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Exploring the Relationship between Neoliberalism and Homicide: A Cross-National Perspective

Craig McLean

Department of Social Sciences, Northumbria University, Newcastle upon Tyne, UK;

Michael A. Long

Department of Sociology, Oklahoma State University, Stillwater, Oklahoma, USA;

Paul B. Stretesky

Department of Social Sciences, Northumbria University, Newcastle upon Tyne, UK;

Michael J. Lynch

Department of Criminology, University of South Florida, Tampa, Florida, USA;

Steve Hall

Teesside Centre for Realist Criminology, Teesside University, Middlesbrough, UK

Research has shown that neoliberal economic policies may increase violence. In this study we extend this logic to create a “neoliberalism-homicide hypothesis.” We test this hypothesis using two global measures of neoliberalism (the *Economic Freedom of the World Index* and the *Index of Economic Freedom*) and 2014 homicide rates for 142 nations. Regression analysis provides little support for the neoliberalism-homicide hypothesis using the global indexes. However, when examining factors that make up these indexes we discover that as size of government and tax burden become more neoliberal across nations, homicide rates increase. A post hoc exploratory analysis suggests that the association between government size, spending, taxes, and homicide is largely indirect and manifests through economic inequality and poverty. That is, neoliberal government policies appear to increase poverty and inequality which, in turn, lead to higher rates of homicide. We situate our findings within the broader literature on neoliberalism and violence and suggest directions for future research.

Keywords neoliberalism; homicide rates; government size; tax burden

INTRODUCTION

The cross-national correlates of homicide have been extensively studied by social scientists (e.g., Chamlin and Cochran 2006; Chamlin and John 2007; Messner, Raffalovich, and Shrock 2002; Messner and Rosenfeld 1997; Nivette 2011; Pridemore 2008, 2002; Pridemore and Trent 2010). A great deal of this literature focuses on political, economic structural changes captured by measures of modernization (e.g., Altheimer 2008; Antonaccio and Tittle 2007; Bjerregaard and Cochran 2008; Lafree and Tseloni 2006), deprivation (e.g., Pridemore 2008, 2011), and political structure (e.g., Krahn, Hartnagel, and Gartrell 1986; Lafree and Tseloni 2006; Li 1995). Notably absent from these cross-national homicide studies is an empirical test of the effects of neoliberalism, an economic philosophy that has dominated national and international policy agendas for the last 40 years (Harvey 2005). Neoliberalism is characterized by a reduction in government spending and free trade as well as privatization, deregulation, and other measures designed to increase the importance of the private sector in the economy (Harvey 2005; Kotz 2008). An expanding literature increasingly documents various adverse social consequences of neoliberal policies (Chomsky 1999; Duggan 2012; Giroux 2004; Harvey 2005). It is within this critical framework that we suggest neoliberalism may generate homicide. In particular, we hypothesize that nations that rank higher on neoliberal indicators will also tend to have elevated levels of homicide.

We measure neoliberalism cross-nationally using two unique indexes: the *Economic Freedom World Index (EFWI)* and the *Index of Economic Freedom (IEF)*. Both indexes are often used synonymously with neoliberalism, and both measure different components of the concept. As of yet, however, these indicators have not been used as predictors of cross-national homicide rates. Thus, the current study represents the first attempt to examine the complex relationship between a nation's adoption of neoliberalism practices and homicide by using the *EFWI* and *IEF* to predict homicide rates.

There are three main reasons why neoliberalism may influence homicide rates cross-nationally. First, neoliberalism stresses the importance of personal responsibility and therefore fosters a historically unique form of competitive individualism (Braedley and Luxton 2010). As a result, these policies can justify high levels of unemployment and decreased wages as means of increasing economic competition. Simultaneously, elevated unemployment and low wages produce a social and cultural context for high rates of interpersonal violence because large numbers of individuals do not have access to living wages and/or are socialized in geographical areas that are excluded from the conventional labor market (e.g., see Anderson 2000). Second, the neoliberal emphasis on economic freedom may create a condition where institutions engaged in socialization falter and socialization is attenuated (Allon 2011), which might affect homicide through related processes such as collective efficacy at the community level (Morenoff, Sampson, and Raudenbush 2001). Thus, homicide may increase when the economic functions of social institutions are more valued than their social control functions (Gordon 2001; Messner and Rosenfeld 2012; Passas 2000). Third, neoliberal policies have been associated with cuts to welfare and the elimination of programs that are ideologically opposed to individual responsibility and freedom (Chomsky 1999). Thus, neoliberal policies undermine the welfare state by limiting social welfare programs and

reducing spending that may directly benefit economically marginalized populations (Rodwan and Cingranelli 2006). These types of cuts are thought to stimulate economic inequality and poverty, which have long been associated with violent crime such as homicide (Pratt and Godsey 2003). It is for these three reasons that we set out to theoretically and empirically scrutinize the relationship between neoliberalism and homicide by testing a neoliberalism-homicide hypothesis in the hopes of contributing to the general debate about its global impact.

The remainder of this manuscript is organized as follows. First, we review the existing literature on cross-national explanations of homicide. We focus on this past cross-national research since theoretical concepts associated with these other theories are also often related to concepts that appear in critical discussions of neoliberalism; in addition, we seek to provide context for the control variables used in our analysis of neoliberalism and homicide. Second, we give a brief overview of neoliberalism to contextualize our neoliberalism-homicide hypothesis. Third, we theoretically link the concept of neoliberalism to violence and homicide. Fourth, we discuss our methodology and report results of multivariate analysis that tests the relationship between neoliberalism and homicide rates. Finally, we situate our findings in the literature and suggest directions for future research.

CROSS-NATIONAL EXPLANATIONS OF HOMICIDE

A significant literature examines the correlates of cross-national homicide (Chamlin and Cochran 2006; Chamlin and John 2007; Messner et al. 2002; Messner and Rosenfeld 1997; Nivette 2011; Pridemore 2008, 2002; Pridemore and Trent 2010), and many different variables have been used in the prediction of cross-national homicide rates. In this brief review we focus primarily on previously established explanations of cross-national homicide rates.

Reviews of the cross-national crime literature (Nivette 2011; Pridemore and Trent 2010) indicate that one of the primary correlates of cross-national homicide includes measures of economic development (e.g., gross domestic product [GDP], gross national product [GNP], and gross national income [GNI]; see Altheimer 2008; Antonaccio and Tittle 2007; Bjerregaard and Cochran 2008; Lafree and Tseloni 2006). These indicators are common in models predicting cross-national homicide and are based on the assumption that economic development drives the modernization process, which in turn produces forms of social disorganization and disruptions in social control that may generate crime. Previous literature indicates that the modernization thesis is a common theoretical perspective informing comparative studies of crime (Nivette 2011; Ouimet 2012; Pridemore and Trent 2010; Shelley 1981). The modernization process can be related to crime in a number of ways, including the disruption of traditional forms of social control (Robbins and Pettinicchio 2012); the expansion of opportunities for crime (Uludag et al. 2009); the generation of social and economic changes that produce social disorganization and conflict, including population heterogeneity (Antonaccio and Tittle 2007; Gartner 1990); the production of either absolute or relative deprivation (Chamlin and Cochran 2006; Pridemore 2008); and an increase in anomie and social strain (Bjerregaard and Cochran 2008; Messner and Rosenfeld 1997).

Pridemore and Trent (2010) suggest that empirical tests of various indicators of modernization remain inconsistent across studies and have demonstrated positive (e.g., Wilson 1995), negative (e.g., Altheimer 2008; Bjerregaard and Cochran 2008; Neapolitan 1998; Stamatel 2009), or null (e.g., Bennett 1991; He et al. 2003; Pridemore 2008) relationships to crime. The most common indicators of the level of modernization in the cross-national crime literature are GNP/GDP/GNI (e.g., Altheimer 2008; Bjerregaard and Cochran 2008; Stamatel 2009), energy consumption (e.g., Avison and Loring 1986; Conklin and Simpson 1985), and indexes of modernization/development that usually include some combination of the following variables: education enrollment, electricity consumption, infant mortality, GDP, life expectancy, literacy rates, population aged 15–24, number of telephone lines, and urbanization (e.g., Antonaccio and Tittle 2007; Chamlin and Cochran 2006; Messner et al. 2002).

Measures of deprivation have often been linked with cross-national homicide rates. Many scholars have found that relative deprivation, or the lack of resources compared with others in that society, has a significant positive relationship with cross-national homicide rates. Relative deprivation is most often measured with the Gini index, an indicator of within-nation income inequality (e.g., Avison and Loring 1986; Barber 2006; Bjerregaard and Cochran 2008; Chamlin and Cochran 2006). Absolute deprivation, or living in poverty, has also been linked with homicide rates (Pridemore 2008, 2011).

Some researchers have suggested that the type and effectiveness of a government within a nation is related to homicide rates. Employing indicators of the level of democracy as a proxy for government type, scholars have found an inconsistent relationship between the level of democracy and homicide rates (Krahn, Hartnagel, and Gartrell 1986; Lafree and Tseloni 2006; Li 1995). However, numerous previous studies have demonstrated that government corruption and the degree of trust government elicits in the population is associated with higher homicide rates (Antonaccio and Tittle 2007; Roth 2009; Stretesky, Long, and Lynch 2017), while others (Lim, Bond, and Bond 2005) failed to find a relationship between corruption and homicide.

Studies of cross-national homicide have also examined the potential role of social institutions in society. Research on institutional anomie theory (IAT), a neo-Marxist explanation of crime in the United States developed by Messner and Rosenfeld (2012), is used in a cross-national context. In particular, IAT theorists argue that free market mechanisms of capitalism weaken noneconomic institutions that act to reduce crime in society. With respect to cross-national homicide this has been tested by researchers such as Bjerregaard and Cochran (2008), who examined whether the potential relationship between economic indicators and homicide rates is mediated or moderated by variables that measure the health of social institutions, such as the level of family disruption, illiteracy rates, pupil-to-teacher ratios, and voter turnout among 46 nations. Consistent with IAT arguments by Messner and Rosenfeld, the researchers discovered that the health of social institutions both mediated and moderated the relationship between economic conditions and homicide (Bjerregaard and Cochran 2008: 39). Importantly, Bjerregaard and Cochran (2008) also conceptualized the *Index of Economic Freedom* as an economic indicator, similar to their measures of economic inequality and unemployment. However, as we suggest, this index is better conceptualized as a distinct indicator of neoliberalism.

Variables that are often associated with the routine activities perspective (Cohen and Felson 1979), including unemployment (He et al. 2003; Krohn 1976; Lim, Bond, and Bond

2005; Wilson 2001) and degree of urbanization (Alzheimer 2008; Bennett 1991; Cole and Gramajo 2009), have also been studied in relation to cross-national homicide rates. In the case of each of these variables the findings are inconsistent with regard to the strength and direction of their relationship with homicide rates. A few researchers have also included measures of deterrence in studies of homicide, including using the size of the police force in an area as a predictor of homicide rates (Fajnzylber, Lederman, and Loayza 2002; McDonald 1976), and found no association between these variables.

Based on the above discussion, it is clear that researchers have employed a variety of social, economic, and political indicators to estimate cross-national homicide rates. However, the existing body of quantitative cross-national studies of homicide neglect an important feature of modern times—neoliberalism. The neoliberal agenda has dominated much of the policy discussions and mandates throughout the world during the last 40 years. In order to better understand cross-national homicide rates, we argue that it is crucial to consider the role of neoliberalism and its potential impact on homicide.

NEOLIBERALISM

Debates rage in the literature over whether neoliberalism brings benefits to society or whether if it is in fact generally ruinous to those states that have implemented it. Neoliberalism stands opposed to Keynesian economics in that it distrusts economic intervention by the state. Specifically, neoliberalism tends to underplay the relative importance of state-spending in order to ensure social cohesion through education and welfare programs as well as the state provision of health services and the like, instead positing that these services should be provided by the private sector. Larner (2000: 5) suggests that markets are understood by neoliberals as “a better way of organizing economic activity because they are associated with competition, economic efficiency and choice.” In other words, neoliberals argue that a properly constituted free market will inevitably lead to the provision of more effective goods than through attempts by the government to intervene.

In a more critical interpretation, David Harvey (2005: 159) has argued that the doctrine of neoliberalism, or more accurately the process of neoliberalization, is one of “accumulation by dispossession.” Accordingly, such a process has four stages: “privatization and commodification . . . financialization . . . the management and manipulation of crises . . . [and] state redistributions” (Harvey 2005: 160–163). That is, neoliberalism is a process opposed to the progressive elements of the Keynesian welfare state. With its emphasis on the alleged efficiencies of competition, self-reliance, the private sector, and reductions in public spending as well as it often being cloaked in a veil of patriotism, neoliberalism explicitly rejects notions of community, as best summed-up in Prime Minister Margaret Thatcher’s now infamous dictum on society: “There is no such thing! There are individual men and women and there are families and no government can do anything except through people and people look to themselves first” (Thatcher [1987] 2016). Decades later, scholars have suggested that this competitive individualistic philosophy has been instituted through neoliberal policies (Braedley and Luxton 2010), leading Loic Wacquant (2009: 306–307) to note that neoliberalism fosters a “cultural trope of

individual responsibility which invades all spheres of life.” One area where this increased individualism may have a negative impact on society is through an increase in violence.

NEOLIBERALISM AND VIOLENCE

As neoliberalism has spread across the globe throughout the last four decades, some have argued that similar patterns of violence emerged as a result of leaving people’s economic and social welfare to be determined primarily by market forces (Green 2011). Alvarado and Massey (2010: 139) discuss this process, suggesting that violence is increasing in some parts of the globe because of the consolidation of land ownership and the “mechanization of production, which together create a population of economically marginalized and socially displaced agrarian workers.” Alvarado and Massey (2010: 140) suggest that “these dislocations are often accompanied by violent acts, as elites use force to impose market-oriented polices from above and the poor resist these impositions.” The end result in many agricultural nations is the loss of jobs, which pushes people into “various black-market activities, including crime, as a means of survival” (Alvarado and Massey 2010: 140). In short, the expansion of neoliberalization creates violence through the transformation of economies, similar to what Durkheim (1893) observed during the industrial revolution. However, the unique nature of neoliberalism, according to Alvarado and Massey (2010), encourages violence through the top-down implementation of market-based polices that cause the numbers of marginalized people to swell (see also Canterbury 2005; Springer 2009, 2011).

Research that links neoliberalism, violence, and crime often focuses on structural adjustment programs (SAPs), loans nations receive from international financial institutions like the International Monetary Fund (IMF), that require a set of neoliberal economic reforms the receiving nation must implement that are designed to generate economic growth. These reforms include “currency devaluation, the removal/reduction of the state from the workings of the economy, the elimination of subsidies in an attempt to reduce expenditures, and trade liberalisation” (Riddell 1992). Included in many SAPs are conditions that reduce employment opportunities for the poor and cut government funding for education, health, and welfare programs, which research has demonstrated worsens human rights’ practices (Rodwan and Cingranelli 2006). Examples of this are varied. Adekanye (1995) has shown how SAPs have increased ethnic tensions in several African nations, while Kaiser (1996) links SAPs with religious and racial tensions in Tanzania. Romo (2002) has argued that SAPs have caused economic growth to slow, causing poverty, unemployment, and crime (including homicide) to increase in Kenya, whereas Sanchez (2006) discovered a large increase in the crime rates of Mexico and Costa Rica after structural adjustment. Increases in violence due to SAPs have not only been found in street crimes; governments are also prone to upsurges in violence and criminal activity. Rodwan and Cingranelli (2006) found that the governments of nations that receive SAPs were more likely to engage in torture, political imprisonment, extrajudicial killing, and disappearances. In sum, research suggests that economic reforms based on neoliberal thought may increase violence and crime. We posit that these findings may extend to homicide.

NEOLIBERALISM AND HOMICIDE

A longitudinal analysis of homicide data across the developed world demonstrates that over the centuries homicide has become less prevalent. Homicide has consistently declined through recent decades, although that decline is not universal. For example, the rate of homicide began to increase in the United States during the 1970s, again peaking in the early 1990s before decelerating to rates characteristic of the 1950s. The spike in homicide coincided with the advent of neoliberal policies in the 1980s under President Ronald Reagan in the United States and Thatcher in the United Kingdom. During this period the competitive forces of the market were unleashed in a manner not seen since the end of World War II and, arguably, since the eve of World War I.

As a result of these neoliberal policies vast swaths of urban Britain were subject to market discipline and saw their industries close. Once proud industrial settlements in the north of England saw skilled work in engineering replaced by jobs in the tertiary sector at best, or, as was often the case, the queue at the local unemployment office. Such an ideological experiment was likewise conducted in the United States, and the fate of the rust belt, for example, echoes the British experience in terms of its effects and social disintegration (Matthews, Maume, and Miller 2001).

It was in such areas most negatively impacted by neoliberalism that a feeling of disenchantment took root. Life chances seemed minimal for individuals and their children. Hence, neoliberalism sowed the seeds for general incivility and violence, sometimes leading to homicide. In sum, the introduction of neoliberal policies in the United States and United Kingdom in the 1980s is correlated with an “explosion” of crime, particularly violent crime (Reiner 2007; Winlow and Hall 2006). It has been noted that under such conditions of socio-economic disruption and competitive individualism caused by neoliberalism, increases in the homicide rate might be expected (Hall and McLean 2009).

Nevertheless, there is a school of thought that claims that neoliberalism *does not* lead to increased violence or incivility. It has been argued that neoliberalism alone does not explain rising crime. Moreover, Bjørnskov (2015) has argued that there is no direct link between neoliberalism and homicide based on a panel study of US states.

The majority of literature on neoliberalism, however, suggests that a significantly greater number of individuals show a tendency to become involved in more serious forms of violence as neoliberal policies are put into place. Therefore, we suggest the following hypothesis, which we test in this work: *Nations with higher neoliberalism scores will also have higher homicide rates.* We call this hypothesis the “cross-national neoliberalism-homicide hypothesis.”

METHODS

We test the neoliberalism-homicide hypothesis quantitatively by examining the statistical relationship between neoliberalism and homicide using cross-national data and ordinary least squares (OLS) regression analyses of homicide rates on neoliberalism index scores (Fraser Institute’s *Economic Freedom World Index [EFWI]* and the Heritage Foundation’s *Index of*

Economic Freedom [IEF]). We also examine the relationship between homicide and components of each neoliberalism index to see if subcomponents of neoliberalism may be related to homicide. OLS allows us to examine the neoliberalism-homicide hypothesis while controlling for other important variables that may also explain cross-national variation in homicide. As a result, we provide a relatively demanding and exhaustive empirical examination of the neoliberalism-homicide hypothesis.

Data on neoliberalism, homicide, and controls are gathered for a sample of 142 nations (see Appendix A). All of the variables used in our statistical models are described below. Because cross-national crime data are notoriously difficult to gather, these 142 nations were selected because of their data availability. We now turn to the description of those variables and the approach used to test our hypothesis.

Dependent Variable

Homicide Rate. The dependent variable is the intentional homicide rate. Data on homicides were obtained from the United Nations' Office on Drugs and Crime's International Homicide Statistics Database (2014). These data measure all recorded "unlawful deaths purposefully inflicted on a person by another person" (UN Office on Drugs and Crime 2014: 109). The number of homicides were then divided by the total resident population of each nation as reported by the World Bank (2018). To aid in the interpretation of coefficients in our analysis we multiplied this proportion by 100,000. The resulting variable represents the number of homicides per 100,000 residents. Finally, to ensure an accurate picture of national homicide rates we took the average annual homicide rate using three years of data (2013–2015). This smoothing method helped diminish the statistical impact of outliers in our sample that are a result of extreme annual fluctuations for any particular nation.

Independent Variable

Neoliberalism. To measure neoliberalism, we used the Fraser Institute's *Economic Freedom World Index (EFWI)* and the Heritage Foundation's *Index of Economic Freedom (IEF)*. The *EFWI* "is an effort to identify how closely the institutions and policies of a nation correspond with a limited government ideal, where the government protects property rights and arranges for the provision of a limited set of 'public goods' such as national defense and access to money of sound value, but little beyond these core functions" (Gwartney, Lawson, and Hall 2015: 2). In other words, it measures the degree to which nations use trade and market institutes to allocate resources (Gwartney et al. 2015: 2), which is consistent with the tenets of neoliberalism. The *EFWI* measures economic freedom in five areas—size of government, legal system and security of property rights, sound money, freedom to trade internationally, and regulation—and combines them into a single index score ranging from 0 (absence of neoliberalism) to 10 (perfect neoliberalism). While the *EFWI* is not widely used by scholars, it has nevertheless been used to study issues such as the relationships between economic freedom and foreign direct investment (Pearson, Nyonna, and Kim 2012) and government expenditures (Sanz and Velázquez 2007). For the countries examined in this analysis, *EFWI* scores

range from 3.3 (Venezuela) to 9.0 (Hong Kong), with a mean economic freedom score of 6.9 (std. dev. = 0.97). The most neoliberal nations in these data according to the *EFWI* are Hong Kong, Singapore, and New Zealand while the least neoliberal nations included in this analysis are Venezuela, Argentina, and the Republic of Congo.

The *IEF* measures the degree to which “individuals are free to work, produce, consume, and invest in any way they please [and] the extent to which governments allow labor, capital, and goods to move freely, and refrain from coercion or constraint of liberty beyond the extent necessary to protect and maintain liberty itself.” Again, this index is harmonious with the neoliberal doctrine. The *IEF* covers 10 aspects of freedom in 2014: property rights, government integrity, tax burden, government spending, business freedom, labor freedom, monetary freedom, trade freedom, investment freedom, and financial freedom. These 10 items are combined into a single index score ranging from 0 (absence of neoliberalism) to 100 (perfect neoliberalism). The *IEF* is widely used by researchers in the social sciences and has been referenced thousands of times in the academic literature (Miller and Holmes 2015). For the countries examined in this analysis, *IEF* scores range from 1 (North Korea) to 90.1 (Hong Kong), with a mean economic freedom score of 61.1 (std. dev. = 11.6). The most neoliberal nations in these data according to the *IEF* are Hong Kong, Singapore, and Australia while the least neoliberal nations included in this analysis are North Korea, Venezuela, and Eritrea (Eastern Africa).

Control Variables

When we test the neoliberalism-homicide hypothesis we control for other potential causes of homicide rates identified as important in the previous cross-national literature. In particular, we control for infant mortality, gross domestic product per capita, income inequality, unemployment, democracy, population size, age structure, percentage of females, and urbanization. We describe each of these controls below.

Infant Mortality. Pridemore (2008, 2011) has made a convincing case that infant mortality should be used as a measure of absolute deprivation (i.e., poverty) in cross-national homicide studies. We include the infant mortality rate, the number of infants who die before age 1 per 1,000 live births, to control for the level of poverty in a nation (World Bank 2018).

GDP per Capita. To account for the level of economic modernization across countries, we use each nation’s GDP per capita, measured in thousands of US dollars (World Bank 2018).

Gini Index. The Gini index (World Bank 2018) is a frequently used measure of income inequality (i.e., relative deprivation) in social science research. Due to the high degree of missing Gini index data, we measure Gini in 2014 but replace missing index values with Gini estimates for nations in 2013 or 2015 if such estimates exist.

Percentage Unemployed. Increases in unemployment have also been linked with cross-national homicide rates (see Krohn 1976; Wilson 2001). We therefore include the percentage of the population that is unemployed in 2014 in our analyses (World Bank 2018).

Democracy. Research has shown that a nation’s political structure may impact its amount of homicide (Lin 2007; Stamatel 2009). To test the effect of democracy we use Freedom House’s Political Rights Index (PRI) in 2014. The PRI is a seven-point scale measuring the

level of democracy in a nation (1 = most democratic, 7 = least democratic; Freedom House 2016). For interpretation purposes, we reverse-coded the PRI so that high values correspond with more democratic nations.

Population Characteristics. We control for three population indicators in 2014 including (1) the total annual population for each nation, (2) the percentage of the population age 0–14,¹ and (3) the percentage of the population that is female (World Bank 2018).

Percentage Urban. We control for the percentage of a nation's population that live in urban areas in 2014 (World Bank 2018). Previous studies have found that urbanization and homicide rates are positively related (e.g., Fischer 1975; Hoskin 2001). Additionally, changes in urbanization can be conceptualized as another measure of modernization. As nations modernize, more people live in cities where the majority of economic opportunities are located, compared to rural areas.

Analytic Strategy

To test the neoliberalism-homicide hypothesis we use ordinary least squares (OLS) regression analysis of homicide rates on the *EFWI* and *IEF* neoliberalism indexes as well as the major components of each index. The models are estimated using Stata (V13). An examination of OLS diagnostics suggests that the major statistical assumptions needed to use this procedure are satisfied. First, the models produced normally distributed residuals when the average homicide rate was logged. Moreover, there is little evidence of heteroscedasticity in the models estimated in Tables 1 and 2. Our initial inspection of the correlation matrix (Appendix B) and variance inflation factor (VIF) scores suggest that multicollinearity is also not a problem for the models we estimate. Specifically, the largest bivariate correlation we observed for any of the dependent variables was 0.89 (between *percentage 0–14 years old* and *infant mortality*). As a result, to determine if multicollinearity might be a problem when these two variables were simultaneously used to predict homicide, we estimated the models removing *democracy*. The model without *democracy* produced substantively similar results to those reported in Table 1, suggesting that multicollinearity is not a problem in these data in the models we estimate. However, notes that variance inflation factor (VIF) scores greater than four may indicate harmful multicollinearity, a condition that may inflate standard errors and produce unstable coefficients. Thus, we also examined the VIF scores for all models. The only VIF score that exceeded four was for the variable *percentage young* (VIF = 8.1). However, when *percentage young* was removed from the model, none of the remaining VIF scores exceeded 3.3 and the average VIF score across all models dropped to a modest 2.1; the coefficients and standard errors in the models remained stable. As a result, we suggest that multicollinearity is not a problem for this particular cross-national analysis.

We begin our statistical examination of the neoliberalism-homicide hypothesis by estimating four cross-national homicide models. Models 1 and 2 in Table 1 estimate only the effects of *EFWI* (Model 1) and *IEF* (Model 2) on homicide rates. Models 3 and 4 include these two neoliberalism indicators along with all of the control variables to predict homicide rates. The models in Tables 2 and 3 contain OLS regressions of each neoliberalism indicator on homicide rates controlling for *infant mortality*, *GDP per capita*, *Gini index*, *percentage unemployed*, *population*, *percentage 0–14 years old*, *percentage Female*, *percentage Urban*,

TABLE 1
 OLS Regression of the Natural Log of Homicide on Neoliberalism and Controls (2014)

	Natural log of homicide			
	<i>Model 1 Heritage (IEF) Coef. (Std. Error)</i>	<i>Model 2 Frasier (EFWI) Coef. (Std. Error)</i>	<i>Model 3 Heritage & Controls Coef. (Std. Error)</i>	<i>Model 4 Frasier & Controls Coef. (Std. Error)</i>
<i>Neoliberalism</i>	-0.0449*** (0.00839)	-0.603*** (0.105)	0.00130 (0.0126)	0.0609 (0.129)
<i>Infant mortality</i>			-0.0128 (0.00783)	-0.0110 (0.00867)
<i>GDP per capita</i>			-0.0247*** (0.00701)	-0.0258*** (0.00702)
<i>Gini index</i>			0.0632*** (0.0117)	0.0629*** (0.0120)
<i>% unemployed</i>			-0.0150 (0.0134)	-0.0171 (0.0141)
<i>Population</i>			-0.000241 (0.000421)	-0.000244 (0.000429)
<i>% 0-14 years old</i>			0.0588** (0.0191)	0.0562** (0.0200)
<i>% female</i>			0.216** (0.0723)	0.216** (0.0756)
<i>% urban</i>			0.0142** (0.00533)	0.0161** (0.00592)
<i>Democracy</i>			-0.0419 (0.0620)	-0.0600 (0.0651)
<i>Constant</i>	4.003*** (0.522)	5.392*** (0.732)	-13.76*** (3.992)	-14.19** (4.163)
Nations	1351	125 ²	93	90
R ²	0.177	0.210	0.714	0.713

¹When Model 1 is estimated using only the 93 nations in Model 3, the regression coefficient for neoliberalism is -0.0513 (se = 0.0121; $t = 4.42$; $p < 0.001$).²

²When Model 1 is estimated using only the 90 nations in Model 4, the regression coefficient for neoliberalism is -0.4494 (se = 0.0138; $t = 3.65$; $p < 0.001$).

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

and *Democracy*. The results for control variables are not presented in these tables for simplicity (but are available on request). However, the coefficients and standard errors for these control variables remain essentially identical to those presented in Table 1 (Models 3 and 4).

RESULTS

Table 1 reports the results of the four OLS models of homicide rate. We will focus our interpretations on the neoliberalism indicators. In Table 1 Model 1, the *IEF* is negatively associated with homicide rates ($b = -0.449$; $p < 0.05$), suggesting that an increase in economic freedom on the order of a 1-unit change across nations for this particular 100-point neoliberalism index is associated with a decrease in the natural log of homicide rates of approximately 0.045. This finding is statistically significant and *contrary* to the

TABLE 2
 OLS Coefficients and Standard Errors (in Parentheses) for the Natural Log of Homicide on Ten Subcomponents of the Heritage *Index of Economic Freedom* (2014)¹

	Natural log of homicide				
	<i>Model 1</i> <i>Property rights</i>	<i>Model 2</i> <i>Government integrity</i>	<i>Model 3</i> <i>Tax burden</i>	<i>Model 4</i> <i>Government spending</i>	<i>Model 5</i> <i>Business freedom</i>
<i>Neoliberalism</i>	-0.00573 (0.00609)	-0.0131 (0.00673)	0.0152* (0.00688)	0.00494 (0.00454)	-0.00104 (0.00776)
Constant	-13.17** (3.973)	-11.97** (3.965)	-15.70*** (3.887)	-14.26*** (3.900)	-13.90*** (3.947)
Nations	92	94	94	94	94
R ²	0.716	0.725	0.728	0.716	0.712
	Natural log of homicide				
	<i>Model 6</i> <i>Labor freedom</i>	<i>Model 7</i> <i>Monetary freedom</i>	<i>Model 8</i> <i>Trade freedom</i>	<i>Model 9</i> <i>Investment freedom</i>	<i>Model 10</i> <i>Financial freedom</i>
<i>Neoliberalism</i>	0.000507 (0.00470)	-0.00542 (0.0117)	-0.000855 (0.0119)	-0.00159 (0.00542)	0.00200 (0.00581)
Constant	-13.98*** (3.918)	-13.37** (4.119)	-13.71*** (3.944)	-13.76*** (3.928)	-13.83*** (3.941)
Nations	94	94	93	93	93
R ²	0.712	0.713	0.714	0.714	0.714

¹All models are adjusted for infant mortality, GDP per capita, Gini index, percentage unemployed, Population, percentage 0–14 years old, percentage female, percentage urban, and democracy.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

TABLE 3
 OLS Coefficients and Standard Errors (in Parentheses) for the Natural Log of Homicide on Five Subcomponents of the Frasier *Economic Freedom of the World Index* (2014).¹

	Natural log of homicide				
	<i>Model 1: Legal System</i>	<i>Model 2: Size of Government</i>	<i>Model 3: Security of Property Rights</i>	<i>Model 4: Sound Money</i>	<i>Model 5: Freedom to Trade</i>
<i>Neoliberalism</i>	-0.147 (0.0860)	0.138* (0.0613)	0.0221 (0.0836)	0.0177 (0.0889)	-0.0282 (0.109)
Constant	-12.69** (4.056)	-15.33*** (4.014)	-13.84** (4.083)	-13.91** (4.128)	-13.65** (4.113)
Nations	90	90	90	90	90
R ²	0.723	0.730	0.713	0.713	0.713

¹All models are adjusted for infant mortality, GDP per capita, Gini index, percentage unemployed, Population, percentage 0–14 years old, percentage female, percentage urban, and democracy.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

neoliberalism-homicide hypothesis. Here it appears that neoliberalism’s effort to promote more expansive individual freedoms has a positive (crime reduction) impact on homicide across nations. We discover similar evidence for the *EFWI*. Specifically, in Model 2 the correlation between neoliberalism and homicide rates is also negative and significant ($b = -0.603$; $p < 0.05$).² We see that across nations an increase in neoliberalism on the order of 1

unit is associated with a decrease in the natural log of homicide rates of approximately 0.6 ($p < 0.05$). This finding is, again, *contrary* to the neoliberalism-homicide hypothesis, but fairly consistent with the results in Model 2. Once controls are added to the cross-national analysis (Model 3), the *IEF* and *EFWI* can no longer be considered adequate predictors of homicide. Therefore, based on the data in Table 1 that shows no association between overall neoliberalism scores and homicide rates when controls are included in the analysis, neoliberalism-homicide hypothesis 1 is not supported.

We investigate the relationship between neoliberalism and homicide in more detail by replicating Models 3 and 4 in Table 1 for each subcomponent of neoliberalism. The first set of results are for the *IEF* and are presented in Table 2, Models 1 to 10. These results examine the individual effects of each of the following components of the *IEF*: (1) property rights, (2) government integrity, (3) tax burden, (4) government spending, (5) business freedom, (6) labor freedom, (7) monetary freedom, (8) trade freedom, (9) investment freedom, and (10) financial freedom. In all cases larger scores represent more neoliberal nations on that particular indicator. These results are interesting and suggest a more nuanced interpretation of the relationship between neoliberalism and homicide. In particular, coefficients are both positive and negative across different indicators. One particular indicator, *tax burden*, is statistically significant ($p < 0.05$). *Tax burden* measures direct taxes “in terms of the top marginal tax rates on individual and corporate incomes, and overall taxes, including all forms of direct and indirect taxation at all levels of government, as a percentage of GDP.” This score is reverse-coded (i.e., subtracted from 100) so that the higher the score, the more freedom and the less tax burden relative to GDP. Model 3 suggests that nations with higher neoliberal tax burdens also tend to have higher homicide rates, even when controlling for other variables known to be correlated with homicide ($b = 0.152$). This finding provides partial support for the neoliberalism-homicide hypothesis in that it suggests threats to the welfare state may limit government spending in ways that promote violent crime. While other neoliberal coefficients in Table 2 are both positive and negative, none are statistically significant.

The second set of results are for the *EFWI* and are presented in Table 3, Models 1 to 5. These results examine *EFWI* subscores: (1) size of government, (2) legal system and security of property rights, (3) sound money, (4) freedom to trade internationally, and (5) regulation. The only neoliberalism subindicator that is statistically significant in any of the models is *size of government*, which indicates a nation’s reliance on politics to allocate resources, goods, and services. Thus, this indicator taps the degree to which markets, rather than government budgets and nations that score higher in this subcategory, tend to have lower levels of government spending, a smaller government, and lower marginal tax rates. Again, as a nation adopts more neoliberal policies, this score increases. Model 2 (Table 3) suggests that across nations, as *government size* becomes more neoliberal, the homicide rate increases ($b = 0.138$, $p < 0.05$) even when controlling for other variables that are known to predict cross-national homicide rates. This finding is consistent with the findings in Table 2 and, again, provides partial support for the neoliberalism-homicide hypothesis in that it suggests that threats to the welfare state may promote homicide. Again, while other neoliberal coefficients in Table 2 are both positive and negative, none of the other four neoliberal indicators are statistically significant.

Taken together Tables 1, 2, and 3 paint a rather particular interpretation of the relationship between neoliberalism and homicide. That is, examining the neoliberalism-homicide hypothesis is not as straightforward as we imagined. For example, some aspects of neoliberalism may be positively related to homicide, while other aspects negatively or unrelated to homicide. The OLS analysis of the neoliberalism-homicide hypothesis suggests that it is only government spending and government size that matter and seem to be positively related to homicide, even after testing each indicator individually and controlling for other variables known to predict homicide rates. To investigate this issue in more detail we conducted additional post hoc analyses to examine a potential causal model of neoliberalism on homicide. That is, as we noted previously, neoliberal policies tend to undermine the welfare state by limiting social welfare programs and reducing spending. Therefore, we focus on government size and spending to see if neoliberalism may be impacting income inequality and poverty, which in turn may be correlated with homicide. While we did not specifically hypothesize that these particular relationships existed in our data, such a finding would be supported in the literature.

POST HOC ANALYSIS

The diversity of findings concerning neoliberal subindicators in Tables 2 and 3 provide some important observations concerning the neoliberalism-homicide hypothesis and suggest a starting point for additional post hoc analysis. We therefore draw upon our previous findings to examine the potential for income inequality (*Gini*) and poverty (*infant mortality*) to act as mediating factors between neoliberalism subindicators and homicide rates. This potential relationship, while never directly specified empirically or theoretically, is consistent with the literature on potential reasons that neoliberalism and homicide may be related. We do this through a series of path models (not shown) that estimate the direct and indirect effects of neoliberal subindicators on homicide. While we tested these mediating relationships on each neoliberalism indicator to determine if suppression or mediation effects might emerge, we present findings only for statistically significant results. Moreover, we focus on the potential mediating variables *Gini* and *infant mortality* since, theoretically, neoliberalism is believed to create both inequality and poverty, which in turn are believed to be related to homicide. When we included *percentage unemployed* in the models it was not related to homicide or neoliberal indexes. As a result, it was dropped from further analyses. We estimate each potential mediating model and find that only three neoliberal subindicators may be mediated by *Gini* and *infant mortality*: (1) *government spending*, (2) *tax burden* from the *EFI*, and (3) *government size* from the *EFWI*.

We present these results in two path models below (estimated by SEM in Stata V13) and emphasize their exploratory nature. Our analysis begins with Figure 1. That model diagrams the standardized coefficients for paths between *government spending*, *tax burden*, *Gini*, *infant mortality* and *homicide*. All paths in Figure 1 are statistically significant ($p < 0.05$), except the path between *tax burden* and *poverty*. As predicted by previous cross-national studies, both *Gini* and *infant mortality* are positive predictors of homicide rates. Moreover, as we discovered in Table 2, *government spending* has a direct and positive effect on homicide rates.

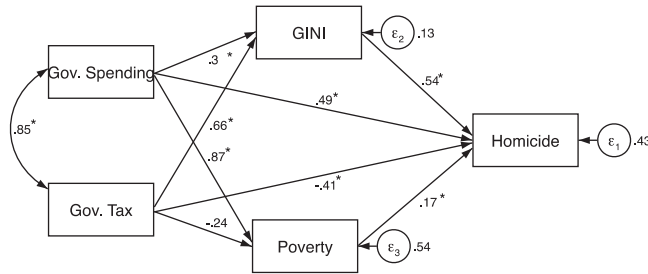


FIGURE 1 Path model of the hypothesized relationship between neoliberal tax policies and spending, income inequality, infant mortality, and homicide rates, 2014.

Results for the path analysis ($N = 90$). Standardized coefficients are presented. * = significant at $p < 0.05$. Chi-square = 0.59 ($df = 1$); root mean square error of approximation = 0.001; Comparative Fit Index, CFI = 0.99; ε = error.

That is, as government spending becomes more neoliberal, homicide rates increase (beta = 0.49, $p < 0.05$). However, Figure 1 also indicates that *government spending* has an indirect effect on homicide through income *Gini* and poverty (*infant mortality*). That is, as government spending becomes more neoliberal, income inequality (beta = 0.3, $p < 0.05$) and infant mortality (beta = 0.87, $p < 0.05$) increase. This increase, in turn, is positively related to homicide rates (beta *Gini* = 0.54, $p < 0.05$; beta *infant mortality* = 0.17, $p < 0.15$), suggesting an indirect impact of neoliberalism on homicide. Thus, it appears that as government spending becomes more neoliberal in nature it increases homicide directly and indirectly. This exploratory finding is consistent with theoretical interpretations of neoliberalism that suggest it promotes high levels of income inequality (Rodwan and Cingranelli 2006) and economic deprivation (Chomsky 1999) as well as research on homicide suggesting an association between relative deprivation, absolute deprivation, and homicide (Pratt and Godsey 2003).

The results in Figure 1 for *tax burden* are also interesting, and they elaborate on the findings in Table 2. Specifically, while more neoliberal tax policy appears to *increase* income inequality (beta = 0.66, $p < 0.05$), which leads to more homicide, it also directly reduces homicide (beta = -0.41). Thus, in the path model we have diagrammed that the total impact of neoliberal taxes on homicide appears relatively insignificant (i.e., total direct and indirect standardized effect = -0.05). That is, unlike neoliberal government spending, which appears to be directly and indirectly counterproductive, when it comes to homicide rates neoliberal tax policy may be indirectly harmful but directly beneficial. The suggestion that neoliberal indicators may have contradictory impacts on homicide (i.e., serve as suppressor variables) makes an examination of the effect of neoliberalism on homicide complex at best.

The results of *government size*, *Gini*, *infant mortality*, and *homicide* are presented in the path model in Figure 2. Again, the results paint an interesting relationship between neoliberalism and homicide rates. Specifically, it is the indirect impact of *government size* on *homicide* that is important. That is, as *government size* (a combination of spending, taxes, and services) becomes more neoliberal, both *income inequality* (*Gini*; beta = 0.94, $p < 0.05$) and poverty (*infant mortality*; beta = 0.54, $p < 0.54$) increase. As in Figure 1, both *Gini* and *infant mortality* are associated with an increase in homicide rates across nations. Again, this finding is partially consistent with the variable *government spending* in Figure 1 and suggests

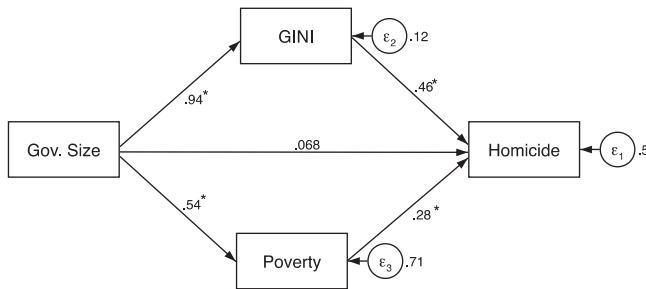


FIGURE 2 Path model of the hypothesized relationship between neoliberal government size, income inequality, infant mortality, and homicide rates, 2014. Results for the path analysis ($N=90$). Standardized coefficients are presented. * = significant at $p < 0.05$. Chi-square = 0.59 (df = 1); root mean square error of approximation = 0.001; Comparative Fit Index, CFI = 0.99; ε = error.

Results for the path analysis ($N=90$). Standardized coefficients are presented. * = significant at $p < 0.05$. Chi-square = 1.23 (df = 1); root mean square error of approximation = 0.04; Comparative Fit Index, CFI = 0.99; ε = error.

that the impact of neoliberalism on homicide is likely complex and occurs through economic outcomes that are a product of government policies. Finally, we emphasize that these results should be viewed with caution as they are specific to these particular nations at this particular time (2014). How these models might look if estimated using other data of neoliberalism and homicide is open to investigation. However, these results suggest a starting point for future studies.

DISCUSSION AND CONCLUSION

In these analyses we draw upon the theoretical literature on neoliberalism and homicide to suggest a cross-national neoliberalism-homicide hypothesis that we tested empirically using cross-national data and neoliberal indexes from the Fraser Institute and the Heritage Foundation in combination with homicide data from the UN Office on Drugs and Crime. We find partial support for that hypothesis. Specifically, while overall indexes of neoliberalism are unrelated to homicide rates when control variables are included in the analysis, two sub-indicators of neoliberalism are related: *government size* (from the *EFWI*) and *tax burden* (from the *IEF*). Both of these indicators appear to add some explanatory power to our cross-national homicide models and are consistent with critical examinations of neoliberalism. When we explore the relationships between neoliberalism indexes and their subindicators and homicide in more detail, we discover that three neoliberalism indicators stand out as being potentially important: *government size* (from the *EFWI*) as well as *tax burden* and *Government Spending* (from the *IEF*). These three neoliberalism indicators appear to have indirect effects on homicide rates across nations. In particular, as nations become more neoliberal in their government spending, government size, and tax burden, their economic inequality (as measured by *Gini*) increases. These increases in Gini are then correlated with increases in homicide. This finding is similar to that for *government spending* and *tax burden* in the case of poverty (*infant mortality*). That is, as *government spending* and *tax burden*

become more neoliberal nations appear to have higher rates of *infant mortality*, which, in turn, appears to have a positive influence on homicide. We find, however, that the direct effects of tax burden on homicide rates are negative, suggesting that it could reduce homicide as it becomes more neoliberal across nations. When combined with the indirect effects, the total impact of a neoliberal tax structure is negligible in these models.

What do our results mean? First, it appears that general statements about the relationship between neoliberalism and homicide are inappropriate. In particular, it appears that much of the potential impact of neoliberalism on homicide rates that we uncover has to do with neoliberal government policies concerning size, expenditures, and taxes on economic inequality and poverty. This suggests that governments adopting these sets of policies may be unintentionally creating conditions for higher rates of homicide. Thus, we recommend that future studies focus more empirical attention on these particular indicators at different points of time, over time, and within nations to make more substantial policy recommendations. Second, we caution readers with respect to the potential OLS regression and path models we produce. These models need to be viewed in the context of the data on which they are based. It might be that the neoliberal changes that have occurred worldwide over the past half century have already had an impact on homicide and it is only now, in later neoliberal stages, that government policies regarding size of government, spending, and taxes are having an additional impact on homicide. That is, by 2014 many nations had already fully adopted neoliberal policies that might be hypothesized to generate the initial increase in homicide. As a result, the large impact of neoliberal policies on violence may be left unanalyzed. Unfortunately, the lack of available reliable data makes it difficult to determine the nature of the relationship between neoliberalism and homicide within nations over the past half century. However, we recognize that such a relationship might exist. As a result, we can therefore not rule out that other subindicators of neoliberalism may demonstrate an associate if measured at a different time in history.

In the end, our analysis lends partial support to the literature that suggests neoliberalism and the government policies crafted based on this philosophy will lead to more violence in the form of homicide (e.g., Adekanye 1995; Harvey 2005; Kaiser 1996; Rodwan and Cingranelli 2006; Romo 2002; Sanchez 2006). We believe that this analysis is important because it helps specify which aspects of neoliberalism may matter and therefore may pave the way for future studies of neoliberalism and homicide.

Specifically, as we have pointed out, Messner and Rosenfeld (1994) argue that the emphasis on noneconomic institutions combined with the weakening of social controls associated with noneconomic social institutions may lead to higher homicide rates. We suggest that neoliberalism indicators associated with diminished government size, lower government spending, and “tax cuts” tend to also be justified based on the value of economic efficiency and growth. Such policies, we argue, lead to conditions of poverty and inequality that have long been associated with homicide. Importantly, these neoliberal policies that tend to reduce government size and spending also serve to shrink many of the government-supported social institutions and programs that may prevent violence. As a result, we see our hypothesis as providing further context and additional evidence for neo-Marxist and economic inequality theories such as Messner and Rosenfeld’s (1997) institutional anomie theory that points out how the devastation of noneconomic institutions may be related to crime.

We would like to acknowledge two important limitations to our study. First, cross-national homicide studies often suffer from missing data. Missing data have significant implications for our analysis of the neoliberalism-homicide hypothesis. That is, the sample we examine is as low as 90 nations in some of the models we estimated (e.g., Model 4, Table 1 and Table 3) because of missing data on homicide, economic inequality, and/or neoliberalism indicators. Given that there are 195 countries in existence, our theoretical proposition that neoliberalism increases homicide should be subject to considerable scrutiny and skepticism as a result of missing data. The reason for this is simple: the nations we study that are listed in Appendix A are disproportionately modernized Western nations. Nations that do not appear in Appendix A tend to have higher than average levels of economic inequality, poverty, and violence (Neapolitan 1997). However, these very same countries may also have lower scores on neoliberalism indicators. Take nations in Africa as an example. Many African countries are not “modernized” in the orthodox sense of the term. For instance, Moore (2001: 910) argues that global forces in many African countries are different from the rest of the world in that “capitalism and modernity are starting over again.” This traditional development and high levels of inequality may lead to elevated levels of violence. As a result, African countries that are not listed in Appendix A may be theoretically unique in that they tend to score low on neoliberalism but high on violence. Future researchers might examine this issue in greater detail as an exception to the neoliberalism-homicide hypothesis.

Second, while the *Economic Freedom of the World Index* and the *Index of Economic Freedom* are likely to reflect the concept of neoliberalism, they were not created to specifically measure this concept. Instead, both indexes were created for policy-making purposes rather than social science purposes. Moreover, some scholars observe that the operationalisation of neoliberalism needs to be more carefully considered (e.g., d’Albergo 2016). As a result, we suggest that future research could focus on analyzing the relationship between neoliberalism and homicide by constructing and examining alternative measures of neoliberalism.

We conclude by suggesting that neoliberalism is one of the most salient features of the world economy over the last four decades. Research has demonstrated that neoliberal policies can lead to increases in violent behavior. We find that when it comes to some specific government policies, higher levels of neoliberalism on those indicators are directly and indirectly associated with higher homicide rates between nations, providing some support to that body of literature. We encourage future research that seeks to further unpack the relationship between neoliberalism and violence because national governments, international financial institutions, and multinational corporations have ensured that the neoliberal agenda is here to stay for the foreseeable future.

NOTES

1. The original models also included percentage of the population age 15–64; however, it needed to be removed due to multicollinearity. Replacing the percentage 0–14 years old with the percentage 15–64 does not meaningfully change the results. Additionally, to measure the noneconomic aspects of the modernization process, we created a principle component index of the following variables: life expectancy, internet users per 1,000, telephones per 1,000 people, and energy consumption measured as kilograms of oil equivalent to energy use per

capita (World Bank 2018). The modernization indicator, however, was highly collinear with other independent variables and was therefore removed from the models.

2. This *EFWI* is measured on a 10-point scale (rather than the 100-point scale for the *IEF*) and therefore the coefficient for the *EFWI* should be 10 times larger than the coefficient for the *IEF*.

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APPENDIX

A. List of nations in the analysis ($n = 142$)

Albania	Czech Republic	Jordan	Republic of Korea
Algeria	South Korea	Kazakhstan	Republic of Moldova
Angola	Denmark	Kenya	Romania
Argentina	Djibouti	Kosovo	Russian Federation
Armenia	Dominican Republic	Kyrgyz Republic	Rwanda
Australia	Ecuador	Lao PDR	Samoa
Austria	El Salvador	Latvia	Saudi Arabia
Azerbaijan	Equatorial Guinea	Lebanon	Senegal
Bangladesh	Eritrea	Libya	Serbia
Barbados	Estonia	Liechtenstein	Sierra Leone
Belarus	Ethiopia	Lithuania	Singapore
Belgium	Finland	Luxembourg	Slovak Republic
Belize	France	Macedonia, FYR	Slovenia
Benin	Gabon	Maldives	Somalia
Bhutan	Gambia	Mali	South Africa
Bosnia & Herzegovina	Georgia	Malta	Spain
Brazil	Germany	Mauritania	Sri Lanka
Brunei Darussalam	Greece	Mexico	Sudan
Bulgaria	Guatemala	Micronesia	Suriname
Burundi	Guinea	Mongolia	Swaziland
Cabo Verde	Guinea-Bissau	Montenegro	Sweden
Cameroon	Guyana	Morocco	Switzerland
Canada	Honduras	Myanmar	Tajikistan
Central African Republic	Hong Kong	Nepal	Tanzania
Chad	Hungary	Netherlands	Thailand
Chile	Iceland	New Zealand	Togo
China	India	Nigeria	Trinidad and Tobago
Colombia	Indonesia	Norway	Turkmenistan
Comoros	Iran	Panama	Uganda
Congo, Dem. R.	Iraq	Paraguay	United Arab Emirates
Congo, Rep. of	Ireland	Peru	United Kingdom
Costa Rica	Israel	Philippines	United States
Cote d'Ivoire	Italy	Poland	Uruguay
Croatia	Jamaica	Portugal	Uzbekistan
Cyprus	Japan	Qatar	Vanuatu
			Venezuela
			Yemen

B. Pearson product moment correlations (*r*) for variables in the analysis

	1	2	3	4	5	6	7	8	9	10	11	12
1. Ln homicide rate	1.00											
2. <i>IEF</i>	-0.40	1.00										
3. <i>EFWI</i>	-0.37	0.88	1.00									
4. Infant mortality	0.45	-0.65	-0.64	1.00								
5. GDP per capita	-0.60	0.67	0.55	-0.64	1.00							
6. Gini	0.70	-0.28	-0.30	0.33	-0.43	1.00						
7. % unemployed	-0.17	0.06	0.09	-0.25	0.00	-0.08	1.00					
8. Population	-0.07	-0.15	-0.13	0.02	-0.07	0.09	-0.15	1.00				
9. % 0-14 years old	0.59	-0.62	-0.59	0.89	-0.66	0.47	-0.33	-0.03	1.00			
10. % female	0.02	0.27	0.29	-0.33	0.11	-0.11	0.16	-0.30	-0.37	1.00		
11. % urban	-0.22	0.52	0.34	-0.63	0.66	-0.10	0.12	-0.10	-0.60	-0.60	1.00	
12. Democracy	0.41	-0.71	-0.62	0.63	-0.66	0.24	-0.16	0.15	0.64	-0.25	-0.60	1.00

C. Descriptive statistics for variables in the analysis

<i>Variable</i>	<i>Observations</i>	<i>Mean</i>	<i>Standard</i>	<i>Min.</i>	<i>Max.</i>
Ln homicide rate	142	1.26	1.21	-1.31	4.29
Homicide rate	142	7.37	11.55	0.27	73.41
<i>IEF</i>	135	61.12	11.57	1.00	90.10
Property	136	44.23	25.49	5.00	95.00
Government	140	40.54	23.18	5.00	94.00
Tax burden	139	76.88	14.47	0.00	99.90
Spending	139	62.03	23.82	0.00	93.60
Business	139	65.82	17.64	0.00	98.90
Labor	139	61.62	17.13	0.00	97.20
Money	139	73.82	9.88	0.00	87.50
Trade	137	75.45	13.13	0.00	90.00
Investment	139	57.55	23.94	0.00	95.00
Financial	137	50.88	19.57	0.00	90.00
<i>EFWI</i>	125	6.88	0.97	3.28	8.99
Government	125	6.38	1.34	3.46	9.46
Legal	125	5.34	1.67	1.62	8.88
Money	125	8.42	1.30	3.19	9.84
Trade	125	7.18	1.30	2.99	9.49
Regulation	125	7.06	1.03	3.04	9.42
Infant mortality	139	22.96	22.46	1.70	93.50
GDP per capita	137	20.82	21.33	0.63	127.31
Gini	97	37.04	7.83	25.60	63.40
% unemployed	139	8.60	6.01	0.20	29.60
Population	141	45.29	161.71	0.04	1364.27
% 0-14 years old	139	26.98	10.74	11.06	48.50
% female	139	50.03	3.33	24.39	54.13
% urban	140	59.32	22.88	8.55	100.00
Democracy	141	3.33	2.03	1.00	7.00