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Do Incentive Regimes Compensate for Variations in Institutional Quality? Evidence from US States

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Abstract

This paper investigates whether state policy makers use targeted economic development incentives to compensate for deficient institutional quality. Our findings suggest that states with stronger economic institutions, as measured by the Economic Freedom of North America index, have lower levels of incentive intensity than those with weaker economic institutions. Evidence suggests the difference in incentive intensity is largely driven by differences in both investment tax credits and research and development tax credits. Moreover, we find that incentives are primarily used to offset the government spending component of the economic freedom index.

JEL Codes: H25, H73, O20

Keywords: targeted economic development incentives; public choice; Economic Freedom of North America

I. Introduction

Targeted economic development incentives (TEDIs) have proven to be a central component of state economic development policy over the last three decades. However, a dubious track record and estimated costs of \$45 billion per year have led scholars to call into question this pervasive policy (Bartik 2017). To date, the stickiness of TEDIs has been attributed to both public choice and interstate-competition factors, with a focus on the role of TEDIs as a compensating differential for state tax burdens.

This line of research has provided valuable insights into the nature of economic development programs as an offset for relative deficiencies in state policy. Yet, given the scope of factors contributing

to business location and investment decisions, an important question remains. Are TEDIs used to compensate for more than just tax burdens?

In this paper, we explore the breadth of TEDIs' role as a compensating differential. Specifically, we explore whether state policy makers use TEDIs to compensate firms for deficient economic institutions. We use the Economic Freedom of North America index to proxy for the quality of economic institutions and examine whether states with less economic freedom utilize an intensified TEDI regime as measured by the Panel Database on Incentives and Taxation.

We find evidence that TEDIs serve as a compensating differential for relatively weak economic institutions. Our results indicate that states with stronger economic institutions have lower incentive intensity than those with weaker economic institutions. Moreover, we find evidence that the decline in incentive intensity as economic freedom increases is largely driven by declines in both investment tax credit programs and research and development tax credit programs. Finally, we find evidence that incentives are primarily used to offset the government spending component of economic freedom.

The remainder of this paper is laid out as follows. Section 2 discusses related literature. Section 3 discusses our methodology, and section 4 presents our results. We conclude in section 5.

II. Related Literature

A. The Prevalence of TEDIs

The literature examining targeted economic development incentives casts significant doubt on the ability of targeted tax breaks and subsidies to generate broad economic benefits (Bartik 2018; Slattery and Zidar 2020). Researchers have increasingly tried to explain why governments continue with development incentives, despite growing evidence that these policies are ineffective. Explanations generally follow two lines of thinking that are not mutually exclusive: public choice and interstate competition.

The public choice framework views TEDIs as providing political rather than economic benefits. Rational political actors attempt to maximize the probability with which they retain their political power. TEDIs may aid elected officials in doing so, even if the programs do not yield economic benefits.

Specifically, Jensen and Malesky (2018) contend that TEDIs are used as tools for political pandering, allowing officials to both claim

credit for economic successes and avoid blame for economic failures. This can benefit incumbent elected officials by potentially improving their electoral odds (Jensen et al. 2014; Slattery 2024; Sobel et al. 2024; Yang 2024) or by improving their campaign finances (Aobdia et al. 2024; Sobel et al. 2024). Moreover, Calcagno and Hefner (2007) argue that TEDIs provide an additional indirect political benefit, owing to the positive relationship between TEDIs and tax revenue. More resources for politicians to allocate enable officials to engage in politically favorable redistribution policy.

The political processes used to implement and allocate TEDIs are also vulnerable to capture and rent-seeking by incumbent firms (Coyne and Moberg 2015; Jansa 2019; Dove 2021). Evidence indicates that an industry's increased political presence is rewarded with increased subsidy spending that heavily favors large, established firms (Jansa and Gray 2017).

According to the interstate-competition framework, state officials compete for economic development broadly and that TEDIs can, to varying degrees, improve a state's competitive position. At the very least, TEDIs may signal the friendliness of a state's business climate. Game theory models can then provide insights into the persistence of TEDIs (Ellis and Rogers 2000; Patrick 2014). Empirically, there is evidence to suggest that states imitate their neighbors' TEDI policies (Wang 2018; Wang et al. 2023).

Incentives may also be used to offset relative deficiencies in a state's business climate. Evidence suggests that states use TEDIs as a compensating differential for a relatively high tax burden (Calcagno and Hefner 2007; Calcagno and Hefner 2018; Cheng, Guo, and Liu 2020; Slattery and Zidar 2020). That is, rather than reduce the state's tax burden relative to other states, officials use TEDIs to compensate select firms for the increased tax burden they face when locating within the state.

Business location decisions, though, are based on more than just the state's tax environment. Are taxes the only aspect of a state's business climate that politicians attempt to offset? In this paper, we explore whether state officials extend the use of TEDIs as a compensating differential for deficient economic institutions.

We build on the work of Bundrick (2025) at the metropolitan statistical area level in which some evidence is provided to suggest that TEDIs may serve as a compensating differential for lack of economic freedom. We argue that the state level may be a more appropriate unit of analysis for at least two reasons. First, the policies

determining both the level of economic freedom and the intensity of an incentive regime are largely determined at the state level. Second, the state-level economic freedom data are reported on an annual basis, whereas the data at the metropolitan statistical area level are reported in five-year intervals. Analysis at the state level allows for more observations and more precise estimation of the relationship between economic freedom and TEDIs.

B. Economic Freedom and TEDIs

TEDIs are typically tied to a firm's employment, wage rates, capital investment, or research and development efforts. By coupling TEDIs to these variables, policy makers are pursuing specific economic outcomes such as attracting and retaining businesses, employment opportunities, and entrepreneurial activity. Though evidence casts doubt on the ability of TEDIs to deliver these results, a separate branch of empirical work reveals a much more reliable method to achieve these desired outcomes. Namely, policy makers can spur economic activity by constructing a strong economic institutional framework through policies that promote economic freedom. Such policies empower "personal choice, voluntary exchange, freedom to compete, and protections of persons and property" (Gwartney and Lawson 2003, p. 406).

Considerable empirical evidence indicates that economic freedom in the states is associated with favorable labor market outcomes. Specifically, higher economic freedom is associated with stronger employment growth (Ashby 2007; Garrett and Rhine 2011), a lower unemployment rate (Heller and Stephenson 2014; Heller and Stephenson 2015; Cebula 2016), a higher employment-to-population ratio (Heller and Stephenson 2014; Heller and Stephenson 2015), and both gross and net job creation (Barnatchez and Lester 2017).

Empirical investigations also reveal strong links between economic freedom and business venturing and entrepreneurial activity (Hall and Sobel 2008). More economic freedom in a state is associated with net establishment entry (Barnatchez and Lester 2017), more firm births (Campbell, Heriot, and Rogers 2007; Hall et al. 2013; Powell and Weber 2013), increased net business formation (Campbell and Rogers 2007; Campbell et al. 2011; Tuszynski and Stansel 2018), and productive—rather than unproductive—entrepreneurship (Sobel 2008). States with more economic freedom also see increased patent activity (Powell and Weber 2013; Tuszynski and Stansel 2018). In particular, evidence suggests that a smaller government (less redistribution) is

associated with greater entrepreneurial activity (Bjørnskov and Foss 2008).

Perhaps most important is the link between economic freedom and prosperity. Higher economic freedom is associated with higher levels of income (Ashby 2007; Ashby and Sobel 2008), income growth (Ashby and Sobel 2008; Bjørnskov 2017; Wiseman 2017), gross state product (Hall, Lacombe, and Shaughnessy 2015), and growth in gross state product (Compton, Giedeman, and Hoover 2011). Importantly, Berg and Bjørnskov (2021) demonstrate that the higher income growth associated with increased economic freedom is realized across the income distribution.

In light of the evidence, state officials wishing to promote economic activity may elect to improve their state's economic institutional framework by reducing the size of government, reducing the tax burden, and increasing labor market freedoms. However, institutional reform is often difficult to achieve in practice. Policy makers instead are tempted to substitute TEDIs for institutional reform, as TEDI legislation avoids political resistance.

TEDIs must be acceptable to the electorate as substitutes for institutional reform. There are at least two reasons they may be accepted. First, the electorate may perceive TEDIs as economically advantageous. A key insight from the political-pandering literature is that TEDIs do not have to be economically effective to be politically effective if the electorate is unsure of the actual effects of TEDIs (Jensen and Malesky 2018). Second, substituting TEDIs for reform may reflect status quo bias (Samuelson and Zeckhauser 1988). That is, the current, familiar institutional arrangement may be preferred to an improved but unfamiliar arrangement.

III. Methodology

A. Data

We investigate the relationship between economic freedom and incentive regimes using a panel data set spanning thirty-two states from 1990 through 2015. Our primary dependent variable is the "total incentives" measure from the W. E. Upjohn Institute's Panel Database on Incentives and Taxation (Bartik 2017). The database uses a simulation-based approach to measure the intensity of each state's incentive regime by estimating the typical incentive package awarded to the typical firm. The total-incentives measure consists of job creation tax credits, investment tax credits, research and development credits, property tax abatements, and customized job training subsidies. The

database presents the measure as the present value of total incentives as a percentage of the present value of the typical firm's value added. Note that the Panel Database on Incentives and Taxation is restricted to thirty-two states from 1990 through 2015, thus restricting our sample.¹

We use the Fraser Institute's Economic Freedom of North America index to measure the level of economic freedom in each state. The index reports an overall economic freedom score on a scale of 1 to 10, where 10 indicates the most freedom. The overall score consists of three area scores—government spending, taxation, and labor market freedom.

We control for a variety of other factors that may influence a state's use of incentives. We split these into two groups—economic factors and political factors. The stated purpose of most incentive programs is to encourage some specific economic activity. Accordingly, we control for several economic considerations, including the unemployment rate, the labor force participation rate, real median household income, and manufacturing's share of employment. The expected impact of these variables on the intensity of a state's incentive regime is ambiguous. On the one hand, politicians may award incentives to spur economic activity and industry diversity. It follows that states may increase the intensity of their incentive regimes when economic conditions are poor and the economy is concentrated. On the other hand, politicians may be opportunistic in their use of incentives. That is, better economic conditions may present more opportunities to award incentives and claim credit. Consequently, states may increase the intensity of their incentive regimes when the economy is strong and diversified.

Political factors may also play a role in determining the intensity of a state's incentive regime. We control for four such factors. First, we control for a state government's political ideology to account for potential differences in attitudes toward using incentives. For instance, Republicans are often viewed as business friendly and may be more willing to award incentives than Democrats (Cohen et al. 2019). We control for ideology using Berry et al.'s (2010) state-government ideology index. The index rates state governments

¹ The thirty-two states are Alabama, Arizona, California, Colorado, Connecticut, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, Nevada, New Jersey, New Mexico, New York, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, Washington, and Wisconsin.

from 0 to 100, with 0 representing the most conservative ideologies, and was validated by Berry et al. (2013). Second, we include a dummy variable equal to 1 when the state government is unified. The alignment of political parties across the lawmaking process may facilitate incentive legislation. Third, we include a dummy variable equal to 1 when a governor is term limited. A governor seeking reelection may wish to increase the use of incentives to appeal to voters. Alternatively, a governor that is term limited may wish to use incentives to secure a lucrative post-political career (Palmer and Schneer 2016; Palmer and Schneer 2019). Finally, we control for the share of unproductive employment to account for lobbying efforts. States with a larger share of lobbyists may see increased incentive intensity. Detailed definitions can be found in table 1, while summary statistics can be found in table 2.

Table 1. Variable definitions

Variable	Definition	Source
<i>Incentive regime</i>		
Incentives	Total incentives. Measured as the present value of incentives as a percentage of the present value of value added. 20-year simulation uses a 3% discount rate for all export-based industries.	W.E. Upjohn Institute's Panel Database on Incentives and Taxation
PTA	Property tax abatements	
JCTC	Job creation tax credits	
ITC	Investment tax credits	
RDC	Research and development tax credits	
CJTS	Customized job training subsidies	
<i>Economic freedom</i>		
EFNA	Overall economic freedom	The Fraser Institute's Economic Freedom of North America (EFNA) Subnational Index
Government Spending	EFNA Area 1	
Taxation	EFNA Area 2	
Labor Market Freedom	EFNA Area 3	
<i>Economic controls</i>		
Unemployment	Unemployment rate	Local Area Unemployment Statistics
Labor Force	Labor force participation rate	
Household Income	Real median household income in thousands of dollars. Adjusted for inflation using 2022 CPI-U-RS.	FRED
Manufacturing	Manufacturing's share of employment. The number of manufacturing employees as a percentage of employed persons.	FRED
<i>Political controls</i>		
Ideology	State-government ideology index score. Rated from 0 to 100, with 0 representing the most conservative ideologies.	Berry et al. (2010)
Unified Government	Dummy variable equal to 1 when the party of the governor aligns with the majority party of both chambers of the legislature	Ballotpedia and US Census Bureau
Term Limit	Dummy variable equal to 1 when the current governor is term limited	National Governors Association
Unproductive Employment	The number of employees belonging to NAICS 8139 per 100,000 employed persons	Quarterly Census of Employment and Wages

Table 2. Summary statistics

Variable	N	Mean	Std. dev.	Min	Max
<i>Incentive regime</i>					
Incentives	832	0.891	0.873	0	4.486
PTA	832	0.302	0.476	0	2.76
JCTC	832	0.265	0.423	0	1.86
ITC	832	0.196	0.397	0	1.934
RDC	832	0.086	0.11	0	0.435
CJTS	832	0.042	0.062	0	0.264
<i>Economic freedom</i>					
EFNA	864	5.916	0.939	2.967	7.756
Government Spending	864	6.738	1.582	2.863	9.701
Taxation	864	5.699	0.873	2.583	7.755
Labor Market Freedom	864	5.309	1.189	1.962	8.678
<i>Economic controls</i>					
Unemployment	832	5.885	1.899	2.1	13.8
Labor Force	832	66.412	3.7	56.6	75.3
Household Income	832	65.347	9.63	44.07	95.34
Manufacturing	832	11.559	4.656	3.173	24.717
<i>Political controls</i>					
Ideology	832	48.324	14.214	17.512	73.619
Unified Government	806	0.433	0.496	0	1
Term Limit	832	0.303	0.46	0	1
Unproductive Employment	832	280.494	93.627	127.731	584.495

Notes: Includes annual data for thirty-two states from 1990 to 2015. An additional year (1989) is included for the economic freedom variables because of the lag used in analysis. *Unified Government* data are for thirty-one states because of Nebraska's unicameral legislature. CJTS=customized job training subsidies; ITC=investment tax credits; JCTC=job creation tax credits; RDC=research and development credits; PTA=property tax abatements; EFNA=Economic Freedom of North America index

B. Econometric Model

We investigate three empirical questions. First, do TEDIs serve as a compensating differential for a weak institutional framework? Second, are there specific types of incentive programs policy makers prefer to use to offset weak economic institutions? Third, are there specific components of economic freedom that policy makers are attempting

to offset with incentives? We use a panel fixed effects model to estimate the relationships of interest. The general model is as follows:

$$Incentives_{it} = \alpha + EFNA_{it-1}\beta + X_{it}\delta + \theta_t + c_i + \epsilon_{it} \quad (1)$$

Here, $Incentives_{it}$ represents the incentive regime (total or type) of state i in year t , $EFNA_{it-1}$ represents the economic freedom (overall or area) of state i in year $t - 1$, X_{it} is a vector of the economic and political control variables discussed above, θ_t represents year dummies, c_i represents the unobserved effects specific to each state, and ϵ_{it} is the idiosyncratic error term, clustered at the state level.

We must consider the possibility of endogeneity. Our interest is in understanding whether a lack of economic freedom leads to increased incentive intensity, but it is possible the reverse is true. Incentive programs are largely tax expenditures that hollow out a state's tax base. This may lead officials to raise tax rates to recover the forgone revenue. This, in turn, would reduce a state's economic freedom score. We follow Dove and Sutter (2018) and account for this by lagging a state's economic freedom score by one year.

IV. Results

A. Economic Freedom and Incentive Regimes

Our first task is to determine whether TEDIs serve as a compensating differential for weak economic institutions. We do so by estimating the relationship between overall economic freedom and the intensity of a state's total-incentives regime using equation (1). The parameter of interest, β , is the coefficient on the overall economic freedom score, the Economic Freedom of North America index. A negative (positive) β indicates that an increase in economic freedom is associated with a decrease (increase) in the intensity of a state's incentive regime.

Our results are presented in table 3. Column (1) includes the full set of control variables. Consequently, Nebraska is dropped from the sample, as its unicameral legislature is not compatible with the unified-government variable. Column (2) excludes the unified-government variable, allowing the observations from Nebraska to be included in the sample. In both regressions, β is negative and statistically significant at the 10 percent level. This implies that states with stronger economic institutions have a lower incentive intensity than those with poor economic institutions.

Table 3. Economic freedom and incentive regime

	Dependent variable: Incentives	
	(1)	(2)
EFNAit-1	-0.15* (0.078)	-0.149* (0.08)
Unemployment	-0.106** (0.04)	-0.111*** (0.038)
Labor Force	0.03 (0.029)	0.025 (0.028)
Household Income	-0.012* (0.006)	-0.012* (0.006)
Manufacturing	-0.043 (0.037)	-0.051 (0.037)
Ideology	-0.004 (0.003)	-0.004 (0.003)
Unified Government	0.071 (0.044)	
Term Limit	-0.015 (0.046)	-0.019 (0.045)
Unproductive Employment	0.001 (0.002)	0.001 (0.002)
Constant	1.094 (1.911)	1.608 (1.9)
Observations	806	832
R-squared	0.384	0.379
State fixed effects?	Yes	Yes
Year fixed effects?	Yes	Yes
States	31	32

Notes: Column (1) includes the Unified Government variable, excluding Nebraska from the analysis. Column (2) excludes the Unified Government variable, including Nebraska in the analysis. Standard errors are clustered at the state level and reported in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. EFNA=Economic Freedom of North America index

The magnitude of the coefficient in column (1) indicates that a one-unit increase in a state's overall economic freedom score is associated with a decrease in the value of a state's typical incentive package of approximately 0.15 percent of the value added of the typical firm. Considering that the value of the average incentive package across the sample is 0.891 percent of the value added of the typical firm, a 0.15 percentage point decrease represents a 16.8 percent decrease in the intensity of a state's incentive regime. These results support the notion that TEDIs are used as a compensating differential for economic freedom.

B. Economic Freedom and Incentive Type

Our second task is to evaluate whether policy makers attempt to offset weakness in economic institutions with specific types of targeted incentives. We explore this by reestimating equation (1) using each of the five incentive categories provided by the Panel Database on Incentives and Taxation as our dependent variables. The independent variable of interest remains the overall economic freedom score, the Economic Freedom of North America index. Our results are presented in table 4 with each column representing a separate incentive type.²

Table 4. Economic freedom and incentive type

	Dependent variable				
	PTA	JCTC	ITC	RDC	CJTS
EFNAit-1	-0.053 (0.047)	0.047 (0.066)	-0.119** (0.045)	-0.03** (0.014)	0.006 (0.004)
Unemployment	-0.008 (0.017)	-0.056* (0.028)	-0.029* (0.017)	-0.01* (0.005)	-0.003* (0.002)
Labor Force	-0.001 (0.022)	0.037 (0.03)	-0.005 (0.01)	0.001 (0.004)	-0.001 (0.002)
Household Income	0.004 (0.004)	-0.015** (0.006)	0 (0.002)	-0.001 (0.001)	0 (0)
Manufacturing	-0.042 (0.041)	-0.011 (0.028)	0.006 (0.013)	0.002 (0.005)	0.001 (0.001)
Ideology	-0.004 (0.002)	0.002 (0.001)	-0.002* (0.001)	0 (0)	0 (0)
Unified Government	0.024 (0.026)	0.005 (0.033)	0.033* (0.017)	0.01 (0.008)	0 (0.002)
Term Limit	-0.027 (0.02)	0.044 (0.031)	-0.038 (0.025)	0.008** (0.004)	-0.001 (0.002)
Unproductive Employment	0 (0.001)	0.002 (0.002)	-0.001 (0.001)	0 (0)	0 (0)
Constant	1.408 (1.634)	-2.093 (2.044)	1.478* (0.772)	0.201 (0.255)	0.103 (0.145)
Observations	806	806	806	806	806
R-squared	0.107	0.315	0.215	0.254	0.182
State fixed effects?	Yes	Yes	Yes	Yes	Yes
Year fixed effects?	Yes	Yes	Yes	Yes	Yes
States	31	31	31	31	31

Notes: Nebraska is excluded because of the inclusion of the Unified Government variable. Standard errors are clustered at the state level and reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1. CJTS=customized job training subsidies; ITC=investment tax credits; JCTC=job creation tax credits; RDC=research and development credits; EFNA=Economic Freedom of North America index; PTA=property tax abatements

² For brevity, we report only the estimations using the full set of control variables from here on. However, estimations dropping the *Unified Government* variable to include data from Nebraska produce qualitatively similar results.

The coefficient β is statistically nonsignificant in the regressions utilizing property tax abatements, job creation tax credits, and customized job training subsidies as the dependent variables.³ However, β is negative and statistically significant at the 5 percent level when either investment tax credits or research and development tax credits are used as the dependent variable. These results suggest that the decline in overall incentive intensity as the quality of economic institutions improves is largely driven by declines in investment tax credits and research and development tax credits. Moreover, they imply a more elastic use of both investment and research and development incentive programs in response to institutional quality than other forms of incentives.

The coefficient in the ITC column indicates that a one-unit increase in a state's overall economic freedom score is associated with a decrease of 0.119 percentage points in the value of a state's typical investment tax credit incentive relative to the value added of the typical firm. Given that the value of the average investment tax credit was 0.196 percent of the value added of the typical firm, a 0.119 percentage point reduction represents a 60.7 percent decline in the intensity of a state's investment tax credit programs.

Similarly, the coefficient in the RDC column indicates that a one-unit increase in the Economic Freedom of North America index is associated with a 0.03 percentage point reduction in the value of research and development credits. A decline of this magnitude represents a decrease of 34.9 percent in the intensity of a state's research and development tax credit programs.

C. Economic Freedom Area and Incentive Regime

Our final task is to evaluate whether policy makers offset specific deficiencies in their economic institutions with TEDIs. We explore this by reestimating equation (1) using the three economic freedom area scores as our independent variables of interest and the total-incentives measure as our dependent variable. Our results are

³ One reason we find no relationship between economic freedom and the intensity of property tax abatements may be that property taxes are typically governed by local rather than state governments. It is also possible that we find no statistical significance when using job creation tax credits or customized job training subsidies as the dependent variable because their salience to voters provides a stronger political benefit. That is, they directly connect a politician to job creation, allowing the politician to claim credit. The programs may therefore be inelastic.

presented in table 5. Columns (1)–(3) evaluate each area score individually, while column (4) includes all three area scores.

Table 5. Economic freedom area and incentive regime

	Dependent variable: Incentives			
	(1)	(2)	(3)	(4)
Government Spending _{it-1}	-0.085* (0.044)			-0.08* (0.041)
Taxation _{it-1}		-0.036 (0.109)		-0.009 (0.121)
Labor Market Freedom _{it-1}			0.075 (0.12)	0.045 (0.116)
Unemployment	-0.11** (0.04)	-0.093** (0.043)	-0.088* (0.047)	-0.106** (0.045)
Labor Force	0.031 (0.028)	0.027 (0.03)	0.024 (0.032)	0.028 (0.034)
Household Income	-0.012* (0.006)	-0.014** (0.006)	-0.014** (0.005)	-0.012** (0.006)
Manufacturing	-0.046 (0.035)	-0.047 (0.038)	-0.05 (0.036)	-0.047 (0.034)
Ideology	-0.004 (0.003)	-0.004 (0.003)	-0.004 (0.003)	-0.004 (0.003)
Unified Government	0.079* (0.045)	0.07 (0.044)	0.076 (0.046)	0.082* (0.046)
Term Limit	-0.016 (0.047)	-0.018 (0.045)	-0.02 (0.046)	-0.017 (0.047)
Unproductive Employment	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)
Constant	0.789 (1.845)	0.658 (2.089)	0.266 (1.728)	0.783 (2.085)
Observations	806	806	806	806
R-squared	0.389	0.379	0.381	0.39
State fixed effects?	Yes	Yes	Yes	Yes
Year fixed effects?	Yes	Yes	Yes	Yes
States	31	31	31	31

Notes: Nebraska is excluded because of the inclusion of the Unified Government variable. Standard errors are clustered at the state level and reported in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The coefficient of interest β is negative and statistically significant at the 10 percent level when evaluating the government spending score. This negative relationship implies that states with higher government spending as a percentage of income tend to have more intense incentive regimes. The coefficient indicates that a one-unit increase in a state's government spending score (i.e., less government

spending as a percentage of income) is associated with a decrease of 0.085 percentage points in the value of a state's typical incentive package as a percentage of the typical firm's value added. Given that the value of the average incentive package across the sample was 0.891 percent of the value added of the typical firm, a 0.085 percentage point reduction represents a 9.54 percent decrease in the intensity of a state's incentive regime.

The coefficient of interest β is statistically nonsignificant when isolating both the taxation score and the labor market freedom score. These results suggest that policy makers use TEDIs to offset relative deficiencies in government spending, but the evidence is not as clear when it comes to taxation and labor market freedom. That the taxation score is nonsignificant is inconsistent with previous literature and is perhaps due to differences in measurement. Note that the results in column (4) are similar to those in columns (1)–(3).

In summary, our results provide evidence that TEDIs serve as a substitute for poor economic institutions. Further investigation reveals that a lack of economic freedom does not affect the use of each type of incentive program equally. There exists a much stronger relationship between economic freedom and both investment tax credits and research and development tax credits relative to other types of incentive programs. Similarly, the subcomponents of economic freedom do not impact incentive intensity in the same way. We find that the relationship between economic freedom and incentive intensity is driven by government spending.

Note that of the control variables, the unemployment rate is the most persistently significant variable. The relationship is negative in all regressions and statistically significant in all but one regression. This suggests that states with a higher unemployment rate tend to have less intense incentive regimes, which may reflect the opportunism of politicians. That is, better economic conditions may present more opportunities to award incentives and claim credit than worse economic conditions. Consequently, states may increase the intensity of their incentive regimes when the unemployment rate is low.

V. Conclusion

That empirical evidence has largely failed to support the use of TEDIs on economic grounds has opened a new line of research into their persistence. This line of research has yielded important insights into the use of TEDIs as an offset for relative deficiencies in state policy but has largely been limited to tax environments. We expand

this literature by exploring whether TEDIs are used to offset a wider set of state policies.

We find evidence to suggest that TEDIs serve as a compensating differential for relatively weak economic institutions. A one-unit increase in a state's overall economic freedom score is associated with a 16.8 percent decrease in the intensity of a state's incentive regime. This decline in incentive intensity is largely driven by a decline in the intensity of both investment tax credit programs and research and development credit programs. Moreover, we find evidence to suggest that policy makers are most inclined to offset relative deficiencies in the government spending component of economic freedom.

Our findings have important implications. Namely, they provide evidence that incentive regimes are used as a compensating differential for a wider range of institutional differences that may make one state less attractive than another. This suggests that the prevalence of TEDIs is, in part, attributable to one state's economic institutional framework relative to another's. Coupled with the body of literature regarding the economic feebleness of TEDIs, our results highlight the importance of policy makers building strong economic institutions. State officials must carefully consider the efficiency trade-off associated with relying on TEDIs to offset a relatively weak set of economic institutions rather than improving economic freedom.

We conclude with two caveats. First, the Panel Database on Incentives and Taxation is limited to thirty-two states, restricting our ability to incorporate all state legislatures into our analysis. One may find different results should a data set encompassing all fifty states become available. Second, the database simulates the typical incentive package awarded by states. Alternative measures of incentive intensity, such as those that incorporate actual dollar values and the number of incentive deals, may yield different results.

References

- Aobdia, Daniel, Allison Koester, and Reining Petacchi. 2024. "Political Connections and US State Government Resource Allocation Effectiveness." *Journal of Law and Economics*, 67(3): 639–89.
- Ashby, Nathan J. 2007. "Economic Freedom and Migration Flows Between US States." *Southern Economic Journal*, 73(3): 677–97.
- Ashby, Nathan J., and Russell S. Sobel. 2008. "Income Inequality and Economic Freedom in the US States." *Public Choice*, 134 (March): 329–46.
- Barnatchez, Keith, and Robert Lester. 2017. "The Relationship Between Economic Freedom and Economic Dynamism." *Contemporary Economic Policy*, 35(2): 358–72.

- Bartik, Timothy J. 2017. "A New Panel Database on Business Incentives for Economic Development Offered by State and Local Governments in the United States." Prepared for the Pew Charitable Trusts.
- Bartik, Timothy J. 2018. "But For? Percentages for Economic Development Incentives: What Percentage Estimates Are Plausible Based on the Research Literature?" *Upjohn Institute Working Paper 18-289*, W. E. Upjohn Institute for Employment Research, Kalamazoo, MI.
- Bergh, Andreas, and Christian Bjørnskov. 2021. "Does Economic Freedom Boost Growth for Everyone?" *Kyklos*, 74(2): 170–86.
- Berry, William D., Richard C. Fording, Evan J. Ringquist, Russell L. Hanson, and Carl E. Klarner. 2010. "Measuring Citizen and Government Ideology in the US States: A Re-appraisal." *State Politics & Policy Quarterly*, 10(2): 117–35.
- Berry, William D., Richard C. Fording, Evan J. Ringquist, Russell L. Hanson, and Carl Klarner. 2013. "A New Measure of State Government Ideology, and Evidence That Both the New Measure and an Old Measure Are Valid." *State Politics & Policy Quarterly*, 13(2): 164–82.
- Bjørnskov, Christian. 2017. "Growth, Inequality, and Economic Freedom: Evidence from the US States." *Contemporary Economic Policy*, 35(3): 518–31.
- Bjørnskov, Christian, and Nicolai J. Foss. 2008. "Economic Freedom and Entrepreneurial Activity: Some Cross-country Evidence." *Public Choice*, 134 (March): 307–28.
- Bundrick, Jacob. 2025. "Economic Freedom and Incentive Regimes: Evidence from United States MSAs." *Journal of Regional Analysis & Policy*, 55(2): 4–15.
- Calcagno, Peter T., and Frank L. Hefner. 2007. "State Targeting of Business Investment: Does Targeting Increase Corporate Tax Revenue?" *Journal of Regional Analysis & Policy*, 37(2): 90–102.
- Calcagno, Peter T., and Frank L. Hefner. 2018. "Targeted Economic Incentives: An Analysis of State Fiscal Policy and Regulatory Conditions." *Review of Regional Studies*, 48(1): 71–91.
- Campbell, Noel D., Alex Fayman, and Kirk Heriot. 2011. "Growth in the Number of Firms and the Economic Freedom Index in a Dynamic Model of the US States." *Journal of Economics and Economic Education Research*, 12(2): 51–64.
- Campbell, Noel D., and Tammy M. Rogers. 2007. "Economic Freedom and Net Business Formation." *Cato Journal*, 27(1): 23–36.
- Campbell, Noel D., Tammy M. Rogers, and Kirk C. Heriot. 2007. "The Economic Freedom Index as a Determinant of Firm Births and Firm Deaths." *Southwest Business & Economics Journal*, 16: 37–50.
- Cebula, Richard. 2016. "Do Regional Differentials in Economic Freedom Yield Regional Unemployment Rate Differentials in the US? A Brief Exploratory Note Adopting Panel Data Analysis." *Econometrics Letters*, 3(1): 11–25.
- Cheng, Shaoming, Hai Guo, and Cathy Yang Liu. 2020. "Incentivized for Leveling the Playing Field: Do State Economic Incentives Compensate for High Taxes?" *Economic Development Quarterly*, 34(2): 101–15.
- Cohen, Alma, Moshe Hazan, Roberto Tallarita, and David Weiss. 2019. "The Politics of CEOs." *Journal of Legal Analysis*, 11: 1–45.
- Compton, Ryan A., Daniel C. Giedeman, and Gary A. Hoover. 2011. "Panel Evidence on Economic Freedom and Growth in the United States." *European Journal of Political Economy*, 27(3): 423–35.

- Coyne, Christopher J., and Lotta Moberg. 2015. "The Political Economy of State-Provided Targeted Benefits." *Review of Austrian Economics*, 28 (September): 337–56.
- Dove, John A. 2021. "Economic Development Incentives: Fostering Productive or Unproductive Entrepreneurship?" In *Entrepreneurship and the Market Process*, ed. Arielle John and Diana W. Thomas, 151–70. Cham: Palgrave Macmillan.
- Dove, John A., and Daniel Sutter. 2018. "Is There a Tradeoff Between Economic Development Incentives and Economic Freedom? Evidence from the US States." *Review of Regional Studies*, 48(1): 55–69.
- Ellis, Stephen, and Cynthia Rogers. 2000. "Local Economic Development as a Prisoners' Dilemma: The Role of Business Climate." *Review of Regional Studies*, 30(3): 315–30.
- Garrett, Thomas A., and Russell M. Rhine. 2011. "Economic Freedom and Employment Growth in US States." *Federal Reserve Bank of St. Louis Review*, 93(1): 1–18.
- Gwartney, James, and Robert Lawson. 2003. "The Concept and Measurement of Economic Freedom." *European Journal of Political Economy*, 19(3): 405–30.
- Hall, Joshua C., Donald J. Lacombe, and Timothy M. Shaughnessy. 2019. "Economic Freedom and Income Levels Across US States: A Spatial Panel Data Analysis." *Contemporary Economic Policy*, 37(1): 40–49.
- Hall, Joshua C., Boris Nikolaev, John M. Pulito, and Benjamin J. VanMetre. 2013. "The Effect of Personal and Economic Freedom on Entrepreneurial Activity: Evidence from a New State Level Freedom Index." *American Journal of Entrepreneurship*, 6(1): 88–103.
- Hall, Joshua C., and Russell S. Sobel. 2008. "Institutions, Entrepreneurship, and Regional Differences in Economic Growth." *Southern Journal of Entrepreneurship*, 1(1): 69–96.
- Heller, Lauren R., and E. Frank Stephenson. 2014. "Economic Freedom and Labor Market Conditions: Evidence from the States." *Contemporary Economic Policy*, 32(1): 56–66.
- Heller, Lauren R., and E. Frank Stephenson. 2015. "Economic Freedom, Homeownership, and State Labor Market Conditions." *Journal of Entrepreneurship and Public Policy*, 4(2): 142–51.
- Jansa, Joshua M. 2019. "Client Group Influence in Economic Development Organizations: Evidence from North Carolina, Nevada, and Oregon." *Administration & Society*, 51(8): 1308–1336.
- Jansa, Joshua M., and Virginia Gray. 2017. "Captured Development: Industry Influence and State Economic Development Subsidies in the Great Recession Era." *Economic Development Quarterly*, 31(1): 50–64.
- Jensen, Nathan M., and Edmund J. Malesky. 2018. *Incentives to Pander: How Politicians Use Corporate Welfare for Political Gain*. New York: Cambridge University Press.
- Jensen, Nathan M., Edmund Malesky, Mariana Medina, and Ugur Ozdemir. 2014. "Pass the Bucks: Credit, Blame, and the Global Competition for Investment." *International Studies Quarterly*, 58(3): 433–47.
- Palmer, Maxwell, and Benjamin Schneer. 2016. "Capitol Gains: The Returns to Elected Office from Corporate Board Directorships." *Journal of Politics*, 78(1): 181–96.
- Palmer, Maxwell, and Benjamin Schneer. 2019. "Postpolitical Careers: How Politicians Capitalize on Public Office." *Journal of Politics*, 81(2): 670–75.

- Patrick, Carlianne. 2014. "The Economic Development Incentives Game: An Imperfect Information, Heterogeneous Communities Approach." *Annals of Regional Science*, 53 (August): 137–56.
- Powell, Benjamin, and Rick Weber. 2013. "Economic Freedom and Entrepreneurship: A Panel Study of the United States." *American Journal of Entrepreneurship*, 6(1): 67–87.
- Samuelson, William, and Richard Zeckhauser. 1988. "Status Quo Bias in Decision Making." *Journal of Risk and Uncertainty*, 1 (March): 7–59.
- Slattery, C. 2024. "The Political Economy of Subsidy Giving." Available at SSRN.
- Slattery, Cailin, and Owen Zidar. 2020. "Evaluating State and Local Business Incentives." *Journal of Economic Perspectives*, 34(2): 90–118.
- Sobel, Russell S. 2008. "Testing Baumol: Institutional Quality and the Productivity of Entrepreneurship." *Journal of Business Venturing*, 23(6): 641–55.
- Sobel, Russell S., Gary A. Wagner, and Peter T. Calcagno. 2024. "The Political Economy of State Economic Development Incentives: A Case of Rent Extraction." *Economics & Politics*, 36(1): 104–51.
- Tuszynski, Meg Patrick, and Dean Stansel. 2018. "Targeted State Economic Development Incentives and Entrepreneurship." *Journal of Entrepreneurship and Public Policy*, 7(3): 235–47.
- Wang, Jia. 2018. "Strategic Interaction and Economic Development Incentives Policy: Evidence from US States." *Regional Science and Urban Economics*, 68 (January): 249–59.
- Wang, Jia, Weici Yuan, and Cynthia L. Rogers. 2023. "Economic Development Program Spending in the US: Is There Club Convergence?" *Applied Economics*, 55(43): 5097–5114.
- Wiseman, Travis. 2017. "Economic Freedom and Growth in US State-Level Market Incomes at the Top and Bottom." *Contemporary Economic Policy*, 35(1): 93–112.
- Yang, Joonseok. 2024. "Why Compete for Firms? Electoral Effects of Corporate Headquarters Relocation." *American Journal of Political Science*, 68(2): 339–53.