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Economic Freedom and Public, Non-Market Institutions: Evidence from Criminal Prosecution*

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Abstract

Economic freedom, which measures the protection of property and freedom to contract, is generally argued to capture the quality of a state's institutions regarding market activity. As to be expected, numerous studies have found that economic freedom is associated with good economic outcomes. Additionally, much effort in public economics has worked to identify the features of quality non-market public institutions. No effort has been made to connect institutions that influence market activity and institutions that govern non-market activities. We take a first step. We employ a linear programming method for measuring relative efficiencies known as Data Envelopment Analysis. We apply this technique to information on the use of inputs to the production of the prosecution of crime across the thousands of local prosecutor offices in the U.S. We then compare state-level measurements of prosecution productivity with data on state-level economic freedom from the Economic Freedom of North America index. We show that there is a positive and statistically significant relationship between the two. Those states that develop institutions respecting economic freedom also tend to be the states that develop efficient publicly-provided services.

JEL codes: H11, C67, D23, D24, D61, K4

Keywords: Data Envelopment Analysis, economic freedom, efficiency, prosecution, publicly-provided services

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1 Introduction

A substantial literature has developed studying the impact of economic freedom around the world. The catalyst for this research was the development of the *Economic Freedom of the World* index by Gwartney, Lawson, and Block (1996). They provide a definition of economic freedom.

> Individuals have economic freedom when property they acquire without the use of force, fraud, or theft is protected from physical invasions by others and they are free to use, exchange, or give their property as long as their actions do not violate the identical rights of others. An index of economic freedom should measure the extent to which rightly acquired property is protected and individuals are engaged in voluntary transactions (p.12).

This was followed by state and province-level measurements of economic freedom in the complementary *Economic Freedom of North America* index by Stansel and McMahon (2013) and, more recently, the *Freedom of the 50 States* (Ruger and Sorens, 2013).

The basic premise of the research on economic freedom is that there are government policies that positively impact economic activity, or more specifically, avoid economically-destructive interventions. Numerous studies (to be discussed in the following section), have empirically identified the correlation between economic freedom and other measurements of economic activity.

Governments, though, also engage in a substantial amount of non-market, publicly-provided service provision. The question addressed here is whether U.S. states that adopt policies that promote economic freedom are states that, in general, develop and foster efficient, productive institutions. Is there a relationship between good governance regarding economic policy and good governance with non-market production?

An important publicly-provided service is the legal system. For state governments it makes up a substantial proportion of public expenditure and it effects

the well-being of everyone, whether through being a defendant or victim, benefitting from deterrence, or its effect on public resources. As a representative criminal justice institution, we consider here prosecutor services. We feel this is a particular good bureaucratic office to study. The inputs used and outputs produced are, for the most part, straightforward and measurable. Second, the administration and funding of the offices differ across states and across districts within a state. For example, almost all states use local, popular, partisan elections to select the chief prosecutor. Budgets are often set by local governments (e.g. in New York the county-level legislative boards set the budget using tax revenue). Prosecutors are notorious for the ability to exercise a significant amount of discretion in both office organization and case management.[1] States differ in laws, sanctions, and restrictions to discretion (e.g. sentencing guidelines). Thus, the state and local government, along with the elected chief of the office, combine to set and distribute the resources of the office to produce convictions.

Therefore, we investigate the correlation between economic freedom and effective prosecution to understand whether good governance spills over to all policies or is concentrated in a specific area. To do this, data from the 2330 prosecutor offices in the United States is used to measure productive efficiency. Specifically, a method known as Data Envelopment Analysis (DEA), which is common in Operations Research and Industrial Organization, is employed. DEA can be used to, in effect, estimate a Production Possibilities Frontier for an industry and then quantify how close an observation is to the frontier. This generates an efficiency measurement. District-level estimates of productive efficiency are aggregated to state-level measurements. This is then compared to data from the Economic Freedom of North America index. Our results indicate that there is a strong, positive correlation between the two. States with higher levels of economic freedom also have prosecutor offices that more efficiently handle their caseloads. Estimates presented indicate that a one standard deviation increase

[1] See Bandyopadhyay and McCannon (2014, 2015a, 2015b) for a detailed discussion of the effect of election concerns on prosecution decisions and Rasmusen, Raghav, and Ramseyer (2009) regarding the effect of budgets on decisions made.

in a state's economic freedom index number corresponds to approximately $1/4^{th}$ of a standard deviation increase in prosecution efficiency.[2]

A brief background discussion on economic freedom, prosecution, and DEA techniques is given in Section 2. Section 3 describes the data used, while Section 4 presents the results. Section 5 concludes.

2 Background

First, we provide a brief background discussion of the major components of the analysis: economic freedom, prosecutors, and Data Envelopment Analysis.

2.1 Economic Freedom

The concept of economic freedom is the ability of individuals do use, exclude, and dispose of their property to maximize their well-being, so long as it does not infringe upon others. The freest economies operate with minimal government interference, relying upon personal choice and markets to answer basic economic questions such as what is to be produced, how it is to be produced, how much is produced, and for whom production is intended. As government imposes restrictions on these choices, there is less economic freedom (Stansel and McMahon, 2013).

The Economic Freedom of North American index (EFNA) examines key indicators of economic freedom based on size of government, taxation, regulation, rule of law and property rights and other relevant factors. It was first produced in 2002 and measures back to 1981 for all fifty states in the U.S. and ten provinces in Canada, and is produced by the Fraser Institute.

There are three areas which are used to comprise the subnational index: (1) size of government, (2) takings and discriminatory taxation, and (3) labor

[2] The only study which investigates anything similar is that of Levendis and Stringham (2010). Using the Economic Freedom of the World index they show that economic freedom is correlated with lower rates of murder. Related to the central theme of our paper, Brunetti and Weder (2003) find evidence of a relationship between more free press and less corruption. Free press can be thought of as one component of economic freedom and corruption as an alternative measurement of the quality of governance.

market freedom.[3] Each area is scored on a zero to ten scale and equally weighted to comprise the EFNA metric.

This index has been used extensively to investigate the relationship between economic freedom and other economic variables. Examples include income (Campbell, Fayman, and Heriot, 2010), state-level growth (Hall and Sobel, 2008; Compton, Giedeman, and Hoover, 2011), corruption (Aspergis, Dincer, and Payne, 2012; Johnson, Ruger, Sorens, and Yamarik, 2014), firm births (Campbell, Fayman, Heriot, 2011), firm deaths (Campbell, Heriot, Jauregui, and Mitchell, 2012), entrepreneurship (Wiseman and Young, 2013), unemployment (Heller and Stephenson, 2014), migration (Ashby, 2007; Cebula and Clark, 2011), income inequality (Ashby and Sobel, 2008; Bennett and Vedder, 2013), income convergence (Heckelman, 2013), and state bond ratings (Calcagno and Benefield, 2013). This is just a sample of the numerous studies on the correlations. See Stansel and McMahon (2013) for an extended bibliography.

Across the board, the research indicates that there is a positive relationship between economic freedom and other economic outcomes. Thus, it is a valid measurement for good economic policies.

2.2 Prosecutors

Local and state governments in the U.S. publicly provide numerous services. An important one is the criminal justice system. Police forces are constituted to investigate and deter crime, prosecutor offices prosecute those believed to break the law, judges and other court personnel officiate the proceedings, and the prison system incarcerates. These are just a few of the actors in the criminal justice system. For the most part, the resource allocation decisions are conducted in non-market institutions.[4] Therefore, it is crucial to investigate the

[3] The subnational measurement, as used her, includes three areas. Area 1 measured government expenditures, transfers and subsidies, and social security payments. Area 2 measures tax revenues, top marginal tax rate, indirect tax revenue, and sales taxes. Area 3 measures labor market freedom (minimum wage laws, government employment, unionization), regulation of credit markets (bank ownership, private sector credit, and interest rate controls), and business regulation (administrative requirements, bureaucracy costs, starting a business metric, bribes, licensing, and tax compliance).

[4] There are a few exceptions, such as the use of private investigators, private prisons, and criminal defense. Furthermore, there are calls for privatization of some of these publicly-

effectiveness of these institutions and to understand the determinants of poorly managed publicly-provided services.

Here, as a proxy for publicly-provided, non-market services, we study prosecutors. As of 2007, there are 2330 local prosecutor offices in the United States. They account for almost 2.2 million convictions per year, which represents approximately 95% of all convictions (Simmons, 2004). They engage in approximately 75,000 jury trials per year. Collectively, the budgets of the offices managed by the chief prosecutor exceed $5.8 billion. Therefore, prosecutors are an important component of the criminal justice system.

Furthermore, prosecutors exercise a significant amount of discretion. They decide whether to file charges, which charges to file, the amount of additional investigation to invest in, and whether to dismiss, plea bargain, or take a case to trial. These are just a few of the choices made in each case. Each office is managed by a chief prosecutor, who has a staff of assistant prosecutors, investigators, supporting legal staff, and other supporting staff. In almost all states the chief prosecutor is elected in partisan, popular elections. These chiefs typically serve four year terms.[5] As a consequence, one can expect substantial differences in the effectiveness of the managing of the offices across the country.

Only limited research has been done on the activities and incentives of state-level prosecutors. Rasmusen, Raghav, and Ramseyer (2009) investigate the effect of increased funding on prosecution decisions. They show that increased budgets lead to both an increase in the number of prosecutions (the extensive margin) and the amount of resources devoted to the prosecutions selected (the intensive margin). Gorman and Ruggiero (2009) measure the efficiency of the prosecutor offices and how it is related to the socio-economic conditions of the population they serve. Dyke (2007) consider the impact of prosecutor elections and show that dismissals of cases decrease. Bandyopadhyay and McCannon (2014) focus on the impact of re-election concerns on the decision to take a case

provided services. For example, Koppl (2005) argues for allowing a market for forensic science used in trials. These issues, though, are beyond the scope of the present study.

[5] A few states use two, six, or eight year terms. There are four states that do not elect their chief prosecutor. They are Alaska, Connecticut, New Jersey, and Rhode Island.

to trial versus plea bargain. They show that more cases go to trial when election pressures are great. Bandyopadhyay and McCannon (2015b) extend this to the impact on base backlogs showing that re-elections lead to greater backlogs.

Therefore, we follow the lead of Gorman and Ruggiero (2009) by estimating the efficiency of public prosecutor offices, but with more recent data, and study its correlation with economic freedom. By doing so, we can comment on the relationship between wealth-generating economic policy, as measured by the latter, and effective administration of publicly-provided, non-market institutions, as proxied by the former.

2.3 DEA

To assess the performance of the prosecutor offices in the U.S., we employ the nonparametric technique known as Data Envelopment Analysis (DEA). DEA is a linear programming formulation used to estimate the production frontier that allows one to calculate and compare a unit's efficiency to its own benchmark in multiple input and output environments. Different from the parametric approaches, DEA does not require an a priori specification of the functional form of the production function as well as an a priori hypothesis on the disturbance term. See Valdmanis (1992) for a discussion of the value of this approach to measuring productive efficiency.

To elaborate, suppose there are M inputs that can be used and N outputs that can be produced by the J agents. Denote the amount of input m used by agent j as x_{jm} and the amount of output n produced by agent j as y_{jn}. Thus, the production of j is denoted by the vector $Y_j = (y_{j1}, ..., y_{jN})$ using the input vector $X_j = (x_{j1}, ..., x_{jM})$. Following Banker, Charnes, and Cooper (1984) and Gorman and Ruggiero (2009), the input-orientated programming model for efficiency is

$$TE_j \quad = \quad min\ \theta_j$$

$$
\begin{aligned}
s.t. \sum_{i=1}^{J} \lambda_i x_{im} &\geq \theta_j x_{jm} \ \forall m = 1, ...M \\
\sum_{i=1}^{J} \lambda_i y_{in} &\geq y_{jn} \ \forall n = 1, ..., N \\
\sum_{i=1}^{J} \lambda_i &= 1 \\
\lambda_i &\geq 0 \ \forall i = 1, ...J
\end{aligned}
$$

The solution to this problem, for each agent, provides a measurement of efficiency, known as technical efficiency. Hence, technical efficiency is defined as the equi-proportional reduction of observed inputs consistent with existing production, which geometrically reflects the distance of each unit from the production frontier. Consequently, values of the technical efficiency range between zero and one. A value of one represents no uniform reduction in inputs to achieve observed levels of output, so that the agent is producing efficiently (i.e., the agent operates on the production frontier line). Values near zero are interpreted as the observed output could be produced with large equi-proportional reductions in inputs, meaning not on the production frontier. Such an agent is operating ineffectively. The smaller this value, the more ineffective is its production.

There is a literature using DEA to study the criminal justice system. Examples include the efficiency of policing (Thanassoulis, 1995; Drake and Simper, 2005; Gorman and Ruggiero, 2008), judges (Deyneli, 2012), and courts (Kittelsen and Forsund, 1992; Pedraja-Chaparro and Salinas-Jimenez, 1996; Schneider, 2005; Castro and Guccio, 2012). In fact, Gorman and Ruggiero (2009) conduct a similar analysis on prosecutors in the U.S. focusing on a second-step analysis of the relationship between inefficiency and the socio-economic characteristics of an area.

3 Data

To measure good economic policies, we use data from the Economic Freedom of North America index (Stansel and McMahon, 2013). Specifically, the "Overall

Subnational Scores" data for 2007 is used. We choose 2007 to be consistent with our other data in the study. There is significant inertia in the index and, thus, the analysis is not sensitive to which year is studied. The variable is labeled *EFNA*.

The prosecution data comes from the *Census of State Prosecutors, 2007* conducted by the Department of Justice. The survey collects basic information from every state-level prosecutor office in the U.S. In 2007, the last survey produced, there were 2330 offices in the United States. It is common in many states for prosecutor offices to be county-level offices (e.g. New York). Some states, though, organize a few counties into prosecutorial districts. For example, in North Carolina more heavily-populated counties (such as Mecklenburg which contains Charlotte) are a prosecutorial district. Typically, two or three less-populated counties are grouped together.

From this survey, four output variables and two inputs variables are calculated. The input variables are the number of prosecutors employed and the number of supporting staff reported. Part-time workers are coded as 0.5 of a worker. An office has a chief prosecutor and a team of assistant prosecutors. A number of different potential supporting staff can be employed in an office. Examples of categories recorded are office managers, civil attorneys, victim advocates, investigators, and secretaries/clerical staff. Rather than disentangle the differences in labor input provided, all non-prosecutorial staff are aggregated into the supporting staff variable.

Four output variables are provided in the census and used. They are (1) the number of cases closed during the year, (2) the number of criminal convictions obtained during the year (either through guilty verdicts at trial or guilty pleas), (3) the number of jury verdicts rendered (either a conviction or an acquittal), and (4) the population of the district. Each of these measurements captures prosecutorial production. The number of closed cases is a direct measurement of how much is handled, or rather, the extensive margin. This is an incomplete measurement, though, because it does not capture the level of effort and resources devoted to prosecution, the intensive margin. Thus, the number of

convictions obtained captures some of this effect. Also, courtroom trials consume a substantial amount of resources and, therefore, presumably generate large expected benefits. Thus, the number of jury trials measures output as well. Finally, as is common in the literature (Gorman and Ruggiero, 2009), the population of the district is used as a proxy for the number of non-prosecution services (e.g. drug awareness programs) provided.

A number of adjustments are made to the data. First, the census survey queried each office on the total number of staff, total supporting staff, and asked for a breakdown of staff by role. Due to reporting error or intentional omissions, the greater of the total supporting staff and the sum of the breakdown in staff roles is used in the analysis. In 105 observations only the total supporting staff was reported. Also, for 26 observations only the total staff was given. For these cases the number of prosecutors is subtracted to measure the supporting staff. Second, 30 observations are eliminated due to no responses on supporting staff questions. This represents only 1.3% of the population. The average number of prosecutors in these districts is 1.83, which is substantially less than the sample average. Third, with regards to the output variables, two observations are dropped due to missing information. Finally, as is expected in mail surveys where data is provided manually, errors in data revelation occasionally occur. While we expect this to be, for the most part, random, we can identify observations which mistakenly record more convictions than cases closed. Since the former is a subset of the latter, these entries are in error. A total of 171 observations made such an error (7.3% of offices in the U.S.). These observations are excluded. Within these observations, the average number of prosecutors and supporting staff is 8.6 and 14.3 respectively, with 608.1 closed cases and 22.1 jury verdicts. Thus, they are slightly smaller offices than the mean in the population. Similarly, the number of jury verdicts cannot exceed the number of closed cases. In two observations a mistake was made. Consequently, there are 2125 observations used in the first-stage analysis.[6] Table 1

[6] Gorman and Ruggiero (2009) limit their analysis to districts with populations between 100,000 and 500,000. In 2007 this range constitutes only 20.3% of the offices in the U.S. As a

provides descriptive statistics on the inputs and outputs used in the DEA.

Table 1: Prosecutorial Production

description	mean	min	max	st. dev.
inputs				
# of prosecutors	12.00	0.5	926.5	37.5
# of supporting staff	22.52	0.17	1247.5	66.5
outputs				
# of closed cases	1314.8	0	64,585	3652.6
# of individuals convicted	940.4	0	58,050	2659.6
# of jury trial verdicts	32.0	0	3000	108.2
population of the district	132,210.2	474	9,948,081	377,910.9

DEA technique, as discussed, constructs from input and output variables a relative Production Possibilities Frontier. Observations can then be measured based on how far away from the estimated PPF they are. This generates an estimated value for *Technical Efficiency*. An observation on the PPF, then, takes the value of *Technical Efficiency* = 1. Values of *Technical Efficiency* are between zero and one, where those near zero are the most inefficient, while those close to one are the most efficient.

Thus, the DEA method creates an estimated efficiency level for each prosecutorial district in the U.S. To create a state-level measurement, then, the population-weighted average for the state is calculated to obtain a state's value for efficiency, denoted *TE*.

Furthermore, an indicator variable is created for those four states in the U.S. where chief prosecutors are appointed, rather than selected through a popular election. In these states, the attorney general or governor makes the selection and retention decisions. This variable is denoted *Appoint*.

Similarly, states differ in the impact of discretion allotted to the criminal justice system. To control for this a variable is created, *Guide*, which is equal to one if the state had sentencing guidelines in 2007 (Kauder and Ostrom, 2008).

consequence, many of these data issues are not present there.

As a final control variable, each state's real GDP is included.[7] While correlated with economic freedom, it is used to disentangle wealth effects, which may lead to increased resources for prosecution, from the institutional measure of the EFNA.

Table 2 provides descriptive statistics used in the second-step analysis.

Table 2: Descriptive Statistics

variable	description	mean	min	max	st. dev.
TE	technical efficiency	0.192	0.084	0.794	0.104
EFNA	economic freedom index	6.946	5.71	8.13	0.605
Pop	population of the state (in millions)	5.968	0.52	36.46	6.671
Appoint	= 1 if prosecutors are appointed	0.080	0	1	0.274
Guide	= 1 if state has sentencing guidelines	0.400	0	1	0.495
GDP	real GDP (in billions)	291	0.263	1924	349

The appendix provides the state rankings of both prosecutorial efficiency and economic freedom.

4 Results

Consider, first, a breakdown of the states into quartiles based on the state's ranking in economic freedom. Figure 1 illustrates.

[Insert Figure 1 here.]

Those in the lowest quartile of economic freedom also experience the lowest level of technical efficiency in the production of the prosecution of crime. Increasing in the quartiles of economic freedom corresponds to higher average levels of prosecutorial efficiency. Thus, this suggests that there is a positive correlation between the two. A formal econometric investigation, though, controlling for population size of the state and the method of selecting and retaining the chief prosecutors is needed to verify this relationship.

[7] The results presented use the 2010 state real GDP (chained to 2009 dollars) of the Bureau of Economic Analysis (www.bea.gov). Using other years does not affect the results.

It is hypothesized that good governance leads to both positive economic policy, as measured by the economic freedom index, and effective publicly-provided services, as proxied by the efficiency of prosecution. Hence, we test whether there is a positive relationship between *EFNA* and *TE*.

A White test on a basic OLS specification generates a large χ^2 value ($\chi^2 = 49.2$), thus detecting a significant heteroscedasticity problem. Not only does this frustrate the hypothesis testing, but can bias the coefficients (especially with a small sample size such as analyzed here). State-level, cross-sectional data suffers heteroscedasticity from size differences between the states. Hence, to account for this problem, both OLS with heteroscedasticity-robust standard errors and weighted least squares estimates are calculated (with the weight value determined by the state's population). Table 3 presents the results.

Table 3: Results

(dependent variable = *TE*; $N = 50$)

	OLS I	**OLS II**	**WLS III**	**WLS IV**
EFNA	0.025 ***	1.387 **	0.026 ***	1.358 ***
	(0.003)	(0.560)	(0.002)	(0.320)
Pop	0.007	0.514 ***	-2.3x10^{-5}	0.426 ***
	(0.009)	(0.130)	(0.005)	(0.086)
Appoint	0.167	0.604	0.171	0.669 ***
	(0.137)	(0.400)	(0.149)	(0.367)
Guide	-0.0004	0.054	0.024	0.207 ***
	(0.025)	(0.101)	(0.017)	(0.072)
GDP	-1.4x10^{-7}	-0.427 ***	-1.9x10^{-8}	-0.417 ***
	(1.6x10^{-7})	(0.1027)	(8.2x10^{-8})	(0.060)
adj R^2	0.804	0.964	0.248	0.364
F	121.8 ***	475.3 ***	4.03 ***	6.40 ***
AIC	-86.4	38.9	-26.2	98.1

TE, EFNA, GDP, and Pop are log-transformed in II and IV.

Heteroscedasticity-robust standard errors reported in parentheses.

*** 1%; ** 5%; * 10% level of significance

The first and third columns use the unadjusted values, while the second and fourth columns log transforms the variables (except the indicator variables).

The results illustrate that states with higher levels of economic freedom also tend to be those states with more efficient production of prosecution. Using I, a one standard deviation increase in *EFNA* corresponds with a 0.24 standard deviation increase in *TE*. Thus, the results are not only statistically significant, but also economically significant.

The results also indicate that those states who appoint their chief prosecutor, rather than have them compete in partisan elections, provide better prosecution. Appointed prosecutors increase efficiency by 1.75 standard deviations.

The results presented are rather robust. If, instead, the *EFNA* of 2003 or 2011 is used (± 4 years where 2011 is the most current data available), the sign, magnitude, and significance of the coefficient on *EFNA* is unaffected. Also, the control variables included can be dropped without affecting the main result. Finally, region control variables if included are individually and collectively insignificant. Their presence does not affect the results.

The empirical strategy employed is to first estimate effectiveness of local prosecutor offices and then aggregate up to a state-level measurement. Alternatively, the input and output measurements can first be aggregated within a state and, then, the state-level technical efficiency can be estimated. Conducting this complementary analysis, the sign and statistical significance of *EFNA* remains in this estimation.

Also, the population is used as a proxy for non-prosecutorial services. One may be concerned, though, that the variable is not endogenous. The technical efficiency can be re-estimated dropping population as an output measurement. The sign and significance of *EFNA* persists. Similarly, one may question the use of the number of convictions as an accurate measurement of output. The prosecutor's goal should be the proper dispensing of justice, which includes

dismissing cases where guilt is unlikely. Again, the main result holds if technical efficiency is re-estimated dropping this variable.

Finally, the estimations are conducted using the complementary *Freedom of the 50 States* index (Ruger and Sorens, 2013). This index combines economic freedom with personal freedom measurements. The results continue to hold with the 2007, 2009, or 2011 (overall) index values are used. Additionally, if the 2007 index is disaggregated into Regulatory Freedom and Economic Freedom all measurements have strong, significantly significant effects on *TE*. Since no new results arise in any of the alternative estimations, they are not presented here, but are available from the authors upon request.

As previously mentioned, the subnational EFNA is comprised of measurments in three main areas: (1) size of government, (2) takings and discriminatory taxation, and (3) labor market freedom. The index can be, then, decomposed into its three areas to identify which dimensions of economic freedom are correlated with effective public provision of services. Table 4 presents the result.

Table 4: Components of Economic Freedom

(dependent variable = TE; $N = 50$)

	OLS	**WLS**
EFNA-Size of Government	0.646	-0.229
	(0.724)	(0.557)
EFNA-Takings and Taxation	-0.483	0.639
	(0.472)	(0.612)
EFNA-Labor Markets	1.612 ***	1.054 **
	(0.416)	(0.449)
Pop	0.581 ***	0.450 ***
	(0.218)	(0.092)
Appoint	0.700 *	0.714 *
	(0.384)	(0.383)
Guide	0.128	0.172 **
	(0.085)	(0.077)
GDP	-0.515 ***	-0.434 ***
	(0.091)	(0.068)
adj R^2	0.968	0.372
F	369.4 ***	5.01 ***
AIC	34.9	99.2

TE, EFNA, GDP, and Pop are log-transformed.

Heteroscedasticity-robust standard errors presented in parentheses.

*** 1%; ** 5%; * 10% level of significance

Thus, the relationship seems to be stronger for labor market restrictions. It could signify that public sector benefits from state labor market conditions, in the extent that high labor market flexibility leads to an increase in criminal prosecution productivity. A possible rationale is that in states where the labor market regulations are less relevant, in general it will be easy to attract and retain skilled and motivated workers in the private sectors. This will lead to having higher-quality employees since local and state institutions draw on the local labor market. It is a kind of positive externality effect from private sectors

to public ones. These findings support Propper and Van Reenen's (2010) analysis in which they find evidence of the negative relationship between efficiency and labor market restrictions among English hospitals.

5 Conclusion

It is hypothesized here that good governance is a general, rather than specific phenomenon. A rich literature investigates the effect of economic policy using the Economic Freedom of North America index as the metric. We conduct a DEA estimation to measure productive efficiency of prosecutor offices as a proxy for effective public provision of non-market services. We find strong evidence that the two are correlated. States who respect property rights, keep taxes low, and allow free labor markets also provide more effective criminal justice systems.

One can view the results as contributing to the literature on the relationship between economic freedom and well-being. The results highlight that, while economic policies have causal effects on macroeconomic variables, such as growth in real GDP for example, it might also be serving as a proxy for more general societal organization. One can argue that there are positive social norms, which facilitate wealth-creating policies, captured by measurements of economic freedom, and spillover to other facits of life such as migration between states (Ashby, 2007; Cebula and Clark, 2011) and, as shown here, prosecution of crimes. As a next step, then, it is crucial to investigate what exactly are these driving forces and how can they be replicated in states and parts of the world that experience lower levels of quality of life.

The analysis is limited to a state-level, cross-sectional dataset. Obviously, one would like a richer dataset to delve deeper into the relationship. For example, one would like to see a panel with offices and prosecutorial services evolving, along with adjustments over time in economic freedom, to investigate changes, rather than just levels, as studied here. Also, a richer dataset would allow one to disentagle other determinants of prosecutorial efficiency, such as laws constraining decision making or changes in caseload pressures. We are limited by the data

availability. Given these limitations, though, strong correlations are illustrated between prosecutorial efficiency and economic freedom, which strengthens our hypothesis.

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7 Appendix

The following table provides the state rankings, as of 2007, for both economic freedom and technical efficiency.

Table A1: State Rankings

	Ranking			Ranking	
	EFNA	*TE*		*EFNA*	*TE*
Alabama	13	7	Montana	36	45
Alaska	34	49	Nebraska	16	40
Arizona	24	32	Nevada	8	4
Arkansas	33	14	New Hampshire	6	13
California	43	39	New Jersey	44	23
Colorado	11	36	New Mexico	40	47
Connecticut	23	1	New York	49	43
Delaware	1	42	North Carolina	10	22
Florida	26	38	North Dakota	15	22
Georgia	12	12	Ohio	46	21
Hawaii	41	48	Oklahoma	20	20
Idaho	30	28	Oregon	29	27
Illinois	27	44	Pennsylvania	38	10
Indiana	14	41	Rhode Island	47	8
Iowa	22	35	South Carolina	28	19
Kansas	17	33	South Dakota	4	46
Kentucky	35	5	Tennessee	3	2
Louisiana	9	26	Texas	2	16
Maine	48	9	Utah	7	11
Maryland	19	30	Vermont	50	37
Massachusetts	25	29	Virginia	5	6
Michigan	32	25	Washington	34	31
Minnesota	42	24	West Virginia	45	34
Mississippi	37	3	Wisconsin	39	15
Missouri	21	18	Wyoming	18	50