Takings and Tax Revenue: Fiscal Impacts of Eminent Domain

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Abstract

This paper provides the first examination of the relationship between eminent domain activity and the growth (and level) of state and local revenue. We restrict our attention to takings that are for private use, such as the one that led to the landmark *Kelo* decision in 2005. One of the arguments used by the proponents of such takings is that they will lead to higher levels of tax revenue for state and local governments. Using data on the number of takings for private use, we find virtually no evidence of a positive relationship between eminent domain activity and the level of state and local tax revenue. We find some limited evidence of a negative relationship between eminent domain and future revenue growth. These findings are robust to a variety of model specifications. They have important implications for contemporary public policy debates on this issue.

JEL codes: K11, H7, R5

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1. Introduction

The United States Supreme Court decision in *Kelo v. City of New London*[1] in 2005 sparked outrage around the country. In this decision, the US Supreme Court allowed the use of eminent domain to transfer property in New London, Connecticut, for *private benefit*, not for *public use* as set forth in the takings clause of the US Constitution. This case focused the attention of citizens, politicians, and academics on property takings. The general public expressed concern that homes, churches, or other properties can now be expropriated on the grounds that redevelopment could decrease unemployment and increase government tax revenue.

Many regarded the *Kelo* decision as an abuse of government power and a threat to liberty (Benson 2010; C. Cohen 2006; Lopez, Kerekes, and Johnson 2007). Politicians scurried to reassure troubled voters by examining, and in some cases modifying, state constitutional constraints on the use of eminent domain. Academics published articles that chronicled eminent domain abuse (Berliner 2006), scrutinized state takings for private benefit (Kerekes 2011; Lanza et al. 2013), and analyzed state reforms in the wake of the *Kelo* decision (Lopez, Jewel, and Campbell 2009; Lopez and Totah 2007; Sandefur 2006a; Somin 2007, 2009).

This paper is an extension of a study that emerged from this literature. Turnbull and Salvino (2009) were the first to empirically examine the relationship between eminent domain for private benefit and the size of state and local public sectors. The purpose of their paper was to test the Leviathan hypothesis proposed by Brennan and Buchanan (1980). This argument states that broader eminent domain powers (i.e., allowing governments to use eminent domain for

[1] Kelo et al. v. City of New London, 545 U.S. 469 (2005).

redevelopment in order to increase employment or to increase the tax base) provide state and local governments additional means through which to increase their overall size. In effect, the 2005 decision in *Kelo* weakened a constitutional constraint on government size. As a result, state and local public sectors may increase in size.

We utilize the Turnbull and Salvino (2009) model and extend it to investigate the effects of eminent domain from a different angle. The *Kelo* ruling allows the compulsory transfer of property between individuals based on the claim that eminent domain used for redevelopment results in increases in the tax base that, in turn, convey public benefits.[2] Our question is whether such applications of eminent domain will actually increase revenue. As we discuss below, if more expansive eminent domain powers undermine the security of private property rights, eminent domain for private benefit may cause the tax base to shrink as a result of decreases in private investment. In addition, redevelopment takings may also affect government revenues through potential increases in rent-seeking behavior. Given the significant potential negative consequences that arise when government undermines property rights, it is worth investigating whether eminent domain for development purposes actually generates the additional government revenue it is purported to create.

Turnbull and Salvino (2009) find that the power to use eminent domain for economic development is associated with greater government revenue. We build on their work by using a more precise measure of eminent domain (actual eminent domain activity rather than a binary variable for potential power), a newer dataset, more control variables, and a new variable for

[2] See Brief of the National League of Cities et al. as *Amici Curiae* Supporting Respondents, Kelo v. City of New London, 545 U.S. 469 (2005) (No. 04-108), available at http://www.communityrights.org/PDFs/Briefs/Kelo.pdf. ("This case is of vital importance to *amici*, whose members include state and local governments and officials throughout the United States. These officials use eminent domain for many purposes, including as a fundamental tool for economic development in distressed cities like New London. Eminent domain is often indispensable for revitalizing local economies, creating much-needed jobs, and generating revenue that enables cities to provide essential services.").

revenue growth. We find virtually no evidence of a statistically significant positive relationship between eminent domain and the level of state and local tax revenue. We find limited evidence of a statistically significant *negative* relationship between eminent domain and the future *growth* of state and local tax revenue. Our failure to find a positive relationship between eminent domain activity and tax revenues suggests that eminent domain for redevelopment fails to achieve its intended purpose. Our paper supports arguments for constraints that limit property takings for private gain.

The next section presents the motivation for the paper, including a brief discussion of the evolution of the interpretation of the takings clause and the general role of property rights. Section 3 details the empirical model and data. Section 4 provides the econometric results and Section 5 concludes.

2. Background and Motivation

There is little debate that property rights are a vital component of a market economy. The institution of well-defined, secure private property rights is the foundation of voluntary exchange. Property rights provide incentives for individuals to maintain property, seek opportunities for mutually beneficial trade, and be innovative and entrepreneurial. Property rights are requisite to coordinate the actions of market participants and generate economic development (Hayek 1945, 1960; von Mises 1935). The link between secure property rights and economic growth is well established in the literature on economic development (Acemoglu and Johnson 2005; Acemoglu, Johnson, and Robinson 2001, 2002; Boettke 1994; Knack and Keefer 1995; Landau 2003; Leblang 1996; Mauro 1995).

When property rights become less secure, individuals are less able to reap the benefits of a market economy. Individuals are less likely to undertake capital investments as the threat of

expropriation of property and physical assets increases (Besley 1995; de Soto 1989, 2000; Kerekes and Williamson 2008). As incentives for capital accumulation decrease, so too do incentives for productive entrepreneurship and innovation (Boettke and Coyne 2003; Boettke, Coyne, and Leeson 2010). Consequently, encroachments on individual property rights—such as eminent domain activity—undermine economic growth.

2.1. *Interpretations of the Takings Clause*

While the importance of property rights is not controversial, the use of eminent domain to acquire property is. The United States government derives its authority to confiscate private property from the takings clause of the Fifth Amendment to the US Constitution. While the original intent of the takings clause was that property only be taken for *public use* and with just compensation, the interpretation of this clause has changed over time.[3] Eminent domain has been used to take property for *public purpose* and, increasingly, for *private benefit*. The traditional interpretation of public use includes taking private property for the provision of public facilities and infrastructure, such as railroads, highways, or schools. In such instances, eminent domain may be used to combat the holdout problem and to reduce the transactions costs associated with acquiring property for public facilities and infrastructure.

Epstein (1985) provides a comprehensive study of the takings clause and the use of eminent domain in the United States. The evolution of the utilization of eminent domain for *public use* to *public purpose* and, ultimately, to *private benefit*, stems from a series of court cases. Some of the more important cases include *Berman v. Parker*[4] in 1954, *Poletown*

[3] For a more detailed discussion of how the interpretation of the takings clause has changed over time, see Epstein (1985), Greenhut (2004), and Sandefur (2006b).
[4] Berman v. Parker, 348 U.S. 26 (1954).

Neighborhood Council v. Detroit[5] in 1981, and *Hawaii Housing Authority v. Midkiff*[6] in 1984. The decision in *Berman v. Parker* allowed the condemnation of property for the redevelopment of blighted areas, regardless of whether the land was transferred to other individuals. Detroit was able to condemn property in a residential neighborhood known as Poletown to provide land for General Motors Corporation on the basis of the public purpose to reduce unemployment. Finally, in *Hawaii Housing Authority v. Midkiff*, Hawaii was permitted to transfer land from landowners to tenants to reduce the "concentration of land ownership."

In *Kelo v. City of New London*, residential property was acquired by eminent domain for the purpose of redevelopment. The city's redevelopment plan included a hotel and shopping center and research, office, and retail space to accompany a new facility for the pharmaceutical company Pfizer. The city of New London argued that the redevelopment plan fulfilled the public purpose interpretation of the takings clause because redevelopment would increase employment and increase the tax base. *Kelo* relaxed the constraints on the use of eminent domain and implied that eminent domain can now be used to transfer private property from one private party to another for private benefit.

This use of eminent domain to seize property for private benefit received significant attention following *Kelo* in 2005. Berliner (2003) estimates there were more than 10,282 filed or threatened condemnations for private use or benefit in the years 1998 through 2002 (or about 2,000 per year across those five years). In the year following the *Kelo* decision (June 2005 to June 2006), Berliner (2006) estimates 5,783 properties were condemned or threatened with the use of eminent domain to benefit other private parties, nearly three times more per year than had occurred in the 1998–2002 period.

[5] Poletown Neighborhood Council v. Detroit, 304 N.W. 2d 455 (1981).
[6] Hawaii Housing Authority v. Midkiff, 467 U.S. 229 (1984).

2.2. *Holdouts, Rent-Seeking, and Investment*

Some claim, and the US Supreme Court concurred, that eminent domain for private development purposes can promote economic growth (Ranis 2007). The argument is that areas that undergo redevelopment experience increases in employment, home ownership, property values, and tax revenues. However, Carpenter and Ross (2008) examine the effects of state reforms restricting eminent domain following the *Kelo* decision on construction jobs, building permits, and property tax revenues. They find no evidence that limiting eminent domain for private use negatively affects these variables. Turnbull, Salvino, and Tasto (2013) examine the relationship between eminent domain and private-sector employment growth. Their findings indicate that the power to use eminent domain for economic development does not increase private-sector employment; in fact, it may actually be associated with slower employment growth.

The previous section emphasized the importance of secure, well-defined property rights for economic development. In an examination of the abuses of eminent domain, Greenhut (2004) attributes the prosperity of the United States to secure property rights that create incentives for investment. Lopez (2010) examines property takings in developed and developing countries and argues that takings alter incentives to maintain and invest in property in both contexts. Staley and Blair (2005) present evidence from specific case studies and argue that eminent domain for development projects has a tendency to be arbitrary and inequitable, tending to serve private purposes. They argue that eminent domain powers can negatively impact redevelopment if they make "property rights less certain and investment less predictable" (Staley and Blair 2005). Eminent domain undermines the security of property rights, and there is substantial evidence that it also discourages economic growth. Those two factors undermine the argument for eminent domain's recently expanded use and provide a

rationale for constraining that use by restricting it to instances adhering to the traditional doctrine on public use.

As previously mentioned, the original intent of the Constitution's takings clause was that government could take private property for public use and with just compensation. One of the primary justifications for eminent domain is to enable the assembly of large tracts of land for government provision of public facilities and infrastructure (roads, schools, etc.). The argument is that landowners in these situations have market power and will refrain from selling their property in order to obtain a higher price. This holdout problem would then make it more difficult for the government to acquire the property necessary to provide public facilities and infrastructure (L. Cohen 1991; Merrill 1986).[7]

Several scholars question the validity of the holdout justification for the use of eminent domain (Benson 2005; Lopez 2010). Munch (1976) examines property takings and illustrates that eminent domain is not necessarily more efficient than the private sector at assembling land. Garrett and Rothstein (2007) demonstrate that takings for private economic development result in zero-sum games. They argue that eminent domain hampers economic development by introducing economic inefficiencies.

In a paper challenging the holdout justification for eminent domain, Benson (2005) also argues that property takings can encourage rent-seeking behavior.[8] Tullock (1967) argues that individuals have an incentive to use the political process to further their own special interests. This rent-seeking behavior consumes economic resources and imposes costs on an economy that can

[7] Epstein (1985) discusses justifications for takings in terms of means and ends. The *ends* refer to the ultimate purpose of the properties taken by eminent domain; the *means* refer to how these properties are taken. For example, eminent domain is justified from an ends perspective as it aids government in the provision of public goods. According to the means perspective, eminent domain may be necessary to procure the desired property for a government project (ends). Lanza et al. (2013) provide a summary of the means and ends justifications for eminent domain.
[8] For an overview of the rent-seeking literature, see Congleton, Hillman, and Konrad (2008).

retard economic growth. Relaxing the constraints on property takings encourages individuals to use eminent domain to pursue their own ends if such ends are deemed to confer public benefits. Thus, it opens the door for rent-seeking behavior. Lopez (2010) discusses how interest groups form in eminent domain cases to try to influence both the outcome and the broader institutional rules that delineate government powers. For example, local governments, urban planners, and developers form alliances in support of eminent domain and weaker constraints on government for the purpose of redevelopment. Property owners, realtors, and some public interest groups align in opposition to eminent domain and prefer stronger constraints on government powers. Similarly, Boettke, Coyne, and Leeson (2010) argue that government intervention, including eminent domain and regulatory takings, promotes unproductive rather than productive entrepreneurship. Rent-seeking activities are one component of unproductive entrepreneurship (Baumol 1990).[9]

3. The Data and Empirical Model

Proponents of eminent domain typically argue that it will provide a benefit to the public by increasing tax revenue[10] (which presumably will be used in a way that residents value). This argument supplies two testable hypotheses:

H1: Eminent domain activity is positively associated with subsequent revenue levels.

H2: Eminent domain activity is positively associated with subsequent revenue growth.

[9] Murphy, Shleifer, and Vishny (1993) distinguish between public and private rent-seeking and discuss how rent-seeking is detrimental to economic growth.

[10] See Brief of the National League of Cities et al., *supra* note 2. See also Ranis (2007). "Much has been made recently of *Kelo* and the negative impact of eminent domain in its use of state and municipal powers to transfer property rights from individual homeowners in poorer, marginal neighborhoods . . . to larger private property enterprises that will achieve simply larger tax revenues. Most eminent domain initiatives are not used to condemn mom-and-pop groceries or small homes for the sake of replacing them with larger operated businesses but rather for large urban, community mixed public and private complexes that provide increased employment, an enhanced tax base, urban development, and community edification" (Ranis 2007, pp. 195–96). "Critical to the impact of *Kelo* is that it was decided by the Supreme Court on behalf of providing jobs for workers in a depressed area, resurrecting the New London Community, and the important principle of preserving and creating employment and a viable tax base" (p. 203).

Using data for 1990 and 2000, Turnbull and Salvino (2009) find that eminent domain for private benefit is associated with higher levels of tax revenue and own-source revenue as a percentage of personal income. Their measure of eminent domain is a dummy variable that takes the value of one for states that explicitly empower local governments to use eminent domain for private development projects. Only seven states do so. For all the other states, the variable is given a value of zero. This eminent domain variable does not provide a very precise measure of the varying levels of eminent domain activity across the states. We build on their work by using a variable that better captures eminent domain activity across states.

To examine the impact of eminent domain, we use state data on the use of eminent domain for private benefit from Berliner (2003). Berliner's data cover the period January 1, 1998, through December 31, 2002. Berliner records the number of total condemnations by state to indicate the number of properties that have been affected by the use of eminent domain to benefit private parties.[11] Note that the Berliner data understate the total amount of eminent domain activity as they exclude those activities done for traditional public purposes (schools, roads, etc.). In a later report, Berliner (2006) provides updated data for the period June 2005 through June 2006, the 12 months following the *Kelo* Supreme Court decision. These data are compiled in the same manner as in Berliner's initial study.

[11] Berliner (2003) collects her data from court decisions and published accounts (public documents and news articles). The number of total condemnations for private use or benefit per state is the summation of filed condemnations and threatened condemnations. Filed condemnations record the number of instances for which the government or private parties filed actions in court to transfer private property for private benefit, or local government voted to authorize filing eminent domain action. Threatened condemnations include actions that precede "filing a condemnation action in court or voting to authorize the filing of such action" (Berliner 2006). When a property is threatened with eminent domain the property owner may decide to divest of the property rather than taking action. Therefore, not all threatened cases necessarily result in court filings.

We follow Turnbull and Salvino (2009) in measuring tax revenue (and total own-source revenue)[12] as a percentage of personal income and in using three measures: combined state and local, state only, and local only.[13] In addition to the level of revenue, we also examine the growth of that revenue. To account for the lag between eminent domain activity (over 1998–2002 and June 2005–June 2006) and subsequent revenue effects, we examine tax revenue levels in 2004 and 2008 and tax revenue growth from 2004 to 2007 and from 2008 to 2011.[14] This implies a minimum of a two-year lag between the eminent domain activity and the revenue effect.

Our independent variable of interest is the eminent domain activity measure described above for 1998–2002 and June 2005–June 2006. We measure that activity three ways: total condemnations in the state, total condemnations per total housing units in the state, and total condemnations per total population in the state. We also use the binary measure of eminent domain power created by Turnbull and Salvino (2009). As table 1 indicates, there is only a very small (and statistically insignificant) correlation between that binary measure and the Berliner measure we use.

Table 1. Correlation Coefficients

	Em. domain total	Em. domain per unit	Em. domain per capita	Em. domain power
Total eminent domain condemnations	1			
Eminent domain condemn. per housing unit	0.6475* 0	1		
Eminent domain condemn. per capita	0.6321* 0	0.9977* 0	1	
Eminent domain power binary variable	0.0498 0.634	0.0519 0.619	0.0412 0.693	1

* Statistically significant at the 10% level.

[12] In addition to taxes, own-source revenue includes various charges, user fees, and things such as interest earnings. It does not include grants from other governments.

[13] At the request of a referee, we also ran regressions with revenue measured on a per capita basis. Some of those results are referenced in the paper. The full results are available from the authors upon request.

[14] As of October 2014, fiscal year 2011 was the most recent year available for combined state and local government finances. With our chosen two-year lag in revenue effects, this limited us to a three-year revenue growth period. In a previous version of this paper, we used a four-year growth period with the 1998–2002 eminent domain data (Berliner 2003) as a single cross section and found similar results.

Following Turnbull and Salvino (2009), we use the same control variables in an attempt to replicate their results with our new dataset: revenue decentralization (local own-source general revenue as a percentage of state and local own-source general revenue), expenditure decentralization (local direct general expenditure as a percentage of state and local direct general expenditure), state grants to local governments (as a percentage of state expenditure), state population, urban (metropolitan statistical area or MSA) share of population, median household income, and a dummy variable for Confederate states. Our initial model is as follows:

$$(1) \quad \text{Revenue}_{i,t} = \alpha + \beta_1 \text{Eminent domain activity}_{i,t-2} + \beta_2 \text{Fiscal decentralization}_{i,t} + \beta_3 \text{Local government count}_{i,t-2} + \beta_4 \text{Control variables}_{i,t}.$$

Then, to expand on Turnbull and Salvino's work, we enhance their model in a variety of ways. Instead of using their raw count of the number of local governments to measure fragmentation,[15] we use the number per 100,000 residents to provide more meaningful comparisons across states with widely differing numbers of residents. We also employ traditional regional dummy variables rather than their dummy variable for "former Confederate states or border states."[16] In addition, we add three control variables to account for differences in demographics and economic conditions that can affect government revenues: the percentage of population aged 18–64, the unemployment rate, and the real per capita gross domestic product. With few exceptions where data were unavailable, our data for each of these control variables are for 2004 and 2008 (which are the two years for which we examine revenue levels and the first year of our two growth periods).

The level and growth of revenue (our dependent variables) may have an impact on eminent domain activity (our independent variable of interest). For example, governments in

[15] Fragmentation refers to the degree to which the local government system is divided into separate jurisdictions. A state with many local governments would be considered to have a highly fragmented system.
[16] Because we have a fairly small number of observations (100), we use four regional dummies rather than state fixed effects. The omitted variable is Northeast.

states with low or slow-growing revenue may be more likely to utilize eminent domain in order to increase their revenue. We first address this potential endogeneity problem by including a control variable for the lagged growth of revenue. To capture the revenue growth trend in each state, we use 1995–1998 and 2002–2005, the three-year periods before the first year of our eminent domain activity data for each of the two periods available (1998–2002 and June 2005–June 2006). Our expanded models are

(2) $$\text{Revenue}_{i,t} = \alpha + \beta_1\text{Eminent domain activity}_{i,t-2} + \beta_2\text{Revenue decentralization}_{i,t} + \beta_3\text{Local governments per 100,000 residents}_{i,t-2} + \beta_4\text{Control variables}_{i,t} + \beta_5\text{Lagged revenue growth}_{i,t}.$$

(3) $$\text{Revenue Growth}_{i,t} = \alpha + \beta_1\text{Eminent domain activity}_{i,t-2} + \beta_2\text{Revenue decentralization}_{i,t} + \beta_3\text{Local governments per 100,000 residents}_{i,t-2} + \beta_4\text{Control variables}_{i,t} + \beta_5\text{Lagged revenue growth}_{i,t}.$$

In addition, following Turnbull and Salvino, as an alternative way to address the potential endogeneity problem, we later drop the lagged revenue growth variable and instead make use of three instrumental variables for our eminent domain variables: lawyers per 1,000 population, percentage of land owned by the state government, and income skewness. As Turnbull and Salvino (2009) suggest, having a higher number of lawyers implies that residents are more likely to resort to nonmarket solutions to disputes; having a higher percentage of land owned by the state implies a greater willingness on the part of government to get involved in land markets; and income skewness "is included to capture possible income distribution effects on choice of institutional restrictions on local powers" (p. 801).

Data sources are provided in table A1. Summary statistics can be found in table A2. Correlation coefficients for our three main eminent domain variables and our four main dependent variables are found in table A3.

4. Regression Results

We first attempt to replicate the results of Turnbull and Salvino (2009) by utilizing the same dependent variables and control variables. However, we use revenue data for 2004 and 2008 rather than for 1990 and 2000. Similarly, with two exceptions, each of our control variables is for 2004 and 2008. The first exception is the urban share of population variable, which is only available for decennial Census years, so we use data for 2000 and an estimate for 2005, achieved by averaging 2000 and 2010. The second exception is the fragmentation variable, which is only available for Census of Government years, so we use 2002 and 2007 data. Later, we modify the Turnbull and Salvino model slightly and add a new dependent variable for revenue growth over the periods 2004–2007 and 2008–2011.

4.1. *Replication of Turnbull and Salvino (2009)*

Table 2 shows our results for the combined state and local tax and revenue data, using Turnbull and Salvino's binary variable for eminent domain power. As they did, we find evidence of a statistically significant positive relationship between eminent domain power and the level of state and local taxes and revenue as a percentage of personal income.[17] When we measure state- and local-level data separately (see table A4), we find that the model's explanatory power (measured by the value for R-squared) increases substantially, but the statistically significant coefficients for the eminent domain power variable only remain for the state revenue regressions, not for the local revenue regressions. While that insignificance for the

[17] When the revenue variables are measured on a per capita basis, the coefficient on the eminent domain power variable is also statistically significant (and positive) in all four of the models. For brevity, those results have not been included. They are available from the authors upon request.

local revenue variables contradicts the findings of Turnbull and Salvino, we do consistently find positive coefficients as they did.[18]

Next we change how eminent domain is measured. Instead of the binary variable, we use total condemnations for private purposes. Otherwise, all the other variables are the same. As table 3 shows, using this improved measure, we fail to find any statistically significant relationship between eminent domain activity and revenue levels. (That result holds true when revenue is measured on a per capita basis as well.) When we measure state and local revenue data separately, we find similar results—no statistically significant relationship (see table A5). While the relationships are not significant, we do still find positive coefficients for our more precise measure of eminent domain activity (with two exceptions, both for local general revenue from own sources). However, the explanatory power of our models, as indicated by the R-squared statistic, is slightly lower when we use this more precise measure.

Using the same model, table 4 shows the results when we measure eminent domain activity as total condemnations per housing unit. Here too we fail to find any statistically significant relationship between eminent domain activity and revenue levels. Separate results for state-level data and local-level data are found in table A6. Those results show the same lack of a statistically significant relationship. (That result holds true when revenue is measured on a per capita basis as well.) As with the previous set of results, the explanatory power of our models is slightly lower than with the binary variable for eminent domain.

Table 5 shows the results when we measure eminent domain activity as total condemnations per capita. Otherwise, all the other variables remain the same. Once again, we find no evidence of a statistically significant relationship between eminent domain activity and

[18] When revenue is measured on a per capita basis, the local revenue coefficients remain weakly statistically significant.

the level of state and local tax revenue. (That result holds true when revenue is measured on a per capita basis as well.) Separate results for state-level data and local-level data confirm that same finding (see table A7).

As tables 2 and A4 show, for eight of our twelve regressions, we confirm the findings of Turnbull and Salvino (2009) of a statistically significant positive relationship between their binary measure of eminent domain power and the level of state and local government revenue. Our results show that their findings are robust to a newer dataset. However, using three different, more precise measures of eminent domain, we fail to find evidence of a statistically significant relationship between eminent domain activity and the level of state and local government revenue. In addition, we find that the explanatory power of our models (measured by the value for R-squared) is lower when we use our more precise measure of eminent domain activity than when we use the Turnbull-Salvino binary variable, which provides further support for the idea that there is no relationship between eminent domain and the level of state and local government revenue when eminent domain is measured more precisely. These results are robust to changes in how revenue is measured (own-source general revenue or tax revenue) as well as the level of government (state and local government revenue combined, state only, and local only), and we find similar results (not reported herein) when we measure revenue on a per capita basis instead of as a percentage of personal income.

Table 2. Turnbull-Salvino (2009) Model, Combined State and Local Revenue

VARIABLES	State and local general revenue from own sources (% of personal income)		State and local tax revenue (% of personal income)	
	(1)	(2)	(3)	(4)
Eminent domain power binary variable	0.00872*	0.00903*	0.0111***	0.0111***
	(0.00459)	(0.00456)	(0.00383)	(0.00386)
Revenue decentralization	−0.0448*		−0.0207	
	(0.0230)		(0.0176)	
Expenditure decentralization		−0.0769*		−0.0570**
		(0.0407)		(0.0250)
Local governments	−3.05e-06***	−2.66e-06**	−1.75e-06**	−1.28e-06
	(1.06e-06)	(1.20e-06)	(8.59e-07)	(8.95e-07)
Local intergovernmental revenue from state government, as % of state total expenditure	0.0251	0.0854	0.00224	0.0497
	(0.0484)	(0.0538)	(0.0288)	(0.0361)
Urban share of population	1.58e-05	1.95e-05	−5.95e-05	−3.02e-05
	(0.000170)	(0.000175)	(0.000131)	(0.000126)
Population	5.86e-10*	5.63e-10*	6.72e-10**	6.62e-10**
	(2.98e-10)	(2.98e-10)	(2.80e-10)	(2.90e-10)
Median household income (constant dollars)	−1.07e-06***	−9.81e-07***	−2.63e-07	−1.86e-07
	(3.05e-07)	(3.09e-07)	(2.25e-07)	(2.21e-07)
Confederate state dummy	−0.0172***	−0.0160***	−0.0122***	−0.0109***
	(0.00404)	(0.00429)	(0.00342)	(0.00345)
Constant	0.233***	0.234***	0.133***	0.135***
	(0.0181)	(0.0183)	(0.0134)	(0.0133)
Observations	94	94	94	94
R-squared	0.332	0.329	0.319	0.339

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

Notes: All models include year fixed effects. Robust standard errors are in parentheses.

Table 3. Turnbull-Salvino (2009) Model, Using Eminent Domain Activity Variable, Combined State and Local Revenue

VARIABLES	State and local general revenue from own sources (% of personal income)		State and local tax revenue (% of personal income)	
	(1)	(2)	(3)	(4)
Total eminent domain condemnations	1.55e-06	1.70e-06	1.76e-06	1.81e-06
	(2.76e-06)	(2.81e-06)	(2.33e-06)	(2.38e-06)
Revenue decentralization	−0.0483**		−0.0252	
	(0.0240)		(0.0195)	
Expenditure decentralization		−0.0814*		−0.0625**
		(0.0415)		(0.0273)
Local governments	−2.47e-06**	−2.05e-06	−1.02e-06	−5.30e-07
	(1.15e-06)	(1.31e-06)	(8.15e-07)	(8.79e-07)
Local intergovernmental revenue from state government, as % of state total expenditure	0.0300	0.0938*	0.00839	0.0599
	(0.0479)	(0.0541)	(0.0278)	(0.0361)
Urban share of population	1.73e-05	1.88e-05	−5.66e-05	−2.99e-05
	(0.000177)	(0.000183)	(0.000138)	(0.000135)
Population	4.76e-10	4.44e-10	5.36e-10*	5.21e-10
	(3.16e-10)	(3.17e-10)	(3.14e-10)	(3.25e-10)
Median household income (current dollars)	−9.37e-07***	−8.42e-07***	−9.71e-08	−1.54e-08
	(2.91e-07)	(2.95e-07)	(2.16e-07)	(2.10e-07)
Confederate state dummy	−0.0164***	−0.0153***	−0.0113***	−0.00992***
	(0.00423)	(0.00450)	(0.00373)	(0.00374)
Constant	0.226***	0.228***	0.125***	0.127***
	(0.0173)	(0.0173)	(0.0128)	(0.0125)
Observations	94	94	94	94
R-squared	0.307	0.302	0.228	0.248

* p < 0.1, ** p < 0.05, *** p < 0.01.

Notes: All models include year fixed effects. Robust standard errors are in parentheses.

Table 4. Turnbull-Salvino (2009) Model, Using Eminent Domain Activity per Housing Unit Variable, Combined State and Local Revenue

VARIABLES	State and local general revenue from own sources (% of personal income)		State and local tax revenue (% of personal income)	
	(1)	(2)	(3)	(4)
Eminent domain condemnations per housing unit	5.81e-06	5.81e-06	5.07e-06	4.55e-06
	(7.19e-06)	(6.93e-06)	(4.55e-06)	(4.28e-06)
Revenue decentralization	−0.0475*		−0.0246	
	(0.0240)		(0.0194)	
Expenditure decentralization		−0.0796*		−0.0611**
		(0.0415)		(0.0272)
Local governments	−2.48e-06**	−2.07e-06	−1.01e-06	−5.31e-07
	(1.14e-06)	(1.31e-06)	(8.06e-07)	(8.70e-07)
Local intergovernmental revenue from state government, as % of state total expenditure	0.0312	0.0935*	0.00931	0.0596
	(0.0477)	(0.0538)	(0.0279)	(0.0361)
Urban share of population	7.70e-06	9.22e-06	−6.32e-05	−3.54e-05
	(0.000177)	(0.000183)	(0.000138)	(0.000134)
Population	5.11e-10	4.82e-10	5.73e-10*	5.59e-10*
	(3.09e-10)	(3.11e-10)	(3.16e-10)	(3.26e-10)
Median household income (current dollars)	−9.23e-07***	−8.30e-07***	−8.44e-08	−5.14e-09
	(2.88e-07)	(2.93e-07)	(2.16e-07)	(2.11e-07)
Confederate state dummy	−0.0163***	−0.0152***	−0.0111***	−0.00979**
	(0.00419)	(0.00448)	(0.00370)	(0.00373)
Constant	0.225***	0.227***	0.124***	0.126***
	(0.0173)	(0.0173)	(0.0128)	(0.0126)
Observations	94	94	94	94
R-squared	0.308	0.303	0.229	0.248

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

Notes: All models include year fixed effects. Robust standard errors are in parentheses.

Table 5. Turnbull-Salvino (2009) Model, Using Eminent Domain Activity Per Capita Variable, Combined State and Local Revenue

VARIABLES	State and local general revenue from own sources (% of personal income)		State and local tax revenue (% of personal income)	
	(1)	(2)	(3)	(4)
Eminent domain condemnations per capita	1.10e-05	1.11e-05	1.00e-05	8.96e-06
	(1.69e-05)	(1.62e-05)	(1.06e-05)	(9.83e-06)
Revenue decentralization	−0.0477**		−0.0247	
	(0.0240)		(0.0194)	
Expenditure decentralization		−0.0801*		−0.0614**
		(0.0415)		(0.0272)
Local governments	−2.47e-06**	−2.06e-06	−1.00e-06	−5.22e-07
	(1.14e-06)	(1.31e-06)	(8.05e-07)	(8.69e-07)
Local intergovernmental revenue from state government, as % of state total expenditure	0.0309	0.0935*	0.00906	0.0596
	(0.0477)	(0.0538)	(0.0279)	(0.0361)
Urban share of population	1.11e-05	1.27e-05	−6.07e-05	−3.30e-05
	(0.000177)	(0.000183)	(0.000138)	(0.000134)
Population	5.09e-10	4.81e-10	5.72e-10*	5.58e-10*
	(3.09e-10)	(3.11e-10)	(3.16e-10)	(3.26e-10)
Median household income (current dollars)	−9.22e-07***	−8.29e-07***	−8.33e-08	−3.88e-09
	(2.89e-07)	(2.94e-07)	(2.17e-07)	(2.12e-07)
Confederate state dummy	−0.0163***	−0.0151***	−0.0111***	−0.00976**
	(0.00420)	(0.00448)	(0.00371)	(0.00374)
Constant	0.225***	0.226***	0.124***	0.126***
	(0.0173)	(0.0173)	(0.0129)	(0.0126)
Observations	94	94	94	94
R-squared	0.308	0.303	0.228	0.247

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

Notes: All models include year fixed effects. Robust standard errors are in parentheses.

4.2. *New Model*

Next, we modify some of the control variables in the Turnbull and Salvino (2009) model and add four new control variables as well as a new dependent variable for revenue growth. To measure fragmentation, we use the number of local governments per 100,000 residents instead of Turnbull and Salvino's raw count of the number of local governments.[19] This provides more meaningful comparisons across states with widely differing numbers of residents.[20] In addition, rather than their dummy variable for "former Confederate states or border states," we employ four traditional regional dummy variables.[21] We also add three variables to control for differences in demographics and economic conditions: the percentage of population aged 18–64, the unemployment rate, and the per capita GDP.

In the interest of brevity, we drop the total eminent domain condemnations variable, and we use only one variable for decentralization rather than two. Since the states vary widely in their population and number of housing units, adjusting the total condemnations data for those two factors provides a more meaningful comparison across states, so we focus hereafter on the per housing unit and per capita measures. The two decentralization variables are highly correlated (with a correlation coefficient of 0.767). Also, they are used independently in separate regressions, and there are not substantial differences in the results for the eminent domain variables in those two sets of results (see tables 2–5). We choose to keep the revenue decentralization variable (local own-source general revenue as a percentage of state and local own-source general revenue) and drop expenditure decentralization because our focus is on revenue.

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[19] Stansel (2006) provides an example of this important distinction in previous work in the Leviathan literature.
[20] For example, Florida had 1,623 local governments in 2007, nearly two and a half times West Virginia's 663. By that measure, Florida has substantially greater fragmentation. But Florida has 10 times as many people as West Virginia, so when you adjust for population, Florida is actually substantially *less* fragmented, not more—8.8 governments per 100,000 people compared to 36.1 in West Virginia.
[21] The excluded variable is Northeast.

Finally, because there may be a simultaneous relationship between revenue growth and eminent domain (low or slow-growing revenue may lead states to increase eminent domain activity), we add a control variable for lagged revenue growth. We use revenue growth over the periods 1995–1998 and 2002–2005, the three-year periods preceding the first year of our eminent domain activity data for each period (1998–2002 and June 2005–June 2006).

Table 6 shows the results for the level of combined state and local tax and revenue for all three measures of eminent domain (the binary variable and our two eminent domain activity variables) when utilizing our revised model. The statistical significance (and the size) of the coefficients on the eminent domain variables remain roughly the same as with the replications in the previous section (tables 2–5). The two more precise measures have statistically insignificant coefficients, and the binary variable continues to have a statistically significant coefficient and positive sign. Our revised model also consistently provides greater explanatory power. Separate results for state-level data and local-level data are found in tables A8 and A9. They show the same basic trends as those described above with the exception that the binary variable is insignificant in two out of four regressions (both for local government).

Table 6. Level of Combined State and Local Taxes and Revenue, Using All Three Eminent Domain Variables

VARIABLES	State and local general revenue from own sources (% of personal income)			State and local tax revenue (% of personal income)		
	(1)	(2)	(3)	(4)	(5)	(6)
Eminent domain condemnations per housing unit	8.68e-06			6.09e-06		
	(8.97e-06)			(6.56e-06)		
Eminent domain condemnations per capita		1.67e-05			1.17e-05	
		(2.05e-05)			(1.47e-05)	
Eminent domain power binary variable			0.00989*			0.0113***
			(0.00552)			(0.00314)
Revenue decentralization	−0.0464**	−0.0467**	−0.0443**	−0.0202	−0.0204	−0.0170
	(0.0219)	(0.0219)	(0.0206)	(0.0167)	(0.0168)	(0.0150)
Number of local governments of all types, per 100,000 residents	9.53e-06	9.27e-06	−2.00e-05	−6.01e-07	−8.11e-07	−3.33e-05
	(3.50e-05)	(3.49e-05)	(3.75e-05)	(2.53e-05)	(2.53e-05)	(2.47e-05)
Local intergovernmental revenue from state government, as % of state total expenditure	0.0495	0.0487	0.0287	0.0479*	0.0473*	0.0262
	(0.0437)	(0.0437)	(0.0426)	(0.0244)	(0.0243)	(0.0221)
Urban share of population	−9.00e-05	−8.27e-05	−0.000130	6.38e-05	6.90e-05	−1.63e-06
	(0.000264)	(0.000264)	(0.000254)	(0.000172)	(0.000172)	(0.000155)
Population	2.24e-10	2.28e-10	3.00e-10	2.47e-10	2.50e-10	3.25e-10**
	(2.46e-10)	(2.46e-10)	(2.33e-10)	(1.63e-10)	(1.63e-10)	(1.49e-10)
Real median household income (2012 dollars)	−1.32e-06***	−1.32e-06***	−1.49e-06***	−7.21e-07**	−7.19e-07**	−9.01e-07***
	(4.29e-07)	(4.31e-07)	(4.22e-07)	(3.10e-07)	(3.13e-07)	(2.65e-07)
Percentage of population aged 18–64	0.0600	0.0593	0.0339	0.114	0.114	0.0823
	(0.215)	(0.215)	(0.220)	(0.120)	(0.120)	(0.113)
Real per capita gross domestic product (millions of chained 2005 $)	1.19e-06**	1.18e-06**	1.16e-06**	5.19e-07*	5.10e-07*	5.15e-07**
	(4.77e-07)	(4.76e-07)	(4.79e-07)	(2.83e-07)	(2.82e-07)	(2.53e-07)
Unemployment rate (%)	−0.00245	−0.00252	−0.00350	−0.00205	−0.00210	−0.00305**
	(0.00242)	(0.00242)	(0.00224)	(0.00141)	(0.00141)	(0.00125)
Midwest region dummy variable	−0.000313	−0.000301	−0.000442	−0.00880**	−0.00879**	−0.00898**
	(0.00574)	(0.00574)	(0.00514)	(0.00436)	(0.00435)	(0.00348)
South region dummy variable	−0.00611	−0.00614	−0.00774	−0.0164***	−0.0165***	−0.0181***
	(0.00599)	(0.00602)	(0.00562)	(0.00488)	(0.00492)	(0.00355)
West region dummy variable	0.00728	0.00730	0.0104*	−0.0109**	−0.0109**	−0.00742*
	(0.00647)	(0.00647)	(0.00568)	(0.00466)	(0.00466)	(0.00385)
Lagged change in state and local general revenue from own sources (% of personal income)	0.100**	0.101**	0.0991**			
	(0.0433)	(0.0434)	(0.0426)			
Lagged change in state and local tax revenue (% of personal income)				0.0654**	0.0656**	0.0636***
				(0.0253)	(0.0254)	(0.0235)
Constant	0.163	0.164	0.202	0.0589	0.0596	0.102
	(0.125)	(0.125)	(0.128)	(0.0716)	(0.0716)	(0.0661)
Observations	94	94	94	94	94	94
R-squared	0.476	0.475	0.497	0.486	0.485	0.555

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

Notes: All models include year fixed effects. Robust standard errors are in parentheses.

If eminent domain activity has a long-lasting impact on revenue, then we should expect to see a positive relationship with future revenue growth. Table 7 shows the results for the growth of combined state and local tax and revenue over the periods 2004–2007 and 2008–2011 (starting two years after the last year of our data for eminent domain activity) for all three measures of eminent domain.[22] All four of the regressions using our more precise measures for eminent domain show *negative* coefficients, two of those are statistically significant (the two for the broader measure of general revenue from own sources). A one standard deviation change in eminent domain activity is associated with a *decline* in the three-year growth rate of state and local own-source general revenue (as a percentage of income) of about 0.74 to 0.77 percentage points. The binary variable for eminent domain power is positive but statistically insignificant both times. In all six models, we fail to find a statistically significant *positive* relationship between eminent domain and subsequent revenue growth. The explanatory power of these six models is higher than those for the level of revenue in the previous set of results.

[22] As of October 2014, fiscal year 2011 was the most recent year available for combined state and local government finances. With our chosen two-year lag in revenue effects, this limited us to a three-year revenue growth period. In a previous version of this paper, we used a four-year growth period with the 1998–2002 eminent domain data (Berliner 2003) as a single cross section and found similar results.

Table 7. Three-Year Growth of Combined State and Local Taxes and Revenue, Using All Three Eminent Domain Variables

VARIABLES	Change in state and local general revenue from own sources (% of personal income)			Change in state and local tax revenue (% of personal income)		
	(1)	(2)	(3)	(4)	(5)	(6)
Eminent domain condemnations per housing unit	−5.03e-05**			−3.92e-05		
	(2.40e-05)			(3.04e-05)		
Eminent domain condemnations per capita		−0.000118**			−9.26e-05	
		(5.36e-05)			(6.83e-05)	
Eminent domain power binary variable			0.00126			0.00231
			(0.0104)			(0.0135)
Revenue decentralization	−0.0605	−0.0609	−0.0499	−0.0960	−0.0962	−0.0873
	(0.0497)	(0.0497)	(0.0519)	(0.0707)	(0.0707)	(0.0709)
Number of local governments of all types, per 100,000 residents	0.000177*	0.000176*	0.000187*	0.000402**	0.000401**	0.000406**
	(0.000104)	(0.000104)	(0.000111)	(0.000185)	(0.000185)	(0.000188)
Local intergovernmental revenue from state government, as % of state total expenditure	0.0863	0.0857	0.110	0.122	0.121	0.138
	(0.0758)	(0.0759)	(0.0794)	(0.112)	(0.112)	(0.112)
Urban share of population	0.000319	0.000322	5.75e-05	0.000500	0.000503	0.000285
	(0.000493)	(0.000490)	(0.000501)	(0.000713)	(0.000710)	(0.000699)
Population	−1.61e-10	−1.60e-10	−2.90e-10	3.93e-10	3.95e-10	3.00e-10
	(6.53e-10)	(6.51e-10)	(6.77e-10)	(9.17e-10)	(9.16e-10)	(9.22e-10)
Real median household income (2012 dollars)	6.58e-07	6.11e-07	7.81e-07	8.81e-07	8.44e-07	9.58e-07
	(7.49e-07)	(7.45e-07)	(8.92e-07)	(9.82e-07)	(9.81e-07)	(1.10e-06)
Percentage of population aged 18–64	0.600	0.609	0.576	0.825	0.833	0.802
	(0.412)	(0.411)	(0.408)	(0.520)	(0.520)	(0.513)
Real per capita gross domestic product (millions of chained 2005 $)	−5.89e-07	−5.90e-07	−1.67e-07	−1.58e-07	−1.60e-07	1.79e-07
	(7.31e-07)	(7.23e-07)	(7.19e-07)	(1.19e-06)	(1.19e-06)	(1.15e-06)
Unemployment rate (%)	0.00654	0.00641	0.00907*	0.00862	0.00851	0.0105
	(0.00480)	(0.00478)	(0.00519)	(0.00675)	(0.00673)	(0.00691)
Midwest region dummy variable	−0.00881	−0.00882	−0.00917	−0.0143	−0.0143	−0.0147
	(0.0124)	(0.0124)	(0.0120)	(0.0166)	(0.0166)	(0.0161)
South region dummy variable	0.00907	0.00864	0.0121	0.0156	0.0153	0.0178
	(0.0123)	(0.0123)	(0.0131)	(0.0147)	(0.0147)	(0.0152)
West region dummy variable	0.00466	0.00473	0.00422	0.00854	0.00861	0.00856
	(0.0133)	(0.0133)	(0.0141)	(0.0185)	(0.0185)	(0.0190)
Lagged change in state and local general revenue from own sources (% of personal income)	0.112***	0.112***	0.112***			
	(0.00842)	(0.00841)	(0.00864)			
Lagged change in state and local tax revenue (% of personal income)				0.0841	0.0832	0.0796
				(0.115)	(0.115)	(0.116)
Constant	−0.502**	−0.504**	−0.519**	−0.719**	−0.720**	−0.727**
	(0.250)	(0.249)	(0.244)	(0.314)	(0.313)	(0.309)
Observations	94	94	94	94	94	94
R-squared	0.782	0.783	0.772	0.674	0.675	0.669

* p < 0.1, ** p < 0.05, *** p < 0.01.

Notes: All models include year fixed effects. Robust standard errors are in parentheses.

Separate results for state data and local data are found in tables A10 and A11. At the state level, the four coefficients for our two new eminent domain activity variables are all negative and statistically significant. For example, a one standard deviation change in eminent domain activity is associated with a *decline* in the three-year growth rate of state own-source general revenue (as a percentage of income) of about 0.94–1.22 percentage points. At the local level, the four coefficients are all positive, but only the two for the narrower measure of tax revenue growth are statistically significant. However, the overall explanatory power of all four of those local models is much lower than for the state government models (R-squareds of about 0.34 versus 0.75 for revenue and about 0.14 versus 0.69 for taxes). In contrast, all four regressions using the binary variable (eminent domain power) show positive but statistically insignificant coefficients (just as they were for the combined state and local totals in table 7 above). There too the local-level regressions have a much smaller R-squared.

In our effort to closely replicate the approach of Turnbull and Salvino (2009), we confirm their findings of a positive relationship between their binary variable for eminent domain power and the *level* of state and local government revenue with a newer dataset. However, those findings are not robust to the usage of more precise measures of eminent domain. Using those new measures, we find no evidence of a statistically significant relationship between eminent domain activity and the *level* of state and local tax revenue, and thus fail to find support for the hypothesis (H1) that eminent domain activity is positively associated with the subsequent level of tax revenue. In contrast, our results for the hypothesis (H2) that eminent domain activity is *positively* associated with subsequent state and local government revenue *growth* are mixed. The binary variable is statistically insignificant in all four regressions, but six of the eight regressions for our new eminent domain activity measures are statistically significant, negative four times and positive twice.

4.3. *Instrumental Variables*

Our dependent variables (the level and growth of revenue) may have an impact on our independent variable of interest, eminent domain activity. That is, states with lower revenue or lower revenue growth may be more likely to engage in eminent domain activity in an effort to increase revenue. In the previous analysis, we attempted to address that potential endogeneity problem by including a control variable for the lagged growth of our dependent variable (revenue). An alternative approach is to find instrumental variables that are correlated with our eminent domain variables but that do not have the same potential reverse causality relationship with our dependent variables. Such variables are inevitably very difficult to identify, and results using this approach should be interpreted with caution. As discussed in the previous section, Turnbull and Salvino made use of three instrumental variables: lawyers per 1,000 population, percentage of land owned by the state government, and income skewness. We use those same three variables in this section.

Table 8 shows our results from replicating the Turnbull-Salvino model. For brevity, we do not include the binary variable for eminent domain power. As in table 2, the coefficients for that variable are statistically significant and positive, though they are about two to three times larger in magnitude, confirming the results of Turnbull-Salvino with our newer dataset.[23] Similarly, the results for our two new eminent domain activity variables do not change much compared to tables 4 and 5. The (positive) magnitudes of the coefficients are larger, but they are still statistically insignificant. Those results largely hold when revenue is decomposed into state and local governments separately (see table A12). Of the eight regressions, six have statistically insignificant (positive) coefficients for the eminent domain variable. The two with the narrower

[23] Those results are available from the authors upon request.

measure of state tax revenue as the dependent variable show a positive coefficient that is statistically significant, though only weakly so, for the eminent domain variable.

Table 8. Turnbull-Salvino (2009) Model, Using Instrumental Variables and New Eminent Domain Variables, Combined State and Local Revenue

VARIABLES	State and local general revenue from own sources (% of personal income)		State and local tax revenue (% of personal income)	
	(1)	(2)	(3)	(4)
Eminent domain condemnations per housing unit	0.000151		0.000174	
	(0.000104)		(0.000112)	
Eminent domain condemnations per capita		0.000334		0.000394
		(0.000232)		(0.000252)
Revenue decentralization	−0.0226	−0.0247	0.00459	0.00267
	(0.0443)	(0.0430)	(0.0449)	(0.0442)
Local governments	−3.74e-06	−3.65e-06	−2.49e-06	−2.41e-06
	(2.44e-06)	(2.41e-06)	(2.65e-06)	(2.66e-06)
Local intergovernmental revenue from state government, as % of state total expenditure	0.0783	0.0761	0.0644	0.0627
	(0.0578)	(0.0570)	(0.0458)	(0.0447)
Urban share of population	−0.000403	−0.000372	−0.000544	−0.000516
	(0.000431)	(0.000417)	(0.000458)	(0.000447)
Population	7.16e-10	7.11e-10	8.13e-10	8.11e-10
	(4.66e-10)	(4.72e-10)	(5.06e-10)	(5.17e-10)
Median household income (current dollars)	−6.81e-07	−6.15e-07	1.99e-07	2.82e-07
	(7.29e-07)	(7.07e-07)	(8.45e-07)	(8.33e-07)
Confederate state dummy	−0.0163	−0.0155	−0.0112	−0.0102
	(0.00994)	(0.00968)	(0.0113)	(0.0112)
Constant	0.212***	0.208***	0.109**	0.103**
	(0.0450)	(0.0442)	(0.0507)	(0.0506)
Observations	94	94	94	94
R-squared	†	†	†	†

* p < 0.1, ** p < 0.05, *** p < 0.01.

† With 2SLS, Stata does not report a value for R-squared when it is negative.

Notes: All models include year fixed effects. Robust standard errors are in parentheses. Eminent domain is treated as endogenous in all models.

Using our expanded model, table 9 shows that the binary variable for eminent domain power continues to have positive and statistically significant coefficients (as it did in table 6). However, results for the new eminent domain variables are mixed. There are positive and statistically significant (at the 10 percent level) coefficients on those two variables for the

narrower measure of tax revenue. However, for the broader measure of general revenue from own sources, the (positive) coefficients are not statistically significant. As with the more compact model in table 8 (discussed in the previous paragraph), when revenue is measured separately for state and local governments (tables A13 and A14), six of the eight coefficients on our eminent domain variables are statistically insignificant (and positive). Only the two for the narrower measure of state tax revenue are statistically significant, and only at the 10 percent level. Three of the four coefficients for the binary variable are significant and positive.

Table 10 shows that our two eminent domain variables have no statistically significant relationship with the growth of taxes and revenue. This is in contrast to the previous OLS results in table 7 in which two of the four regressions showed a statistically significant negative relationship with growth. Neither of the two regressions using the binary variable for eminent domain power showed a statistically significant relationship either. The results are no different when revenue is measured separately for state and local governments (tables A15 and A16), with one exception. In one of the regressions, the binary variable has a statistically significant positive coefficient (table A16).

Table 9. Levels of Combined State and Local Taxes and Revenue, Using Instrumental Variables and New Eminent Domain Variables

VARIABLES	State and local general revenue from own sources (% of personal income)			State and local tax revenue (% of personal income)		
	(1)	(2)	(3)	(4)	(5)	(6)
Eminent domain condemnations per housing unit	7.55e-05			9.14e-05*		
	(5.59e-05)			(5.26e-05)		
Eminent domain condemnations per capita		0.000167			0.000207*	
		(0.000127)			(0.000120)	
Eminent domain power binary variable			0.0145**			0.0169***
			(0.00707)			(0.00392)
Revenue decentralization	−0.0437*	−0.0445*	−0.0537***	−0.0113	−0.0118	−0.0237*
	(0.0265)	(0.0261)	(0.0185)	(0.0255)	(0.0253)	(0.0136)
Number of local governments of all types, per 100,000 residents	1.88e-05	1.90e-05	−4.26e-05	2.20e-05	2.29e-05	−5.05e-05**
	(4.01e-05)	(4.00e-05)	(3.29e-05)	(3.77e-05)	(3.77e-05)	(2.39e-05)
Local intergovernmental revenue from state government, as % of state total expenditure	0.0772	0.0757	0.0146	0.0927**	0.0920**	0.0179
	(0.0534)	(0.0532)	(0.0442)	(0.0406)	(0.0405)	(0.0248)
Urban share of population	−0.000443	−0.000427	−0.000191	−0.000366	−0.000356	−5.39e-05
	(0.000378)	(0.000376)	(0.000250)	(0.000333)	(0.000333)	(0.000156)
Population	−0	0	2.73e-10	−0	−0	3.26e-10**
	(2.54e-10)	(2.50e-10)	(2.43e-10)	(2.13e-10)	(2.08e-10)	(1.52e-10)
Real median household income (2012 dollars)	−1.32e-06***	−1.27e-06***	−1.75e-06***	−5.77e-07	−5.11e-07	−1.09e-06***
	(5.07e-07)	(4.92e-07)	(3.94e-07)	(5.41e-07)	(5.33e-07)	(2.40e-07)
Percentage of population aged 18–64	0.0691	0.0585	0.0571	0.0904	0.0764	0.0779
	(0.211)	(0.211)	(0.208)	(0.159)	(0.158)	(0.113)
Real per capita gross domestic product (millions of chained 2005 $)	1.89e-06***	1.86e-06***	1.33e-06**	1.32e-06***	1.30e-06**	6.42e-07**
	(6.84e-07)	(6.84e-07)	(5.23e-07)	(5.05e-07)	(5.07e-07)	(2.95e-07)
Unemployment rate (%)	0.00185	0.00184	−0.00290	0.00272	0.00282	−0.00299***
	(0.00341)	(0.00343)	(0.00204)	(0.00317)	(0.00319)	(0.00114)
Midwest region dummy variable	−0.00295	−0.00298	−0.00281	−0.0112*	−0.0113*	−0.0110***
	(0.00655)	(0.00648)	(0.00445)	(0.00640)	(0.00635)	(0.00310)
South region dummy variable	−0.00568	−0.00547	−0.0122***	−0.0135	−0.0131	−0.0214***
	(0.00713)	(0.00680)	(0.00452)	(0.00852)	(0.00828)	(0.00278)
West region dummy variable	0.00419	0.00408	0.00974*	−0.0140**	−0.0142**	−0.00748**
	(0.00773)	(0.00776)	(0.00527)	(0.00697)	(0.00704)	(0.00357)
Constant	0.125	0.130	0.210*	0.0228	0.0278	0.123*
	(0.134)	(0.133)	(0.122)	(0.109)	(0.107)	(0.0663)
Observations	94	94	94	94	94	94
R-squared	0.190	0.187	0.444	†	†	0.490

* p < 0.1, ** p < 0.05, *** p < 0.01.

† With 2SLS, Stata does not report a value for R-squared when it is negative.

Notes: All models include year fixed effects. Robust standard errors are in parentheses. Eminent domain is treated as endogenous in all models.

Table 10. Growth of Combined State and Local Taxes and Revenue, Using Instrumental Variables and New Eminent Domain Variables

VARIABLES	Change in state and local general revenue from own sources (% of personal income)			Change in state and local tax revenue (% of personal income)		
	(1)	(2)	(3)	(4)	(5)	(6)
Eminent domain condemnations per housing unit	−6.82e-05			4.65e-05		
	(7.11e-05)			(0.000104)		
Eminent domain condemnations per capita		−0.000156			0.000108	
		(0.000161)			(0.000239)	
Eminent domain power binary variable			−0.000910			0.0227
			(0.0152)			(0.0168)
Revenue decentralization	−0.0598	−0.0596	−0.0457	−0.0897	−0.0897	−0.0901
	(0.0435)	(0.0433)	(0.0463)	(0.0697)	(0.0697)	(0.0620)
Number of local governments of all types, per 100,000 residents	0.000176*	0.000175*	0.000198*	0.000424***	0.000424***	0.000348*
	(9.27e-05)	(9.24e-05)	(0.000113)	(0.000162)	(0.000162)	(0.000182)
Local intergovernmental revenue from state government, as % of state total expenditure	0.0797	0.0799	0.116	0.167	0.167	0.106
	(0.0823)	(0.0818)	(0.0725)	(0.107)	(0.107)	(0.108)
Urban share of population	0.000417	0.000413	8.51e-05	6.68e-05	6.60e-05	0.000107
	(0.000543)	(0.000539)	(0.000452)	(0.000878)	(0.000873)	(0.000634)
Population	−9.28e-11	−9.40e-11	−2.79e-10	1.28e-10	1.27e-10	3.76e-10
	(6.44e-10)	(6.42e-10)	(6.02e-10)	(8.90e-10)	(8.91e-10)	(8.59e-10)
Real median household income (2012 dollars)	6.82e-07	6.29e-07	8.98e-07	9.93e-07	1.03e-06	5.35e-07
	(6.33e-07)	(6.33e-07)	(8.38e-07)	(1.02e-06)	(1.02e-06)	(1.07e-06)
Percentage of population aged 18–64	0.592	0.603	0.566	0.805*	0.797*	0.756
	(0.376)	(0.375)	(0.375)	(0.481)	(0.484)	(0.473)
Real per capita gross domestic product (millions of chained 2005 $)	−7.95e-07	−7.87e-07	−2.42e-07	6.82e-07	6.82e-07	3.90e-07
	(8.76e-07)	(8.66e-07)	(6.28e-07)	(1.40e-06)	(1.39e-06)	(1.03e-06)
Unemployment rate (%)	0.00527	0.00516	0.00881*	0.0135*	0.0137*	0.00977
	(0.00524)	(0.00530)	(0.00486)	(0.00777)	(0.00785)	(0.00678)
Midwest region dummy variable	−0.00781	−0.00777	−0.00812	−0.0173	−0.0174	−0.0175
	(0.0117)	(0.0117)	(0.0109)	(0.0144)	(0.0144)	(0.0147)
South region dummy variable	0.00945	0.00909	0.0141	0.0177	0.0180	0.0123
	(0.0103)	(0.0103)	(0.0115)	(0.0131)	(0.0131)	(0.0130)
West region dummy variable	0.00575	0.00589	0.00449	0.00496	0.00486	0.0126
	(0.0122)	(0.0122)	(0.0133)	(0.0168)	(0.0168)	(0.0177)
Constant	−0.490**	−0.494**	−0.523**	−0.755***	−0.753***	−0.653**
	(0.231)	(0.230)	(0.232)	(0.281)	(0.282)	(0.296)
Observations	94	94	94	94	94	94
R-squared	0.780	0.781	0.771	0.647	0.646	0.660

* p < 0.1, ** p < 0.05, *** p < 0.01.

† With 2SLS, Stata does not report a value for R-squared when it is negative.

Notes: All models include year fixed effects. Robust standard errors are in parentheses. Eminent domain is treated as endogenous in all models.

When we use instrumental variables, our results continue to confirm the findings of Turnbull and Salvino for revenue *levels* and their binary measure of eminent domain power (see table 9). For our two more precise measures of eminent domain activity, the use of instrumental variables changes our results slightly. Four of the twelve results show a statistically significant positive coefficient for eminent domain; all four are for the narrower measure of tax revenue (see tables 9 and A14), compared to none of the twelve in the previous results (tables 6, A8, and A9). However, with the broader measure of general revenue from own sources, the results using our instrumental variables confirm those previous results, finding no statistically significant relationship between eminent domain activity and the level of government revenue. Thus, our first hypothesis (H1)—that eminent domain activity is positively associated with the subsequent level of state and local government revenue—is provided only very weak support.

For our measure of revenue *growth* when we use instrumental variables, the results go in the opposite direction. None of the twelve regressions (in tables 10, A15, and A16) show a statistically significant relationship between eminent domain activity and the growth of government revenue. That compares to eight of the twelve showing significance in tables 7, A10, and A11 (six negative and two positive). The coefficients on the binary variable for eminent domain power are statistically *insignificant* across all but one of the six revenue growth regressions. Therefore, we again fail to find support for our second hypothesis (H2)—that eminent domain activity is positively associated with subsequent state and local government revenue *growth*.

Overall, our results are largely inconclusive. We largely confirm the previous findings of Turnbull and Salvino (2009) that there is a positive relationship between their binary measure of eminent domain power and the *level* of state and local government revenue using an entirely

different, and newer, dataset. However, when eminent domain is measured more precisely, we fail to find much evidence to support that finding. Our findings are robust across a wide variety of specifications (only 4 out of 24 coefficients are supportive of a positive relationship with revenue levels, 4 out of 12 with regressions using the instrumental variables), including modifications in the measurement of eminent domain, changes in the level of government (combined state and local revenue, state only, and local only), as well as refinements in the way fragmentation and regional location were measured.

When we expand further on the work of Turnbull and Salvino by examining subsequent revenue growth, we fail to find evidence that supports the hypothesis that eminent domain is positively associated with future revenue growth. To the contrary, using our more precise measure of eminent domain activity, we find limited evidence of a negative relationship between eminent domain and revenue growth (6 out of 24 regressions find a statistically significant negative coefficient, 2 find a positive one; however, when instrumental variables regressions were used none of those 8 specifications were found to have statistically significant coefficients).

While our results are somewhat inconclusive, taken as a whole, they cast doubt on the argument commonly made for individual eminent domain activities—that they will increase government revenue in the future. These findings are relevant for contemporary public policy debates concerning the use of eminent domain.

5. Conclusion

In the end, the redevelopment plans that eventually culminated in the 2005 *Kelo* decision did not materialize; the property at the center of this landmark Supreme Court case sits vacant (Allen 2014; McGeehan 2009). Failed fundraising attempts and a lack of financing derailed components

of the initial development plan. "But what of the promised building boom that was supposed to come wrapped and ribboned with up to 3,169 new jobs and $1.2 million a year in tax revenues? They are noticeably missing" (Nelson 2009).

Given the controversy surrounding the *Kelo* decision and the potential implications for long-run economic growth, it is worth investigating the effects of eminent domain for private benefit. This paper contributes to the current literature by empirically examining the effects on government revenue and revenue growth. Almost no empirical research has been produced on the relationship between eminent domain and government revenue. We build on the one previous study (Turnbull and Salvino 2009) by using a more precise measure of eminent domain, a newer dataset, more control variables, and an additional dependent variable for revenue growth. Ultimately, we find virtually no evidence of a statistically significant positive relationship between eminent domain and the subsequent level of state and local tax revenue. In contrast, we find some limited evidence of a statistically significant *negative* relationship between eminent domain and the subsequent *growth* of state and local tax revenue. These results are robust across a variety of specifications.

Our results contradict one of the primary arguments often made by politicians in favor of eminent domain activity (and cited as a constitutionally valid justification by the Supreme Court)[24]—that it will increase revenue. One possible explanation for that contradiction is that economic impact studies of new local developments are often plagued by double counting and the omission of opportunity costs. As a result, the subsequent impact on the local economy, and

[24] Kelo v. City of New London, 545 U.S. 469 (2005) ("Those who govern the City were not confronted with the need to remove blight in the Fort Trumbull area, but their determination that the area was sufficiently distressed to justify a program of economic rejuvenation is entitled to our deference. The City has carefully formulated an economic development plan that it believes will provide appreciable benefits to the community, including—but by no means limited to—new jobs and increased tax revenue. . . . Because that plan unquestionably serves a public purpose, the takings challenged here satisfy the public use requirement of the Fifth Amendment.").

therefore on government revenue, is often much lower than anticipated. While much further work is needed in this area, one implication of our results is that voters ought to be much more skeptical about politicians' and developers' claims regarding the revenue impact of eminent domain activity for private purposes.

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Table A1. Data Sources

Variable	Source
Total eminent domain condemnations, 1998–2002 & June 2005–June 2006	Berliner (2003), Berliner (2006)
Eminent domain condemnations per housing unit, 1998–2002 & June 2005–June 2006	Berliner (2003), Berliner (2006), and US Census Bureau
Eminent domain condemnations per capita, 1998–2002 & June 2005–June 2006	Berliner (2003), Berliner (2006), and US Census Bureau
Eminent domain power binary variable	Turnbull and Salvino (2009)
State and local general revenue from own sources, as a percentage of personal income, 2004 & 2008	US Census Bureau
State and local tax revenue, as a percentage of personal income, 2004 & 2008	US Census Bureau
Revenue decentralization (local general revenue from own sources, as a percentage of state & local general revenue from own sources), 2004 & 2008	US Census Bureau
Expenditure decentralization (local direct general expenditure, as a percentage of state & local direct general expenditure), 2004 & 2008	US Census Bureau
Total number of local governments of all types, 2002 & 2007	Census of Governments, US Census Bureau
Local intergovernmental revenue from state government, as a percentage of state total expenditure, 2004 & 2008	US Census Bureau
Urban share of population (%), 2000 & 2005 est.* (*average of 2000 & 2010)	US Census Bureau
State population, 2004 & 2008	US Census Bureau
Real median household income (2012 dollars), 2004 & 2008	US Census Bureau
Percentage of population aged 18–64, 2004 & 2008	US Census Bureau
Real per capita gross domestic product (millions of chained 2005 $), 2004 & 2008	Bureau of Economic Analysis
Unemployment rate (%), 2004 & 2008	Bureau of Labor Statistics
Confederate state dummy variable	Turnbull and Salvino (2009)
Northeast, Midwest, South, and West region dummy variables	US Census Bureau
Lawyers per 1,000 population, 2000 & 2006–2010	US Census Bureau, Equal Employment Opportunity Data File, and American Community Survey
Income skewness (median household income divided by average household income), 1999 & 2005	US Census Bureau, Census 2000 Summary File 3, and American Community Survey
State-government-owned portion of total state land area (%), 1995	National Wilderness Institute

Table A2. Summary Statistics

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Total eminent domain condemnations, 1998–2002 & June 2005–June 2006	94	169.777	398.853	0	2,625
Eminent domain condemnations per housing unit, 1998–2002 & June 2005–June 2006	94	65.378	147.971	0	963.108
Eminent domain condemnations per capita, 1998–2002 & June 2005–June 2006	94	28.182	65.215	0	424.711
Eminent domain power binary variable	94	0.149	0.358	0	1
State and local general revenue from own sources, as a percentage of personal income, 2004 & 2008	94	15.40%	1.81%	11.2%	23.3%
State and local tax revenue, as a percentage of personal income, 2004 & 2008	94	10.31%	1.22%	8.0%	14.6%
State general revenue from own sources, as a percentage of personal income, 2004 & 2008	94	9.14%	1.93%	6.0%	14.8%
State tax revenue, as a percentage of personal income, 2004 & 2008	94	6.46%	1.24%	3.9%	10.6%
Local general revenue from own sources, as a percentage of personal income, 2004 & 2008	94	6.26%	1.33%	2.7%	10.3%
Local tax revenue, as a percentage of personal income, 2004 & 2008	94	3.85%	1.00%	1.6%	7.7%
Change in state and local general revenue from own sources, as a percentage of personal income, 2004–2007 & 2008–2011	94	0.31%	6.68%	−13.0%	11.8%
Change in state and local tax revenue, as a percentage of personal income, 2004–2007 & 2008–2011	94	−0.32%	7.26%	−15.9%	17.4%
Change in state general revenue from own sources, as a percentage of personal income, 2004–2007 & 2008–2011	94	0.10%	8.84%	−17.0%	18.8%
Change in state tax revenue, as a percentage of personal income, 2004–2007 & 2008–2011	94	−0.96%	10.79%	−26.7%	30.8%
Change in local general revenue from own sources, as a percentage of personal income, 2004–2007 & 2008–2011	94	0.40%	6.73%	−23.7%	14.1%
Change in local tax revenue, as a percentage of personal income, 2004–2007 & 2008–2011	94	0.53%	8.31%	−38.2%	23.0%
Lagged change in state and local general revenue from own sources, as a percentage of personal income, 1995–1998 & 2002–2005	94	0.94%	5.31%	−10.2%	13.1%
Lagged change in state and local tax revenue, as a percentage of personal income, 1995–1998 & 2002–2005	94	1.26%	6.08%	−11.6%	16.9%
Lagged change in state general revenue from own sources, as a percentage of personal income, 1995–1998 & 2002–2005	94	1.72%	6.75%	−12.5%	23.4%

Table A2 (cont.)

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Lagged change in state tax revenue, as a percentage of personal income, 1995–1998 & 2002–2005	94	1.91%	7.51%	−14.3%	31.7%
Lagged change in local general revenue from own sources, as a percentage of personal income, 1995–1998 & 2002–2005	94	−0.23%	6.58%	−21.9%	18.1%
Lagged change in local tax revenue, as a percentage of personal income, 1995–1998 & 2002–2005	94	0.22%	8.63%	−33.7%	24.1%
Revenue decentralization (local general revenue from own sources, as a percentage of state & local general revenue from own sources), 2004 & 2008	94	40.59%	8.92%	7.7%	57.6%
Expenditure decentralization (local direct general expenditure, as a percentage of state & local direct general expenditure), 2004 & 2008	94	51.89%	8.03%	33.3%	70.1%
Total number of local governments of all types, 2002 & 2007	94	1,868	1,495	118	6,994
Number of local governments of all types, per 100,000 residents, 2002 & 2007	94	57.043	72.094	4.528	431.313
Local intergovernmental revenue from state government, as a percentage of state total expenditure, 2004 & 2008	94	24.34%	5.54%	15.3%	43.4%
Urban share of population (%), 2000 & 2005 est.* (*average of 2000 & 2010)	94	71.857	14.906	38.180	94.697
State population (1,000s), 2004 & 2008	94	6,142	6,716	506.529	36,600
Real median household income (2012 dollars), 2004 & 2008	94	$53,305	$7,749	$38,867	$70,571
Percentage of population aged 18–64, 2004 & 2008	94	62.83%	1.20%	60.0%	65.3%
Real per capita gross domestic product (millions of chained 2005 $), 2004 & 2008	94	$40,481	$7,068	$27,686	$62,706
Unemployment rate (%), 2004 & 2008	94	5.233	1.098	3	8.3
Confederate state dummy variable	94	0.298	0.460	0	1
Northeast region dummy variable	94	0.191	0.396	0	1
Midwest region dummy variable	94	0.255	0.438	0	1
South region dummy variable	94	0.319	0.469	0	1
West region dummy variable	94	0.234	0.426	0	1
Lawyers per 1,000 population, 2000 & 2006–2010	94	2.959	0.931	1.743	5.760
Income skewness (median household income divided by average household income), 1999 & 2005	94	0.765	0.026	0.702	0.820
State-government-owned portion of total state land area (%), 1995	94	5.311	6.309	0.180	36.710

Table A3. Correlation Coefficients

	Eminent domain condemnations per housing unit	Eminent domain condemnations per capita	Eminent domain power binary variable
State and local own-source general revenue (% of personal income)	0.0412 0.6932	0.047 0.6527	0.0828 0.4276
State and local tax revenue (% of personal income)	0.0626 0.5487	0.0596 0.5681	0.3125* 0.0022
Change in state and local own-source general revenue (% of personal income)	−0.1308 0.2088	−0.1463 0.1594	0.053 0.6119
Change in state and local tax revenue (% of personal Income)	−0.114 0.274	−0.1269 0.2229	0.113 0.2783

* Statistically significant at the 10 percent level.

Table A4. Turnbull-Salvino (2009) Model, State Revenue and Local Revenue

VARIABLES	State general revenue from own sources (% of personal income)		Local general revenue from own sources (% of personal income)		State tax revenue (% of personal income)		Local tax revenue (% of personal income)	
	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Eminent domain power binary variable	0.00514*	0.00607**	0.00357	0.00297	0.00647***	0.00694***	0.00462	0.00414
	(0.00271)	(0.00276)	(0.00266)	(0.00274)	(0.00213)	(0.00219)	(0.00288)	(0.00297)
Revenue decentralization	−0.154***		0.109***		−0.0934***		0.0726***	
	(0.0358)		(0.0259)		(0.0267)		(0.0165)	
Expenditure decentralization		−0.288***		0.211***		−0.187***		0.130***
		(0.0306)		(0.0174)		(0.0182)		(0.0163)
Local governments	−2.17e-06***	−5.13e-07	−8.80e-07	−2.15e-06***	−1.33e-06**	−1.58e-07	−4.26e-07	−1.12e-06
	(7.81e-07)	(7.61e-07)	(6.75e-07)	(6.37e-07)	(6.15e-07)	(5.00e-07)	(6.43e-07)	(6.99e-07)
Local intergovernmental revenue from state government, as % of state total expenditure	−0.00343	0.225***	0.0285	−0.140***	0.0480**	0.198***	−0.0458***	−0.148***
	(0.0336)	(0.0374)	(0.0248)	(0.0238)	(0.0232)	(0.0258)	(0.0162)	(0.0227)
Urban share of population	−7.08e-06	3.58e-05	2.29e-05	−1.63e-05	−0.000115	−7.35e-05	5.58e-05	4.33e-05
	(0.000120)	(0.000127)	(7.78e-05)	(7.50e-05)	(0.000102)	(9.92e-05)	(6.65e-05)	(7.55e-05)
Population	3.15e-10**	2.34e-10	2.71e-10	3.29e-10*	3.27e-10***	2.78e-10**	3.45e-10	3.84e-10
	(1.50e-10)	(1.70e-10)	(1.75e-10)	(1.80e-10)	(1.17e-10)	(1.15e-10)	(2.44e-10)	(2.54e-10)
Median household income (constant dollars)	−6.95e-07***	−3.60e-07*	−3.71e-07**	−6.20e-07***	−2.75e-07	−5.17e-08	1.29e-08	−1.34e-07
	(2.18e-07)	(2.09e-07)	(1.52e-07)	(1.45e-07)	(1.97e-07)	(1.87e-07)	(1.27e-07)	(1.39e-07)
Confederate state dummy	−0.0133***	−0.00854***	−0.00386	−0.00751***	−0.00688**	−0.00353**	−0.00535*	−0.00738***
	(0.00428)	(0.00252)	(0.00331)	(0.00234)	(0.00320)	(0.00176)	(0.00274)	(0.00252)
Constant	0.200***	0.208***	0.0324***	0.0266***	0.117***	0.122***	0.0161**	0.0130
	(0.0123)	(0.0134)	(0.00757)	(0.00822)	(0.00889)	(0.00935)	(0.00785)	(0.00885)
Observations	94	94	94	94	94	94	94	94
R-squared	0.706	0.731	0.669	0.722	0.613	0.683	0.620	0.615

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

Notes: All models include year fixed effects. Robust standard errors are in parentheses.

Table A5. Turnbull-Salvino (2009) Model, Using Eminent Domain Activity Variable, State Revenue and Local Revenue

VARIABLES	State general revenue from own sources (% of personal income)		Local general revenue from own sources (% of personal income)		State tax revenue (% of personal income)		Local tax revenue (% of personal income)	
	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Total eminent domain condemnations	1.82e-06	2.26e-06	−2.64e-07	−5.59e-07	1.23e-06	1.49e-06	5.30e-07	1.59e-07
	(2.02e-06)	(2.26e-06)	(1.21e-06)	(1.20e-06)	(1.25e-06)	(1.57e-06)	(1.51e-06)	(1.44e-06)
Revenue decentralization	−0.156***		0.108***		−0.0959***		0.0707***	
	(0.0361)		(0.0252)		(0.0276)		(0.0159)	
Expenditure decentralization		−0.291***		0.210***		−0.190***		0.128***
		(0.0306)		(0.0178)		(0.0194)		(0.0168)
Local governments	−1.85e-06**	−1.37e-07	−6.19e-07	−1.92e-06***	−9.03e-07	3.02e-07	−1.12e-07	−8.26e-07
	(8.12e-07)	(8.99e-07)	(6.42e-07)	(5.86e-07)	(6.52e-07)	(6.53e-07)	(5.58e-07)	(5.92e-07)
Local intergovernmental revenue from state government, as % of state total expenditure	−0.000161	0.231***	0.0302	−0.138***	0.0517**	0.204***	−0.0433***	−0.145***
	(0.0332)	(0.0377)	(0.0242)	(0.0236)	(0.0235)	(0.0272)	(0.0148)	(0.0214)
Urban share of population	−1.02e-05	3.05e-05	2.75e-05	−1.17e-05	−0.000114	−7.48e-05	5.79e-05	4.72e-05
	(0.000122)	(0.000132)	(8.23e-05)	(7.71e-05)	(0.000108)	(0.000108)	(6.63e-05)	(7.40e-05)
Population	2.35e-10	1.35e-10	2.41e-10	3.09e-10*	2.44e-10*	1.84e-10	2.92e-10	3.40e-10
	(1.61e-10)	(1.81e-10)	(1.78e-10)	(1.79e-10)	(1.31e-10)	(1.36e-10)	(2.54e-10)	(2.58e-10)
Median household income (current dollars)	−6.21e-07***	−2.70e-07	−3.16e-07**	−5.72e-07***	−1.79e-07	5.43e−08	8.23e-08	−7.18e-08
	(2.10e-07)	(2.00e-07)	(1.31e-07)	(1.30e-07)	(1.98e-07)	(1.90e-07)	(1.03e-07)	(1.16e-07)
Confederate state dummy	−0.0130***	−0.00811***	−0.00348	−0.00716***	−0.00634*	−0.00294	−0.00494*	−0.00698***
	(0.00435)	(0.00265)	(0.00323)	(0.00234)	(0.00331)	(0.00192)	(0.00272)	(0.00254)
Constant	0.197***	0.204***	0.0295***	0.0240***	0.112***	0.117***	0.0126*	0.00946
	(0.0122)	(0.0126)	(0.00690)	(0.00759)	(0.00903)	(0.00900)	(0.00709)	(0.00817)
Observations	94	94	94	94	94	94	94	94
R-squared	0.699	0.722	0.661	0.717	0.584	0.650	0.596	0.594

* p < 0.1, ** p < 0.05, *** p < 0.01.

Notes: All models include year fixed effects. Robust standard errors are in parentheses.

Table A6. Turnbull-Salvino (2009) Model, Using Eminent Domain Activity Per Housing Unit Variable, State Revenue and Local Revenue

VARIABLES	State general revenue from own sources (% of personal income)		Local general revenue from own sources (% of personal income)		State tax revenue (% of personal income)		Local tax revenue (% of personal income)	
	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Eminent domain condemnations per housing unit	7.46e-06	6.72e-06	−1.66e-06	−9.13e-07	3.78e-06	3.03e-06	1.29e-06	1.52e-06
	(6.71e-06)	(5.10e-06)	(2.65e-06)	(2.89e-06)	(2.84e-06)	(2.74e-06)	(3.07e-06)	(3.64e-06)
Revenue decentralization	−0.155***		0.108***		−0.0954***		0.0709***	
	(0.0362)		(0.0253)		(0.0277)		(0.0160)	
Expenditure decentralization		−0.289***		0.209***		−0.189***		0.128***
		(0.0309)		(0.0178)		(0.0193)		(0.0168)
Local governments	−1.87e-06**	−1.49e-07	−6.12e-07	−1.92e-06***	−9.03e-07	3.09e-07	−1.09e-07	−8.40e-07
	(8.10e-07)	(8.98e-07)	(6.40e-07)	(5.83e-07)	(6.51e-07)	(6.53e-07)	(5.54e-07)	(5.91e-07)
Local intergovernmental revenue from state government, as % of state total expenditure	0.00151	0.231***	0.0297	−0.137***	0.0524**	0.204***	−0.0431***	−0.144***
	(0.0330)	(0.0374)	(0.0239)	(0.0236)	(0.0233)	(0.0272)	(0.0147)	(0.0214)
Urban share of population	−2.33e-05	2.07e-05	3.10e-05	−1.15e-05	−0.000120	−7.72e-05	5.66e-05	4.19e-05
	(0.000124)	(0.000133)	(8.24e-05)	(7.71e-05)	(0.000108)	(0.000107)	(6.75e-05)	(7.53e-05)
Population	2.76e-10*	1.84e-10	2.34e-10	2.98e-10*	2.70e-10**	2.14e-10	3.03e-10	3.45e-10
	(1.54e-10)	(1.79e-10)	(1.77e-10)	(1.76e-10)	(1.28e-10)	(1.34e-10)	(2.54e-10)	(2.59e-10)
Median household income (current dollars)	−6.04e-07***	−2.56e-07	−3.19e-07**	−5.75e-07***	−1.70e-07	6.18e-08	8.57e-08	−6.69e-08
	(2.01e-07)	(1.98e-07)	(1.31e-07)	(1.31e-07)	(1.97e-07)	(1.90e-07)	(1.02e-07)	(1.14e-07)
Confederate state dummy	−0.0128***	−0.00795***	−0.00351	−0.00720***	−0.00623*	−0.00283	−0.00489*	−0.00696***
	(0.00426)	(0.00262)	(0.00319)	(0.00234)	(0.00327)	(0.00189)	(0.00271)	(0.00254)
Constant	0.196***	0.202***	0.0297***	0.0243***	0.111***	0.117***	0.0123*	0.00961
	(0.0121)	(0.0126)	(0.00694)	(0.00768)	(0.00910)	(0.00902)	(0.00707)	(0.00809)
Observations	94	94	94	94	94	94	94	94
R-squared	0.701	0.723	0.661	0.717	0.584	0.649	0.596	0.596

* p < 0.1, ** p < 0.05, *** p < 0.01.

Notes: All models include year fixed effects. Robust standard errors are in parentheses.

Table A7. Turnbull-Salvino (2009) Model, Using Eminent Domain Activity Per Capita Variable, State Revenue and Local Revenue

VARIABLES	State general revenue from own sources (% of personal income)		Local general revenue from own sources (% of personal income)		State tax revenue (% of personal income)		Local tax revenue (% of personal income)	
	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Eminent domain condemnations per capita	1.56e-05	1.42e-05	−4.62e-06	−3.14e-06	7.86e-06	6.35e-06	2.17e-06	2.60e-06
	(1.57e-05)	(1.18e-05)	(5.76e-06)	(6.52e-06)	(6.41e-06)	(5.95e-06)	(7.19e-06)	(8.57e-06)
Revenue decentralization	−0.155***		0.108***		−0.0955***		0.0708***	
	(0.0362)		(0.0253)		(0.0277)		(0.0160)	
Expenditure decentralization		−0.289***		0.209***		−0.189***		0.128***
		(0.0308)		(0.0178)		(0.0194)		(0.0168)
Local governments	−1.86e-06**	−1.40e-07	−6.09e-07	−1.92e-06***	−8.98e-07	3.13e-07	−1.06e-07	−8.35e-07
	(8.10e-07)	(9.00e-07)	(6.40e-07)	(5.83e-07)	(6.50e-07)	(6.53e-07)	(5.54e-07)	(5.90e-07)
Local intergovernmental revenue from state government, as % of state total expenditure	0.00127	0.231***	0.0296	−0.138***	0.0523**	0.204***	−0.0432***	−0.144***
	(0.0330)	(0.0374)	(0.0239)	(0.0236)	(0.0233)	(0.0272)	(0.0147)	(0.0214)
Urban share of population	−2.07e-05	2.30e-05	3.18e-05	−1.03e-05	−0.000118	−7.61e-05	5.77e-05	4.31e-05
	(0.000123)	(0.000132)	(8.22e-05)	(7.69e-05)	(0.000108)	(0.000107)	(6.73e-05)	(7.51e-05)
Population	2.76e-10*	1.83e-10	2.34e-10	2.97e-10*	2.70e-10**	2.14e-10	3.02e-10	3.44e-10
	(1.54e-10)	(1.79e-10)	(1.77e-10)	(1.76e-10)	(1.28e-10)	(1.34e-10)	(2.54e-10)	(2.59e-10)
Median household income (current dollars)	−6.01e-07***	−2.53e-07	−3.21e-07**	−5.76e-07***	−1.69e-07	6.29e-08	8.56e-08	−6.68e-08
	(2.01e-07)	(1.98e-07)	(1.31e-07)	(1.32e-07)	(1.97e-07)	(1.90e-07)	(1.02e-07)	(1.15e-07)
Confederate state dummy	−0.0128***	−0.00791***	−0.00352	−0.00720***	−0.00621*	−0.00281	−0.00489*	−0.00695***
	(0.00425)	(0.00262)	(0.00319)	(0.00234)	(0.00326)	(0.00190)	(0.00271)	(0.00254)
Constant	0.195***	0.202***	0.0298***	0.0244***	0.111***	0.116***	0.0123*	0.00961
	(0.0122)	(0.0126)	(0.00696)	(0.00770)	(0.00915)	(0.00904)	(0.00709)	(0.00811)
Observations	94	94	94	94	94	94	94	94
R-squared	0.700	0.722	0.662	0.717	0.584	0.649	0.596	0.596

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

Notes: All models include year fixed effects. Robust standard errors are in parentheses.

Table A8. Level of State Revenue and Local Revenue, Using All Three Eminent Domain Variables

VARIABLES	State general revenue from own sources (% of personal income)			Local general revenue from own sources (% of personal income)		
	(7)	(8)	(9)	(10)	(11)	(12)
Eminent domain condemnations per housing unit	1.01e-05			−1.24e-06		
	(8.09e-06)			(4.42e-06)		
Eminent domain condemnations per capita		2.11e-05			−4.29e-06	
		(1.86e-05)			(9.68e-06)	
Eminent domain power binary variable			0.00620*			0.00401
			(0.00356)			(0.00284)
Revenue decentralization	−0.157***	−0.157***	−0.156***	0.105***	0.105***	0.107***
	(0.0353)	(0.0354)	(0.0352)	(0.0248)	(0.0248)	(0.0249)
Number of local governments of all types, per 100,000 residents	8.20e-06	8.10e-06	−1.12e-05	−2.40e-06	−2.61e-06	−1.32e-05
	(2.63e-05)	(2.63e-05)	(2.68e-05)	(1.01e-05)	(1.00e-05)	(1.29e-05)
Local intergovernmental revenue from state government, as % of state total expenditure	0.0118	0.0114	−0.00347	0.0366	0.0363	0.0301
	(0.0282)	(0.0281)	(0.0283)	(0.0233)	(0.0233)	(0.0243)
Urban share of population	−0.000100	−9.50e-05	−0.000101	3.54e-06	6.57e-06	−3.59e-05
	(0.000165)	(0.000165)	(0.000162)	(0.000129)	(0.000129)	(0.000120)
Population	0	0	7.39e-11	2.04e-10	2.06e-10	2.21e-10
	(1.71e-10)	(1.70e-10)	(1.54e-10)	(1.54e-10)	(1.55e-10)	(1.45e-10)
Real median household income (2012 dollars)	−8.23e-07***	−8.17e-07***	−9.32e-07***	−5.57e-07**	−5.60e-07**	−6.14e-07***
	(2.51e-07)	(2.51e-07)	(2.59e-07)	(2.13e-07)	(2.13e-07)	(2.18e-07)
Percentage of population aged 18–64	0.0463	0.0451	0.0305	0.0342	0.0348	0.0217
	(0.140)	(0.140)	(0.145)	(0.0880)	(0.0880)	(0.0876)
Real per capita gross domestic product (millions of chained 2005 $)	8.19e-07**	8.10e-07**	7.50e-07**	3.99e-07	3.94e-07	4.23e-07
	(3.46e-07)	(3.45e-07)	(3.44e-07)	(2.96e-07)	(2.95e-07)	(2.83e-07)
Unemployment rate (%)	−0.000979	−0.00101	−0.00192	−0.00133	−0.00136	−0.00149
	(0.00167)	(0.00167)	(0.00153)	(0.00108)	(0.00108)	(0.00100)
Midwest region dummy variable	−0.000512	−0.000506	−0.000483	−0.000878	−0.000875	−0.000981
	(0.00333)	(0.00333)	(0.00303)	(0.00290)	(0.00289)	(0.00267)
South region dummy variable	−0.00479	−0.00479	−0.00597*	−0.00298	−0.00303	−0.00340
	(0.00340)	(0.00341)	(0.00353)	(0.00330)	(0.00330)	(0.00326)
West region dummy variable	0.00489	0.00489	0.00700**	0.00128	0.00129	0.00247
	(0.00362)	(0.00362)	(0.00335)	(0.00319)	(0.00319)	(0.00272)
Lagged change in state general revenue from own sources (% of personal income)	0.0458*	0.0462*	0.0494*			
	(0.0249)	(0.0249)	(0.0252)			
Lagged change in local general revenue from own sources (% of personal income)				0.0243*	0.0243*	0.0216*
				(0.0132)	(0.0132)	(0.0129)
Constant	0.145*	0.146*	0.172**	0.0115	0.0117	0.0257
	(0.0830)	(0.0830)	(0.0840)	(0.0508)	(0.0508)	(0.0509)
Observations	94	94	94	94	94	94
R-squared	0.754	0.753	0.758	0.706	0.706	0.713

* p < 0.1, ** p < 0.05, *** p < 0.01. Notes: All models include year fixed effects. Robust standard errors are in parentheses.

Table A9. Level of State Tax Revenue and Local Tax Revenue, Using All Three Eminent Domain Variables

VARIABLES	State tax revenue (% of personal income)			Local tax revenue (% of personal income)		
	(13)	(14)	(15)	(16)	(17)	(18)
Eminent domain condemnations per housing unit	5.98e-06			−9.47e-08		
	(4.27e-06)			(4.03e-06)		
Eminent domain condemnations per capita		1.25e-05			−1.34e-06	
		(9.66e-06)			(8.94e-06)	
Eminent domain power binary variable			0.00824***			0.00397
			(0.00190)			(0.00239)
Revenue decentralization	−0.0883***	−0.0884***	−0.0854***	0.0687***	0.0686***	0.0703***
	(0.0251)	(0.0252)	(0.0243)	(0.0147)	(0.0147)	(0.0148)
Number of local governments of all types, per 100,000 residents	5.85e-06	5.77e-06	−1.83e-05	−8.25e-06	−8.40e-06	−1.93e-05*
	(2.03e-05)	(2.02e-05)	(1.91e-05)	(7.76e-06)	(7.75e-06)	(9.92e-06)
Local intergovernmental revenue from state government, as % of state total expenditure	0.0630***	0.0627***	0.0463***	−0.0146	−0.0148	−0.0215
	(0.0195)	(0.0195)	(0.0175)	(0.0137)	(0.0137)	(0.0141)
Urban share of population	−0.000120	−0.000117	−0.000157	0.000204**	0.000207**	0.000174**
	(0.000124)	(0.000124)	(0.000109)	(8.67e-05)	(8.61e-05)	(8.28e-05)
Population	8.14e-11	8.29e-11	1.43e-10	1.64e-10	1.66e-10	1.82e-10*
	(1.39e-10)	(1.38e-10)	(1.21e-10)	(1.11e-10)	(1.11e-10)	(1.07e-10)
Real median household income (2012 dollars)	−3.81e-07*	−3.78e-07*	−5.10e-07***	−3.59e-07**	−3.61e-07**	−4.22e-07***
	(1.92e-07)	(1.93e-07)	(1.73e-07)	(1.61e-07)	(1.63e-07)	(1.48e-07)
Percentage of population aged 18–64	0.0460	0.0454	0.0239	0.0856	0.0859	0.0737
	(0.0939)	(0.0939)	(0.0877)	(0.0543)	(0.0543)	(0.0537)
Real per capita gross domestic product (millions of chained 2005 $)	3.76e-07**	3.71e-07**	3.44e-07**	8.08e-08	7.69e-08	9.54e-08
	(1.85e-07)	(1.84e-07)	(1.62e-07)	(1.65e-07)	(1.65e-07)	(1.56e-07)
Unemployment rate (%)	−0.000396	−0.000414	−0.00126	−0.00189***	−0.00191***	−0.00212***
	(0.00115)	(0.00115)	(0.00101)	(0.000658)	(0.000659)	(0.000616)
Midwest region dummy variable	−0.00206	−0.00206	−0.00201	−0.00702***	−0.00702***	−0.00708***
	(0.00257)	(0.00257)	(0.00206)	(0.00264)	(0.00263)	(0.00244)
South region dummy variable	−0.00389	−0.00388	−0.00493**	−0.0129***	−0.0130***	−0.0134***
	(0.00246)	(0.00247)	(0.00204)	(0.00304)	(0.00305)	(0.00261)
West region dummy variable	−0.000441	−0.000442	0.00225	−0.0112***	−0.0112***	−0.0100***
	(0.00266)	(0.00266)	(0.00246)	(0.00257)	(0.00257)	(0.00213)
Lagged change in state tax revenue from own sources (% of personal income)	0.0494***	0.0495***	0.0534***			
	(0.0141)	(0.0142)	(0.0138)			
Lagged change in local tax revenue (% of personal income)				0.0103	0.0103	0.00765
				(0.00738)	(0.00739)	(0.00730)
Constant	0.0714	0.0719	0.103**	−0.0199	−0.0197	−0.00537
	(0.0571)	(0.0570)	(0.0517)	(0.0327)	(0.0327)	(0.0325)
Observations	94	94	94	94	94	94
R-squared	0.687	0.686	0.720	0.742	0.742	0.755

* p < 0.1, ** p < 0.05, *** p < 0.01. Notes: All models include year fixed effects. Robust standard errors are in parentheses.

Table A10. Three-Year Growth of State Revenue and Local Revenue, Using All Three Eminent Domain Variables

VARIABLES	Change in state general revenue from own sources (% of personal income)			Change in local general revenue from own sources (% of personal income)		
	(7)	(8)	(9)	(10)	(11)	(12)
Eminent domain condemnations per housing unit	−6.35e-05*			6.00e-06		
	(3.44e-05)			(2.64e-05)		
Eminent domain condemnations per capita		−0.000153**			1.43e-05	
		(7.57e-05)			(5.93e-05)	
Eminent domain power binary variable			0.00473			0.00385
			(0.0152)			(0.0215)
Revenue decentralization	−0.112*	−0.113*	−0.0978	0.0429	0.0430	0.0434
	(0.0661)	(0.0660)	(0.0678)	(0.0957)	(0.0957)	(0.0965)
Number of local governments of all types, per 100,000 residents	0.000424**	0.000422**	0.000429**	−0.000276**	−0.000276**	−0.000288*
	(0.000168)	(0.000168)	(0.000176)	(0.000132)	(0.000132)	(0.000151)
Local intergovernmental revenue from state government, as % of state total expenditure	0.259*	0.257*	0.284*	−0.116	−0.116	−0.126
	(0.141)	(0.141)	(0.145)	(0.184)	(0.185)	(0.192)
Urban share of population	0.000178	0.000191	−0.000180	0.000423	0.000422	0.000421
	(0.000715)	(0.000714)	(0.000691)	(0.000937)	(0.000935)	(0.000949)
Population	−5.25e-10	−5.18e-10	−6.71e-10	−5.09e-10	−5.10e-10	−4.74e-10
	(9.91e-10)	(9.92e-10)	(1.00e-09)	(1.38e-09)	(1.38e-09)	(1.36e-09)
Real median household income (2012 dollars)	1.17e-06	1.11e-06	1.28e-06	−8.54e-07	−8.48e-07	−9.31e-07
	(1.11e-06)	(1.11e-06)	(1.23e-06)	(1.15e-06)	(1.15e-06)	(1.18e-06)
Percentage of population aged 18–64	0.298	0.311	0.259	0.806	0.805	0.797
	(0.577)	(0.575)	(0.568)	(0.671)	(0.672)	(0.691)
Real per capita gross domestic product (millions of chained 2005 $)	−2.04e-07	−2.19e-07	3.53e-07	−1.99e-07	−1.97e-07	−2.34e-07
	(1.23e-06)	(1.22e-06)	(1.16e-06)	(1.40e-06)	(1.40e-06)	(1.42e-06)
Unemployment rate (%)	0.0151*	0.0148*	0.0181**	0.00103	0.00105	0.000512
	(0.00764)	(0.00763)	(0.00783)	(0.00789)	(0.00786)	(0.00749)
Midwest region dummy variable	−0.0396**	−0.0396**	−0.0401**	0.0291	0.0291	0.0291
	(0.0166)	(0.0166)	(0.0164)	(0.0246)	(0.0246)	(0.0244)
South region dummy variable	−0.00319	−0.00382	0.000337	0.0131	0.0131	0.0122
	(0.0153)	(0.0153)	(0.0153)	(0.0233)	(0.0234)	(0.0225)
West region dummy variable	−0.00890	−0.00874	−0.00847	0.0198	0.0197	0.0210
	(0.0178)	(0.0177)	(0.0193)	(0.0229)	(0.0229)	(0.0257)
Lagged change in state general revenue from own sources (% of personal income)	−0.167*	−0.169*	−0.174*			
	(0.0969)	(0.0967)	(0.0988)			
Lagged change in local general revenue from own sources (% of personal income)				−0.0831	−0.0830	−0.0862
				(0.113)	(0.113)	(0.113)
Constant	−0.417	−0.419	−0.428	−0.504	−0.503	−0.487
	(0.341)	(0.340)	(0.330)	(0.389)	(0.389)	(0.417)
Observations	94	94	94	94	94	94
R-squared	0.751	0.752	0.742	0.344	0.344	0.344

* p < 0.1, ** p < 0.05, *** p < 0.01. Notes: All models include year fixed effects. Robust standard errors are in parentheses.

Table A11. Three-Year Growth of State Tax Revenue and Local Tax Revenue, Using All Three Eminent Domain Variables

VARIABLES	Change in state tax revenue (% of personal income)			Change in local tax revenue (% of personal income)		
	(13)	(14)	(15)	(16)	(17)	(18)
Eminent domain condemnations per housing unit	−7.79e-05*			7.25e-05*		
	(4.23e-05)			(4.00e-05)		
Eminent domain condemnations per capita		−0.000187**			0.000170*	
		(9.22e-05)			(9.02e-05)	
Eminent domain power binary variable			0.00589			0.0247
			(0.0221)			(0.0270)
Revenue decentralization	−0.186*	−0.187*	−0.168*	0.0353	0.0354	0.0298
	(0.0994)	(0.0994)	(0.0997)	(0.127)	(0.127)	(0.125)
Number of local governments of all types, per 100,000 residents	0.000751**	0.000749**	0.000757**	−0.000361*	−0.000359*	−0.000451*
	(0.000307)	(0.000307)	(0.000314)	(0.000207)	(0.000207)	(0.000228)
Local intergovernmental revenue from state government, as % of state total expenditure	0.296	0.294	0.327	−0.142	−0.141	−0.222
	(0.197)	(0.197)	(0.203)	(0.225)	(0.225)	(0.229)
Urban share of population	0.000623	0.000637	0.000183	9.66e-05	9.21e-05	0.000272
	(0.00107)	(0.00107)	(0.00102)	(0.00136)	(0.00135)	(0.00133)
Population	−6.96e-11	−6.11e-11	−2.45e-10	1.39e-10	1.37e-10	4.42e-10
	(1.29e-09)	(1.29e-09)	(1.30e-09)	(1.77e-09)	(1.77e-09)	(1.68e-09)
Real median household income (2012 dollars)	9.18e-07	8.42e-07	1.06e-06	−9.43e-07	−8.80e-07	−1.55e-06
	(1.85e-06)	(1.85e-06)	(1.96e-06)	(1.72e-06)	(1.72e-06)	(1.84e-06)
Percentage of population aged 18–64	0.415	0.430	0.363	0.915	0.902	0.872
	(0.763)	(0.761)	(0.748)	(0.941)	(0.940)	(0.968)
Real per capita gross domestic product (millions of chained 2005 $)	5.82e-08	4.02e-08	7.32e-07	1.24e-06	1.24e-06	7.32e-07
	(1.84e-06)	(1.84e-06)	(1.75e-06)	(2.34e-06)	(2.32e-06)	(2.28e-06)
Unemployment rate (%)	0.0194*	0.0191*	0.0231**	−0.00163	−0.00143	−0.00679
	(0.0103)	(0.0103)	(0.0104)	(0.00977)	(0.00971)	(0.00964)
Midwest region dummy variable	−0.0584**	−0.0583**	−0.0590**	0.0566*	0.0565*	0.0565*
	(0.0254)	(0.0254)	(0.0253)	(0.0332)	(0.0332)	(0.0332)
South region dummy variable	−0.00643	−0.00716	−0.00204	0.0342	0.0347	0.0265
	(0.0232)	(0.0231)	(0.0226)	(0.0295)	(0.0294)	(0.0290)
West region dummy variable	−0.0152	−0.0150	−0.0146	0.0469	0.0468	0.0553
	(0.0248)	(0.0247)	(0.0269)	(0.0343)	(0.0343)	(0.0381)
Lagged change in state tax revenue from own sources (% of personal income)	−0.00921	−0.0101	−0.0136			
	(0.121)	(0.121)	(0.124)			
Lagged change in local tax revenue (% of personal income)				−0.0809	−0.0807	−0.0964
				(0.117)	(0.117)	(0.122)
Constant	−0.561	−0.563	−0.572	−0.579	−0.576	−0.457
	(0.453)	(0.452)	(0.438)	(0.562)	(0.561)	(0.589)
Observations	94	94	94	94	94	94
R-squared	0.689	0.690	0.680	0.139	0.140	0.132

* p < 0.1, ** p < 0.05, *** p < 0.01. Notes: All models include year fixed effects. Robust standard errors are in parentheses.

Table A12. Turnbull-Salvino (2009) Model, Using Instrumental Variables and New Eminent Domain Variables, State Revenue and Local Revenue

VARIABLES	State general revenue from own sources (% of personal income)		Local general revenue from own sources (% of personal income)		State tax revenue (% of personal income)		Local tax revenue (% of personal income)	
	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Eminent domain condemnations per housing unit	9.37e-05		5.70e-05		8.47e-05*		8.97e-05	
	(5.97e-05)		(5.13e-05)		(5.07e-05)		(6.69e-05)	
Eminent domain condemnations per capita		0.000208		0.000127		0.000192*		0.000203
		(0.000133)		(0.000115)		(0.000114)		(0.000151)
Revenue decentralization	−0.140***	−0.142***	0.118***	0.117***	−0.0815***	−0.0824***	0.0861***	0.0851***
	(0.0396)	(0.0391)	(0.0331)	(0.0326)	(0.0311)	(0.0308)	(0.0308)	(0.0303)
Local governments	−2.62e-06*	−2.56e-06*	−1.12e-06	−1.09e-06	−1.61e-06	−1.57e-06	−8.82e-07	−8.41e-07
	(1.53e-06)	(1.51e-06)	(1.15e-06)	(1.14e-06)	(1.36e-06)	(1.36e-06)	(1.48e-06)	(1.48e-06)
Local intergovernmental revenue from state government, as % of state total expenditure	0.0296	0.0281	0.0488*	0.0479*	0.0787***	0.0780***	−0.0144	−0.0153
	(0.0361)	(0.0357)	(0.0266)	(0.0263)	(0.0273)	(0.0269)	(0.0250)	(0.0245)
Urban share of population	−0.000268	−0.000248	−0.000135	−0.000124	−0.000349	−0.000336	−0.000194	−0.000180
	(0.000260)	(0.000252)	(0.000206)	(0.000199)	(0.000225)	(0.000221)	(0.000259)	(0.000251)
Population	3.99e-10	3.95e-10	3.17e-10	3.15e-10	3.85e-10*	3.84e-10*	4.28e-10	4.27e-10
	(2.51e-10)	(2.55e-10)	(2.39e-10)	(2.41e-10)	(2.14e-10)	(2.21e-10)	(3.36e-10)	(3.39e-10)
Median household income (current dollars)	−4.59e-07	−4.19e-07	−2.21e-07	−1.96e-07	−3.47e-08	5.78e-09	2.34e-07	2.76e-07
	(4.34e-07)	(4.18e-07)	(3.07e-07)	(3.01e-07)	(4.32e-07)	(4.26e-07)	(4.36e-07)	(4.30e-07)
Confederate state dummy	−0.0128*	−0.0123*	−0.00352	−0.00322	−0.00625	−0.00579	−0.00491	−0.00443
	(0.00658)	(0.00643)	(0.00493)	(0.00478)	(0.00581)	(0.00579)	(0.00636)	(0.00627)
Constant	0.188***	0.185***	0.0245	0.0227	0.104***	0.101***	0.00447	0.00152
	(0.0276)	(0.0271)	(0.0183)	(0.0182)	(0.0252)	(0.0252)	(0.0266)	(0.0266)
Observations	94	94	94	94	94	94	94	94
R-squared	0.285	0.297	0.257	0.267	†	†	†	†

* p < 0.1, ** p < 0.05, *** p < 0.01.

† With 2SLS, Stata does not report a value for R-squared when it is negative.

Notes: All models include year fixed effects. Robust standard errors are in parentheses. Eminent domain is treated as endogenous in all models.

Table A13. Level of State Revenue and Local Revenue, Using Instrumental Variables and New Eminent Domain Variables

VARIABLES	State general revenue from own sources (% of personal income)			Local general revenue from own sources (% of personal income)		
	(7)	(8)	(9)	(10)	(11)	(12)
Eminent domain condemnations per housing unit	4.70e-05			2.85e-05		
	(3.31e-05)			(2.86e-05)		
Eminent domain condemnations per capita		0.000103			6.41e-05	
		(7.43e-05)			(6.53e-05)	
Eminent domain power binary variable			0.00568			0.00884**
			(0.00384)			(0.00395)
Revenue decentralization	−0.156***	−0.156***	−0.163***	0.112***	0.112***	0.110***
	(0.0325)	(0.0324)	(0.0309)	(0.0278)	(0.0276)	(0.0226)
Number of local governments of all types, per 100,000 residents	1.45e-05	1.45e-05	−1.45e-05	4.29e-06	4.50e-06	−2.80e-05**
	(2.74e-05)	(2.73e-05)	(2.46e-05)	(1.60e-05)	(1.61e-05)	(1.36e-05)
Local intergovernmental revenue from state government, as % of state total expenditure	0.0307	0.0295	−0.00283	0.0466*	0.0462*	0.0174
	(0.0310)	(0.0309)	(0.0290)	(0.0269)	(0.0269)	(0.0213)
Urban share of population	−0.000304	−0.000292	−0.000118	−0.000140	−0.000135	−7.24e-05
	(0.000236)	(0.000234)	(0.000156)	(0.000191)	(0.000189)	(0.000112)
Population	−1.15e-10	−1.09e-10	0	1.09e-10	1.11e-10	2.33e-10*
	(1.90e-10)	(1.88e-10)	(1.68e-10)	(1.52e-10)	(1.50e-10)	(1.38e-10)
Real median household income (2012 dollars)	−8.14e-07***	−7.85e-07***	−1.03e-06***	−5.06e-07**	−4.86e-07**	−7.15e-07***
	(2.99e-07)	(2.88e-07)	(2.60e-07)	(2.28e-07)	(2.23e-07)	(1.86e-07)
Percentage of population aged 18–64	0.0457	0.0393	0.0485	0.0234	0.0192	0.00859
	(0.138)	(0.138)	(0.134)	(0.0826)	(0.0828)	(0.0833)
Real per capita gross domestic product (millions of chained 2005 $)	1.26e-06***	1.24e-06***	8.97e-07***	6.33e-07	6.25e-07	4.34e-07
	(4.36e-07)	(4.33e-07)	(3.36e-07)	(3.87e-07)	(3.85e-07)	(2.69e-07)
Unemployment rate (%)	0.00144	0.00141	−0.00131	0.000408	0.000426	−0.00159*
	(0.00219)	(0.00219)	(0.00144)	(0.00172)	(0.00173)	(0.000954)
Midwest region dummy variable	−0.00158	−0.00160	−0.00144	−0.00137	−0.00138	−0.00136
	(0.00385)	(0.00379)	(0.00276)	(0.00330)	(0.00329)	(0.00239)
South region dummy variable	−0.00383	−0.00372	−0.00753**	−0.00186	−0.00175	−0.00465*
	(0.00436)	(0.00412)	(0.00325)	(0.00324)	(0.00314)	(0.00275)
West region dummy variable	0.00358	0.00352	0.00600*	0.000614	0.000566	0.00374
	(0.00442)	(0.00442)	(0.00335)	(0.00376)	(0.00380)	(0.00244)
Constant	0.125	0.128	0.165**	0.000449	0.00208	0.0446
	(0.0878)	(0.0867)	(0.0788)	(0.0540)	(0.0535)	(0.0500)
Observations	94	94	94	94	94	94
R-squared	0.676	0.677	0.739	0.603	0.600	0.695

* p < 0.1, ** p < 0.05, *** p < 0.01.

† With 2SLS, Stata does not report a value for R-squared when it is negative.

Notes: All models include year fixed effects. Robust standard errors are in parentheses. Eminent domain is treated as endogenous in all models.

Table A14. Level of State Tax Revenue and Local Tax Revenue, Using Instrumental Variables and New Eminent Domain Variables

VARIABLES	State tax revenue (% of personal income)			Local tax revenue (% of personal income)		
	(13)	(14)	(15)	(16)	(17)	(18)
Eminent domain condemnations per housing unit	6.17e-05*			2.97e-05		
	(3.63e-05)			(2.39e-05)		
Eminent domain condemnations per capita		0.000140*			6.74e-05	
		(8.23e-05)			(5.49e-05)	
Eminent domain power binary variable			0.00896***			0.00796**
			(0.00310)			(0.00318)
Revenue decentralization	−0.0861***	−0.0864***	−0.0955***	0.0747***	0.0746***	0.0718***
	(0.0260)	(0.0258)	(0.0226)	(0.0181)	(0.0180)	(0.0134)
Number of local governments of all types, per 100,000 residents	2.27e-05	2.33e-05	−1.95e-05	−7.71e-07	−4.79e-07	−3.10e-05***
	(2.81e-05)	(2.81e-05)	(2.03e-05)	(1.32e-05)	(1.33e-05)	(1.15e-05)
Local intergovernmental revenue from state government, as % of state total expenditure	0.0938***	0.0933***	0.0473**	−0.00105	−0.00129	−0.0294**
	(0.0276)	(0.0274)	(0.0195)	(0.0207)	(0.0208)	(0.0135)
Urban share of population	−0.000437*	−0.000431*	−0.000206*	7.14e-05	7.46e-05	0.000152**
	(0.000240)	(0.000239)	(0.000121)	(0.000144)	(0.000144)	(7.49e-05)
Population	−7.77e-11	−7.48e-11	1.35e-10	6.90e-11	7.03e-11	1.91e-10*
	(1.91e-10)	(1.89e-10)	(1.36e-10)	(1.08e-10)	(1.06e-10)	(9.99e-11)
Real median household income (2012 dollars)	−2.79e-07	−2.34e-07	−5.89e-07***	−2.99e-07	−2.77e-07	−4.99e-07***
	(3.90e-07)	(3.85e-07)	(2.03e-07)	(1.84e-07)	(1.81e-07)	(1.32e-07)
Percentage of population aged 18–64	0.0162	0.00674	0.0153	0.0742	0.0696	0.0626
	(0.118)	(0.117)	(0.0894)	(0.0608)	(0.0605)	(0.0518)
Real per capita gross domestic product (millions of chained 2005 $)	1.01e-06***	9.92e-07***	5.36e-07**	3.19e-07	3.12e-07	1.07e-07
	(3.58e-07)	(3.58e-07)	(2.10e-07)	(2.66e-07)	(2.65e-07)	(1.45e-07)
Unemployment rate (%)	0.00304	0.00311	−0.000660	−0.000320	−0.000288	−0.00233***
	(0.00237)	(0.00238)	(0.000933)	(0.00130)	(0.00132)	(0.000627)
Midwest region dummy variable	−0.00405	−0.00408	−0.00389*	−0.00717**	−0.00719**	−0.00715***
	(0.00399)	(0.00394)	(0.00216)	(0.00318)	(0.00318)	(0.00220)
South region dummy variable	−0.00243	−0.00216	−0.00745***	−0.0111***	−0.0110***	−0.0139***
	(0.00586)	(0.00569)	(0.00215)	(0.00321)	(0.00315)	(0.00212)
West region dummy variable	−0.00219	−0.00230	0.00145	−0.0118***	−0.0119***	−0.00893***
	(0.00434)	(0.00436)	(0.00268)	(0.00327)	(0.00331)	(0.00176)
Constant	0.0547	0.0581	0.113**	−0.0319	−0.0303	0.00956
	(0.0779)	(0.0762)	(0.0543)	(0.0426)	(0.0420)	(0.0313)
Observations	94	94	94	94	94	94
R-squared	0.280	0.271	0.654	0.578	0.571	0.740

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

† With 2SLS, Stata does not report a value for R-squared when it is negative.

Notes: All models include year fixed effects. Robust standard errors are in parentheses. Eminent domain is treated as endogenous in all models.

Table A15. Growth of State Revenue and Local Revenue, Using Instrumental Variables and New Eminent Domain Variables

VARIABLES	Change in state general revenue from own sources (% of personal income)			Change in local general revenue from own sources (% of personal income)		
	(7)	(8)	(9)	(10)	(11)	(12)
Eminent domain condemnations per housing unit	3.00e-06			−0.000116		
	(0.000108)			(0.000117)		
Eminent domain condemnations per capita		2.93e-06			−0.000258	
		(0.000245)			(0.000268)	
Eminent domain power binary variable			−0.000536			0.00927
			(0.0202)			(0.0224)
Revenue decentralization	−0.0725	−0.0729	−0.0734	0.0146	0.0156	0.0431
	(0.0656)	(0.0653)	(0.0636)	(0.0834)	(0.0830)	(0.0877)
Number of local governments of all types, per 100,000 residents	0.000459***	0.000459***	0.000460**	−0.000305**	−0.000305**	−0.000296**
	(0.000152)	(0.000152)	(0.000180)	(0.000125)	(0.000126)	(0.000125)
Local intergovernmental revenue from state government, as % of state total expenditure	0.294**	0.293**	0.293**	−0.160	−0.159	−0.116
	(0.131)	(0.131)	(0.135)	(0.190)	(0.189)	(0.173)
Urban share of population	−7.79e-05	−6.93e-05	−5.85e-05	0.00101	0.000990	0.000358
	(0.000885)	(0.000878)	(0.000651)	(0.00110)	(0.00109)	(0.000854)
Population	−5.96e-10	−5.92e-10	−5.91e-10	−1.31e-10	−1.42e-10	−3.87e-10
	(8.55e-10)	(8.55e-10)	(8.73e-10)	(1.19e-09)	(1.19e-09)	(1.22e-09)
Real median household income (2012 dollars)	1.74e-06*	1.74e-06*	1.74e-06	−1.09e-06	−1.17e-06	−8.74e-07
	(1.01e-06)	(1.01e-06)	(1.17e-06)	(1.20e-06)	(1.23e-06)	(9.92e-07)
Percentage of population aged 18–64	0.214	0.214	0.217	0.852	0.869	0.774
	(0.531)	(0.531)	(0.535)	(0.626)	(0.623)	(0.633)
Real per capita gross domestic product (millions of chained 2005 $)	−1.68e-07	−1.82e-07	−1.95e-07	−1.16e-06	−1.12e-06	−1.81e-07
	(1.41e-06)	(1.40e-06)	(1.08e-06)	(1.46e-06)	(1.45e-06)	(1.29e-06)
Unemployment rate (%)	0.0165**	0.0165**	0.0164**	−0.00593	−0.00595	−0.000599
	(0.00767)	(0.00774)	(0.00699)	(0.00891)	(0.00901)	(0.00714)
Midwest region dummy variable	−0.0367**	−0.0367**	−0.0366**	0.0309	0.0310	0.0302
	(0.0158)	(0.0158)	(0.0157)	(0.0242)	(0.0241)	(0.0227)
South region dummy variable	0.00669	0.00658	0.00654	0.00791	0.00752	0.0147
	(0.0121)	(0.0120)	(0.0153)	(0.0214)	(0.0213)	(0.0216)
West region dummy variable	−0.00700	−0.00698	−0.00712	0.0223	0.0225	0.0235
	(0.0167)	(0.0167)	(0.0184)	(0.0233)	(0.0233)	(0.0224)
Constant	−0.428	−0.427	−0.428	−0.457	−0.464	−0.473
	(0.306)	(0.306)	(0.322)	(0.376)	(0.373)	(0.379)
Observations	94	94	94	94	94	94
R-squared	0.730	0.730	0.730	0.279	0.280	0.337

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

† With 2SLS, Stata does not report a value for R-squared when it is negative.

Notes: All models include year fixed effects. Robust standard errors are in parentheses. Eminent domain is treated as endogenous in all models.

Table A16. Growth of State Tax and Local Tax, Using Instrumental Variables and New Eminent Domain Variables

VARIABLES	Change in state tax revenue (% of personal income)			Change in local tax revenue (% of personal income)		
	(13)	(14)	(15)	(16)	(17)	(18)
Eminent domain condemnations per housing unit	0.000153			4.97e-05		
	(0.000187)			(0.000166)		
Eminent domain condemnations per capita		0.000346			0.000124	
		(0.000429)			(0.000379)	
Eminent domain power binary variable			0.0167			0.0641**
			(0.0256)			(0.0323)
Revenue decentralization	−0.135	−0.136	−0.161*	0.0324	0.0331	0.0486
	(0.109)	(0.109)	(0.0886)	(0.107)	(0.107)	(0.116)
Number of local governments of all types, per 100,000 residents	0.000817***	0.000819***	0.000728**	−0.000358*	−0.000356*	−0.000547***
	(0.000275)	(0.000274)	(0.000306)	(0.000188)	(0.000189)	(0.000200)
Local intergovernmental revenue from state government, as % of state total expenditure	0.414**	0.413**	0.308	−0.139	−0.137	−0.269
	(0.181)	(0.181)	(0.193)	(0.244)	(0.244)	(0.197)
Urban share of population	−0.000515	−0.000498	0.000102	9.00e-05	7.14e-05	−0.000203
	(0.00147)	(0.00147)	(0.000954)	(0.00156)	(0.00155)	(0.00120)
Population	−6.78e-10	−6.71e-10	−1.82e-10	3.29e-10	3.19e-10	8.13e-10
	(1.14e-09)	(1.14e-09)	(1.21e-09)	(1.61e-09)	(1.61e-09)	(1.50e-09)
Real median household income (2012 dollars)	1.62e-06	1.73e-06	9.27e-07	−7.85e-07	−7.30e-07	−1.83e-06
	(1.93e-06)	(1.91e-06)	(1.84e-06)	(1.68e-06)	(1.75e-06)	(1.73e-06)
Percentage of population aged 18–64	0.317	0.294	0.331	0.913	0.903	0.738
	(0.737)	(0.741)	(0.692)	(0.858)	(0.855)	(0.908)
Real per capita gross domestic product (millions of chained 2005 $)	1.91e-06	1.87e-06	7.26e-07	1.10e-06	1.12e-06	9.34e-07
	(2.35e-06)	(2.34e-06)	(1.63e-06)	(2.33e-06)	(2.31e-06)	(2.12e-06)
Unemployment rate (%)	0.0310**	0.0312**	0.0222**	−0.00317	−0.00286	−0.00966
	(0.0121)	(0.0122)	(0.00979)	(0.0112)	(0.0114)	(0.00977)
Midwest region dummy variable	−0.0591**	−0.0592**	−0.0586***	0.0567*	0.0567*	0.0560*
	(0.0241)	(0.0241)	(0.0223)	(0.0312)	(0.0311)	(0.0316)
South region dummy variable	0.00934	0.0100	−0.00252	0.0341	0.0347	0.0243
	(0.0241)	(0.0239)	(0.0200)	(0.0272)	(0.0274)	(0.0302)
West region dummy variable	−0.0183	−0.0186	−0.0110	0.0488	0.0486	0.0692*
	(0.0251)	(0.0252)	(0.0243)	(0.0323)	(0.0324)	(0.0353)
Constant	−0.661	−0.652	−0.535	−0.574	−0.574	−0.322
	(0.426)	(0.426)	(0.421)	(0.524)	(0.522)	(0.543)
Observations	94	94	94	94	94	94
R-squared	0.608	0.605	0.679	0.132	0.133	0.101

* p < 0.1, ** p < 0.05, *** p < 0.01.

† With 2SLS, Stata does not report a value for R-squared when it is negative.

Notes: All models include year fixed effects. Robust standard errors are in parentheses. Eminent domain is treated as endogenous in all models.