(2018) 48, 55–69

The Review of Regional Studies

The Official Journal of the Southern Regional Science Association

Is There a Tradeoff Between Economic Development Incentives and Economic Freedom? Evidence from the US States*

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Abstract: State and local governments have used targeted incentives to recruit businesses for decades. The relationship between incentives and business formation, employment, and economic growth has been studied in detail. This paper extends this literature by examining the relationship between development incentives and economic freedom – where economic freedom refers to the ability of individuals and firms to enter into contracts and use their property as they see fit without permission from government (Gwartney, Lawson, and Hall, 2016). Optimal tax theory assumes an exogenous government revenue constraint, suggesting that taxes not collected from some businesses result in higher taxes on others, which may negatively impact economic freedom. By contrast, tax breaks could diffuse across firms and thus positively affect economic freedom. The paper investigates this relationship with state-level panel data between 1994 and 2013. We find an economically and statistically significant negative relationship between incentives and freedom, which are robust to several specifications.

Keywords: economic development incentives, economic freedom, subsidies, tax incentives

JEL Codes: H11, H71, H81

1. INTRODUCTION

Over the past fifty years, state and local governments across America have become very aggressive in recruiting and trying to retain businesses to help sustain and grow their local economies. These efforts frequently take the form of packages of tax exemptions and abatements, regulatory relief, and taxpayer assistance individually targeted to candidate businesses. An extensive academic literature now evaluates different aspects of targeted incentives.

A significant body of scholarship also investigates the consequences of economic freedom – where economic freedom refers to the ability of individuals and firms to enter into contracts and use their property as they see fit without permission from government (Gwartney, Lawson, and Hall, 2016). These studies consistently find that higher levels of economic freedom lead to higher levels of income and faster economic growth, both across nations and across states. Furthermore, competition between governments is understood as a primary means by which economic freedom has emerged and been sustained, both historically and in contemporary times.

A natural question then is the relationship between targeted development incentives and economic freedom. Because higher taxes and stricter regulations reduce economic freedom, do

* The authors would like to thank three anonymous referees, the editor, participants at the 2017 Southern Regional Science Association annual meeting in Memphis, TN, and the Mercatus Center for extremely helpful feedback on earlier versions of this manuscript. Any remaining errors or omissions are the sole responsibility of the authors.

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ISSN 1553-0892, 0048-749X (online)

www.srsa.org/rrs

targeted incentives increase freedom in a piecemeal fashion? Or do incentive packages increase spending and raise tax rates to recoup exempted tax revenue? Answers to these questions affect whether bidding for businesses constitute a form of government-constraining competition or an example of unhealthy crony capitalism.

Specifically, as will be discussed in greater detail below, given that targeted incentives do not typically affect statutory tax rates and total expenditures are low relative to state budgets, we do not anticipate a strong direct effect between these incentives and economic freedom. However, potential indirect effects provide an empirical question. If the public sector faces an exogenous revenue constraint, then targeted incentives may result in higher tax rates for the tax base that remains, which would lead to a reduction in economic freedom. This effect may be compounded if it increases rent-seeking activities by firms to obtain abatements or avoid the remaining tax or regulatory burden. On the other hand, it may be the case that such tax incentives would, in fact, increase economic freedom. This could occur if tax incentives slowly diffuse across industries and ultimately become broad based rather than selective and targeted.

We explore these relationships and potential channels using the Good Jobs First Subsidy Tracker 3.0 database and the Fraser Institute's *Economic Freedom of North America* (EFNA) state freedom scores. The EFNA scores, to be discussed in greater detail below, provide a measure of overall economic freedom for each state and several subcomponent scores measuring the overall size of government, tax policy, and labor market freedoms within a state.

We find that states which have been more active with development incentives have experienced lower levels of overall economic freedom, which appears to be largely channeled through the labor market freedom subcomponent scores and, to a lesser extent, the tax policy scores. To the extent that policy implications are to be drawn from our findings, these results suggest that the use of development incentives can create adverse distortions within an economy, which has a deleterious effect on economic freedom and tax competitiveness. This suggests a more streamlined and broad-based use of development incentives meant to reduce rent-seeking and other unproductive behavior, or the end to the utilization of such incentives, rather than the ad-hoc and piecemeal application of incentives could improve economic freedom across states.

The remainder of this paper is organized as follows. Section 2 discusses the relevant prior literature on development incentives, economic freedom, and why a relationship should exist between these variables. Section 3 elaborates on how targeted incentives might increase or decrease economic freedom. Section 4 defines the measures of subsidies and economic freedom and considers some preliminary evidence on the bivariate relationship between these variables. Section 5 describes the econometric model used and control variables employed, while Section 6 presents the econometric results. Section 7 offers a brief conclusion.

2. REVIEW OF THE RELEVANT LITERATURE

The relative efficiency and economic impact associated with development incentives have been evaluated in relation to a number of variables including employment and job growth (Rubin and Wilder, 1989; Erickson and Friedman, 1990; Papke, 1994; Grasso and Crosse, 1991; Elvery, 2009; Neumark and Kolko, 2010; Busso, Gregory, and Kline, 2013), overall welfare and economic growth (Reynolds and Rohlin, 2014; Patrick, 2014), and new firm formation (Hanson and Rohlin, 2011a; 2011b) among other areas. However, no research to date has evaluated how, if at all, economically targeted incentives might affect economic freedom. As noted in the previous section, the potential effect poses an important empirical question.

This is especially true given the relationship that exists between economic freedom and a number of important socioeconomic characteristics. Thus, evaluating the relationship between development incentives and economic freedom can provide a more holistic and overarching analysis of the impact that economically targeted incentives have on a jurisdiction's economy, without having to evaluate each component individually. Further, as will be discussed in greater detail below, the economic freedom indices that are available can be decomposed into subcomponents, which allows for an even richer understanding of the relationship under analysis.

Given this, the literature has found economic freedom to be associated with several important socioeconomic variables in both cross-country studies and research across lower-level jurisdictions (typically U.S. states). This latter strand of the research is most relevant to the current study. Specifically, at the U.S. state level Compton, Giedeman, and Hoover (2011) evaluated the relationship between economic growth and freedom. These authors find that, once controlling for a number of socioeconomic control variables and applying both system GMM and panel fixed-effects models, there is a positive and significant relationship between growth and economic freedom, though the level effects are only significant for the panel fixed effect model. These findings are largely consistent with Karabegovic et al. (2003) who found that economic freedom is positively related to both economic growth and income levels.

Gohmann, Hobbs, and McCrickard (2008) and Garrett and Rhine (2011) addressed the relationship between economic freedom and state-level employment in various ways. Gohmann, Hobbs, and McCrickard (2008) found that greater economic freedom leads to greater employment growth in personal services and declines in growth in health, legal, and other sectors, while Garrett and Rhine (2011) found that greater economic freedom results in higher employment growth in general. Finally, Goetz and Rupasingha (2009) found higher growth rates in the number of proprietorships within a state is also correlated with greater economic freedom. Further, Heller and Stephenson (2014) found a positive correlation between economic freedom and state-level employment-to-population ratios and a negative relationship with unemployment rates.

Additionally, an extensive literature has developed analyzing the relationship between economic freedom and various measures of entrepreneurship, including the growth rate of firms generally (Campbell, Feyman, and Heriot, 2011), the growth rate of sole proprietorships specifically (Kreft and Sobel, 2005), and firm creation (Campbell and Rogers, 2007), all of which have been shown to be positively related to economic freedom. Finally, Sobel (2008) corroborates the above, finding a strong positive relationship between economic freedom and proprietorship growth rates along with total firm birth rates, a positive relationship between economic freedom and venture capital investment and patents per capita, and a negative relationship between unproductive entrepreneurship a la Baumol (1990).

Given all of this research, evaluating the relationship between economic development incentives and economic freedom would be beneficial for several reasons. First, as noted, it provides a way to assess all of the potential areas that economically targeted incentives might influence and impact economic outcomes within a state in an overarching manner and to evaluate how entangled these variables are. Also, it is clear that development incentives are meant to promote many of the factors discussed above, which are all clearly related to economic freedom. For instance, the prevalence and use of development incentives is specifically touted as a means to promote economic activity, stimulate entrepreneurship, and ultimately lead to economic growth. Further, with the ability to disaggregate economic freedom into subcomponents, it is possible to better pinpoint the specific areas that might be impacted. Finally, as noted in the introduction, a priori, economically targeted incentives may be positively or negatively associated with economic freedom and thus provides an important empirical question in its own right. The remainder of the paper is devoted to addressing these issues.

3. WHY TARGETED INCENTIVES COULD INCREASE OR DECREASE ECONOMIC FREEDOM

The Fraser Institute's *Economic Freedom of North America* (Stansel, Torra, and McMahon, 2016) includes three components for state level economic freedom: government spending, taxes, and labor market regulation. Targeted development incentives typically include tax exemptions, regulatory exemptions, and expenditures of tax dollars to assist firms. The deals do not alter statutory tax rates and expenditures are typically modest relative to state budgets, so the direct effect of incentives on economic freedom is likely to be small.

A more significant effect is likely to emerge indirectly, and could either increase or decrease economic freedom. The optimal taxation problem assumes that government faces an exogenous revenue constraint (Sandmo, 1976). If an independently determined revenue target must be met, revenue not collected due to tax exemptions must be made up elsewhere. Increasing revenue from the remaining tax base may likely involve higher tax rates, which would reduce measured economic freedom. Admittedly this effect may be somewhat small given that development incentives are not typically large relative to total public sector revenues. However, they may create the expectation that many businesses will be exempted from taxes, which could create an incentive to increase tax rates, if only to induce firms to lobby for exemptions. Further, to the extent that the allocation of resources becomes a political decision, this can also lead to a misallocation of resources and adversely affect economic freedom.

Several factors suggest that targeted incentives might increase measured economic freedom. For instance, the reduced revenues in the presence of state balanced budget rules could reduce the size of government. Tax abatements and exemptions could also diffuse across firms. Concessions might be offered to a handful of firms initially, but other firms could then ask for similar concessions. The legal authority used to provide exemptions has been extended to offer exemptions to other firms (Anderson and Wasmer, 2000). Firms may also learn how to put forth a persuasive case for exemptions. Targeted incentives could diffuse across state lines in a form of yardstick competition (Besley and Case, 1995), or through a race-to-the-bottom dynamic. The proliferation of exemptions may eventually lead to across the board cuts reducing maximum rates, and improving the tax component of freedom.

The impact of regulatory relief on measured economic freedom is less clear. The Economic Freedom of North American Index, which is the most often used measure at the state-level and which will be discussed in greater detail below, includes labor market regulation, specifically the minimum wage, government employment, and union density. Exemptions from complying with a regulation which remains on the books seem unlikely to affect measured levels of freedom, though it may be true that a heavy regulatory burden could induce greater rent-seeking behavior, especially if development incentives and other abatements can be applied to offset the costs associated with more burdensome regulatory compliance. Further, diffusion of exemptions would reduce the effective level of regulation and may eventually lead to reduced official regulation. Overall, contrasting forces could lead economic development incentives to potentially diffuse and improve economic freedom, or generate offsetting increases in tax rates and reduce economic freedom. The relationship between incentives and freedom consequently requires empirical investigation.

4. PRIMARY DATA SETS AND SUMMARY STATISTICS

Our dependent variable of interest is the Fraser Institute's *Economic Freedom of North America* (EFNA) Index (Stansel, Torra, and McMahon, 2016).[1] Importantly, with this index we are able to avoid survey data or more subjective and ad-hoc determinations of what economic freedom actually is. The index measures freedom on a scale from "0" (least economically free) to "10" (most free) and now covers the years 1981 to 2014 annually. The EFNA index is made up of three subcomponents: Area 1, "Government Spending," Area 2, "Taxes," and Area 3, "Labor Market Freedom," also measured on the same 10-point scale, with each component comprised of several variables. The scale is a relative measure rather than absolute, meaning that the lowest and highest levels of freedom observed across states receive 0 and 10 scores, with scores showing the level of economic freedom in states relative to one another. We use the sub-national economic freedom scores for the states, which are based on policies that tend to vary at the state level.[2]

Although a significant literature examines economic development incentives, no perfect measure of incentives exists (Patrick, 2014). We use the Subsidy Tracker 3.0 database compiled by Good Jobs First, a not-for-profit and non-partisan group.[3] Several recent papers have used this database (Wang, 2016; Jansa and Gray, 2016), which was first compiled in 2010 and initially included 43,000 separate subsidy awards across 27 states. However, the database now includes over 500,000 deals across all 50 states and the District of Columbia, with data going back, in some cases, to the 1970s. Given this large range of data across all states, Subsidy Tracker is the most comprehensive database available for information on state incentive deals. Thus, we employ these data in our analysis. Subsidy Tracker provides extensive information across 19 categories (including federal subsidies) and 14 specific categories for state and local subsidies, which include tax and non-tax programs. Specifically, the types of subsidies compiled include mega deals (which are subsidy packages valued at $50 million or more), tax credits/rebates, property tax abatements, grants, grant/loan hybrid programs, loan or bond financing, enterprise zones, tax increment financing, training reimbursement, cost reimbursement, infrastructure assistance, industrial revenue bonds, tax credits/rebates and grants, and venture capital.[4]

The exact measurement of incentives is not obvious, even after choosing the Subsidy Tracker dataset. As Good Jobs First admits, their dataset does not track all economic development deals, and the value of tax exemptions often must be estimated. Further, many programs do not provide actual monetary benefits to firms, though they do provide other ancillary benefits. When this is the case Subsidy Tracker lists the value as "$0."

In this section we explore three different measures of incentive activity. The first is the estimated dollar value of all incentives (in 2014 dollars). We also use the inflation-adjusted estimated value of mega deals. Both are scaled by gross state product (per million dollars of GSP

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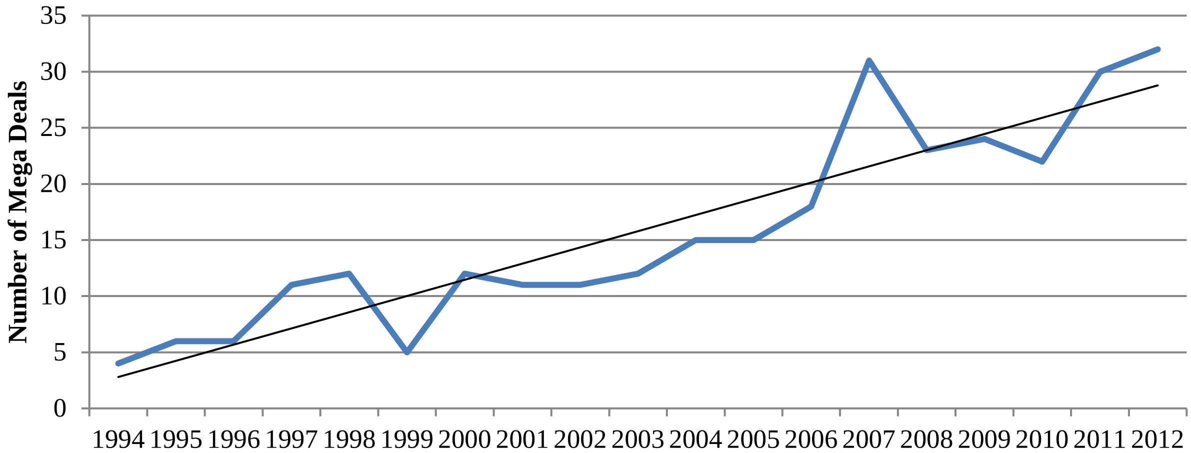
[1] Data along with a detailed description of the index are available at https://www.fraserinstitute.org/studies/economic-freedom-of-north-america-2016.

[2] One exception is the minimum wage component for labor market freedom, which depends on the minimum wage in the state relative to average state wage. The federal minimum wage applies in all states for this component, if not superseded by a higher state minimum wage.

[3] Data are freely available at http://www.goodjobsfirst.org/subsidy-tracker.

[4] For a full list and discussion of each component collected by Good Jobs First, see http://www.goodjobsfirst.org/subsidy-tracker-user-guide.

Figure 1: State Mega Deals, 1994 – 2013



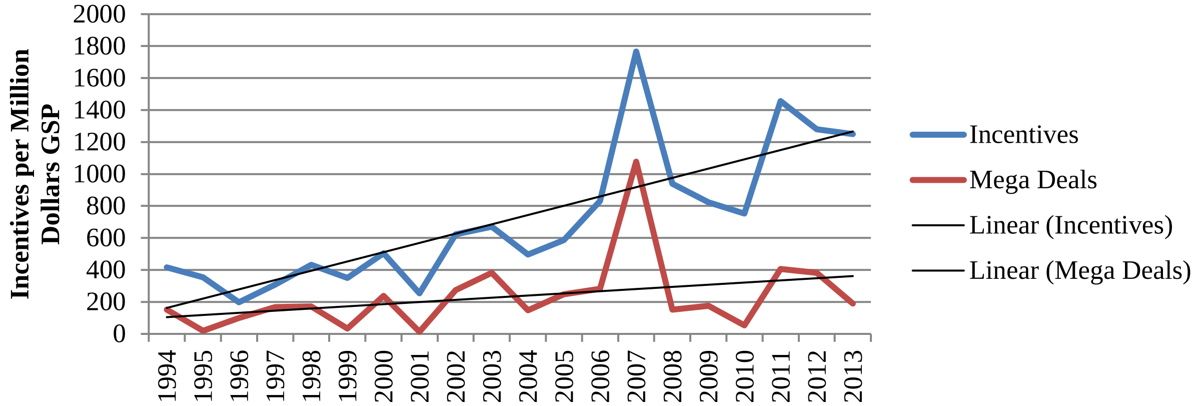
Source: Subsidy Tracker 3.0; Mega Deals are incentive packages with an estimated value of at least $50 million.

here, as a percentage in the regression analysis). We also use the number of mega deals per capita as a measure. Large deals almost always involve state governments and receive enough media attention to rarely escape notice. The count of megadeals is likely the most accurate measure, although not necessarily the most economically relevant measure, since the enormous variation in deal size (the largest deal, between Washington state and Boeing in 2013, was worth nearly $9 billion). The three measures are positively correlated, as we would hope, but hardly perfectly correlated (subsidies and mega deals: +0.68; subsidies and the number of mega deals: +0.73; value of mega deals and the number of mega deals: +0.43).

A first question involves the pattern of development incentives over time. Subsidy Tracker 3.0 database reports 373 mega deals with a total value of $91 billion, and $192 billion in total subsidies from 1982 through 2014. The data confirm an increase in incentive activity over time. Figure 1 reports the number of mega deals annually between 1994 and 2013 (the timeframe used in the regression analysis in the next section), along with the linear trend. Mega deals were reported in every year since 1984, but in the mid-1990s the average was still only about five per year nationally. By contrast, thirty or more occurred in 2010, 2013, and 2014. The dollar value of all tracked incentives has increased significantly, but at least in part due to reporting in an increasing number of states. To evaluate more complete reporting over time, and the actual dollar amount magnitude of these deals, Figure 2 reports the dollar value (and linear trend) of all subsidies and all mega deals scaled by GSP for fifteen states with reported deals for almost all of the years 1994 to 2013. Both trend lines indicate significant increases, with a larger proportional increase for all deals (approximately seven-fold), some of which may still be due to improved reporting.

Have more or less economically free states been more aggressively using incentive deals? Table 1 reports averages for the ten states with the highest and lowest levels of total subsidies per million dollars GSP averaged over the years 2000 to 2014. The difference in incentive deal activity is enormous: $2,730 for all incentives and $1,269 for mega deals versus $44 and less than $8 (per million dollars of GSP) for the ten states using incentives the least. Although the perception might be that "everyone is doing it," great variation exists across states. Indeed, Subsidy Tracker reports no deals in Hawaii. The states using incentives to the greatest extent had slightly lower economic freedom in 2000, by one tenth of a point. Interestingly, the states using subsidies the most had

Figure 2: Trends in Incentive Deal Activity



Source: Authors' calculations using data reported in Subsidy Tracker 3.0 for fifteen states: Connecticut, Colorado, Florida, Illinois, Kentucky, Louisiana, Maryland, New Jersey, New York, North Carolina, Ohio, Oregon, Texas, Virginia, Wisconsin. Dollar values are adjusted for inflation and in 2014 dollars.

higher government spending scores than the least active states in 2000, but lower scores (by about a quarter of a point) in taxation and labor market regulations.

Economic freedom overall barely changed between 2000 and 2014 in either group of states, registering a 0.014 decline in the most active states and an equal increase in the least active states. Both groups had similar increases in economic freedom in labor market regulation, but differing changes for the other areas. The government spending score fell in both groups, but by much more (0.84 vs. 0.47) in states using incentives the most. But the taxation scores improved more (by a quarter point) in states using incentives the most. This is consistent with abatements spreading across firms and constraining taxes.

Table 1: Comparing the States Most and Least Active with Incentive Deals

Variable	Ten Most Active States	Ten Least Active States
Incentives per million dollars GSP	$2,780	$43.91
Mega Deal Incentives per million dollars GSP	$1,269	$8.97
Number of Mega Deals per million persons	1.89	0.039
Economic Freedom, 2000	6.857	6.934
Change in Economic Freedom, 2000-14	-0.014	0.014
Area 1 Economic Freedom, 2000	7.42	7.128
Change in Area 1, 2000-2014	-0.842	-0.47
Area 2 Economic Freedom, 2000	6.61	6.874
Change in Area 2, 2000-2014	0.345	0.096
Area 3 Economic Freedom, 2000	6.541	6.798
Change in Area 3, 2000-2014	0.454	0.416

States ranked by Incentives per million dollars GSP

5. ECONOMETRIC MODEL AND OTHER VARIABLE DEFINITIONS

We employ a panel model with data spanning 1994 to 2013. The baseline model takes the following form:

$$(1) \qquad Freedom_{it} = \alpha + \beta_1 Subsidy_{it-1} + \boldsymbol{z'_{it}}\beta_2 + \boldsymbol{\mu_i} + \boldsymbol{\sigma_t} + \boldsymbol{\varepsilon_{it}}$$

$Freedom_{it}$ represents the overall economic freedom score along with each of the subcomponent scores for state *i* in period *t*, while $Subsidy_{it}$ is the dollar amount of subsidy payments made by state *i* in period *t* as a percentage of GSP. In this specification, we take the four-year average of each variable. Specifically, we average each variable from 1994 to 1997, 1998 to 2001, 2002 to 2005, 2006 to 2009, and 2010 to 2013. This creates observations over five unique time periods.

We take the four-year average for several reasons. First, economic freedom does not change significantly from year to year, thus a four-year average provides a better indication of how these scores evolve over time. Indeed, some states do not have legislative sessions every year, so the policies determining freedom cannot change annually in all states. Second, while Good Jobs First compiles the total dollar amount of a given subsidy at the time it is announced, more often these subsidies are paid out over an extended period. Thus, a four-year average can help smooth this subsidy data. Further, these averages can help overcome some of the issues associated with the observations that had no dollar amount value for the subsidy, though some form of subsidy was granted. Finally, the four-year average loosely corresponds to gubernatorial elections.

To better tease out the overall effect that economic development incentives might have on economic freedom, we also use the three subcomponents as dependent variables (size of government, taxes, and labor market freedom). z'_i represents a vector of socioeconomic control variables consistent with the literature (see Hall, Stansel, and Tarabar (2015) for a survey). These include the total population within a state, percentage of the population with a Bachelor's degree, median age, percent male, percent white, percent of the population below the poverty line, and a measure of voter ideology. Each of these control variables were taken from and are freely available through the U.S. Census Bureau, except the ideology variable which is discussed below. To control for any unobserved, time-invariant factors that may be unique to a given state, we include state and year fixed effects. Finally, we apply Driscoll-Kraay standard errors, which are robust to heteroskedasticity and autocorrelation.

With respect to the control variables included, a larger population may lead to increased demands on public services, but may also lead to increased revenue. Thus, the effect of this variable is ambiguous. Median age is included as an older population tends to become more dependent upon public services, while also providing fewer resources to supply those services. A more educated populace tends to correlate with increased demands for a more expansive public sector, which may reduce economic freedom.

Further, the percentage of the population that is white or male may shift the median voter, resulting in changing public sector priorities and legislation that could influence economic freedom. This would also be true for the poverty rate within a state. Finally, we include a measure of state-level voter ideology developed by Berry et al. (2013). Based on DW-NOMINATE, these scores run between 0 and 100 for each state, with 0 being most conservative and 100 being most liberal. This variable is meant to proxy for voter preference within a state, given that this otherwise omitted variable could have an important impact on economic freedom.

Additionally, there is the potential that economic freedom might be causing a change in incentive policy. To alleviate this issue as best as possible, we include a lagged value of the main

Table 2: Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Subsidy as % of GDP	210	0.11	0.23	0.00	2.61
Subsidy as % of GDP (Without "$0" values)	189	0.14	0.35	0.0002	3.57
Economic Freedom Score (Overall)	250	6.85	0.63	5.05	8.38
Economic Freedom Score (Area 1)	250	7.08	1.04	2.33	8.95
Economic Freedom Score (Area 2)	250	6.58	0.75	4.65	8.45
Economic Freedom Score (Area 3)	250	6.89	0.64	5.18	8.45
Population (In ten millions)	250	0.580	0.639	0.04	3.78
Population Density (In thousands)	250	0.187	0.253	0.001	1.203
% Population with Bachelor's Degree	250	25.58	4.86	13.25	38.85
Median Age	250	36.68	2.47	26.88	43.35
% Male	250	48.93	1.11	41.32	54.04
% White	250	82.16	12.11	26.00	97.88
Per Capita GDP	250	48.47	9.17	33.44	72.36
% Below Poverty Line	250	12.518	3.22	5.68	23.28
Voter Ideology	250	50.08	14.99	17.84	87.59

independent variables of interest (subsidies as a percentage of GDP).[5] Finally, as an additional specification we estimate the above models excluding all “$0” values. Table 2 provides the summary statistics for each of the variables described above.

6. RESULTS

Table 3 reports the results from the models discussed above using each of the state economic freedom scores as the dependent variable, where the first three columns include all of the dollar amount economic development incentives as a percentage of GSP, while columns 4 through 6 exclude all of the development incentives that were listed as having a “$0” value. Columns 1 and 4 only employ the overall economic freedom score as the dependent variable, columns 2 and 5 add all the socioeconomic variables discussed above (population, percentage of the population with a bachelor’s degree, median age, percent male, percent white, and percent below the poverty line), while columns 3 and 6 include the voter ideology variable.

Targeted development incentives as a percentage of GSP is negatively associated with overall economic freedom in every specification, and is statistically significant in five of six specifications, indicating the result is quite robust.[6] The magnitude of the effect is sizable as well: a one percent increase in targeted development incentives as a percentage of GSP implies a 0.0345 to 0.0763 point decline in overall economic freedom, depending on the specification. To better understand the magnitude of this effect, consider Alabama which is the median state over the period analyzed with an average overall economic freedom score of 6.9297. A ten percent increase

[5] Unfortunately, there do not appear to be any valid instruments that could be employed, thus precluding the use of an instrumental variables strategy.

[6] While the point estimates are similar whether or not the “$0” values are included, once excluded, the estimates become less precise. This may be due to the loss of observations that excluding the “$0” values necessarily entails.

Table 3: OLS Regression Results

Dependent Variable = Overall Economic Freedom Score

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Subsidy as % of GDP	-0.0763*	-0.0455**	-0.0345*			
	(0.0328)	(0.0119)	(0.0130)			
Subsidy as % of GDP (No $0)				-0.0502	-0.0407*	-0.0363*
				(0.0418)	(0.0187)	(0.0168)
Population (In ten millions)		-0.1070	-0.1120		-0.113**	-0.0206
		(0.0752)	(0.0585)		(0.0346)	(0.0565)
% with Bachelor's Degree		-0.0099	-0.0060		-0.0173*	-0.0141*
		(0.0085)	(0.0059)		(0.0077)	(0.0066)
Median Age		-0.0393**	-0.0497**		0.0021	-0.0036
		(0.0115)	(0.0144)		(0.0151)	(0.0181)
% Male		0.0008	0.0050		0.0021	0.0074
		(0.0059)	(0.0054)		(0.0090)	(0.0078)
% White		-0.0097	-0.0064		-0.0113	-0.0071
		(0.0219)	(0.0226)		(0.0252)	(0.0253)
% Below Poverty Line		-0.0512***	-0.0536***		-0.0487***	-0.0501***
		(0.0073)	(0.00823)		(0.0058)	(0.0066)
Voter Ideology			0.0071**			0.0089*
			(0.0025)			(0.0035)
State Fixed Effects	Y	Y	Y	Y	Y	Y
Year Dummies	Y	Y	Y	Y	Y	Y
Observations	180	180	180	154	154	154
R-Squared	0.375	0.461	0.477	0.373	0.441	0.464

Driscoll-Kraay standard errors in parentheses in columns 1 through 6. Robust standard errors in parentheses in columns 7 through 12. Constant not included in the output. Subsidy as a percent of GDP lagged one period. *** p<0.01, ** p<0.05, * p<0.1

in incentive expenditures would suggest a decline in its economic freedom score between 6.5847 and 6.1667, which would leave Alabama ranked anywhere between 36th and 45th.

The next tables evaluate each subcomponent of the EFNA index to see which factors may be driving the overall result observed. Table 4 provides the results when the size of government subcomponent variable is used as the dependent variable. The layout follows that of Table 3. For the sake of space, only the coefficients for the main independent variables of interest are provided, though full results are available upon request. Interestingly, none of the results are statistically significant nor do the coefficients appear to be particularly large. Thus, there does not seem to be any particularly strong relationship between the area 1 scores and economically targeted incentives.

Tables 5 and 6 evaluate the taxes and labor market freedom variables, respectively. The results from Table 5 indicate that the size of government variable is statistically significant in three specifications (when the “$0” values are included), but this is not robust once those observations are removed. However, all of the coefficients are negative and the magnitudes are sizeable. Table

Table 4: OLS Regression Results

Dependent Variable = Area 1 "Size of Government" Economic Freedom Score

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Subsidy as % of GDP	-0.0412	0.0129	-0.0113			
	(0.0513)	(0.0251)	(0.0255)			
Subsidy as % of GDP (Without $0)				-0.0147	-0.00749	-2.96e-05
				(0.0508)	(0.0231)	(0.0258)
State Fixed Effects	Y	Y	Y	Y	Y	Y
Year Dummies	Y	Y	Y	Y	Y	Y
Observations	180	180	180	154	154	154
R-Squared	0.620	0.692	0.696	0.612	0.684	0.686

Driscoll-Kraay standard errors in parentheses in columns 1 through 6. Robust standard errors in parentheses in columns 7 through 12. Subsidy as a percent of GDP lagged one period. *** p<0.01, ** p<0.05, * p<0.1

Table 5: OLS Regression Results

Dependent Variable = Area 2 "Taxes" Economic Freedom Score

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Subsidy as % of GDP	-0.0791*	-0.0785*	-0.0786*			
	(0.0298)	(0.0288)	(0.0288)			
Subsidy as % of GDP (Without $0)				-0.0727	-0.0374	-0.0360
				(0.0584)	(0.0364)	(0.0350)
State Fixed Effects	Y	Y	Y	Y	Y	Y
Year Dummies	Y	Y	Y	Y	Y	Y
Observations	180	180	180	154	154	154
R-Squared	0.407	0.478	0.478	0.353	0.494	0.497

Driscoll-Kraay standard errors in parentheses in columns 1 through 6. Robust standard errors in parentheses in columns 7 through 12. Subsidy as a percent of GDP lagged one period. *** p<0.01, ** p<0.05, * p<0.1

Table 6: OLS Regression Results

Dependent Variable = Area 3 "Labor Market Freedom" Economic Freedom Score

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Subsidy as % of GDP	-0.0479***	-0.0424**	-0.0547**			
	(0.00606)	(0.0108)	(0.0182)			
Subsidy as % of GDP ($0)				-0.0469	-0.0499***	-0.0499**
				(0.0244)	(0.015)	(0.0160)
State Fixed Effects	Y	Y	Y	Y	Y	Y
Year Dummies	Y	Y	Y	Y	Y	Y
Observations	180	180	180	154	154	154
R-Squared	0.621	0.674	0.674	0.561	0.608	0.608

Driscoll-Kraay standard errors in parentheses in columns 1 through 6. Robust standard errors in parentheses in columns 7 through 12. Subsidy as a percent of GDP lagged one period. *** p<0.01, ** p<0.05, * p<0.1

6 indicates a much stronger relationship between development incentives and labor market freedom. Again, every specification is negative and economically large and is also statistically significant in five of six specifications. Therefore, given the above findings the channel through which economic freedom is most affected appears to be through labor market freedom.

Clearly, there appears to be some link between development incentives and economic freedom. While we suggested two mechanisms tied to the revenue constraint and tax policy within a state, the taxes results within the economic freedom scores are not as robust as expected. While to some extent the results suggest a negative relationship between development incentives and size of government and taxes, the labor market indicates the most robust effect.

Several reasons could explain this result. First, the weaker results might suggest that these measures may not be precisely measuring what our theory suggests. While more nuanced and different measures of economic freedom might alleviate this issue, such measures unfortunately do not exist. Second, issues with endogeneity may also be influencing the results. While we attempted to alleviate this problem as best as possible with our controls and fixed effects, valid instruments do not appear to exist. Future work that could overcome these issues would be highly beneficial.

Finally, the results for labor market freedom may correlate with the regulatory environment in general within a state. A more regulated labor market may be indicative of the existing regulatory burden which might incentivize greater rent-seeking and other unproductive behavior by firms, especially to the extent that development incentives can help offset the costs associated with a more heavily regulated labor market. This potential was also suggested as a channel through which development incentives could influence economic freedom. Future studies could better tease this out with a more nuanced evaluation of the regulatory burdens across states. Overall, the use of economic development incentives does appear to be negatively associated with economic freedom, with the labor market freedom scores and, to a lesser extent, the taxation scores driving the results.

7. CONCLUSION

States undoubtedly compete for business. This competition sometimes takes the form of general policy changes designed to improve the business climate or level of economic freedom, like passing a right-to-work law or reducing income tax rates, and sometimes incentives target specific businesses. Incentive packages can include both exemptions from taxes and regulations and various direct subsidies using tax dollars. Competition between governments has long been recognized as an important constraint on excessive taxation and spending by government (Brennan and Buchanan, 1980; Vaubel, 2007). How does bidding for business fit into this framework?

We have offered some evidence on this question, specifically examining the link between development incentives and state economic freedom. We found that states using development incentives more intensely have lower levels of economic freedom. The relationship is statistically and economically significant, and robust to several different specifications. These results suggest that economic development incentives may be creating economic distortions that have a detrimental effect on overall state-level economic activity. To the extent that this is the case, this would suggest that more broad-based changes to the tax code rather than one-off targeted benefits would lead to overall improvements in economic freedom. While this initial study is an important first step in understanding this relationship, there are still many empirical questions to be addressed with future work. One specific area is the exact relationship between subsidies, voter preferences, and economic freedom. Finally, our results do suggest that targeted incentives and tax breaks have not disseminated widely enough to generally increase economic freedom.

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