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Home Rule Effects on State and
Local Government Size

Robert Salvino

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**Georgia State
University**

Andrew Young

School of Policy Studies

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Robert F. Salvino*
Georgia State University

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Abstract. The leviathan hypothesis maintains that direct and indirect constitutional constraints are necessary to control government expansion. Various branches of economic literature have examined the effects of decentralization, an indirect constraint, as well as direct constraints such as tax and expenditure limitations. Home rule power describes the level of local discretionary authority municipal and county governments have with respect to a wide range of governing functions. This form of direct constitutional constraint has been overlooked in the literature. This paper determines that home rule has no effect on the size of government in a standard leviathan model; however, the leviathan hypothesis itself implies that home rule is a choice made by state governments at the constitutional stage, and taking this selection process into account, the empirical results are consistent with the leviathan hypothesis. States that allow greater home rule freedoms have larger government sectors than states whose local governments have more restricted governing powers.

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“Any fair, reasonable doubt concerning the existence of the [municipal corporation’s] power is resolved by the courts against the [municipal] corporation, and the power is denied.”

--Judge John F. Dillon, *Clark v. City of Des Moines*, 1865

1. Introduction

The social welfare maximizing and efficiency enhancing benefits of decentralized powers in a federal system of government have been modeled in economic literature dating back to the works of Musgrave (1959) and Oates (1972) and empirically tested in many studies (Oates 1985, Nelson 1987, Zax 1989). Policy experts in the field of public finance have made fiscal decentralization an important focus of their efforts aimed at government reforms across the world (Martinez-Vazquez and Alm 2003). At the local level of government in the United States, urban planners, development groups, and local political leaders have urged their state governments to extend the powers of decentralization beyond fiscal matters and into concerns ranging from eminent domain to government form. This movement for greater local discretion has recently found its way into the economic and political science literatures under the name of home rule. Given the general trend toward greater fiscal decentralization, one should question why many states are so reluctant to grant greater home rule powers to local governments.

The leviathan hypothesis (Brennan and Buchanan 1980) maintains that government behaves as if its primary motivation is to maximize its revenue, even absent the direct intent of any one of its agents. Evidence of leviathan behavior has policy implications, leading taxpayers to weigh the costs and benefits of direct and indirect constitutional constraints to restrain this tendency. Fiscal decentralization, a shift of

power from a higher vertical tier of the federal system to a lower tier, is one form of indirect constitutional constraint, encouraging competition between political jurisdictions in a manner similar to firm competition in the private sector, and implying that centralization in the public sector contributes to larger government size (Brennan and Buchanan 1980; Zax 1989). A number of past studies have empirically tested this hypothesis, examining how greater decentralization affects government size by increasing competition for taxpayers between government units (Oates 1985; Nelson 1987; Forbes and Zampelli 1989; Zax 1989). The conclusions are generally sensitive to type of data used and model specification.

Brennan and Buchanan (1980) also examine the role of direct constitutional constraints to restrain Leviathan. The empirical studies previously mentioned overlook these direct constraints; however, such constraints are widely used to differing degrees by state governments. Tax and expenditure limitations are the most notable examples, such as Proposition 2-1/2 in Massachusetts and Proposition 13 in California. A number of studies examine these instruments in other contexts (Alm and Skidmore 1999, Fischel 2001, Ladd and Wilson 1982), and Skidmore (1999) examines the effects of tax and expenditure limitations on government size. In contrast this paper examines the effects of home rule power, encompassing the varying degrees of discretion allowed local governments, not just in fiscal matters, but in all matters ranging from organizational structure to eminent domain usage. Based on Krane, Rigos, and Hill's (2001) study of home rule, the measure of home rule power used in this paper captures two unique dimensions of local discretionary authority not incorporated into traditional measures of fiscal decentralization. First, local governments may enjoy greater functional, structural,

and/or fiscal discretion without necessarily limiting powers at the state level. In this context, the local sector could increase in size without any change in the size of the state sector, a notion not inherent in the traditional definition of decentralization. Second, by considering functional and structural components of local government this measure expands the scope of decentralization beyond the context of purely fiscal decisions traditionally measured by how revenues or expenditures are divided between the local and state levels of government.

If home rule power fosters greater competition between competing government jurisdictions, then greater home rule power could have a restraining effect on the size of government. On the other hand, greater local powers in concert with the effects of fiscal illusion and local homevoters reluctant to leave their jurisdictions (Fischel, 2001) may lead to greater size of the public sector. The effect that dominates is not obvious, thus home rule's influence on government size is an empirical question. Using the Leviathan model framework, this is the first study to examine the role of home rule choice by state governments and its effect on government size. The results show that greater home rule power is associated with a larger public sector and that states behave as if they rely on Dillon's Rule to constrain government size.

This paper is organized as follows. Section 2 is a descriptive presentation of home rule power and the history of its application in the United States. Section 3 reviews the Leviathan hypothesis from Brennan and Buchanan (1980) and other literature that influences this analysis of home rule. Section 4 presents the empirical leviathan model, data and results. The fifth section applies Heckman's self-selection correction to account for endogeneity of the home rule selection process. Section 6 concludes.

2. Home Rule Background

The 10th Amendment of the Constitution of the United States of America reserves for the states or the people, those powers not delegated to the federal government in the Constitution nor prohibited by the same. The entire Constitution makes no mention of local government. In general states determine the local-state intergovernmental relationship, and so it follows that this relationship varies greatly from state to state, even locality to locality. The U.S. Supreme Court had this to say about the power of local governments in *Community Communication Co. v. Boulder* (1982), declaring:

all sovereign authority within the geographic limits of the United States resides either with the government of the United States, or [with] the states of the Union. *There exist with the broad domain of sovereignty but these two.* There may be cities, counties, and other[s]...but they are all derived from, or exist in, subordination to one of the other of these. (Citations omitted; emphasis in original.)¹

Thus, local governments, whether they are counties, townships, cities, or the like, are creatures of their respective states, and hence the debate of local government freedoms and powers begins where the constitution ends, providing the opportunity for each state to ultimately determine these powers and freedoms for its local governments (Richardson et al, 2003).

Given the above, the debate about home rule versus Dillon's Rule is best understood after examination of the historical context from which the terminology derives itself. In the pursuit of economic development, the questionable behavior of many typical municipal governments helped influence Judge John Dillon's Iowa state

¹ As published in Richardson, Gough, and Puentes (2003), page 3.

court decision as well as the state perspective regarding either the reluctance or the willingness to provide local governments with greater home rule powers even today.

The term home rule is actually an afterthought of Dillon's Rule, the latter term coming into use after Judge Dillon was forced to interpret the rules of authority in an Iowa state court case in 1865. Judge Dillon's decision came about during a time in American history that saw widespread corruption in municipal governments. Much of this corruption was related to the pursuit of municipalities in steering railroads into their towns in the interest of economic development and private gain. Similar to the great debate going on in our states today following the *Kelo v. City of New London* decision concerning the extension of eminent domain powers for purposes of private economic development, the focus of property rights in these debates was a prominent one.

Another major point of contention regarded municipalities often financing all or portions of economic development projects with the issuance of municipal bonds. In many cases municipalities avoided payment on these bonds, and in one case in particular the fact that one such municipality had no authority to issue bonds gave the municipality legal standing on which to deny any payment on such bonds. Ironically, it was such a decision from which the term Dillon's Rule came about. In *Clark v. City of Des Moines* (1865), Dillon applied a strict construction interpretation to determine that the city had no authority to issue bonds, and therefore could not be held responsible for paying on the same bonds. The irony is that Dillon generally was uncomfortable with the conflict of interest formed by municipalities' pursuits of economic development and the effects these pursuits had on personal property rights, but his decision enabled this particular municipality to completely avoid responsibility for essentially stealing funds from

individuals in order to finance an economic development project. However, the ultimate legacy of the decision was that local governments and potential purchasers of bonds were made aware of the fact that local governments could not authorize bonds or more importantly engage in any activity without the authorization of the state (Richardson et al 2003).

Dillon's strict construction interpretation became a doctrine for many state courts when faced with similar cases involving rules of municipal and other local government authority. In this view, local governments have no power unless explicitly granted by the state. This is one of two possible ways of interpreting constitution and law, the other being a liberal interpretation, which assumes that local governments have those powers that are not expressly denied by law or constitution. This latter interpretation has come to be referred to as home rule when applied to the rules of authority for local governments.

After considering the combined effects of constitutional and legislative grants of power, judicial interpretations of the rules of authority, and finally the degree of home rule power actually observed in application, it follows that a state can be classified generally as either a home rule or a Dillon's Rule state.² Many assume that Dillon's Rule states have weak local governments and strong state government oversight, while localities in home rule states have greater freedom to govern with less state interference. Proponents of home rule often assert that home rule states have the benefit of less bureaucratic restraint, allowing them to more effectively handle local problems (Richardson et al 2003). Krane, Rigos, and Hill (2001) note that government reformers,

² It should be noted that a state with a home rule amendment may in fact behave more like a Dillon's Rule state or vice versa. For this reason, classification is not based on legislation or constitutional designations alone, but must consider how the courts in a state have applied and interpreted home rule or Dillon's Rule in past cases. Thus it is not possible to identify exact points in time when a state may have shifted from a home rule to a Dillon's Rule state or back.

public officials, and civic groups regard home rule power as a key ingredient for improving local-state government relations and thereby improving the efficiency of local governments. Whether this supposition is true or not remains an empirical question.

To understand how home rule could affect government size it is helpful to discuss the specific components of local governance to which a state can grant home rule powers.³ It is important to keep in mind the notion previously discussed that greater local discretionary authority does not necessarily require a weakening of the state-level government tier. Zimmerman's (1981) ACIR study examining varying degrees of local discretionary authority across counties and cities in the United States looked specifically at four separate components: structure, function, finance, and personnel. The home rule study of Krane, Rigos, and Hill (2001), essentially looks at three categories: structure, function, and finance, while including personnel freedoms in the function category.⁴

States can grant home rule freedoms to any or all of the following structural functions or tasks: ability to and steps of incorporation for a community; rules and restraints of annexation; other legal factors such as extraterritoriality – whether local governments can own facilities or property beyond its boundaries, such as for airports, landfills, or water supplies; and finally government form, which for counties describes whether the internal decision-making structure of the government is elected executive, council-administrator, or county commission with similar choices for municipal governments.

³ In addition to home rule freedoms varying from one component of local government to another, they are often applied with varying degrees for counties and municipalities in a given state. For example Zimmerman's 1981 ACIR study found that on average, municipalities were given greater freedoms than county governments.

⁴ The following categorization can be viewed in greater detail in Krane, Rigos, and Hill (2001), which provides a state by state analysis of each component as to the degree of local discretion allowed.

Functional home rule freedoms can include the ability to choose different forms and/or levels of public services provided by a local government. They may extend to economic development activities ranging from funding such activities to creating economic development organizations. Planning, zoning, or land use controls can be affected by varying degrees of home rule freedoms. Home rule freedoms can affect administrative procedures as well as contracting and purchasing decisions. The authority to cooperate with surrounding localities, such as in good neighbor policies, can also be restricted or freely allowed.

Finally, home rule can affect local government fiscal freedoms regarding revenues, expenditures, grants-in-aid, and funded and unfunded mandates from state governments. There can be debt limits, tax base limitations, limitations concerning choice of fiscal instruments, spending limitations, rules for distributing funds, balanced-budget requirements, as well as rules regarding bankruptcy. Skidmore (1999) examines some of these elements.

A number of studies have examined the effects of various limitations on fiscal freedoms for local governments. In general these studies have not been concerned with local discretion or home rule powers in particular. Ladd (1978) analyzed state-imposed local tax and spending limitations, focusing on the motivation of states to impose such restrictions as well as the costs and benefits of the restrictions. The study employed a linear probability model to determine the likelihood that a state would impose restrictions given levels and growth in property taxes and expenditures respectively, finding a positive correlation between likelihood of imposing restrictions and property tax burdens and growth in expenditures per capita. Alm and Skidmore (1999) examine the question

of why these restrictions pass in local elections. They use a simultaneous equation model with maximum likelihood to determine that increases in property taxes as well as increases in local revenues relative to state revenues are consistent with the passage of tax and expenditure limitations. Other studies have examined, from various perspectives, the effects of Proposition 2¹/₂ in Massachusetts and Proposition 13 in California, approved by voters to reduce the property tax burden (Ladd and Wilson 1982, McGuire 1999, Sexton, Sheffrin, O'Sullivan 1999).

One benefit of considering local discretion, or home rule, in an analysis of government size is that traditional measures of decentralization cannot reveal differences in pure local discretionary power. Proportional measures of expenditure or revenue concentration or differences in the number of local government units in a state or region do not say anything about decision-making powers. One state may be highly decentralized in terms of direct expenditures, but the ultimate decisions regarding these expenditures may be heavily controlled by the state. One aspect of the home rule investigation concerns whether or not greater local discretionary authority enhances the competition effect seen from fiscal decentralization, or whether this greater discretion contributes to a loss of scale economies as local governments take over functions previously consolidated at a higher level. Alternatively, from the perspective of local taxpayers, John Wallis's idea of government growth suggests that government size may increase with greater home rule power if home rule localities are better able to meet the demands of local tax payers wanting a greater level of government services than that being provided under a state of less local discretion.⁵ Musgrave's (1959) theory, on the other hand, implies that greater home rule power may lead to a decrease in size if home

⁵ Wallis's theory appears as a brief side note in the Oates (1985) study of Leviathan.

rule localities can better meet the demands of the more homogeneous voters to decrease the level of redistribution programs. The Leviathan hypothesis and supporters of Dillon's rule would argue that without proper constitutional constraints, local governments will use their power to achieve their revenue-maximizing objective (Brennan and Buchanan 1980, Downes 1996, Dye and McGuire 1997). Greater local fiscal discretion will not offset this tendency if state and local spending exhibits a complementary relationship or in non-urban settings where horizontal competition is not strong. Thus, the Leviathan hypothesis would imply that governments operating under Dillon's rule would tend to be smaller than those under home rule (Turnbull and Geon, 2007). For a listing of states categorized by their home rule rankings and some basic characteristics, see Table 1.⁶

3. Leviathan and Decentralization

3.1. Leviathan

Devolution of power from the federal to sub-national levels of government has implications for the size of the government sector. These implications stem from the well-documented effects of horizontal and vertical competition and fiscal illusion as well as effects from institutional factors yet to be explored. Significant bodies of literature in the fields of public finance and public choice consider and investigate the effects of horizontal relationships beginning with the early works of Brennan and Buchanan (1980), the ensuing Leviathan studies starting with Oates (1985), and more recently, Turnbull and Djoundourian (1993) and Campbell (2004) have explored the vertical relationships. Empirical research into the effects of institutional factors, such as local discretion or

⁶ Alaska, Hawaii, and Virginia are not included in the analysis.

home rule power, tax and expenditure limitations, the use of court systems, or governments' attitudes about the reach of government are less abundant. A 1981 ACIR study by Zimmerman attempts to measure local discretionary authority and Krane, Rigos, Hill (2001) presents findings of a state by state examination of home rule power; however, neither study employs any empirical analysis or discusses effects on government size. Turnbull and Geon (2007) investigate home rule effects in an application of GARP analysis to median voter outcomes. Their finding that non-urban home rule counties tend to violate median voter demands while urban counties do not violate, suggests that horizontal competition may be a stronger factor in urban settings.

Brennan and Buchanan (1980) provide an explanation for growth of the public sector that portrays government as a monolithic entity whose primary motivation is to maximize its revenue. They attempt to demonstrate that electoral processes alone are not sufficient to constrain this growth. Essentially, removing all constitutional constraints (direct and indirect) and relying solely on majority decisions would not yield desirable outcomes or an effective constraint. Thus their basic claim is direct and indirect constitutional constraints in addition to electoral constraints are necessary to constrain leviathan and obtain efficient outcomes. They present three types of observations to serve in defense of their contention.

1. *For certain types of decisions regarding the use of resources, electoral processes would not achieve desirable outcomes (regardless of majority decisions).* Included among the reasons cited for this contention is the rational ignorance effect when information has a public good quality, which leads to an information asymmetry concentrating power in the hands of politician-bureaucrats.

2. *Inherent characteristics of majoritarian political processes suggest an inability of such processes to constrain governments.* Many day to day decisions of bureaucrats are not subject to majority vote; furthermore, Niskanen's (1971) bureaucracy theory maintains that bureaucrats enjoy a monopoly power over the supply of public goods and services as well as the ability to set political agendas and more importantly that electoral constraints do not threaten this power.
3. *Historical observation of the growth of government and attempts of the electorate to limit this growth suggest that democratic electoral processes may not constrain growth.* Their main question is whether or not electoral constraints would allow the electorate to reverse the growth trend if desired. As evidence to support the contention that a majority of voters in some areas would rather rely on constitution-level constraints rather than electoral constraints, they point to California's Proposition 13.⁷

It is important to note that Brennan and Buchanan do not assume that revenue maximization is an explicit objective entering into the direct utility function of each or any politician or bureaucrat. Rather they draw upon the analogy of Adam Smith's public interest outcome whereby self-interested, independent buyers and sellers in a competitive market generate an efficient outcome for society. According to Brennan and Buchanan, the interest of Leviathan, "revenue maximization, emerges from the interaction of the whole set of governmental decision makers even if no person explicitly sets maximum revenue as the goal of his own action."

⁷ Further evidence came later with Massachusetts' Proposition 2-1/2. Additionally the current uproar in many states in response to the Supreme Court decision in *Kelo v. City of New London*, which effectively removes a constitutional constraint on state and local governments concerning their ability to obtain private property for the broader public purpose of economic development, a departure from the public use interpretation originally set forth in the 5th Amendment to the Constitution.

Furthermore, an effective, basic, indirect constitutional constraint on Leviathan is inherent in a federal system of government, whereby decentralization of taxing authorities serves to diminish the maximum power any one unit of government can achieve. This notion first put forth by Brennan and Buchanan (1980) is certainly their most scrutinized pontification, having been empirically tested in a number of studies with mixed results (Oates 1985, Nelson 1987, Marlow 1988, Zax 1989). It is the purpose of this paper to bring to the forefront a somewhat overlooked facet of Brennan and Buchanan's (1980) analysis, which is that once locational value and mobility costs are brought into the model of taxing power in a federal system of government, local leviathans may arise even in the presence of the indirect constraint of decentralization.⁸ Locational value and mobility costs have diminishing effects on the constraining power of fiscal decentralization. The implication of these two factors and their effects according to the Leviathan Hypothesis is that "local governments should not be allowed unconstrained taxing power." Given the existence of locational value and mobility costs, additional direct constraints (not only constraints on the power to tax) at the constitutional level become necessary. Dillon's Rule may be viewed as one such constitutional level direct constraint.

4. Data, Empirical Leviathan Methodology, and Results

The sample pools 94 observations from 47 continental U.S. states for 1990 and 2000.⁹

Chow tests could not reject that the effects of variables were structurally similar across

⁸ See pp. 176-179 of Brennan and Buchanan (1980) for the progression of models used to demonstrate the efficiency characteristics of centralized and decentralized government structures in their fiscal constitution analysis.

⁹ Virginia is omitted from this study because cities are independent of counties in Virginia, a unique institutional arrangement that by itself can lead to as yet undetermined effects on public sector size.

this time period, thus enabling pooling. Consistent with earlier literature, the empirical model specifies government size as a function of state and local government structure and socio-economic factors. These variables follow the different forms used in the empirical leviathan literature (Campbell 2004, Oates 1985, Nelson 1987, Zax 1989). In addition to the usual variables, additional controls include a measure of the dominant political ideology, the use of the legal system to influence public policy, and a variable indicating the degree of home rule power granted to local governments in each state. See Table 2 for a definition of the variables used in the analysis and Table 3 for summary statistics.

Two dependent variable formulations are used. *Taxshare* is the level of combined state and local tax revenues as a share of total personal income in a state and *osrshare* is the level of combined state and local own source revenues as a share of personal income.

The general logit model is as follows:

$$G_i = f(i_{ij}, w_{ik}, x_{il}) + u_i$$

where

$0 < G(\cdot) < 1 = \textit{taxshare}$ or $\textit{osrshare}$ as defined above.

\mathbf{i} = vector of institutional variables including *home rule*, *TEL*- measuring

a composite of state tax and expenditure limitations and *lawyers per capita*.

\mathbf{w} = a vector of fiscal variables including *E decentralization*- decentralization

measured as the share of local expenditures in total state and local spending,

fragmentation- fragmentation as measured by the total number of local

governments in a state, and *intergovgrants*- a measure of grants to local

governments as a share of state expenditures.

\mathbf{x} = a vector of socio-economic and political variables including *income*-

median household income, *population*, *msapop*- Metropolitan Statistical Area population, *unemployment*- unemployment rate for state, *incomevariance*- the variance of median household incomes across counties in a state, and *democratvote*- the percent of state population voting for democrat president in 1992 and 2000 elections.

u = a random error term

The process of identifying each state as Dillon's rule or home rule in order to create the variable *home rule* is complicated and subjective, and it is important to note that the two doctrines sometimes co-exist in the same state. Specifically, application may vary from county to municipality, giving municipalities more or less freedom than county governments (Richardson, et al., 2003). The resulting classification used in this study is based on the extensive work of Krane, Rigos, and Hill (2001), for which files of case law and current practices for each state and its local government sectors were painstakingly reviewed in order to come up with a classification system. The four group classification used here is the compilation by Turnbull and Geon (2007) based on Krane et al. (2001).

TEL is a dummy variable obtained from Skidmore (1999) that signifies whether or not a state has any kind of tax or expenditure limitation in force. It captures another type of direct constitutional constraint on state and local governments. The *lawyers per capita* variable employs data on occupations from the Equal Employment Opportunity Files of the Census for 1990 and 2000. This variable is used to capture the extent to which the legal institution in a state may be used to advance public policy initiatives. This variable contains any person in the Census whose occupation is lawyer or judge, thereby

excluding people who may have a degree in law but do not practice it as their primary occupation. This variable was introduced in Baker, Micelli, Sirmans, and Turnbull (2001) to capture differences in the efficiency of the legal institution in each state in a study examining length of statutes with regard to adverse possession of land.

Decentralization and fragmentation are commonly used measures to test the Leviathan hypothesis dating back to Oates (1985), who models Leviathan using two measures of fiscal decentralization and a measure of “non-fiscal decentralization” (now referred to in the literature as “fragmentation”). *E Decentralization* measures the degree to which direct expenditures are carried out at the local level as opposed to the state level. Other studies have also used share of own-source revenues as a measure of fiscal decentralization and an alternative specification using this measure is included in our analysis (Nelson, 1987; Zax, 1989). *Fragmentation* is the number of local governments in the state including all county governments, sub-county general purpose governments, public school systems, and special districts. This definition is consistent with Oates’ (1985).¹⁰ Nelson (1987) and Zax (1989) argue that this measure of fragmentation is too broad and propose splitting single purpose governments from general purpose governments. We ran models using this break-out, but our results do not change significantly. Zax further suggests that the effects of fragmentation may not be picked up at a level of aggregation beyond that of county or metropolitan statistical area. He reasons that, since fragmentation measures local inter-jurisdiction competition, state-level data will include many jurisdictions that are not in direct competition with one another, thus masking the effects of inter-jurisdiction competition going on at local levels.

¹⁰ For a detailed breakdown of the government structure of each state see <http://www.census.gov/govs/govstruc.txt>

Nevertheless, an attempt is made here to measure fragmentation effects consistent with Oates (1985). The effects of fragmentation are significant in some studies (Nelson, 1987; Zax, 1989) and insignificant in others (Oates, 1985).

The socio-economic variables control for factors other than the fiscal effects described above that also have an impact on government size. For example, Wagner's Law, which states that increasing levels of personal income, generally consistent with higher levels of economic development, should have a positive effect on the share of government expenditures in gross state product (Oates, 1985). *Unemp* attempts to capture changes in demand for government-provided services as the proportion of the population needing government assistance changes. Higher levels of unemployment may put a greater strain on state and local governments for the services they provide, but may also reduce the level of demand for the same services. The MSA variable controls for effects due to economies of scale and Tiebout sorting. *Incomevariance* defined as the variation in household median incomes across counties in a state, attempts to control for differences in the level of demand for services within each state. A greater variance of median household incomes across counties indicates a more diverse population in terms of income, which in turn may create a greater need for wider range of local government services to meet the divergent demands of different groups within the state. The democrat vote proportion is a proxy for political ideology. Other measures of ideology were also tested, but the measured effects were not significantly different.¹¹ The expected effect would be for largely democrat states to favor bigger government, *ceteris paribus*.

¹¹ For a description of other measures of political ideology, see Berry, Ringquist, Fording, and Hanson (1998).

4.1 Empirical Results

Tables 4 and 5 show results of the logit estimation of the Leviathan model. Looking at the regression results we find that *E-decentralization* is significant at the .01 level, carries a negative sign and is robust across all specifications for both dependent variables. This suggests that a local sector taking on more fiscal responsibility relative to the state is consistent with a decreasing size of the combined state and local sector. This result is consistent with the notion that forces of inter-jurisdiction competition have a constraining effect on government size, a result that is consistent with the Leviathan hypothesis advanced by Brennan and Buchanan (1980) and the empirical relationship found in Zax (1989). *Intergovgrant* is significant at the .01 level in the positive direction when decentralization is measured in terms of expenditures. However, when decentralization is measured in terms of own source revenues, models 2 and 3 for both dependent variables, t-ratios drop slightly for the models using own source revenue as the dependent variable and drop to insignificant levels when taxes are used in the construction of the dependent variable. Additionally the magnitudes and significance of the own source revenue measure of decentralization are weaker than those for *E-decentralization*. Nevertheless, as the share of state aid to localities increases relative to own-source revenues, the size of government increases. This is consistent with the effect of grants to decrease the overall tax price of public goods, which increases the quantity demanded and thus the revenue collected. The positive sign is also consistent with the flypaper effect (Turnbull, 1998). Assuming balanced budgets so that increases in revenue shares coincide with increases in expenditure shares, then increases in intergovernmental aid translate into higher government spending. The positive, significant coefficient on *intergovgrant* is also

consistent with the results of Oates (1985). *Fragmentation* is positive and significant in most of the specifications using taxes as the dependent variable. This result is not consistent with that of Zax (1989); however, it could be the case that the positive sign is picking up effects from a loss of scale economies as more and more small local governments provide services to a given total population. When own source revenues are the measure of government size, *fragmentation* has no explanatory power. Not one of the demographic variables is significant at the 5% level in Tables 4 and 5. For *population* and *msapop*, this is consistent with other studies. These variables by themselves are not usually found to have a significant effect on government size. The effect of *income* varies in the literature and is sensitive to model specification (Oates, 1985; Nelson, 1987; Zax, 1989). Most studies do not include *unemployment* as a separate variable.

Of the institutional variables included in this model, *home rule* and *lawyers per capita*, only *lawyers per capita* is significant, and then only when the measure of government size is based on taxes. It carries a positive sign, suggesting that the court system is used on average to uphold policies that have the effect of increasing government expenditures, and challenge those that restrict expenditures. The *TEL* variable, tax and expenditure limitations, is positive and significant in models with both dependent variable measures. This sign is consistent with that found in Skidmore (1999). Tax and expenditure limitations do have an effect on the size of the public sector. We tried several model formulations to test the *home rule* variable, including dropping *expendcent*, but it was never significant.

These results are consistent with the decentralization hypothesis and leviathan. There is also some evidence that some institutional factors affect government size, as the

positive and significant coefficient on the lawyer and TEL variables indicate. Home rule is not significant in these models; however, the theory of constitutional constraints suggests this more parsimonious empirical logit model does not effectively capture the effect the constitutional stage home rule choice has on government size. The next section examines self-selection bias in the choice of home rule and its impact on observing the estimated home rule effect.

5. Home Rule and Self-selection

This section addresses the possibility of endogenous home rule status and resultant effects on the estimates of government size across home rule and Dillon's Rule states. We model this nature of endogeneity in the form of a self-selection problem in light of the notion that at the constitutional stage, states may select home rule as a tool for giving more autonomy to local governments or Dillon's Rule for constraining the growth of state and local government. A standard approach for correcting for a self-selection problem is to use Heckman's two-step method (Heckman 1974, Lee 1978). We view applying this method under the circumstances described above as a better fit in comparison with an endogenous instrumental variables approach to correcting for endogeneity bias because it does not impose equal marginal effects on government size for home rule and Dillon's Rule states. Conceptually, modeling home rule status as a choice of state governments at the constitutional stage is a reasonable assumption, and using Heckman's two-step method we can analyze the underlying demand factors that might affect this choice.

5.1 *The Self-Selection Model*

Maddala (1983) explains the basic idea of the selection model. It consists of three main equations. The first equation represents an agent's choice among two alternatives. For example in the union – nonunion wage model (Lee 1978), an individual chooses whether to join a union or not. In a second example, a property owner can decide whether to self-manage a rental property or to contract the responsibility out to a professional management company (Sirmans, Sirmans, and Turnbull 1999). Based on the initial selection, we can observe an economic outcome for each of the two regimes, represented by two separate equations. In the case of the above two examples, we could observe wages for union and nonunion workers, and in the second example we could observe rental rates for owner-managed and professionally managed properties.

5.2 *Empirical Self-Selection Model Applied to Home Rule*

The model for self-selection as it applies to home rule choice and the determination of government size can be illustrated as follows. Let H_i be an unobservable home rule status variable such that if $H_i > 0$, state i selects home rule status; otherwise it does not.

Structural Probit Equation (home rule choice):

$$(1) H_i = a_0 + a_1 Z_i + a_2 (Y_{Hi} - Y_{Di}) - \varepsilon_i$$

where Z_i is a vector of home rule demand factors: *stateaid*, *populationvariance*, *historical population change*, plus several of the government size determinants as in the Leviathan model discussed in section 4, *E-decentralization*, *democratvote*, *unemployment*, and $(Y_{Hi} - Y_{Di})$ approximates the government size differential between

home rule and Dillon's Rule. A year dummy variable, *Year2000*, is also included in the specification. See Tables 2 and 3 for summary statistics and variable definitions. The model also includes two government size equations for home rule and Dillon's Rule states.

Home rule regime:

$$(2) Y_{Hi} = b_{Ho} + b_{H1} X_{Hi} + \epsilon_{Hi}$$

Dillon's Rule regime:

$$(3) Y_{Di} = b_{Do} + b_{D1} X_{Di} + \epsilon_{Di}$$

where equations (2) and (3) are the size of government equations, as in the Leviathan models discussed in the previous section, under home rule and Dillon's Rule respectively. The vectors X_{Hi} and X_{Di} for home rule and Dillon's Rule states respectively comprise government size determinants. Of course home rule is not a separate variable in the self-selection model as each equation is modeled for home rule and Dillon's Rule separately.

We estimate the reduced-form of equation (1), obtain the predicted probit values and calculate the inverse mills ratios. Substituting into equations (2) and (3) provides the following first stage estimating equations:

$$(2') Y_{Hi} = b_{Ho} + b_{H1} X_{Hi} - \sigma_{Hu} W_{Hi} + \xi_{Hi} \text{ for } H_i = 1$$

$$(3') Y_{Di} = b_{Do} + b_{D1} X_{Di} + \sigma_{Du} W_{Di} + \xi_{Di} \text{ for } H_i = 0$$

where W_{Hi} and W_{Di} represent the inverse mills ratios for home rule and Dillon's Rule respectively. To determine the existence and effect of endogeneity bias from self-selection, we look at the coefficients of the inverse mills ratios. Suppose estimation yields a positive, significant mills ratio coefficient, σ_{Du} , in equation (3'). This would indicate a positive selectivity bias in the government size distribution for the Dillon's

Rule states. For clarification, consider a sample of home rule and Dillon's Rule states that could choose Dillon's Rule.¹² A positive, significant coefficient, σ_{Du} , indicates that the states actually choosing Dillon's Rule have a larger government sector than the average state, whether home rule or Dillon's Rule, under Dillon's Rule. In other words under the above scenario, had home rule states instead chosen Dillon's Rule, they would have smaller government sectors than Dillon's Rule states. Looking at the empirical results in Tables 6 and 7, we find that the coefficient on the mills ratio in the Dillon's Rule equation is indeed positive and significant. At this point, one cannot conclude that home rule states would be smaller under Dillon's Rule than they actually are under home rule, since the coefficient on σ_{Hu} is not significant.

To gain further insight, proceed using results obtained from the first stage and obtain predicted estimates of the home rule – Dillon's Rule government size differential ($Y_{Hi} - Y_{Di}$). Table 8 reveals a significant, positive difference between home rule and Dillon's Rule states when accounting for selectivity bias compared to no significant difference without this correction. Substitute these predicted values into the structural home rule probit equation (1) and obtain coefficient estimates, the second stage of the procedure. Table 8 reports these structural probit estimation results. The coefficient on the predicted ($Y_{Hi} - Y_{Di}$) is positive and significant at 5% in the difference in tax share equation, indicating that the gain in tax share under home rule relative to Dillon's Rule is positively correlated with the increasing likelihood of a state choosing home rule at the constitutional stage. The sign is marginally significant in the difference in own source revenue share equation. This is consistent with our expectation that home rule powers

¹² See Maddala (1983). See Sirmans et al (1999) for more on the estimation and intuition applied in a model of owner-managed and third-party managed real estate assets and Duncan and Leigh (1980) for an application to wage determination for union and nonunion sectors.

allow governments to circumvent voters' restrictions on government size. It follows that Dillon's Rule can be viewed as having a constraining effect on government size.

6. Conclusion

This paper examined whether allowing greater home rule powers for local governments has any effect on the size of the state and local public sector. Previous research has demonstrated the social welfare benefits of fiscal decentralization in a federal form of government (Musgrave 1959; Oates 1972). The question of why decentralization has not completely extended to local discretionary power is an interesting one with policy implications. The Leviathan model predicts that states that allow their local governments to have broad local discretion, greater home rule powers, will have larger public sectors than those that do not, so greater local discretionary power may have consequences in contrast to the constraining notion of decentralization.

Previous studies of government size and the effects of decentralization and direct constitutional constraints indicate these institutional constructs can have a constraining effect on government size, demonstrating the relationship between structure and performance in the public sector (Oates 1985; Nelson 1987; Zax 1989; Skidmore 1999). Extending measures of decentralization beyond fiscal relationships to include local discretionary authority as captured by the choice for home rule, we have identified states that allow greater home rule powers to their local governments. These states generally have larger public sectors, results that are consistent with Brennan and Buchanan's (1980) Leviathan hypothesis. Correcting for the endogeneity of home rule choice at the constitutional stage, a model incorporating Heckman's self-selection method reveals a

positive relationship between home rule status and public sector size. States may choose home rule rather than Dillon's Rule if they value the increase in public sector size, a decision criterion consistent with the leviathan hypothesis.

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Table 1. List of States in Sample sorted by Degree of Home Rule with Population and Government Size

State	Degree of HR ¹	Population		2000 Size of Government		Averages per Home Rule Rank	
		2000	1990	S+L Tax Share of Personal Income	S+L Own Source Revenue Share		
Indiana	1	6,080,485	5,544,159	0.099	0.132	2000 Tax Share	0.103
Nebraska	1	1,711,263	1,578,385	0.106	0.134		
Nevada	1	1,998,257	1,201,833	0.097	0.129	2000 OSR Share	0.138
North Carolina	1	8,049,313	6,628,637	0.099	0.136		
Oklahoma	1	3,450,654	3,145,585	0.097	0.134	Combined Population:	3,138,412
West Virginia	1	1,808,344	1,793,477	0.107	0.138		
Wyoming	1	493,782	453,588	0.117	0.162		
Alabama	2	4,447,100	4,040,587	0.085	0.138	2000 Tax Share	0.099
Idaho	2	1,293,953	1,006,749	0.097	0.136		
Kentucky	2	4,041,769	3,685,296	0.104	0.131	2000 OSR Share	0.131
Maine	2	1,274,923	1,227,928	0.126	0.149		
Minnesota	2	4,919,479	4,375,099	0.111	0.140	Combined Population:	5,418,568
Mississippi	2	2,844,658	2,573,216	0.102	0.150		
New Hampshire	2	1,235,786	1,109,252	0.083	0.101		
New Jersey	2	8,414,350	7,730,188	0.102	0.123		
New Mexico	2	1,819,046	1,515,069	0.108	0.136		
Pennsylvania	2	12,281,054	11,881,643	0.098	0.127		
Tennessee	2	5,689,283	4,877,185	0.082	0.114		
Texas	2	20,851,820	16,986,510	0.094	0.120		
Washington	2	5,894,121	4,866,692	0.099	0.132		
Arizona	3	5,130,632	3,665,228	0.100	0.120	2000 Tax Share	0.102
Arkansas	3	2,673,400	2,350,725	0.102	0.133		
California	3	33,871,648	29,760,021	0.105	0.136	2000 OSR Share	0.128
Connecticut	3	3,405,565	3,287,116	0.103	0.115		
Florida	3	15,982,378	12,937,926	0.091	0.121	Combined Population:	7,973,260
Georgia	3	8,186,453	6,478,216	0.098	0.127		
Illinois	3	12,419,293	11,430,602	0.100	0.119		
Iowa	3	2,926,324	2,776,755	0.101	0.141		
Maryland	3	5,296,486	4,781,468	0.100	0.120		
Michigan	3	9,938,444	9,295,297	0.101	0.132		
Missouri	3	5,595,211	5,117,073	0.094	0.118		
Montana	3	902,195	799,065	0.093	0.126		
New York	3	18,976,457	17,990,455	0.131	0.158		
Rhode Island	3	1,048,319	1,003,464	0.108	0.124		
Vermont	3	608,827	562,758	0.109	0.133		
Colorado	4	4,301,261	3,294,394	0.091	0.121	2000 Tax Share	0.100
Delaware	4	783,600	666,168	0.101	0.136		
Kansas	4	2,688,418	2,477,574	0.102	0.128	2000 OSR Share	0.132
Louisiana	4	4,468,976	4,219,973	0.108	0.147		
Massachusetts	4	6,349,097	6,016,425	0.096	0.111	Combined Population:	3,673,829
North Dakota	4	642,200	638,800	0.103	0.145		
Ohio	4	11,353,140	10,847,115	0.109	0.136		
Oregon	4	3,421,399	2,842,321	0.088	0.127		
South Carolina	4	4,012,012	3,486,703	0.094	0.138		
South Dakota	4	754,844	696,004	0.090	0.111		
Utah	4	2,233,169	1,722,850	0.104	0.147		
Wisconsin	4	5,363,675	4,891,769	0.114	0.144		

¹Degree of Home Rule: 1=Strong Dillon's Rule, 2=Weak Dillon's Rule, 3=Weak home rule, 4=Strong home rule

Table 2. Variable Definitions and Sources

Variable Name	Variable Definition	Source
Dependent Variables		
<i>Taxshare</i>	state and local tax revenues as share of personal income	Computed from <i>Census of Governments</i> and <i>Census of Population</i>
<i>OSRshare</i>	state and local own source revenues as share of personal income	Computed from <i>Census of Governments</i> and <i>Census of Population</i>
Independent Variables		
<i>Home rule</i>	Degree of home rule power for localities; 1=Dillon's Rule, 2=Weak Dillon's Rule, 3=Weak home rule, 4=Strong home rule	Variable compiled by author with reference to Turnbull & Geon (2004), Krane, Rigos, Hill (2001)
<i>E-decentralization</i>	share of local expenditures in total state and local spending	Computed from <i>Census of Governments</i>
<i>OSR decentralization</i>	share of local own source revenue in total state and local own source revenue	Computed from <i>Census of Governments</i>
<i>Fragmentation</i>	total number of all local government units in a state	<i>Census of Governments: Vol.1, No. 2, Individual State Descriptions</i>
<i>Intergovgrants</i>	dollar value of grants to local governments as a share of state expenditures	Computed from <i>Census of Governments</i>
<i>Population</i>	state population	<i>Census of Population</i>
<i>MSApop</i>	share of population in MSA	Census Tiger Database
<i>Medhhincome</i>	median household income (1989 \$'s)	<i>Census SF3</i>
<i>Incomevariance</i>	variance in <i>Medhhincome</i> across counties divided by state population	Calculated by author
<i>Unemployment</i>	state rate of unemployment	BLS: Local Area Unemployment Statistics
<i>Democratvote</i>	% of state popular vote for democrat presidential candidate (1992 and 2000)	1994 City and County Data Book and http://www.cnn.com (Date: 01/06/01)
<i>Lawyers per capita</i>	# of lawyers (primary occupation) in state divided by state population	Equal Employment Opportunity Files of <i>Census 1990</i> and <i>2000</i>
<i>TEL</i>	dummy variable for whether state has any type of tax or expenditure limitation on the state	variable used in Skidmore (1999)
<i>Year2000</i>	dummy variable for year 2000 = 1, base year is 1990	compiled by author
Heckman variables (additional)		
<i>Taxsize difference</i>	Difference in predicted tax size for Dillon's Rule and home rule	Estimated by author
<i>OSRsize difference</i>	Difference in predicted own source revenue size for Dillon's Rule and home rule	Estimated by author
<i>Stateaid</i>	share of state grants to localities in local revenues	Computed from <i>Census of Governments</i>
<i>Populationvariance</i>	variance in average population across counties in state divided by state population	Computed by author from <i>Census of Population</i>
<i>Historical popotion change</i>	state population change from 1970 through 2000	Historical <i>Census of Population</i>

Table 3. Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Dependent Variables					
<i>Taxshare</i>	94	0.101	0.011	0.067	0.141
<i>OSRshare</i>	94	0.130	0.012	0.101	0.166
Independent Variables					
<i>Home rule</i>	94	2.681	1.018	1	4
<i>OSR decentralization</i>	94	0.412	0.076	0.2	0.545
<i>E-decentralization</i>	94	0.514	0.082	0.323	0.654
<i>Fragmentation</i>	94	1,829	1,500	119	6,835
<i>Intergovgrants</i>	94	0.246	0.060	0.089	0.411
<i>Population</i>	94	5,448,832	5,921,957	453,588	33,900,000
<i>MSApop</i>	94	4,388,063	5,469,860	134,368	29,300,000
<i>Medhhincome</i>	94	\$29,465	\$4,939	\$20,136	\$41,721
<i>Incomevariance</i>	94	1033	582	293	2808
<i>Unemp</i>	94	0.050	0.016	0.024	0.096
<i>Democratvote</i>	94	0.434	0.075	0.250	0.610
<i>Lawyers per capita</i>	94	0.003	0.001	0.001	0.005
<i>TEL</i>	94	0.404	0.493	0	1
<i>Year2000</i>	94	0.500	0.503	0	1
Heckman variables (additional)					
<i>Home rule dummy</i>	94	0.574	0.497	0	1
<i>Taxsize difference</i>	94	0.019	0.010	-0.005	0.050
<i>OSR sizedifference</i>	94	0.022	0.012	0.003	0.065
<i>Stateaid</i>	94	0.352	0.072	0.125	0.554
<i>Populationvariance</i>	94	348887	512065	2	3127632
<i>Historical popution change</i>	94	47.5	54.1	4.0	309.0

Table 4. Leviathan model logit estimates with *OSRshare* dependent variable

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
<i>OSR share</i>	mf	mf	mf	mf	mf	mf	mf	mf
<i>year2000</i>								0.007 * 1.88
<i>E-decentralization</i>	-0.06 *** -2.95			-0.06 *** -3.05	-0.08 *** -3.49	-0.092 *** -4.4	-0.092 *** -4.41	-0.070 *** -(3.39)
<i>osrdecentralization</i>		-0.03 ** -1.99	-0.03 ** -2.04					
<i>fragmentation</i>	1.90E-07 0.19	-6.45E-08 -0.06	-1.09E-07 -0.11	1.52E-07 0.16	-2.16E-07 -0.25	-4.06E-07 -0.46	-3.71E-07 -0.42	-9.49E-07 -0.96
<i>intergovgrants</i>	0.13 *** 4.21	0.08 *** 3.12	0.08 *** 3.13	0.13 *** 4.25	0.13 *** 4.55	0.150 *** 4.83	0.149 *** 4.91	0.135 *** 4.88
<i>population</i>	-1.92E-09 -0.91	-2.15E-09 -0.91	-2.47E-09 -1.01	-2.25E-09 -0.96	-1.03E-09 -0.42	1.00E-09 0.49	7.94E-10 0.39	4.59E-10 0.23
<i>msapop</i>	1.94E-09 0.77	2.24E-09 0.86	2.65E-09 0.97	2.37E-09 0.9	1.31E-09 0.47	-9.68E-10 -0.43	-7.63E-10 -0.34	-3.96E-10 -0.18
<i>income</i>	-5.13E-07 -1.61	-5.36E-07 * -1.65	-6.49E-07 * -1.73	-6.31E-07 * -1.73	-3.51E-07 -0.86	-7.23E-07 -1.36	-7.28E-07 -1.36	-5.48E-07 -1.09
<i>unemployment</i>			-0.07 -0.69	-0.07 -0.72	-0.07 -0.73	-0.104 -1.13	-0.106 -1.16	0.146 1.07
<i>home rule</i>			-0.0004 -0.36	-0.0005 -0.39	-0.0003 -0.23	-0.0004 -0.29	-0.0004 -0.31	-0.0006 0.56
<i>democratvote</i>					-0.04 * -1.76	-0.060 *** -2.63	-0.059 *** -2.63	-0.073 *** -3.31
<i>lawyers per capita</i>						5.346 1.38	5.015 1.41	5.053 1.47
<i>incomevariance</i>						-8.23E-07 -0.37	0.000	-1.14E-06 -0.51
<i>TEL</i>								-0.001 ** -2.41
<i>_cons</i>	-1.763 *** -20.82	-1.802 *** -20.68	-1.739 *** -14.54	-1.697 *** -14.33	-1.582 *** -11.78	-1.517 *** -10.94	-1.512 *** -11	-1.670 -11.77
<i>R-square</i>	0.152	0.124	0.129	0.158	0.190	0.221	0.221	0.232

*,***,*** coefficient significant at 10%, 5%, 1% respectively
marginal effects in bold
t-ratios under marginal effects

Table 5. Leviathan model logit estimates with *Taxshare* dependent variable

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
<i>Tax share</i>	mf	mf	mf	mf	mf	mf	mf	mf
<i>year2000</i>								0.00 0.07
<i>E-decentralization</i>	-0.06 *** -3.23			-0.065 *** -3.35	-0.057 *** -2.63	-0.088 *** -3.86	-0.070 *** -3.86	0.113 *** -3.55
<i>osrdecentralization</i>		-3.24E-02 ** -2.33	-0.033 ** -2.44					
<i>fragmentation</i>	1.46E-06 ** 2.21	1.19E-06 * 1.84	1.46E-06 ** 2.03	1.73E-06 ** 2.37	1.90E-06 ** 2.3	1.98E-05 ** 1.96	1.73E-06 ** 2.11	1.65E-06 1.06
<i>intergovgrants</i>	0.08 *** 3.2	3.28E-02 1.54	0.030 1.31	0.082 *** 3.09	0.079 *** 2.79	0.126 *** 3.4	0.097 *** 3.33	0.176 *** 3.67
<i>population</i>	-3.07E-09 * -1.68	-3.32E-09 * -1.79	-3.58E-09 * -1.85	-3.36E-09 * -1.75	-3.92E-09 ** -1.96	-1.17E-09 -0.64	-1.67E-09 -1.07	-1.88E-09 -0.72
<i>msapop</i>	3.34E-09 1.57	3.64E-09 * 1.71	3.88E-09 * 1.73	3.59E-09 1.6	4.08E-09 * 1.78	9.76E-10 0.48	1.51E-09 0.88	1.84E-09 0.63
<i>income</i>	2.01E-07 0.86	1.79E-07 0.76	3.19E-07 1.21	3.39E-07 1.31	2.10E-07 0.65	-3.07E-07 -0.58	-2.60E-07 -0.61	-4.93E-07 -0.67
<i>unemployment</i>			0.072 0.95	0.070 0.93	0.071 0.93	0.039 0.4	0.023 0.29	0.118 0.56
<i>home rule</i>			-0.001 -1.09	-0.001 -1.13	-0.001 -1.19	-0.002 -1.24	-0.002 -1.31	-0.002 -0.84
<i>democratvote</i>					0.019 0.81	-0.005 -0.2	-0.004 -0.16	-0.017 -0.44
<i>lawyers per capita</i>						9.261 ** 2.42	6.252 ** 2.16	13.051 *** 2.68
<i>incomevariance</i>						-3.614E-06 -1.61		-5.22E-06 -1.51
<i>TEL</i>								-0.014 ** -2.51
<i>_cons</i>	-2.133 *** -23.91	-2.186 *** -24.27	-2.218 *** -16.2	-2.160 *** -15.58	-2.229 *** -15.49	-2.137 *** -14.06	-2.114 *** -14.35	-2.13 *** -13.28
R-square	0.136	0.098	0.116	0.154	0.164	0.238	0.226	0.234

*, **, *** coefficient significant at 10%, 5%, 1% respectively
 marginal effects in bold
 t-ratios under marginal effects

Table 6. Heckman-corrected Leviathan model sub-samples*OSR share is dependent variable*

n=40 Dillon's Rule, n=54 home rule

Dillon's Rule sample		home rule sample	
<i>OSR share</i>	mf	<i>OSR share</i>	mf
<i>mills0</i>	0.034 *** 5.43	<i>mills1</i>	0.006 0.9
<i>year2000</i>	0.003 *** 4.20	<i>year2000</i>	0.006 0.17
<i>E-decentralization</i>	0.004 0.15	<i>E-decentralization</i>	-0.094 *** -2.66
<i>intergovgrants</i>	0.079 *** 2.78	<i>intergovgrants</i>	-0.147 *** 2.94
<i>fragmentation</i>	2.27E-06 * 1.86	<i>fragmentation</i>	-1.16E-06 -1.01
<i>MSApop</i>	-9.18E-09 -2.5	<i>MSApop</i>	-2.41E-09 -0.73
<i>population</i>	6.33E-09 * 1.93	<i>population</i>	-2.69E-09 0.88
<i>medhhincome</i>	5.65E-07 0.9	<i>medhhincome</i>	-5.49E-07 -0.73
<i>incomevariance</i>	4.74E-06 * 1.9	<i>incomevariance</i>	-2.49E-06 -0.68
<i>unemployment</i>	0.824 *** 3.33	<i>unemployment</i>	-0.019 -0.09
<i>lawyers per capit</i>	-0.874 0.16	<i>lawyers per capita</i>	5.813 1.11
<i>democratvote</i>	-0.115 *** -4.93	<i>democratvote</i>	-0.054 * -1.41
<i>constant</i>	-3.000 *** -10.52	<i>constant</i>	-0.213 *** -8.59
R-square	0.574		0.229

*, **, *** coefficient significant at 10%, 5%, 1% respectively

marginal effects in bold

t-ratios under marginal effects

Other model specifications were tested, including a specification with *TEL*

There was no significant difference in results

Table 7. Heckman-corrected Leviathan model sub-samples

Tax share is dependent variable
n=40 Dillon's Rule, n=54 home rule

Dillon's Rule sample		home rule sample	
<i>Tax share</i>	mf	<i>Tax share</i>	mf
<i>mills0</i>	0.024 *** 2.89	<i>mills1</i>	-0.003 -0.48
<i>year2000</i>	0.010 * 1.67	<i>year2000</i>	-0.020 -0.14
<i>E-decentralization</i>	-0.047 * -1.72	<i>E-decentralization</i>	-0.055 ** -2.35
<i>intergovgrants</i>	0.059 ** 2.25	<i>intergovgrants</i>	0.111 *** 2.83
<i>fragmentation</i>	3.41E-06 *** 2.58	<i>fragmentation</i>	5.23E-07 0.51
<i>MSApop</i>	-3.18E-09 -0.96	<i>MSApop</i>	-2.22E-09 -1.06
<i>population</i>	1.41E-09 0.47	<i>population</i>	1.96E-09 0.98
<i>medhhincome</i>	9.37E-07 * 1.87	<i>medhhincome</i>	-7.42E-08 -0.14
<i>incomevariance</i>	5.00E-06 ** 2.02	<i>incomevariance</i>	-5.23E-06 ** -2.17
<i>unemployment</i>	0.457 * 1.97	<i>unemployment</i>	0.083 0.51
<i>lawyers per capita</i>	-2.521 -0.44	<i>lawyers per capita</i>	6.874 * 1.88
<i>democratvote</i>	-0.074 *** -3.39	<i>democratvote</i>	0.007 0.21
<i>constant</i>	-0.024 *** -9.15	<i>constant</i>	-0.024 *** -12.64
R-square	0.474		0.300

*, **, *** coefficient significant at 10%, 5%, 1% respectively

marginal effects in bold

t-ratios under marginal effects

Other model specifications were tested, including a specification with *TEL*

There was no significant difference in results

Table 8. Structural probit estimation

<i>hrdummy</i>	Coefficients stand. errs.	Coefficients stand. errs.
<i>OSR size difference</i>	29.060 * 1.93	
<i>Tax size difference</i>		48.477 ** 2.1
<i>democratvote</i>	1.033 0.38	-1.389 -0.41
<i>population variance</i>	8.52E-07 ** 1.96	8.74E-07 ** 1.96
<i>Historical population change</i>	-0.003 -1.13	-0.003 -1.11
<i>incomevariance</i>	2.16E-05 0.08	1.96E-04 0.68
<i>stateaid</i>	-1.970 -0.96	-2.061 -1.01
<i>E-decentralization</i>	-2.207 -1.08	-4.308 * -1.86
<i>unemployment</i>	-21.785 * -1.35	-29.246 * -1.94
<i>year2000</i>	-0.562 -1.06	-0.725 -1.47
<i>_cons</i>	2.166 1.19	4.332 ** 2.04
pseudo R2	0.145	0.151

*, ** significant at 10%, 5% respectively.

Mean predicted OSR share home rule	Mean predicted OSR share Dillon's Rule
0.127	0.105
Difference in means	21.28%
T-test	17.8
Mean predicted Tax share home rule	Mean predicted Tax share Dillon's Rule
0.102	0.083
Difference in means	22.80%
T-test	24.172