, and migrant smuggling (OCTA, 2011).
61 The estimated annual value of the global market for cocaine is US$88 billion (UNODC, 2010: 227).
addiction qualities, severe withdrawal symptoms, deaths from overdoses, and method of use.\textsuperscript{62} Since 2005, approximately 12,000 tons of opium was produced in Afghanistan, which the UNODC (2010) estimates is “enough to meet global demand for two years” (109). The annual global flow of heroin has been estimated at 430-450 tons. Organized crime syndicates traffic heroin from these source regions through the Russian Federation, the Middle East, and Southeast Europe to destination countries almost exclusively located in West and Central Europe, with some of the Afghan heroin markets destined for the United States (UNODC, 2010). More specifically, the most common trafficking routes begin in Afghanistan, entering Western and Central Europe via Turkey and the Balkans (OCTA, 2011). However, in recent years heroin trafficking routes have diversified, to include the Black Sea Route via Iran, Azerbaijan, Georgia, and Ukraine destined for Europe. Increasingly, organized crime groups have utilized maritime shipments of heroin from Iran and Pakistan through the Mediterranean Sea, as well as trafficking the drugs from source countries via commercial and freight air into Europe (OCTA, 2011).

Other secondary organized crime activities, to include trafficking in firearms, migrant smuggling, human trafficking, and trafficking in counterfeit medicines, have smaller markets that follow more specific patterns. For instance, firearms trafficking by organized crime groups originate in the United States and the Ukraine, destined for Mexico and Central and Eastern Africa respectively (UNODC, 2010). Counterfeit consumer goods are trafficked directly from China to Western and Central Europe. Female trafficking victims originate from three source regions: Brazil, Southeast Europe, and the Russian Federation, with Western and Central Europe as the main destination.

\textsuperscript{62} Heroin is most commonly administered through injection, raising additional concerns for the transmission of diseases such as HIV/AIDS and Hepatitis C (DEA, 2012; OCTA, 2011).
region for each point of origin (UNODC, 2010). Mexico, West Africa, North Africa, and
East Africa are source regions for migrant smuggling into the United States and West and
Central Europe (UNODC, 2010).

From these trafficking flows of various illicit activities by organized crime
groups, a few patterns emerge. Source regions and destination regions illustrate the
markets for supply and demand of these illegal goods and services (OCTA, 2011). While
there are many source regions supplying various illegal commodities indicated in
Appendix A, there are only a few destination regions where the majority of global
demand is centered. The smaller destination regions are the United States, China, and
Southeast Asia, but by far the largest destination region for almost 60% of all global
illicit organized crime activities is Western and Central Europe. This indicates the region
is a high demand “hot spot,” which has cultivated an environment conducive for
organized crime groups to operate in at various levels. Thus, a further look at the Western
and Central European region more closely is warranted.

A European Focus

Drug trafficking continues to be “the primary problem” associated with organized
crime in Europe, with the Council of Europe (2005) noting “Europe is probably the most
profitable drug market globally” (6). While this overall region houses the highest
prevalence of drug users, particularly heroin, worldwide, the Western European section
of Europe experiences the highest volume of drug abuse and the Central and Eastern
European (CEE) section experiences the highest levels of drug trafficking by organized
crime (Council of Europe, 2005; OCTA, 2011). In the case of heroin, much of the heroin
and opiate derivatives originate in the Afghan and Central Asia regions. This is because
organized crime groups have exploited the disorganization and lax border controls of former Soviet Bloc countries, entering Western Europe through countries in the CEE section, namely Poland, Ukraine, and the Czech Republic (Summers and Plywaczewski, 2012). The organized crime groups most prominent in trafficking illicit drugs into the European region are Albanian groups, Lithuanian groups, Russian groups, and Vietnamese crime groups (OCTA, 2011).

The other secondary forms of crime that organized criminal groups are involved in also share common trafficking characteristics of the drug trade. For instance, the CEE is also a point of entry to Western Europe in terms of migrant smuggling and human trafficking, with organized crime groups exploiting routes similar to drug trafficking. “Turkey is a key nexus point for transit” of illegal migrants into Europe (OCTA, 2011: 21). As illustrated in Appendix A, North, East and West Africa are points of origin for immigrants, and smugglers have taken advantage of the Turkish-Greek border. The Turkish-Greek border provides both sea and land access, leading EU authorities to focus on Greece as a new focal point for migrant smuggling.

Another secondary form of organized crime activity, cybercrime, also shares trafficking characteristics that connect the CEE section with the rest of Europe. Organized criminal syndicates use cybercrime to target legitimate credit card holders in other regions of Europe “by means of malicious software installation, or by using social

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63 Organized crime groups “now recruit would-be migrants by offering them an apparently legitimate means of entry” (OCTA, 2011: 21) by providing them with forged or otherwise falsified travel documentation and identification. In some instances, once the organized crime groups have arranged safe (but illegal) passage to their final destination, the illegal immigrants are forced to work for the groups to “pay off their debts” through forced labor or sexual exploitation, thus becoming victims of human trafficking (OCTA, 2011). The organized crime groups most actively involved in migrant smuggling and human trafficking in Europe are Turkish groups, Brazilian groups, Pakistani groups, and West African organized criminal groups (OCTA, 2011).
engineering to encourage them to divulge data” (OCTA, 2011: 30). This problem is most serious in countries in CEE where “sprawling geographies and weak institutional infrastructure make education and enforcement all the more difficult” (BSA, 2007: 2).

The ease and rapidity at which organized crime groups can access electronic documents and make transactions and connections has led to more efficient methods of money laundering and drug trafficking, producing still greater concerns and challenges for law enforcement. Russia, the Ukraine, Armenia, and Bulgaria hold the highest rates of software piracy by organized crime groups (between 68-93%), with the Czech Republic experiencing the least from this country cluster (39%) (Council of Europe, 2005; BSA, 2007). European countries of most concern for organized crime cyber targets are Germany, the United Kingdom, and France (UNODC, 2010), located in the Western Europe and Anglo-Saxon country clusters.

With these levels and diversity of organized crime activities within Europe’s borders, it is evident that countries in Europe are indeed a “hot spot” destination for organized crime. Moreover, the CEE countries present additional concerns for the region, because it appears to contain not only demand for illicit goods and services provided by organized crime groups, but it is also the gateway into Western Europe. That is, criminal organizations are also utilizing countries in this section as the final trafficking routes to reach their Western European destinations (UNODC, 2010). International organizations and scholars alike have noted this may be the case largely due to the fall of communism

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64 This includes phishing scams, computer espionage (i.e., Trojan horses), or computer sabotage and extortion (e.g., viruses, worms, denial of service attacks, spamming) (Council of Europe, 2005: 40). Organized criminal syndicates have also utilized the Internet to conduct software piracy to increase their revenues.

65 By comparison, the U.S. experiences a piracy rate of 20%, and all countries in the Western Europe cluster experience rates of less than 30% (with the exception of France) (BSA, 2007).
in 1989; since then, former Eastern Bloc countries have experienced increased intensity of organized crime activity related to the disorganization of countries in transition (Fijnaut and Paoli, 2004; Krajewski, 2003; Plywaczewski, 1997; 2004; Plywaczewski and Filipkowksi, 2004; Summers and Plywaczewski, 2012; UNODC, 2010). Many of the former Soviet Bloc countries initially struggled to transform their governments and transition away from communism. This left many weaknesses at national borders, leading the way for organized crime to exploit opportunities for corruption (Fijnaut and Paoli, 2004; Krajewski, 2003). Moreover, these countries provided vast unsaturated markets for drugs, as drug use and abuse was not prevalent behind the Iron Curtain (Krajewski, 2004; Kramer, 1990; Plywaczewski, 2004). As drug trafficking remains the most significant activity of organized crime groups on a global scale (Council of Europe, 2005), the development of trafficking routes and new demand markets for illicit drugs in CEE has attracted and encouraged large volumes of organized crime activity since the early 1990s.

However, one country in particular that is situated in the CEE region presents a unique set of circumstances for organized crime. Poland, a country with a population of roughly 38.4 million, borders Germany, the Czech Republic, Slovakia, the Ukraine, Belarus, Lithuania, and the Russian territory Kaliningrad (see Figure 5 below).
This country has faced many of the same social, economic, and political issues as its former Eastern Bloc neighbors (e.g., Czech Republic, Belarus, Ukraine, Slovakia) since the collapse of communism. Poland, like its neighbors, experienced a “moral panic” regarding the sharp rise in organized crime activity following the collapse of communism as citizens became increasingly aware of the social situation via the newly liberated media (Krajewski, 2003; Plywaczewski, 2004). This social situation included surges in violence, use of firearms, the “process of moral corruption” of juveniles, and full integration into the international drug trade (Plywaczewski, 2004). However, one factor separates Poland from its neighboring CEE countries: amphetamine manufacturing.

For almost a decade, Poland has been recognized as “Europe’s center for amphetamine production” (DEA, 2004: 1). Poland’s Central Bureau of Investigation (CBI) reported that 25% of all amphetamines seized in Europe were produced in Poland, while the UNODC International Narcotics Control Board estimated that 60% of

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Figure 5: Map of Poland

66 Source: Google Maps
amphetamines seized in Scandinavian countries was either produced or trafficked through Poland by organized crime (DEA, 2004). In 2004, it was noted:

> Well-organized criminal groups operate extensive international networks to carry out the illicit production of amphetamines in Poland. While… sources indicate that there are over 200 domestic criminal groups with ties to the drug trade, there are three syndicates operating in the Warsaw, Krakow, and Gdansk areas that largely control the production and trafficking of amphetamines. (DEA, 2004: 2)

Updated reports since 2004 confirm increased levels of specialized organized crime involvement in amphetamine production within Poland: “Production facilities are reported to be often set up by organized criminal [groups], which employ chemists and operators” (EUROPOL, 2011: 33). This indicates that organized crime groups in Poland are evolving by becoming increasingly sophisticated in its methods of drug production, and are becoming more hierarchical in structure by separating and dividing responsibilities among its employees. This, in turn, decreases the risk for higher-level criminal syndicates to be detected by law enforcement, or be injured or killed during the manufacturing of amphetamines (Krawczyk et al., 2009).

Precursor chemicals needed to produce the synthetic drug and its many derivatives (e.g., methamphetamine, MDMA) have been trafficked into Poland since the late 1980s from mainly Russia and the Ukraine (DEA, 2004; EUROPOL, 2011). Once the amphetamines have been manufactured, organized crime groups traffic them to the Baltic, Northern, and Western European countries clusters (DEA, 2004; EMCDDA, 2012). More recently, Polish-made amphetamines have been mainly destined for Sweden, Norway and Finland (EUROPOL, 2011), which is thought to be related to increased competition from Western European countries in recent years. This is

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67 Countries with the highest consumer demand for amphetamines include the U.K., Germany, Spain, the Netherlands, and Belgium (EUROPOL, 2011).
evidenced by reported expansions in amphetamine production in the Netherlands and Belgium, but Poland remains the major source country in CEE for amphetamines consumed in other regions of Europe (DEA, 2004; EUROPOL, 2011; Krawczyk et al., 2009).

Poland’s status as a source country for the production of a major illicit drug by organized crime syndicates sets it apart from the severity of organized crime prevalence in other CEE countries. This is further underlined by the market for drugs within the country, as well as the prevalence of trafficking routes through the country. Demand for drugs has steadily increased in Poland since the early 1990s, as evidenced by the number of persons admitted to treatment centers increased from 7.4 per 100,000 in 1990 to 22.2 per 100,000 in 2000 (Reitox National Focal Point, 2005). Currently there exists an estimated 56,000 – 103,000 “problem drug users”68 between the ages of 15-64, while deaths from drug overdoses rose from 155 in 1990 to 247 in 2009 (EMCDDA, 2012; Reitox National Focal Point, 2011). From the law enforcement perspective, arrests for drug law violations surged from 4,284 in 1995 to 72,357 in 2010 (EMCDDA, 2012; Reitox National Focal Point, 2005). Moreover, two well-established trafficking routes exist in Poland on which organized crime groups have traversed the country from east to west. The first route transports mainly opiate derivatives through southern Poland from Romania, the Ukraine, and the Czech Republic, while the second route transports illicit drugs from source countries in the Afghan region “through former Soviet countries into the Ukraine and Belarus before entering through Poland’s eastern border (Summers and Plywaczewski, 2012: 236; Krajewski, 2001).

68 “Problem drug use” is defined as “regular (daily or almost daily) illicit drug use causing serious problems, with all illicit drugs included” (EMCDDA, 2012).
These statistics indicate a worrisome combination for Poland: there exist both an enticing drug market for organized crime to target and well-established trafficking routes to utilize through the country. These factors, multiplied by Poland’s status as an established source country for amphetamines, place it in a concerning category for exploitation by organized crime. Located in a section of Europe already at elevated levels of vulnerability for criminal organizations – a section that is situated in a larger global region of the world identified as the main “hot spot” for demand of organized crime activities – Poland is a country warranting further attention from researchers and policymakers alike.

Summary

This chapter has demonstrated the dynamic, multifaceted nature of the increasingly complex phenomenon of organized crime. Examining this crime problem through the academic lens, it becomes apparent that research is lacking in drawing from theoretical perspectives other than the Rational Choice paradigm. Other avenues in criminological research, particularly those theories that emphasize socio-cultural elements related to crime, require further attention in the context of organized crime. The legal approach has increased global awareness of organized crime presence and activities, but the fragmented nature of national and international definitions and policies have been largely ineffective (Council of Europe, 2005; OCTA, 2011; Skinnider, 2006). Together, however, academics and policymakers have somewhat reconciled these shortcomings. That is, academic explorations of the nature of the supply and demand markets for illicit goods and services from the economic and Rational Choice perspectives (e.g., Rengelink, 2012; Reuter, 1979; Reuter and Haaga, 1989; Scaperdas, 2001) have aided international
organizations in concluding where the global “hot spots” and source regions are for supply and demand (OCTA, 2011; UNODC, 2010). These discoveries have led to countless reports and publications on descriptive factors associated with organized crime, detailing the current “state of affairs” of organized crime prevalence in various global regions (e.g., Council of Europe, 2005; EICPC, 1998; EUROPOL, 2011; Reitox National Focal Point, 2005; 2011; UNODC, 2010).

Even though these reports are undoubtedly useful, the fact that organized crime continues to proliferate in all corners of the world indicates that different approaches are now needed. Academics now need to move forward, applying what has been learned from past research endeavors to new investigations of the many aspects of organized crime through the lens of other theoretical orientations. Both scholars and official reports have recently begun to push for the development of more comprehensive research on the social phenomena (culture, the development of societies, emerging pathologies) related to organized crime (BSA, 2007; Plywaczewski and Filipkowski, 2012). Organized criminal proliferation cannot be approached in the one-sided manner it has been (Plywaczewski and Filipkowski, 2012), and future policies now rely on academics to pave the way toward a more comprehensive and conceptually whole understanding of this criminal phenomenon.

Addressing the Current Issues in Research

By merging two bodies of research in criminology, namely Institutional Anomie Theory and the large body of work on organized crime, this research has addressed three main issues in the field of criminology.
This first issue that was addressed regards the measurement of key elements in Institutional Anomie Theory. The model of Institutional Anomie Theory proposed by Messner and Rosenfeld (1994) is clearly articulated; the elements of culture and social institutions are clearly identified. Yet, Chamlin and Cochran (2007) noted that while the theory is intuitively appealing, Messner and Rosenfeld provide little guidance on how their theory might be tested or how their key theoretical constructs might be operationalized. The more cryptic definitions of Anomie, culture, and social institutions have led scholars to debate and interpret the meaning and operationalization of these concepts for themselves (e.g., Bernburg, 2002; Bjerregaard and Cochran, 2008a; 2008b; Chamlin and Cochran, 1995; Gross and Hausmann, 2011; Maume and Lee, 2003).

The largest issue lies within operationalizing Messner and Rosenfeld’s concept of “Anomie culture.” To-date, only two studies have attempted to partially measure this key element of Institutional Anomie Theory (e.g., Cullen, Parboteeah and Hoegel, 2004; Gross and Haussman, 2011), and have done so using individual-level scales compiled from items on the World Values Survey and other surveys, with limited success. Aside from these examples, no studies have been able to operationalize Messner and Rosenfeld’s (1994) conception of culture. This is quite a problem, because the authors argue in their original conception of the theory that the two dimensions of social organization (i.e., culture and social institutions) should remain distinctive of each other; these two dimensions cannot be combined or singularly emphasized. Moreover, Chamlin and Cochran (2007) further noted that if these elements of culture are not able to be operationalized (e.g., perhaps “culture” cannot be captured in empirical data), then the
theory is non-falsifiable and unable to be tested without being misspecified because only half of the Institutional Anomie model can be empirically measured.

Therefore, this research addressed this issue by attempting to operationalize both elements of “Anomic culture” and social institutions in this exploratory test of Institutional Anomie Theory. This was done by also identifying Anomie as an embedded element within culture, and by making empirical distinctions between social institutions and Anomie culture as the theory originally intended (Messner and Rosenfeld, 1994).

The second issue that was addressed was the applicability of Institutional Anomie Theory to other settings. The specific orientation of “culture” in the theory and Messner and Rosenfeld’s conceptualization of this latent construct has imparted a Western bias on how the theory has previously been tested. In their model of the theory, Messner and Rosenfeld very clearly consider the element of culture to be embedded directly in Merton’s concept of the American Dream. The authors do not set out to define “culture” more generally; instead, the type of culture Messner and Rosenfeld (1994) identify as Anomic (e.g., producing normlessness and higher crime rates) is a culture that stresses a commitment to the goal of material success that is shared by all members of society, under conditions of open, individual competition. The values that anchor this cultural concept of the American Dream (i.e., achievement, individualism, universalism, fetishism of money) have naturally led some researchers to apply this concept of Anomic Culture to comparative research in the United States (e.g., Chamlin and Cochran, 1995; Piquero and Piquero, 1998).

Messner and Rosenfeld (1994) themselves argue that Institutional Anomie Theory is most applicable to developed countries only, because these countries are most likely to
have the Anomic cultural pressures identified coupled with a dominance of the economy over the non-economic social institutions. Messner and Rosenfeld (2001) acknowledge that countries in transitioning stages or that are still developing, like countries in Eastern Europe, Southeast Asia, or even South America may be more likely to have a dominance of non-economic institutions (e.g., the family) in addition to less cultural pressures to succeed as defined by the American Dream. However, Messner and Rosenfeld clearly state in 2009 that “A core claim of Institutional Anomie Theory is that the type of institutional configuration conducive to high levels of crime is one in which the claims of the economy are awarded the highest priority” (215).\textsuperscript{69} As a result, past empirical studies of Institutional Anomie Theory have largely involved Western or developed countries.

Interestingly, more recent studies, to include Messner’s (et al.) own work in 2011, have taken a different direction by incorporating data from many countries in their cross-national analyses, which sometimes include data from forty or fifty countries (e.g., Bjerregaard and Cochran, 2008a; 2008b). While these studies include data from countries like Venezuela, Thailand, and Uruguay, the data are lumped together and little (or no) effort is made to consider any between-country differences, or to group countries to examine how the impact of the theory might vary in these different settings. Instead, the goal of many of these studies (e.g., Bjerregaard and Cochran, 2008a) has been to simply examine how the proxies for social institutions and Anomie behave more generally in relation to homicide rates. These studies take for granted the fact that the theory operates the same in all countries.

\textsuperscript{69} This somewhat conflicts with their own statements in 2001, in which they claim that “societies with differing institutional configurations, for example, those in which political or religious institutions are dominant, also may exhibit high levels of criminal activity, even if the type of crime differs from that observed in anomic societies” (153).
As such, this study broadened the range of geographical settings for Institutional Anomie theory by testing the theory in multiple cultural settings that accounted for differences between these settings. The different cultural settings included fourteen countries in Europe (which contained three countries in transitioning stages). This research also considered how Institutional Anomie Theory applied within and between six country-clusters over time (from 1995 to 2009).

The final issue that was addressed in this study regards the fact that past empirical tests of Institutional Anomie Theory have almost exclusively used homicide rates as the dependent variable, with a handful of other studies branching out to include property crimes or other utilitarian forms of theft (e.g., Chamlin and Cochran, 1995; Cochran and Bjerregaard, 2011; Maume and Lee, 2004; Messner and Rosenfeld, 1997c). This may be the product of Messner and Rosenfeld’s (1994) original claims that criminologists largely ignored explaining “serious crimes” in the early 1990s, while they also noticed that the U.S. had the highest rates of homicide comparative to other developed nations. Messner and Rosenfeld (1994) further noted that “homicide” was a more reliably recorded measure internationally. As such, they decided to operationalize “serious crime” through intentional homicide rates, which they now label as “the most serious form of conventional crime” (Messner and Rosenfeld, 2012: 20).

The question becomes whether or not Institutional Anomie Theory can explain other forms of serious crime. Messner and Rosenfeld (2012) themselves suggest that their

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70 Considering changes in Institutional Anomie over time is an important point; to-date no explicit tests of the theory have considered how changes in crime rates over time affect or are affected by changes in levels of Institutional Anomie. Messner and Rosenfeld (2009) themselves point this out: “Nearly all of the macro-level research on IAT has been cross-sectional in nature. Typically, one society or community is compared in snap-shot form with others at a single point in time. But, of course, crime rates vary over time within social units and not merely across different social units… On occasion crime rates also exhibit abrupt turning points and rise or decline rapidly over very short time intervals” (220).
theory might be able to explain forms of white-collar crime and even “street” crimes. Yet, to-date, no studies have applied Institutional Anomie Theory to these or any other crime-types.

Therefore, this study broadened the range of dependent variables to be tested against by employing a different dependent variable representative of serious crime: organized crime. The United Nations and other international governing bodies have recognized transnational organized crime to be one of the greatest concerns and threats to the security of the global community. Moreover, these organizations have identified patterns in flows of organized crime within and between various regions of the world, suggesting that the social organizations of societies play a role in the movement and development of transnational organized crime (Passas, 1997; 2000; UNODC, 2010). This indicates that this form of serious crime may be well suited for further empirical analysis using the guidance of Institutional Anomie Theory. Moreover, because drug trafficking is the common denominator between organized crime activities worldwide, and because markets of drugs are known to vary between geographic regions (which perhaps drives the movement and flows of transnational organized crime), this study operationalized organized crime using seizure rates of four drug-types known to be trafficked by these groups: cannabis, cocaine, heroin, and amphetamines.
CHAPTER 4: RESEARCH QUESTIONS, METHODOLOGY, DATA, AND ANALYTIC STRATEGY

Research Questions

The research questions central to this research involved the application of the theoretical framework of Institutional Anomie Theory to the criminal phenomenon of organized crime in order to gain further knowledge of the socio-cultural factors affecting organized crime development, levels, and movements across and within developed and transitioning countries in Europe. As this was an exploratory endeavor designed to improve the measurement of key elements in the theory, investigate the applicability of Institutional Anomie Theory in different settings, and employ a new measure of serious crime, the research questions did not have associated hypotheses. Each question is derived from the literatures reviewed.

First Set of Research Questions:

The first research questions, utilizing measurements of both “Anomic culture” and “social institutions,” addressed how the theory operated in the fourteen countries in Europe, but also how it operated between and within six country-clusters over time. As such:

**RQ 1:** The first research question considered whether *countries in Europe with higher rates of Institutional Anomie also have correspondingly higher rates of organized crime activity.*

**RQ 1a:** This research also sought to assess whether *variations in levels of Institutional Anomie over time correspondingly impacted levels of organized crime activity in European countries.*
RQ 1b: This research also assessed whether grouping countries into country-clusters significantly impacts Institutional Anomie Theory’s ability to predict high levels of organized crime.

While there are no associated hypotheses with this exploratory study, based on past successful endeavors (i.e., Cullen, Parboteeah, and Hoegel, 2004), Institutional Anomie Theory may be expected to be able to predict high rates of serious crime while considering Anomic culture as a separate element from social institutions. However, it must be noted that the two empirical studies that did attempt to measure “Anomic culture” did so only partially; they did not include a measurement representing a lack of legitimate means. As such, it is unclear how the added operationalization of this additional Anomic cultural element will impact the study.

It is unclear how considering changes over time will impact the theory’s explanatory ability. While Messner and Rosenfeld (2009) encourage future research to include this element, others argue that “cultures” change too slowly over time to capture any significant changes. However, proponents of Institutional Anomie argue that full-scale changes in culture and institutions are not needed to impact levels of serious crime; changes in some elements of institutions and/or culture are enough to effectively influence levels of Institutional Anomie and crime rates (Messner and Rosenfeld, 2009; Scott, 2008).

It is also unclear how considering country-cluster differences will impact Institutional Anomie Theory. Messner and Rosenfeld (1994) would argue that the theory should work best in the country clusters containing developed countries; as such, this research has similar expectations. This study will also be able to further discern whether
or not it is appropriate to lump or combine data from large samples of fifty countries, assuming the theory operates the same in each.

The impacts of using a new measurement of “serious crime” on the explanatory power of Institutional Anomie Theory are further unknown. However, what is known about “organized crime” and the documented movements and patterns of this criminal phenomenon indicate that it may be well suited for testing using a socio-cultural theory such as Institutional Anomie. Also, Europe has been identified as a global demand “hot spot” for illicit goods and services provided by organized crime syndicates, which most prominently include drugs, and it is also evident that some regions within Europe experience elevated levels of organized crime activity (Council of Europe, 2005; OCTA, 2011; UNODC, 2010). Therefore, it is reasonable to assume that applying this dependent variable in this particular geographic region should produce at least preliminary indications of what Anomic cultural and institutional factors may impact organized crime in Europe.

**Second Research Question:**

The second research question further challenges the notion that Institutional Anomie Theory was designed to operate best in “market capitalist,” developed countries (Messner and Rosenfeld, 2001). As such:

**RQ 2:** This research: *examines how elements of culture and social institutions affect levels of Institutional Anomie and organized crime in both developed and transitioning countries.*

As aforementioned, countries considered to be “transitioning” in this research are those that experienced the collapse of the USSR in 1989. In this research, this includes the
countries of Poland, Lithuania, and Slovakia. All other countries in this study (see Figure 9, pg. 150) are included in the developed country group. Based on original arguments by Messner and Rosenfeld (1994), it would be expected for the theory to operate best in the developed country group. However, this research question, like RQ 1a, will also be able to help discern whether lumping data together from fifty or sixty countries is appropriate. If the theory operates the same in both developed and transitioning country groups, then perhaps there is no cause for concern in combining large quantities country-data.

**Third Set of Research Questions:**

The third research question examined the dynamics of Anomic culture, social structure, and Institutional Anomie in relation to organized crime activity in the transitioning democratic country of Poland. This research question applied the measurements of “Anomic culture” and “social institutions” employed in the other research questions to a country that Messner and Rosenfeld (1994) would not necessarily expect the theory to operate well in, but it sought to address the new measure of “serious crime” in a setting that had elevated concerns for this crime-type:

**RQ 3:** This proposed research seeks to address: *how Institutional Anomie Theory operates in the transitioning democracy of Poland.*

**RQ 3a:** This research also considers: *whether the culture-institutional configuration in the transitioning democracy of Poland varies from other CEE countries.*

**RQ 3b:** If so: *how does it impact the levels of organized crime involvement?*

As such, it is unclear first how the theory will operate in Poland or in the other CEE country included in this study (i.e., Slovakia). However, because this region of Europe, and Poland in particular, has been noted in the literature as experiencing high rates of
organized crime and drug trafficking, it can reasonably be assumed that the elevated activity would allow for a signal of Institutional Anomie Theory to be detected, thus allowing for a comparison between Poland and Slovakia. Moreover, as Messner and Rosenfeld themselves noted in 2001 (along with other cultural and institutional scholars like Dirk Enzmann), other cultural settings may result in different cultural-institutional configurations that lead to high rates of crime. This third research question hopes to add to this body of knowledge by considering which elements of Anomic culture and social institutions most impact serious crime in Poland.

Methodology

A quantitative research design will be used to address all three sets of research questions. The design will take an exploratory approach to determine whether countries in Europe with higher rates of Institutional Anomie also have correspondingly higher rates of organized crime activity, taking into account changes over time and the grouping of European countries into clusters and developed vs. transitioning country groups, in addition to considering Poland and Slovakia separately. The variables to be used in this research are listed in Figure 6 below, and will be explained in greater detail in the following sections of this chapter.

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71 Recall the differences between “developed” and “transitioning” relate to the age of the democratic governments. Poland, Slovakia and Lithuania are the youngest, following the collapse of the USSR in 1989. Thus, these governments are still considered to be “transitioning towards democracy.”
More specifically, the quantitative research design used to address the three sets of research questions took a three-step approach. First, the data were addressed through visual inspection that included graphing the variables to determine the visual story that the data were telling. Second, no study has considered how the theory operates across time. Therefore, the years 1995 to 2009 were then empirically examined using multivariate and pooled cross-sectional time series analysis techniques. These analyses utilized explanatory variables representing the two elements of social organization: Anomic culture (i.e., cultural pressures to succeed and a lack of legitimate means) and

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<th>Dependent Variables</th>
<th>Independent Variables Representing Cultural Pressures to Succeed</th>
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<td>Heroin seizures</td>
<td>World Index of Economic Freedom</td>
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<td>Cocaine seizures</td>
<td>Gross Household Savings Rate</td>
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<td>Amphetamine seizures</td>
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<td>Cannabis seizures</td>
<td>Independent Variables Representing Cultural Lack of Legit. Means</td>
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<td>Intentional homicide rate</td>
<td>Corruption Perception Index</td>
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<td>Unemployment</td>
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<th>Independent Variables Representing the Economy</th>
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<td>Political Stability and Absence of Violence</td>
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<th>Independent Variables Representing the Education</th>
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social institutions (economic, political, familial, and educational) (see Figure 6 above, for a list of variables).

The time period for the second stage of the quantitative research design has been selected for multiple reasons. The time period beginning in 1995 is useful because it will capture any changes or restructuring of the various elements of social organization between developed and non-developed nations (due to the collapse of the USSR in 1989), without risking contaminated or otherwise unreliable data from the years directly following the collapse of the Soviet Union (Krajewski, 2003). The year 1995 is most appropriate for these countries representing Central and Eastern Europe (i.e., Poland and Slovakia) for two reasons. First, Poland did not draft a new constitution following the collapse of communism until 1997, well after their liberation from the Soviet Union’s sphere of influence. Second, the second country representing the Central and Eastern European region, Slovakia, was not an independent country until the peaceful splitting of Czechoslovakia in 1993. Thus, 1995 is an appropriate time period to begin collecting data from these two countries; data are more reliable than in the years directly following the collapse of the U.S.S.R., and beginning the time series in 1995 still captures data for the most transitional stages of social change. Therefore, because of the necessity in capturing this data for Poland and Slovakia, the same time period will be employed for collection of data from all countries in this research.72

72 It is noted that fifteen years results in a less than desirable number of observations for time series analyses. However, using pooled-cross sectional methods, the number of observations for the full model is 210. Regarding the country clusters, the n size in the Western and Mediterranean country clusters is 60, in the Anglo-Saxon and CEE clusters it is 30, and in the Baltic and Northern clusters it is 15. Poland and Slovakia each had an n size of 15 as well. As the desirable number of observations for time series is approximately 50, the Northern and Baltic clusters and Poland and Slovakia represent the greatest concerns. However, these limitations are noted but as this is exploratory research to determine between cluster and country differences in the operation of Institutional Anomie Theory, it was necessary to break
The third stage of the quantitative research design involved more sophisticated time series analytic techniques that employed tests for Granger causality and cointegration for the same time period. These added measures allowed this study to determine whether there were any additional causal connections existing between the variables, or if a common element was causing proxies of Anomic culture and social institutions to move together over time with their dependent variables. These analyses were important to include, because discovering Granger causal elements between variables can more strongly support or refute the role the variable might play in supporting Institutional Anomie Theory in each model. Additionally, finding the existence of cointegration between pairs of variables has many policy implications, as it indicates that impacting one variable also has the ability to equally impact the cointegrated variable. In order to conduct these tests, however, it was necessary to first run unit root tests to determine the stationarity of the variables before proceeding. The same time period applies to this analytic stage; however, these techniques could not be applied to the separate country analyses of Poland and Slovakia due to the lack of observations. A larger than typical dataset is desirable for these two powerful tests because of their specific requirements, discussed in greater detail below. However, this does not take away from other methodological approaches used in this study to address the operation of Institutional Anomie in these separate countries; it simply means that this study was unable to address any underlying relationships among the variables in these countries.

down the full model composing 210 observations. These data limitations are further discussed in the following sections.
This quantitative approach allowed this exploratory study to address how the theory operated in Europe as an entire region over time (combining data from all fourteen countries), as well as within and between the six country clusters (breaking down the data based on this country-grouping technique discussed below). Additionally, these methods allowed for a comparison between developed and transitioning countries to uncover whether any differences in configurations from Western nations were more conducive to organized crime activity, and whether Institutional Anomie Theory could predict levels of organized crime in transitioning nations. Finally, these methods were appropriate for preliminarily investigating how the theory operated in the transitioning nation of Poland in comparison to its CEE companion, Slovakia.

**Dependent Variables and Measures**

The dependent variable for this research is “organized crime.” As was noted in Chapter 3, both scholars and practitioners alike have struggled to define organized crime. Studies of this elusive criminal phenomenon have been confined to largely descriptive accounts of “Mafia-type” groups (Arlacchi, 1988; Catanazaro, 1988; Dorn, et al., 2005; La Spina, 2008; Paoli, 2003; 2008), theoretically informed work focusing on aspects of illicit markets (Reuter and Haaga, 1989) and offender decision-making (Bullock et al., 2010; Kleemans, et al., 2012; Levi and Maguire, 2004; Von Lampe, 2011), or describing the characteristics of and differences in hierarchical structures and levels of organization (Becucci, 2008; Hagan, 1983; Smith, 1975; 1978). As such, there exists little guidance from criminology in operationalizing “organized crime” in empirical studies.
One more recent development, however, is the “Composite Organized Crime Index” developed by Jan Van Dijk (2008). This composite index combines five interrelated indicators that include the organized crime perception index and “four other indicators of secondary manifestations of organized crime activity” (Van Dijk, 2012: 162). The other four are unsolved homicide rates, informal sector rates (i.e., shadow economies or “black market” economies), high-level corruption rates, and money laundering rates. Van Dijk (2012) notes that unsolved homicide rates represent an objective measure of organized crime, while the other four measures are based on perceptual surveys (i.e., how do people perceive these problems of corruption, money laundering, and informal sectors in their country).

These five indicators combine to form the Composite Organized Crime Index, which Van Dijk (2012) notes, “should not be taken at face value. Scores on the index and on the five source indicators should be used as a set of diagnostic tools” to help criminologists “arrive at evidence-based crime diagnoses of [organized crime in] individual countries” (162). In other words, this index is useful “in the search for metrics on organized crime” at certain points in time (i.e., the index does not consider changes over time) (Van Dijk, 2012: 162; Van Dijk, 2008).

While the index has indeed proven valuable in providing a more comprehensive and conceptually whole measure of “organized crime” in individual countries and regions of the world, the index suffers from a lack of data. For instance, Van Dijk (2012) notes that “in some cases, the index score is based on just one source, resulting in a comparatively large margin of error” (164), thus making cross-national comparisons of index scores difficult. Despite these limitations, regional mean scores on the Composite
Organized Crime Index highlights the Caribbean, Central Asia, and Eastern Europe as having consistently high scores (Van Dijk, 2012).

One problematic element of this approach is that the Composite Organized Crime Index indicates that countries to include the United Kingdom, Germany, and Sweden, are among the fifteen countries with the lowest composite scores on the world-ranking system. This means that citizens of these countries perceive there to be little corruption or organized crime operating in money laundering or in an underground economy, as well as the country having a low unsolved homicide rank. This is problematic, because the international organizations (e.g., UNODC, Council of Europe) tracking organized crime activity have indicated that Europe is indeed the world’s main destination for illicit goods and services trafficked by organized crime groups – a region of the world that includes countries identified as low on Van Dijk’s composite score. This discrepancy between the Composite Organized Crime Index results and evidence of heightened levels of organized crime activity in Europe may result from failure on both parts to separate organized crime activity based on “source countries” and “destination countries.” The Composite Organized Crime Index would therefore be most appropriate in identifying source countries or regions of the world where organized crime syndicates rely on factors of political corruption, high unsolved homicide levels, and informal sectors to operate, cultivate and/or manufacture their illegal goods or services. However, factors such as corruption are independent of organized crime activity in destination countries.73 Because

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73 A good example of this is the case of drug trafficking organizations in North America. Mexico (a country with a high Index score in van Dijk’s study) is a source country for illegal drugs such as marijuana, cocaine, and black tar heroin, which are trafficked by organized crime groups into the U.S. (a country with a medium-low Index score). These organized crime groups rely on high levels of corruption and informal markets in Mexico to install items like hidden compartments in hundreds of thousands of automobiles in order to smuggle the drugs into the U.S. This is done because there are not high levels of corruption in the United States that would allow for such activities to occur within the destination country without alerting
this research examines the destination region of the world for organized crime activity (UNODC, 2010) (see Figure 17, pg. 291), the Composite Organized Crime Index is not an appropriate measure to utilize here for organized crime. However, the findings from this study will be visually compared with the Index to examine any differences between source and destination countries and/or regions.

In 1999, the Council of Europe (2000) suggested using drug seizure amounts (in kilograms), namely seizures of heroin, cocaine, amphetamines, and cannabis, as indicators of organized crime activity. This is largely because while organized criminal groups were found to be involved in other crimes, the common denominator between criminal organizations, particularly in Europe, was drug trafficking (Council of Europe, 2000; 2005; OCTA, 2011; UNODC, 2012). The Council of Europe warned against the reliability of the reported numbers of drug seizures, but also acknowledged that it was the most reported indicator of organized crime activity among European countries. Little or no comprehensive data exists for the number of seizures, cases, arrests, or convictions for vehicle theft, cybercrimes, illegal arms trafficking, or trafficking in human beings.

Minimal research has been done to confirm or refute drug seizures as an empirical measure of organized criminal activity, but the international community agrees that drug trafficking remains the common denominator for organized crime.

Additionally, the markets for various drugs are known to vary based on a number of factors that include price, purity of the drugs, and regional (geographic) demand.

Organized crime syndicates have also been known to vary in the types of drugs they law enforcement (though some corruption within the U.S. undoubtedly occurs). This is further supported by the Composite Organized Crime Index itself, which reports that the U.S. has much lower levels of perceived corruption than Mexico (Van Dijk, 2012). Therefore, high levels of corruption in the United States are not needed for organized crime groups to infiltrate the country.
traffic. As such, this indicator of drug trafficking representing organized crime is most appropriate when applied to cross-national or at least regional-level analyses in order to allow for comparisons in these levels of drug trafficking to be considered. Additionally, these characteristics of drug trafficking make this indicator suitable to test against a socio-cultural criminological theory that was originally developed to explain cross-national rates of crime.

This research will empirically operationalize organized crime through the separate annual seizure amounts (in kilograms) of heroin, amphetamines, cocaine, and marijuana. These measures will serve as representatives of organized crime for the three sets of research questions, including the European country-level, cluster-level, and Polish-level analyses for the time periods of 1995 to 2009. Even though it is recognized that there are deficiencies in utilizing this measure of organized crime (e.g., drug seizure amounts may also be indicative of police interdiction efforts,\textsuperscript{74} this measure does not capture the multiple dimensions of organized crime as does the Composite Organized Crime Index), this is the most appropriate measure for this research because drug trafficking is such a pervasive element of organized crime groups worldwide, and has been for decades (Council of Europe, 2000). Moreover, by using seizure amounts of heroin, amphetamines, cocaine, and marijuana separately, meaning each drug-type will be a dependent variable, this research will be able to account for variations in the type and geographic region of demand.

\textsuperscript{74} Indeed, drug trafficking seizures are in fact indicative of police activity, since the seizure amounts are reported by the police organizations themselves in each country. However, having personally worked for the Drug Enforcement Administration in the U.S. for over three years, patterns of drug trafficking organizations’ geographical movements and activities were in fact reflected in the amount of particular types of drugs seized in each district or regional office over time. In countries such as Poland, Lithuania, and Slovakia, problems of accurately reporting these seizure amounts becomes the more concerning limitation – see further discussion of this in the concluding chapter of this study.
In order to test the additional proxy measure of serious crime using homicide data, intentional/completed homicide rates will be measured as the intentional killing of a person, including murder, manslaughter, euthanasia and infanticide (Eurostat, 2012d). As has been previously noted in past research, criminological studies have long followed the tradition of investigating serious forms of macro-level crime trends, particularly utilizing homicide data (Maume and Lee, 2003; Messner and Rosenfeld, 1994; 1997b; 2009). Homicide data are commonly used in large part based on the likelihood of an incident being reported to police (due to the seriousness of the offense), and the continuity of cross-national legal definitions of “homicide” (LaFree and Drass, 2002; Messner and Rosenfeld, 1994). Intentional (completed) homicides are used in this research as opposed to “total” homicides, because total homicides rates include uncompleted homicidal attempts (Eurostat, 2012d). Because “homicide” was one form of serious crime that Messner and Rosenfeld (1994) originally applied to Institutional Anomie Theory, this research will utilize it as a comparative additional dependent variable to check against the results of the organized crime dependent variable. This is important, as the findings from models using this more reliable (and well-tested) measure of serious crime will act as a gauge for soundness of the untested measures of organized crime. That is, if countries in Europe with higher rates of Institutional Anomie do in fact experience comparatively higher rates of both homicide and organized crime activity (meaning, the theory operates the same for all dependent variables), it can be assumed that the measures of organized crime are more reliable.

Independent Variables and Measurement
The independent variables to be used in this study are the following two concepts: Anomic culture and social institutions. This section details each concept, providing support for the measures chosen by this research to operationalize each construct. This was one of the more difficult aspects of this study, as the model of Institutional Anomie Theory clearly identifies culture as existing separately from social institutions, yet Messner and Rosenfeld (1994) themselves concede that these concepts may be “empirically inseparable” (55). If they are empirically inseparable, Chamlin and Cochran (2007) point out that Institutional Anomie Theory is then non-falsifiable, and a non-falsifiable theory is arguably an un-scientific theory (Kuhn, 1996). However, in their own arguments, Messner and Rosenfeld (2009) maintain that these two dimensions of social organization must remain distinctive of each other, and they cannot be combined or singularly emphasized. As such, this research chose to operationalize Anomic culture and social institutions separate from each other to maintain continuity with the original model of Institutional Anomie Theory. Multiple measures were used to represent each element in the model to attempt to capture the multiple dimensions of the American Dream and social institutions.

**Anomic Culture**

According to Messner and Rosenfeld (2012), “Anomic culture” is composed of three main elements (see Figure 3, pg. 41). The first element is the pressure to succeed, measured by an emphasis on achievement, individualism, universalism, and pecuniary materialism. The second element is the lack of emphasis on legitimate means to succeed. These two elements combine to produce Anomie.

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75 See Kuhn (1996) for further discussion of problems surrounding non-falsifiable theories.
The Anomic cultural element representing “the pressure to succeed” has proven the most problematic for empirical studies, in that no criminological studies, save for a few exceptions (i.e., Cullen, Parboteeah, and Hoegel (2004), Gross and Haussman (2011)), have been able to empirically distinguish between the four elements (i.e., achievement, individualism, universalism, and pecuniary materialism). This is most likely due to the ambiguous descriptions given by Messner and Rosenfeld (2012) themselves. The below quote illustrates this ambiguity in the elusive description of “pressure to succeed” given by the authors:

These value commitments generate strong, relentless pressures for everyone to succeed, understood in terms of an inherently elusive monetary goal. People accordingly formulate wants and desires that are difficult, if not impossible to satisfy within the confines of legally permissible behavior. This feature of the American Dream helps explain criminal behavior with an instrumental character, behavior that offers monetary rewards. (Messner and Rosenfeld, 2012: 88)

As previously mentioned, in their original conception of Institutional Anomie Theory, the authors claim that cultural elements may not be empirically discernable from institutional elements (Messner and Rosenfeld, 1994). One of the studies that was able

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76 It should be noted that other studies published in non-English journals may have conducted such studies (e.g., Hirtenlehner et al. 2010; Thome, 2003).
77 Cullen and colleagues (2004) first examined “achievement,” which refers to the levels of encouragement for members of society to “make something of themselves” (Messner and Rosenfeld, 2012: 71). It is an “assessment of personal worth on the basis of the outcome of efforts” (Cullen, Parboteeah, and Hoegel, 2004). That is, the end goals (i.e., winning or losing) are more important than “how you play the game” (Messner and Rosenfeld, 2001: 63). Thus, the “cultural pressures to achieve at any cost are … very intense” (Messner and Rosenfeld, 2012: 72).

Cullen, Parboteeah, and Hoegel (2004) operationalized achievement by creating an index composed of three indicators: first two used percentages of people in each country who disagreed with statements such as “The respect a person gets is highly dependent on their family background,” while the third indicator was an item from the World Values Survey represented the percentage of people surveyed who agreed with the statement, “One does not have the duty to respect and love parents who have not earned it by their behavior and attitudes” (Cullen, Parboteeah and Hoegl, 2004: 415; Trompenaars and Hampden-Turner, 1998).

Individualism “encourages disengagement from the collective and, as a consequence, weakens bonds of social control” (Cullen, Parboteeah, and Hoegel, 2004: 413). “In the pursuit of success, people are encouraged to ‘make it’ on their own. Fellow members of society thus become competitors and rivals in the struggle to achieve social rewards and, ultimately, to validate personal worth” (Messner and Rosenfeld, 2012: 72). Cullen, Parboteeah, and Hoegel (2004) operationalized individualism by using three items from
to empirically separate the four cultural elements did not include any inter-item correlation statistics, which would illustrate whether any correlation between the four operationalized cultural elements existed. This is an important limitation because Messner and Rosenfeld’s (1994; 2012) own ambiguity over whether or not cultural elements can be empirically separated from each other would suggest the potential for high correlations between any separate measures of “pressures to succeed.” To address this limitation and to ensure that a measure of this cultural element is present in this study, this research seeks to employ existing composite measures (which take many different variables into account, combining them into one “score”) to represent all aspects of the cultural element of “pressures to succeed.” Therefore, Figure 7 below represents the adapted model of Institutional Anomie Theory that will be tested.

the World Values Survey that used the percentage of respondents in a nation making the individualism choice on three issues. The issues and items were:

(1) Quality of life: “It is obvious that if individuals have as much freedom as possible and the maximum opportunity to develop themselves, the quality of their life will improve as a result;” (2) typical job: “Everyone is allowed to work individually and individual credit can be received;” and (3) negligence of a team member: “The person causing the defect by negligence is the one responsible.” (Cullen, Parboteeah, and Hoegel, 2004: 415).

For the national sample, the authors correlated this index with Hofstede’s (2001) individualism measure. Universalism “promotes equality of opportunity in that it creates expectations that all will be judged on similar criteria rather than on particularistic relationships” (Cullen, Parboteeah, and Hoegel, 2004: 413). “With few exceptions, everyone is encouraged to aspire to social ascent, and everyone is susceptible to evaluation on the basis of individual achievements” (Messner and Rosenfeld, 2012: 72). Similar to the cultural element of achievement, universalistic cultural pressures may encourage an emphasis on outcomes “at the expense of the ethicality [or legality] of achieving these ends” (Cullen, Parboteeah, and Hoegel, 2004: 413). Cullen, Parboteeah, and Hoegel (2004) were measured through two items: “One dealt with testifying truthfully regarding the driving speed of a friend involved in an accident… The other asked whether a journalist should write a positive review for a friend’s restaurant” (416).

Pecuniary materialism (originally identified by Messner and Rosenfeld (1994) as fetishism of money) represents a focus on monetary rewards. “To the degree cultural values promote money as a valued end independent of other material rewards, the desire for this end becomes insatiable” (Cullen, Parboteeah, and Hoegel, 2004: 413; Messner and Rosenfeld, 2001). Personal monetary success becomes a metric for comparison “that is not linked to group welfare” (Cullen, Parboteeah, and Hoegel, 2004: 413). Thus, Cullen, Parboteeah, and Hoegel (2004) operationalize pecuniary materialism as a series of indicators from multiple surveys (i.e., WVS and Inglehart (1997)). These items:

…came from questions asking respondents to prioritize the following goals for their nation: “stable economy” and “progress toward a society where ideas count more than money.” To improve reliability [the authors] added an indicator…. the proportion of people in a nation choosing “good pay” as an “important job.” (Cullen, Parboteeah, and Hoegel, 2004: 416).
The composite index that was used to operationalize Anomic cultural pressures to succeed is the World Index of Economic Freedom. This composite measure embodies the Anomic cultural pressures to succeed as defined by Messner and Rosenfeld (1994; 2009; 2012); in other words, these scholars *explicitly* state that cultures that reinforce *economic* gains and successes are more likely to be Anomic, which impacts serious rates of crime. That is,

Cultural values that define success or social standing largely in economic terms and extol the virtues of economic success for all members of society are likely to be “anomic” to the extent that corresponding cultural emphasis is not placed on

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78 Adapted from Messner and Rosenfeld (2012).
79 The Index of Economic Freedom is a composite measure that is ranked between 0 and 100, with 0 representing the least amount of economic freedom, and 100 representing maximum freedom.
80 Figure 9 below illustrates the model of Institutional Anomie with the assigned variables that will be tested in this dissertation.
the normative status of the means for attaining success, and legitimate means are distributed unequally across the social structure. (Messner and Rosenfeld, 2009: 214).

In other words, this statement by Messner and Rosenfeld (2009) underlines that the more problematic Anomic cultural pressures to succeed are those that define and stress “success” for its members in economic and utilitarian terms. Cultures that do not emphasize this definition of success should therefore not experience the same levels of Anomie and crime. This is why this research utilized the World Index of Economic Freedom;\(^{81}\) this index embodies the economic cultural values (as explicated by Messner and Rosenfeld (1994)) that define “success” in economic, utilitarian terms. This is in full acknowledgement of past criticisms generated by this research leveled at the largely economic focus in past studies of organized crime. However, this largely survey-based index is only used to represent this element of Anomic culture in Messner and Rosenfeld’s model of Institutional Anomie Theory, and is not used to measure organized crime or any separate institutions. This research sought to test Institutional Anomie Theory as closely as possible, and therefore must operationalize the variables as the theory intended.

\(^{81}\) Figure 8 below illustrates the model of Institutional Anomie with the assigned variables that will be tested in this dissertation.
The World Index of Economic Freedom\textsuperscript{83} combines fifty economic indicators that are grouped into 10 “freedoms,” including trade policy, fiscal burden of government, government intervention in the economy, monetary policy, capital flows and foreign investment, banking and finance, wages and prices, property rights, and black market activity, in approximately 184 countries (Beach and O’Driscoll, 2003; Heritage Foundation, 2012; O’Driscoll, Holmes, and O’Grady, 2003). The index is compiled from multiple sources, to include data from social surveys and officially reported data. Taken separately, these indicators are reflective of the economic institution, which would be problematic and conflict with the empirical separation of institutions from culture in this

\textsuperscript{82} Adapted from Messner and Rosenfeld (2012).
\textsuperscript{83} Economic freedom is defined as “the absence of government coercion or constraint on the production, distribution, or consumption of goods and services beyond the extent necessary for citizens to protect and maintain liberty itself” (Beach and O’Driscoll, 2003: 50).
study. However, the composite index of these approximately 50 indicators is intended to reflect gaps in what the Heritage Foundation labels “economic freedom and prosperity.” That is, the level of openness to free-market capitalism for each country is placed along a continuum that reflects “traditional American values” (Heritage Foundation, 2012: 1). This is directly in line with Messner and Rosenfeld’s (1994) conception of a culture that is more susceptible to high rates of crime; these authors label this type of problematic culture as the “American Dream,” and claim any country with a cultural configuration most closely matching the American Dream will in turn experience high rates of Anomie. Therefore, in this research if a country scores low on the World Index of Economic Freedom, it can be assumed to be less in line with “traditional American values” that are problematic in generating higher rates of Anomie. Therefore, this Index is the best operationalization of Messner and Rosenfeld’s (1994) utilitarian conceptualization of cultural pressures to succeed.

In recognition that multiple measures are often preferred to single or unidimensional indicators, this research will also consider the Gross Household Savings Rate to represent Messner and Rosenfeld’s (1994) concept of cultural pressures to succeed. That is, they view money as the “metric” of success. As Orru (1990) states, “Money is literally, in this context, a currency for measuring achievement” (235; emphasis in original). The Gross Household Savings Rate is calculated as the gross savings amount divided by the gross disposable income, with the latter being adjusted for the change in the net equity of households in pension funds reserve (Eurostat, 2012e). Gross savings is illustrative of the amount of the gross disposable income that is not spent as consumption on necessities. Therefore, countries with higher savings rates can be
assumed to reinforce, or at least be compatible with, Messner and Rosenfeld’s (1994) elements of individualism, achievement, pecuniary materialism, and universalism. This indicator, together with the Index of Economic Freedom, should present more comprehensive proxy representing (utilitarian) cultural pressures to succeed.

The second element in Messner and Rosenfeld’s cultural schema (see Figure 8, pg. 137) is the lack of emphasis on legitimate means to succeed. To-date, no empirical studies have addressed this as a separate cultural element. However, Messner and Rosenfeld (2012: 89) (in line with Merton’s Anomie Theory) imply it to be separate from the four cultural elements:

At the same time, the American Dream does not contain within it strong injunctions against substituting more effective, illegitimate means for less effective, legitimate means in the pursuit of monetary success. To the contrary, the distinctive cultural message accompanying the monetary success goal in the American Dream is the devaluation of all but the most technically efficient means. This anomic orientation leads not simply to high levels of serious crime in general but to especially violent forms of economic crime.

The above statement implies that Anomie, then, is the product of cultural pressures to succeed coupled with a lack of emphasis on legitimate means to succeed (Merton, 1938). Here, lack of legitimate means to succeed moderates the cultural pressures to succeed. That is, if cultural pressures to succeed were high in a society, but the societal members had access to and an emphasis on legitimate means to succeed, Anomie levels should be lower than in countries without emphasis or access to legitimate means (Messner and Rosenfeld, 1994). Again, Messner and Rosenfeld (2012) assign a utilitarian emphasis to this cultural element. Because of this, this proposed research will measure a lack of emphasis on legitimate means to succeed as the Corruption Perceptions Index (CPI) and the unemployment rate.
The Corruption Perceptions Index (CPI) was first launched in 1995 by Transparency International, an organization dedicated to collecting and disseminating statistics, policies, and knowledge surrounding corruption in the public sector in over 100 nations around the world (Transparency International, 2012a). The Index itself is a composite measure that combines information from a number of polls and surveys with corruption-related data collected by a variety of institutions and official governments. “The CPI reflects the views of observers from around the world, including experts living and working in the countries/territories evaluated” and ranks countries “based on how corrupt their public sector is perceived to be” (Transparency International, 2012b: 1).

Perceptions, capturing perceived measures of both administrative and political aspects of corruption, “are used because corruption – whether frequency or amount – is to a great extent a hidden activity that is difficult to measure” (Transparency International, 2010: 4). To build this composite measure, the CPI includes survey questions addressing “the misuse of public office for private (or political party) gain: including corruption in public procurement, misuse of public funds, corruption in public service, and prosecution of public officials” (Transparency International, 2010: 17). Questions also address the level of transparency regarding corruption (public awareness), the likelihood of encountering corrupt officials, and the perceived levels of undocumented payments or bribes connected with exports and imports, public utilities, tax collection, public contracts, and judicial decisions.

84 To calculate the CPI, the data are first standardized using a matching percentiles technique that takes the ranks of countries reported by each individual score. “This method is useful for combining sources that have different distributions” (Transparency International, 2010: 15). The bounds of the CPI are between 0 and 10 – with 0 being completely corrupt and 10 being the least corrupt.
The CPI is an appropriate measure to represent Merton’s and Institutional Anomie notion of “lack of emphasis on legitimate means to succeed” because varying levels of corruption in societies undermines the ability of its members to find and maintain legitimate jobs, it risks the stability of financial markets, and corruption negatively impacts the perceived legitimacy of the criminal justice system and the political process (Transparency International, 2010). That is, high rates of perceived corruption in the public sectors indicate that legitimate avenues may be threatened for citizens to obtain even the basic necessities. Consequently, countries that score high on the perception index (indicating very low levels of perceived corruption) are representative of a cultural emphasis on legitimate means to succeed. Countries with a low CPI (indicative of high levels of perceived corruption) represent a general lack of emphasis on legitimate means to succeed.

Unemployment rates were also used as a proxy representing a lack of legitimate means to succeed. The rate of unemployment, defined by the World Bank (2012) as “the share of the labor force that is without work but available for and seeking employment,” is a logical indicator to include, as the inability to find work significantly limits the ability to achieve success goals through legal means. Therefore, the higher a country scores on the unemployment rate, it can be assumed the country has a correspondingly higher lack of emphasis on legitimate means to succeed.85

85 A good point to make, however, is that Messner and Rosenfeld (2009) acknowledge that cultural and institutional elements are known to change slowly over time. Unemployment rates are known to fluctuate at faster rates than perhaps would be reflective of an actual Anomic cultural (or institutional) shift; all attempts at operationalizing “Anomic culture” and social institutions should be wary of this point.
Therefore, these Anomic cultural variables considered together are seen as representative of Anomie.\textsuperscript{86} That is, as countries experience intense cultural pressures to succeed (reinforced by increased levels of economic freedom and increased household savings), Institutional Anomie Theory predicts that these societies will experience higher levels of Anomie when they also experience higher unemployment rates and elevated levels of perceived corruption (resulting in a lack of emphasis on the legitimate means to succeed).

\textit{Social Institutions}

The other half of Messner and Rosenfeld’s (2012) model of Institutional Anomie Theory (see Figure 7, pg. 135) are the four social institutions\textsuperscript{87} that represent an institutional balance of power. This institutional balance of power is composed of the economic, political, familial, and educational institutions. As the theory states, Anomic societies are typically characterized by an economic dominance over other non-economic institutions (Gross and Grossmann, 2011). However, to-date, no study has been able to create an empirical measure of an “institutional balance of power”.\textsuperscript{88} The vast majority of past research endeavors have simply tested the four institutions separately in multivariate regression analyses and concluded a stronger economic dominance exists when the coefficients for economic indicators are larger and more significant than non-economic indicators. Recently, Gross and Haussmann (2011), utilized separate indicators and inferred that lower scores on variables such as welfare spending was indicative of a

\textsuperscript{86} This will improve on past operationalizations of Anomie, as existing studies have largely considered Anomie to be a representative of a strong economic institution (e.g., Bjerregaard and Cochran, 2008a; 2008b).

\textsuperscript{87} No studies, aside from Cullen and colleagues (2004) and in part, Gross and Haussmann (2011), have ever empirically considered variations in “culture” apart from “social institutions.”

\textsuperscript{88} However, scholars of Institutional Anomie Theory, to include Dirk Enzmann, are currently examining ways of empirically measuring this balance.
dominant economy: “Low rates of welfare spending can be interpreted as an indicator of pronounced commodification (commercialization of all areas of society…) and thus economic dominance” (308). Without guidance on the formation of an empirical index system to represent measure of the four institutions in one measure of an “institutional balance,” this research will employ the logic proposed by Gross and Hausmann (2011) by including separate measures that can be inferred to represent an economic imbalance of institutions.

The economic institution “consists of activities organized around the production and distribution of goods and services. It functions to satisfy the basic material requirements for human existence, such as the need for food, clothing, or shelter” (Messner and Rosenfeld, 2012: 75). A commonly used indicator in past research to represent the strength of the economy is the Gross Domestic Product (GDP) per capita (Bjerregaard and Cochran, 2008a; 2008b). The GDP per capita is a basic measure of a country’s overall economic health.

As an aggregate measure of production, GDP is equal to the sum of the gross value added of all resident… industries engaged in production, plus any taxes, and minus any subsidies, on products not included in the value of their outputs. Gross value added is the difference between output and intermediate consumption. (Eurostat, 2012b).

Thus, this research also utilized GDP per capita to represent the economic strength of each country. However, instead of using just the GDP per capita, this research calculated the annual percentage growth rate of GDP per capita in order to illustrate changes from year to year, thus providing a more appropriate measure of economic strength. This is because the annual percentage growth rate of GDP illustrates changes within the same country from year to year, allowing the researcher to compare changes in percentage
growth within and between countries. That is, one can compare a 15% growth rate in 2003 in Poland to a 3% growth rate in the U.K. at the same time. GDP per capita rates do not allow for this level of comparison; comparing per capita does not provide the context to compare rates between countries (to say that Austria’s GDP per capita in 2003 was 38,967 versus Belgium’s GDP per capita of 43,849 is less meaningful). 89

The next institution is the polity, which is designed to “mobilize and distribute power to attain collective goals” (Messner and Rosenfeld, 2012: 75). Messner and Rosenfeld (2012: 75) note:

One collective purpose of special importance [for the political institution] is the maintenance of public safety... As part of the polity, agencies of the civil and criminal justice systems have major responsibility for crime control and the lawful resolution of conflicts.

However, to date studies of Institutional Anomie have only operationalized this institution through voter turnout (with one exception). This measure is problematic, 90 and does not embody Messner and Rosenfeld’s (2012) definition of the social institution. The one study to define the polity as Messner and Rosenfeld (1994) originally intended was Gross and Hausmann (2011), who utilized survey data 91 to capture trust in the police, the overall government, and the legal system. Therefore, this research remained true to the spirit of the theory and operationalized the polity using three measures that more closely represents Messner and Rosenfeld’s (2012) above description of the political institution: the total spending on social protection, a Rule of Law measure, and a Political Stability

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89 The percentage growth rate of GDP per capita will only be used in the first stage of the analyses; that is, the visual inspection. This is due to the restrictions of the use of negative numbers in the multivariate time series analyses.

90 This measure is only appropriate for more fully developed democracies that actually hold true (i.e., non or less corrupt) elections, thereby excluding any transitioning or non-democratic nations from the study. Additionally, there is “considerable variation across the democracies in voter-turnout rates” (Jackman, 1987).

91 This data was gathered from the European Social Survey (ESS).
and Absence of Violence measure. The social protection expenditure is defined as the amount of government expenditures (represented as per capita) on law courts, policing, fire-protection services, and prisons (Eurostat, 2012). Therefore, countries ranking high on this indicator are implied to be more politically driven, and hold a greater emphasis for the political institution because more emphasis is placed on ensuring funding for these services.

The Rule of Law measure and the Political Stability and Absence of Violence measure are two indicators out of a total of six dimensions of governance compiled by the Worldwide Governance Indicators (WGI) project, headed by the World Bank (2013a). The WGI project reports aggregate and individual governance indicators for 215 nations from the mid-1990s until 2011.

Governance consists of the traditions and institutions by which authority in a country is exercised. This includes the process by which governments are selected, monitored and replaced; the capacity of the government to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern…social interactions among them. (World Bank, 2013b)

Each dimension of governance is based on a series of aggregate indicators that include officially reported data as well as survey data. “The six composite WGI measures are useful as a tool for broad cross-country comparisons [of governance] and for evaluating … trends over time” (World Bank, 2013b). The Rule of Law measure and the Political Stability and Absence of Violence measure were chosen out of the six dimensions for their relevance to Messner and Rosenfeld’s (1994) conception of the polity.
The Rule of Law dimension\textsuperscript{92} “captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence” (World Bank, 2013c: 1). This dimension includes factors such as the confidence in the police force, confidence in the judicial system, reliability of police services, and effectiveness of the judicial system. This is very closely related to the requirement of the polity outlined by Messner and Rosenfeld (1994); that is, the maintenance of public safety. Here, the Rule of Law represents the extent to which the people of each nation feel that their country is indeed maintaining public safety.

The Political Stability and Absence of Violence\textsuperscript{93} dimension “measures perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism” (World Bank, 2013d). This measure includes factors such as the threat of civil unrest, government stability, violent social conflicts, and violent demonstrations. This governance dimension also closely follows Messner and Rosenfeld’s (1994) definition of the polity, as it addresses levels of actual and perceived civil unrest within each nation.

The educational institution “aims to enhance personal adjustment, facilitate the development of individual human potential, and advance the general knowledge base of the culture” (Messner and Rosenfeld, 2012: 75). Moreover, “schools are given responsibility for transmitting basic cultural standards to new generations” (Messner and Rosenfeld, 2012: 75). To represent the importance placed on the educational institution in

\textsuperscript{92} The Rule of Law dimension is measured in a percentile rank, ranging from 0 to 100. 0 represents the lowest level of governance, and 100 represents the highest.
\textsuperscript{93} This dimension is also measured in a percentile rank, ranging from 0 to 100. 0 represents the lowest level of governance, and 100 represents the highest.
each country, past studies have operationalized this construct as the educational expenditures as a percent of GDP (Bjerregaard and Cochran, 2008a; Maume and Lee, 2003). Educational expenditures generally refers to “direct expenditure on educational institutions: bearing directly the current and capital expenses of educational institutions” (EUROSTAT, 2012c). This measure has demonstrated the ability to capture the emphasis placed on the amount of educational institutions available within each country, thereby facilitating the advancement of knowledge within the society; this research also utilized this measure with the slight modification of calculating it as per capita instead of as a percent of GDP to ensure that the measure is not dependent on the level of GDP in each country, but rather on the population.

Additionally, to include a proxy for the strength of the educational institution in each country, this research also included a measure of the educational attainment level. The primary education level is defined as the percentage of the labor force having completed at least primary schooling (World Bank, 2012). This was an important indicator to include in this study in order to separate aspects of the educational institution from its inherent economic ties, thus reducing the likelihood for high correlation among the variables.

Finally, the familial institution “bears primary responsibility for the regulation of sexual activity and for the replacement of members of society” (Messner and Rosenfeld, 2012: 75). “One of the most consistently utilized measures of the weakening of the family units is the divorce rate” (Bjerregaard and Cochran, 2008a: 188), and additionally has been one of the most consistent measures of the familial institution in empirical tests of Institutional Anomie Theory (Bjerregaard and Cochran, 2008a; 2008b; Chamlin and
Cochran, 1995; Piquero and Piquero, 1998; Maume and Lee, 2003). High divorce rates represent family disruption, thus “indicating a breakdown of the traditional nuclear family” (Bjerregaard and Cochran, 2008a: 188). However, changes in marriage rates over time must be accounted for. Therefore, this research utilized the ratio of divorce rates to marriage rates in each nation as representative of the familial institution. Divorce-to-marriage ratios will be computed as the number of marriages divided by the number of divorces per 100,000 population, which is in line with past research (Cullen, Parboteeah, and Hoegl, 2004).

Additionally, the Total Public Social Expenditures (per capita) was added as another proxy representing the familial institution. The Social Expenditure Database (SOCX) was developed by the OECD “in order to serve a growing need for indicators of social policy. It includes reliable and internationally comparable statistics on public policy and (mandatory and voluntary) private social expenditure at program level” (OECD, 2012). This indicator is similar to the one used by Gross and Haussmann (2011) to represent welfare spending in each nation. As Gross and Hausmann (2011) surmise, the amount of welfare spending in each country has been interpreted as an indicator of the degree of commodification present in each society. Countries with social policies less oriented towards existing needs are believed to experience “elevated commodification of labor (increased market dependency)” (Gross and Hausmann, 2011: 308). This represents an imbalance of the emphasis on the importance of the family as represented through social programs that strengthen the family unit (healthcare, community programs, after school programs, day care, etc.) and the economic institution. Here, parents are (culturally) encouraged and sometimes forced to work overtime or work multiple
positions instead of attending their child’s soccer game or staying home to help them with their homework (Messner and Rosenfeld, 2012).

To ensure that other factors are not significantly influencing these institutions, the following variables were controlled for: the age distribution and the percent of population that is male. Even though Institutional Anomie Theory does not address individual differences, Cullen, Parboteeah and Hoegl (2004) suggest using these “individual-level control variables” largely because criminological research “has shown relationships [exist] between most forms of crime… with age [and] gender” (416).

**Population and Sampling Selection Criteria**

As international organizations have illustrated (e.g., Council of Europe, 2000; 2005; OCTA, 2011), there exists much substantial variation of organized crime activity between and within Europe in terms of the activities, the consumer countries, and the countries utilized for their trafficking routes. Based on this geographical representation within Europe, the following countries have been selected to represent the Western and Central European Region in this research (UNODC, 2010): Austria, Belgium, France, Germany, Greece, Ireland, Italy, Lithuania, Poland, Portugal, Spain, Slovakia, Sweden, and the United Kingdom. This selection was based on two main criteria: identifying countries that provided geographical representation across all parts of Europe (to include transitioning nations), and countries that had reliably reported indicators from 1995 to 2009 with the least amount of missing data.

Moreover, because “it is very difficult to provide detailed descriptions of so many nations simultaneously and to make sense out of it” (Marshall and Summers, 2012: 42),
scholars have found it helpful to organize these large numbers of countries into country groupings or clusters. The classification system used in this research was one based on the work of Esping-Andersen (1990) and Lappi-Seppala (2007), and “has a strong conceptual foundation that takes into account a number of unifying and separating factors like social welfare investment, income inequality, geography, political traditions and orientations, and history and culture tradition” (Marshall and Summers, 2012: 42). Thus, the Western and Central European region was broken down into the following six country clusters (Enzmann, et al., 2010; Esping-Andersen, 1990; Lappi-Seppala, 2007; Saint-Arnaud and Bernard, 2003):

<table>
<thead>
<tr>
<th>Countries</th>
<th>Clusters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>Western Europe</td>
</tr>
<tr>
<td>Belgium</td>
<td>Western Europe</td>
</tr>
<tr>
<td>France</td>
<td>Western Europe</td>
</tr>
<tr>
<td>Germany</td>
<td>Western Europe</td>
</tr>
<tr>
<td>Greece</td>
<td>Mediterranean</td>
</tr>
<tr>
<td>Ireland</td>
<td>Anglo-Saxon</td>
</tr>
<tr>
<td>Italy</td>
<td>Mediterranean</td>
</tr>
<tr>
<td>Lithuania</td>
<td>Baltic</td>
</tr>
<tr>
<td>Poland</td>
<td>Central and Eastern Europe</td>
</tr>
<tr>
<td>Portugal</td>
<td>Mediterranean</td>
</tr>
<tr>
<td>Slovakia</td>
<td>Central and Eastern Europe</td>
</tr>
<tr>
<td>Spain</td>
<td>Mediterranean</td>
</tr>
<tr>
<td>Sweden</td>
<td>Northern Europe</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Anglo-Saxon</td>
</tr>
</tbody>
</table>

Figure 9: List of Countries and Clusters included in this Research

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Here, it is assumed that “geographic proximity implies a certain degree of cultural, social, legal, economic, and political homogeneity among the countries grouped together,” and that these “within-cluster commonalities and between-cluster differences will be useful in comparative analyses of crime” (Marshall and Summers, 2012: 42; see also Smit, Marshall, and van Gammeren, 2008).
Representation from each country cluster will allow for the three sets of research questions to be considered from multiple comparative frameworks.95

**Data Sources**

All of the dependent and independent variables used to address the research questions and their related hypotheses were collected from several official sources. The dependent and independent variables used to empirically address regional variation in organized crime activity were collected from official reports for the following European countries: Austria, Belgium, France, Germany, Greece, Ireland, Italy, Lithuania, Poland, Portugal, Slovakia, Spain, Sweden, and the United Kingdom. The data are available online from Eurostat (2012), OECD (2012), Transparency International (2012a), The Heritage Foundation (2012), and the World Bank (2012).

The data for empirical analyses of Poland were collected from a number of national and international sources and databases. Specific drug-related data are annually reported figures collected by the National Bureau for Drug Prevention (NBDP) and the Institute of Psychiatry and Neurology in Warsaw under the Ministry of Health in Poland. The NBDP receives data from the police, court systems, and government-run facilities, and the data are made electronically available on a yearly basis through the National Reports. The other dependent and independent variables are readily available online from

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95 This research naturally lends itself to a comparative framework. The methods behind this framework, identified first by Durkheim (1962/1895), include 1) the analysis of variations within one given society at one point in time; 2) the comparison of similar societies but differing in certain aspects; and 3) the comparison of dissimilar societies that share some feature(s). The first of these applications is intra-societal in nature, meaning cultural and institutional elements are examined against some phenomenon to be explained within that society. This application has historically been the most popular method employed by comparative criminologists. This research will focus on all three comparative methods outlined by Durkheim; however, most of the emphasis will be on comparing similar societies that differ in certain aspects (e.g., CEE cluster countries that differ in rates of organized crime), and comparing dissimilar societies that share some feature(s) (e.g., between cluster differences in Institutional Anomie).

**Analytic Strategies**

The quantitative data analysis plan was able to explore whether countries in Europe with higher rates of Institutional Anomie also had correspondingly higher rates of organized crime activity, taking into account changes over time and the grouping of European countries into clusters and into developed and transitioning country groups. These same strategies were then employed to address how Institutional Anomie Theory operated within the transitioning democracy of Poland. This analytic strategy involved multiple stages that were most appropriate for the data at hand (see Figure 10 below).

First and foremost, this research graphed all of the variables included in this study (see Figure 6, pg. 123) and calculated descriptive statistics, allowing for a visual inspection of the data (Maltz, 2010). This involved inspecting the data for the two concepts embodying Institutional Anomie (i.e., Anomie culture and social institutions), the measures of organized crime (heroin, cocaine, amphetamine, and marijuana seizures) and intentional homicide rates, as collected for each European country (Austria, Belgium, France, Germany, Greece, Ireland, Italy, Lithuania, Poland, Portugal, Slovakia, Spain, Sweden, and the United Kingdom). Once the descriptive statistics were run on all the variables, any outliers were identified. Any outliers that were identified were noted, but not removed from the study since the nature of the outliers remains unclear and these data may in fact turn out to be valuable indicators.

96 The sources for this section of Chapter 4 that discuss time series analysis and pooled cross-sectional time series analysis include the following: Dadkhah (2007), Maddala and Kim (1998), Hamilton (1994), Enders (1995), and Campbell et al. (1997).
Table 1: Research Questions and Analytic Strategies

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Analytic Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do countries in Europe with higher rates of Institutional Anomie also have correspondingly higher rates of organized crime activity?</td>
<td>Full model (all countries): pooled cross-sectional time series analysis; Granger causality; cointegration</td>
</tr>
<tr>
<td>1a. Do variations in levels of Institutional Anomie over time correspondingly impact levels of organized crime activity in Europe?</td>
<td>Full model (all countries): pooled cross-sectional time series analysis; Granger causality; cointegration</td>
</tr>
<tr>
<td>1b. Does grouping countries into country-clusters significantly impact Institutional Anomie Theory’s ability to predict high levels of organized crime?</td>
<td>Regional-level pooled cross-sectional time series analysis; Granger causality; cointegration</td>
</tr>
<tr>
<td>2. How do the elements of culture and social institutions affect levels of Institutional Anomie and organized crime in both developed and transitioning countries?</td>
<td>Pooled cross-sectional time series analysis followed by a comparison between the two groups; Granger causality; cointegration</td>
</tr>
<tr>
<td>3. How does Institutional Anomie Theory operate in the transitioning democracy of Poland?</td>
<td>Multivariate time series analysis</td>
</tr>
<tr>
<td>3a. Does the culture-institutional configuration in Poland vary from other CEE countries?</td>
<td>Comparison of composite measures for culture and social institutions (for Poland and Slovakia) following multivariate time series analysis</td>
</tr>
<tr>
<td>3b. If so, how does it impact the levels of organized crime involvement?</td>
<td>Comparison of results from Poland and Slovakia</td>
</tr>
</tbody>
</table>

Figure 10: Research Questions and Analytic Strategies

Full Model, Country-Cluster, and Developed v. Transitioning Group Analyses

The next stage in the data analysis addressed the full model (i.e., all fourteen countries) variation in organized crime activity (see Figure 10 below). These methods employed multivariate time series analyses (described below) for the full model from 1995 to 2009\(^7\) across all five dependent variables.\(^{98}\) Next, unit root tests were conducted

\(^{97}\) Thus resulting in 210 observations. As mentioned in the following discussions, approximately 50 or more observations are desired in order to obtain sound empirical results in time series analysis.
to determine the stationarity of the variables, followed by Granger causality tests, and (depending on the non-stationarity of the variables) tests for cointegration. Each multivariate regression and Granger causality model indicated the coefficient, standard error, and significance of the explanatory variables, which in turn indicated the Anomic cultural and social institutional proxies with the greatest impact on each of the four types of drug seizures in Europe. The results also illustrated whether countries in Europe with higher rates of Institutional Anomie also had correspondingly higher rates of organized crime activity (as measured through drug seizures) over time. The results from the cointegration models yielded a $t$ statistic, indicating the presence of cointegration through the stationarity and significance of the $t$ statistic. Diagnostics were run to assure the absence of multicollinearity and highlight any potential serial correlation.

Then, pooled cross-sectional time series analysis was employed to address differences between country clusters. The same analyses were conducted as used in the full country model. That is, the independent variables were first tested using pooled cross-sectional multivariate regressions. Next, following unit root analysis to determine stationarity among the country clusters, Granger causality and cointegration models were run. These results were compared with the full-country analyses to determine whether grouping countries into country-clusters significantly impacted Institutional Anomie Theory’s ability to predict high levels of organized crime. These results were also compared with the full-country analyses to determine whether grouping countries into

---

98 The use of separate dependent variables for the four types of drugs were used to account for regional variation in drug markets across Europe.
99 The $n$ size in the Western and Mediterranean country clusters was 60, in the Anglo-Saxon and CEE clusters the $n$ was 30, and in the Baltic and Northern clusters the $n$ was 15. These numbers of observations are all less than the desirable 50 that are suggested in the literature (e.g., Enders, 1995) at varying degrees. This concern is further discussed in the limitation sections below, along with the impacts of this limitation on empirical interpretation.
country-clusters significantly impacts Institutional Anomie Theory’s ability to predict high levels of organized crime.

This study next separated and pooled the countries in this sample into two groups: developed countries (Sweden, Ireland, United Kingdom, Austria, Belgium, France, Germany, Greece, Italy, Portugal, Spain) and transitioning countries (Poland, Slovakia, Lithuania).100 This research first ran multivariate regression analyses on the pooled data.101 Then, comparisons between the strength and statistical significance of the coefficients for culture and social institutions were made between the two groups to investigate any variations over time. Additionally, to uncover further relationships existing among and between the proxies of Anomic culture and social institutions, tests for Granger causality and cointegration were conducted.102 Diagnostics were again run to assure the absence of multicollinearity and highlight any potential serial correlation.

Polish Analyses

A similar analytic strategy was applied to the country-level analyses that allowed for comparisons to be made between the compositions of Poland’s culture-institutional configuration with the other CEE cluster country represented in this research (Slovakia) for the same time period (1995 to 2009). This involved time series regression analyses. However, due to the lack of observations for the separate country analyses between

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100 The differences between “developed” and “transitioning” relate to the age of the democratic governments. Poland, Slovakia and Lithuania are the youngest, following the collapse of the USSR in 1989. Thus, these governments are still considered to be “in transition” as opposed to more stable, established governments.
101 The developed country group had 165 observations, and the transitioning country group had 45 observations. Only slight concerns surrounded the results in the transitioning country group attributable to the n size.
102 Unit root tests were first conducted to determine the stationarity of the variable.
Poland and Slovakia, Granger causality and cointegration tests were not calculated.\textsuperscript{103} Because of this limitation, the country-level analyses between Poland and Slovakia represented preliminary endeavors to uncover the influence of social organizational elements in these countries. However, the limitation of data was acknowledged and as this research was exploratory, the analytic techniques applied here allowed for an initial signal of Institutional Anomie Theory to be detected. These techniques were also able to detect how these variables impacted proxies for organized crime.

The following elements of this section detail the econometric techniques used to address the three sets of research questions (see Figure 10 above) by describing the technical language behind multivariate and pooled cross-sectional time series analyses, as well as the Granger causality and cointegration tests.

\textit{Time Series Analysis}

Time series analysis gained prominence in econometric analysis during the 1970s and 1980s. A time series is a collection of random variables ordered in time \( \{X_t\} \):

\[ X_t = T_t + S_t + C_t \quad (1) \]

Where \( T_t \) is a long-term trend component; \( S_t \) is seasonality; and \( C_t \) is the remaining short-term component of cyclical residual. The properties of time series became hugely popular in macroeconomics, as this type of analysis “provide[s] valuable benchmarks to assess the effect of policy changes” (Dadkhah, 2007: 143). To understand

\textsuperscript{103} As explained in sections below, these countries had non-stationary independent and dependent variables that further limited the number of observations, because the variables would have had to be first-differenced and then taken the lag of the first difference before inclusion in the Granger causality or cointegration models. Non-stationarity was less of a concern for the Northern and Baltic country clusters, which is why these two statistical tests were conducted tentatively for each cluster but not for the individual country analyses.
the basic elements of the time series analyses undertaken in this research, a few terms and concepts first need to be defined.

A time series is said to be stationary if the data do show some sort of trend (as opposed to non-stationary). Stationary time series illustrate mean-reverting processes, while non-stationary time series are absent a mean and are either increasing (with a positive trend) or declining (with a negative trend) towards infinity. In other words, the mean and variance of a stationary process are constant over time. The covariance of a stationary process between any two points in time depends only on the time difference between these two points. A stationary series \(y_t\) has the following properties:

\[
\begin{align*}
E(y_t) &= \mu \quad \forall t \\
E(y_t - \mu)^2 &= \sigma^2 \quad \forall t \\
E(y_t - \mu)(y_s - \mu) &= \gamma(t-s) \quad \forall t \neq s
\end{align*}
\]  

(2)

Most social science time series are not stationary. “While we can consider each observation [in historical data] as a sample or realization of a distribution with constant mean and variance, the whole series cannot be assumed to have a constant mean and variance” (Dadkhah, 2007: 20). Therefore, the trend must be modeled. If a time series is stationary, then it does not have a trend and contains no unit root (see footnote 107). This means that any shocks to the time series are necessarily temporary and the effects will dissipate over time as the series reverts to its long-run mean. A non-stationary time series with a unit root has a stochastic trend. Therefore, any shock to the system will be permanent. A non-stationary time series may have a deterministic trend; in this case, shocks to the system affect the variable in only one time period and have no permanent effect. A non-stationary time series may contain a unit root process as identified through
the Levi-Lin-Chu (2002) formal test for the presence of a unit root.\textsuperscript{104} Importantly, the assumptions of the classical regression model\textsuperscript{105} require that both the \( \{ y_t \} \) (dependent variable) and \( \{ z_t \} \) (independent variable) sequences be stationary (Enders, 1995).

However, most time series containing social science indicators (to include crime statistics) show some sort of upwards or downwards trend, which is problematic for statistical analysis. Thus, the time series must be first-differenced (known as second-order stationary) before it can be further manipulated.

The field has since experienced many developments over the past three decades, to include the causality test proposed by Clive Granger and cointegration analysis developed by Engle and Granger. The issue of causality is one of particular interest to criminologists and other social scientists alike. It must be remembered, though, that

\[ y_t = \rho y_{t-1} + \varepsilon_t \]

Where \( \varepsilon_t \) is a stationary process with mean zero and variance of one. If \(|\rho| \geq 1\) then \( y_t \) has unit root and is integrated of order one. Thus, in order to test for a variable being stationary we consider the equation:

\[ y_t = \mu + \rho y_{t-1} + \Delta y_{t-1} + \Delta y_{t-1} + \varepsilon_t \]

the null and alternative hypotheses are:

\[ H_0: |\rho| \geq 1 \]
\[ H_a: |\rho| < 1 \]

Rejecting the null hypothesis establishes that the process is stationary. Rewriting the equation as:

\[ \Delta y_t = \mu + (\rho - 1) y_{t-1} + \Delta y_{t-1} + \Delta y_{t-1} + \varepsilon_t \]

Since trends in social and economic variables are generally positive, it will be tested to determine if the coefficient of \( y_{t-1} \) is greater than or equal to zero. Rejecting this null hypothesis establishes that \( y_t \) is stationary. The test statistics is the t-statistics of the coefficient of \( y_{t-1} \). Its distribution, however, is not the t-distribution. Indeed it is the ratio of two random variables. The distribution is available via different statistical packages including Stata.

It is noteworthy that the trend may not be necessarily stochastic. Tests are available to distinguish between stochastic and deterministic trends. These tests shall be used, but the power of tests in distinguishing between the two types of trends is low.

\[ y_t = a_0 + a_1 z_t + \varepsilon_t \]
correlation does not imply causality, and only true experimental studies have the ability to successfully isolate the effect of a dependent variable. Therefore, for time series:

Clive Granger noted that a necessary, but not sufficient, condition for causality is that knowledge of past values of \( x \) should improve the forecast of \( y \). Surely if we can reject causality in the Granger sense then definitely we can reject causality in the more strict experimental sense. But failure to reject causality in the Granger sense does not mean causality in the strict sense cannot be rejected. (Dadkhah, 2007: 150)

The test of causality involves estimating the following equations:

\[
\begin{align*}
y_t &= \beta_0 + \beta_1 y_{t-1} + \cdots + \beta_k y_{t-k} + u_t, \\
y_t &= \beta_0 + \beta_1 y_{t-1} + \cdots + \beta_l y_{t-l} + \gamma_1 x_{t-1} + \cdots + \gamma_m x_{t-m} + v_t
\end{align*}
\]  

The equations suggest that if one cannot reject the null hypothesis, it must be concluded that \( x \) does not cause \( y \). However, the Granger test for causality was developed in the field of economics, and thus requires a large number of observations to be confident in the results. Thus this test for causality has had limited application in the field of criminology due to the limitation of existing data.\(^{106}\)

Finally, Engle and Granger developed a test to see if non-stationary time series move or “track” together – known as cointegration. For instance, consider demand and supply of some licit good. If demand exceeds supply, an error correction mechanism is set in motion to increase supply and reduce demand. These two time series are said to be cointegrated; they share a common trend.

Technically, when a linear combination of two or more variables is stationary, we say that they are cointegrated. Note, however, any combination of two or more stationary variables would also be stationary. Therefore, the existence of equilibrium or cointegration among variables cannot be statistically tested unless at least two of the variables involved exhibit non-stationarity. (Dadkhah, 2007: 154)

\(^{106}\) It has been suggested (Enders, 1995) that approximately 50+ observations are optimal for achieving sound empirical results. Quite often in criminological research, this equates to at least fifty years worth of data, which is often difficult to obtain.
After performing a Levi-Lin-Chu (2002) unit root test and establishing the time series as stationary upon first-differencing the data (known as integrated of order one), the following regression can be run to test for cointegration:

\[ y_t = \alpha + \beta x_t + \epsilon_t \] (4)

If cointegration is present, the residual from the regression will be stationary. This will indicate that an error-correction relationship (such as the one between the example of demand and supply of a licit good) exists between them:

\[ \Delta y_t = \phi_0 + \phi_1 \Delta x_{t-1} + \xi_t \] (5)

These tests (cointegration and causality) have important implications for the field of criminology. As previously discussed in Chapter 3, much previous work on organized crime has focused on market forces of drugs and drug trafficking (e.g., Reuter and Haaga, 1989). If a relationship is found between two time series (exhibiting institutional change and crime rates for Spain and Poland, for instance), any shocks to one system will directly affect the system that shares a common trend. Elements of forecastability are then present, meaning if a causal relationship is found, the impact of future institutional changes in Spain may behave predictably with changes in Poland. As already mentioned, the results are tempered when a less than desirable number of observations are used.

**Pooled Cross-Sectional Time Series Analysis**

Pooled cross-sectional time series analysis combines time series for several cross-sections.\(^{107}\) Pooled data “are characterized by having repeated observations (most frequently years) on fixed units (most frequently states and nations. This means that pooled arrays of data are one that combines cross-sectional data on \(N\) spatial units and \(T\)

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\(^{107}\) It should be noted here that “pooled cross-sectional time series analysis” is sometimes referred to as a “panel analysis,” but this is often confused with panel research in social survey studies.
time periods to produce a data set of $N \times T$ observations” (Podesta, 2002: 6). Given this explanation, this section of the quantitative analyses utilizes fourteen spatial units over fifteen years, or $14 \times 15$. The generic pooled linear regression model estimated by Ordinary Least Squares (OLS) procedure is given in equation 1:

$$y_{it} = \beta_1 + \sum_{k=2}^{K} \beta_k x_{it} + e_{it}$$  \hspace{1cm} (6)

Here, $i = 1, 2, \ldots; N$ refers to a cross-sectional unit; $t = 1, 2, \ldots; T$ refers to a time period and $k = 1, 2, \ldots; K$ refers to a specific explanatory variable. Therefore, $y_{it}$ and $x_{it}$ refer to dependent and independent variables for unit $i$ and time $t$; $e_{it}$ is a random error and $\beta_1$ and $\beta_k$ refer to the intercept and slope parameters.

Pooling data in this fashion is beneficial to social science research for two reasons. First, in social science research, limitations of available data often result in small sample sizes (which is also a concern shared by this current study). By rule of thumb, time series analysis should utilize at least fifty observations, but this is not often possible in criminological research. Reliable observations for fifty consecutive years (months, weeks) are not readily available for multiple countries. Thus, pooled cross-sectional time series analysis accounts for these limitations by combining limited number of spatial units and limited number of observations over time. “This allows us to test the impact of a large number of predictors of the level and change in the dependent variable within the framework of a multivariate analysis” (Podesta, 2002: 7). Second, pooled cross-sectional analyses allow for the combination of time and space to be considered simultaneously. This is in comparison to either cross-sectional studies that may look at multiple countries at one point in time, or a time series model that looks at one country for multiple years of data. A pooled model tests for multiple countries across multiple points in time.
As with any analysis of time series data, special problems of high correlation may exist due to trends in the variables involved. Serial correlation might also exist among the errors in the regression model. Therefore, diagnostics\textsuperscript{108} were run to assure the absence of multicollinearity and any serial correlation that might be present among the variables.

\textit{Limitations of Data}

Within the available collected data there remain some methodological limitations that may impact the strength of the empirical tests. Officially collected statistics have well documented problems of underreporting, and validity and reliability concerns (Plywaczewski, 2004), particularly when the study employs officially reported data from other countries for any length of time. This is primarily a concern in the three countries considered to be in transition in this study (Lithuania, Poland, and Slovakia) particularly for the early years of the data captured (i.e., 1995 to 2000). Following the collapse of communism in 1989 these countries experienced high rates of institutional conflict and restructuring. Officially reported statistics are problematic even through the late 1990s as these countries transitioned (and continue to transition) to democracy. However, the year 1995 was chosen as the starting date for data collection to try and limit these concerns.\textsuperscript{109} This also does not mean these data should be ignored. However, since there is no way to correct or supplement this limitation, the data must be utilized as it was reported and published.

\textsuperscript{108}Variance Inflation Factors (VIF) scores were calculated to ensure the absence of multicollinearity. A VIF score of more than 5 is generally accepted as an indicator of multicollinearity in the field. Durbin-Watson test statistics will also be calculated to ensure the absence of serial correlation. The DW statistic will be between 0 and (+/-) 4. A value near (+/-) 2 indicates no first-order serial correlation, but values less than 2 indicate the presence of positive serial correlation.

\textsuperscript{109}The rationale behind this date selection is discussed earlier in this chapter.
Additionally, composite measures used in this research, such as the World Index of Economic Freedom (Heritage Foundation, 2012), the Corruption Perception Index (Transparency International, 2012), and the Gini coefficient, are subject to further methodological concerns. All composite indices, most particularly the Index of Economic Freedom, are based on a composition of multiple separate indicators that are all individually prone to problems of underreporting, validity, and reliability of the reported national statistics for each country. Additionally, the Corruption Perception Index faces methodological issues related to international survey instruments (e.g., translation of questions between languages, nationally representative samples for each country, response rates).

As documented in Chapter 2, scholars have criticized Institutional Anomie Theory for failing to provide helpful guidelines for operationalizing key concepts within the theory. Institutional Anomie Theory contains major sociological concepts of historical importance, yet within the theory these remain latent constructs. Thus, any measure of “Anomic culture” or “social institutions” is not a direct measure, but rather an indirect measure, measuring some aspect of the construct. Therefore, the measures of these two latent constructs for this research are subject to validity and reliability issues. However, many of the indicators chosen have been previously used in past research (e.g., Bjerregaard and Cochran, 2008a; 2008b; Cullen, Parboteeah, and Hoegel, 2004; Maume and Lee, 2003; Messner and Rosenfeld, 1997c), and thus have demonstrated reliability in these studies.

Further, concerns surround empirically separating “Anomic culture” from “social institutions.” While Messner and Rosenfeld (1994) originally expressed the desire (in line
with Talcott Parsons (1951)) to keep these two dimensions of social organization distinct from each other, they also noted “they are not ‘things’ that can be neatly separated” (55). Indeed, some scholars argue that “Anomic culture” (or “culture” more generally) is too abstract of a concept to be separated from social institutions at all (Messner and Rosenfeld, 2001). However, the original model of Institutional Anomie Theory clearly separates these two constructs from each other, outlining the components that constitute each. To maintain continuity with Messner and Rosenfeld’s (1994) original conception of the theory, and to add new measurements of Anomic culture to previous work done by Cullen and colleagues (2004) and Gross and Haussman (2011), this research empirically represented Anomic culture and social institutions separately from each other. The possibility remains, however, for “Anomic culture” to be empirically inseparable from social institutions. Yet, if this is the case, this puts the theory of Institutional Anomie in danger of being non-falsifiable (Chamlin and Cochran, 2007).

As documented in Chapter 3, there does not currently exist a universal definition for what constitutes “organized crime.” Like the underlying concepts of Institutional Anomie Theory, “organized crime” is itself a latent construct. Thus, any proposed operationalization of organized crime will measure an indirect aspect of the criminal phenomenon. To help increase reliability and validity of any measure of organized crime, the European Council (2000) proposed to operationalize the construct through annual drug seizure amounts. This is largely because the United Nations and Council of Europe have recognized that drug trafficking is the common denominator between the vast majority of criminal organizations (Council of Europe, 2000; 2005; OCTA, 2011; UNODC, 2010; 2012). These syndicates are largely responsible for the transportation and
manufacturing of illicit drugs, and most drugs are seized from these groups at points of entry and exit from their respective countries (OCTA, 2011; UNODC, 2010; 2012). Further, data on drug seizure amounts is captured and reported more regularly and for longer periods of time than other forms of organized crime activity (e.g., human smuggling and trafficking, cybercrime, weapons trafficking, trafficking in commodities and prescription medicine) (Council of Europe, 2000). However, it must be noted that a limitation of this particular operationalization of organized crime is also a measure of police activity (i.e., drugs are seized by the police in each country), which might skew the empirical results and in some cases, these drug seizure rates may be less representative of patterns of organized crime movement. Together, these issues illustrate that measurement is one important issue for this research.

**Limitations of Analytic Strategies**

Some difficulties were encountered with the econometric analytic strategies used in this research that, as previously mentioned, relate to the number of observations available in some of the empirical models. The power of a statistical test “is equal to the probability of rejecting a false null hypothesis,” and unit root tests such as the Levi-Lin-Chu (2002) test have been shown to demonstrate low power (Enders, 1995: 251). Therefore, it is less likely that the tests will reject the presence of a unit root existing in the time-series data. Additionally, tests for Granger causality and cointegration require larger numbers of observations to account for the loss of degrees of freedom when first differencing and/or lagging the variables necessary to perform these additional tests. This does not present particular limitations for the full model or the developed country group,
but it is a concern in varying degrees for some of the European country clusters, the transitioning country group, and the separate country analyses. As such, the results from the models facing the greatest limitation of observations (i.e., the Baltic and Northern clusters, Poland, Slovakia) were tempered. However, in this exploratory study the numbers of observations were large enough for the tests to be able to obtain an initial signal of the proxies of Institutional Anomie Theory impacting their dependent variables.

Limitations of time series analysis also included making sure a spurious relationship did not exist among the series. Two randomly generated, independent time series with no connection could potentially have a high degree of correlation (Granger and Newbold, 1974). Therefore, a very low Durban-Watson statistic and a low $R^2$ indicate that the time series are correlated. When conducting tests for cointegration, two time series may appear cointegrated but actually be spurious. This often occurs if non-stationary time series are first differenced and then included in the model. However, a spurious relationship will not contain a common trend, whereas two cointegrated series will share a common trend. Correlation does not imply causation, and any potential serial correlation encountered in this research was addressed.
CHAPTER 5: FINDINGS

To assess whether countries in Europe experiencing higher rates of Institutional Anomie also had correspondingly higher levels of organized crime activity (as measured through the proxy of drug seizures) a series of quantitative analyses were conducted. Descriptive statistics were first calculated and presented in Table 1 below, and the data were visually inspected and described. Following this visual inspection of the data, econometric time series regressions were performed on all of the variables in order to consider how the theory operates across time in the full country model, between country clusters, between developed and transitioning countries, and between the separate country analyses of Poland and Slovakia. These findings are presented in Tables 6 through 20.

Lastly, econometric time series techniques were applied to the data to uncover any further relationships that may exist. Based on the results of unit root testing (presented in Table 21), tests were first run to detect any instances of Granger causality among the variables. If causality is found, it significantly strengthens the argument for the inclusion of the Granger causal independent variable in the Institutional Anomie model predicting the corresponding dependent variable among that specific set of countries. If Granger causality is not found, it does not confirm or refute its inclusion in the multivariate regression model; it simply indicates that the independent and dependent variables are associated but the independent variable does not have any causal impact on the dependent variable. The Granger causality results are presented in Tables 22 through 31.

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110 For example, if the strength of the GDP is found to Granger cause organized crime rates to increase or decrease in the full country model, then it further solidifies the inclusion of GDP per capita in the model as an essential (and causal) element impacting organized crime.
Depending on the stationarity of the variable (revealed in the unit root test results), tests for cointegration were then conducted. These tests revealed whether or not an (non-stationary) independent variable and a (non-stationary) dependent variable share a common element that causes the two time series to track together over time. If cointegration is found between variables, this indicates that any impact or shock (i.e., change in policy) incurred by one variable will be expected to have the same impact and effects on the second variable over time. The results of the cointegration tests are presented in Tables 32 through 38.

Following the results from these quantitative tests, a detailed discussion of the findings, as broken down by research questions, concludes this chapter.

**Visual Inspection of the Data**

Table 1 describes the summary statistics of the variables used to address the three sets of research questions for the fourteen countries: Austria, Belgium, France, Germany, Greece, Ireland, Italy, Lithuania, Poland, Portugal, Slovakia, Spain, Sweden, and the United Kingdom. The dependent variables are seizures (in kilograms) of cannabis, heroin, cocaine, and amphetamines, and intentional homicide rates per 100,000 population. The independent variables representing Messner and Rosenfeld’s (1994) concept of culture (as portrayed through the “American Dream”) are the World Index of Economic Freedom, Gross Household Saving Rate, the Corruption Perception Index, and the rate of unemployment as a percentage of the labor force. The independent variables that represent Messner and Rosenfeld’s (1994) conception of the four social institutions
(the economy, polity, education, and family) are GDP per capita growth rate, social protection expenditures per capita, educational expenditures per capita, the percentage of the labor force that has at least a primary educational level, the divorce-to-marriage ratio, and the total public social expenditures per capita. The two control variables in this study are the percentage of the population that is male, and the percentage of the population that is between 15 and 24 years of age.

Table 1. Summary Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs.</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannabis Seizures†</td>
<td>210</td>
<td>37.07</td>
<td>70.96</td>
<td>0.023</td>
<td>559.901</td>
</tr>
<tr>
<td>Heroin Seizures†</td>
<td>210</td>
<td>2.66</td>
<td>5.10</td>
<td>0.001</td>
<td>38.579</td>
</tr>
<tr>
<td>Cocaine Seizures†</td>
<td>210</td>
<td>13.95</td>
<td>32.30</td>
<td>0.001</td>
<td>326.195</td>
</tr>
<tr>
<td>Amphetamine Seizures‡</td>
<td>210</td>
<td>3.87</td>
<td>14.07</td>
<td>0</td>
<td>75.62</td>
</tr>
<tr>
<td>Intentional Homicide‡</td>
<td>210</td>
<td>1.99</td>
<td>2.07</td>
<td>0.5</td>
<td>12.35</td>
</tr>
<tr>
<td>World Index of Econ. Freedom</td>
<td>210</td>
<td>66.23</td>
<td>6.69</td>
<td>49.7</td>
<td>82.6</td>
</tr>
<tr>
<td>Gross Savings</td>
<td>188</td>
<td>11.26</td>
<td>5.06</td>
<td>-4.21</td>
<td>22.55</td>
</tr>
<tr>
<td>CPI</td>
<td>203</td>
<td>6.49</td>
<td>1.72</td>
<td>2.99</td>
<td>9.5</td>
</tr>
<tr>
<td>Unemployment§</td>
<td>210</td>
<td>9.44</td>
<td>4.12</td>
<td>4</td>
<td>23</td>
</tr>
<tr>
<td>GDP**</td>
<td>210</td>
<td>5.98</td>
<td>10.53</td>
<td>-21.59</td>
<td>35.98</td>
</tr>
<tr>
<td>Rule of Law</td>
<td>210</td>
<td>83.36</td>
<td>12.94</td>
<td>56.5</td>
<td>99.9</td>
</tr>
<tr>
<td>Political Stability</td>
<td>210</td>
<td>75.45</td>
<td>14.80</td>
<td>33.2</td>
<td>99.8</td>
</tr>
<tr>
<td>Social Protect.***</td>
<td>210</td>
<td>4,175.41</td>
<td>2,688.90</td>
<td>240.99</td>
<td>11,176.85</td>
</tr>
<tr>
<td>Primary Education†</td>
<td>210</td>
<td>30.50</td>
<td>17.76</td>
<td>6</td>
<td>80</td>
</tr>
<tr>
<td>Educational Exp.***</td>
<td>210</td>
<td>1,230.32</td>
<td>796.38</td>
<td>111.52</td>
<td>3580.83</td>
</tr>
<tr>
<td>Social Welfare Exp.</td>
<td>195</td>
<td>6,007.95</td>
<td>372.58</td>
<td>679</td>
<td>14,566.99</td>
</tr>
<tr>
<td>Div.-Marriage Ratio</td>
<td>210</td>
<td>0.40</td>
<td>0.18</td>
<td>0.0032</td>
<td>0.775</td>
</tr>
<tr>
<td>Population Male†</td>
<td>210</td>
<td>48.72</td>
<td>0.76</td>
<td>46.546</td>
<td>50.03</td>
</tr>
<tr>
<td>Population 15-24</td>
<td>210</td>
<td>13.57</td>
<td>1.95</td>
<td>10.153</td>
<td>17.48</td>
</tr>
</tbody>
</table>

†Per 100,000 population
‡Percent labor force
**Per capita growth rate
***Per capita

111 GDP per capita growth rate was included the visual inspection, but GDP per capita was used in the cross-sectional and time series analyses due to the large number of negative values. The natural log of GDP was calculated and employed in the analyses in order to consider the rate of growth and to provide variance stability.
Appendix C contains the graphical representations of the five dependent variables and fourteen independent variables for all countries (1995-2009) used in this study.

**Dependent Variables**

What is interesting to note, following a visual inspection of all five dependent variables, is that some of the trends of the proxies for organized crime support the assumptions made by Institutional Anomie Theory, while the trends of the traditional dependent variable (homicide rates) are contradictory to what the theory would expect. That is, Institutional Anomie Theory was developed by Messner and Rosenfeld (1994) following the observation that Western, developed countries experienced the highest rates of homicide comparatively. However, this is not the case in my sample of fourteen countries in Europe; Lithuania has consistently held the highest intentional homicide rate out of the fourteen countries for the length of the time series. Between 1997 and 2000, Poland held the second highest intentional homicide rate. In more recent years (2004-2009), the trends for all countries, with the exception of Lithuania, have converged and declined below two intentional homicides per 100,000 population. In other words, it is the transitioning countries in this sample that have consistently, over fifteen years, experienced higher rates of intentional homicide than developed countries. This indicates that for this dependent variable, the visual inspection alone contradicts the initial assumptions of Institutional Anomie Theory. This is further illustrated in Table 2 below.
The trends of the four proxies for organized crime are less discernable than those of homicide rates, yet in general the trends supported the assumption of Institutional Anomie Theory that more developed countries experience high levels of serious crime than transitioning countries. For instance, seizures of cannabis experienced the most variation of these four variables. Belgium seized the most cannabis in 1995-1996 (559 kilograms per 100,000 population), but then the trend quickly dropped off, rejoining the majority of the other countries. In the more recent years, 2008 and 2009 specifically, the United Kingdom has seized significantly more cannabis than the other thirteen included countries. Developed countries also were found to seize more heroin (i.e., Ireland, the United Kingdom, and Sweden), cocaine (i.e., Portugal, Spain, and Belgium), and amphetamines (i.e., Sweden) than the transitioning countries of Poland, Slovakia, and Lithuania. While this does support the theoretical assumption that higher rates are expected to be found amongst the most developed countries, the seizure amounts for these transitioning countries do not support of the organized crime literature that suggests organized crime prevalence, particularly in drug trafficking and manufacturing, is
particularly high in Eastern Europe (e.g., DEA, 2004; Krawczyk et al., 2009). The variation between the four proxies of crime are further illustrated in Table 3 below.

<table>
<thead>
<tr>
<th>Cannabis</th>
<th>Heroin</th>
<th>Cocaine</th>
<th>Amphetamine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>Ireland</td>
<td>Portugal</td>
<td>Sweden</td>
</tr>
<tr>
<td>Ireland</td>
<td>U.K.</td>
<td>Spain</td>
<td>Belgium</td>
</tr>
<tr>
<td>U.K.</td>
<td>Sweden</td>
<td>Belgium</td>
<td>U.K.</td>
</tr>
<tr>
<td>Slovakia</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3. Top Drug Seizure Amounts From 1995 to 2009

Independent Variables: Anomic Cultural Proxies

Assuming that the independent variables were in fact representative of these elements of Institutional Anomie Theory, an interesting picture unfolded as these independent variables representing Anomic cultural pressures to succeed were visually inspected. As was seen in the visual inspection of the dependent variables, some of the Anomic cultural proxies behaved as expected by Institutional Anomie Theory (i.e., more developed countries exhibited stronger Anomic cultural pressures to succeed), while other Anomic cultural indicators were less clear. More specifically, the four independent

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112 However, this could be the result of a number of issues facing countries in transition, to include adequate and effective reporting of police statistics and interdiction methods and training. This evidence is particularly concerning for this dependent variable, given that the global source region for heroin and opium lies in the Afghan region, which most commonly utilizes the Silk Road and other well-established land routes from the Eastern regions into Western Europe via countries such as Poland and Slovakia (Krajewski, 2003; Summers and Pływaczewski, 2012).

113 In the interest of better illustrating trends among the countries, these dependent variables were again graphed based on their country-cluster groupings and the graphs can be found in Appendix C. That is, the mean for each cluster was calculated and graphed to better illustrate overall trends and changes over time that may have been overshadowed by the outlier countries with significantly greater seizure amounts. In considering cannabis seizures between country clusters, the levels of variation between each cluster become increasingly apparent. Aside from the Baltic cluster, all clusters experienced peaks in cannabis seizure amounts throughout the time series, with recent trends (from 2005 to 2009) indicating an upward trend for the Anglo-Saxon and Northern Europe clusters. However, for the other four dependent variables as broken down into country clusters the patterns remain very similar to their respective figures that include all countries.
variables that represented Messner and Rosenfeld’s (1994) concept of “Anomic culture” as portrayed through the American Dream were the World Index of Economic Freedom and the Gross Household Savings Rate, representing utilitarian pressures to succeed, while the Corruption Perception Index and the unemployment rate were proxies for the lack of emphasis on legitimate means to succeed.

Trends of the World Index of Economic Freedom\(^\text{114}\) were less clear, with the developed countries such as the U.K., Ireland, Austria, and Belgium consistently having the highest indices of 70-79, and the transitioning country of Poland consistently having some of the lowest index scores between 50-60. However, Lithuania and Slovakia have each significantly improved their index scores from 2002 to 2009, with Lithuania hitting its highest score of 71.80 in 2006 and Slovakia hitting its highest score of 70.00 in 2008. This suggests that these two countries have had the highest growth rate in this index in recent years, illustrating that they are culturally catching up to the U.S. at a faster rate than the other countries in the study.

The other Anomic cultural proxies experienced trends anticipated by Institutional Anomie: the Gross Household Savings Rate (countries with the most savings were Italy, Belgium, and France; however, Poland held the fourth highest savings rate per household (16.88%) of the fourteen countries), the Corruption Perception Index\(^\text{115}\) (Sweden, the U.K., and Austria had the least amount of perceived corruption), and unemployment (countries with the lowest unemployment rates were Austria, Portugal, and Ireland).

\(^{114}\) This is a composite measure that is ranked between 0 and 100, with 0 representing the least amount of economic freedom and 100 representing maximum freedom. In other words, the Heritage Foundation interprets this index as the higher the index score is for each country, the more similarly their values match those of “traditional American values” (Heritage Foundation, 2012: 1), or in the words of Messner and Rosenfeld (1994), the American Dream.

\(^{115}\) The fourteen countries were plotted along the Index ranging from 0 to 10, with an index score of 0 representing complete corruption and 10 representing the least amount of perceived corruption.
Independent Variables: Social Institutional Proxies

Upon visual inspection of the social institutional proxies, the trends also uncovered mixed support for the initial assumptions of Institutional Anomie Theory. Developed countries (i.e., Ireland, Sweden, and Austria) consistently experienced the strongest economies (i.e., GDP per capita) throughout the time period, which is what the theory would anticipate.

However, among the non-economic institutions, the trends were less clear. Representing the polity was the Rule of Law, Political Stability, and Social Protection Expenditures. The Rule of Law and Social Protection Expenditure experienced a dominance of developed countries (e.g., Austria, U.K., Ireland) experiencing confidence in their government’s ability to provide protection through the rule of law and through fiscal aid to social protection functions, the Political Stability indicator showed a notably wider range of variance. While Sweden, Austria, and Ireland again topped the highest consistent percentile rankings throughout the time period, Slovakia, Poland, and Lithuania were not among the lowest percentile rankings from the mid-2000s to 2009. In fact, Poland and Slovakia experienced large increases in their percentile rankings from 2006 onwards while the majority of other countries experienced sharp downturns in confidence. Until 2000, Lithuania held one of the lowest percentile

116 The Rule of Law dimension of governance “captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement… the police, and the courts, as well as the likelihood of crime and violence” (World Bank, 2013c: 1). This indicator is measured based on a percentile rank, ranging from 0 to 100. The higher the percentile rank, the more confidence citizens have in their government’s ability to provide protection through the rule of law.
117 The Political Stability and Absence of Violence dimension of governance “measures perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism” (World Bank, 2013d). Similar to the Rule of Law indicator, the Political Stability measure is based on a percentile rank, ranging from 0 to 100. The higher the percentile ranking, the more confident citizens are in the political stability of their nation.
118 The Social Protection Expenditure indicator measures the amount of government expenditures on law courts, policing, fire-protection services, and prisons, per capita.
rankings, along with Spain, Poland, and Greece, but experienced a surge in perceived political stability from 2000 to 2003/2004. Since the mid-2000s, many of the developed countries experienced a decrease in perceived political stability – most felt by Spain, the United Kingdom, and Greece. By 2009, these three countries had the lowest percentile rankings of the fourteen included in this research, which is likely due to the global fiscal crisis that began in early 2008.

The familial institution was represented by the divorce-to-marriage ratio\textsuperscript{119} and the total public social expenditures per capita\textsuperscript{120}. Developed countries would be expected to experience a weakened familial institution (i.e., higher divorce rates) in favor of a stronger economic institution; the findings in this study were mixed. Austria and Sweden were found to have a higher rate of divorce than Poland, but Lithuania also experienced higher rates of divorces while Ireland and Italy experienced the lowest rates of divorces.\textsuperscript{121} The trends for Public Social Expenditures were a bit contradictory to the expectations of Institutional Anomie Theory. For this time period, the governments of Slovakia and Poland spent significantly less on public social expenditures per person than the developed countries of Sweden, France, Austria, and Belgium, indicating stronger emphasis on familial institutions in these developed countries.

\textsuperscript{119} For the divorce-to-marriage ratio, the values on the y-axis range from 0 to 1, with scores approaching 0 representing extremely few divorces in the country and many marriages, and scores approaching 1 representing an even balance between the number of divorces and marriages. If the number were greater than 1, it would be indicative of more divorces in the country than marriages. This did not occur in the fourteen countries used in this study.

\textsuperscript{120} This indicator represents the amount of government spending that is appropriated towards public welfare programs that benefit families. The main social policy areas are as follows: old age, incapacity-related benefits, survivors, health, and family health (OECD, 2012).

\textsuperscript{121} It is important to note that in this case, the low number of divorces in Ireland, Poland and Spain may be attributable to religious influences and beliefs.
The educational institution was represented by two proxies: the total educational expenditures per capita\textsuperscript{122} and primary educational attainment\textsuperscript{123}. Both proxies did not illustrate trends that were initially supportive of Institutional Anomie Theory, because again the governments of Poland, Slovakia, and Lithuania consistently spent the least amount of money per capita on educational expenditures than the other countries in the study, indicating a weaker emphasis on the educational institution in these transitioning countries. In terms of the primary educational attainment levels, interestingly all fourteen countries experienced a negative trend from 1995 to 2009, indicating that less of the labor force is completing at least primary school over time. Portugal has significantly higher percentages than the other thirteen countries in the study, with approximately 67% of the labor force attaining at least a primary level education in 2009. Slovakia, Lithuania, Poland and Germany had the smallest percentage of primary education among the labor force, ranging from 6 to 15% in 2009 among these four countries. This indicates that it was largely the transitioning countries (along with the developed country of Germany) that experienced the strongest lack of emphasis on the educational institution over time.

To summarize the findings from the visual inspection of the independent variables representing Anomic cultural and institutional proxies, Table 4 below illustrates the countries scoring the “highest” on these key elements of Institutional Anomie Theory (i.e., “strongest” pressures to succeed, “greatest” lack of legitimate means to succeed,

\textsuperscript{122} The total educational expenditures per capita refers to “direct expenditure on educational institutions: bearing directly the current and capital expenses of educational institutions” (EUROSTAT, 2012c) throughout each country.

\textsuperscript{123} This proxy illustrates the percentage of the labor force having completed at least primary-level schooling.
“greatest” economic growth, “strongest” emphasis on the polity, education, and familial institutions).

<table>
<thead>
<tr>
<th>Pressures to Succeed</th>
<th>Lack of Legit. Means</th>
<th>Economy</th>
<th>Polity</th>
<th>Education</th>
<th>Family</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ireland</td>
<td>Poland</td>
<td>Ireland</td>
<td>Sweden</td>
<td>Sweden</td>
<td>Ireland</td>
</tr>
<tr>
<td>U.K.</td>
<td>Slovakia</td>
<td>Sweden</td>
<td>France</td>
<td>Ireland</td>
<td>Italy</td>
</tr>
<tr>
<td>Belgium</td>
<td>Greece</td>
<td>Austria</td>
<td>Austria</td>
<td>Portugal</td>
<td>Sweden</td>
</tr>
<tr>
<td>Italy</td>
<td>Spain</td>
<td>Belgium</td>
<td>Germany</td>
<td>Spain</td>
<td>France</td>
</tr>
</tbody>
</table>

Developed Countries
Countries in Transition

What is interesting is that, when these findings are taken together, Table 4 illustrates that the developed countries experiencing some of the strongest (utilitarian) cultural pressures to succeed with the least access to legitimate means to succeed were not necessarily experiencing an institutional imbalance of power dominated by the economy. That is, countries with the greatest emphasis on the polity, education, and family out of the fourteen total countries also experienced comparatively higher cultural pressures to succeed, yet they had access to legitimate means to succeed. Interestingly, when compared with Table 3, the same developed countries also appeared to have the highest prevalence of organized crime rates. Countries with high rates of organized crime involvement also experienced cultural pressures to succeed (as illustrated by Belgium, Ireland, and the U.K.), yet appeared to have access to legitimate means to succeed and live in a country that was not necessarily dominated by the economic institution. Messner and Rosenfeld (1994) would expect to see countries with the highest scores on cultural

---

124 This is based on nothing more than a visual inspection of the data.
pressures to succeed and a lack of legitimate means to succeed also score high on the economy alone, resulting in high rates of organized crime involvement; these same countries should not appear under the non-economic institutions in Table 3. The only country to fit this schema out of the fourteen was Belgium. Moreover, the countries in transition appeared to have the highest rate of growth of their economies throughout the given time period while also experiencing a lack of legitimate means to succeed (as measured by the Corruption Perception Index and unemployment). These same countries also experienced the highest homicide rates, which fits the Institutional Anomie model much better, with the exception that these countries are not fully developed democracies.\textsuperscript{125}

\textit{Correlations and Relations Among the Variables}

As a first step in the quantitative analyses, a correlation matrix was calculated among all of the variables (i.e., full model) and presented in Table 5 below. As can be seen, almost perfect correlation existed among some of the non-economic institutional proxies: Welfare Expenditures, Social Protection Expenditures, and Educational Expenditures. These three proxies were not only highly correlated with each other, but also with GDP per capita in correlation matrices representing all variations of country

\textsuperscript{125} Briefly, it should also be noted that two control variables were included in this study: the percentage of the population that is male and the percentage of the population that is between 15 and 24 years old. For all countries with the exception of Lithuania, the percent of the population that is male fell between roughly 48 and 50\% from 1995 to 2009. Lithuania, however, experienced a much lower percent male population throughout this timeframe, with percentages varying between 46 and 47\%. Interestingly, all countries except Lithuania followed a slightly positive trend, while Lithuania has experienced a slightly negative trend over time. For the percentage of the population ages 15 to 24 years old, all fourteen countries ranged between 10 and 17.5 percent of the overall population. Poland and Slovakia had consistently the highest percentages of youth in this age range throughout the time period, while countries such as Italy and Germany fell towards the lower end of the percentages. The overall trend for the majority of these countries was slightly negative, but Lithuania, Germany, and the U.K. have seen an increase in the youth population over time.
groups tested in this research. As such, these three non-economic institutional proxies were not included in the full model, country cluster, developed v. transitioning group, or the individual country time series analyses to avoid issues of multicollinearity among the independent variables.\textsuperscript{126} Interestingly, the CPI was fairly highly correlated with the Rule of Law indicator for the full model ($r = 0.88$), but was not problematic in the other country groups tested in this study. As such these variables remained in the time series analyses.

\textsuperscript{126} These variables were also omitted because they remained problematic even after using mean-centering techniques.
Time-Series Analyses

In order to determine whether levels of Institutional Anomie impact rates of organized crime over time for Europe (RQ 1a), country clusters (RQ 1c), developing and transitioning countries (RQ 2), and countries within the CEE (RQ 3), a series of multivariate time series regression models were conducted.\textsuperscript{127} These regression models

\textsuperscript{127}For all time series analyses, the natural log was taken for each variable before running each analysis. This transforms any series that might be expected to grow (exponentially) over time (i.e., experience
were conducted for the full model (i.e., all countries were included), and then separate regressions were run for each of the country clusters (i.e., Western European cluster, Mediterranean cluster, Northern European cluster, CEE cluster, Baltic cluster, Anglo-Saxon cluster). Finally, regressions were run on the developing and transitioning country groups, as well as Poland and Slovakia. The results are presented in Tables 6 - 20.

Pooled Cross-Sectional Multivariate Regression Analysis: Full Model

Table 6 illustrates the independent variables that were statistically significant predictors of the five dependent variables for the full model (i.e., all countries were included) for the time period 1995 to 2009.\textsuperscript{128}

\textsuperscript{128} Multivariate time series regressions were run using both fixed effects (i.e., holding all differences between countries constant) and random effects (i.e., differences between countries are not held constant). The Hausman test (a statistical hypothesis test in econometrics that evaluates the significance of an estimator against an alternative estimator) was conducted on each model to determine whether the fixed effects model or the random effects model was a better fit for the data. The null hypothesis of the Hausman test is that the two estimation methods are similar, yielding coefficients that are also similar. The alternative hypothesis is that the fixed effects estimation is the better fit for the data. In this case, the coefficients will be statistically significantly different between the fixed effects and random effects models, thus yielding a large (and significant) Hausman statistic. Therefore, the tables presented in this dissertation represent the models that were the best fit for the data (i.e., either fixed effects or random effects). Since the Northern and Baltic clusters only contained one country in each cluster, fixed effects and random effects do not apply (i.e., there is no between country variation since there is only one country in the Northern and Baltic clusters).
Above, the coefficients and standard errors are presented, as well as the variable significance levels. Since all fourteen countries were included in the models, the number of observations for each regression is 210. From this table, it is evident that among the five dependent variables there exist mixed results in terms of Institutional Anomie Theory’s explanatory ability. While all five models were significant at the 99.9% confidence interval, each model for cannabis, heroin, and cocaine seizures only had one or two significant independent variables. The only significant predictor of cannabis seizures was primary educational attainment level; as the level of primary educational attainment increases by one unit, seizures of cannabis decrease by 2.1 kilograms per 100,000 population. The two significant predictors of heroin seizures were the World Index of Economic Freedom and the Gross Household Savings Rate. As each variable increases by one unit, seizures of heroin also increase by 5.1 and 0.51 kilograms per 100,000 population, respectively. The two significant independent variables predicting

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<tbody>
<tr>
<td>W.I. of Econ. Fred.</td>
<td>5.1(1.4)***</td>
<td></td>
<td>5.1(2)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td>.51(2)*</td>
<td>1.1(.34)**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td>.21(1)***</td>
<td>-.4(.05)***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td>1.2(.23)***</td>
<td></td>
<td></td>
<td>-.38(.15)*</td>
<td></td>
</tr>
<tr>
<td>Rule of Law</td>
<td>-5.7(2.3)*</td>
<td>2(.43)***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Stability</td>
<td></td>
<td>-.38(.15)*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Education</td>
<td>-2.1(.4)***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population Male</td>
<td>91(33)***</td>
<td>107(33)***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age distribution</td>
<td>3.2(1.3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.6040</td>
<td>0.6644</td>
<td>0.7840</td>
<td>0.8665</td>
<td>0.8927</td>
</tr>
<tr>
<td>Prob &gt; F</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001
Cocaine seizures were GDP per capita and a variable controlling for the percentage of males in the population. As GDP per capita and the percentage of population male both increase, seizures of cocaine also increase by 1.2 and 91 kilograms per 100,000 population, respectively. The coefficients for cannabis, heroin, and cocaine seizures are all in the anticipated direction of Institutional Anomie Theory, thus supporting the theory’s predictions. 129

Amphetamine seizures had the most significant independent variables out of the four organized crime proxies. The World Index of Economic Freedom and the Gross Household Savings Rate were the two significant variables representing cultural pressures to succeed. As each of these indicators increases by one unit, seizures of amphetamines increase by 5.1 and 1.1 kilograms per 100,000 population, respectively. The only institutional variable that was significant was the Rule of Law. Here, as the Rule of Law index increases by one unit, seizures of amphetamines drop by 5.7 kilograms per 100,000 population. All three coefficients are also in the expected direction as predicted by Institutional Anomie Theory. The two control variables were also significant. As the percentage of male population increases by one percent, seizures of amphetamines increase by 107 kilograms per 100,000 population, and as the number of youths ages 15 to 24 increase by one percent, seizures of amphetamines increase by 3.2 kilograms per 100,000 population.

The model predicting intentional homicide rates had the least support for Institutional Anomie Theory. Four variables (i.e., unemployment rates, GDP per capita,

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129 In other words, the direction of the coefficient was indicative here of support/non-support of Institutional Anomie Theory. For example, a strong economy is predicted by the theory of being indicative of contributing to high levels of serious crime. In Table 6 above, the coefficient of GDP in the cocaine seizures model supports this assumption, and was therefore considered to provide support for the theory.
Rule of Law, Political Stability) were found to be significant predictors of homicide rates, but only one (Political Stability) had a coefficient in the anticipated direction of Institutional Anomie Theory. The model found that as unemployment rates, GDP per capita, and Political Stability each increase by one unit, rates of homicide drop by 0.21, 0.4, and 0.38 per 100,000 population respectively. As the Rule of Law index increases by one unit, homicide rates increase by 2 per 100,000 population.

These are interesting findings, as it appears the traditional measure of serious crime tested in past empirical studies of Institutional Anomie Theory performed the worst in terms of predictability across all fourteen countries in this research over time.

*Pooled Cross-Sectional Multivariate Regression: Country Clusters*

Tables 7 through 12 illustrate the significant regression results for the six country clusters. Since the Northern and Baltic clusters only had one country in the respective cluster, the pooled cross-sectional regression models were unable to be run. As such, simple multivariate regressions were run on these clusters. It should be reiterated here that 50 observations are desirable in time series analysis in order to maximize the power of the empirical tests. In this study, the clusters with the largest number of observations are the Western and Mediterranean clusters, which have 60 observations each. This of course is more than the desired number, but the other cluster analyses have less than 50. As such, the results are interpreted with this limitation in mind.130

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130 The number of observations in each cluster analyses is also further reduced by the number of independent variables (i.e., degrees of freedom) used in each regression.
Table 7. Western Country Cluster Significant Regression Results with Fixed Effects
\((n = 60; \text{B(SE)})\)

<table>
<thead>
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<tbody>
<tr>
<td>W.I. of Econ. Fred.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5(9)**</td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td>4.6(1.4)**</td>
<td>3.37(1.1)**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td>3.3(1.5)*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td>-1.5(.5)**</td>
<td>1.77(.3)**</td>
<td>1.19(.54)*</td>
<td>.47(.1)*</td>
<td></td>
</tr>
<tr>
<td>Rule of Law</td>
<td></td>
<td></td>
<td>12.81(5.2)*</td>
<td></td>
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</tr>
<tr>
<td>Political Stability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Primary Education</td>
<td>1.92(.58)**</td>
<td></td>
<td></td>
<td>1.1(45)*</td>
<td></td>
</tr>
<tr>
<td>Population Male</td>
<td>88.7(30.4)**</td>
<td>237(55.9)**</td>
<td>-30(13)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age distribution</td>
<td></td>
<td></td>
<td></td>
<td>5.6(1.8)**</td>
<td></td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.7489</td>
<td>0.1841</td>
<td>0.8812</td>
<td>0.6654</td>
<td>0.8585</td>
</tr>
<tr>
<td>Prob &gt; F</td>
<td>**</td>
<td>**</td>
<td>***</td>
<td>***</td>
<td>***</td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001

Table 8. Mediterranean Country Cluster Significant Regression Results with Fixed Effects
\((n = 60; \text{B(SE)})\)

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>W.I. of Econ. Fred.</td>
<td>-16.97(4.9)**</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td></td>
<td></td>
<td>1.49(.6)**</td>
<td>-0.37(.1)**</td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td>-3.63(1.1)**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rule of Law</td>
<td></td>
<td></td>
<td>-6.3(2.9)*</td>
<td>1.49(.5)**</td>
<td></td>
</tr>
<tr>
<td>Political Stability</td>
<td></td>
<td></td>
<td></td>
<td>-0.80(.2)**</td>
<td></td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td>2.12(.7)**</td>
<td></td>
<td>0.82(.4)*</td>
<td>-0.62(.1)**</td>
<td></td>
</tr>
<tr>
<td>Primary Education</td>
<td>-6.46(2.6)*</td>
<td>-3.61(1.1)**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population Male</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age distribution</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.7197</td>
<td>0.3765</td>
<td>0.7863</td>
<td>0.7598</td>
<td>0.8555</td>
</tr>
<tr>
<td>Prob &gt; F</td>
<td>**</td>
<td>***</td>
<td>**</td>
<td>***</td>
<td>***</td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001

Table 7 above illustrates significant models for each of the five dependent variables in the Western country cluster. This cluster contains four countries (i.e.,
Austria, Belgium, France, and Germany), and thus the model has an $n$ of 60. In this cluster, organized crime as measured through cannabis seizures are predicted by the Gross Household Savings Rate, the CPI, and GDP. When the coefficients are interpreted, they illustrate that as the Gross Household Savings Rate increases by one unit, seizures of cannabis increase by 4.6 kilograms per 100,000 population. As the Corruption Perception Index increases by one unit (i.e., decreases in perceived corruption), seizures of cannabis increase by 3.3 kilograms per 100,000 population. The coefficient of the CPI is not in the expected direction as predicted by Institutional Anomie Theory. Finally, as GDP per capita strengthens by one unit, cannabis seizures decrease by 1.5 kilograms per 100,000 population, which again is not in the predicted direction of the theory. The overall model is significant at the 99% confidence interval.

Heroin seizures were only predicted by one variable representing the educational institution: primary educational attainment. Here, as education increases, seizures of heroin also increase. Even though the model is significant at the 99% confidence interval, the coefficient is not in the theoretically predicted direction.

The model for cocaine seizures was significant at the 99.9% confidence interval, and had four significant predictor variables for this proxy of organized crime. Gross Household Savings Rate, GDP per capita, Rule of Law, and the male population were all significant, positive predictors for cocaine seizures. While the direction and strength of the first two significant variables are predicted by Institutional Anomie Theory, the polity variable (Rule of Law) is not. That is, as citizens trust in their nation’s rule of law increases by one unit (or percentage point), drug seizures (i.e., organized crime) also increase by 12.8 kilograms per 100,000 population. While this contradicts the theory, it
might be argued that an increase in seizure amounts is acceptable because as a country gains legitimacy politically, it might indicate that the police became more efficient. Moreover, the percentage of the population that is male (a control variable) also played a significant role in predicting seizures of cocaine: as the percent of the population that is male increases by one percentage point, seizures increase by 89 kilograms per 100,000 population.

The model for amphetamine seizures only had two significant independent variables, one of which was a control variable. This model predicts that amphetamine seizures will increase by 1.2 kilograms per 100,000 population as GDP per capita strengthens by one unit. Also, as the percent of the population that is male increases by one percentage point, drug seizures of amphetamines increase by 237 kilograms per 100,000 population.

Overall, across the four organized crime dependent variables, it appears that GDP per capita and Population Male are the two most common significant predictor variables. Within the organized crime proxies, the models work the best for predicting cannabis and cocaine seizures.

The fifth dependent variable, Intentional Homicide Rates, had the most significant variables. Five independent variables were found to be significant (even though two of the five are control variables), and two of the three proxies for elements of Institutional Anomie Theory had coefficients that were in the predicted direction. Moreover, one of the control variables was also significant. As the percentage of males in the population increase by one percent, homicide rates decrease by 30 per 100,000 population.
Table 8 above illustrates the Mediterranean country cluster, which is composed of four countries (i.e., Greece, Italy, Portugal, and Spain), also resulting in an $n$ size of 60. In this cluster, the model for predicting cannabis seizures had four significant independent variables representing cultural pressures to succeed, the economy, the family, and the educational institution. The coefficients, when interpreted, indicate that as the index of Economic Freedom increases by one unit for this cluster, seizures of cannabis decrease by roughly 17 kilograms per 100,000 population. Similarly, as the economy strengthens by one unit (as represented by the GDP per capita), seizures of cannabis decrease by 3.6 kilograms per 100,000 population. The direction of both coefficients is in the opposite direction that Institutional Anomie Theory predicts. However, the variables representing the polity and education behave as the theory would predict. That is, as both indicators strengthen, organized crime (as represented by cannabis seizures) activity decreases. The overall model is significant at the 99% confidence interval.

Interestingly, there were no significant independent variables for the model using heroin seizures as the dependent variable, nor was the overall model significant. When cocaine seizures were used as the dependent variable, only primary educational attainment was significant. However, the variable’s coefficient was in the anticipated direction (as educational levels increase, seizures decrease by 3.6 kilograms per 100,000 population) and the overall model was significant at the 99.9% confidence interval.

The model using the final proxy for organized crime, amphetamine seizures, predicted that as the unemployment rate increases by one percent, seizures of amphetamines also increase by 1.5 kilograms per 100,000 population. Moreover, as
citizens’ faith in the rule of law increase by one unit, seizures will decrease by 6.3 kilograms per 100,000 population. Both of these coefficients support Institutional Anomie Theory. However, this model also predicts (at the 99% confidence interval) that as the familial unit weakens, amphetamine seizures will increase, which does not support the theory.

Overall, between the four dependent variable proxies for organized crime, there do not seem to be any readily apparent patterns. The only variables that were significant for more than one model was the divorce-to-marriage ratio and the primary educational attainment level. Moreover, these regression models appear to best predict cannabis and amphetamine seizures.

The model for the fifth dependent variable, intentional homicide rates, also appears to operate well, although the coefficients illustrate mixed support for Institutional Anomie Theory. While the overall model is significant (at the 99.9% confidence interval), it predicts that access to legitimate means to succeed, strong citizen faith in the rule of law, yet weak faith in their nation’s political stability, coupled with a strong familial institution are predictive of high rates of intentional homicide. Interestingly, this model shares the familial indicator as a predictive variable with cannabis and amphetamine seizures, and this model for homicide does not appear to operate any better (or worse) than the models for cannabis and amphetamine seizures.
Table 9. CEE Country Cluster Significant Regression Results with Fixed Effects
\((n = 30; B(\text{SE}))\)

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<tbody>
<tr>
<td>W.I. of Econ. Fred.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td>6.1(2.1)**</td>
<td></td>
<td>-6.9(2.6)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td>-2.9(9)**</td>
<td></td>
<td>-2.9(1.4)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td></td>
<td>2.7(1.1)*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rule of Law</td>
<td>10.5(4.5)*</td>
<td></td>
<td></td>
<td>3.8(8)***</td>
<td></td>
</tr>
<tr>
<td>Political Stability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td>-3.0(1.4)*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Education</td>
<td></td>
<td></td>
<td>4.3(1.6)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population Male</td>
<td></td>
<td></td>
<td></td>
<td>85(18)***</td>
<td></td>
</tr>
<tr>
<td>Age distribution</td>
<td></td>
<td></td>
<td></td>
<td>4.9(1)***</td>
<td></td>
</tr>
<tr>
<td>Adjusted (R^2)</td>
<td>0.6315</td>
<td>0.0025</td>
<td>0.2543</td>
<td>0.7429</td>
<td>0.7073</td>
</tr>
<tr>
<td>(Prob &gt; F)</td>
<td>***</td>
<td>*</td>
<td>*</td>
<td>***</td>
<td></td>
</tr>
</tbody>
</table>

Note: *\(p < .05\); **\(p < .01\); ***\(p < .001\)

Table 10. Anglo-Saxon Country Cluster Significant Regression Results with Random Effects
\((n = 30; B(\text{SE}))\)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>W.I. of Econ. Fred.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td>0.85(0.4)*</td>
<td>2.1(0.49)***</td>
<td>0.79(0.31)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td>-6.8(3.3)*</td>
<td>9.3(3.3)**</td>
<td>-9.1(3.1)**</td>
<td>1.9(4)***</td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td>4.1(0.85)***</td>
<td>3.65(3.65)***</td>
<td>2.05(2.52)***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rule of Law</td>
<td>49(18)**</td>
<td></td>
<td></td>
<td>9.4(2.6)***</td>
<td></td>
</tr>
<tr>
<td>Political Stability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td>2.1(0.57)***</td>
<td></td>
<td>2.3(0.5)***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population Male</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age distribution</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted (R^2)</td>
<td>0.5225</td>
<td>0.6748</td>
<td>0.7184</td>
<td>0.6104</td>
<td>0.6579</td>
</tr>
<tr>
<td>(Prob &gt; \text{chi2})</td>
<td>*</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td></td>
</tr>
</tbody>
</table>

Note: *\(p < .05\); **\(p < .01\); ***\(p < .001\)

Table 9 above illustrates the five time series multiple regression models for the
Central and Eastern European country cluster, which is composed of Poland and Slovakia.
(thus, the \( n \) is 30). Because of the smaller number of observations, the interpretations of the coefficients are conditioned, yet the regressions still allowed for an initial signal of Institutional Anomie Theory to be obtained.\(^{131}\) In the model predicting cannabis seizures, this signal captured four independent variables that were found to be predictive. As the Corruption Perception Index (CPI) increases, seizures of cannabis also increase. As the rate of unemployment and the ratio of divorce-to-marriages increases, cannabis seizures decrease. None of the coefficients are in the theoretically predicted direction.

Once again, the model using heroin seizures as the dependent variable is not significant, nor does it contain any significant predictor variables. Cocaine seizures are predicted by two independent variables; namely, GDP and primary educational attainment level. As GDP strengthens and the rate of primary educational attainment increases, seizures of cocaine also increase.

Two variables were found to have predictive qualities with Amphetamine seizures: the CPI and the unemployment rate. As the perception of corruption in the country decreases, and as the unemployment rate increases, seizures of amphetamines decrease. The direction of both coefficients supports the assumptions of Institutional Anomie Theory.

Out of the four proxies for organized crime, the regression model predicting cannabis seizures has the most predictive variables. One discernable pattern across the four models is that the CPI and unemployment were both significant predictors for cannabis and amphetamine seizures. However, there remains mixed support for the overall operation of Institutional Anomie Theory. This could illustrate that the theory

\(^{131}\) However, it should be kept in mind that these variables presented in the above table were still found to be statistically significant in the regression models despite the noise, which is where the signal is located.
really is not applicable to transitioning countries (as Messner and Rosenfeld (1994) originally suggested), and the smaller $n$ size may also play a role in the increase of white noise into the models.

Finally, three independent variables were found to be predictive of high rates of homicide, yet two of the three were control variables. The coefficient of the non-control variables, Rule of Law, is in the opposite direction that the theory would predict. These findings do not support Institutional Anomie Theory, as it appears that the percent of population that is male, as well as the number of youth in the cluster (i.e., the two control variables), may be driving the overall model’s significance.

Table 10 illustrates the results for the Anglo-Saxon country cluster, which is composed of the U.K. and Ireland (i.e., the $n$ size is 30). Again, because of the smaller number of observations, the interpretations of the coefficients are conditioned, yet the regressions were still able to obtain a signal for the operation of the theory.\(^{132}\) Each model was found to have at least two predictor variables. In the model predicting cannabis seizures, the Gross Household Savings Rate, the CPI, and the Rule of Law all appear to be important predictors. The Gross Household Savings Rate and the Rule of Law have positive relationships with cannabis seizures, indicating that as each strengthens, the number of seizures increases. Moreover, as the perceived amount of corruption in the countries decrease, the number of cannabis seizures also decreases. This is supportive of Institutional Anomie Theory.

The Gross Household Savings Rate is also predictive of the number of heroin seizures, in addition to the GDP per capita and the divorce-to-marriage ratio. All three

\(^{132}\) However, it should be kept in mind that the variables listed in the table were still found to be statistically significant in the regression models despite the noise, which is where the signal is found.
coefficients are in the anticipated direction that supports Institutional Anomie Theory. That is, as the Gross Household Savings Rate increases and as the economy strengthens while the familial unit weakens, seizures of heroin (i.e., organized crime) increase.

Table 10 illustrates that the CPI as well as GDP predicted seizures of cocaine in the Anglo-Saxon cluster. Again, the coefficient for GDP per capita is in the theoretically predicted direction. In other words, as the Corruption Perception Index and GDP per capita increase, seizures of cocaine increase. These variables were also found to be important predictors of amphetamine seizures, in addition to the Gross Household Savings Rate and the divorce-to-marriage ratio. All of these coefficients are supportive of Institutional Anomie Theory for the model predicting amphetamines.

Out of the four organized crime dependent variables, patterns are apparent in Table 10 between the predictor variables. Unlike previous clusters, all four drug-types share many of the same significant independent variables. For instance, Gross Household Savings Rate is predictive of cannabis, heroin, and amphetamine seizures, while the CPI is predictive of cannabis, cocaine, and amphetamine seizures. GDP is predictive of heroin, cocaine, and amphetamine seizures, and the divorce-to-marriage ratio is predictive of heroin and amphetamine seizures.

Interestingly, there are also noticeable patterns between the organized crime dependent variables and the fifth dependent variable: homicide rates. A high Corruption Perception Index (i.e., indicating a decrease in perceived corruption), high unemployment rates, and a strong faith in the rule of law are predictive of high rates of homicide. All are supportive of Institutional Anomie Theory except for the Rule of Law indicator. The CPI variable joins cannabis, cocaine, and amphetamine seizures as an important indicator
across models. Overall, it appears all five regression models operate well because of the consistency in predictor variables between them.

Table 11. Northern Country Cluster Significant Regression Results (n = 15; B(SE))

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>W.I. of Econ. Fred.</td>
<td></td>
<td></td>
<td></td>
<td>33.75(2.46)***</td>
<td></td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td></td>
<td></td>
<td></td>
<td>-38.59(7.48)***</td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td></td>
<td></td>
<td>-5.43(1.08)***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td></td>
<td></td>
<td>3.44(1.5)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rule of Law</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Stability</td>
<td></td>
<td></td>
<td></td>
<td>1.70(0.78)*</td>
<td></td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Education</td>
<td>-13.41(2.9)***</td>
<td>-8.27(2.19)**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population Male</td>
<td></td>
<td></td>
<td>321.06(123.15)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age distribution</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>.7494</td>
<td>.7135</td>
<td>.7446</td>
<td>.9327</td>
<td>0.269</td>
</tr>
<tr>
<td>Prob &gt; F</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>*</td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001

Table 12. Baltic Country Cluster Significant Regression Results (n = 15; B(SE))

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>W.I. of Econ. Fred.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td></td>
<td></td>
<td>9.06(2.9)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td></td>
<td></td>
<td>-1.61(.5)**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rule of Law</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Stability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td></td>
<td></td>
<td>-6.13(2.4)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Education</td>
<td>-4.2(.5)***</td>
<td>-5.08(6)***</td>
<td></td>
<td>0.36(1)***</td>
<td></td>
</tr>
<tr>
<td>Population Male</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age distribution 15-24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>.7993</td>
<td>.8572</td>
<td>.2781</td>
<td>.7416</td>
<td>.5520</td>
</tr>
<tr>
<td>Prob &gt; F</td>
<td>***</td>
<td>***</td>
<td>*</td>
<td>**</td>
<td>***</td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001

Table 11 above illustrates the results from the Northern country cluster multivariate regression models. This cluster is composed of Sweden, and thus has a small
of 15. Because this cluster is only represented by one country, fixed effects or random effects pooled cross-sectional regressions could not be run. However, multivariate regression techniques were able to uncover those independent variables that were significant predictors of the five dependent variables. The small number of observations must be kept in mind though, and the results presented in Tables 11 and 12 are interpreted with due caution.

Cannabis seizures were predicted by GDP and primary educational attainment levels. Both coefficients are in the theoretically anticipated direction. Moreover, this model appears to explain the most variance, but because of the white noise present in the model, it can only be concluded that this is perhaps the strongest model of the organized crime proxies. The model predicting heroin seizures had only one predictor variable: unemployment rates, and its coefficient was not in the anticipated direction. Two variables appeared to predict cocaine seizures: the primary educational attainment level and the percentage of population male indicators. The direction of the educational proxy was in the theoretically expected direction. Finally, the model for amphetamine seizures was predicted by the World Index of Economic Freedom and the Corruption Perception Index. As the cluster moves towards greater economic freedom, amphetamine seizures also increased, and as the level of perceived corruption decreased, seizures also decreased. Because of the noise in the model, however, this potential relationship should be further examined in future studies. However, both coefficients are in the direction predicted by Institutional Anomie Theory.

Out of the four organized crime dependent variables, primary educational attainment was the most common predictor across drug-types. That is, primary
educational attainment predicts cannabis and cocaine seizures. It appears here that the polity also played an important role across drug-types. There were not other discernable trends across drug-types.

Regarding homicide rates, the polity (represented by the Political Stability) was the only important variable in the Northern country cluster. That is, as Political Stability increases, homicide rates also increased. The coefficient for this variable was not in the anticipated direction of IAT.

Table 12 above displays the results from the Baltic country cluster multivariate regression models. This cluster is composed of Lithuania, and thus has a small n size of 15. Similarly to the Northern country cluster (Table 11), fixed effects or random effects pooled cross-sectional regressions could not be run because there was only one country in this cluster. However, multivariate regression techniques were able to uncover an initial signal regarding which independent variables may be important predictors of organized crime and homicide rates, as in Table 11.

Each of the five models only had one independent variable predicting the dependent variables with the exception of amphetamine seizures. Regarding both cannabis and heroin seizures, higher primary educational levels were predictive of lower seizure amounts for both drug-types. The measure of the familial institution, the divorce-to-marriage ratio, was found to be predictive of cocaine seizures. Here, as the familial unit weakened (indicated by an increase in the divorce-to-marriage ratio), seizures decreased. This coefficient was not in the direction predicted by Institutional Anomie Theory. Amphetamine seizures were predicted by the CPI and unemployment rates. As the perceived level of corruption in the cluster decreased, seizures increased, and as the
rate of unemployment increased by one percent, seizures decreased. Both coefficients are not in the anticipated direction of Institutional Anomie Theory. The model predicting intentional homicide rates was predicted by the primary educational level, maintaining continuity with cannabis and heroin seizures. Yet, the coefficient was in the opposite direction that Institutional Anomie Theory would predict. While primary educational attainment was predictive in three of the five models, the general lack of findings may be attributable to the small number of observations and the fact that Lithuania is also a transitioning country, lending their reporting of both drug seizures and homicides questionable in terms of reliability.

Table 13 below summarizes the information presented in the above tables to better consider which proxies for culture and social institutions, as exist in Messner and Rosenfeld’s (1994) model of Institutional Anomie Theory, best explained all four measures of organized crime and intentional homicide rates respectively. Table 14 below summarizes the same information, but removes the theoretical restrictions placed on the variables. In other words, Table 13 illustrates the percentage of significant independent variables that had coefficients in the predicted direction of Institutional Anomie Theory (the significant independent variables are further broken down into cultural and institutional indicators), while Table 14 simply illustrates the percentage of significant independent variables as broken down by country cluster and dependent variable.\footnote{In both tables, it is acknowledged that comparisons are being made between models without concerns for the number of observations to those with concerns.}
Table 13. Time Series Country Cluster Regression Results: Significant Predictor Variables in the Theoretically Predicted Direction

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Independent Variable Type</th>
<th>Anglo-Saxon*Mediterranean</th>
<th>Western</th>
<th>Northern</th>
<th>Baltic</th>
<th>CEE</th>
<th>Indep. Var Sum</th>
<th>Dep. Variable Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amphetamines</td>
<td>Anomic Culture</td>
<td>50%</td>
<td>25%</td>
<td>0%</td>
<td>50%</td>
<td>0%</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td>Institutions</td>
<td>40%</td>
<td>40%</td>
<td>20%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>17%</td>
</tr>
<tr>
<td>Cannabis</td>
<td>Anomic Culture</td>
<td>50%</td>
<td>0%</td>
<td>25%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td>Institutions</td>
<td>0%</td>
<td>40%</td>
<td>0%</td>
<td>40%</td>
<td>20%</td>
<td>0%</td>
<td>17%</td>
</tr>
<tr>
<td>Cocaine</td>
<td>Anomic Culture</td>
<td>0%</td>
<td>0%</td>
<td>25%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>4%</td>
</tr>
<tr>
<td></td>
<td>Institutions</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Homicide</td>
<td>Anomic Culture</td>
<td>50%</td>
<td>0%</td>
<td>25%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td>Institutions</td>
<td>0%</td>
<td>20%</td>
<td>20%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>7%</td>
</tr>
<tr>
<td>Heroin</td>
<td>Anomic Culture</td>
<td>25%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>4%</td>
</tr>
<tr>
<td></td>
<td>Institutions</td>
<td>40%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>20%</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td>Indep. Var Sum</td>
<td>Anomic Culture</td>
<td>35%</td>
<td>5%</td>
<td>15%</td>
<td>10%</td>
<td>0%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>Institutions</td>
<td>20%</td>
<td>24%</td>
<td>12%</td>
<td>12%</td>
<td>12%</td>
<td>4%</td>
<td>4%</td>
</tr>
</tbody>
</table>

* indicates the use of the Random Effects Model; no * implies the use of the Fixed Effects model
The findings presented in the above table are extremely interesting. The country clusters appear in descending order (from left-to-right) based on the percentage of significant variables, as summed by the bottom row (labeled “Cluster Total”). The Anglo-Saxon, Mediterranean, and Western country clusters had the highest percentage of significant variables with coefficients in the predicted direction of Institutional Anomie Theory across all five dependent variables (27%, 16%, and 13% of the variables were significant respectively). In other words, these clusters were most supported by Institutional Anomie Theory’s predictions. The clusters that least supported the theory’s predictions were the Central and Eastern European cluster, the Baltic cluster, and the Northern cluster, in which only 4%, 7%, and 11% of the variables were significant across all five dependent variables respectively. These results are interesting, as it can be argued that the countries within the Anglo-Saxon cluster (Ireland and the U.K.) most closely resemble the U.S. as a country, in terms of political, social, and economic environments. Institutional Anomie Theory was designed using the “American Dream” as the prima facie case for the theoretical model, and Messner and Rosenfeld (1994) themselves have argued that countries most closely resembling the cultural and institutional composition of the U.S. should have correspondingly higher rates of serious crime. These findings support this assumption. However, the lack of performance found in the CEE, Baltic, and Northern clusters may also be indicative of the low power of the regression models to detect additional significant variables due to the less than desirable number of observations.

Additionally, looking at the second to last row (labeled “Indep. Var. Sum”) that differentiates between cultural variables and institutional variables, Institutional Anomie
Theory is further supported in the Anglo-Saxon and Western Country clusters. This is also illustrated in Figure 11 below.

Figure 11. Cultural-Institutional Breakdown between Country Clusters: IAT Restrictions

These two clusters had more significant variables representing Anomic cultural pressures to succeed, coupled with a lack of legitimate means to succeed, resulting in Anomie. The results illustrate that these two clusters had the highest rates of Anomie among the six country clusters, which is expected as the theory predicts that countries more closely resembling American culture will have higher rates of Anomie. Moreover, countries in these clusters were also found to have some of the highest rates of organized crime and homicide. Again, these findings support the assumptions of Institutional Anomie Theory. However, the CEE cluster (Poland and Slovakia) was also found to have a slight

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134 Recalling the findings from the visual inspection of the data, the countries experiencing the most organized crime (as measured through drug seizure amounts) include Belgium, Ireland, and the U.K. Belgium was also one of the four countries experiencing the highest rates of homicide.
abundance of Anomic cultural variables over institutional variables. This was an unexpected finding, as the theory does not predict that these transitioning countries should experience Anomie. However, these percentages were represented by only one significant variable each, so this finding does not strongly refute the assumptions of the theory.

Countries that were not Anomic, containing more predictive variables representing social institutions than cultural pressures to succeed, were the Northern cluster (Sweden), the Mediterranean cluster (Greece, Italy, Portugal, and Spain), and the Baltic cluster (Lithuania). The Baltic cluster was found to have the least number of total significant variables (aside from the CEE cluster). This clusters represents countries in transition, which would be expected to be the least similar to the American culture as defined by Messner and Rosenfeld (1994). Interestingly it is the non-economic institutions in the Northern and Mediterranean clusters that are most predictive of high rates of crime (in terms of both organized crime and homicide), indicating that there are few cultural pressures to succeed driving drug seizures or intentional homicide rates. Rather, much of the explanatory power is placed among the institutional variables.

Additionally, Table 13 illustrates that Institutional Anomie Theory appears to best predict amphetamine and cannabis seizures the best out of the five dependent variables, as amphetamines had 11 important predictor variables (representing 20% of the total number of independent variables) with coefficients in the theoretically anticipated direction (listed in the column on the far right labeled “Dep. Variable Total”). Interestingly, models for all six country clusters using intentional homicide rates as the dependent variable performed the second to worst in terms of Institutional Anomie
Theory. That is, the theory predicted homicide rates the second to least out of all five dependent variables. This is particularly interesting, as the theory was originally developed to explain the serious criminal phenomenon of homicide. The majority of past empirical studies have only involved explaining homicide rates (e.g., Bjerregaard and Cochran, 2008a; Maume and Lee, 2003; Messner and Rosenfeld, 1997c; Messner et. al, 2011; Savolainen, 2000) with varying degrees of success.

When the breakdown between Anomic cultural and institutional variables was considered between dependent variables (in the second to last column on the right in Table 13 and illustrated in Figure 12 below), there were fairly even distributions between the two categories. That is, between the five dependent variables there only appeared to be a slight dominance of institutional over cultural variables in the models. The only exception was intentional homicide rates, which were predicted by a slight dominance of cultural variables over institutional variables.

Figure 12. Cultural-Institutional Breakdown between Dependent Variables: IAT Restrictions
Table 14. Time Series Country Cluster Regression Results: Significant Predictor Variables

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Independent Variable Type</th>
<th>Anglo-Saxon*</th>
<th>Western</th>
<th>Mediterranean</th>
<th>CEE</th>
<th>Northern</th>
<th>Baltic</th>
<th>Indep. Var Sum</th>
<th>Dep. Variable Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannabis</td>
<td>Anomic Culture Institutions</td>
<td>50%</td>
<td>50%</td>
<td>25%</td>
<td>50%</td>
<td>0%</td>
<td>0%</td>
<td>29%</td>
<td>37%</td>
</tr>
<tr>
<td>Amphetamines</td>
<td>Anomic Culture Institutions</td>
<td>50%</td>
<td>0%</td>
<td>25%</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
<td>28%</td>
<td>26%</td>
</tr>
<tr>
<td>Homicide</td>
<td>Anomic Culture Institutions</td>
<td>50%</td>
<td>25%</td>
<td>25%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>17%</td>
<td>24%</td>
</tr>
<tr>
<td>Cocaine</td>
<td>Anomic Culture Institutions</td>
<td>25%</td>
<td>25%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>8%</td>
<td>19%</td>
</tr>
<tr>
<td>Heroin</td>
<td>Anomic Culture Institutions</td>
<td>25%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>25%</td>
<td>0%</td>
<td>8%</td>
<td>13%</td>
</tr>
<tr>
<td>Indep. Var Sum</td>
<td>Anomic Culture Institutions</td>
<td>40%</td>
<td>20%</td>
<td>15%</td>
<td>20%</td>
<td>15%</td>
<td>10%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cluster Total: 33% 31% 27% 22% 16% 13%

* indicates the use of the Random Effects Model; no * implies the use of the Fixed Effects model
Table 14 above removes the theoretical restrictions placed on the independent variables, and simply lists the percentage of all significant variables among the models regardless of whether or not the coefficients were in the expected direction of Institutional Anomie Theory. When compared to Table 13, the results of Table 14 immediately indicate an increase in variables for every country cluster and dependent variable. Looking first at the country cluster results, the Anglo-Saxon and Western clusters again have the highest percentage of significant predictor variables, but all six clusters are now more tightly grouped. While the Northern cluster and Baltic cluster still have the least significant variables, the Central and Eastern European cluster gained the most significant variables upon lifting the theoretical restrictions. This implies that while the overall regression models for this cluster were comparable to the other clusters, once the restrictions of Institutional Anomie Theory were placed on the models the theory failed to perform well in these transitioning countries.

In looking at the breakdown of significant variables between country clusters in terms of cultural or institutional representations (illustrated in Figure 13 below), there are more significant institutional variables than Anomic cultural variables for each cluster except the Anglo-Saxon country cluster. In Table 13, the Western cluster had more significant Anomic cultural variables under the restrictions of Institutional Anomie Theory, but absent those restrictions this country cluster saw a dramatic increase in the number of significant institutional variables (from 12% of the total independent variables to 40%). This was the largest gain among country cluster institutional variables. These overall trends indicate that institutional variables are more predictive of the five proxies.

---

135 This is important, because it indicates that despite the low power of the regression model in this cluster, these variables were still determined to be important predictors when the restrictions of the theory were removed.
for serious crime among each country cluster (with the exception of the Anglo-Saxon cluster).

Figure 13. Cultural-Institutional Breakdown between Country Clusters: Without IAT Restrictions

Table 14 also illustrates that the models’ predictability of each dependent variable has changed from the results in Table 13. Recall that in Table 13, amphetamine and cannabis seizures were the most predicted. When the theoretical restrictions were lifted on the models, cannabis seizures became the strongest model with 20 significant independent variables (37% of the total number of independent variables) and heroin seizures became the weakest model with only 7 significant independent variables (13% of the total number of independent variables). Cannabis seizures present an interesting picture here, as cannabis is the most widely abused and readily available drug in Europe (UNODC, 2010). As such, police are more likely to encounter and subsequently seize this drug from non-drug traffickers, which adds to the total number of seizures. It is less likely that the police are specifically targeting cannabis instead of heroin, amphetamines,
or cocaine in these fourteen countries. Interestingly, while homicide rates were not well predicted using Institutional Anomie Theory, the models using this dependent variable are now the second most-predicted by the pooled cross-sectional time series regression absent any theoretical bounds.

When the differences between significant Anomic cultural variables and significant institutional variables are examined for all five dependent variables, Figure 14 below illustrates that institutional variables are again more represented than Anomic cultural variables (as was seen in the between-cluster differences). This trend holds for all dependent variables with the exception of amphetamine seizures, which has slightly more emphasis on Anomic cultural variables than institutional variables.

Figure 14. Cultural-Institutional Breakdown between Dependent Variables: Without IAT Restrictions
Pooled Cross-Sectional Time Series Analyses: Developed and Transitioning Countries

Tables 15 and 16 below address the second research question, which seeks to determine how Institutional Anomie Theory operates in developed countries compared to countries in transition. The developed country group (i.e., Austria, Belgium, France, Germany, Greece, Ireland, Italy, Portugal, Spain, Sweden, and the United Kingdom) model contains 145 observations, and the transitioning country group (i.e., Poland, Lithuania, and Slovakia) model contains 45 observations.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>W.I. of Econ. Fred.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.71(50)***</td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td>0.86(0.29)**</td>
<td></td>
<td></td>
<td>0.76(.38)*</td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td></td>
<td></td>
<td></td>
<td>-0.21(1)*</td>
<td></td>
</tr>
<tr>
<td>Rule of Law</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.1(.51)*</td>
</tr>
<tr>
<td>Political Stability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td>0.64(0.2)**</td>
<td>0.69(0.28)*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Education</td>
<td>2.97(0.55)***</td>
<td>3.7(0.49)***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population Male</td>
<td>115(47)*</td>
<td>0.4772</td>
<td>0.7113</td>
<td>237(37)***</td>
<td>-28.4(9.3)**</td>
</tr>
<tr>
<td>Age distribution</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.5276</td>
<td>0.4772</td>
<td>0.7113</td>
<td>0.8847</td>
<td>0.7473</td>
</tr>
<tr>
<td>Prob &gt; F</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001
Table 15 above illustrates the pooled cross-sectional multivariate regression results for developed countries. All five models were run using fixed effects. Among the four proxies for organized crime, it appears that the variables representing the familial institution and educational institution had the most significance in models of cannabis, heroin, and cocaine seizures. Anomic cultural variables did not play a large role in this group of countries, though the Gross Household Savings Rate was significant for heroin and amphetamine seizures.

More specifically, the model for cannabis seizures indicated that as the divorce-to-marriage ratio increases, cannabis seizures also experienced a slight increase (0.64 kilograms per 100,000 population). The only other significant variable in this model was the variable controlling for the male population in each country. As the percentage of males increased, seizures of cannabis increased by 115 kilograms per 100,000 population. The overall model was significant at the 99.9% confidence interval.

Table 16. Transitioning Countries Significant Regression Results with Random Effects (n = 45; B(SE))

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>W.I. of Econ. Fred.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td></td>
<td>.62(.28)*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td>-7.0(2.2)***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td>-1.5(63)*</td>
<td>-1.7(67)*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td>-1.8(57)**</td>
<td></td>
<td>3.8(1.0)***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rule of Law</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.8(.61)**</td>
</tr>
<tr>
<td>Political Stability</td>
<td>3.0(1.5)*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td></td>
<td>-1.99(.85)*</td>
<td>-3.4(1.4)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Education</td>
<td>3.4(.77)***</td>
<td>-1.99(.85)*</td>
<td>6.1(2.0)**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population Male</td>
<td></td>
<td></td>
<td>-188(23)***</td>
<td>87(11)***</td>
<td></td>
</tr>
<tr>
<td>Age distribution 15-24</td>
<td>15(2.7)*</td>
<td>-40(8.8)***</td>
<td>3.7(.72)***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.6257</td>
<td>0.5940</td>
<td>0.1411</td>
<td>0.6818</td>
<td>0.9000</td>
</tr>
<tr>
<td>Prob &gt; chi2</td>
<td>***</td>
<td>***</td>
<td>*</td>
<td>***</td>
<td>***</td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001
Three variables were significant in the model predicting heroin seizures. The Gross Household Savings Rate (an indicator of culture) was significant and positive, indicating that with an increase in saving rates, heroin seizures also slightly increased (by 0.86 kilograms per 100,000 population). Two institutional variables were also significant and positive: the divorce-to-marriage ratio and primary educational attainment level. As the divorce-to-marriage ratio and primary educational attainment level increased, seizures of heroin also increased by 0.69 and 2.97 kilograms per 100,000 population, respectively. The overall model was significant at the 99.9% confidence interval.

In the regression model predicting cocaine seizures, only one variable was significant: primary educational attainment level. This was the model with the least number of significant variables for developed countries, but the overall model was still significant at the 99.9% confidence interval. The model predicted that as primary educational attainment level increased, seizures of cocaine increased by 3.7 kilograms per 100,000 population.

One Anomic cultural variable (Gross Household Savings Rate) and one control variable (population male) were significant predictors of amphetamine seizures. As the savings rate increased among developed countries, seizures of amphetamines also increased by 0.76 kilograms per 100,000 population. The variable controlling for the percent of population that is male in the model indicated that seizures of amphetamines will increase by 237 kilograms per 100,000 population as the percentage of the male population increases by one percent. This model was also significant at the 99.9% confidence interval.
Finally, the model predicting homicide rates among developed countries had the largest number of significant variables. The World Index of Economic Freedom was the only significant variable representing cultural pressures to succeed. That is, as developed countries gain values similar to “traditional American values” (i.e., the index scores of countries increase), the rate of homicide increased by 1.71 per 100,000 population. GDP per capita, representing the strength of the economic institution, was also significant. As GDP per capita increased by one unit, the rate of homicide fell by 0.21 per 100,000 population. Moreover, as the Rule of Law (representing the polity) index score increases by one unit for developed countries, the rate of homicides increases by 1.1 per 100,000 population. The percentage of male population was also significant, indicating that as the male population increased by one percent, the rate of intentional homicides falls by 28.4 per 100,000 population.

Table 16 above illustrates the pooled cross-sectional multivariate regression results for transitioning countries (i.e., Lithuania, Poland, and Slovakia). The five models had 45 observations, and were run using random effects. Overall this table illustrates many more significant predictor variables than were present in the developed country models (i.e., Table 15), and there is a more even spread between variables representing culture and institutions. While there does not appear to be much consistency among the independent variables across measures of organized crime and homicide, the models that appear to be the most predictive are cannabis and amphetamine seizures. Additionally, all five regression models for the transitioning country group were significant. However, these models find very little support for Institutional Anomie Theory, as the majority of coefficients are not in the expected direction that the theory would predict.
Cannabis seizures were predicted by unemployment rates, GDP per capita, political stability, primary educational attainment level, and the age distribution. As unemployment rates and GDP per capita increase by one unit each, seizures of cannabis decrease by 1.5 and 1.8 kilograms per 100,000 population respectively. As political stability and primary educational attainment levels increase by one unit each, seizures of cannabis increase by 3.0 and 3.4 kilograms per 100,000 population. None of these predictions support Institutional Anomie Theory; all of the coefficients are in the opposite direction that the theory predicts. Moreover, the variable that controls for the youth age distribution (between 15 and 24 years old) was significant and positive, indicating that as the number of youths between 15 and 24 year olds increase, seizures of cannabis also increase by 15 kilograms per 100,000 population. This model was significant at the 99.9% confidence interval.

Three significant variables predicted seizures of heroin – Gross Household Savings Rate, unemployment rate, and the age distribution. As savings rates in transitioning countries increased, seizures of heroin also increased, and as unemployment rates and the number of youths between 15 and 24 year olds increased, seizures of heroin decreased. While the savings rate is supportive of Institutional Anomie Theory, the remaining two significant variables were not. This model was also significant at the 99.9% confidence interval.

The regression model predicting cocaine had the least number of significant variables (as was also found among developed countries in Table 15, pg. 207). Only the divorce-to-marriage ratio significantly predicted cocaine seizures; as the divorce-to-marriage ratio increased by one unit, seizures of cocaine were found to decrease. The
overall model was significant at the 95% confidence interval. These results are not wholly unexpected, as very little cocaine exists in these transitioning countries (UNODC, 2010). Western Europe has been noted as the second largest destination region for cocaine (second only to the U.S.), but the same levels of demand for or presence of cocaine are not experienced in Central and Eastern Europe or the Baltic countries.

Amphetamine seizures were predicted by five significant independent variables, only one of which represented cultural pressures to succeed (i.e., CPI). As the CPI increases by one unit (i.e., indicating a decrease in perceived corruption), seizures of amphetamines decrease by 7 kilograms per 100,000 population. Moreover, as GDP per capita strengthens, seizures of amphetamines were also found to increase, and as the number of divorces-to-marriages increased, amphetamine seizures decreased. As the primary educational attainment level increases, amphetamine seizures also increase by 6.1 kilograms per 100,000 population. The variable controlling for the percentage of males in transitioning countries was also significant, indicating that as the percentage of males increase, seizures decrease by 188 kilograms per 100,000 population. This model finds mixed support for Institutional Anomie Theory; the theory predicts that as the economy strengthens, seizure rates (proxies for organized crime) also increase, which is what this model illustrates. However, coefficients for the institutional variables (divorce-to-marriage ratio and primary educational attainment level) were not in the theoretically anticipated direction. The overall model was significant at the 99.9% confidence interval.

Lastly, the model predicting intentional homicide rates did not find any support for Institutional Anomie Theory. The only variable that was significant, aside from the two control variables, was the Rule of Law representing the polity, and the direction of
the coefficient was not in the expected direction that Institutional Anomie Theory would predict. That is, as the Rule of Law index increased by one unit, rates of intentional homicide also increased by 1.8 per 100,000 population. If this was supportive of the theory, there would be a negative relationship between the variables. Moreover, as the male population and the percentage of 15 to 24 year olds increased in transitioning countries, homicide rates increased in both cases. The overall model was also significant at the 99.9% confidence interval.

Tables 17 and 18 below summarize the information presented in the above tables to better consider which proxies for culture and social institutions, as exist in the Institutional Anomie Theory model, best explain all four drug seizures and intentional homicide rates respectively.

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Independent Variable Type</th>
<th>Developed</th>
<th>Transitioning*</th>
<th>Indep. Var Sum</th>
<th>Dep. Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heroin</td>
<td>Anomic Culture</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>17%</td>
</tr>
<tr>
<td></td>
<td>Institutions</td>
<td>20%</td>
<td>0%</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Amphetamines</td>
<td>Anomic Culture</td>
<td>25%</td>
<td>0%</td>
<td>13%</td>
<td>11%</td>
</tr>
<tr>
<td></td>
<td>Institutions</td>
<td>0%</td>
<td>20%</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Cannabis</td>
<td>Anomic Culture</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>6%</td>
</tr>
<tr>
<td></td>
<td>Institutions</td>
<td>20%</td>
<td>0%</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Homicides</td>
<td>Anomic Culture</td>
<td>25%</td>
<td>0%</td>
<td>13%</td>
<td>6%</td>
</tr>
<tr>
<td></td>
<td>Institutions</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Cocaine</td>
<td>Anomic Culture</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>Institutions</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Indep. Var Sum</td>
<td>Anomic Culture</td>
<td>15%</td>
<td>5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Institutions</td>
<td>8%</td>
<td>4%</td>
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<td></td>
</tr>
<tr>
<td>Cluster Total</td>
<td></td>
<td>11%</td>
<td>4%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* indicates the use of the Random Effects Model; no * indicates the use of the Fixed Effects model.
Table 17 above illustrates the percentage of significant variables for both developed and transitioning country models that support the predictions of Institutional Anomie Theory. The developed country models had a total of 5 significant variables that supported the theory, while the transitioning country models only had 2 significant variables. This represents only 11% and 4% of the total variables included in the developed and transitioning country models.

Figure 15 below illustrates the breakdown between culture and institutions for each group. Interestingly, both country groups experienced more Anomic cultural forces than social institutional forces, even though the percentage of significant variables was very low (between 4% and 15% for the two groups). These findings support Institutional Anomie Theory’s claim that more developed countries will experience more Anomic cultural pressures to succeed. However, the slightly more Anomic cultural influences in the Transitioning country are unexpected, yet match with what was found in the cluster analyses (see Figure 11). Again, however, the percentage of overall independent variables that were found to be significant was very small.
When considering how the theory operated in these two groups of countries between measures of organized crime and homicide, there was also little support found for Institutional Anomie Theory. Heroin seizures were found to have the most predictor variables, but represented only 17% of the total variables included in the models. No theoretical support was found for cocaine seizures. Between cultural and institutional proxies for each dependent variable, Anomic cultural variables were found to be over-represented in heroin, amphetamines, and homicide models, while social institutions were more predictive of cannabis seizures. Overall, this table illustrates that while not much support was found for Institutional Anomie Theory because of the overall lack of significant variables; the theory is more supported in developing countries than transitioning countries.

Interestingly, when this table (Table 17) is compared with the table below (Table 18), many differences are found. Table 18 below illustrates the percentage of variables
found to be significant predictors among developed and transitioning countries after the theoretical restrictions of Institutional Anomie were omitted. In other words, this table illustrates simply the percentage of significant variables found in the models. Whereas the developed country group had more significant variables in the table with theoretical restrictions, the group of transitioning countries now has the highest percentage of significant variables absent any theoretical restrictions. That is, the transitioning country group had 12 significant variables total across all five dependent variables, which represents roughly 27% of total independent variables. The dependent country group had 9 significant variables, representing 20% of total independent variables. This is a significant increase from the models using theoretical restrictions.

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Independent Variable Type</th>
<th>Transitioning*</th>
<th>Developed</th>
<th>Indep. Var Sum</th>
<th>Dep. Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannabis</td>
<td>Anomic Culture</td>
<td>25%</td>
<td>0%</td>
<td>13%</td>
<td>28%</td>
</tr>
<tr>
<td></td>
<td>Institutions</td>
<td>60%</td>
<td>20%</td>
<td>40%</td>
<td></td>
</tr>
<tr>
<td>Heroin</td>
<td>Anomic Culture</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>28%</td>
</tr>
<tr>
<td></td>
<td>Institutions</td>
<td>20%</td>
<td>40%</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>Amphetamines</td>
<td>Anomic Culture</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>28%</td>
</tr>
<tr>
<td></td>
<td>Institutions</td>
<td>60%</td>
<td>0%</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>Homicides</td>
<td>Anomic Culture</td>
<td>0%</td>
<td>25%</td>
<td>13%</td>
<td>22%</td>
</tr>
<tr>
<td></td>
<td>Institutions</td>
<td>20%</td>
<td>40%</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>Cocaine</td>
<td>Anomic Culture</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>11%</td>
</tr>
<tr>
<td></td>
<td>Institutions</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>Indep. Var Sum</td>
<td>Anomic Culture</td>
<td>15%</td>
<td>15%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Institutions</td>
<td>36%</td>
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</tr>
<tr>
<td>Cluster Total</td>
<td></td>
<td>27%</td>
<td>20%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* indicates the use of the Random Effects Model; no * implies the use of the Fixed Effects model.
Moreover, Figure 16 below illustrates that now both country groups experience more predictability across all five dependent variables from the social institutional proxies instead of the Anomic cultural proxies. This means that the models themselves (without any theoretical restrictions) are more predicted by stronger non-economic institutions than the theory would expect in both developed and transitioning countries.

Figure 16. Cultural-Institutional Breakdown between Country Groups: Without IAT Restrictions

The same increase in model performance is not found as much when differences between dependent variables are compared. Cannabis, heroin, and amphetamine seizures are tied for the most predictive with five significant variables each, but this only represents 28% of the total independent variables – an 11% increase from the models with theoretical restrictions. Cocaine was still the least predicted model, with only two significant variables (or 11% of the total independent variables).

*Multivariate Time Series Regression: Poland and Slovakia*
Finally, Tables 19 and 20 illustrate the significant regression results for Poland and Slovakia, which address the third research question that sought to compare Poland’s cultural-institutional configuration to the other country in the Central and Eastern European country cluster (i.e., Slovakia). Since these separate country analyses contain only 15 observations and constitute one group, pooled cross-sectional regressions were unable to be run. As was used in the Baltic and Northern cluster analyses, simple time series regressions were run on each country. Because of the very small number of observations, and the increased likelihood of noise in the models (thus reducing the confidence in the empirical results), only the direction of the coefficients will be interpreted here. However, these regressions were able to still detect an initial signal regarding which independent variables are most important in predicting the dependent variables.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>W.I. of Econ. Fred.</td>
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<td>13.16(5.4)*</td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td>-1.21(.4)**</td>
<td></td>
<td></td>
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<tr>
<td>CPI</td>
<td></td>
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<tr>
<td>Unemployment</td>
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<tr>
<td>GDP</td>
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<tr>
<td>Rule of Law</td>
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<tr>
<td>Political Stability</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-1.32(5.5)*</td>
</tr>
<tr>
<td>Primary Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population Male</td>
<td></td>
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<tr>
<td>Age distribution</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>.4106</td>
<td>.0392</td>
<td>.2089</td>
<td>.2529</td>
<td>.7603</td>
</tr>
<tr>
<td>Prob &gt; F</td>
<td>**</td>
<td>*</td>
<td>***</td>
<td></td>
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</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001
Table 20. Slovakia Significant Time Series Regression Results (n = 15; B(SE))

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>W.I. of Econ. Fred.</td>
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<td>-13.99(6.1)*</td>
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<td>-2.67(3)**</td>
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<tr>
<td>G.H. Savings Rate</td>
<td>2.72(9)*</td>
<td></td>
<td></td>
<td>-0.43(1)**</td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td></td>
<td>-7.97(2.1)**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Rule of Law</td>
<td></td>
<td></td>
<td>26.60(10.7)*</td>
<td></td>
<td></td>
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<tr>
<td>Political Stability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Education</td>
<td></td>
<td></td>
<td></td>
<td>0.17(1)**</td>
<td></td>
</tr>
<tr>
<td>Population Male</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age distribution</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>.2007</td>
<td>.3573</td>
<td>.5350</td>
<td>0.0398</td>
<td>.9306</td>
</tr>
<tr>
<td>Prob &gt; F</td>
<td>*</td>
<td>**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001

Table 19 above illustrates the multivariate regression results for Poland for the time series 1995 to 2009. The models predicting the four proxies of organized crime did not perform as well as the model predicting intentional homicide rates. Models predicting heroin and cocaine seizures were not significant, though cocaine seizures were predicted by unemployment rates. As the unemployment rate in Poland increases, cocaine seizures also were found to increase. The direction of this coefficient supports the predictions of Institutional Anomie Theory. Cannabis seizures were only predicted by the Gross Household Savings Rate; as the rate of savings increased in the country, seizures of cannabis were found to decrease. The direction of this coefficient was not in the theoretically anticipated direction. Amphetamine seizures were also predicted by a cultural proxy: the World Index of Economic Freedom. Interestingly, as the World Index of Economic Freedom increased, indicating that as Poland increases in cultural values similar to those in the U.S., amphetamine seizures also increased. This model predicting
amphetamine seizures was in the direction that supported Institutional Anomie Theory’s predictions.

The model predicting intentional homicide rates appeared to be much stronger than the models predicting organized crime given the $r^2$; however, future research is needed to further confirm this. Here, homicide rates were predicted by both polity variables (i.e., Rule of Law and Political Stability), as well as the proxy representing the familial institution (i.e., divorce-to-marriage ratio). As the Rule of Law index increased, rates of intentional homicide also increased. As the Political Stability index and divorce-to-marriage ratio increased, homicide rates fell in both cases. The only coefficient not found to be in the direction predicted by the theory was the Political Stability indicator.

Table 20 above illustrates the multivariate regression results for Slovakia for the time period of 1995 to 2009. Since the number of observations was also 15, these results also shared the same limitations and concerns as those for Poland in Table 19. As such, as with Poland, only the direction of the coefficients were interpreted. Again the four proxies for organized crime did not appear to perform as well as the model for intentional homicide rates. Two of the four proxies for organized crime were again insignificant, but in the case of Slovakia the insignificant proxies were cannabis and amphetamine seizures. Each of these proxies did not contain any significant variables.

The model predicting heroin seizures was only predicted by Gross Household Savings Rate. As the savings rate increased in Slovakia, seizures of heroin also increased. This coefficient supports the predictions of Institutional Anomie Theory. Cocaine seizures was the model containing the most predictive variables out of the four organized crime proxies, and was predicted by the World Index of Economic Freedom,
unemployment rates, and Rule of Law. As the World Index of Economic Freedom and unemployment rates increased each by one unit, seizures of cocaine decreased. As the Rule of Law index increased, cocaine seizures were also found to decrease. None of these coefficients supported Institutional Anomie Theory.

Again, similar to the model in Poland, intentional homicide rates appeared to be the strongest model of the five dependent variables. Two proxies for Anomic cultural pressures to succeed were predictive of homicide rates: World Index of Economic Freedom and Gross Household Savings Rate. As both indicators increased, homicide rates also decreased. Primary educational attainment level was also significant, predicting that homicide rates would increase as the indicator also increases. Again, none of these coefficients supported Institutional Anomie Theory.

Discussion

In terms of the first research question, this exploratory research sought to explore whether countries in Europe with higher rates of Institutional Anomie will also have correspondingly higher rates of organized crime activity, after considering changes in levels of Institutional Anomie and crime rates over time. The findings of the full model (i.e., all fourteen countries included) pooled cross-sectional time series analyses found weak support for the assumptions of Institutional Anomie Theory. That is, countries in Europe were found to have slightly more Anomic cultural variables than institutional variables predicting the organized crime proxies. However, the number of significant independent variables supportive of Institutional Anomie Theory (i.e., that had coefficients in the predicted directions) only represented 25% of the total number of independent variables for the four proxies of organized crime. Additionally, the total
number of significant variables across all five models was very low (no more than 33% of the variables were found to be significant per dependent variable). This again supports the finding that perhaps the majority of countries in the full model do not match the cultural-institutional configuration proposed by Institutional Anomie Theory that results in high rates of serious crime, particularly when changes over time are taken into account.

It was further considered whether grouping countries into country-clusters significantly impacted Institutional Anomie Theory’s ability to predict high levels of organized crime. To address this question, a series of pooled cross-sectional multivariate regressions were conducted on the six country clusters (i.e., Western cluster, Mediterranean cluster, CEE cluster, Baltic cluster, Northern cluster, and Anglo-Saxon cluster; see Figure 9 pg. 150). Recall Figure 11 (pg. 200), which illustrated the breakdown of the weaknesses of significant Anomic cultural and institutional variables that had coefficients in the theoretically anticipated direction for all five dependent variables combined. For the research question to be supported, it would be expected that the country clusters that most similarly resemble the American culture would have correspondingly high rates of Institutional Anomie and serious crime. Out of the six clusters the Anglo-Saxon is arguably the most similar to the U.S. in terms of socio-economic environment. From Figure 11, the findings support these assumptions. That is, the two country clusters that illustrate strong cultural pressures to succeed (and therefore may be considered “Anomic”) are the Anglo-Saxon cluster136 (composed of Ireland and the U.K.) and the Western cluster (composed of Austria, Belgium, France, and Germany).

136 These findings are even more interesting given the less than desirable number of observations in the Anglo-Saxon cluster. That is, despite the smaller number of observations in this cluster compared to others (e.g., the Mediterranean cluster), the signal that was obtained was stronger in terms of supporting the theory than the results from clusters with the desired number of observations.
Moreover, countries in these clusters were also found to have some of the highest rates of organized crime and homicide.137

Interestingly it is the non-economic institutions in the Northern and Mediterranean clusters that are most predictive of high rates of crime (in terms of both organized crime and homicide), indicating that there are few cultural pressures to succeed driving drug seizures or intentional homicide rates. Rather, much of the explanatory power is placed among the institutional variables. This does not support the theory’s assumptions. Moreover, these findings further illustrate that between-cluster differences are too great to consider together in a full model. In other words, the effects of between-cluster differences become washed out when all fourteen countries are considered together, resulting in only weak support for Institutional Anomie Theory. From Figure 11, it is evident that the Anglo-Saxon and Western country clusters are the driving forces behind the weak support found in the full model analyses.

The second research question138 was also of the exploratory nature to determine which and how elements of culture and institutions differentially impacted countries in developed nations versus transitioning nations. The findings in this research (Table 17) support the theory’s assumptions that developed countries will operate the best under Institutional Anomie Theory, but the support is weak. The developed country group was found to be the most predicted by the theory, and was found to have Anomic conditions, while the transitioning country group was only supported by two significant variables that each represented the cultural and social institutions. The support for these findings are

137 Recalling the findings from the visual inspection of the data, the countries experiencing the most organized crime (as measured through drug seizure amounts) include Belgium, Ireland, and the U.K. Belgium was also one of the four countries experiencing the highest rates of homicide.

138 How do the elements of culture and social institutions affect levels of Institutional Anomie and organized crime in both developed and developing countries?
weak, because for the developed country group only 11% of the total number of independent variables were found to be significant across all dependent variables. Additionally, no support was found for cocaine seizures. In terms of transitioning countries, the only dependent variables that had any significant predictors were heroin and amphetamine seizures. The number of observations for each group of countries was not a limitation in these models (the smallest $n$ was 45), which strengthen the conclusions that while the theory did predict developed countries as having higher rates of Anomie (which also coincided with higher rates of organized crime) over transitioning countries, the overall strength of the theory’s predictability among these groups is weak. Moreover, once the theoretical restrictions were lifted from the models, transitioning countries (particularly in terms of institutional variables) were most explained across all five dependent variables. This again illustrates weak support for Institutional Anomie Theory in that the cultural-institutional configurations of countries in transition are not conducive to explanation through Institutional Anomie Theory, as Messner and Rosenfeld (1994) anticipated.

The third and final set of research questions\textsuperscript{139} were also of the exploratory nature to uncover individual transitioning country differences between Poland and Slovakia. As was expected based on earlier findings that Institutional Anomie Theory did not operate well in transitioning countries, the same results were found among the two countries in the Central and Eastern European cluster (i.e., Poland and Slovakia). In Poland (Table 19), Anomic cultural variables were the only predictors of the organized crime proxies, with two coefficients in the anticipated direction of Institutional Anomie Theory.

\textsuperscript{139} How does Institutional Anomie Theory operate in the developing democracy of Poland? Does the cultural-institutional configuration in Poland vary form other CEE countries? If so, how does it impact the levels of organized crime involvement?
Cannabis and amphetamine seizures were the only significant models, explaining between 25 and 41% of the variance. Interestingly, the model of amphetamine seizures indicated that as Poland gains Anomic cultural values in line with the American Dream, the rate of seizures (i.e., organized crime) increases. This is significant particularly for this dependent variable because Poland has been identified as a source country for this drug-type. This may indicate that while the signal for Institutional Anomie Theory was weak, Anomic cultural values may play a role particularly in why organized crime syndicates may use Poland as a source country for amphetamines. Additionally, the model for homicide had the most significant predictor variables – all of which were institutional variables that did not support the predictions of Institutional Anomie Theory (with one exception: Political Stability).

By comparison, the model predicting amphetamines and cannabis seizures were not significant in Slovakia (Table 20). Cocaine seizures were the most predicted by two significant cultural variables and one significant institutional variable (all with coefficients in the opposite direction of Institutional Anomie Theory’s predictions). Heroin seizures were predicted by one (theoretically supported) cultural variable. Similar to Poland, homicide rates were the strongest model, with two significant cultural variables and one significant institutional variable (again, all with coefficients in the opposite direction of Institutional Anomie Theory’s predictions). The strengths of the homicide models in both Poland and Slovakia are interesting – even though there was no support for the theory found in either case, these models are the strongest predicted dependent variable in each setting.
Anomie cultural indicators in both countries appear to be the most predictive of the four organized crime proxies, though the specific proxies differ between the two countries. Amphetamine seizures are important for Poland, which has identified as a major source country for amphetamines (DEA, 2004). As previously mentioned, the World Index of Economic Freedom is in the direction as predicted by Institutional Anomie Theory, indicating that as Poland gains Anomie cultural traits resembling the American Dream, seizures of amphetamines also increase. Interestingly, this same indicator was important in the Slovakian models, yet the coefficient indicated the opposite relationship; as Slovakia moves away from traditional American values, seizures of cocaine and homicide rates increase. To conclude the third set of research questions, the theory did not appear to work better or worse in Poland compared with Slovakia. Moreover, each country had very little representation of institutional variables impacting the five dependent variables, so it can also be concluded that there was not much variation between these two countries in terms of cultural-institutional configurations. However, the lack of an adequate number of observations for each Poland and Slovakia most likely resulted in the inability of the regression models to detect additional influential independent variables; yet this research was able to obtain an initial signal of Institutional Anomie Theory in Poland and Slovakia that allowed for these country comparisons to be made.

**Unit Root Tests, Granger Causality, and Cointegration**

Overall these assorted empirical (and visual) analyses have been able to address the three sets of research questions in this research. However, the time series analyses
were taken one step further to investigate whether or not there were any additional relationships between the dependent variables and significant independent variables. Uncovering any additional relationships is important for not only the operation of each model for organized crime and homicides, but the findings also have potential implications for Institutional Anomie Theory. This section applies advanced econometric time series techniques to the dependent and independent variables in this research. First, unit root tests were conducted to determine the stationarity of each variable. Depending on whether each variable is stationary or non-stationary, Granger causality tests were conducted for the full model (i.e., all fourteen countries will be included), for the six country clusters, and for developed and transitioning countries. The findings of the Granger causality tests detected whether any potential causality existed between independent variables and each dependent variable. When causality is found, it significantly strengthens the argument for the inclusion of the Granger causal independent variable in the Institutional Anomie model for that specific dependent variable. When causality was not found, it simply indicated that the independent variable remained a predictor of the dependent variable, but it did not strengthen or refute its inclusion in the overall Institutional Anomie model for that dependent variable. In

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140 For instance, if GDP per capita is found to have a (Granger) causal link with heroin seizures for the Anglo-Saxon country cluster for the time period utilized in this study (1995 to 2009), it suggests that GDP is a vital (causal) component of explaining heroin seizures in this setting. However, it does not imply that GDP per capita will be Granger causal for heroin seizures at any other point in time, or for any other country clusters for the same time period. The value of this test is in the potential to build a regression model maximizing the Granger causal links among independent variables. Consider a model predicting heroin seizures in the Anglo-Saxon cluster in which all proxies of the elements of Institutional Anomie Theory exhibit (Granger) causal connections to the dependent variable; this would be an extremely powerful overall model of Institutional Anomie predicting heroin seizures. However, if only GDP per capita, for instance, was found to be Granger causal in this country cluster for this dependent variable, then other proxies for non-economic institutions could be substituted into and out of the model and tested until further Granger causality was found among all independent variables. In other words, it allows researchers to maximize the explanatory power of the regression model by finding proxies that contain elements of causality with the specific dependent variable. While this is beyond the scope of this study, it provides additional avenues for future research.
other words, finding an absence of Granger causal relationships does not negatively impact the use of the variables as proxies in the model of Institutional Anomie Theory, it simply means the independent variables do not significantly improve the prediction of the dependent variable through Granger causal processes.

Additionally, depending on the stationarity of the variables, tests for cointegration were conducted on the full model, the six country clusters, and for developed and transitioning countries. These tests revealed whether or not the (non-stationary) independent variable is cointegrated with the (non-stationary) dependent variable; that is, the tests will determine if there is an element common to both variables causing them to track together over time. This means that any shock to one variable, such as a change in law, will have the same impact (i.e., either increasing or decreasing the trend) of the second cointegrated variable. These tests do not have implications for inclusion of the cointegrated variables into the models of Institutional Anomie, but rather the value of these findings lie within the implications for policy. That is, in theory if the divorce-to-marriage ratio was found to be cointegrated with heroin seizures, then policymakers would only have to apply policies that lower divorce rates in the country in order to impact organized crime without ever needing to create policies directly aimed at organized crime.

Because these two powerful econometric tests require large numbers of observations to run the models, the individual country-level investigation of Poland and Slovakia could not be conducted. Following the results from these quantitative tests, a detailed discussion of the findings will conclude this chapter.

*Unit Root Analyses: Full Model Results*
Table 21 below illustrates the results of the Levi-Lin-Chu (2002) unit root tests for the full model that test for the stationarity of each trend (i.e., variable). When the adjusted $t$ statistic is negative and the $p$ value is significant, the unit root test reveals that the trend is stationary. If the adjusted $t$ statistic is positive and/or the $p$ value is not significant, then the trend is considered to be non-stationary.

Table 21. Levi-Lin-Chu Unit Root Results (14 panels, 15 periods)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Adjusted $t$ Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannabis Seiz.</td>
<td>-6.926***</td>
</tr>
<tr>
<td>Heroin Seiz.</td>
<td>-3.731***</td>
</tr>
<tr>
<td>Cocaine Seiz.</td>
<td>-2.979**</td>
</tr>
<tr>
<td>Amphetamine Seiz.</td>
<td>-2.806*</td>
</tr>
<tr>
<td>Intentional Homicide Rate</td>
<td>-1.468</td>
</tr>
<tr>
<td>W.I. of Econ. Fred.</td>
<td>-6.127***</td>
</tr>
<tr>
<td>G.H. Savings Rate†</td>
<td>--</td>
</tr>
<tr>
<td>CPI†</td>
<td>--</td>
</tr>
<tr>
<td>Unemployment</td>
<td>-4.458***</td>
</tr>
<tr>
<td>GDP</td>
<td>-1.948*</td>
</tr>
<tr>
<td>Rule of Law</td>
<td>-0.455</td>
</tr>
<tr>
<td>Political Stability</td>
<td>1.276</td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td>-1.388</td>
</tr>
<tr>
<td>Primary Education</td>
<td>-0.168</td>
</tr>
<tr>
<td>Population Male</td>
<td>-2.347**</td>
</tr>
<tr>
<td>Age distribution</td>
<td>-6.035***</td>
</tr>
</tbody>
</table>

Note: *$p < .05$; **$p < .01$; ***$p < .001$

† Indicates an unbalanced dataset

From the results above, it is evident that the majority of the variables are stationary (i.e., cannabis seizures, heroin seizures, cocaine seizures, World Index of Economic Freedom, unemployment rates, GDP per capita, population male, and the age distribution of 15 to 24 year olds). In other words, these variables do not have a unit root within their time series’ and follow mean-reverting processes. From the perspective of this research, this means that the nature of the trends are deterministic and follow a
forecastable pattern. That is, any outside factor (e.g., a new policy) that impacts the particular variable will, over time, have a temporary affect. Once the effect of the impact of that factor (e.g., policy) wears off, the trend will revert to its long run mean.

The only dependent variable that is not stationary is intentional homicide rates. The non-stationary independent variables are the rule of law, political stability, the divorce-to-marriage ratio, and primary educational level. The trends of these five variables do contain a unit root, indicating a stochastic process. This means that the trend of each variable does not revert to a long run mean over time; instead, the direction of the trend over time is completely dependent on the previous observation only ($Y_{t-1}$). Unit root tests were unable to be run for Gross Household Savings Rate and the Corruption Perception Index due to enough missing data in each time series to cause the dataset to be too unbalanced for the test to be conducted.

These results are the important first steps in determining how the variables can be used in tests of Granger causality, as well as considering which variables should be used in tests of cointegration for the full model. For instance, results in Table 21 above illustrate that only the non-stationary dependent variable (i.e., intentional homicide rates) can be tested for cointegration among the four non-stationary independent variables (i.e., rule of law, political stability, the divorce-to-marriage ratio, and primary educational level), as the test for cointegration requires non-stationarity. The results for the unit root tests for each country cluster and developed and transitioning countries can be found in the Appendix.

*Granger Causality: Full Model and Country Clusters*
As previously discussed, Granger causality indicates if any of the independent variables are impacting the dependent variables temporally, once the dependent variable has been lagged. In other words, this econometric test can help determine the directionality among the significant variables impacting each dependent variable. Once past values are considered in the dependent variable’s time series, the tests reveal whether the independent variables have a potentially (Granger) causal relationship with the dependent variable.\(^{141}\) This test provides stronger results than simple correlation or regression analyses, but requires a large number of observations to maintain its explanatory power.\(^{142}\)

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\(^{141}\) A simple way of considering Granger causality is with the following example: consider the relationship between a rooster crowing at dawn with the rising of the sun. The rooster will crow every morning as the sun rises, but the sun will continue to rise even if the rooster does not crow. Therefore, there is no causal relationship here, yet the rooster’s crowing will help predict when the sun will come up.

\(^{142}\) The first steps in running Granger causality tests have been taken by conducting the unit root analyses for each variable. Next, any variable that was not stationary was first-differenced (First-differencing the variable transforms the trend from non-stationary to stationary. Unit root tests were conducted on the five first-differenced variables to ensure for stationarity. The reason for transforming non-stationary variables into stationary trends is because regressions that are run using non-stationary variables produce spurious results), and then all variables were lagged (the non-stationary variables were lagged on the first-difference). One lag was used for both dependent and independent variables because every lag cuts the number of observations by 14 (i.e., 14 countries). Given that the strength of the causality tests is dependent on the length of time, cutting the time periods by one for each country affects the strength of the results. As such, only one lag was used. A series of pooled cross-sectional regressions were run (using either fixed effects or random effects as determined previously above by the Hausman test) on each dependent variable (if the dependent variable was stationary; if dependent variable was not stationary, regressions were run on the first-differenced dependent variable), using first only the lagged dependent variable. A second regression was then run that also included any significant independent variables discovered in the above pooled-crossectional regressions (i.e., Tables 6 through 23). The reason for running two pooled-cross sectional regressions for each dependent variable is because the sum of squared residuals (SSqR) for the restricted model (i.e., where only the lag of the dependent variable is regressed on the dependent variable) and the unrestricted model (i.e., the lag of the dependent variable plus the lag of any significant independent variables are regressed on the dependent variable) must be retrieved and calculated. If the Hausman test indicates that fixed effects is the dominant model, then retrieving the sum of squared residuals must be conducted by including dummy variables representing each country in the regression. If the Hausman test indicates that random effects is the dominant model, then the dummy variables are not needed to retrieve the SSqR. Using the sum of squared residuals for the restricted and unrestricted model allow for the calculation of the \(F\) statistic \(F = ((\text{SSqR Restricted}/\text{SSqR Unrestricted})/\#IVs)/(\text{SSqR Restricted}/\#observations in Unrestricted model))\) \(\text{[The F-statistic can only be calculated if the unrestricted model has one variable more than the restricted model. Otherwise, the t-statistic will be used.]}\) If the \(F\) statistic is significant, then it can be concluded that Granger causality exists among the independent variables. The unrestricted model is then further reviewed to uncover which of the lagged independent variables are significant, thus illustrating causality in the Granger sense.
After running the analyses, the findings are presented in Tables 22 through 26 below for the full model and six country clusters as broken down by dependent variable. The reason for these table-configurations is because to determine Granger causality, each dependent variable must be run in a model that contains the significant independent variable(s) form the regression analyses (established in Tables 6-12) and the lag of the dependent variable. Therefore, it is appropriate to illustrate the results of the independent variables for each dependent variable in the full model and six country clusters, instead of considering each country cluster separately. Granger causality among the independent variables is distinguished in these tables by their \( p \) values. If the models indicate that an independent variable has a Granger causal relationship with the dependent variable, their \( p \) value must be .05 or smaller.
Table 22. Granger Causality Results for Full Model and Country Clusters: Cannabis Seizures (Coef(SE))

<table>
<thead>
<tr>
<th>Variable</th>
<th>Full Model</th>
<th>Western</th>
<th>Mediterranean</th>
<th>CEE</th>
<th>Anglo-Saxon+</th>
<th>Northern</th>
<th>Baltic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lag of Cannabis Seizures</td>
<td>0.49(0.06)**</td>
<td>0.17(0.13)</td>
<td>0.39(0.14)**</td>
<td>-0.20(0.20)</td>
<td>-0.14(0.16)</td>
<td>-0.65(0.24)*</td>
<td>0.50(0.19)*</td>
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<tr>
<td>W.I. of Econ. Fred.</td>
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<tr>
<td>G.H. Savings Rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td>1.66(1.22)</td>
<td></td>
<td>-18.27(6.41)**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td></td>
<td></td>
<td></td>
<td>-1.47(1.17)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td>-0.40(1.60)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rule of Law</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.25(20.33)</td>
<td></td>
</tr>
<tr>
<td>Political Stability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td>0.33(0.92)</td>
<td>0.33(0.92)</td>
<td>1.66(3.80)</td>
<td></td>
<td>-1.29(4.37)</td>
<td>-1.63(5.68)</td>
<td>-0.11(2.58)</td>
</tr>
<tr>
<td>Primary Education</td>
<td>0.45(0.88)</td>
<td>0.24(4.78)</td>
<td></td>
<td></td>
<td>-1.29(4.37)</td>
<td>-1.63(5.68)</td>
<td>-0.11(2.58)</td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001; + indicates Random Effects model; no + implies Fixed Effects model

Table 23. Granger Causality Results for Full Model and Country Clusters: Heroin Seizures (Coef(SE))

<table>
<thead>
<tr>
<th>Variable</th>
<th>Full Model</th>
<th>Western</th>
<th>Mediterranean</th>
<th>CEE</th>
<th>Anglo-Saxon+</th>
<th>Northern</th>
<th>Baltic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lag of Heroin Seizures</td>
<td>0.46(0.06)**</td>
<td>0.11(0.14)</td>
<td></td>
<td>-0.41(0.19)*</td>
<td>0.60(0.51)</td>
<td>0.66(0.13)***</td>
<td></td>
</tr>
<tr>
<td>W.I. of Econ. Fred.</td>
<td>3.38(1.16)**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.51(2.20)</td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.86(0.68)</td>
<td></td>
</tr>
<tr>
<td>Rule of Law</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-2.62(24.57)</td>
<td></td>
</tr>
<tr>
<td>Political Stability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.14(0.17)</td>
<td>3.18(7.96)</td>
</tr>
<tr>
<td>Primary Education</td>
<td>-1.26(1.53)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-1.32(2.07)</td>
<td></td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001; + indicates Random Effects model; no + implies Fixed Effects model

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Table 22 above illustrates the results for the full model and six country clusters for cannabis seizures. From the table, it is evident that there are not any independent variables that illustrate Granger causality with cannabis seizures for the full model. This means that the independent variable (primary educational attainment) remains associated with cannabis seizures, but it did not significantly increase the predictability of this dependent variable once the lagged effects were taken into consideration. In other words, the model rejected the possibility of Granger causality existing between these variables.

Only the Anglo-Saxon cluster had any independent variables illustrating Granger causality out of the six country clusters. The Corruption Perception Index was significant at the 99% confidence interval in this country cluster, indicating the presence of Granger causality between this variable and cannabis seizures. This means that once the lagged dependent variable was taken into account (i.e., changes over time are accounted for), the only variable in this time series regression to have any type of Granger causal relationship was the CPI, whereas the Rule of Law variable (the second independent variable in the equation) was not significant. This does not mean that the Rule of Law is not useful in predicting cannabis seizures; these results simply indicate that the Rule of Law does not impart any kind of causal relationship with cannabis seizures. Moreover, the coefficient of CPI indicates that the increase of CPI by one unit (i.e., indicating a decrease in perceived corruption) Granger causes the seizures of cannabis to decrease by 18 kilograms per 100,000 population. This does support the predictions of Institutional Anomie Theory for this regression model, as more corruption should lead to a lack of legitimate means to succeed, which should in turn increase the rate of organized crime (as measured by cannabis seizures). This means that CPI is an important component of the
Anglo-Saxon model of Institutional Anomie Theory. The results in Table 29 also illustrate that with the exception of the CPI in the Anglo-Saxon country cluster, all other independent variables are associated with and share a predictive relationship with cannabis seizures, but the regressions rejected the presence of Granger causality.¹⁴³

Table 23 above illustrates the full model and country cluster results for the dependent variable of heroin seizures. One independent variable was found to “Granger cause” heroin seizures in the full country model: the World Index of Economic Freedom. In other words, the World Index of Economic Freedom was found to significantly and causally impact heroin seizures. An increase in the index of Economic Freedom by one percent Granger causes the seizures of heroin to also increase by 3.38 kilograms per 100,000 population. This strongly supports the inclusion of this variable in the model of Institutional Anomie Theory predicting heroin seizures, as this indicator is a proxy representing cultural pressures to succeed. Increases in cultural pressures to succeed should result in an increase in organized crime, according to the theory. Moreover, none of the independent variables for any of the six country clusters were found to have Granger causal properties, though they remain associated predictors of heroin seizures.¹⁴⁴

¹⁴³ To take the results from Table 22 one step further, the models containing multiple independent variables that did not illustrate Granger causality (i.e., Mediterranean, CEE, and Northern clusters) were further pared down. In other words, the regressions were re-run in these models, eliminating the least significant variables (illustrated by the variable with the smallest $t$ score) to see if these eliminations uncovered any further Granger causal relationships. When the Mediterranean cluster was pared down, no additional Granger causality was discovered among the independent variables. No additional variables were uncovered in the CEE pared down models, nor in the pared down models of the Northern cluster.

¹⁴⁴ The Anglo-Saxon and Northern country cluster models were further pared down to determine whether there were any underlying Granger causal relationships. No additional Granger causality was discovered among the pared down models of the Anglo-Saxon country cluster, nor in the Northern cluster.
### Table 24. Granger Causality Results for Full Model and Country Clusters: Cocaine Seizures (Coef(SE))

<table>
<thead>
<tr>
<th>Variable</th>
<th>Full Model</th>
<th>Western</th>
<th>Mediterranean</th>
<th>CEE</th>
<th>Anglo-Saxon+</th>
<th>Northern</th>
<th>Baltic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lag of Cocaine Seizures</td>
<td>0.13(0.07)</td>
<td>0.28(0.13)*</td>
<td>-0.57(0.11)**</td>
<td>-0.57(0.19)**</td>
<td>-0.51(0.16)**</td>
<td>0.74(0.29)*</td>
<td>-0.86(0.21)**</td>
</tr>
<tr>
<td>W.I. of Econ. Fred.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td>1.12(0.25)**</td>
<td></td>
<td>8.46(4.37)</td>
<td>0.91(0.75)</td>
<td>0.67(4.17)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rule of Law</td>
<td></td>
<td>-1.58(6.58)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Stability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-11.96(13.25)</td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-5.04(6.05)</td>
</tr>
<tr>
<td>Primary Education</td>
<td>6.46(4.53)</td>
<td>0.33(4.66)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001; + indicates Random Effects model; no + implies Fixed Effects model

### Table 25. Granger Causality Results for Full Model and Country Clusters: Amphetamine Seizures (Coef(SE))

<table>
<thead>
<tr>
<th>Variable</th>
<th>Full Model</th>
<th>Western</th>
<th>Mediterranean</th>
<th>CEE</th>
<th>Anglo-Saxon+</th>
<th>Northern</th>
<th>Baltic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lag of Amphetamine Seiz.</td>
<td>0.27(0.07)**</td>
<td>-0.47(0.15)**</td>
<td>0.16(0.15)</td>
<td>0.10(0.20)</td>
<td>0.05(0.22)</td>
<td>-0.16(0.37)</td>
<td>-0.51(0.40)</td>
</tr>
<tr>
<td>W.I. of Econ. Fred.</td>
<td>4.72(1.75)**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td></td>
<td></td>
<td>1.71(1.44)</td>
<td>-0.52(1.13)</td>
<td></td>
<td>1.91(0.70)</td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td>-0.25(1.92)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rule of Law</td>
<td>1.71(1.97)</td>
<td>0.53(3.19)</td>
<td></td>
<td></td>
<td>0.03(0.55)</td>
<td>-4.22(4.44)</td>
<td></td>
</tr>
<tr>
<td>Political Stability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td></td>
<td>-0.70(1.23)</td>
<td></td>
<td></td>
<td>-0.12(0.15)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001; + indicates Random Effects model; no + implies Fixed Effects model

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Table 24 above illustrates the results of the Granger causality tests for cocaine seizures for the full model and the six country clusters. In the full model regressions, GDP per capita was found to “Granger cause” cocaine seizures. This indicates that after the dependent variable was lagged, GDP per capita significantly improved the prediction of cocaine seizures by 1.12 kilograms per 100,000 population; a Granger causal relationship exists between these two variables. Moreover, the coefficient was in the direction that the theory would predict. This builds further support that in the full country model, a strong economy was found to Granger cause cocaine seizures (i.e., organized crime rates) to increase. None of the independent variables for any of the six country clusters were found to have Granger causal properties, though they remain associated predictors of cocaine seizures.\textsuperscript{145}

Table 25 above illustrates the results of the Granger causality tests of amphetamine seizures for the full model and the six country clusters. Again, the full model is the only model containing a Granger causal relationship. Here, the World Index of Economic Freedom is “Granger causing” amphetamines when all fourteen countries are considered together. As these countries in Europe gain Anomic cultural elements of the American dream, seizures of amphetamines (i.e., organized crime) increase by 4.72 kilograms per 100,000 population. Granger causal relationships were not found among the independent variables for any of the six country clusters.\textsuperscript{146}

\textsuperscript{145} The CEE, Anglo-Saxon, and Northern country cluster models were further pared down to uncover any further Granger causality that may be hidden in the multivariate regressions. No additional Granger causality was discovered among the pared down models of the CEE country cluster, nor among the Anglo-Saxon pared down models. Granger causality was also not discovered among the pared down models of the Northern country cluster.

\textsuperscript{146} The Mediterranean, Anglo-Saxon, Northern, and Baltic country cluster models were further pared down, and no additional Granger causality was found among the independent variables.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Full Model</th>
<th>Western</th>
<th>Mediterranean</th>
<th>CEE</th>
<th>Anglo-Saxon+</th>
<th>Northern</th>
<th>Baltic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lag of Homicide Rates</td>
<td>0.37(0.07)***</td>
<td>0.33(0.12)**</td>
<td>-0.48(0.14)**</td>
<td>-0.28(0.35)</td>
<td>-0.39(0.18)*</td>
<td>-0.66(0.24)*</td>
<td>-0.43(0.26)</td>
</tr>
<tr>
<td>W.I. of Econ. Fred.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.16(0.98)</td>
<td>-3.01(3.16)</td>
</tr>
<tr>
<td>Unemployment</td>
<td>-0.20(0.07)**</td>
<td></td>
<td>0.17(0.21)</td>
<td></td>
<td>-0.81(0.28)**</td>
<td>0.00(0.21)</td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td>-0.09(0.05)</td>
<td>-0.53(0.31)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rule of Law</td>
<td>0.07(0.35)</td>
<td>0.49(0.46)</td>
<td>-0.54(1.05)</td>
<td>4.35(2.64)</td>
<td>3.25(3.63)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Stability</td>
<td>0.02(0.13)</td>
<td></td>
<td>-0.11(0.22)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.16(0.17)</td>
<td></td>
</tr>
<tr>
<td>Primary Education</td>
<td>-0.28(0.48)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.11(0.38)</td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001; + indicates Random Effects model; no + implies Fixed Effects model
Finally, Table 26 above illustrates the Granger causality results for the full model and six country clusters for intentional homicide rates. The full model results reveal a Granger causal relationship between unemployment rates and intentional homicide rates. With regards to this dependent variable, as unemployment rates increase, homicide rates decrease by a very small margin (0.20 per 100,000 population). None of the other independent variables were found to be significant in the full model. Moreover, upon eliminating the least significant variables one by one, no additional Granger causality was uncovered. The causal impact of unemployment rates on the homicide rates for the model including all fourteen countries was not in the direction Institutional Anomie Theory would predict, which provides further evidence against the operation of the theory in this particular setting.

The only country cluster to have independent variables exhibiting Granger causality is again the Anglo-Saxon cluster. Unemployment rates were found to again Granger cause homicide rates to very slightly decrease. The causal impact of this independent variable on the homicide rates for the Anglo-Saxon country cluster is not in the direction Institutional Anomie Theory would predict, which again provides evidence against the operation of the theory in this additional setting.

Overall, the results from Tables 22 through 26 are very interesting, and reveal that the majority of relationships between the independent predictor variables and the dependent variables are not causal in the Granger sense. That is, the majority of the independent variables share an association with their corresponding dependent variables

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147 It must be kept in mind that this cluster had only 30 observations to begin with, so these results are conditioned based on this limitation of data.
148 Paring down the Mediterranean country cluster model revealed no further Granger causality. Further, no additional Granger causal relationships were discovered in the pared down models of the Northern country cluster or the Western country cluster.
and aid in predicting their outcomes, but these variables do not share a causal relationship. Moreover, the full model (i.e., all countries included) results across all five dependent variables reveal that in all but one instance (i.e., cannabis seizures), at least one variable had a Granger causal relationship with the dependent variable. The independent variables that were found to have a causal relationship with their corresponding dependent variable were the World Index of Economic Freedom, GDP per capita, and unemployment rates. For the organized crime proxies, the direction of the coefficients was in the anticipated and predicted direction of Institutional Anomie Theory. This strongly supports the inclusion of these indicators in their respective models of Institutional Anomie Theory because not only are these variables associated with organized crime, they were found to actually have a (Granger) causal relationship in the direction that the theory suggests.

Additionally, the causal relationship uncovered with intentional homicide rates was not supportive of Institutional Anomie Theory in the full country model. That is, increased unemployment rates (a proxy for lack of legitimate means to succeed) were found to cause a decrease in homicide rates. The theory suggests that increased unemployment rates should subsequently increase the level of homicide in all fourteen countries, as it would represent a lack of legitimate means to succeed. While this relationship was not found, it does not suggest that unemployment rates are a poor proxy in the Institutional Anomie model predicting this dependent variable. Instead, the findings simply suggest that the relationship is not as the theory would expect.

Among the country clusters, the Anglo-Saxon cluster was the only one of the six to uncover any Granger causal relationships, and these relationships were only found to
be present in two of the dependent variables (i.e., cannabis seizures and intentional homicide rates). The CPI was the independent variable found to have a (Granger) causal relationship with cannabis seizures, one proxy for organized crime. The coefficient of this variable was not in the anticipated direction of Institutional Anomie Theory. The CPI in this research is a proxy representing a lack of legitimate means to succeed. The theory predicts that an increase in a lack of legitimate means to succeed should result in an increase in serious crime. However, in this country cluster, the CPI was found to have a negative and causal relationship when predicting cannabis seizures. Likewise, the coefficient for unemployment, the indicator found to have a causal relationship with intentional homicide rates in this cluster, was also not in the direction that Institutional Anomie Theory would predict. An increase in unemployment rates (a second proxy representing a lack of legitimate means to succeed) was found to Granger cause a decrease in homicide rates.\textsuperscript{149}

It is possible that the reason Granger causality was found only in the Anglo-Saxon country cluster and not in the other five clusters (aside from the limited number of observations) is perhaps because the Anglo-Saxon cluster regressions were calculated using random effects models, and not fixed effects (recall the Hausman test indicated that random effects was the dominant model for the Anglo-Saxon cluster). The random effects model allows differences between countries to be taken into consideration in the regressions, whereas the fixed effects model assumes there are no differences between countries in each cluster. The Hausman tests revealed that the fixed effects model was the dominant model for all of the country cluster models except the Anglo-Saxon; thus, the

\textsuperscript{149} Moreover, when the models with multiple independent variables were pared down for the full model considering all fourteen countries, as well as the six country clusters for all five dependent variables, no additional Granger causal relationships were uncovered.
lack of Granger causal findings in these other clusters might be attributable to the fact that the differences between the countries within each cluster are so strong that not much room is left for other factors. In other words, grouping these countries into these clusters may be too artificial, and the differences between countries in each group too large to generate a signal of causality from the independent variables.

Granger Causality: Developed vs. Transitioning Countries

To further examine the differences between developed and transitioning countries, Granger causality tests were conducted for these two groups of countries for all five dependent variables. The results are presented in Tables 27 through 31 below. While the developed country group again did not suffer from a lack of observations, the transitioning country group contained slightly less (i.e., 45) than the desired number of fifty. Once the number of independent variables were included, in addition to any lagged variables, the degrees of freedom were further limited. As such, the results from the transitioning country group were conditioned accordingly.

<table>
<thead>
<tr>
<th>Table 27. Granger Causality Results for Developed and Transitioning Countries: Cannabis Seizures (Coef(SE))</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable</strong></td>
</tr>
<tr>
<td>Lag of Cannabis Seizures</td>
</tr>
<tr>
<td>W.I. of Econ. Fred.</td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
</tr>
<tr>
<td>CPI</td>
</tr>
<tr>
<td>Unemployment</td>
</tr>
<tr>
<td>GDP</td>
</tr>
<tr>
<td>Rule of Law</td>
</tr>
<tr>
<td>Political Stability</td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
</tr>
<tr>
<td>Primary Education</td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001; + indicates Random Effects model; no + implies Fixed Effects model
Table 27 above illustrates the results of the Granger causality tests for both developed and transitioning countries for cannabis seizures. The table reveals that none of the independent variables “Granger cause” this dependent variable for either country group; the relationships between the variables are not causal yet they remain predictive of cannabis seizures.

Table 28 above illustrates the results of the Granger causality tests for both developed and transitioning countries for heroin seizures. Here, the divorce-to-marriage ratio was found to “Granger cause” heroin seizures for developed countries. That is, once the lagged dependent variable was considered, the divorce-to-marriage ratio significantly improved the predictions of heroin seizures. An increase in the number of divorce-to-marriage ratio (i.e., a weakening of the familial institution) was found to Granger cause heroin seizures to slightly decrease (by 0.68 kilograms per 100,000 population), which was not supportive of Institutional Anomie Theory. Primary educational attainment level was not found to have a Granger causal relationship with heroin seizures. Moreover,
unemployment rates in transitioning countries were not found to significantly improve the prediction of heroin seizures in the Granger sense.

Table 29. Granger Causality Results for Developed and Transitioning Countries: Cocaine Seizures (Coeff(SE))

<table>
<thead>
<tr>
<th>Variable</th>
<th>Developed</th>
<th>Transitioning+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lag of Cocaine Seizures</td>
<td>0.35(0.08)***</td>
<td>-0.68(0.14)***</td>
</tr>
<tr>
<td>W.I. of Econ. Fred.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rule of Law</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Stability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td>-8.37(3.75)*</td>
<td></td>
</tr>
<tr>
<td>Primary Education</td>
<td>0.60(0.92)</td>
<td></td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001; + indicates Random Effects model; no + implies Fixed Effects model

Table 30. Granger Causality Results for Developed and Transitioning Countries: Amphetamine Seizures (Coeff(SE))

<table>
<thead>
<tr>
<th>Variable</th>
<th>Developed</th>
<th>Transitioning+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lag of Amphetamine Seiz.</td>
<td></td>
<td>0.77(0.11)***</td>
</tr>
<tr>
<td>W.I. of Econ. Fred.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td></td>
<td>-3.09(3.44)</td>
</tr>
<tr>
<td>Rule of Law</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Stability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td>-3.22(3.67)</td>
<td></td>
</tr>
<tr>
<td>Primary Education</td>
<td>4.40(2.89)</td>
<td></td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001; + indicates Random Effects model; no + implies Fixed Effects model

Table 29 above illustrates the Granger causality results for these two groups of countries predicting cocaine seizures. Here, the single independent variable for developed
countries was not found to have a Granger causal relationship with cocaine seizures, but the independent variable for transitioning countries was found to have this relationship. In other words, an increase in the divorce-to-marriage ratio (i.e., a weakening of the familial institution) was found to Granger cause cocaine seizures to decrease. This causal relationship was not in the direction the theory would expect, as Institutional Anomie Theory would anticipate that a weakening of the familial institution would lead to an increase in cocaine seizures in this country group.

Table 30 above illustrates the results of the Granger causality tests for transitioning countries predicting amphetamine seizures. Granger causality tests were unable to be conducted on the developed countries because the only significant independent variable from the multivariate regression analysis (Table 15) that was not a control variable was Gross Household Savings Rate. Unfortunately, this variable contained too much missing data to be able to be tested using unit root analyses, and therefore the stationarity of the variable was not able to be determined. Thus, Granger causality tests were unable to be conducted. The results for transitioning countries reveal that no Granger causal relationships exist among the independent variables. When this model was further pared down, eliminating the independent variables with smallest $t$ values one at a time, no further Granger causal relationships were uncovered.
Table 31 above illustrates the results of the Granger causality tests for both groups of countries predicting intentional homicide rates. Similar to previous findings, there were no instances of Granger causality among the independent variables for either developed or transitioning countries. Once the model was pared down for the developed country group, no additional Granger causal relationships were uncovered. This implies that while these independent variables are associated with and predictors of homicide rates, they do not share a causal relationship with the dependent variable.

These findings are similar to the Granger causality test results for the six country clusters, in that the majority of independent variables for both developed and transitioning countries were not found to be Granger causing the five dependent variables. For developed countries, Granger causal relationships were only detected for one proxy for organized crime (heroin seizures). Here, the coefficient of the divorce-to-marriage ratio was not in the anticipated direction that Institutional Anomie Theory would predict. The findings of this causal relationship illustrate that for developed countries, a weakening of the familial institution actually Granger causes heroin seizures.
to slightly decrease. This does not mean that this proxy for the familial institution should not be included in models predicting heroin seizures; however, the findings do suggest that Institutional Anomie Theory may not work in this particular setting in terms of this indicator as Messner and Rosenfeld (1994) intended.

No Granger causality was discovered for developed countries using Messner and Rosenfeld’s (1994; 1997c) traditional proxy of serious crime. The fact that the majority of independent variables in the developed country groups did not share a Granger causal relationship with any of the five dependent variables does not support or refute Institutional Anomie; these variables remain significant predictors of their corresponding dependent variable as the multivariate regressions reveal, they simply do not share a causal link with the proxies for organized crime or homicide.

For countries in transition, only one independent variable was found to Granger cause one of the organized crime proxies. The divorce-to-marriage ratio was found to have a causal relationship with cocaine seizures. Interestingly, this is the same indicator that was found to Granger cause another proxy for organized crime in the developed country group. With regards to transitioning countries, the familial unit weakening (as indicated by an increase in the divorce-to-marriage ratio) was found to Granger cause cocaine seizures to decrease. The coefficient again is not in the anticipated direction of Institutional Anomie Theory.

The models for the developed country group were run using fixed effects, while the Hausman tests revealed that the dominant model for transitioning counties was random effects. The fixed effects models here might have a similar impact as was found in the country cluster discussion above, in that the differences between the countries in
the developed country group may be too large to detect any further Granger causal relationships between the independent and dependent variables. This is plausible, as there are eleven countries that compose the developed country group, while only three countries compose the transitioning country group.

Cointegration: Full Model and Country Clusters

Next, tests for cointegration were conducted on the variables in this research to determine whether any of the independent variables and their corresponding dependent variables “move” or track together. That is, this econometric time series technique revealed if there were any common elements between the variables that were causing them to follow similar trends over time. As previously discussed, running tests for cointegration could only be conducted if the dependent and independent variables were non-stationary.

The results of the cointegration tests are presented in Tables 32 through 38 below, and the tables are broken down by dependent variable. Cointegration among the independent variables is distinguished in these tables by their \( p \) values. If the models indicate that an independent variable is cointegrated with the dependent variable, their \( p \) value must be .05 or smaller. The small number of observations should be again noted for the country clusters. As such, the power of the empirical tests was compromised and

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150 See Murray (1994) for a good explanation of cointegration using “a drunk and her dog” example.  
151 In order to run econometric tests for cointegration, the non-stationary dependent variable is first regressed on one non-stationary independent variable. Next, the residuals of the regression are predicted and plotted for visual inspection. Finally, the Levi Lin Chu (LLC) unit root test is conducted on the residuals. If the results of the test are stationary (i.e., if the coefficient is negative and the \( p \) value is significant), then it can be concluded that the two variables are cointegrated. This indicates that the difference between the two trends is stationary; that is, it has a deterministic trend that can be predicted (i.e., the difference between the two trends is predictable over time). If the results of the unit root test indicate non-stationarity, than the two variables are not cointegrated and their trends do not move together because the difference between the two trends remains random (non-stationary) and therefore cannot be estimated.
therefore this limitation tempered the results (especially for the Northern and Baltic clusters).

Table 32 below displays the cointegration results for the full model and six country clusters. Because the trend of cannabis seizures was found to be stationary in the full model, and in the Western, Mediterranean, and Baltic country clusters, tests for cointegration could not be conducted. In the Central and Eastern European cluster, no instances of cointegration between the dependent and independent variables were found. However, cointegration was uncovered in the Anglo-Saxon and Northern country clusters. In the Anglo-Saxon cluster, the Rule of Law and Political Stability, the two proxies for the political institution, were found to each track together with cannabis seizures over time. Moreover, primary educational attainment was also found to track together with cannabis seizures. This means that these independent variables each share a common stochastic drift with the dependent variable; there exists common elements between these pairs of independent and dependent variables that cause them to move together over time. This is important, because cointegration implies that as, for instance, the Rule of Law time series changes over time, similar changes can be expected or anticipated in the rate of cannabis seizures in the Anglo-Saxon country cluster over time because of the error-correction mechanism inherent in both non-stationary trends. In other words, this implies that any shock to the system (e.g., change in policy) that (positively or negatively) impacts the Rule of Law will result in a similar (positive or negative) impact to cannabis seizures in the Anglo-Saxon country cluster.

Cointegration was also found between the World Index of Economic Freedom and the rate of cannabis seizures over time in the Northern country cluster. However,
results for the Northern and Baltic country clusters must be considered in light of the small number of observations in each time series, thus weakening the explanatory power of the statistical models.

Table 33 below illustrates the cointegration results for the full model and country clusters predicting heroin seizures. Because the unit root tests for the full model, and the Western, Mediterranean, Northern, and Baltic country clusters revealed stationary processes among heroin seizures, cointegration tests could not be conducted. Further, no instances of cointegration were uncovered in the CEE or Anglo-Saxon country clusters.
Table 32. Cointegration Results for Full Model and Country Clusters: Cannabis Seizures (Adjusted $t$ Statistic)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Full Model</th>
<th>Western</th>
<th>Mediterranean</th>
<th>CEE</th>
<th>Anglo-Saxon</th>
<th>Northern</th>
<th>Baltic</th>
</tr>
</thead>
<tbody>
<tr>
<td>W.I. of Econ. Fred.</td>
<td></td>
<td></td>
<td></td>
<td>-1.21</td>
<td></td>
<td>-4.01***</td>
<td></td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td></td>
<td></td>
<td></td>
<td>-1.02</td>
<td></td>
<td>-1.28</td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-1.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td></td>
<td></td>
<td></td>
<td>-0.84</td>
<td></td>
<td></td>
<td>-0.71</td>
</tr>
<tr>
<td>Rule of Law</td>
<td></td>
<td></td>
<td></td>
<td>-1.57</td>
<td>-1.92*</td>
<td>-0.58</td>
<td></td>
</tr>
<tr>
<td>Political Stability</td>
<td></td>
<td></td>
<td></td>
<td>-1.12</td>
<td>-1.82*</td>
<td>-0.66</td>
<td></td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td></td>
<td></td>
<td></td>
<td>-0.94</td>
<td></td>
<td></td>
<td>-1.15</td>
</tr>
<tr>
<td>Primary Education</td>
<td></td>
<td></td>
<td></td>
<td>-0.87</td>
<td>-3.54***</td>
<td></td>
<td>-0.63</td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001

Table 33. Cointegration Results for Full Model and Country Clusters: Heroin Seizures (Adjusted $t$ Statistic)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Full Model</th>
<th>Western</th>
<th>Mediterranean</th>
<th>CEE</th>
<th>Anglo-Saxon</th>
<th>Northern</th>
<th>Baltic</th>
</tr>
</thead>
<tbody>
<tr>
<td>W.I. of Econ. Fred.</td>
<td></td>
<td></td>
<td></td>
<td>-1.07</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td></td>
<td></td>
<td></td>
<td>-1.24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td></td>
<td></td>
<td></td>
<td>1.16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rule of Law</td>
<td></td>
<td></td>
<td></td>
<td>-1.27</td>
<td>-0.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Stability</td>
<td></td>
<td></td>
<td></td>
<td>-1.26</td>
<td>-0.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td></td>
<td></td>
<td></td>
<td>-1.41</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Education</td>
<td></td>
<td></td>
<td></td>
<td>-1.36</td>
<td>-1.32</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001
Table 34 below illustrates the cointegration results for the full model and six country clusters predicting cocaine seizures. Stationarity was found in this dependent variable for the full model, as well as for the Western and Northern country clusters. Therefore, tests for cointegration could not be conducted on these groups of countries or the full model. Among the Mediterranean, CEE, Anglo-Saxon and Baltic country clusters, only one independent variable in the Anglo-Saxon cluster was found to be cointegrated with cocaine seizures. The time series of primary education was found to move or track together with cocaine seizures in this country cluster over time. That is, a common element (i.e., an error-correcting mechanism) exists in these two non-stationary trends that causes them to track together. Thus, any impact to the primary educational attainment level in the Anglo-Saxon cluster can be expected to have the same effects on cocaine seizures. Similar to Granger causality, insignificant results do not indicate that these variables are unimportant to predicting cocaine seizures. The lack of significant findings among the cointegration tests simply illustrate that many of the independent variables are associated with cocaine seizures and aid in predicting this dependent variable, but many of the independent variables are not connected to the dependent variable through cointegration.

Table 35 below displays the cointegration test results for the full model and country clusters for the fourth organized crime proxy: amphetamine seizures. Amphetamine seizures were found to be a stationary trend in the full model, as well as in the Mediterranean and CEE country clusters; therefore, cointegration tests were not conducted on these models. In the Western cluster, two independent variables were found to be cointegrated with amphetamine seizures. The Corruption Perception Index (CPI)
was found to be cointegrated with the dependent variable, as was GDP per capita. These results indicate that the difference between the CPI and amphetamine seizure trends is stationary and predictable; as the CPI shifts over time, the rates of amphetamine seizures will be similarly impacted and follow a similar trend. Additionally, as amphetamine seizures change over time, similar changes can be seen in GDP per capita. This lends additional levels of predictability of the dependent variable among these independent variables.

Cointegration was also discovered among primary educational attainment and amphetamine seizures in the Anglo-Saxon cluster, and between the divorce-to-marriage ratio and amphetamine seizures in the Northern country cluster. However, with regards to the Northern country cluster results, the small number of observations may more simply illustrate that this pair of variables should be further examined for cointegration in the future when more data is obtained for this cluster.
Table 34. Cointegration Results for Full Model and Country Clusters: Cocaine Seizures (Adjusted t Statistic)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Full Model</th>
<th>Western</th>
<th>Mediterranean</th>
<th>CEE</th>
<th>Anglo-Saxon</th>
<th>Northern</th>
<th>Baltic</th>
</tr>
</thead>
<tbody>
<tr>
<td>W.I. of Econ. Fred.</td>
<td>-1.14</td>
<td>-0.89</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-1.45</td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.93</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td>-1.17</td>
<td></td>
<td></td>
<td></td>
<td>0.03</td>
<td></td>
<td>0.26</td>
</tr>
<tr>
<td>GDP</td>
<td>-1.34</td>
<td>-1.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rule of Law</td>
<td>-0.84</td>
<td>-0.96</td>
<td>-0.63</td>
<td></td>
<td></td>
<td></td>
<td>0.87</td>
</tr>
<tr>
<td>Political Stability</td>
<td>-1.07</td>
<td>-0.91</td>
<td>0.48</td>
<td></td>
<td></td>
<td></td>
<td>1.38</td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td>0.27</td>
<td>-0.17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-1.21</td>
</tr>
<tr>
<td>Primary Education</td>
<td>-1.02</td>
<td>-0.29</td>
<td>-1.68*</td>
<td></td>
<td></td>
<td></td>
<td>0.41</td>
</tr>
</tbody>
</table>

Note: *$p < .05$; **$p < .01$; ***$p < .001$

Table 35. Cointegration Results for Full Model and Country Clusters: Amphetamine Seizures (Adjusted t Statistic)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Full Model</th>
<th>Western</th>
<th>Mediterranean</th>
<th>CEE</th>
<th>Anglo-Saxon</th>
<th>Northern</th>
<th>Baltic</th>
</tr>
</thead>
<tbody>
<tr>
<td>W.I. of Econ. Fred.</td>
<td>-1.51</td>
<td></td>
<td></td>
<td></td>
<td>-0.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td>-2.18</td>
<td></td>
<td></td>
<td></td>
<td>-1.29</td>
<td>-0.84</td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td>-2.18*</td>
<td></td>
<td></td>
<td></td>
<td>-0.93</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td>-2.37**</td>
<td></td>
<td></td>
<td></td>
<td>-0.64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td>-2.37**</td>
<td></td>
<td></td>
<td></td>
<td>-1.42</td>
<td>-0.31</td>
<td></td>
</tr>
<tr>
<td>Rule of Law</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-1.51</td>
<td>-0.84</td>
<td>0.03</td>
</tr>
<tr>
<td>Political Stability</td>
<td>0.17</td>
<td></td>
<td>-1.25</td>
<td></td>
<td>-0.34</td>
<td>-0.05</td>
<td></td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-1.64*</td>
<td>-0.39</td>
<td></td>
</tr>
<tr>
<td>Primary Education</td>
<td>-0.59</td>
<td></td>
<td></td>
<td></td>
<td>-2.94**</td>
<td>-0.48</td>
<td>-0.81</td>
</tr>
</tbody>
</table>

Note: *$p < .05$; **$p < .01$; ***$p < .001$
Table 36 below illustrates the cointegration results for the full model and country clusters for the proxy of serious crime: intentional homicide rates. The only country cluster that could not be included in these tests for cointegration (due to stationarity among the dependent variable) was the Western country cluster. Cointegration was uncovered among two of the four non-stationary independent variables in the full country model. The Rule of Law was found to track together with intentional homicide rates, as was the divorce-to-marriage ratio. This indicates that within the full country model, any changes to either of these independent variables will result in predictable and subsequent changes in homicide trends over time.

The CPI was found to be cointegrated with homicide rates in the Anglo-Saxon country cluster. Primary educational attainment level was found to be cointegrated with homicide rates in the Baltic cluster. Moreover, four independent variables in the Northern cluster were found to be cointegrated with homicide rates (i.e., World Index of Economic Freedom, Gross Household Savings Rate, GDP per capita, and the divorce-to-marriage ratio). However, the results of the Northern and Baltic clusters again must be reconsidered due to the small number of observations, increasing the white noise among the models and thus decreasing the tests’ explanatory power. Again, these pairs of variables should be further examined for cointegration in the future when more data is obtained for these clusters.
Table 36. Cointegration Results for Full Model and Country Clusters: Intentional Homicide Rates (Adjusted $t$ Statistic)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Full Model</th>
<th>Western</th>
<th>Mediterranean</th>
<th>CEE</th>
<th>Anglo-Saxon</th>
<th>Northern</th>
<th>Baltic</th>
</tr>
</thead>
<tbody>
<tr>
<td>W.I. of Econ. Fred.</td>
<td></td>
<td>-0.737</td>
<td>0.715</td>
<td></td>
<td>-2.335**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td></td>
<td></td>
<td>-0.059</td>
<td></td>
<td>-3.088***</td>
<td>-1.800</td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-1.921*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td></td>
<td>-1.618</td>
<td></td>
<td></td>
<td>-0.327</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td></td>
<td>-0.840</td>
<td>-1.557</td>
<td></td>
<td>-2.544**</td>
<td>-1.546</td>
<td></td>
</tr>
<tr>
<td>Rule of Law</td>
<td>-2.823*</td>
<td>0.284</td>
<td>1.233</td>
<td></td>
<td>-1.423</td>
<td>-0.610</td>
<td></td>
</tr>
<tr>
<td>Political Stability</td>
<td>-1.446</td>
<td>0.900</td>
<td>0.780</td>
<td>-0.207</td>
<td>-1.476</td>
<td>-0.365</td>
<td></td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td>-1.658*</td>
<td>-0.642</td>
<td>0.900</td>
<td></td>
<td>-3.579***</td>
<td>-1.326</td>
<td></td>
</tr>
<tr>
<td>Primary Education</td>
<td>-1.393</td>
<td>-0.805</td>
<td>-0.511</td>
<td>-0.554</td>
<td>-0.898</td>
<td>-2.023*</td>
<td></td>
</tr>
</tbody>
</table>

Note: *$p < .05$; **$p < .01$; ***$p < .001$
Overall the cointegration tests for the full country model and the six country clusters indicate that the majority of the non-stationary independent variables are not cointegrated with the non-stationary dependent variables. This is not completely unexpected, as many of these variable-combinations do not appear endogenous upon visual inspection.\textsuperscript{152} Regarding the proxies for organized crime, the Anglo-Saxon cluster had the most cointegration among non-stationary independent variables in three of the four dependent variables (cannabis, cocaine, and amphetamine seizures). This means that among these cointegrated independent variables there exists common elements with their corresponding non-stationary dependent variable that establishes a different kind of relationship than the other independent variables – an added level of predictability was uncovered here. This means that, for instance, in the Anglo-Saxon model predicting cocaine seizures, from 1995 to 2009 primary educational attainment remained connected with the trend of cocaine seizures, where as other independent variables (like GDP per capita) served to simply predict changes in amounts of heroin seizures over time. This implies that any policies aimed at changing the level of primary educational attainment over time will also impact the same degree of changes in cocaine seizures over time. The other (non-stationary) independent variables were not found to have any shared common elements with cocaine seizures.

Regarding intentional homicide rates, this dependent variable had the most non-stationary independent variables out of the full country model and five of the six country clusters. This was the only dependent variable that was non-stationary for the full country model, and two of the four independent variables were found to be cointegrated with this

\textsuperscript{152} That is, the GDP per capita and cocaine seizures would not necessarily be expected to track together over time (i.e., share an endogenous relationship) in the same way that the number of police and crime rates would be expected to share common elements.
dependent variable. This indicates that when all fourteen countries were considered in the same model, the Rule of Law and the divorce-to-marriage ratio were each cointegrated, and therefore move together over time with intentional homicide rates. Cointegration was also found among the Anglo-Saxon, Northern, and Baltic clusters, but the less than optimal number of observations cast doubt on the reliability of these findings.

*Cointegration: Developed and Transitioning Countries*

To uncover any further relationships between the non-stationary independent and dependent variables of developed countries and of transitioning countries, tests of cointegration were conducted. Because cannabis, heroin, and amphetamine seizure trends were found to be stationary for both developed and transitioning countries, tests for cointegration could not be conducted. Therefore, Tables 37 and 38 below illustrate the cointegration results for cocaine seizures and intentional homicide rates respectively.

*Table 37. Cointegration Results for Developed and Transitioning Countries: Cocaine Seizures (Adjusted t-Statistic)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Developed</th>
<th>Transitioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>W.I. of Econ. Fred.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td></td>
<td>-0.11</td>
</tr>
<tr>
<td>GDP</td>
<td>-0.76</td>
<td></td>
</tr>
<tr>
<td>Rule of Law</td>
<td>-0.53</td>
<td></td>
</tr>
<tr>
<td>Political Stability</td>
<td>-0.24</td>
<td></td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td></td>
<td>-0.11</td>
</tr>
<tr>
<td>Primary Education</td>
<td>0.13</td>
<td></td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001
Table 38. Cointegration Results for Developed and Transitioning Countries: Intentional Homicide Rates (Adjusted $t$ Statistic)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Developed</th>
<th>Transitioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>W.I. of Econ. Fred.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td></td>
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<tr>
<td>CPI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td>-0.52</td>
<td></td>
</tr>
<tr>
<td>Rule of Law</td>
<td>1.05</td>
<td></td>
</tr>
<tr>
<td>Political Stability</td>
<td>0.33</td>
<td></td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td>0.31</td>
<td></td>
</tr>
<tr>
<td>Primary Education</td>
<td>-0.69</td>
<td></td>
</tr>
</tbody>
</table>

Note: *$p < .05$, **$p < .01$, ***$p < .001$

Table 37 above illustrates the cointegration results for transitioning countries only, since the nature of the trend of the dependent variable for the group of developed countries was found to be stationary. As displayed in the results above, no non-stationary independent variables were found to be cointegrated with cocaine seizures over time.

Table 38 above illustrates the cointegration results for transitioning countries only, as again the nature of the trend of homicide rates for developed countries was found to be stationary. Similar to the results in Table 37, none of the non-stationary independent variables exhibited any indication of cointegration with the dependent variable.

**Discussion**

The results presented from the advanced econometric techniques offer additional insight into the nature of the trends between independent and dependent variables in this research that have implications for Institutional Anomie Theory and the findings presented from the multivariate regression analyses. Tests for Granger causality among the variables indicate that certain variables contain causal elements or relationships with the dependent variables when the past observations (lagged by an order 1 in this research)
of both variables were considered. The aim of employing this advanced econometric technique was to determine which of the independent variables that were found to be significant predictors of the dependent variables in the simple regression results shared a (Granger) causal relationship with the corresponding dependent variable. That is, the goal of the additional sophisticated Granger causal analyses was to uncover which proxies for culture and social institutions could provide further support for the inclusion of the proxy in the model of Institutional Anomie for each regression. The results reveal that the majority of the independent variables share an association with their corresponding dependent variables and aid in predicting their outcomes, but these variables do not share a causal relationship.

However, Granger causality was discovered in the full country model and in the Anglo-Saxon country cluster for the five dependent variables. For instance, GDP per capita was found to Granger cause cocaine seizures in the full country model. This indicates that not only can this independent variable help predict cocaine seizures, but it also has an element of causation in the outcome. This is not to say that GDP per capita is the only factor causing cocaine seizures to (in this case) increase, but it should be considered as one of the causal elements of cocaine seizures in the full country model of Institutional Anomie Theory. Differences in Granger causality between the full model and country clusters, and even developed vs. transitioning countries, must be taken into consideration as well. While GDP per capita was found to Granger cause cocaine seizures in the full model, the same independent variable was not found to Granger cause cocaine seizures in any other country grouping. If the coefficients of the independent variables found to Granger cause their respective dependent variables is in the direction predicted
by Institutional Anomie Theory (as is the case for the full model results for all proxies of organized crime), this significantly strengthens support for the operation of Institutional Anomie Theory in that particular setting (i.e., dependent variable and country grouping). Little theoretical support was found in terms of Granger causality for intentional homicide rates because while elements of causality were found none of the relationships were in the direction anticipated by the theory. This implies that the theory simply did not operate well in predicting homicide rates in any of the fourteen countries and six country clusters as Messner and Rosenfeld would anticipate (1994). Moreover, these findings largely match those from the simple multivariate regression analyses.

The goal of applying sophisticated testing for cointegration among the variables was to provide policymakers with additional, evidence-based information regarding the potential impacts of changes in policy or policing methods. Discovering cointegration between two variables allows policymakers to address both $x$ (e.g., primary educational attainment) and $y$ (heroin seizures) through policies that only impact one or the other (i.e., $x$ (primary educational attainment) or $y$ (heroin seizures)). The cointegration conclusions do not contain direct implications for the operation of Institutional Anomie Theory in these various settings. More specifically, tests for cointegration are very helpful in identifying whether a non-stationary independent variable and a non-stationary dependent variable share a relationship through a common element (i.e., error-correcting mechanism) (Murray, 1994). In the full country model, only the non-stationary dependent variable of homicide rates was found to be cointegrated with two of the non-stationary independent variables (Rule of Law and divorce-to-marriage ratios). For the six country clusters, the Western, Anglo-Saxon, Northern, and Baltic clusters were found to have
cointegrated variables among four of the five dependent variables (heroin seizures was the only exception). No instances of cointegration were uncovered among developed or transitioning countries for any of the five dependent variables.

The significance and value of these findings lie within the implications for multivariate regression performance. In other words, these findings have less direct implications for the operation of Institutional Anomie Theory, but are more important for the individual variables themselves in relation to future policies. Take, for instance, the Anglo-Saxon country cluster. Primary educational attainment was found to be cointegrated with cannabis seizures during the time period 1995 to 2009. Knowing that a common element exists between these two variables, further steps can be taken to estimate the amount of error being corrected between the two time series, therefore predicting how changes in one trend will directly influence the trend of the second variable in future years. While this is beyond the scope of this research, forecastability of the proxies for organized crime would be a useful tool. However, differences between country clusters must be accounted for – cointegration between primary educational attainment and cannabis in one country cluster does not mean cointegration exists between the same variables for other country clusters.

Western cluster cointegration findings: CPI and GDP were found to each be cointegrated with amphetamine seizures. Anglo-Saxon cluster findings: Rule of Law, Political Stability, and primary education were cointegrated with cannabis seizures; primary education was cointegrated with cocaine seizures; primary education was cointegrated with amphetamine seizures; CPI was cointegrated with homicide rates. Northern cluster findings: World Index of Economic Freedom was cointegrated with cannabis seizures; divorce-to-marriage ratio was cointegrated with amphetamine seizures; World Index of Economic Freedom, Gross Household Savings Rate, GDP per capita, and the divorce-to-marriage ratio were cointegrated with homicide. Baltic cluster findings: primary education was cointegrated with homicide rates.

This depends on whether the impact to the time series is random or permanent; a random shock will allow researchers to forecast the effect on the second variable through the error-correction mechanism. If the effect is permanent, then the effect can be forecasted through the cointegration relationship unless the shock is large enough to change the nature of the relationship.
Moreover, tests for cointegration reveal relationships that are not causal in the Granger sense, but are more meaningful than what simple multivariate regressions can uncover. For instance, in the Western country cluster multivariate results (i.e., Table 7 pg. 185), only GDP per capita was found to be a significant predictor variable of amphetamine seizures. However, tests for cointegration among this dependent variable in this country cluster revealed that not only was GDP per capita cointegrated with amphetamine seizures, but CPI was also cointegrated. That is, the CPI shares a common element with amphetamine seizures that results in these two trends moving together over the 15 year time period. This variable can also aid in predicting amphetamine seizures in this country cluster, but more advanced econometric techniques were required to tease out this relationship than simple multivariate pooled cross-sectional time series analysis.

Similar findings were uncovered in the Anglo-Saxon country cluster. The Rule of Law, Political Stability, and primary education were found to be cointegrated with cannabis seizures, whereas these three variables were not found to be significant predictor variables in the simple regression analysis. Primary education was found to be cointegrated with both cocaine seizures and amphetamine seizures; this independent variable was not found to be a significant predictor of the dependent variables in their respective regression analyses.\textsuperscript{155}

Overall, these advanced econometric time series techniques lend a deeper level of understanding regarding the nature of the relationships between the independent and dependent variables in this study: Granger causality tests help determine whether the proxies for culture and social institutions provide additional explanatory power though

\textsuperscript{155} Similar results were found for the Northern and Baltic country clusters, but the small number of observations draw these results into question as tests for cointegration in particular require large numbers of observations (i.e., more than 50) for the statistical models to operate properly.
causal relationships, which is an additional layer to the question of how Institutional Anomie Theory operates in each setting (i.e., dependent variables and country groupings), and cointegration provides additional information and direction for policymakers by determining which independent-dependent variable combinations move together over time and share elements of predictability and forecastability.

**Summary**

*Research Questions 1 and 1a*

In sum, the cross-sectional analyses and the time series analyses for the full model (i.e., all fourteen countries were included) found weak support for the operation of Institutional Anomie Theory. Amphetamine seizures were the most predicted the models, while the models predicting intentional homicide rates were predicted the least in each regression. Finally, the majority of countries in the full sample could not be concluded as being “Anomic” in the sense that Messner and Rosenfeld (1994) intended because of an overrepresentation of institutional influences.

*Research Question 1b*

These findings were further solidified when changes over time were taken into account between groups of six country clusters. Once the countries were divided into their respective country clusters, Institutional Anomie Theory operated as expected in the clusters that are most similar to the U.S. (as defined by Messner and Rosenfeld (1994)). That is, the Anglo-Saxon and Western country clusters were found to be Anomic and also had correspondingly high rates of organized crime (as represented by drug seizure

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156 Anomie is not a range; countries that exhibited the “tipping point” of having at least one more cultural variable than institutional variable that was predictive of high rates of crime are considered to be Anomic.

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amounts). The CEE and Baltic country clusters, containing all countries in transition, supported the theory the least, which also supports the assumptions of Institutional Anomie Theory. As was found in the full model analyses, amphetamine seizures were again the most predicted dependent variable, and homicide rates were the least predicted under the restrictions of Institutional Anomie Theory. Once the restrictions of the theory were lifted on the coefficients, homicide rates were predicted comparably to the other dependent variables. This indicates that the proxies used in each model are in fact useful at predicting high rates of crime, but are less useful in predicting the same under the restrictions of the theory. Granger causal relationships were found in the country clusters that both supported and refuted the strength of the particular Institutional Anomie models, which must be considered in the overall findings. In sum, strong support was found regarding RQ 1a: dividing countries into clusters significantly impacted Institutional Anomie Theory’s ability to predict rates of organized crime.

Research Question 2

In addressing cultural-institutional differences between developed and transitioning countries over time, weak support for Institutional Anomie Theory was found. That is, the findings supported the theory’s assumptions that developed countries would operate the best under Institutional Anomie Theory. Yet support for these findings were weak, because only 11% of the total number of independent variables were found to be significant predictors (with coefficients in the expected theoretical direction) for the developed country group. Once the theoretical restrictions were lifted from the coefficients, both models operated much better. Moreover, no Granger causal

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157 Although caution is needed in this interpretation because of the lack of observations for the CEE and Baltic country clusters; the regression models lacked power in these clusters to detect significant variables that may have been supportive of the theory.
relationships were uncovered in the two groups of countries, indicating no further relationships between the significant predictor variables in these models.

**Research Question 3**

Institutional Anomie Theory was not found to operate well in the transitioning democracy of Poland. Only three of the five overall models predicting the dependent variables were significant, but none of the organized crime proxies had more than one significant independent variable (though all variables were representative of cultural pressures to succeed). No support was found for heroin seizures. Homicide rates were predicted by three variables (all representing social institutions), but two of the three were not supportive of Institutional Anomie Theory. Interestingly, the results did indicate that as Poland became more (Anomic) culturally similar to the American Dream (as indicated by the World Index of Economic Freedom), seizures of amphetamines increased. This is significant for the country of Poland, because of its additional status as a source country for this drug-type. This indicates that perhaps the market for amphetamines is driven in part by this Anomic cultural element. Again caution must be exercised; the weaker regression models may have failed to detect other important variables that might refute this conclusion.

**Research Question 3a**

The cultural-institutional configuration in Poland was not found to vary much from the other country in the CEE cluster in this research, which was Slovakia. Both countries had a limited number of predictor variables overall, and those that were significant for each country mostly represented cultural pressures to succeed. The only slight difference was within the cultural variables: two of three cultural variables for
Poland represented strong cultural pressures to succeed in terms of Institutional Anomie Theory, while three of four cultural variables for Slovakia indicated weaker cultural pressures to succeed. Institutions did not play a large role for either country. However, the same cultural indicators that were important for Poland were not found to be significant or have the same relationship in Slovakia. The prime example of this is the World Index of Economic Freedom. This indicator was predictive of high rates of organized crime in Slovakia, but the direction of the coefficient indicated that as Slovakia becomes less (Anomic) culturally similar to the American Dream, organized crime rates increase. This indicates that in fact there are differences within the Anomic cultural variables that play a role in predicting this type of serious crime. The same cautions must be reiterated again, however; the weaker regression models may have failed to detect other important variables that might refute this conclusion.
CHAPTER 6: CONCLUSION

The purpose of this research endeavor was to return to the use of socio-cultural aspects of societies in order to gain insight into the highly complex and multifaceted criminal phenomenon of organized crime, given its international significance. More specifically, this was an exploratory endeavor designed to improve the measurement of key elements of Institutional Anomie Theory, investigate the applicability of the theory in different settings, and employ a new measure of serious crime. This was accomplished by using Messner and Rosenfeld’s (1994) theory of Institutional Anomie as a guiding theoretical framework that allowed this study to merge key sociological concepts underlying Institutional Anomie Theory with the complex and convoluted notion of organized crime. These concepts – Anomic culture and social institutions – form the foundation for an entire discipline in criminological thought that begins with Durkheim. Robert Merton was the first to utilize Durkheim’s (1956/1922; 1962/1895) foundational work on societies and social organization to explain rates of crime across both micro- and macro-level units. Merton’s Anomie Theory equally emphasizes the importance of culture and institutions in explanations of crime, describing how universal cultural goals are generated by societies, but claim societies fail in regulating the institutional means for individuals to achieve these goals (Merton, 1968). Moreover, Merton’s Anomie Theory considers these institutional means to be one-dimensional; that is, the theory only considers class stratification to constitute “social institutions.” This left some criminologists unsettled, citing this theory for its shortcomings (e.g., narrowly defining social institutions, failure to account for a historical, comparative context, failing to consider relative deprivation) (Messner and Rosenfeld, 2009; Tittle, 1995).
An important extension of Merton’s Anomie Theory was developed in the early 1990s that also fused the sociological concepts of culture, institutions, and Anomie into one macro-level explanation of crime: Institutional Anomie Theory. This theory addressed Merton’s shortcomings by expanding on the concept of “social institutions.” Institutional Anomie Theory explicates four main social institutions most relevant to the explanation of crime as the economy, the polity, the family, and education (Messner and Rosenfeld, 1994; Parsons, 1951; 1970). Institutional Anomie also stresses the importance of a comparative context, and was developed to explain rates of serious crime cross-nationally. Moreover, this theory maintained Merton’s (1938) equal emphasis (and interconnectedness) on the elements of social organization, and clearly modeled cultural pressures and institutional configurations most conducive to high rates of serious crime (Messner and Rosenfeld, 2009). That is, Institutional Anomie Theory predicts high rates of serious crimes will occur when there is an imbalance of cultural pressures to succeed (in terms of pecuniary materialism, universalism, individualism, and achievement) with a lack of emphasis on legitimate means to succeed, interacting with an institutional balance of power emphasizing the economy over non-economic institutions. Unfortunately, Messner and Rosenfeld (1994) did not address Anomic situations in transitioning or non-capitalist systems. They simply noted in 2001 that other institutional balances might result in other forms of crime. Messner and Rosenfeld (1994) also failed to offer more explicit definitions or suggestions on operationalization of Anomic culture and social institutions, which has resulted in only partial tests of the theory in existing research.158

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158 As previously mentioned, Messner and Rosenfeld (1994) distinguish Anomic culture from social institutions, yet they also noted that these two elements may be empirically inseparable. This causes even further concern for the ability of the theory to be falsified, as noted by Chamlin and Cochran (2007).
The organized crime literature has struggled in defining, studying, and combating this criminal phenomenon. Policymakers and international organizations around the world have recognized organized crime as one of the leading threats to national and international security (Council of Europe, 2005; FBI, 2012; OCTA, 2011; Passas, 1999; UNODC, 2012a; 2010). As a result, copious national and international publications have expertly detailed global patterns of organized crime movement and the main activities criminal groups are involved in, as well as legislation developed by various countries and governing bodies to curb organized crime growth. These reports have identified Europe as the global demand “hot spot” for the majority of all organized crime activity in the world. Upon closer inspection of countries within Europe, the CEE country cluster stands out as particularly problematic. Moreover, one country within this cluster is in a uniquely vulnerable position for elevated levels of organized crime: Poland.

Even with these increasingly high levels of a particularly serious form of crime worldwide, criminologists have not routinely examined this crime-type through the lens of a socio-cultural theory. Those that have studied organized crime have used a very limited scope of criminological theories to help empirically explain the phenomenon. The theories that have been employed, namely Rational Choice, Routing Activities, and Situational Crime Prevention, are rooted in economic based explanations of crime that believe humans (including criminals) are hedonistic, and will decide to engage in crime if the benefits (which are largely profit driven) outweigh the costs. Through the lens of this paradigm, research has also more closely examined various aspects of organized crime activity, such as drug market operations, to explain how criminals, as rational actors, decide when and where to buy and sell their illicit goods and services. While these
endeavors have been useful in understanding illegal markets for organized crime activities, they ignore external socio-cultural factors that may also affect organized crime.

As such, this study built on past research by applying a socio-culturally based macro-level criminological theory of crime: Institutional Anomie Theory. That is, this study has built on previous empirical tests of Institutional Anomie Theory by improving the measurement of Anomic culture and social institutions, investigating the applicability of Institutional Anomie Theory in different settings (i.e., country clusters, countries in transition), and employing a new measure of serious crime (i.e., organized crime).

**Summary of the Main Findings**

There are five main findings of this research that have both implications for Institutional Anomie Theory and policy. Using the new measurements of Anomic culture, social institutions, and serious crime together while also accounting for the differences between settings, the first main finding of this study is that Institutional Anomie Theory was not found to predict high levels of serious crime as well as originally anticipated among the four proxies for organized crime or intentional homicide rates for the fourteen countries in this sample. The majority of countries in the full sample could not be concluded as being “Anomic” in the sense that Messner and Rosenfeld (1994) intended, largely because the results indicated an overrepresentation of institutional influences and a lack of cultural influences for all fourteen countries. This means that the majority of the countries in this sample did not have the cultural, Anomic requirements to lead to high
rates of serious crime, further implying that the full country model generally did not fit the authors’ original model of Institutional Anomie Theory.\textsuperscript{159}

These findings were further solidified when changes over time were taken into account between groups of six country clusters. Once the countries were divided into their respective country clusters, Institutional Anomie Theory operated as expected in the clusters that are most similar to the U.S. (as defined by Messner and Rosenfeld (1994)). That is, the Anglo-Saxon cluster (composed of Ireland and the U.K.) and Western country cluster (composed of Austria, Belgium, France, and Germany) were found to be Anomic\textsuperscript{160} and also had correspondingly high rates of organized crime (as represented by drug seizure amounts). However, Granger causality tests among these clusters revealed less support for the theory in certain contexts. That is, two indicators in the model of Institutional Anomie Theory in the Anglo-Saxon cluster predicting cannabis seizures and homicide rates were found to share causal elements with the independent variable that were not in the expected direction of Institutional Anomie Theory. The CPI was found to Granger cause cannabis seizures to decrease, and unemployment rates were found to Granger cause homicide rates to decline in this country cluster. Both findings provide stronger evidence than simple regression analyses that the impact of these independent variables on their corresponding dependent variable does not support Institutional Anomie Theory in the Anglo-Saxon cluster. This was an unexpected set of findings, which might indicate that these variables were either poor proxies of their latent

\textsuperscript{159} It should also be noted that an alternate interpretation of these findings might indicate that the proxies used to represent Anomic culture and social institutions were poor measures of their latent constructs, since these measures employed here are new and many have not been previously tested or included in past empirical tests of the theory.

\textsuperscript{160} As previously noted, countries that exhibited the “tipping point” of having at least one more cultural variable than institutional variable that was predictive of high rates of crime are considered to be Anomic. As such, “Anomie” is not measured in this study using a range of values. See the Future Research section below for further discussion.
constructs, or these particular indicators did not perform well under the theory’s restrictions.

As expected, the CEE and Baltic country clusters, containing all countries in transition, supported the theory the least, which also supports the assumptions of Institutional Anomie Theory. Here, amphetamine seizures were again the most predicted dependent variable, and homicide rates were the least predicted under the restrictions of Institutional Anomie Theory. No Granger causal relationships were further uncovered to support or refute Institutional Anomie Theory.161

While these country cluster results do support Messner and Rosenfeld’s (1994) original assertions that Institutional Anomie Theory’s explanatory scope only includes developed countries, the implications are more significant than this. The findings of this research illustrate that there are variations within and between “developed countries;” only those developed countries that are most similar to the U.S. support the Anomic conditions required by the theory to predict serious crime rates. Other developed country clusters, such as the Mediterranean and Northern clusters, did not support this assumption; these groups of countries, while considered “modern,” “developed,” and “Western,” did not exhibit cultural pressures to succeed as defined by Messner and Rosenfeld’s (1994) concept of the “American Dream.” These findings may suggest that Institutional Anomie Theory is applicable to a more narrow scope of nations than originally posited by Messner and Rosenfeld (1994), and that other cultural-institutional configurations may exist in these developed countries that also lead to high rates of organized crime (this is further discussed in the second major finding below).

161 The less than optimal number of observations for these clusters (30 and 15, respectively) impacted the power of the empirical tests to detect additional significant relationships. However, the number of observations still allowed for an initial signal of Institutional Anomie Theory to be detected.
Overall, the findings of the multivariate cluster regressions supported the practice of grouping countries into clusters in order to significantly impact Institutional Anomie Theory’s ability to predict rates of organized crime. However, the results of the Granger causality tests revealed that the between-country differences within each cluster may be too great to accurately detect Granger causality in some instances. This should be a significant consideration for any advanced statistical analyses conducted on data from country clusters.

Institutional Anomie Theory was found to predict high levels of serious crime more so in the developed country group than the transitioning country group, after addressing these cultural-institutional differences over time. That is, the findings support the theory’s assumptions that developed countries will operate the best under Institutional Anomie Theory. Yet support for these findings are weak, because a very small percentage of the total number of independent variables were found to be supportive of the theory for the developed country group. Once the theoretical restrictions were lifted from the coefficients, both the models operated much better for both developed and transitioning countries – a key finding that is troublesome for Institutional Anomie Theory’s explanatory power, because it indicates that the independent variables themselves are important predictors of organized crime and homicide, but are not as useful when restricted to the theoretical expectations. This may also indicate that the independent variables used do not embody Messner and Rosenfeld’s (1994) conception of “culture” and “social institutions,” yet the fact that the majority of the predictor variables were significant absent the theoretical restrictions weakens this position. If these variables were poor proxies of culture and social institutions in general, it would be
expected that they would not perform well in the various models. As this is not the case, it is more likely that most of the countries in this sample simply did not fit the restrictions of Messner and Rosenfeld’s (1994) model requiring societies to be similar to the United States.

Finally, as anticipated Institutional Anomie Theory was not found to predict high levels of serious crime very well in the transitioning democracy of Poland using the new measurements of Anomic culture and social institutions in this study. Only three of the five overall models predicting the dependent variables were significant, but none of the organized crime proxies had more than one significant independent variable (this most likely represents the initial signal of the results because of the small number of observations). Interestingly, however, the Anomic cultural indicators that were significant indicated that, for instance, amphetamine seizures were predicted by an increase in “traditional American values” as represented by the World Index of Economic Freedom.

While the small number of observations limited the interpretation of the results for Poland (and Slovakia), this did indicate that as Poland has been identified as a source country for amphetamines (e.g., DEA, 2004), perhaps organized crime syndicates involved in producing and trafficking this drug-type are encouraging a competitive atmosphere similar to the Anomic cultural values described by Institutional Anomie Theory. This may be supported in light of the results from Slovakia; the World Index of Economic Freedom was an important predictive indicator of drug seizures in this second CEE country, but it was fewer Anomic cultural values similar to the American Dream that predicted high rates of serious crime. Finally, homicide rates in Poland were

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162 As aforementioned, the small number of observations in the Poland analyses may be responsible for the lack of findings.
predicted by three variables (all representing social institutions), but two of the three coefficients were not in the direction anticipated by Institutional Anomie Theory.

Moreover, the cultural-institutional configuration in Poland was not found to vary much from Slovakia. Both countries had a limited number of significant variables overall (most likely due to the small number of observations), and those that were significant for each country mostly represented cultural pressures to succeed. The only slight difference was within the cultural variables that was previously touched on: two of three cultural variables for Poland represented strong cultural pressures to succeed in terms of Institutional Anomie Theory, while three of four cultural variables for Slovakia indicated weaker cultural pressures to succeed. Institutions did not play a large role for either country.

The second major finding of this research is that cultural-institutional configurations were found to vary between countries and groups of countries, and each configuration differentially impacted the four measures of organized crime in Europe.163 This finding has several major implications. For instance, this conclusion suggests that the concept of “Anomie” should be expanded on and clarified to include various types of Anomie that can produce high rates of organized crime. In fact, Messner and Rosenfeld (2001) themselves acknowledged that other forms of institutional balances exist in other cultural settings that may lead to different forms of crime.164 Other institutional scholars such as Dirk Enzmann further support this idea that different configurations impact different crimes. The creators of Institutional Anomie Theory have identified one type of

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163 Particularly when the restrictions of Institutional Anomie Theory were lifted.
164 However, this statement in 2001 was later contradicted by the authors in 2009 when they stated “A core claim of Institutional Anomie Theory is that the type of institutional configuration conducive to high levels of crime is one in which the claims of the economy are awarded highest priority” (215).
Anomic cultural-institutional configuration that is conducive to high levels of organized crime and homicide in American-like countries – a conclusion that the findings of this research support. Of course this means that the narrow definition of “Anomic culture” in Institutional Anomie Theory makes this cultural-institutional “measuring rod” less useful to any societies who do not exhibit American Dream-like cultural pressures to succeed and/or experience a social institutional balance dominated by the economy. This begs the question, if countries do not fit this measuring rod yet still are experiencing forms of serious crime, what is their cultural-institutional configuration? What other cultural-configurations exist to produce organized crime or homicide (or any other form of crime) in other settings? Messner and Rosenfeld (2001) suggest “societies with differing institutional configurations, for example, those in which political or religious institutions are dominant, also may exhibit high levels of criminal activity” (153) but do not indicate which societies these may be. Delving into this “black box” of Anomic cultural and institutional elements was one of the aims of this research. As such, this study was able to preliminarly uncover other cultural-institutional configurations that are predictive of high rates of organized crime as noted in Table 39 below.
<table>
<thead>
<tr>
<th>Country Cluster</th>
<th>Strong Cultural Pressures</th>
<th>Weak Cultural Pressures</th>
<th>Lack of Legitimate Means to Succeed</th>
<th>Strong Economic Institution</th>
<th>Weak Economic Institution</th>
<th>Strong Non-Economic Institution</th>
<th>Weak Non-Economic Institutions</th>
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<tbody>
<tr>
<td>Anglo-Saxon</td>
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</tbody>
</table>

Note: Green indicates support; yellow indicates moderate support, red indicates no support.
In Table 39 above, green shading illustrates support found for the cultural or institutional elements listed across the top of the table, yellow shading illustrates moderate support found, and red shading indicates no support found.\textsuperscript{165} The Anglo-Saxon and Western country clusters, as mentioned previously were found to be the closest match to Messner and Rosenfeld’s (1994) model of Institutional Anomie Theory (i.e., strong cultural pressures to succeed and a lack of legitimate means to succeed produce Anomie, and taken together with a strong economic institution coupled with weak non-economic institutions produce high levels of serious crime). The table also illustrates that while some clusters do follow similar patterns of having strong economic institutions, the Western and CEE clusters also had strong non-economic institutions that were important predictors of organized crime. While the Northern country cluster was found to experience moderate cultural pressures to succeed, the Mediterranean cluster was found to exhibit weak cultural pressures to succeed. These findings confirm Messner and Rosenfeld’s (2001) suspicions that Anomie can manifest itself in different cultural-institutional configurations that are conducive to high levels of serious crime (in this case, organized crime activity).

This is finding advances criminological thought beyond considering whether or not Institutional Anomie “works” or does not “work,” and instead considers variations of Anomic culture and institutions within the theoretical model. However, it should also be noted that the model used in this research defined “Anomic culture” as Messner and Rosenfeld (1994) intended; that is, Anomic culture only embodied the elements of the American Dream. Therefore, the country clusters in Table 39 were only able to be

\textsuperscript{165} The table is oriented in such a way that the rows for each country cluster provide a lateral “check box” of the various elements of Institutional Anomie Theory (i.e., cultural pressures to succeed, lack of legitimate means to succeed, economic strength, and non-economic strength).
identified as being similar or dissimilar to the American Dream in terms of cultural pressures to succeed; this research was unable to measure, for instance, access to legitimate means to achieve the culturally prescribed goals. Nonetheless, these preliminary first steps have identified differences in these cultural-institutional configurations between developed country clusters, as well as transitioning countries, and have thus indicated multiple forms of Anomie existing in Europe.¹⁶⁶

These findings further support the Durkheimian roots of Institutional Anomie Theory, and suggest that what is now needed is a focus on the broader role of culture and institutions beyond the influence of “American Dream” in order to identify other cultural-institutional balances conducive to crime.¹⁶⁷ Durkheim reminds us (as did Messner and Rosenfeld in 2001) that these rules, norms, and meanings developed through human interactions will manifest themselves differently in different societies, variations that must be accounted for in comparative research. Where cultural pressures that encourage societal members to adopt an “anything goes” mentality in the pursuit of personal (monetary) goals is applicable to the United States (in addition to the Anglo-Saxon and Western country clusters as found in this research), these norms and value systems are not applicable to all societies.

Durkheim’s underlying assumptions about human nature and the nature of crime further illustrate this point. Durkheim believed that the insatiable level of needs and

¹⁶⁶ These various forms of Anomie might include (per the findings of this research) cultural pressures to succeed that are not defined by utilitarian, monetary qualities, and/or societies that might contain access to legitimate means to achieve these various culturally prescribed goals, both of which may lead to high levels of crime.

¹⁶⁷ Durkheim viewed culture as more of a dynamic, holistic, and homogenous concept (Campbell, 1981). It is these cultural underpinnings of society that guide behavior on the basis of compliance, legitimacy, and affect that are ultimately the driving forces behind the general stability of social institutions (Scott, 2008). Within social institutions, rules, norms, and meanings develop through human interactions and are modified and reinforced by groups at the societal level.
demands of society require regulation by social controls. That is, humans are compelled to search for gratification and will not be fulfilled unless restricted by these social controls, implying that crime or deviance is a normal and regular element of society. If crime is a variable to be found in every society, the elements of the equation that must vary are those built around the needs and desires of each society and the social structures in which these desires are organized (or where they might conflict). That is, these normative desires vary from society to society and manifest themselves differently.

In 1994, Messner and Rosenfeld developed a theory that was built on these Durkheimian foundations with the understanding that “other institutional balances exist” (2001: 153) in various societies; yet, the way the Institutional Anomie model was originally designed limits the theory’s applicability to different settings, as illustrated by this study. This is because the Anomic cultural and institutional elements of the theory are not allowed to vary. First, the authors hold serious crime as a constant or a given; the theory originated based on their observations that the U.S. and other developed “capitalist” countries had the highest rates of homicide compared to other nations. This is consistent with Durkheim’s aforementioned notions of human nature. Messner and Rosenfeld (1994) also hold elements of Anomic culture and social institutions constant by defining and restricting these variables in their model of Institutional Anomie Theory in terms of the American culture and institutional balance. As the results of this study indicated, as long as the theory is employed in the limited countries that resemble the American dream, the model should produce expected results (which is arguably a

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168 This is a point that is actually acknowledged by Messner and Rosenfeld (2001) as they reiterate “Institutional Anomie Theory seeks to explain the elevated levels and … types of criminal activity that result from particular forms of institutional imbalance” (153; emphasis added). This means they have defined the specific situation in which high rates of serious crime (homicide) should occur.
tautological model). Thus, considering other, perhaps broader definitions of “culture,” institutions, and crime in the theoretical model is necessary in order to identify these various cultural-institutional configurations that produce various forms of crime in societies around the world, as suggested by Durkheim and Messner and Rosenfeld (2001).\(^{169}\) The more narrow Anomic cultural-institutional definition of “Anomie in America” is less useful for identifying crime in all countries, but it becomes more meaningful when placed as *one piece* of the global puzzle in determining the causes of crime through the cultural-institutional lens.

The third main finding of this research is that the four proxies for organized crime were found to behave differently from each other in the given settings in this study. That is, all models\(^{170}\) varied depending on the type of drug when changes over time were taken into account (from 1995 to 2009). Cannabis seizures were the most predicted proxy of organized crime, followed by amphetamines and cocaine, for the time period 1995 to 2009. These results are interesting; cannabis is the most widely available of the four drug-types and the hardest to conceal because of its bulky quality compared to powder or tablet forms of the other drugs. As such, it is expected that the police should seize more cannabis from non-drug traffickers, which adds to the total number of kilograms seized by police and may distort this indicator as an indirect measure of organized crime movement.

Moreover, the models predicting heroin seizures operated the worst both under the theory’s restrictions and without the restrictions. This is an unexpected finding

\(^{169}\) For instance, weak cultural pressures to succeed (as defined by Institutional Anomie Theory) coupled with a strong economy and strong economic institutions resulted in higher rates of crime in the Central and Eastern European country cluster.

\(^{170}\) Recall that all models in this study include: full country model, six country clusters, developed country group, transitioning country group, Poland separately, and Slovakia separately.
because Europe is the largest regional consumer of heroin in the world (UNODC, 2010). As such, it is expected that organized crime groups participate in trafficking this type of drug into this region, thereby increasing the chances that police will uncover this activity and seize the heroin shipments. However, the overall market for heroin is much smaller than that of cocaine and cannabis (UNODC, 2010),\textsuperscript{171} and it is more potent per gram. As such, less amounts of heroin are needed to feel the same level of effects as cocaine or cannabis (the same cannot necessarily be said for amphetamines); therefore, smaller quantities of heroin that are more easily concealable may be eluding interdiction by police and thus skewing this indirect measure of organized crime patterns. These findings may also illustrate that since it drug trafficking organizations are known to specialize in the types of drugs they are involved in, perhaps there is something different about groups trafficking heroin that makes this dependent variable less predicted by the proxies in this study.

The results in Table 14 also indicate that cannabis seizures were most predicted by the institutional proxies included in this research. This implies that Anomic cultural proxies were less likely to have an impact on predicting rates of cannabis seizures, and that the market for cannabis in Europe may resemble the institutional configuration in the U.S. (i.e., strong economic emphasis and dominance over non-economic institutions). By comparison, cultural and institutional proxies equally predicted amphetamine seizures. This illustrates that not only are there differences in how well different drug-types are predicted by the same models, but that each drug-type is impacted differentially

\textsuperscript{171} For instance, the estimated annual market volume for cocaine in 2010 was 309 tons, and the annual market volume for heroin was 95 tons in 2010 (UNODC, 2010).
depending on the cultural-institutional configurations that exist in each country or
country grouping.

The fourth major finding of this research is that the traditional dependent variable
(i.e., intentional homicide rates) that has been used in the majority of past empirical
studies of Institutional Anomie Theory was not well predicted under the theory’s
restrictions for the countries used in this study. That is, models of Institutional Anomie
predicting homicide rates consistently performed poorly out of the five dependent
variables across the time series results. While all models predicting homicide rates over
time were significant and in most cases explained a fair amount of variance (ranging from
55% to 93%), the direction of most of the coefficients of the significant independent
variables were not in the direction anticipated by Institutional Anomie Theory. That is, in
some cases weak economies were predictive of high rates of homicide (i.e., full model,
developed countries) instead of the strong economy required by Institutional Anomie
Theory. A lack of cultural pressures to succeed (as defined by Messner and Rosenfeld’s
(1994) “American Dream”) was also found to predict increased homicide rates in some
models (i.e., full model, Mediterranean cluster, Slovakia). Interestingly, intentional
homicide rates were still found to have more cultural variables predicting these crimes
than institutional variables, as illustrated in Figure 12 (pg. 202). This suggests that
Anomic conditions are more likely to be an influence for homicide rates, while
institutional variables are more predictive of the organized crime proxies. This indicates
that the organized crime proxies operate differently from homicide rates – the organized
crime proxies had the most indicators supportive of Institutional Anomie Theory, but
homicide rates was the only dependent variable to have an overabundance of Anomic,
cultural variables predicting high rates of serious crime. However, it should be noted that even though this relationship was found among homicide rates, there were only six total significant predictor variables for this dependent variable out of all six country clusters. This indicates that while the results preliminarily suggest Anomic cultural variables are more predictive of homicide rates, further research is needed to further confirm this finding.

Additional concerning evidence for the performance of homicide rates as a proxy for serious crime in the model of Institutional Anomie was uncovered in the Granger causality results. That is, in the full model results, not only were two of the four significant predictor variables found to have coefficients in the opposite direction that the theory would anticipate, but one of those two variables was actually found to Granger cause intentional homicide rates. This means that increases in unemployment were actually found to Granger cause homicide rates to decrease. The same relationship was found among unemployment rates and homicide in the Anglo-Saxon cluster. However, it must be kept in mind that Granger causality is specific to each situation (i.e., dependent variable, time series, and country group). What these Granger causality results ultimately indicate is that at least in the full model and Anglo-Saxon country cluster, unemployment rates as a proxy representing a lack of legitimate means to succeed does not operate the way that Institutional Anomie Theory predicts. These results might also indicate that unemployment rates (or any of the other proxies for culture and social institutional elements) are not a good indicator of a lack of legitimate means to succeed. Yet, if the latter were the case, it would be expected that none of the five dependent variables would
perform well under the restrictions of Institutional Anomie Theory, and this was simply not the case when changes over time were accounted for.

Finally, the fifth major finding of this study is that future policies have the potential to impact some of the non-stationary independent-dependent variable combinations in this research. Tests for cointegration among non-stationary dependent and independent pairings in all models (with the exception of the Polish and Slovakian separate analyses) revealed whether there was any element common to each pairing that would cause both variables to move together over time. This means that any shock to the series of one variable, such as a change in law, can be expected to have the same impact (i.e., either increasing or decreasing the trend) on the second cointegrated variable. While these conclusions are less helpful for Institutional Anomie Theory, they provide vital information for policymakers as it would allow policies to be formed that address only one of the variables, knowing that a significant impact would be made on both cointegrated variables.

Interestingly, the majority of cointegrated relationships were found among the social institutional proxies. Regarding the full country model, cointegration was only found among two independent variables predicting homicide rates. The Rule of Law and the divorce-to-marriage ratio were each found to be cointegrated with homicide rates. This implies that a shock to either independent variable can be expected to have the same impact on homicide rates. Cointegration was found in the Anglo-Saxon cluster predicting three proxies of organized crime: the Rule of Law, Political Stability, and primary education were cointegrated with cannabis seizures, and primary education was found to be cointegrated with each cocaine seizures and amphetamine seizures. Also, cointegration
was found in the Western country cluster between GDP per capita and amphetamine seizures, and in the Northern cluster between GDP per capita and homicide rates, and between divorce-to-marriage ratio and each homicide rates and amphetamine seizures. Finally, primary educational attainment was found to be cointegrated with homicides in the Baltic country cluster. The frequency of cointegrated relationships discovered among the non-stationary institutional variables implies that within each of these aforementioned country clusters where instances of cointegration were found, policies aimed at these institutional variables (e.g., impacting primary educational attainment in the Anglo-Saxon and Baltic clusters) can be expected to have a similar impact to their corresponding dependent variables (e.g., cannabis seizures and homicide, respectively, in the previous example) over time. The occurrence of cointegration between GDP and serious crime in the Western and Northern clusters is interesting, implying that at least in these two settings, the strength of the economy is connected to the rate of amphetamine seizures and the homicide rate.

Cointegration was also found among cultural proxies in the Anglo-Saxon cluster (between CPI and homicide), the Western cluster (between the CPI and amphetamine seizures) and the Northern cluster (between the World Index of Economic Freedom and cannabis seizures, the World Index of Economic Freedom and homicide rates, and the Gross Household Savings Rate and homicide rates). These findings illustrate that the trend of these cultural independent variables and their corresponding dependent variables (for their respective country groupings) over time will remain connected by common elements; impacting one will subsequently impact the other. However, it is not known

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172 The results from the Baltic, Anglo-Saxon, and Northern clusters are conditioned in light of the less than ideal number of observations desired to reliably run cointegration models.
from these results in which direction or for how long the impact of each shock (e.g., policy) will last. Yet, it is very helpful for policymakers to realize that the level of perceived corruption in the country (not just in the government sectors, but also private sectors) is causally connected to homicide rates and amphetamine seizures in the Anglo-Saxon and Western clusters, respectively. Also, the occurrence of cointegration between the World Index of Economic Freedom and serious crime (cannabis seizures and homicide) in the Northern cluster illustrate that there may be evidence of a causal link in this region as these countries gain more “traditional American values.”

Overall the cointegration tests for the full country model and the six country clusters indicated that the majority of the non-stationary independent variables were not cointegrated with the non-stationary dependent variables. This was not completely unexpected, as many of these variable-combinations would not be expected to track together over time (i.e., share an endogenous relationship) in the same way that the number of police and crime rates might be expected to share common elements. Additionally, future research should more closely look at these cointegrated independent-dependent variable pairings for their country groupings in order to delve into the error-correcting mechanism that exists between each pair. Further steps can (and should) be taken to estimate the amount of error being corrected between the two time series, therefore predicting how changes in one trend will directly influence the trend of the

\[173\] “Evidence of” is used here, as the small number of observations calls the findings into question. However, uncovering these instances of cointegration unveils that these variable pairings need to be considered in future studies when more adequate data are available.
second variable in future years.\textsuperscript{174} This added element of forecastability will be invaluable for policymakers.

\textit{Limitations of the Research}

This research advances the knowledge and the understanding of how socio-cultural factors impact the multifaceted concept of “organized crime” by employing Institutional Anomie Theory. While this study was the first to conduct a comprehensive and comparative test of the theory using a different type of crime, the analyses are limited by the nature of the data employed. Operationalization of the key concepts is a common challenge among past tests of Institutional Anomie Theory (Chamlin and Cochran, 2007; Messner and Rosenfeld, 2009), one challenge that this research shares. Since only two past empirical tests of Institutional Anomie Theory had ever attempted to operationalize the cultural elements of the model (i.e., Cullen, Parboteah and Hoegl, 2004; Gross and Haussman, 2011), there was little guidance for operationalizing these concepts in this research. As such, how closely the proxies chosen in this research represent the latent constructs of cultural pressures to succeed and lack of legitimate means to succeed are one concern. Moreover, this research was not able to empirically represent an “institutional balance of power” between the economy, polity, educational, and familial institutions as Messner and Rosenfeld (2009) suggest. However, the measures used to represent the four social institutions (with the exception of the polity proxies) have been

\textsuperscript{174} If an impact or “shock” to the time trend is random, the effects on the other variable can be forecasted through causality relationships or the error-correcting mechanism. If the “shock” has a permanent effect, the effect can be forecasted through the cointegration relationship unless the shock is so large as to change the nature of the relationship.
well established in the literature (e.g., Bjerregaard and Cochran, 2008a; 2008b; Messner and Rosenfeld, 1997c), and thus have demonstrated reliability in these studies.

The variables chosen to represent these key elements of Institutional Anomie Theory face their own set of limitations with regards to missing data and reliability and validity concerns surrounding the collection and reporting of official data. These concerns are problematic in the social sciences, particularly in countries undergoing social, economic and political transformations. Missing data in particular is a very important problem in the social sciences because it can potentially bias the estimates and standard errors, and thus reduce the validity of key measures. To address missing data issues in this research, estimation regressions were utilized that estimated the missing data based on the nature of the entire time series. The dangers of this technique involve biasing the results towards linearity, thus smoothing out the trends. However, this technique is preferable to mean-estimation methods, group mean-estimation techniques, or multiple imputations. The small number of missing variables in this study that had to be estimated in this fashion reveal few reasons to expect that these estimation methods severely biased the data leading to a misinterpretation of results.  

Operationalizing “organized crime” through four measures of drug seizure amounts (cannabis, heroin, cocaine, and amphetamine seizures) also faces limitations. Like the underlying concepts of Institutional Anomie Theory, “organized crime” is itself a latent construct. Thus, any proposed operationalization of organized crime will measure an indirect aspect of the criminal phenomenon. To help increase reliability and validity of any measure of organized crime, the European Council (2000) proposed to operationalize

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175 The two variables that suffered from consecutive years worth of missing data (CPI and Gross Household Savings Rate) were list-wise deleted in the time series regressions.
the construct through annual drug seizure amounts. This is largely because the United Nations and Council of Europe have recognized that drug trafficking is the common denominator between the vast majority of criminal organizations around the world (Council of Europe, 2000; 2005; OCTA, 2011; UNODC, 2010; 2012). Moreover, research by Hagan (1983) and other organized crime scholars support this assertion.

Importantly, the limitations surrounding the use of this common denominator to represent “organized crime” stem from its application. That is, confirmation of this operationalization can be found in the results of this research and ultimately comes from making the distinction between source countries and destination countries.\(^{176}\) Consider Figure 17 below.

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**Figure 17**: Source Countries and Destination Countries

\(^{176}\) See Appendix A.
Source countries and regions, such as Mexico, the Andes region of South America, and Afghanistan, suffer from high-level corruption and unsolved murder rates, and these countries subsequently score high on van Dijk’s (2008) Composite Organized Crime Index. In an empirical study such as this research, using drug seizure amounts as a proxy for organized crime activity in these source countries and regions is clearly not reflective of actual patterns and movements of organized crime. This is because the reliability of the police to accurately report (or even seize) the drugs is suspect. Corruption in these source countries is so rampant in some cases (e.g., Columbia) that the entire government is considered to be a drug trafficking organization (Lyman, 2011). However, these concerns are not shared at the same level in destination countries and regions such as West and Central Europe (which was identified as the “global demand hotspot” for drugs in this research). Levels of corruption and unsolved murder rates are much lower, which again is reflected in van Dijk’s (2008) research. As such, drug seizure amounts are reflective of the patterns of organized crime movement that have been documented by the UNODC (2010) and other international organizations.

However, led by the literature this research considered Poland, Slovakia, and Lithuania to be included in this overall “global demand hotspot,” which is defined as a destination-country category, even though these countries are still transitioning from the fall of communism. The findings of this research illustrate that these transitioning countries have consistently reported comparatively low amounts of drug seizures from 1995 to 2009, which in turn most likely contributed to the lack of significant results in regression models for the transitioning country group. Moreover, these findings appear to contradict what the organized crime literature suggests is happening in this part of Europe.
(DEA, 2004; Krajewski, 2003; Krawczyk et al., 2009; Plywaczewski, 2004). That is, the body of research on organized crime has identified countries in Central and Eastern Europe as not only common transit routes for drug trafficking organizations and for housing a high demand population for drugs and, but also has identified Poland as smaller source country for the production and distribution of amphetamines (DEA, 2004; Krawczyk et al., 2009; Plywaczewski, 2004; UNODC, 2010). As such, one would expect to see high rates of drug seizures in these countries.

This contradiction between drug seizure rates and existing literature lends itself to a few different explanations. An unlikely scenario is that the organized crime literature from Central and Eastern European has incorrectly gauged the existence of organized crime presence in these countries. What is more likely is that these countries (Poland, Slovakia, and Lithuania), while not suffering from the high levels of corruption and unsolved murder rates experienced in source countries (as supported by van Dijk’s (2008) Composite Organized Crime Index), may in fact occupy a third position that exists in between source and destination countries – a third position labeled as “transit countries” in (Figure 13 above) that is known to exist in the literature (e.g., UNODC, 2010). Thus, using drug seizure amounts as proxies for organized crime is less helpful in this category, yet is still somewhat relevant. That is, the problem may not be unbridled corruption among police officers who fail to seize the drugs at all or maliciously fail to report the amount of drugs seized (though this is sure to be true in some cases); instead, the low drug seizure amounts may be attributable to the lack of training and police experience in interdiction methods and drug identification. This argument is further supported by the graph Figure 18 below.
If drug seizure amounts were simply reflective of police efficiency, then it would be expected that in the decades following the collapse of communism the police would exponentially improve in capturing and seizing drug traffickers and their products. This exponential relationship is found in Figure 18 above, which illustrates the number of arrests for drug trafficking in Poland; however, this exponential relationship is not found in the amount of drugs seized by police in Poland (see Figure 19 below). Thus, while the police are increasingly able to catch the drug traffickers, they may remain unsure how to classify the various drugs seized off of the traffickers. This ultimately illustrates the scope

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177 Source: Reitox National Focal Point (2011).
of limitations surrounding this proxy for organized crime: context matters in how it is utilized.

![Drug Seizures in Poland](image)

Figure 19. Drug Seizures in Poland

There also exist methodological limitations surrounding the empirical tests used. The power of the time series regressions to detect significant results was limited based on the number of observations. This limitation also applied to the analyses of the individual country analyses of Poland and Slovakia, as well as the country cluster analyses of the Baltic and Northern country clusters (because each cluster contained just one country – Lithuania and Sweden respectively) and slightly less so for the Anglo-Saxon and CEE clusters (because each cluster contained only two countries each). In the time series regressions this limitation of data is concerning because the results might be attributable to white noise processes. Moreover, the advanced and powerful econometric techniques
testing for Granger causality and cointegration among the variables requires a high number of observations due to the consideration of the lagged effect of the variables (which therefore consumes fourteen years worth of data with every lag). It is important to note that all full model, Western and Mediterranean country clusters, and developed and transitioning country groups did not face this same limitation of data as the other four clusters (Baltic, Northern, CEE, Anglo-Saxon) and individual countries (Poland and Slovakia).

A final limitation is more of a consideration for the context of the findings of this research. That is, this study was conducted during a set time period; the findings of this study are therefore relevant for the time period 1995 to 2009 for the fourteen countries in this sample. The findings are useful in giving researchers a starting place for examining certain aspects of culture and social institutions in historical time periods for other countries around the world, but the findings cannot be directly transposed to these other societal settings in other time periods.

**Future Research**

The findings of this study open wide the doors for future research considerations in terms of both Institutional Anomie Theory and organized crime. In the theoretical arena concerning Institutional Anomie Theory, future empirical research should continue to seek out other forms of “Anomie” that exist in societies around the world. Discovering what cultural-institutional configurations produce Anomie in various source countries (e.g., Columbia, Peru, and Afghanistan) and transit countries (e.g., Poland, Slovakia, and Lithuania) would be extremely useful in disentangling the cultural-institutional
differences from what is already known about the configuration in destination countries (like the U.K, Ireland, and the U.S.). Once these configurations are discovered in various societies, they can be used as each country’s “measuring rod” to continually “check” the country against its own past to determine whether (and how) the cultural or social institutional elements are changing or shifting over time. This in turn will help law enforcement and international governing bodies alike determine how policies and initiatives are differentially impacting these regions in terms of organized crime prevalence, particularly in the drug trade. However, to do this, researchers applying Institutional Anomie Theory in comparative settings need to be wary when restricting the definition of “Anomic culture” to the American Dream, and acknowledge (as Messner and Rosenfeld (2001) have) that the Anomic society uncovered by Institutional Anomie Theory is just one type of Anomie that exists globally. The findings also underline the fact that future research should not continue to lump data together from many (sometimes forty or fifty) countries and take for granted this notion that the theory operates the same in all settings.

Once other forms of Anomie have been identified, future research studies should consider the value of the concept of “Anomie.” In other words, future research should determine whether Anomie should be considered as an absolute value, or whether the level of Anomie of each cultural-institutional configuration should fall along a spectrum or continuum that results in various levels of serious crime.

Future research should also strive to build a more comprehensive operationalization of “Anomic culture” to be used in future empirical tests of Institutional
Anomie Theory. Complications surrounding the operationalization of this extremely complex latent construct have been acknowledged, but to-date few researchers have even approached the challenge (Cullen, Parboteeah and Hoegl, 2004; Gross and Haussman, 2011; Messner and Rosenfeld, 2009). This research took the next step in attempting to improve the measurement of “Anomic culture,” but future research should strive to continue this endeavor. Once superior measures of Anomic culture are obtained, it will facilitate more accurate tests of Institutional Anomie Theory, and would even allow for a replication of this study to be conducted.

Additional avenues for future research include qualitative efforts that focus on the Central and Eastern European region in terms of both uncovering Anomic cultural and institutional elements useful for Institutional Anomie Theory, but also that focus on defining the problem of organized crime within these countries. It is clear from the findings of this research that the three countries in transition did not operate as anticipated under the four proxies of organized crime. Researchers in this region should focus on uncovering additional appropriate measures of organized crime in these “transit” countries in order to build a stronger conceptualization (and measurement) of the phenomenon. This in turn will allow policymakers to address these dimensions of organized crime and build more effective policies in these countries.

Moreover, future research should address the grossly underreported nature of drug seizure amounts (when compared to the estimates provided by international organizations like the UNODC) of cannabis, cocaine, heroin, and amphetamines in Poland, Slovakia, 

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178 This is in acknowledgement that some scholars may argue that “Anomic cultural” elements are unable to be measured empirically. However, the model of Institutional Anomie clearly separates Anomic culture from institutions. Further, if this element of the theory is unable to be empirically measured, it calls into question whether or not the theory can be falsified (Chamlin and Cochran, 2007).
and Lithuania. As presented in the example of Poland, the underreporting of drug seizure amounts does not appear to be related to a lack of police effort to target drug trafficking organizations (see Figures 18 and 19). Moreover, outside sources to include the European Union and the U.S. Department of Justice (U.S. Embassy, 2013) have provided additional funding and police interdiction training to this region of the world. Yet, this discrepancy persists in the longitudinal data regarding drug seizure amounts. Future research should consider what additional factors (e.g., police corruption, lack of sustained uniformed training to all officers in each country, lack of resources to store the seized drugs) are behind this observed phenomenon.

Finally, future research should also expand operationalization of organized crime in destination, transit, and source countries.¹⁷⁹ Current organized crime research conducted by Jan van Dijk (2008) already exists that help identify the cultural settings that are more conducive to organized crime in source countries, but these measures have not been tested empirically. The composite index combines five interrelated indicators: the organized crime perception index, unsolved homicide rates, informal sector rates (i.e., shadow economies or “black market” economies), high-level corruption rates, and money laundering rates. Further empirical inclusion of this index, as well as the organized crime perception index, is needed in future research. Additionally, other prominent activities of organized crime that have been identified by the UNODC (2011) to include cybercrime, human trafficking, and firearms trafficking, need to be considered in future composite indices and definitions of organized crime. Data on these activities are still in the

¹⁷⁹ However, this set of findings is debated in the literature. For example, other research has suggested that categories of organized crime activity are best studied at the sub-national level, because using global assessments of organized crime activity (e.g., political bribes, human trafficking) are meaningful for drawing attention to the problem, but are not useful for actually studying or combating the problem (Albanese, 2008).
developmental collection stages internationally, and would benefit from supplementation with qualitative efforts.

Policy Implications

While this research was largely a test of Institutional Anomie Theory, there are some implications for policies addressing organized crime prevalence in Europe. The results of the cluster analysis revealed the Anglo-Saxon and the Western country clusters were the only clusters to experience Anomic conditions as defined by Messner and Rosenfeld (1994). In other words, organized crime rates in these country clusters were more affected by cultural variables than institutional variables. This implies that to reduce Anomie and subsequently organized crime prevalence, Anomic cultural values need to change with regards to the demand for drugs. That is, policies need to be created in the Anglo-Saxon and Western country clusters that are aimed at changing the Anomic culture surrounding normative drug use instead of implementing institutional changes.

One excellent place for policymakers in these European country clusters to start changing the normative culture surrounding drug use is with new media campaigns. This is supported by studies conducted by the UNODC (2012c), which have shown how the Internet has revolutionized media.

Social networking sites, inexpensive mobile technology, and the increase of Internet reach and speed have meant that young people are routinely exposed to various kinds of messaging and advertising. Unfortunately, this has also meant that messages directly or indirectly promoting alcohol, tobacco, and other drugs have proliferated. (UNODC, 2012c: 16)

“When examining content of prime time television, content concerning drug abuse is scarce, particularly when compared to messages about food and nutrition [and] alcohol
use… – [two] topic areas commonly portrayed” (UNODC, 2012c: 17; emphasis added). This illustrates that while countries in Europe have addressed the drug problem through numerous outlets, to include the Youth Initiative (UNODC, 2013), family-based training programs (United Nations, 2009), and health-care initiatives aimed at drug dependents (United Nations, 2010), steps have not been taken to decrease the normative nature of drug use through media campaigns. This is a steep challenge, but one that policymakers in these European countries (i.e., Anglo-Saxon and Western country clusters) can look to the U.S. for assistance with, largely in part because these countries share similar cultural configurations that resemble the American Dream.

The social campaign against tobacco use in the U.S. has been widely regarded as successful particularly since the 1970s (Leshner, Vultee, and Bolls, 2010; ONDCP, 2013; Stobbe, 2012). Rates of tobacco use among all demographics have dropped significantly over the years without the need to change the legal (institutional) status of tobacco or tobacco products. Much of this success has been attributed to campaign and advertising efforts aimed at “shocking” viewers into realizing the dangers of smoking tobacco through graphic television advertisements and pictures on packages of cigarettes (Leshner, Bolls, and Thomas, 2009; Lyman, 2011). In the U.S., the culture around the normative acceptance of smoking or using tobacco products has slowly changed over the years, but it was able to change. Leaders in Europe can apply this model by addressing the demand for drugs in this region through graphic or “shocking” anti-drug advertising campaigns aimed at all levels of the population.

180 This media campaign has also supported by the current U.S. “drug czar” Gil Kerlikowske (ONDCP, 2013) since 2005.
However, these implications for policy would only be effective in those countries that are Anomic and resemble Messner and Rosenfeld’s (1994) conception of the American Dream. The country clusters that did not resemble the American Dream or the institutional imbalance of power required by Institutional Anomie Theory in this research (i.e., Northern, Mediterranean, CEE, and Baltic country clusters) require different policy approaches depending on each country’s cultural-institutional configuration. For instance, in the Northern and Baltic clusters, weak non-economic institutions were predictive of higher rates of organized crime. Policies aimed at strengthening the polity, familial, and educational institutions (or any combination thereof) might address various law enforcement initiatives, increase government transparency, or allocate additional resources for increasing primary educational attainment levels within each country. There do exist programs to strengthen these non-economic institutions, such as the Family Skills Training Program to prevent drug abuse (United Nations, 2009). However, these programs may not have been uniformly available and funded in countries in the Northern, Mediterranean, CEE, and Baltic country clusters between 1995 and 2009. Messner and Rosenfeld (2001) remind us that crime rates cannot fall to zero, but “by specifying with some precision the [cultural-]institutional sources of crime, it encourages us to imagine the social changes required to move a little closer to perfection” (153).

This study builds on past bodies of research by applying a socio-culturally based macro-level criminological theory to the study of organized crime in the global demand hotspot of Europe. It is the first study to answer the call by Messner and Rosenfeld (2009) to consider changes in levels of Institutional Anomie and crime rates over time. Moreover, this research improved measurements of key elements of the theory, while
also considering differences in how Institutional Anomie Theory operated between
different country (and cluster) settings as well as against a new definition of “serious
crime.” This research was also a significant contribution to the organized crime literature
by taking a macro-level, socio-cultural approach to an empirical study of organized
crime. While the scope of this research was ambitious, the theoretical orientation of
Institutional Anomie facilitated the discovery of Anomic cultural and institutional factors
found to differentially impact organized crime in Europe. This has armed policymakers
with more comprehensive tools from which to build more effective policies and
initiatives designed to curb transnational organized crime, which is an arduous task
indeed.
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Summers, Diana L. and Emil W. Plywaczewski. (2012). The Polish context: Examining issues of police reform, drug use and drug trafficking in a transitioning


APPENDICES

APPENDIX A: MAIN GLOBAL TRANSNATIONAL ORGANIZED CRIME FLOWS

APPENDIX B: MESSNER AND ROSENFELD’S (1994) ORIGINAL SCHEMATIC REPRESENTATION OF INSTITUTIONAL ANOMIE THEORY

APPENDIX C: GRAPHICAL REPRESENTATION OF ALL VARIABLES IN THIS STUDY

Cannabis Seizures for All Countries

Heroin Seizures for All Countries
Cocaine Seizures for All Countries

Amphetamine Seizures for All Countries
Intentional Homicide Rates for All Countries

Cannabis Seizures by Country Cluster
Heroin Seizures by Country Cluster

Cocaine Seizures by Country Cluster
Amphetamine Seizures by Country Cluster

Intentional Homicide Rates by Country Cluster
World Index of Economic Freedom for All Countries

Gross Savings Rate per Household for All Countries
Corruption Perceptions Index for All Countries

Unemployment Rate as a % of Labor Force for All Countries
GDP Per Capita Growth Rate

Social Protection Expenditures per Capita
Rule of Law

Political Stability and Absence of Violence
Educational Expenditures per Capita

Primary Educational Attainment as a Percentage of the Labor Force
Percentage of the Population that is Male

Percentage of the Population Ages 15 to 24
APPENDIX D: COMPARISON OF BJERREGAARD AND COCHRAN’S (2008a) EMPIRICAL TEST OF IAT AND REPLICATION WITH CURRENT DATA

Table 1: OLS regression – the relative effects of the components of institutional anomie on cross-national rates of homicide

<table>
<thead>
<tr>
<th>Homicide rates</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gini</td>
<td>.057**</td>
<td>.075**</td>
<td>.061**</td>
</tr>
<tr>
<td>GDP</td>
<td>-.644*</td>
<td>-.723**</td>
<td>-.716**</td>
</tr>
<tr>
<td>Economic freedom</td>
<td>.360</td>
<td>.298</td>
<td>.507</td>
</tr>
<tr>
<td>GDP*Gini</td>
<td>.072**</td>
<td>.064**</td>
<td></td>
</tr>
<tr>
<td>Gini*Freedom</td>
<td>.049</td>
<td>.064</td>
<td></td>
</tr>
<tr>
<td>GDP*Freedom</td>
<td>-.337</td>
<td>-.222</td>
<td></td>
</tr>
<tr>
<td>Gini<em>GDP</em>Freedom</td>
<td>.060</td>
<td>.082*</td>
<td></td>
</tr>
<tr>
<td>Family</td>
<td></td>
<td>-.003</td>
<td></td>
</tr>
<tr>
<td>Polity</td>
<td></td>
<td>.027*</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td>-.168</td>
<td></td>
</tr>
<tr>
<td>Economic growth</td>
<td>-.060</td>
<td>.001</td>
<td>.011</td>
</tr>
<tr>
<td>Total population</td>
<td>7.18E-009</td>
<td>5.43E-009</td>
<td>6.30E-009</td>
</tr>
<tr>
<td>R²</td>
<td>.52**</td>
<td>.64**</td>
<td>.71**</td>
</tr>
<tr>
<td>V.I.F.</td>
<td>&lt;2.95</td>
<td>&lt;3.46</td>
<td>&lt;3.56</td>
</tr>
</tbody>
</table>

Note: * P < .05; ** P < .01

Replication of Bjerregaard and Cochran's (2008a) Test of Institutional Anomie Theory using Intentional Homicide Rates (14 Countries, Year 2000)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gini coefficient</td>
<td>-0.04(0.07)</td>
<td>-0.01(0.13)</td>
<td>-0.17(0.21)</td>
</tr>
<tr>
<td>GDP</td>
<td>-0.91(0.45)</td>
<td>-3.22(1.21)*</td>
<td>-4.31(3.32)</td>
</tr>
<tr>
<td>Economic Freedom</td>
<td>0.01(0.03)</td>
<td>0.18(0.06)*</td>
<td>0.08(0.10)</td>
</tr>
<tr>
<td>GDP*Gini</td>
<td>0.01(6.66e-6)*</td>
<td>0.00(0.00)</td>
<td></td>
</tr>
<tr>
<td>Gini*Freedom</td>
<td>1.59e-6(2.26e-6)</td>
<td>-1.22e-6(3.03e-6)</td>
<td></td>
</tr>
<tr>
<td>GDP*Freedom</td>
<td>Omitted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gini<em>GDP</em>Freedom</td>
<td>-3.02e-7(1.22e-7)</td>
<td>-5.06e-8(2.42e-7)</td>
<td></td>
</tr>
<tr>
<td>Family</td>
<td></td>
<td>0.10(0.41)</td>
<td></td>
</tr>
<tr>
<td>Polity</td>
<td></td>
<td>-1.10(0.41)</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td>1.10(1.63)</td>
<td></td>
</tr>
<tr>
<td>Economic growth</td>
<td>0.03(0.04)</td>
<td>0.00(0.05)</td>
<td>-0.06(0.13)</td>
</tr>
<tr>
<td>Total Population</td>
<td>9.49e-9(9.52e-9)</td>
<td>0.13(0.21)</td>
<td>0.31(0.29)</td>
</tr>
<tr>
<td>R²</td>
<td>.63*</td>
<td>.79*</td>
<td>.79</td>
</tr>
<tr>
<td>Mean VIF</td>
<td>4.46</td>
<td>184</td>
<td>467</td>
</tr>
</tbody>
</table>

Note: * p < .05; ** p < .01; *** p < .001

Note: The first table was the original findings from Bjerregaard and Cochran (2008a), page 189. The second table was produced using data from this dissertation for comparison purposes. GDP*Freedom was omitted in the replication due to multicollinearity issues despite mean-centering techniques.
### APPENDIX E: LEVI-LIN-CHU UNIT ROOT RESULTS

Levi-Lin-Chu Unit Root Results (4 panels, 15 periods) Western Country Cluster

<table>
<thead>
<tr>
<th>Variable</th>
<th>Adjusted t Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannabis Seiz.</td>
<td>-6.848***</td>
</tr>
<tr>
<td>Heroin Seiz.</td>
<td>-2.192*</td>
</tr>
<tr>
<td>Cocaine Seiz.</td>
<td>-2.615**</td>
</tr>
<tr>
<td>Amphetamine Seiz.</td>
<td>-0.564</td>
</tr>
<tr>
<td>Intentional Homicide Rate</td>
<td>-1.673*</td>
</tr>
<tr>
<td>W.I. of Econ. Fred.</td>
<td>0.089</td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td>0.000</td>
</tr>
<tr>
<td>CPI</td>
<td>-1.894*</td>
</tr>
<tr>
<td>Unemployment</td>
<td>-2.741**</td>
</tr>
<tr>
<td>GDP</td>
<td>-0.401</td>
</tr>
<tr>
<td>Rule of Law</td>
<td>-3.297***</td>
</tr>
<tr>
<td>Political Stability</td>
<td>-1.532</td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td>-1.745*</td>
</tr>
<tr>
<td>Primary Education</td>
<td>1.399</td>
</tr>
<tr>
<td>Population Male</td>
<td>-1.391</td>
</tr>
<tr>
<td>Age distribution</td>
<td>-6.289***</td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001

Levi-Lin-Chu Unit Root Results (4 panels, 15 periods) Mediterranean Country Cluster

<table>
<thead>
<tr>
<th>Variable</th>
<th>Adjusted t Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannabis Seiz.</td>
<td>-3.509***</td>
</tr>
<tr>
<td>Heroin Seiz.</td>
<td>-1.774*</td>
</tr>
<tr>
<td>Cocaine Seiz.</td>
<td>-1.134</td>
</tr>
<tr>
<td>Amphetamine Seiz.</td>
<td>-3.054**</td>
</tr>
<tr>
<td>Intentional Homicide Rate</td>
<td>-0.696</td>
</tr>
<tr>
<td>W.I. of Econ. Fred.</td>
<td>-2.562</td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td>-3.108***</td>
</tr>
<tr>
<td>CPI</td>
<td>-7.131***</td>
</tr>
<tr>
<td>Unemployment</td>
<td>-1.111</td>
</tr>
<tr>
<td>GDP</td>
<td>-0.391</td>
</tr>
<tr>
<td>Rule of Law</td>
<td>-1.411</td>
</tr>
<tr>
<td>Political Stability</td>
<td>2.785</td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td>0.244</td>
</tr>
<tr>
<td>Primary Education</td>
<td>-0.681</td>
</tr>
<tr>
<td>Population Male</td>
<td>-3.762</td>
</tr>
<tr>
<td>Age distribution</td>
<td>-2.669**</td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001
Levi-Lin-Chu Unit Root Results (2 panels, 15 periods) Anglo-Saxon Country Cluster

<table>
<thead>
<tr>
<th>Variable</th>
<th>Adjusted $t$ Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannabis Seiz.</td>
<td>-1.427</td>
</tr>
<tr>
<td>Heroin Seiz.</td>
<td>-0.082</td>
</tr>
<tr>
<td>Cocaine Seiz.</td>
<td>0.234</td>
</tr>
<tr>
<td>Amphetamine Seiz.</td>
<td>-0.932</td>
</tr>
<tr>
<td>Intentional Homicide Rate</td>
<td>-0.408</td>
</tr>
<tr>
<td>W.I. of Econ. Fred.</td>
<td>-3.298***</td>
</tr>
<tr>
<td>G.H. Savings Rate†</td>
<td>-</td>
</tr>
<tr>
<td>CPI</td>
<td>0.239</td>
</tr>
<tr>
<td>Unemployment</td>
<td>0.811</td>
</tr>
<tr>
<td>GDP</td>
<td>-2.258*</td>
</tr>
<tr>
<td>Rule of Law</td>
<td>-0.995</td>
</tr>
<tr>
<td>Political Stability</td>
<td>1.129</td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td>-2.601**</td>
</tr>
<tr>
<td>Primary Education</td>
<td>0.028</td>
</tr>
<tr>
<td>Population Male</td>
<td>0.381</td>
</tr>
<tr>
<td>Age distribution</td>
<td>-6.482***</td>
</tr>
</tbody>
</table>

Note: *$p < .05$; **$p < .01$; ***$p < .001$
†Indicates an unbalanced dataset

Levi-Lin-Chu Unit Root Results (2 panels, 15 periods) CEE

<table>
<thead>
<tr>
<th>Variable</th>
<th>Adjusted $t$ Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannabis Seiz.</td>
<td>-0.879</td>
</tr>
<tr>
<td>Heroin Seiz.</td>
<td>-1.274</td>
</tr>
<tr>
<td>Cocaine Seiz.</td>
<td>-0.905</td>
</tr>
<tr>
<td>Amphetamine Seiz.</td>
<td>-2.255*</td>
</tr>
<tr>
<td>Intentional Homicide Rate</td>
<td>0.857</td>
</tr>
<tr>
<td>W.I. of Econ. Fred.</td>
<td>0.686</td>
</tr>
<tr>
<td>G.H. Savings Rate†</td>
<td>-</td>
</tr>
<tr>
<td>CPI†</td>
<td>-</td>
</tr>
<tr>
<td>Unemployment</td>
<td>-3.522**</td>
</tr>
<tr>
<td>GDP</td>
<td>0.413</td>
</tr>
<tr>
<td>Rule of Law</td>
<td>1.265</td>
</tr>
<tr>
<td>Political Stability</td>
<td>-0.548</td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td>-1.198</td>
</tr>
<tr>
<td>Primary Education</td>
<td>-0.432</td>
</tr>
<tr>
<td>Population Male</td>
<td>-0.917</td>
</tr>
<tr>
<td>Age distribution</td>
<td>2.806</td>
</tr>
</tbody>
</table>

Note: *$p < .05$; **$p < .01$; ***$p < .001$
†Indicates an unbalanced dataset
Levi-Lin-Chu Unit Root Results (1 panel, 15 periods) Baltic Country Cluster

<table>
<thead>
<tr>
<th>Variable</th>
<th>Adjusted t Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannabis Seiz.</td>
<td>-2.411**</td>
</tr>
<tr>
<td>Heroin Seiz.</td>
<td>-2.201*</td>
</tr>
<tr>
<td>Cocaine Seiz.</td>
<td>1.164</td>
</tr>
<tr>
<td>Amphetamine Seiz.</td>
<td>-0.617</td>
</tr>
<tr>
<td>Intentional Homicide Rate</td>
<td>-0.725</td>
</tr>
<tr>
<td>W.I. of Econ. Fred.</td>
<td>-6.067***</td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td>0.806</td>
</tr>
<tr>
<td>CPI</td>
<td>-7.296***</td>
</tr>
<tr>
<td>Unemployment</td>
<td>-2.078*</td>
</tr>
<tr>
<td>GDP</td>
<td>-0.996</td>
</tr>
<tr>
<td>Rule of Law</td>
<td>1.164</td>
</tr>
<tr>
<td>Political Stability</td>
<td>0.239</td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td>1.253</td>
</tr>
<tr>
<td>Primary Education</td>
<td>-0.951</td>
</tr>
<tr>
<td>Population Male</td>
<td>-3.031**</td>
</tr>
<tr>
<td>Age distribution</td>
<td>-2.518**</td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001

Levi-Lin-Chu Unit Root Results (1 panel, 15 periods) Northern

<table>
<thead>
<tr>
<th>Variable</th>
<th>Adjusted t Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannabis Seiz.</td>
<td>-0.615</td>
</tr>
<tr>
<td>Heroin Seiz.</td>
<td>-1.721*</td>
</tr>
<tr>
<td>Cocaine Seiz.</td>
<td>-2.071*</td>
</tr>
<tr>
<td>Amphetamine Seiz.</td>
<td>-0.784</td>
</tr>
<tr>
<td>Intentional Homicide Rate</td>
<td>-0.786</td>
</tr>
<tr>
<td>W.I. of Econ. Fred.</td>
<td>-1.467</td>
</tr>
<tr>
<td>G.H. Savings Rate</td>
<td>-1.229</td>
</tr>
<tr>
<td>CPI</td>
<td>-2.129*</td>
</tr>
<tr>
<td>Unemployment</td>
<td>-2.614**</td>
</tr>
<tr>
<td>GDP</td>
<td>-0.739</td>
</tr>
<tr>
<td>Rule of Law</td>
<td>3.206</td>
</tr>
<tr>
<td>Political Stability</td>
<td>2.421</td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td>-0.691</td>
</tr>
<tr>
<td>Primary Education</td>
<td>-0.788</td>
</tr>
<tr>
<td>Population Male</td>
<td>2.791</td>
</tr>
<tr>
<td>Age distribution</td>
<td>-3.752***</td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001
Levi-Lin-Chu Unit Root Results (11 panels, 15 periods) Developed Countries

<table>
<thead>
<tr>
<th>Variable</th>
<th>Adjusted t Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannabis Seiz.</td>
<td>-6.671***</td>
</tr>
<tr>
<td>Heroin Seiz.</td>
<td>-2.916**</td>
</tr>
<tr>
<td>Cocaine Seiz.</td>
<td>-3.022**</td>
</tr>
<tr>
<td>Amphetamine Seiz.</td>
<td>-2.081*</td>
</tr>
<tr>
<td>Intentional Homicide Rate</td>
<td>-1.779*</td>
</tr>
<tr>
<td>W.I. of Econ. Fred.</td>
<td>-3.909***</td>
</tr>
<tr>
<td>G.H. Savings Rate†</td>
<td>-6.701***</td>
</tr>
<tr>
<td>CPI</td>
<td>-2.681**</td>
</tr>
<tr>
<td>Unemployment</td>
<td>-2.001*</td>
</tr>
<tr>
<td>GDP</td>
<td>-1.931*</td>
</tr>
<tr>
<td>Rule of Law</td>
<td>2.474</td>
</tr>
<tr>
<td>Political Stability</td>
<td>-1.371</td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td>0.242</td>
</tr>
<tr>
<td>Primary Education</td>
<td>-1.493</td>
</tr>
<tr>
<td>Population Male</td>
<td>-6.037***</td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001
†Indicates an unbalanced dataset

Levi-Lin-Chu Unit Root Results (3 panels, 15 periods) Transitioning Countries

<table>
<thead>
<tr>
<th>Variable</th>
<th>Adjusted t Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannabis Seiz.</td>
<td>-2.361**</td>
</tr>
<tr>
<td>Heroin Seiz.</td>
<td>-2.372**</td>
</tr>
<tr>
<td>Cocaine Seiz.</td>
<td>-0.271</td>
</tr>
<tr>
<td>Amphetamine Seiz.</td>
<td>-2.031*</td>
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<tr>
<td>Intentional Homicide Rate</td>
<td>0.446</td>
</tr>
<tr>
<td>W.I. of Econ. Fred.</td>
<td>-4.915***</td>
</tr>
<tr>
<td>G.H. Savings Rate†</td>
<td>-4.085***</td>
</tr>
<tr>
<td>CPI†</td>
<td>-</td>
</tr>
<tr>
<td>Unemployment</td>
<td>-4.085***</td>
</tr>
<tr>
<td>GDP</td>
<td>-0.382</td>
</tr>
<tr>
<td>Rule of Law</td>
<td>1.678</td>
</tr>
<tr>
<td>Political Stability</td>
<td>-0.298</td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td>-0.765</td>
</tr>
<tr>
<td>Primary Education</td>
<td>-0.253</td>
</tr>
<tr>
<td>Population Male</td>
<td>-3.004</td>
</tr>
<tr>
<td>Age distribution</td>
<td>1.693**</td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001
†Indicates an unbalanced dataset
Levi-Lin-Chu Unit Root Results (1 panel, 15 periods) Poland

<table>
<thead>
<tr>
<th>Variable</th>
<th>Adjusted t Statistic</th>
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<tbody>
<tr>
<td>Cannabis Seiz.</td>
<td>0.204</td>
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<tr>
<td>Heroin Seiz.</td>
<td>-1.799**</td>
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<tr>
<td>Cocaine Seiz.</td>
<td>-1.499</td>
</tr>
<tr>
<td>Amphetamine Seiz.</td>
<td>-1.817**</td>
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<tr>
<td>Intentional Homicide Rate</td>
<td>-0.124</td>
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<tr>
<td>W.I. of Econ. Fred.</td>
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<tr>
<td>G.H. Savings Rate</td>
<td>2.394</td>
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<tr>
<td>CPI</td>
<td>-0.496</td>
</tr>
<tr>
<td>Unemployment</td>
<td>-2.393**</td>
</tr>
<tr>
<td>GDP</td>
<td>0.922</td>
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<tr>
<td>Rule of Law</td>
<td>0.037</td>
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<tr>
<td>Political Stability</td>
<td>0.228</td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td>-1.134</td>
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<tr>
<td>Primary Education</td>
<td>0.411</td>
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<tr>
<td>Population Male</td>
<td>-0.293</td>
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<tr>
<td>Age distribution</td>
<td>3.144</td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001

Levi-Lin-Chu Unit Root Results (1 panel, 15 periods) Slovakia

<table>
<thead>
<tr>
<th>Variable</th>
<th>Adjusted t Statistic</th>
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</thead>
<tbody>
<tr>
<td>Cannabis Seiz.</td>
<td>-1.601</td>
</tr>
<tr>
<td>Heroin Seiz.</td>
<td>-0.428</td>
</tr>
<tr>
<td>Cocaine Seiz.</td>
<td>0.481</td>
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<tr>
<td>Amphetamine Seiz.</td>
<td>-2.106</td>
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<td>Intentional Homicide Rate</td>
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<td>W.I. of Econ. Fred.</td>
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<tr>
<td>G.H. Savings Rate</td>
<td>-0.322</td>
</tr>
<tr>
<td>CPI</td>
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</tr>
<tr>
<td>Unemployment</td>
<td>-2.601**</td>
</tr>
<tr>
<td>GDP</td>
<td>-0.095</td>
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<tr>
<td>Rule of Law</td>
<td>1.976</td>
</tr>
<tr>
<td>Political Stability</td>
<td>-1.242</td>
</tr>
<tr>
<td>Divorce-to-marriage ratio</td>
<td>-0.508</td>
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<tr>
<td>Primary Education</td>
<td>-1.765*</td>
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<tr>
<td>Population Male</td>
<td>-1.008</td>
</tr>
<tr>
<td>Age distribution</td>
<td>2.299</td>
</tr>
</tbody>
</table>

Note: *p < .05; **p < .01; ***p < .001