Economic Freedom and Violent Crime: What is Revealed by Data at the Metropolitan Statistical Area Level

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Abstract

This study examines the relationship between economic freedom and crime. Our panel data from 2007 to 2017 provides no evidence that overall economic freedom predicts homicide or non-homicide crimes. However, we did find that a larger size of government is associated with higher rates of non-homicide crime. When more resources are allocated by the market process instead of the political process, the lower the non-homicide rate. A further examination of the subcomponents of the economic freedom index yields mixed results, but our results add to the evidence that refute the claims that allocation of resources by the free-market process is responsible for the rise in crime rates. Rather, there is some evidence, albeit little, that shows that market policies and reforms are associated with a decrease in non-homicide crime.

1 Introduction

After two decades of decline, violent crime in the United States is on the rise again, while property crime continues to decline. The increasing crime rate is of concern to policymakers for a number of reasons. Aside from direct impacts such as loss of property and loss of life, residents in higher-crime areas are indirectly, yet negatively impacted via losses associated with property value and mental health, among others. Taylor (1995) found that housing prices are lower in communities with higher crime rates. Baranyi et al. (2021) conducted a systematic review and meta-analysis and concluded that neighborhood crime is an important predictor of mental health.

Because of its negative impact on the well-being of residents, it is not surprising that crime was a key voting issue in the November 2022 midterm elections. A Pew Research Center poll revealed that around 60% of registered voters considered violent crime as an important factor in decisions regarding congressional elections (Gramlich, 2022). Cummins (2009) noted that crime affects election outcomes more at the state level than the federal. Since crime affects elections, politicians have an incentive to offer solutions. Such solutions may be empirically untested and aimed at increasing the politicians' chances of winning at the expense of the well-being of the communities.

This study tests the relationship between violent crime and economic freedom at the metropolitan statistical area (MSA) level. Economic theory suggests that criminals can be viewed as making rational choices just like other economic actors. Becker (1968) and Ehrlich (1973) both theorized that criminals rationally assess the costs and benefits of committing a crime. If the benefits exceed the costs, the criminal is more likely to commit the crime. Becker's (1968) model focuses on the probability of getting caught and the punishment incurred, while Ehrlich (1973) focuses on the market opportunities, modeling illegal activities as a substitute for legal ones.

The policy conclusion that can be drawn from these models is that to curb crime, policymakers need to increase the opportunity cost of committing crime. One way of increasing costs is harsher penalties such as longer prison sentences. Research on the deterrent effect of longer sentences is inconclusive, however (Berger and Scheidegger, 2022). Some research such as that of Lee and McCrary (2005), Chen and Shapiro (2007), and Maurin and Ouss (2009) indicates there is no evidence to support that harsher punishments deter crime. Lee and McCrary (2005) examined the effect of longer sentences. Chen and Shapiro (2007) specifically studied whether inmates housed in higher security institutions are less likely to recidivate; they found no evidence to support that. While the research is inconclusive, the theoretical reasoning is that harsher punishments will add to the opportunity cost of committing an illegal activity.

Another way of increasing the opportunity cost, which is the focus of this paper, is to provide more economic opportunities for citizens. The greater the opportunities available, the costlier it becomes to engage in criminal activities. To investigate this relationship, we used the economic freedom index for US metropolitan areas constructed by Stansel (2019). The index measures the degree to which policies and institutions are supportive of economic freedom. It comprises three main categories, namely the size of government, taxation, and labor market freedom (Stansel, 2019). The intuition linking the three components to economic freedom is that higher government spending implies that the government is allocating more resources relative to the market process, thereby reducing individual freedom to allocate their own resources. Similarly, higher taxes reduce an individual's disposable income, thereby reducing their freedom on how to spend it. Stiffer labor market regulations prevent individuals from engaging in a trade of their choice. The overall measure, known as the Economic Freedom of North America (EFNA) index, combines the three measures. For our analysis, we examined both the effect of the overall index and the effect of the individual areas that make up the index, as well as their subcomponents.

Scholars, such as Klein and Smith (2008), have argued that policies associated with increased economic freedom are responsible for poor human rights conditions. Hall et al. (2015), Boas and Gans-Morse (2009), and Thorsen (2012) specifically asserted that liberalizing policies and reforms are responsible for an increase in homicide rates and other types of violent crime. Wenger and Bonomo (1993), Przeworski (1991), and Schmitt et al. (2006) showed that free-market policies and reforms suppress voters, which leads to various forms of social resistance, including crime. However, as observed by Bjørnskov (2015), such claims are based on very little empirical research. Bjørnskov (2015) formally tested the relationships among homicide, other violent crime, and non-violent crime, and the neoliberal policies measured by the degree of economic freedom across the states. For our analysis we examined the same relationship but at the level of MSAs. Glaeser et al. (1996) and Glaeser and Sacerdote (1999) argued that smaller jurisdictions display extensive variation in crime rates. Freeman (2000) and Levitt (2001) made the same argument, contending that national-level data may cloud the real experience at smaller jurisdictions. Thus, the aggregated state-level results may not hold true for the smaller units, and our study seeks to fill the gap by focusing on MSA-level crime.

A glance at the data shows that the aggregated national-level crime rate does not paint a complete picture of the experience in smaller communities such as MSAs. According to the data we gathered from the Federal Bureau of Investigation's (FBI) Uniform Crime Reporting (UCM), there was much variation among MSAs in their rates of crime - some increased while others decreased. For example, Farmington, New Mexico, recorded the highest increase of about 527 violent crimes per 100,000 people while Sumer, South Carolina, experienced the highest decline of about 1,383 violent crimes per 100,000 people. Overall, about 28% of the MSAs experienced an increase in violent crime.[1]

Our focus was on violent crime rather than property crime. The reason is that our sample period falls in the period prior to 2021 when the FBI assigned crimes on a "hierarchy rule." This meant that in incidents where multiple crimes were committed, the FBI assigned all the committed crimes to the most serious among them. The descending order of the violent crimes are murder and non-negligent manslaughter, rape, robbery, and aggravated assault, followed by the property crimes of burglary, larceny-theft, and motor vehicle theft (United States Department of Justice, Federal Bureau of Investigation, 2017). Thus, despite the shortcoming that crime data suffer from reporting errors, violent crime data offers greater reliability from empirical and practical standpoints than property crime. Soares (2004) argued specifically for homicide data being among the most objective. We chose to further examine the impact of economic freedom on both homicide and

[1]In 2013, the FBI UCR revised the definition of rape which is one of the violent crimes. This might have slightly contributed to the increase in crime rate

non-homicide crimes.

2 Literature Review

This study is not the first use economic freedom as an explanatory variable. Nor is it the first to explore the relationship between economic freedom and crime. The major distinguishing feature of this work is that we used an economic freedom index measure for MSAs, which allows us to study crime at a lower, more specific unit than at the cross-state or cross-country level, which typifies most research of this kind. Crime does not happen in a vacuum, so it is also good to take a peek at how economic freedom explains society outcomes. This next section provides a brief literature review for both non-crime-related and crime-related outcomes.

2.1 Economic Freedom and Non-Crime Related Variables

Volumes of research have been published on the relationship between economic freedom and non-crime related variables, but that is not true for economic freedom and crime. Hall and Lawson (2014) provided a comprehensive review of studies whose authors used economic freedom as an explanatory component for various dependent variables. In a follow-up assessment of 721 articles that use the Economic Freedom of the World (EFW) or its components and/or subcomponents as independent explanatory variables, Lawson found that in slightly more than half of the studies economic freedom was associated with positive outcomes such as faster growth, better living standards, and more happiness. In less than 5% of the studies was there a finding of a negative relationship between economic freedom and other variables such as income inequality (Gwartney et al., 2022). The studies included those of Gwartney et al. (1999), De Haan and Sturm (2000), Sturm and de Haan (2001), Adkins et al. (2002), Compton et al. (2011), and Bologna et al. (2016). Each of those authors found a positive relationship between economic freedom and economic growth. Kreft and Sobel (2005) and Wiseman and Young (2018) found a positive relationship with entrepreneurial activity. Arif et al. (2020) found that a 10% increase in economic freedom of a destination MSA is associated with a slightly more than 27% increase in net migration.

2.2 Economic Freedom and Crime

Bjørnskov (2015) argued that the theoretical mechanism of how economic freedom is related to crime is unclear. On the one hand, scholars such as Abouharb and Cingranelli (2007, 2009), Przeworski (1991), and Rodrik (1992) reported that the link between capitalism and market-friendly policies hinges on the social tension created by liberalizing economic reforms. Abouharb and Cingranelli (2007, 2009) noted that social tension is created because liberalizing policies are unpopular; hence the elite resort to oppression of the economically disadvantaged groups in order to achieve their goal. Przeworski (1991) and Rodrik (1992) argued that the source of tension is the cost that liberalizing policies impose on economically disadvantaged groups in society. Schmitt et al. (2006) asserted that liberalizing policy reforms socially exclude certain groups, thereby creating more tension in society. Therefore, it is suggested that the social tension created by these policies in turn creates an environment conducive to criminal activities.

On the other hand, Bjørnskov (2015) also raised questions as to whether the social tension mechanism actually holds, especially in democracies such as the US. He argued that public choice literature shows that liberalizing reforms may affect the elites more than the disadvantaged groups in society and therefore, such reforms may reduce social tension. For example, labor market reforms may reshuffle political power from the elites to the disadvantaged groups and lead to less social exclusion and social tension. If closed-shop regulations and high minimum wages exclude marginalized groups, deregulation may actually lead to more economic opportunities for disadvantaged groups. The more economic opportunities people have, the less the tension there is and hence the lower the crime rate.

Empirical studies on the relationship between economic freedom and crime can be organized in a couple of ways. First, we can group the studies based on their level of aggregation and second, on whether the dependent variable is crime or another crime-related variable such as recidivism. Under the first type of organization, we have identified two subgroups of studies. The first subgroup includes findings from scholars

such as Stringham and Levendis (2010) and De Soysa and Noel (2020) who examined the relationship at the cross-country level. For their studies, the EFW index was used as the independent variable. Stringham and Levendis (2010) and De Soysa and Noel (2020) found a negative relationship between economic freedom and homicide rates at the national level. The second subgroup of studies includes those from Bjørnskov (2015) and Snyder and Ouattara (2018). Using panel data analysis, Bjørnskov (2015) found that non-violent types of crime decreased with increased government spending and higher taxes. Similar results were found by Snyder and Ouattara (2018), but in their case they used cross-sectional data. Also, within the second type of organization we have studies such as those from Hall et al. (2015), and Wright (2022) who examined the relationship between economic freedom and crime at the cross-state level. The independent variable in these cases was the Economic Freedom of North America (EFNA) index. The dependent variable was the recidivism rate. The authors of both studies found that better labor market institutions can reduce recidivism. Table 1 provides a way of looking at the literature on economic freedom and crime. We have included our paper to show where it fits in the economic freedom and crime literature.

Table 1: Summary of Literature Review

Level of aggregation	Connection to crime			
	Crime directly			Other
	Homicide	Non-homicide	Property crime	Recidivism
National				
Stringham and Levendis (2010)	X			
Levendis (2020)	X			
State				
Bjørnskov (2015),	X	X	X	
Snyder and Ouattara (2018)			X	
Wright (2022)				X
Hal, Harger, and Stansel (2015)				X
MSA				
Kalulu and Duan	X	X		

As shown in Table 1, the study that most closely resembles ours is Bjørnskov's (2015). However, unlike Bjørnskov (2015) whose analysis was at the state level, ours is at the MSA level. Another feature that distinguishes our study is that we examined the effects of economic freedom and the types of violent crimes up to the subcomponent level of each of the areas of the economic freedom index.

3 Data and Empirical Approach

Economic freedom data are compiled for 355 MSAs (Stansel, 2019). For our analysis we used 180 MSAs, delineated by our dependent variable (crime) that is voluntarily reported by the local agencies (and in some instances the FBI). We excluded MSAs for whom the data were not consistently reported. Some local agencies have changed their reporting practices — which, according to the FBI -– makes the data incomparable to that of previous years. Another reason for the exclusion is that the FBI determined that local agencies' data were underreported.

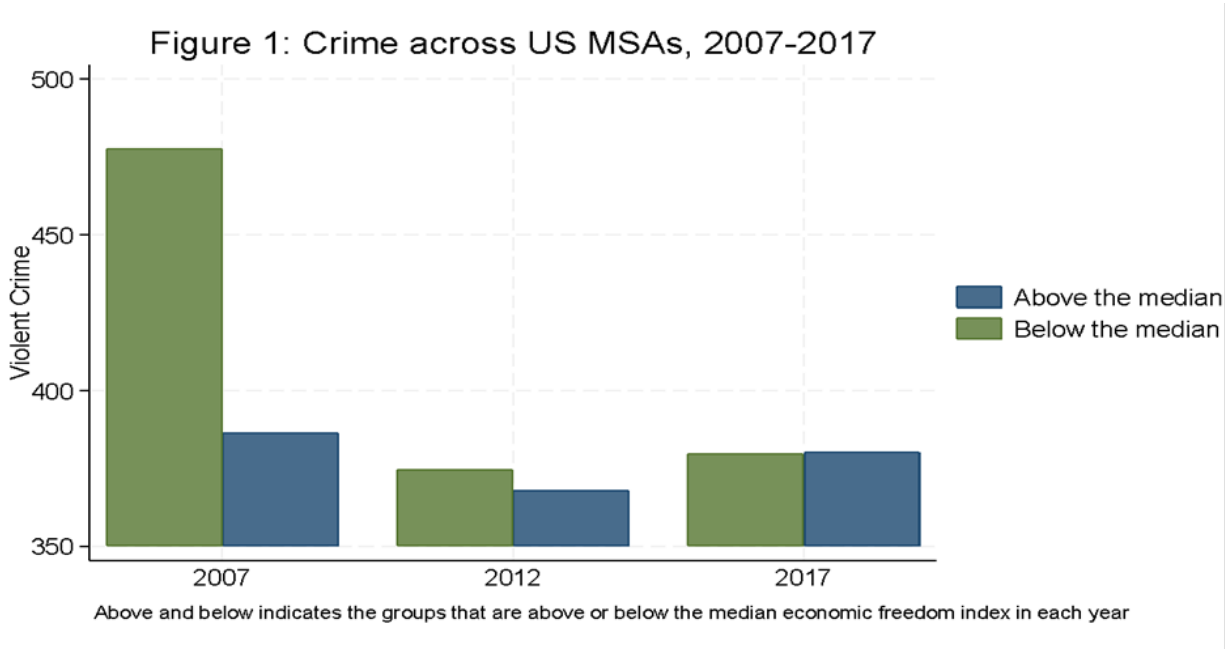
On the assumption that such errors may be non-random, we excluded all MSAs that the FBI excluded in their reporting, which left us with a panel of 540 observations in the period of 2007 to 2017.[2] In order to further address the measurement issues that are associated with voluntary reporting (which according to Gould et al. (2002), could vary by type of crime and across MSAs), we followed the work of Ehrlich (1996). Ehrlich (1996) argued that the logs of crime rates are likely to be proportional to true crime rates. Another

[2]The FBI retired the Uniform Crime Reporting (UCR) program in 2021 and replaced it with the National Incident-Based Reporting System (NIBRS). It has been observed that the nearly 40% of law enforcement agencies around the country did not submit crime data in 2021. However, this change does not affect our data because our study period ended with 2017, which was before the switch occurred.

source of measurement error pointed out by Gould et al. (2002) is that the methods of collecting crime data could also vary across local authorities. We addressed this by including MSA-fixed effects.

Our independent variable of interest is the economic freedom index for US metropolitan areas compiled by Stansel (2019) of the Bridwell Institute for Economic Freedom at Southern Methodist University. We tested the overall index as well as the different areas that make up the index and the subcomponents of each of the areas. The index is on a 0 to 10 scale with higher values representing more freedom. In the case of area A1, a higher score means lower government spending. For A2 a higher score means lower taxes, and for A3 a higher score means fewer regulations. From Table 2 the mean of overall economic freedom is 6.80 and scores range from 3.82 to 8.81. We expected a negative relationship between crime and the overall index as well as the components. More economic freedom entails that individuals have more opportunities to engage in productive work without impediments, thereby increasing the opportunity cost of engaging in criminal activities.

Figure 1 shows comparisons of violent crime among MSAs above and below the median economic freedom value.



Note: violent crime measured per 100,000 people.

In both 2007 and 2012, MSAs below the median economic freedom value had more violent crimes compared to those above the median. In 2017, the two groups were about the same. Between 2007 and 2012, violent crime declined. Between 2012 and 2017, MSAs experienced a slight uptick in crime.

Our control variables included crime deterrence factors such as the level of policing measured by the number of law enforcement officers and the existence of the death penalty in each state. The expected relationship between law enforcement employees and crime is ambiguous: While it is expected that a higher rate of law enforcement deters individuals from engaging in illegal activities, the relationship could be a positive one indicating law enforcement's efforts. Adamson and Rentschler (2021) show that if officers face strong performance incentives, they may report and clear more cases than if not. The death penalty factor was assigned a value of 1 for those states that have the death penalty and 0 for those that do not.

Based on empirical research, the deterrence effect of death penalty on crime is mixed. A meta-analysis by Yang and Lester (2008) supported the deterrent effect of the death penalty on crime but acknowledged that the results were dependent on the methodology used. Time-series and panel data analyses tended to yield a negative relationship. Other control variables included educational attainment and demographic factors such as race, family composition, and median age. Educational attainment is believed to work the same way as economic freedom: The more educated people are, the higher the opportunity cost of engaging in illegal

activities (Lochner and Moretti, 2004).

We also included a state political ideology variable constructed by Berry et al. (2010). The variable captured the electorates' policy preferences. Liberal states and conservative jurisdictions have differing views and attitudes about dealing with crime. The state ideology variable helped capture the differences in the mindsets and influences of citizens in each state. The variable range was constructed on a 0 to 100 scale, with higher values implying more liberal views. Table 2 provides the summary statistics for all the variables included in our model.

Table 2: Summary statistics

Variable	N	Mean	Std. dev.	Min	Max
Homicide	540	4.445	3.662	0.000	29.700
Non-homicide	540	352.782	185.049	35.600	1409.300
Overall economic freedom	540	6.799	0.828	3.820	8.810
A1: Size of government	540	6.545	1.183	2.110	9.040
A1(A): General consumption	540	6.283	1.886	0.000	10.000
A1(B): Transfers and subsidies	540	8.877	0.732	5.240	9.896
A1(C): Social security payments	540	4.475	2.043	0.000	8.198
A2: Taxes	540	6.145	0.824	2.940	9.258
A2(A): Total tax revenue	540	4.946	2.999	0.000	10.000
A2(B): Total individual income tax revenue	540	5.345	1.741	0.000	10.000
A2(C): Indirect tax revenue	540	8.146	1.199	0.000	10.000
A3: Labor market freedom	540	7.706	1.043	4.070	9.820
A3(A): Minimum wage annual income	540	7.343	1.260	4.013	10.000
A3(B): State and local government employment	540	8.194	1.054	0.000	10.000
A3(C): State union density	540	7.581	2.172	1.421	10.000
Per-capita personal income	535	49963	9487	31912	105809
Unemployment rate	537	5.934	2.826	2.100	27.700
Law enforcement employees per 1,000 citizens	540	3.009	0.608	1.500	4.800
% of population with bachelor's degree or higher	535	25.708	8.300	10.600	54.300
% White	535	80.424	12.231	0.000	96.800
% Single mothers	535	7.159	1.943	3.000	15.100
Sex ratio (males per 100 females)	535	97.626	4.709	86.000	138.000
Median age	535	37.285	4.855	24.400	58.100
State ideology	540	41.144	17.784	17.512	73.127
Death penalty	540	0.804	0.398	0.000	1.000

4 Regression Analysis

We ran a two-way, fixed-effect regression to do the analysis within the following econometric framework:

$$Y_{mt} = \beta_0 + \beta_1 EconomicFreedom_{mt} + X_{mt}\Gamma + \Omega_m + \Pi_t + \zeta_{mt}$$

where m denotes metropolitan areas and t indexes years; Y_{mt} represents outcome variables; $EconFreedom_{mt}$ is the independent variable; X_{mt} are control variables; Ω_m is a vector of metropolitan fixed effects; Π_t indicates year fixed effects; and ζ_{mt} is the error term. βs are the coefficients, and specifically, β_1 is the parameter of interest.

We considered two groups of dependent variables of interest: homicide and non-homicide crimes. The homicide group included murder and non-negligent manslaughter, while the non-homicide crimes included robbery and aggravated assault. We excluded rape from the non-homicide crimes because the definition of rape was changed in 2013. The parameter of interest was the coefficient on $EconFreedom_{mt}$, a calculated index at the metropolitan level. The economic freedom index has three categories: government spending, taxes, and labor market freedom. They contribute to the economic freedom of different aspects of the

economy, so we also ran regressions using the sub-indices. The coefficient indicates the relationship between economic freedom and crimes in the economy.

The vector of control variables, X_i are standard to the literature on crime and economic freedom in general, and they contain variables that relate to law enforcement efforts, the labor market, income, and political and geographic variables. In an ideal analysis, measures of law enforcement efforts, political ideologies, and the death penalty at the metropolitan level would be matched to economic freedom data at the MSA level. Unfortunately, police employment data at this level of aggregation and consistent disaggregated data at the city or county level are non-existent. Political ideology data are also not available at the MSA level. The death penalty laws are determined at the state level. In order to overcome this issue, we used state-level data for police employee data, political ideology, and the death penalty (which is a dummy variable taking the value of 1 if a state has a death penalty and zero if it does not). Thus, we were still able to account for variations among MSAs across states, but not within states. We included the percentage of the population who have a bachelor's degree or higher to control the education attainment. Demographic variables included the percentage of the white population, percentage of single mothers, sex ratio, median age, and median age squared. We excluded unemployment and income from our regressions to avoid what is known as collider bias. Unemployment and income are the channels through which economic freedom affects crime; hence we excluded it.

5 Regression Results

Table 3 provides part of the regression results for the relationship between economic freedom at the MSA level and our two crime variables (homicide and non-homicide crimes). For regression results with all the control variables see Appendix Table 1.

Table 3: Homicide and Non-homicide Crime, and Economic Freedom

Dependent variable	**Homicide**			**Non-homicide**		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Overall economic freedom	-0.133			-0.450		
	(0.745)			(0.407)		
A1: Size of government		-0.316			-0.384**	
		(0.394)			(0.191)	
A2: Taxes		-0.104			-0.099	
		(0.788)			(0.351)	
A3: Labor market freedom		0.455			0.102	
		(0.520)			(0.190)	
A1(A): General consumption			0.172			0.248**
			(0.399)			(0.113)
A1(B): Transfers and subsidies			-0.739			-1.125***
			(0.737)			(0.307)
A1(C): Social security payments			-0.060			-0.028
			(0.096)			(0.054)
A2(A): Total tax revenue			0.057			-0.052
			(0.142)			(0.051)
A2(B): Total individual income tax revenue			-0.183			-0.156
			(0.204)			(0.104)
A2(C): Indirect tax revenue			-0.044			-0.218
			(0.663)			(0.310)
A3(A): Minimum wage annual income			0.281			0.627***
			(0.545)			(0.216)
A3(B): State and local government employment			-0.198			-0.301
			(1.134)			(0.364)
A3(C): State union density			0.058			-0.082
			(0.186)			(0.068)

The results in column (1) show no significant relationship between overall economic freedom and homicide. Similarly, there was no significant relationship between homicide and any of the individual areas of economic freedom or their subcomponents. With regard to the relationship between economic freedom and non-homicide crime, our results showed some relationship in some of the areas that make up the index. There was no significant relationship between the overall economic freedom index and non-homicide crime in column

(4). However, regressing non-homicide on the three categories of the index in column (5), we found that size of government has a negative and significant relationship with non-homicide crime. The other two categories, taxes and labor market freedom, had no significant effect on non-homicide crime. Comparing our results to Bjørnskov (2015), who estimated a similar relationship at the state level, we observed differences in two of the three categories of the index: government size and labor market freedom. Bjørnskov (2015) reported a positive and significant effect of government size on both homicide and non-homicide crimes. He also found a negative and significant relationship between labor market freedom and non-homicide crimes. Our results were, however, similar for taxes, which had no significant effect on non-homicide crime.

In case the sub-indicators were relatively correlated (which could have, in principle, yielded a multi-collinearity problem), we also provided the estimates for regressions that included each sub-indicator separately; see Appendix Table 2. The correlations for the three categories A1, A2 and A3 are provided in Appendix Table 3. The results were similar in that only the size of government was significant. The relationship was negative and the magnitude of the estimate was about the same.

We took our study further to examine the subcomponents of each of the three categories. The results in column (6) show that two of the subcomponents of size of government had significant but opposite effects on non-homicide crime. Lower general government consumption had a positive effect on non-homicide crime while lower transfers and subsidies had a negative effect. The third subcomponent, social security payments, had no significant effect on non-homicide crime. None of the subcomponents in the tax category had a significant effect on non-homicide crime. With regard to labor market freedom, which was not significant as an aggregate, we observed that the lack of relationship with non-homicide crime was driven by two of its subcomponents, state and local government employment and state union density. The third subcomponent, minimum wage annual income, had a positive and significant effect on crime, which means lower minimum wages were associated with higher non-homicide rates. At first glance this might seem contrary to our expectation that a high minimum wage reduces employment opportunities for people and, therefore, increases their chances of engaging in criminal activities. However, we argue that the minimum wage may not be binding in most of the MSAs and to the extent that is the case, the minimum wage variable may be capturing the fact that higher wages means more income for individuals and therefore less incentive to engage in criminal activities.

Following Bjørnskov (2015), for robustness check, we included right to work variable in our regression. Notice that the right to work variable is a state level variable rather than MSA level variable because the decision made at state level. Additional robustness checks include the exclusion of extreme values of crime and economic freedom indices. We dropped the top 5 percent MSAs for both crime and economic freedom. The results for these three robustness checks are similar to our original estimation as shown in Appendix Tables 4, 5, and 6, respectively. The variables that are significant in the original estimation remain significant and maintain the same sign. The magnitudes of the estimates are, however, slightly different. As a forth robustness check, we estimated the relationship by excluding the endogenous control variables such as law enforcement and death penalty. As shown in Appendix Table 7, both law enforcement and death penalty are not highly correlated with the overall economic freedom index. Neither are they highly correlated with the categories size of government (A1), taxes (A2) and labor market freedom (A3). The regression results Appendix Table 8 show that the results are also the same as the original estimation leading us to conclude that our results are robust.

6 Discussion and Conclusion

We set out to examine the relationship between economic freedom, homicide, and non-homicide crimes. A two-way, fixed-effect estimation technique was employed on panel data for the period 2007 to 2017. We found no significant relationship among any of the measures of economic freedom and homicide. There was, however, some evidence that certain aspects of economic freedom have an effect on non-homicide crime. General consumption, which is part of the A1, government size had a positive effect while another subcomponent of government size, transfers and subsidies, had a negative effect. A 10% decrease in the general consumption index was associated with a 2.5% increase in non-homicide crime, while a 10% decrease in the transfers and subsidies index was associated with an 11.3% decline in non-homicide crime. For labor

market freedom, a 10% decline in the minimum wage annual income is associated with a 6.3% increase in non-homicide crime. Our conclusions are in line with those of other researchers such as Stringham and Levendis (2010), Bjørnskov (2015), and De Soysa and Noel (2020), who empirically refuted the claims that allocation of resources by the free-market process is responsible for the rise in crime rates. Rather, there is some evidence, albeit little, that shows that market policies and reforms are associated with a decrease in non-homicide crime.

The benefit of this paper is that we have examined the economic freedom is not responsible for increases in homicide crime rates as argued by Klein and Smith (2008), and Hall and McLean (2009). More research is therefore, needed to figure out the factors that cause changes in homicide crime rates. More work is also needed to examine the long run effect of economic freedom on crime. The effect of these policies may take some time to materialize.

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Appendix

Appendix Table 1: Homicide and Non-homicide Crime, and Economic Freedom

Dependent variable	**Homicide**			**Non-homicide**		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Overall economic freedom	-0.133			-0.450		
	(0.745)			(0.407)		
A1: Size of government		-0.316			-0.384**	
		(0.394)			(0.191)	
A2: Taxes		-0.104			-0.099	
		(0.788)			(0.351)	
A3: Labor market freedom		0.455			0.102	
		(0.520)			(0.190)	
A1(A): General consumption			0.172			0.248**
			(0.399)			(0.113)
A1(B): Transfers and subsidies			-0.739			-1.125***
			(0.737)			(0.307)
A1(C): Social security payments			-0.060			-0.028
			(0.096)			(0.054)
A2(A): Total tax revenue			0.057			-0.052
			(0.142)			(0.051)
A2(B): Total individual income tax revenue			-0.183			-0.156
			(0.204)			(0.104)
A2(C): Indirect tax revenue			-0.044			-0.218
			(0.663)			(0.310)
A3(A): Minimum wage annual income			0.281			0.627***
			(0.545)			(0.216)
A3(B): State and local govt. employment			-0.198			-0.301
			(1.134)			(0.364)
A3(C): State union density			0.058			-0.082
			(0.186)			(0.068)
Law enforcement employees per 1000	0.162*	0.179*	0.189	0.030	0.041	0.142**
	(0.092)	(0.093)	(0.120)	(0.059)	(0.059)	(0.068)
% of pop. with bachelor's degree or higher	-0.013	-0.012	-0.031	0.008	0.009	0.008
	(0.022)	(0.022)	(0.026)	(0.009)	(0.009)	(0.011)
% White	-0.003	-0.003	-0.006	-0.004**	-0.004**	0.003
	(0.005)	(0.005)	(0.012)	(0.002)	(0.002)	(0.005)
% Single mothers	-0.015	-0.016	-0.021	0.010	0.010	0.012
	(0.028)	(0.028)	(0.032)	(0.012)	(0.012)	(0.013)
Sex ratio (males per 100 females)	0.033**	0.032*	0.019	0.003	0.003	-0.002
	(0.016)	(0.017)	(0.017)	(0.009)	(0.009)	(0.009)
Median age	0.527**	0.538**	0.485**	0.152**	0.159**	0.024
	(0.227)	(0.224)	(0.236)	(0.063)	(0.063)	(0.074)
Median age squared	-0.006**	-0.006**	-0.006**	-0.002***	-0.002***	-0.000
	(0.003)	(0.003)	(0.003)	(0.001)	(0.001)	(0.001)
State ideology	-0.004*	-0.004*	-0.006**	-0.001	-0.001	-0.001
	(0.002)	(0.002)	(0.003)	(0.001)	(0.001)	(0.001)
Death penalty	0.283	0.287	0.131	0.061	0.070	0.197**
	(0.178)	(0.180)	(0.132)	(0.106)	(0.100)	(0.090)
2012.Year	-0.039	-0.056	-0.007	-0.134***	-0.158***	-0.032
	(0.063)	(0.108)	(0.121)	(0.037)	(0.054)	(0.065)
2017.Year	0.158	0.200	0.207	-0.167***	-0.154**	-0.128
	(0.100)	(0.123)	(0.156)	(0.051)	(0.062)	(0.078)
N	515	515	475	535	535	494
F-statistic	3.280	2.830	2.050	5.990	5.920	7.020
R-squared	0.121	0.127	0.131	0.176	0.189	0.292

Note: Both dependent variables and all economic freedom measures including overall measure, major categories and sub-indexes are in logs.

Appendix Table 2: Homicide and Non-homicide Crime, and Subindex of Economic Freedom

	Homicide			**Non-homicide**		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
A1: Size of government	-0.360			-0.397**		
	(0.367)			(0.181)		
A2: Taxes		-0.150			-0.150	
		(0.332)			(0.332)	
A3: Labor market freedom			0.147			0.147
			(0.174)			(0.174)

Appendix Table 3: Correlation Table

	A1: Size of government	A2: Taxes	A3: Labor market freedom
A1: Size of government	1		
A2: Taxes	0.4392	1	
	(0.000)		
A3: Labor market freedom	0.6316	0.3447	1
	(0.000)	(0.000)	

Appendix Table 4: Homicide and Non-homicide Crime, and Economic Freedom (without endogenous controls)

	Homicide			**Non-homicide**		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Overall economic freedom	-0.074			-0.433		
	(0.745)			(0.405)		
A1: Size of government		-0.239			-0.368*	
		(0.416)			(0.190)	
A2: Taxes		-0.095			-0.093	
		(0.798)			(0.343)	
A3: Labor market freedom		0.407			0.094	
		(0.533)			(0.187)	
A1(A): General consumption			0.196			0.272**
			(0.398)			(0.111)
A1(B): Transfers and subsidies			-0.232			-0.747***
			(0.695)			(0.263)
A1(C): Social security payments			-0.081			-0.042
			(0.095)			(0.058)
A2(A): Total tax revenue			0.071			-0.039
			(0.141)			(0.049)
A2(B): Total individual income tax revenue			-0.184			-0.147
			(0.206)			(0.103)
A2(C): Indirect tax revenue			-0.216			-0.316
			(0.665)			(0.314)
A3(A): Minimum wage annual income			0.279			0.624***
			(0.541)			(0.215)
A3(B): State and local government employment			-0.329			-0.406
			(1.159)			(0.379)
A3(C): State union density			0.059			-0.076
			(0.182)			(0.068)

Note: Both dependent variables and all economic freedom measures including overall measure, major categories and sub-indexes are in logs.

Appendix Table 5: Homicide and Non-homicide Crime, and Economic Freedom (Drop the top 5% MSAs for Crime)

	Homicide			**Non-homicide**		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Overall economic freedom	-0.522			-0.467		
	(0.744)			(0.415)		
A1: Size of government		-0.424			-0.334*	
		(0.396)			(0.188)	
A2: Taxes		-0.345			-0.180	
		(0.782)			(0.325)	
A3: Labor market freedom		0.361			0.069	
		(0.511)			(0.190)	
A1(A): General consumption			0.131			0.237**
			(0.408)			(0.110)
A1(B): Transfers and subsidies			-0.940			-1.201***
			(0.691)			(0.307)
A1(C): Social security payments			-0.041			-0.003
			(0.102)			(0.052)
A2(A): Total tax revenue			0.027			-0.062
			(0.140)			(0.047)
A2(B): Total individual income tax revenue			-0.139			-0.152
			(0.199)			(0.097)
A2(C): Indirect tax revenue			-0.245			-0.222
			(0.658)			(0.299)
A3(A): Minimum wage annual income			0.220			0.506**
			(0.519)			(0.211)
A3(B): State and local government employment			-0.209			-0.319
			(1.107)			(0.357)
A3(C): State union density			0.038			-0.063
			(0.188)			(0.064)

Note: Both dependent variables and all economic freedom measures including overall measure, major categories and sub-indexes are in logs.

Appendix Table 6: Homicide and Non-homicide Crime, and Economic Freedom (Drop the top 5% MSAs for Crime)

	Homicide			**Non-homicide**		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Overall economic freedom	-0.522			-0.467		
	(0.744)			(0.415)		
A1: Size of government		-0.424			-0.334*	
		(0.396)			(0.188)	
A2: Taxes		-0.345			-0.180	
		(0.782)			(0.325)	
A3: Labor market freedom		0.361			0.069	
		(0.511)			(0.190)	
A1(A): General consumption			0.131			0.237**
			(0.408)			(0.110)
A1(B): Transfers and subsidies			-0.940			-1.201***
			(0.691)			(0.307)
A1(C): Social security payments			-0.041			-0.003
			(0.102)			(0.052)
A2(A): Total tax revenue			0.027			-0.062
			(0.140)			(0.047)
A2(B): Total individual income tax revenue			-0.139			-0.152
			(0.199)			(0.097)
A2(C): Indirect tax revenue			-0.245			-0.222
			(0.658)			(0.299)
A3(A): Minimum wage annual income			0.220			0.506**
			(0.519)			(0.211)
A3(B): State and local government employment			-0.209			-0.319
			(1.107)			(0.357)
A3(C): State union density			0.038			-0.063
			(0.188)			(0.064)

Note: Both dependent variables and all economic freedom measures including overall measure, major categories and sub-indexes are in logs.

Appendix Table 7: Correlation Table

	Overall economic freedom	A1: Size of government	A2: Taxes	A3: Labor market freedom
Law enforcement	0.2149	0.1763	0.0221	0.2949
	(0.000)	(0.000)	(0.608)	(0.000)
Death Penalty	0.2325	0.1653	0.2692	0.1529
	(0.000)	(0.000)	(0.000)	(0.000)

Appendix Table 8: Homicide and Non-homicide Crime, and Economic Freedom (control right to work)

	Homicide			**Non-homicide**		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Overall economic freedom	-0.197			-0.462		
	(0.729)			(0.400)		
A1: Size of government		-0.286			-0.362*	
		(0.390)			(0.189)	
A2: Taxes		-0.204			-0.142	
		(0.783)			(0.345)	
A3: Labor market freedom		0.417			0.088	
		(0.519)			(0.189)	
A1(A): General consumption			0.182			0.251**
			(0.405)			(0.111)
A1(B): Transfers and subsidies			-0.707			-1.086***
			(0.701)			(0.303)
A1(C): Social security payments			-0.049			-0.023
			(0.102)			(0.051)
A2(A): Total tax revenue			0.029			-0.066
			(0.140)			(0.049)
A2(B): Total individual income tax revenue			-0.160			-0.148
			(0.197)			(0.101)
A2(C): Indirect tax revenue			-0.309			-0.349
			(0.664)			(0.299)
A3(A): Minimum wage annual income			0.325			0.644***
			(0.520)			(0.209)
A3(B): State and local government employment			-0.187			-0.292
			(1.127)			(0.351)
A3(C): State union density			0.054			-0.083
			(0.184)			(0.067)

Note: Both dependent variables and all economic freedom measures including overall measure, major categories and sub-indexes are in logs.