

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. Optimal tax theory assumes an exogenous government revenue constraint, suggesting that not collecting taxes from some businesses results 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 is robust to several specifications.

JEL Codes: H11, H71, H81

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1. Introduction

Over the past 50 years, state and local governments across America have become 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. 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 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 business constitutes a form of government-constraining competition or an example of unhealthy crony capitalism.

Specifically, as will be discussed in greater detail, 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* state freedom scores. We find that states that have been more active with development incentives have experienced lower levels of economic freedom, both overall and to varying degrees within the subcomponents of the index, though these latter findings are somewhat less robust.

Section 2 discusses relevant prior literature on development incentives, economic freedom, and how it is that some 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 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; Grasso and Crosse 1991; Papke 1994; Elvery 2009; Neumark and Kolko 2010; Busso, Gregory, and Kline 2013), overall welfare and economic growth (Bartik and Erickcek 2014; Patrick 2014; Reynolds and Rohlin 2014), and new firm formation (Hanson and Rohlin 2011a, 2011b). 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 has been shown to exist between economic freedom and a number of important socioeconomic characteristics and variables. 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, available economic freedom indices can be decomposed into subcomponents, which allows for a richer understanding of the relationship under analysis.

Given this, the literature has found economic freedom to be associated with a number of important socioeconomic variables in both cross-country studies and research across lower-level jurisdictions (typically US states). This latter strand of the research is most relevant to the current study. Specifically, at the US state level, Compton, Giedeman, and Hoover (2011) evaluate 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 find that economic freedom is positively related to both economic growth and income levels.

Gohmann, Hobbs, and McCrickard (2008), Garrett and Rhine (2011), and Goetz and Rupasingha (2009) all address the relationship between economic freedom and state-level employment in various ways. Gohmann et al. (2008) find 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) find that greater economic freedom results in higher employment growth in general. Finally, Goetz and Rupasingha (2009) find that higher growth rates in the number of proprietorships within a state are also correlated with greater economic freedom. Further, Heller and Stephenson (2014) find 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, Fayman, and Heriot 2011), the growth rate of sole proprietorships specifically (Kreft and Sobel 2005), and firm creation (Campbell and Rogers 2007; Campbell et al. 2012), all of which have been shown to be positively related to economic freedom. Finally, Sobel (2008) corroborates the same, 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 with unproductive entrepreneurship *a la* Baumol (1990).

Given all this, then, 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 the potential areas that economically targeted incentives might influence and impact economic outcomes within a state in an overarching manner and to

determine how entangled these variables are. Also, it is clear that development incentives are meant to promote many of the factors discussed, which are all clearly related to economic freedom. 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, provide an important empirical question in their own right. The remainder of the paper is devoted to addressing these issues.

3. Why Targeted Incentives Could Increase or Decrease Economic Freedom

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). 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 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, in fact, increase measured economic freedom. A first channel is that 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 just to a handful of firms to begin with, 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 Wassmer 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 the “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 America Index, which is the most often used measure at the state level and later will be discussed in greater detail, includes only labor market regulation—specifically, the minimum wage, government employment, and union density. Exemptions from complying with a regulation that 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. Freedom, Incentives, and Preliminary Analysis

Our dependent variable of interest is the Fraser Institute’s Economic Freedom of North America Index (Stansel et al. 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 economic freedom 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 a number of variables. The scale is relative rather than absolute, meaning that the lowest and highest levels of freedom observed across states receive scores of 0 and 10, with scores showing the level of economic freedom in states relative to one another. We use the subnational 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

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 state minimum wage.

by Good Jobs First, a not-for-profit and nonpartisan group.³ Several recent papers have used this database (see Wang 2016 and Jansa and Gray 2016), which was first compiled in 2010 and initially included 43,000 separate subsidy awards across 27 states. However, to date, 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), with 14 specific categories for state and local subsidies, which include tax and nontax 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, a number of programs do not provide actual monetary benefits to firms, although 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

³ Data are 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>.

gross state product [GSP] 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, because of 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 time frame 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, 30 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 the years from 1994 to 2013. Both trend lines indicate significant increases, with a larger proportional increase for all deals (approximately sevenfold), some of which may still be due to improved reporting.

Have relatively freer 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 higher Area 1 “Government Spending,” scores than the least active states in 2000, but lower scores (by about a quarter of a point) in Areas 2 and 3.

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 Area 3 “Regulation” but differing changes for the other areas. The Area 1 “Government Spending” score fell in both groups, but by much more (0.84 versus 0.47) in states using incentives the most. But the Area 2 “Taxes” scores improved more (by a quarter point) in states using incentives the most. This is consistent with abatements spreading across firms and constraining taxes.

5. Econometric Model and Other Variable Definitions

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

$$Freedom_{it} = \alpha + \beta_1 Subsidy_{it-1} + \mathbf{z}'_{it} \beta_2 + \boldsymbol{\mu}_i + \boldsymbol{\sigma}_t + \boldsymbol{\varepsilon}_{it} \quad (1)$$

$Freedom_{it}$ 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. In other words, 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.

This is done 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 pay out over an extended period of time. Thus a four-year average can help smooth this subsidy data and can alleviate some of the problems that might arise with the observations that had no dollar amount value for the subsidy even though some form of subsidy was granted. Finally, the four-year average also 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 (Area 1 “Size of Government,” Area 2 “Taxes,” and Area 3 “Labor Market Freedom”), along with an additional subcomponent to Area 2, which is Area 2a “Income and Payroll Tax Revenue as a Percentage of Income.” \mathbf{z}'_{it} 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, percentage male, percentage white, percentage of the population below the poverty line, and a measure of voter ideology. Each of these control variables was taken from and is freely available through the US Census Bureau. To control as best as possible 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 should be 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 also tends to correlate with increased demands for a more expansive public sector, which may reduce economic freedom.

Further, the percentage of the white and male population may lead to shifts in the median voter that would result 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.

As noted, many incentive deals involve tax abatements and exemptions over a number of years, even though the value of the incentive package is reported for a state entirely in the year the deal begins. Additionally, there is the potential that economic freedom might be causing a change in incentive policy. To alleviate some of the issues these shortcomings might present, we include a lagged value of the main independent variables of interest (subsidies as a percentage of GDP) in each of the six panel regressions that we evaluate and also a cross-sectional model that averages our variables between 1994 and 2013. Finally, as an additional specification, we also

estimate the above models when excluding all “\$0” values where they appear. Table 2 provides the summary statistics for each of the variables described above.

6. Econometric Results

Table 3 reports the results from the models just discussed using each of the state economic freedom scores as the dependent variable, with the first six columns listing the panel specifications and the remaining columns listing the cross-sectional specifications. Further, the first three columns include all the dollar amount economic development incentives as a percentage of GSP, while columns 4 through 6 exclude all the development incentives that were listed as having a “\$0” value. Finally, columns 1 and 4 employ only 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, percentage male, percentage white, and percentage below the poverty line); while columns 3 and 6 include the DW-NOMINATE variable. The cross-sectional specifications follow the same format.

“Targeted development incentives as a percentage of GSP” reduces overall economic freedom in every specification and is statistically significant in eleven of twelve specifications, indicating it is quite robust. The magnitude of the effect is sizable as well; for the panel results, a 1 percent increase in targeted development incentives as a percentage of GSP implies a 0.0395 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 10 percent increase in incentive expenditures would suggest a decline in its economic freedom score

between 6.5347 and 6.1667, which would leave Alabama ranked somewhere between thirty-eighth and forty-fifth.

The next tables evaluate each subcomponent of the economic freedom index to see which factors may be driving the overall result observed. Table 4 provides the results when the Area 1 “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, although full results are available upon request.

Interestingly, none of the panel results are statistically significant, while four of six cross-sectional specifications are, with most coefficients negative. Thus, there does not seem to be any particularly strong relationship between the Area 1 scores and economically targeted incentives.

The next two tables evaluate the Area 2 “Taxes” and Area 3 “Labor Market Freedom” variables, respectively.

The results from table 5 indicate that the Area 2 variable is generally not statistically significant, with three of the specifications significant and most of the coefficients negative. However, table 6 indicates a much stronger relationship between development incentives and “Labor Market Freedoms.” Here, every specification is negative and economically large and is also statistically significant in eleven of twelve specifications. Therefore, given these findings, it would seem the channel through which economic freedom is most effected is through Area 3 “Labor Market Freedom.”

Finally, we consider one component of the Area 2 “Taxes” component of the index. This is specifically Area 2a “Personal Income Tax as a Percentage of Revenue.” The results can be found in table 7.

Interestingly, none of the results are significant, although the coefficients are generally negative and sizable. This at least is suggestive that, in some way, as targeted development incentives are increased to firms, part of those costs may be passed on to state citizens.

Clearly, there does appear to be some link between development incentives and economic freedom. However, determining the channel through which this occurs is somewhat elusive. While we suggested two mechanisms were tied to the revenue constraint and tax policy within a state, neither of these areas within the economic freedom scores appear to robustly indicate this. While the cross-sectional results in table 4 and, to some extent, the panel results in table 5 suggest a negative relationship between development incentives and “Size of Government” and “Taxes,” respectively, the labor market indicates the most robust effect.

There may be several reasons for this. First, the weaker results might suggest 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, 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 increase incentives for rent-seeking and other unproductive behavior by firms, especially to the extent that future 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, then, the use of economic development incentives does appear to negatively affect economic freedom. Further, to the extent that the panel results are persuasive, this would indicate that outcome is largely a result of the impact that occurs on a state's tax environment. Given that tax policy and economic freedom broadly are slow-changing processes, panel specifications would seem a more appropriate means by which to evaluate those effects. However, given the cross-sectional results and the extent to which they are persuasive, the channel through which economic freedom might be affected admittedly cannot be drawn out with complete certainty, although the general effects on overall freedom are robust.

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, such as passing a right-to-work law or reducing income tax rates; 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. 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 question 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.

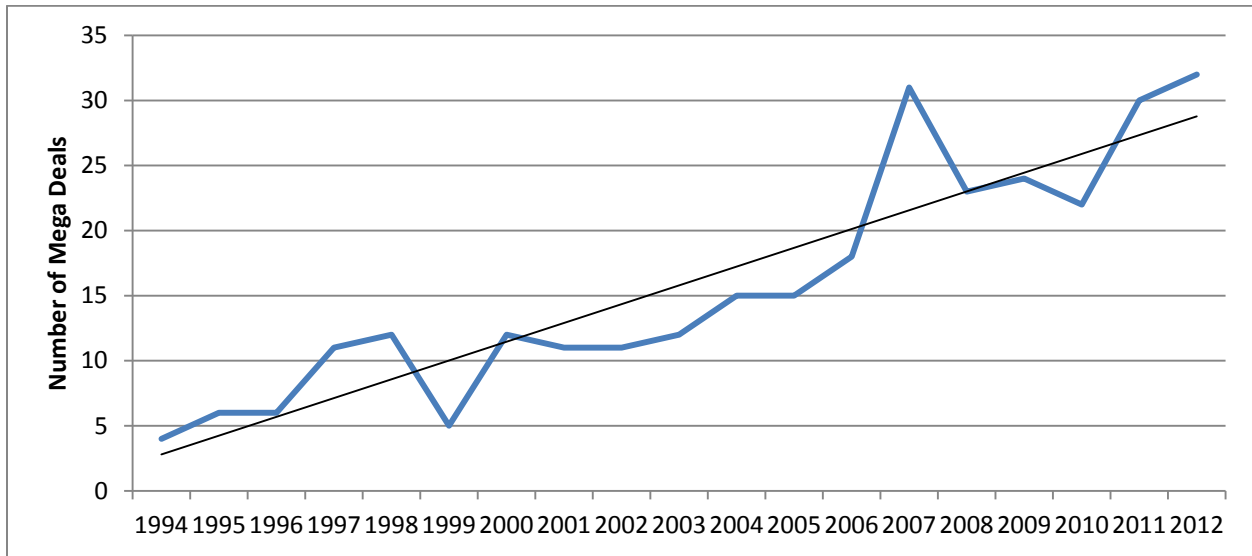
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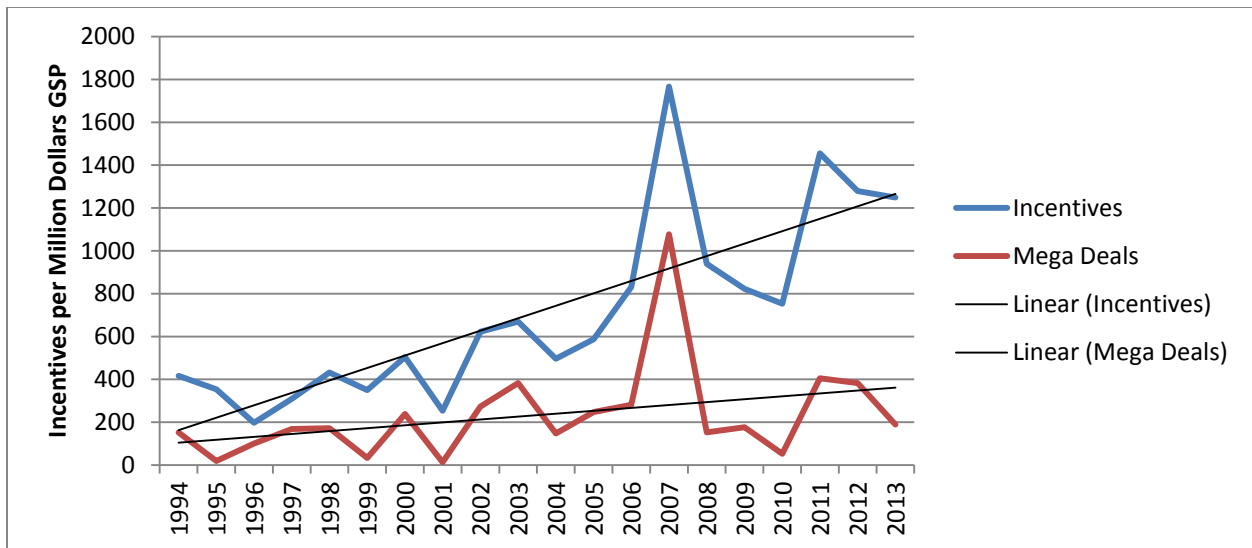
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Figure 1. State Mega Deals, 1994–2013



Source: Subsidy Tracker 3.0; Mega deals are incentive packages with an estimated value of at least \$50 million. <https://www.goodjobsfirst.org/subsidy-tracker>.

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.

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, 2000–2014	–0.014	0.014
Area 1 economic freedom, 2000	7.420	7.128
Change in Area 1, 2000–2014	–0.842	–0.470
Area 2 economic freedom, 2000	6.610	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.

Source: Authors' calculations.

Table 2. Summary Statistics

Variable	Observations	Mean	Std. Dev.	Min	Max
Subsidy as % of GDP	210	0.11	0.23	0	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 (ten millions)	250	0.580	0.639	0.04	3.78
Population density (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	249	49.82	15.14	17.47	90.13

Source: Authors' calculations.

Table 3. OLS Regression Results
Dependent Variable = Overall Economic Freedom Score

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Panel	Panel	Panel	Panel	Panel	Panel	Cross-Section	Cross-Section	Cross-Section	Cross-Section	Cross-Section	Cross-Section
Subsidy as % of GDP	-0.0763* (0.0328)	-0.0455** (0.0119)	-0.0408** (0.0123)				-2.184*** (0.576)	-2.854*** (0.942)	-2.433*** (0.882)			
Subsidy as % of GDP (without "\$0" values)				-0.0502 (0.0418)	-0.0407* (0.0187)	-0.0395* (0.0161)				-2.223*** (0.433)	-2.643*** (0.688)	-2.129*** (0.685)
Population (ten millions)		-0.107 (0.0752)	-0.127 (0.0606)		-0.113** (0.0346)	-0.0814* (0.0354)		-0.0935 (0.177)	-0.0473 (0.151)		-0.148 (0.175)	-0.0679 (0.161)
% population with bachelor's degree		-0.00986 (0.00848)	-0.00614 (0.00656)		-0.0173* (0.00766)	-0.0164* (0.00709)		-0.0124 (0.0224)	0.0288 (0.0237)		-0.00674 (0.0220)	0.0316 (0.0250)
Median age		-0.0393** (0.0115)	-0.0456** (0.0127)		0.00214 (0.0151)	-0.00101 (0.0157)		-0.0933* (0.0497)	0.0120 (0.0458)		-0.0668 (0.0485)	0.0157 (0.0465)
% male		0.000828 (0.00587)	0.00283 (0.00543)		0.00207 (0.00898)	0.00451 (0.00808)		-0.309** (0.138)	-0.309*** (0.108)		-0.236 (0.170)	-0.279** (0.129)
% white		-0.00968 (0.0219)	-0.00956 (0.0223)		-0.0113 (0.0252)	-0.00916 (0.0254)		0.00863 (0.00623)	0.00357 (0.00422)		0.00130 (0.0112)	0.00359 (0.00935)
% below poverty line		-0.0512*** (0.00727)	-0.0539*** (0.00876)		-0.0487*** (0.00575)	-0.0501*** (0.00713)		-0.0198 (0.0350)	-0.0246 (0.0345)		-0.0136 (0.0388)	-0.0172 (0.0386)

(continued on next page)

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Panel	Panel	Panel	Panel	Panel	Panel	Cross-Section	Cross-Section	Cross-Section	Cross-Section	Cross-Section	Cross-Section
Voter ideology			0.00411** (0.00134)			0.00468* (0.00194)			-0.0271*** (0.00704)			-0.0255*** (0.00828)
State fixed effects	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N
Year dummies	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N
Observations	180	180	179	154	154	154	50	50	50	49	49	49
R-Squared	0.375	0.461	0.465	0.373	0.441	0.449	0.138	0.263	0.445	0.195	0.274	0.422

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 % of GDP lagged one period.

*** $p < .01$, ** $p < .05$, * $p < .1$.

Source: Authors' calculations.

Table 4. OLS Regression Results—Panel Data
Dependent Variable = Area 1 “Size of Government” Economic Freedom Score

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Panel	Panel	Panel	Panel	Panel	Panel	Cross-Section	Cross-Section	Cross-Section	Cross-Section	Cross-Section	Cross-Section
Subsidy as % of GDP	-0.0412 (0.0513)	0.0129 (0.0251)	0.0241 (0.0365)				-2.912*** (0.785)	-4.482** (1.684)	-2.011 (1.606)			
Subsidy as % of GDP (without “\$0” values)				-0.0147 (0.0508)	-0.00749 (0.0231)	-0.00644 (0.0211)				-2.894*** (0.625)	-4.137*** (1.232)	-1.745 (1.258)
State fixed effects	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N
Year dummies	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N
Observations	180	180	179	154	154	154	50	50	50	49	49	49
R-Squared	0.620	0.692	0.696	0.612	0.684	0.686	0.099	0.312	0.492	0.128	0.337	0.544

Driscoll-Kraay standard errors in parentheses in columns 1 through 6. Robust standard errors in parentheses in columns 7 through 12. Subsidy as a % of GDP lagged one period.

*** $p < .01$, ** $p < .05$, * $p < .1$.

Source: Authors’ calculations.

Table 5. OLS Regression Results—Panel Data
Dependent Variable = Area 2 “Taxes” Economic Freedom Score

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Panel	Panel	Panel	Panel	Panel	Panel	Cross-Section	Cross-Section	Cross-Section	Cross-Section	Cross-Section	Cross-Section
Subsidy as % of GDP	-0.130** (0.0467)	-0.0785* (0.0288)	-0.0786* (0.0288)				-0.748 (0.813)	-0.630 (0.968)	1.411 (1.090)			
Subsidy as % of GDP (without “\$0” values)				-0.0727 (0.0584)	-0.00749 (0.0231)	-0.00644 (0.0211)				-1.039 (0.625)	-0.774 (0.753)	0.770 (0.869)
State fixed effects	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N
Year dummies	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N
Observations	180	180	179	154	154	154	50	50	50	49	49	49
R-Squared	0.407	0.478	0.479	0.353	0.684	0.686	0.011	0.111	0.360	0.031	0.224	0.376

Driscoll-Kraay standard errors in parentheses in columns 1 through 6. Robust standard errors in parentheses in columns 7 through 12. Subsidy as a % of GDP lagged one period.

*** $p < .01$, ** $p < .05$, * $p < .1$.

Source: Authors’ calculations.

Table 6. OLS Regression Results—Panel Data
Dependent Variable = Area 3 “Labor Market Freedom” Economic Freedom Score

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Panel	Panel	Panel	Panel	Panel	Panel	Cross-Section	Cross-Section	Cross-Section	Cross-Section	Cross-Section	Cross-Section
Subsidy as % of GDP	-0.0479*** (0.00606)	-0.0424** (0.0108)	-0.0417** (0.0108)				-2.943*** (0.514)	-3.322*** (0.616)	-3.133*** (0.605)			
Subsidy as % of GDP (without “\$0” values)				-0.0469 (0.0244)	-0.0499*** (0.015)	-0.0496*** (0.0149)				-2.778*** (0.405)	-2.907*** (0.500)	-2.697*** (0.540)
State fixed effects	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N
Year dummies	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N
Observations	180	180	179	154	154	154	50	50	50	49	49	49
R-Squared	0.621	0.674	0.674	0.561	0.608	0.608	0.273	0.530	0.576	0.325	0.533	0.560

Driscoll-Kraay standard errors in parentheses in columns 1 through 6. Robust standard errors in parentheses in columns 7 through 12. Subsidy as a % of GDP lagged one period.

*** $p < .01$, ** $p < .05$, * $p < .1$.

Source: Authors’ calculations.

Table 7. OLS Regression Results—Panel Data

Dependent Variable = Area 2a “Personal Income Tax as a % of Revenue” Economic Freedom Score

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Panel	Panel	Panel	Panel	Panel	Panel	Cross-Section	Cross-Section	Cross-Section	Cross-Section	Cross-Section	Cross-Section
Subsidy as % of GDP	-0.162* (0.0709)	-0.113 (0.0757)	-0.121 (0.0813)				0.132 (2.468)	-1.087 (4.131)	5.341 (3.939)			
Subsidy as % of GDP (without “\$0” values)				-0.129 (0.106)	-0.0777 (0.105)	-0.0784 (0.107)				-0.353 (2.047)	-1.373 (3.183)	3.879 (3.185)
State fixed effects	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N
Year dummies	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N
Observations	180	180	179	154	154	154	50	50	50	49	49	49
R-Squared	0.414	0.510	0.512	0.403	0.511	0.512	0.000	0.102	0.351	0.001	0.112	0.337

Driscoll-Kraay standard errors in parentheses in columns 1 through 6. Robust standard errors in parentheses in columns 7 through 12. Subsidy as a % of GDP lagged one period.

*** $p < .01$, ** $p < .05$, * $p < .1$.

Source: Authors’ calculations.