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Testing Theories of Government Growth in the Fifty States, 1945 to 1998.

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TESTING THEORIES OF GOVERNMENT GROWTH IN THE FIFTY STATES, 1945 TO 1998

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Abstract

This dissertation explores the determinants of government growth in the American states. Understanding the causes of public sector growth is important as the administration of government programs is increasingly devolved to the states. Past research has typically been on national-level growth. However, the variety in state institutional structures, resource bases, and population needs makes for an ideal "comparative laboratory." With some exceptions, state-level studies have had a public finance approach that often exclude relevant political and demographic factors that can lead to increased public sector size.

My analysis of state government growth tests thirteen models covering both traditional political explanations as well as explanations found in the public finance literature. I use a pooled cross-sectional time-series research design to determine the causes of growth in forty-nine states for the years 1946 to 1997. The study categorizes explanations of government growth as either responsive or excessive. Responsive explanations suggests that growth is a reflection of the needs and demands of the population. Excessive explanations are those that posit growth beyond that demanded by the citizenry. These explanations are tested in a combined model on both undeflated and deflated state government size.

I find strong support for three responsive explanations: *Political Needs*, *Party Control*, and *Political Culture*. The analysis indicates weak support for Wagner's Law with confirmatory evidence confined to urbanization. Two components of Wagner's Law, industrialization and per capita income, are negatively related to government growth.

Four excessive explanations gain considerable support: *Intergovernmental Grants*, *Bureau-Voting*, *Divided Government*, and *Unfunded Mandates*. The analysis indicates that only state government employees have a positive impact on public sector growth. The results reveal that the effect of divided government on state government growth is contingent on the lack of state supermajority requirements for tax increases. There is only weak evidence in favor of the *Constituency Size* theory.

Overall, my study suggests that state government growth is best explained by theories that fall within the excessive category. Of the variables correctly signed, the effects of intergovernmental grants and state employees on government growth are the two strongest in both the undeflated and deflated model.

Chapter 1: Introduction

One way to view politics is to see it as the product of competing societal demands. These competing demands are channeled through government and emerge as public policy. This perspective sees politics as "the authoritative allocation of values for a society" (Easton, 1953) or Lasswell's (1936) "who gets what, when, and how". When politics is defined this way, there is an implicit recognition that government is expected to play a pivotal role in the distribution of a society's resources. Governmental policy, thus, may be thought of as a reflection of the underlying demand for public goods. Whether hospitals or public schools are the recipients of governmental largesse depends largely on how these competing demands are prioritized by the government.

Perhaps the most important decision to be made by the public sector concerns its relative size vis-à-vis the private sector. Politics has often been analyzed in terms of why spending increased in one category and declined in another. However, any such spending is contingent upon the existence of a public sector of sufficient size to spend in the first place. It may be argued that the relative size of the government is the single most divisive issue in contemporary American politics, with liberals and Democrats perceived as expanding the role of the government and conservatives and Republicans advocating a more limited government. As Garand, Parkhurst, and Seoud (1991, 177-178) note:

> The relative size of the public sector has been one of the most divisive issues in contemporary American political debate. The magnitude of government activity and the degree to which the public sector absorbs resources from the private sector has been an issue that has divided political liberals and conservatives in the United States,

> particularly in the period of government growth since the beginning of the New Deal era. Contemporary liberals contend that government has a legitimate, active role in solving a wide range of policy problems confronting American citizens, and that programs designed to ameliorate these problems require the expenditure of society's resources. Conservatives, on the other hand, suggest a much more limited role of government in solving problems, arguing that "big government" is inevitably coercive, corrupt, and inefficient, and hence inferior to the private market as an allocator of society's resources. This issue is particularly salient insofar as most policy issues that structure the dominant liberal-conservative debate in the United States (and, for that matter, in other Western industrial democracies) can be subsumed under the broader question of the appropriate size of the public sector relative to that of the private sector.

As government has continued to grow, it is little wonder that the issue of government size has spawned an extensive body of research. Scholars have generated numerous studies of government growth from the turn of the century, and particularly since World War II (Berry and Lowery 1987; Borcherding 1977a; Garand 1988a; 1988b; Lewis-Beck and Rice 1985; Lowery and Berry 1983; Nutter 1978). A raft of theories for public sector expansion have emerged and have been empirically tested in number of governmental contexts (Berry and Lowery 1987; Cameron 1978; Garand 1988a; Husted and Kenny 1997; Kau and Rubin 1981; Larkey, Stolp, and Winer 1981; Lewis-Beck and Rice 1985; Lowery and Berry 1983; Lybeck 1986; Mann 1980; Niskanen 1967; Peacock and Wiseman 1967; Saunders 1988; Tarschys 1975; Wagner 1977). Tangentially related studies have analyzed the effect of government size on such characteristics as economic growth (Conte and Darrat 1988; Jones 1990), state divorce rates (Garand and Monroe 1991) and citizen's attitudes toward risk (usually operationalized as propensity to save) (Greene 1973; Hatzinikolaou 1997; Hatzinikolaou and Ahking 1995).

The overwhelming majority of past research has looked at the causes of government growth at the federal level. However, research at the state level has not gone neglected. Most notably, Garand's research has tested explanations of state government growth from 1945 to 1984 (1988a; 1988b; 1989; 1991; 1993). Using both time-series and pooled cross-sectional time-series analysis, his investigations reveal general support for what has been called in the literature the *bureau voting*, *intergovernmental grant*, *partisan control*, and *political need* models of public sector growth. Modest support is also found for *political culture* and *Wagner's Law* explanations of government size.

In this dissertation, I complement this and other state-level analyses in several ways. First, it extends the period under examination to the fifty-two years from 1946 to 1997, providing an additional twenty-eight years to the work done by Garand (1993). Second, two additional theories that have garnered support in national-level investigations of government growth are tested. Both of these theories come from a public choice perspective and have been little-mentioned in the political science literature. These economics-based theories include the median income voter model (Meltzer and Richard 1981; Peltzman 1980; Stigler 1970; Tridimas 1993) and an explanation that relates legislative structure and constituency size to government growth (Crain 1979; Gilligan and Matsusuka 1995; Stigler 1976; Thornton and Ulrich 1999).

Two other theories treated in this analysis focus on the effect of political institutions on the size of state government. The first of these concerns the effect of divided government on public sector growth. Some evidence has been found that

links divided government control at the federal level to greater public sector expenditures (McCubbins 1991). A second explanation links increased spending by state governments to greater levels of interparty competition. This theory, dating to V.O. Key (1949), is most closely allied to investigations of state welfare spending (Broach 1973; Carmines 1974; Dawson and Robinson 1963; Fry and Winters 1970; Jennings 1979; Lewis-Beck 1977; Wright 1975). However, because one of the primary sources of government growth is through redistributive programs (Berry and Lowery 1987; Borcherding 1977a; Mueller 1984; Tiegen 1980), testing such an explanation would be important for this analysis. An additional explanation tested in this analysis concerns the role of state statutory and constitutional measures designed to curb state expenditures. Most notable of these fiscal instruments are initiatives, tax and expenditure limitations and balanced budget requirements. Past research into the effect of these prohibitions finds little evidence that they do anything to restrain the growth in state expenditures, though given that they are designed to do so justifies their inclusion. Finally, the effect of unfunded federal mandates on state government growth is tested in this study. Past research on state government growth has not considered how these mandates have contributed to public sector growth at the state level.

In addition to these alternative explanations for public sector growth, some variables in this analysis have been measured differently. Party control models at the state level have never controlled for the length of time a party has been in power; substantial impacts for this variable have been found in a study of government growth in fifteen developed democracies (Blais, Blake, and Dion 1993; see also Swank 1988).

Another point of departure in this study involves the more precise measurement of median income voter participation. Past analyses routinely gauge the effect of increased participation by lower income voters through the use of turnout levels. The following analysis takes advantage of median income voter turnout data measured at the county-level. This county-level data has been aggregated to the state level.

Along with improvements in variable measurement, two of the government growth theories tested herein, Wagner's Law and bureau voting, benefit from the inclusion of theoretically important variables previously unavailable due to data limitations. Data is now available for state manufacturing income, an important factor in measuring industrialization, a major component of Wagner's Law. Also, the effect of state, local, *and* federal employees on state public sector growth provides for a more complete test of the bureau voting model.

One may ask whether investigation of government growth is not more appropriate at the national level. Public sector growth at the national level is well-documented, its scope is universal within the country, the federal government has access to more coercive policy instruments, and it is, generally speaking, more visible than the fifty subnational governments of the United States.

State level analysis of government growth is important for several reasons. First, states have different institutional structures, resource bases, and population needs. These differences provide a "comparative laboratory" through which the importance of a variety of environmental and structural explanations can be tested. This variation between state contexts provides for an optimal testing of the relative

explanatory power of the competing models of government growth tested at the national level. Moreover, the average growth of all state public sectors has leveled off recently. This leveling off of state government growth is a boon to this study, as it means that there will be more variation among the examined variables across states within this time period. If all state governments were growing, it would be much harder to disentangle the relative effects of the competing models of government growth examined in this study.[1]

Second, much of the research done at the state level in the recent past has had a more explicitly public finance or economic approach. This research has unquestionably extended our knowledge base as to the determinants of subnational government growth. However, the economic orientation of this research has led to a neglect of the more political explanations of public sector growth. For instance, party control and divided government have received relatively little attention (though see Alt and Lowery 1994; Clingermayer and Wood 1995; and Garand and Kapeluck 2000).

Third, there has been a rebirth of interest in state politics and policy. Research into the causes of state government growth provides a rich backdrop to further understanding of the contextual factors driving the political systems of the fifty states. Identification of significant models of state public sector growth is essential to explanations of differing policy outputs among the states.

Fourth and most importantly, the ongoing devolution of power from the federal government implies an increased importance of state-level policy contexts. This

[1] Though states could be growing at different rates.

devolution, which began with the revenue sharing programs of Nixon and Reagan, has proceeded apace to the present. Not only does increased state responsibility for the administration of government programs result in a wider distribution of potential public sector output, it also means that the determinants of overall public sector expenditures may be more closely linked to the political contexts present at the state level. This represents a sharp difference from the past in which overall growth patterns were more closely linked to national level policy outcomes.

The framework that guides the following analysis recognizes that growth in the public sector can be the result of two broad sets of processes (Buchanan 1977; Lowery and Berry 1983). First, government growth can be responsive to the demands of citizens. Responsive models of government growth see increases in public sector size as the result of decisions made by the populace within a democracy. If a majority of the public desires increased public expenditures, then government should grow in response. From a normative standpoint, a democratic government should increase in size if such growth reflects the majority of the population. In such models, the institutions of government through which decisions affecting the size of government are made are neutral in regard to whether the choice is to expand or reduce the public sector.

On the other hand, government growth can be excessive. Excessive government growth occurs when the public sector increases in size beyond that desired by the majority of the citizenry. Government growth in a democracy that is over and above that wished for by the majority of the population belies the tenets of democratic theory. Thus, if the excessive models of government growth examined in

this study contribute a great deal to state public sector size, we have reason to believe that democratic control of state government has been undermined.

From a normative perspective, government size in a democracy should be due to the preferences of the citizenry. Hence, the thesis of my study is that public sector size should be explained primarily by responsive theories of state government growth. I suggest that because state government operates much closer to the citizenry than the federal government, state policy choices, as reflected in the size of government, should reflect the policy demands and needs of the state's population. An increase in the size of state government should reflect a desire by a state's citizens for an increased provision of public goods and services. Given the close proximity between the elected and the governed, state government should be more responsive to the electorate. The level of control exercised by the citizen over his or her state government is greater than the control exercised at the national level. Not only is the likelihood greater that the average citizen can access his or her state representative more easily than his or her federal representative, but the issues decided at the state level often have a much more tangible impact than those decided at the national level. Since state-level decision-making permits more citizen participation and concerns issues that have a more immediate impact, policies that affect the size of state government, it is proposed, are subject to increased oversight than those affecting the size of the federal government. Therefore, increases in state government growth should be the result of government responsiveness rather than a duplicitous effort on the part of government institutions to increase the size of government beyond that desired by the citizen.

Issues in Previous Research on Government Growth

While there is an enormous amount of research on government growth, there has been no final word on the subject. Debates still occur among scholars as to the relative importance of particular explanations of government growth, though the research has moved toward the incorporation of a number of explanatory models versus a single comprehensive meta-theory. This general agreement on how to approach the issue of government growth, however, does not extend to all facets of the research agenda. In the following section, I examine three of the most important disagreements, all of which will be addressed in one way or another in the empirical sections of the paper.

Cross-Sectional vs. Longitudinal Models

Past analysis of government growth is marked by debate over whether to use a cross-sectional or longitudinal approach to studying government growth. A number of studies utilize a cross-sectional design to model a process that occurs over time (Cameron 1978; Fisher 1964; Mitchell, Owen, and Feiock 1985; Wagner 1976). The hazards associated with the use of cross-sectional designs to analyze dynamic policy process are well-documented (Garand and Monroe 1991; Gray 1976).

Three problems in particular stand out when a cross-sectional design is used to study public sector growth. First, growth in government occurs over time. If one were studying or comparing government size at a single point in time, such a research strategy might be appropriate. Longitudinal research on the causes of government

growth that incorporates temporal variation in response to environmental factors is preferable to the snapshot of the size of government provided by cross-sectional studies.

Another pitfall of cross-sectional designs is that they typically rely on averages calculated over a number of years. Such temporal aggregation may conceal covariation between government size and the relevant explanatory variables that may prove useful in making causal inferences about the processes behind growth in the public sector. For example, a study by Cameron (1978) of the changes in public sector expenditure as a share of gross domestic product (GDP) in eighteen developed countries from 1960 to 1975 relies on such a cross-sectional approach. His analysis centers on the average increases over the sixteen-year period as a function of explanatory variables, which are also aggregated over this same period. The consequence of this research design is that it is impossible to determine whether the results obtained can be attributed to real relationships or are an artifact of the aggregation procedure. It may be that covariation among the dependent and independent variables within the period under analysis would have led to different results and inferences. In short, cross-sectional designs are useful if the researcher wants to understand why one political system exhibited more public sector growth than another for the time in question, however they do not enable the researcher to examine change in government size within political systems over time. The development of adequate models of government growth in the fifty states demands the specification of a dynamic element best captured by a longitudinal (time-series) design.

Third, in her study of American state policy outputs, Gray (1976) shows how varying results can be obtained as a result of using cross-sectional research designs rather than time-series analysis. These differing results lead to different (and possibly misleading) inferences about the state policy process. A review of the government growth literature reveals similar conflicting findings. For instance, Cameron's cross-sectional analysis indicates substantial support for his foreign trade dependency model of government growth. Subsequent longitudinal studies, however, fail to find any effect for trade dependency on government growth in the United States (Berry and Lowery 1987; Lowery and Berry 1983). Indeed, their results paint the opposite picture, with increased foreign trade dependency leading to a decline in government size.

This having been said, pure longitudinal research designs have their own disadvantages. In longitudinal designs, government growth is depicted as a function of explanatory variables that are gathered within one political unit over time. This approach is satisfactory if one is interested only in one particular political system, however, it prevents the researcher from drawing strong conclusions regarding changes in public sector size across political systems. Of course, government growth is particular to specific political systems, and can be modeled longitudinally within one political system. However, comparative research has as one of its primary goals the explanation of behavior and outcomes that occur across political systems. So while knowing the factors behind government growth in, say, California, is important, it is also important to understand why California has a larger government than, say, New Hampshire.

What the preceding paragraphs imply is that it is important for one studying the size of government and its growth over time to explain a full range of cross-sectional and longitudinal covariation between government size and the independent variable that (supposedly) explains government size. The development of pooled cross-sectional time-series designs is an innovation that permits one to explain over-time and across-system variation in the size of the public sector.

Aggregation Across Levels of Government

A second issue pertains to the fact that a number of previous analyses of public sector growth in federal political systems measure government size by using *total* government expenditures as a proportion of total national economic output. For example, in their studies of public sector growth, both Lowery and Berry (1983, 1987) and Lewis-Beck and Rice (1985) aggregate local, state, and federal spending as a proportion of national economic output. This aggregation, some argue, can be traced to the comparative origins of the growth in government literature, which as Lowery and Berry (1983, 90) note, necessarily had to adjust for the very different government structures of the industrial democracies." This approach is beneficial as it takes into account the total extractive nature of the public sector within the overall national economic and political system. Indeed, it is practically unavoidable in research comparing federal and nonfederal regimes. It may also be argued that it is a proper approach for analysis of federal systems, which, like the United States, have significant intergovernmental exchange of both financial resources and governmental responsibility. This interdependence suggests that patterns of government size for different government levels may be less distinct than one might expect, and thus

should be studied as a whole.

Nonetheless, analysis that uses data aggregated over several governmental levels has several drawbacks. First, combining expenditure data across governmental levels may conceal unique patterns of public sector growth for the various levels of government. Aggregation of governmental expenditure prevents the researcher from knowing whether increased size is attributable to either public sector growth at the local, state, national, or some combination of all three levels. For example, Dye and MacManus (1990) show that growth in the public sector from 1952 to 1984 is largely attributable to increased federal spending, which when compared to state and local sector spending shows little sign of leveling off. Another disaggregated analysis shows that the reverse was true in the late nineteenth century (Borcherding 1977b). Dye and MacManus also find that the predictive power of their government growth models is contingent on whether state and local expenditures are examined together or separately. These examples suggest that it is important to focus in on whether and why growth in the size of government is observed within each specific level.

Second, certain models of public sector growth are specifically aimed at explaining growth at a particular level of government. To take one example, the intergovernmental transfer model of government growth implicitly assumes that one level receives benefits from another level. In this analysis of state government growth, it is the state that is the benefactor of intergovernmental grants; thus to test the theory of intergovernmental grants requires a disaggregation of public sector growth.

A third argument in favor of disaggregating public sector growth by level of government is related to the one discussed above. Studies that use aggregated public

sector size data run the risk of attributing government growth to factors that apply only to one level of government. For instance, the theory of partisan control suggests that government control by parties more amenable to an activist government (e.g. the Democratic Party) will result in a larger public sector. By conflating all levels of government expenditure, the researcher then has to justify at what government level is party control to be measured. In this example, the decision to gauge party control at the national level would fail to acknowledge that much of public sector growth could be attributed to decisions made at the state and local level. These decisions are beyond the control of national policymakers.

Finally, it may be argued that the best strategy for studying the size of the public sector is to concentrate on the particular levels of government within which political and economic decisions relevant to the size of the public sector are made. The consideration of the effects of policy made in other levels of government can be included as separate variables within the scope of a public sector growth analysis that focuses on a specific level of government. In other words, if state public sector growth is highly dependent on, say, national level decisions regarding the awarding of intergovernmental grants, state government growth models could incorporate variables that represent such decisions. In essence, in order to achieve a broader understanding of government growth, it is necessary to examine government growth patterns and their causes using data disaggregated for the different levels of government under consideration.

The Price Deflator Issue

One final issue that marks a division within the government growth literature is the question of differing inflation rates between the public and private sector. The origin of this dispute comes from an article published in the late 1960s that convincingly argued that the inflation rate for government would be higher than that experienced by the private sector (Baumol 1967). The key to understanding this difference lies in the differing productivity levels of the two sectors. Baumol argued that sectors of the economy could be thought of as either progressive or non-progressive with progressive sectors enjoying a greater rate of productivity. The implication is that the product cost in the progressive sector will decline as productivity gains are made. However, non-progressive sectors will experience ever-increasing costs per unit. These progressive sectors are characterized by "innovations, capital accumulation, and economies of large scale [which] all make for a cumulative rise in output per man hour" (Baumol 1967, 416). The public sector, on the other hand, belongs in the non-progressive category because of its relative inability to increase productivity. This proposed gap in productivity between the two sectors is based on three premises. First, public sector activities are primarily labor intensive.[2] Second, advances in technology have a negligible effect on the quantity of labor

[2] Some studies claim that the public sector is actually more capital-intensive than the private sector (Orzechowski 1974; Tullock 1977, 285-87), though as Berry and Lowery point out (1984b), the high level of aggregation in such studies makes an accurate appraisal of the results is difficult. Moreover, some have argued that technological advances have translated into better service not to reductions (Bradford, Malt and Oates 1969).

needed to provide government services.[3] Third, without market mechanisms that ensure competitiveness, bureaucracy has little motivation to improve efficiency or productivity. If Baumol's hypothesis is true, it suggests that the undeflated cost of public sector goods and services will increase relative to costs in the more productive private sector. Moreover, because government must compete with the private sector for labor, wages for government employees must also rise (Beck 1979).

In essence, Baumol argues that the private sector is better able to enjoy the fruits of productivity than the public sector because it relies more on capital than labor. For example, a factory that begins using a more automated production process may increase the output of automobiles from a hundred a day to two hundred. The factory has now doubled its output and will be earning considerably more profit. Some of this profit translates into increased wages. The government worker, however, is employed in a more labor-intensive job. For instance, there is little the government can do to increase the productivity of the social worker without compromising the quality of the service. Government, however, must pay social workers enough to prevent them from leaving to work at the automobile plant. Thus, government expenditures on labor must increase in order to retain its employees, even though there is no accompanying increase in productivity. This means that government will have a higher inflation rate

[3] Support for this premise is weakened because of the advent of the computer. However, it may be argued that computer-based productivity gains experienced by the private sector far outstrip those enjoyed in the public sector. The classic example is the teacher. A teacher's ability to teach more students through the use of distance learning techniques results in greater efficiency; however, the quality of education suffers as the pupil to teacher ratio increases. Since government output is largely service-oriented, efficiency gains provided through computer applications are often limited by the need for more personalized attention that is the hallmark of the service sector.

than the private sector, particularly since the bulk of government activities are labor-intensive (e.g. education, welfare, health services). It is the deflator that "corrects" for this private sector-public sector disparity in inflation by accounting for that part of government expenditure increase due to the productivity advantage enjoyed by the private sector.

It is this differential inflation rate between the public and private sector that has led to different conclusions regarding the increasing size of the public sector. Controlling for public sector price inflation, several scholars have found little to no evidence of ongoing governmental growth (Beck 1976, 1979; Dubin 1977; Ott 1980). An analysis of growth in state government reveals that almost half of the increase in the public sector can be attributed to what has come to be called "Baumol's Disease" (Garand 1991). Another study finds that during the post-war period from 1945 to 1984, the mean inflation rate for the private sector (GNP) was 4.6%, while the inflation rates for the federal and state and local government sectors were 5.3 and 6.0% respectively. Given the relevance of this variable, many researchers have taken it into account in their investigations of government growth (Beck 1976, 1981; Berry and Lowery 1984a; 1984b; Borcherding 1985; Garand 1988a; 1988b; 1989; 1991; Ladd 1978; Lowery and Berry 1983; 1987).

What are the consequences of ignoring the deflator issue? If the size of government is measured in terms of the ratio of government spending to the size of the total economy, it is likely that an undeflated government size measure will be contaminated by the different inflation rates that characterize the two sectors of the

economy. Since public sector inflation exceeds private sector inflation, government size can be expected to grow regardless of whether there is a *real* accompanying increase in the scope of government activity. As Lowery and Berry (1983, 680) point out, measures of the size of the public sector based on the ratio of government expenditures to total economic output may grow for two reasons: "(1) the scope of government activity may broaden (i.e., government may increase the amounts and types of goods and services it provides), and (2) the cost of providing a *constant* level of goods and services may rise relative to the prices of goods and services in the private sector."

A second consequence of using undeflated measures of government growth is that the empirical findings have been found to differ from those using deflated measures. Berry and Lowery (1984a) have found that the choice of whether to use an deflated measure of government size has a considerable impact on the results of empirical tests of public sector growth models, with the level of empirical support for various explanations contingent on the decision to use a deflated or undeflated measure of government size. Research at the state level confirms Berry and Lowery's national level conclusion, though differences in the results are not as stark. (Garand 1989).[4]

In this dissertation, I sidestep the problem of using a deflated measure in the measurement of the dependent variable by testing the various theories using both deflated and undeflated measures of state government growth. While this paper is

[4] A national level analysis also fails to find important differences when using either deflated or nondeflated measure of size; however, this study is not strictly comparable

ultimately concerned with the increasing scope of government, as measured by its share of total economic output, any explanation of government growth is incomplete without accounting for the uncontrollable dimension caused by the differential inflation rates of the public and private sectors. Whereas most studies have modeled government growth using either a deflated or an undeflated measure, this analysis will use both operationalizations of the dependent variable.

The decision to model government growth using the undeflated measure is based on the importance of appreciating the total extractive component of the public sector. A preliminary adjustment to control for differing inflation rates will tend to mask the overall trend of increased government size. In the words of Musgrave and Musgrave (1980, 149), "the unadjusted ratio gives a better picture of the public sector share in the value of the total output, and of the share of private income which has to be paid into the public sector through taxation."

There is one final issue within the price deflator debate that deserves attention. This concerns the two broad categories of government spending: transfers and final consumption expenditures. Transfers refer to the redistributive aspect of government expenditures, whereas capital outlays, wages, and purchases belong in the final consumption category. An example of a transfer expenditure would be Medicare spending, whereas a B-1 bomber would fall into the final consumption category. A question emerges: should transfer payments be counted as adding to government growth? This question has become more important as government budget allocations are increasingly moving from purchases to transfers (Shariff 1978). The argument for

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as government expenditures are disaggregated into a number of policy categories

exclusion is that such expenditures do not entail the permanent movement of resources from the private to the public sector, rather it is redistributed to transfer program beneficiaries (Brown and Jackson 1978). In this interpretation, including transfer payments overstates the actual size of government. The opposing viewpoint contends that this redistribution is financed by taxpayers and regardless of where the money ends up it no longer is in their hands. As Buchanan and Flowers argue, this "is as much a real cost as direct outlay for tanks, planes, and paper clips" (1975, 40-41). And at the heart of scholarly (and partisan) interest in the size of the public sector lies the concern with government power. Thus, ignoring the redistributive capacity of government is to neglect a substantial exercise of government influence (Lewis-Beck and Rice 1985).

The discussion thus far of public and private sector price deflators yields two conclusions pertinent to this study of state government growth. First, government expenditures are subject to a different inflation rate than private sector expenditures and this differential should be taken into account. Second, transfers constitute a large and growing proportion of state expenditures. This transfer spending, though much of it is returned to the citizen, has a real economic effect on the average citizen. Since transfer spending does have an economic effect on the citizen, it is included in the operationalization of the dependent variable.

Summary

Evident from the preceding discussion is that the research program on government growth is not complete. There remains considerable disagreement among

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(Mahler 1992).

scholars regarding (1) the time frame appropriate for analyzing public sector size and its growth over time, (2) the use of government size data disaggregated to specific levels of government in federal systems, instead of data on public sector size aggregated across governmental levels, and (3) the use of government size measures that control for the different inflation rates of the public and private sectors. The strategy adopted here to analyze the growth of state government (1) utilizes data collected both cross-sectionally and longitudinally, (2) uses government expenditures measured at the state level, and (3) tests both deflated and undeflated state government growth models.

Chapter 2: Thirteen Models of Public Sector Growth

This section describes the various responsive and excessive theories of government growth that have attracted attention in the literature. The following 13 theories form the basis of the multivariate analysis tested in this paper. All of the following, with the exception of unfunded mandates, have been tested empirically in a wide variety of political contexts; however, with some exceptions (Garand 1988b; 1993), there has been little effort to develop a broader, more comprehensive model of government size in the American states that simultaneously takes into account the effects suggested by a range of government size models. Variables reflecting these explanations will be included in a comprehensive model of state government size estimated in a pooled model for the American states for the years 1946 to 1997. A brief summary of the variables used herein is in Appendix 2.

The dependent variable in this analysis is government size and is measured as total state government expenditures (including intergovernmental grants) as a proportion of total state personal income. In the deflated models, government expenditures are deflated by the state and local government price deflator, and total state personal income is deflated by the GDP deflator. Both government expenditures and total state personal income are left undeflated in the undeflated models.

The government size measure that is undeflated indicates the total extractive component of the state public sector. This measure is based on the ratio of real state government expenditures in year Y to real total state personal income in year Y. This is what government consumes, regardless of whether the state public sector is doing more or less with the money it receives. The deflated measure of state government

size, on the other hand, is deflated by the appropriate government price deflator. The size of state government under this operationalization indicates the degree to which the scope, or activity of state government has either increased or declined in the states over the time period under analysis.

Responsive Models of Government Growth

The seven theories discussed below are best characterized as responsive explanations of state government growth. Responsive theories suggest that growth in a state's public sector is due to the demands of a majority of the citizens. These demands can be expressed directly, for instance by voting for candidates that promise increased state expenditures. Government growth can also be the result of apparent needs within the population. What is common to either process is that government size increases (or decreases) in response to the preferences of a majority of the citizens.

Wagner's Law

Adolph Wagner, a nineteenth century German economist, was one of the first scholars to speculate on the causes of government growth. His theory, which has come to be known as Wagner's Law, is one of the most referred to and tested in the government growth literature. He proposed that government grew in response to factors associated with increased industrialization (Wagner 1877). Three primary factors thought to be related to industrialization are an increase in per capita income, greater technological advances, and wider political participation (Bhargava 1953; Mann 1980). The combination of these factors suggested to Wagner three reasons why the scope of government could be expected to expand. First, industrialization

results in a more greatly concentrated population. The resulting urbanization of the population is associated with externalities that must be addressed by the public sector. For example, urbanization requires greater outlays on such public goods as law enforcement, socioeconomic regulation (i.e. welfare, labor-management arbitration), and pollution control. Second, gains in per capita income are expected to result in an *elastic* demand in publicly provided goods and services such as old age insurance, public education, and health coverage. The term "elasticity" refers to the degree to which the demand for a product fluctuates due to changes in price and income. Water, for example, is price inelastic. Regardless of the price per gallon, demand for water will be inelastic or unchanging. On the other hand, as an individual's income increases, he or she may be more likely to spend a greater amount on publicly provided goods and services. In other words, there will not be a one to one correspondence between income and demand for public goods; rather Wagner proposed that proportionally more would be demanded of the public sector as incomes rise.[1] The last component of Wagner's Law pertains to the infrastructure requirements of an industrial society. As Mann has noted, "the technological needs of an industrial economy require larger amounts of capital than are forthcoming from the private sector. Therefore, the state has to provide the necessary capital funds to finance large-scale capital expenditures" (1980, 189). This final component is illustrated by the enormous public expenditure on mass transit, interstates, and public utilities.

[1] This interpretation of Wagner's Law has been the source of some debate, as some scholars have argued that there has to be some limit or equilibrium point at which demand for public goods would cease to grow (Alt 1980), for instance, when the further expansion of government results in a decline in income growth. Moreover, if

The three implications of the theory that have attracted the most attention consider the relationship of industrialization, urbanization (or population density) and rise in per capita income to growth in government. Despite the intuitive appeal of Wagner's Law, extensive testing in a variety of political and economic contexts provides only modest evidence of its empirical validity. Whereas Wagner's Law receives some support in Lowery and Berry's (1983) test of nine theories of government growth, this support is confined to their measures of industrialization.[2] A subsequent analysis by the authors fails, however, to find a significant relationship between industrialization and growth in government (Berry and Lowery 1987). Moreover, the coefficient is negative, suggesting that industrialization is related to a decline in public sector growth. On the other hand, Rice's (1986) study of twelve European nations reveals a modest role for industrialization. His analysis indicates that Wagner's Law is primarily operative in "nations with a strong commitment to social welfare, and these nations appear to be primarily Northern European" (1986, 249). Support for a positive relationship between industrialization and government growth are also found in longitudinal analyses of the Mexican (Mann 1980) and Greek (Karavitis 1987) public sectors.

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income elasticity exceeds one, "then public spending at some point would exceed national income (Borcherding 1985).

[2] The authors wrongly attribute a negative coefficient for population to evidence against Wagner's Law (see also Garand 1988). Controlling for other factors, the population variable *should* take a negative sign because of the public sector's economy of scale (see Samuelson 1954). For instance, a nation of 25 million with a military of 1 million incurs twice the defense cost per capita when compared to a nation of 50 million with a similar sized military. Wagner's Law refers to population density not to overall population.

A much more tested implication of Wagner's Law is that an increase in per capita income bolsters demand for government services. Here again, the evidence is mixed. Berry and Lowery find a positive and significant relationship—increased per capita income leads to a larger public sector (1983; 1984).[3] Subsequent analysis by the authors reveals a negative effect (Berry and Lowery 1987). Lewis-Beck and Rice (1985) operationalize economic affluence as personal savings as a proportion of personal disposable income, the latter of which, it can be argued, is a reasonable measure of discretionary income. Their analysis suggests a positive and significant relationship between their measure of income and growth in the aggregated United States public sector. Finally, Ferris and West's (1995) examination of total United States government size (federal, state, and local) fails to support Wagner's rising per capita income relationship to increased government size. When the authors include transfer expenditures, real government size is inversely related to per capita income.

Turning to the state-level, Garand's (1988) analysis reveals an overall negative relationship between per capita income and government growth; only 14 of the 50 states had significant positive coefficients for the income variable. A more recent analysis by Garand (1993) reveals a strong negative relationship between state government growth and per capita income when government size is deflated. Other studies, however, find positive and significant effects for the per capita income variable (Thornton and Ulrich 1999; Wagner 1976). Husted and Kenny's (1997) state-level analysis that separates nonwelfare from welfare spending finds modest evidence that per capita income increases boost spending on the former though not the

[3] The authors find the opposite result when using the undeflated measure of

latter (1997). International studies of government growth provide conflicting results as well. Cameron's (1978) analysis of government growth in 18 industrial democracies shows no relationship between national economic output and increased government size. Other analyses point to a significant though weak impact for the per capita income variable on government growth (OECD 1983; Wagner and Weber 1977).

Boix (2001), in a recent analysis of government growth in 65 democratic and authoritarian countries, makes the argument that the relationship between per capita income and government growth is nonlinear. And once per capita income becomes sufficiently high, the marginal return of public investment to the taxpayer declines. Boix links the relationship between per capita income and public sector expenditures to the voting incentives before the median income voter. At low levels of income, pressures for redistribution are low. The return to the citizen in the form of public goods and services such as roads, an airport, bridges is minimal. These public goods are unlikely to affect positively the productivity of the citizen. However, once per capita income reaches a certain threshold, the returns from public investment are sufficient to warrant an increased level of taxation. The median income voter supports a tax level that maximizes their income (through the development of publicly funded infrastructural improvements or transfers) only to the point where any additional tax would reduce total economic output. For example, a 100% tax would reduce output to

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government growth (Berry and Lowery 1984).

zero (see 25n4).[4] Finally, the demand for public sector investment should taper off at high levels of per capita income.

To control for this non-linear relationship between per capita income and government growth, Boix (2001) uses the log value of real per capita income. He finds a strong positive effect for per capita income in his cross-sectional time series analysis. Logged per capita income is a positive factor for government growth in both democratic and authoritarian regimes.

Finally, urbanization is the implication of Wagner's theory that has received the most extensive testing. This measure, along with population density, is intended to gauge the level of interdependency in an industrial society. This measure of interdependency, like Wagner's other hypotheses, has mixed empirical support in the literature, though one public finance scholar goes as far as to say that its explanatory contribution is "virtually zero" (Borcherding 1985). Nevertheless, urbanization has a certain theoretical appeal as a proxy for the societal interdependencies engendered by industrialism. On the positive side, coefficients for urbanization and population density are significant and in the hypothesized direction in Greece, Mexico, Sweden and Norway (Karavitis 1987; Mann 1980; Murray 1981; and Sorenson 1984 respectively). Lybeck's analysis of twelve developed economies also suggests that public sector growth is driven in part by urbanization (1986).

[4] This argument is similar to that espoused by the economist Arthur Laffer, with his famous Laffer Curve. Laffer suggested that tax revenue would increase if tax rates were reduced. Tax revenues will increase because a reduction in taxes will lead to increased capital investment. Productivity gains due to such investment translates into increased profits. And increased profits enlarges the government's tax base.

Research on United States government growth has failed to uncover a link between population density and public sector growth (Kau and Rubin 1981); however this may be the fault of the measures chosen. Some have attempted to model interdependencies as a function of population—higher population should equal increased government spending (Berry and Lowery 1983; 1984; Garand 1988). But as Thornton and Ulrich (1999, 594) note, "states with larger populations are expected to have larger governments but lower levels of per capita spending because of economies of scale in the provision of state government services." This suggests that population may have a non-linear effect on the size of government. While state population is an essential control variable in models of public sector growth, it is no surprise that population variables are seldom positively signed. Indeed, a positive population coefficient suggests a more redistributive role for government rather than a provision of public goods (Mueller and Murrell 1985).[5] This redistributive component of government expenditures is hopefully captured in variables to be discussed later.

Turning to state level analysis, the evidence is clearly weaker for the interdependency aspect of Wagner's Law. Some scholars find that population density (or alternatively urbanization) leads to an increase in welfare spending (Jennings 1980; Sharkansky 1968). More sophisticated analysis draws the opposite conclusion with increased urbanization resulting in higher nonwelfare expenditures but exhibiting no relationship to welfare spending (Husted and Kenny 1997). This finding is attributed to the higher wages that government must pay to cover the costs of living in a city,

[5] Of course, Wagner's Law has a redistributive component but the main thrust of his interdependency hypothesis accents the increased demand for publicly provided *goods and services* in response to more proximate living conditions.

while transfer payments "are unaffected by this variation in costs" (78). This conclusion is questionable on the basis that private sector goods and services are not offered at a lower cost to the beneficiaries of government transfers. Thus, it would appear that, if anything, intra-city transfer payments must be comparatively larger than those made to non-urban recipients. Earlier study of the effect of urbanization on disaggregated state expenditures bears this out (Fisher 1964). Disaggregation also points to an increased state expenditure for health care, sewers and sanitation, police and fire services—interdependencies at the heart of Wagner's thesis (Borcherding 1985; Fisher 1964). On the other hand, Garand's (1993) analysis of state government size reveals a negative relationship for urbanization and population density, though when controlling for state fixed effects (with state dummy variables), the coefficients for both variables are positive and significant. Finally, investigations of local government expenditures reveal mixed results. Wagner's (1976) analysis of city government suggests a strong positive effect for urbanization on government size, while Schneider's (1988) study of over 500 suburban governments indicates a negative and insignificant impact for population density on the number of government workers per capita—arguably a measure of government size (see Rose 1984a; 1984b).

To summarize, Wagner's Law suggests that government increases in size in response to the societal changes introduced by industrialization. Industrialization leads to a more urbanized population. A more concentrated population leads to externalities such as higher crime and traffic congestion that must be taken care of by public authorities. Empirical evidence in support of the urbanization component of Wagner's Law is strong. Second, per capita income increases associated with

industrialization, Wagner argues, generate an increased demand for publicly provided goods and services. The majority of studies point to a modest positive effect for per capita income, though analysis at the state-level reveals mixed results. Finally, industrialization requires substantial investment on infrastructure. Expenditures on interstate systems, ports, and mass transit should increase as a society undergoes industrialization. Evidence that industrialization is positively related to government growth is mixed with the preponderance of positive findings confined to international studies.

Party Control Explanation

One avenue of research on government activity asserts a role for political parties in determining public sector expenditures. Governments controlled by parties of the left are hypothesized to expand the role of the public sector through increased taxes and expenditures. Conversely, governments controlled by parties of the right are hypothesized to contract the role of the public sector through a reduction of taxes and expenditures.

This notion that "politics matters" has come under fire, primarily from Marxist theorists who argue that government is merely the reflection of the underlying power relationship between worker and capitalist. Thus to look at parties as a factor in determining state expenditures is to ignore the fact that they exist to serve the dominant class in society. In a less radical vein, it has been argued, à la Wagner (1877), that the societal changes generated through the government are merely a response to the driving-engine of industrialization. As Castles (1982, 23) notes, both of these theories point to socioeconomic factors as the primary determinants of public

sector activity and that "there may be a coincidence of political alignments and the role of the state, but that is only a consequence of the fact that both are similarly situated by such factors as the industrial or class structure."

Thus, the crucial assumption of the party control thesis is that the parties can be differentiated as to their policy preferences, which in this context is proposed to affect the size of the public sector. The above criticisms notwithstanding, there are compelling electoral-based reasons why this assumption may fail. Most persuasive is Downs' (1957) theory that the parties will move to the center in an effort to acquire the majority of votes. If this is the case, party's policy preferences should be almost indistinguishable. There is considerable evidence that points to a diminished or negligible effect of parties on such state policy outputs as welfare spending (Dawson and Robinson 1963; Dye 1966; Winters 1976) and tax increases (Berry and Berry 1992).

On the other hand, public expenditures may not diminish should a fiscally conservative party take power. Instead, the policy preferences of the electoral base that put the conservative party in office will result in a new direction for public spending. For instance, a Republican-held national government may reduce welfare and education spending at the same time as it increases expenditures on defense. The spending decrease in one sector is offset by an increase in another. There is no reduction in overall spending, rather there is a reshuffling of spending priorities.

It is for the reasons cited above that empirical evidence is at best inconclusive regarding the impact of parties on government growth. Cross-national studies of industrial democracies reveal mixed results and confirmation of the partisan control

theory remains qualified. Cameron (1978) suggests that leftist parties do tend to increase the size of the public sector, though this is contingent on the openness of their economy to foreign trade. Left–leaning parties in larger nations with less foreign trade are more successful at increasing the size of government than those in smaller countries with more open economies. Blais, Blake, and Dion's (1993) study of 15 liberal democracies indicates that the extent to which parties of the left increase the size of government is in large part a function of how long they are in power. Rice (1986) and Lybeck (1986), however find a limited-to-nonexistent role for parties in affecting the size of the public sector.

Studies of government growth in the United States are similarly inconclusive. Lewis-Beck and Rice's (1985) study, which measures Democratic Party strength as an index derived from the percentage of Democratic Party members in the Senate, House and governorships, finds some evidence that party matters. However, this is the least powerful variable in their model of public sector growth. Other studies of national government growth fail to find any relationship at all (Berry and Lowery 1987; Lowery and Berry 1983). State-level studies have found both little effect (Garand 1988; Marquette and Hinckley 1981) or substantial impact (Garand 1985; Garand 1993).

The party control theory attributes government growth to ideological differences between parties of the left and right. Government control by parties of the left is hypothesized to lead to public sector growth and control by right-leaning parties will result in a smaller government. Evidence is generally weak that partisan control of government leads to substantial change in public sector growth, though some

support is found in state level studies (Garand 1988; 1993). There is some indication that government size is contingent upon the length of time a party has been in power (Blais, Blake, and Dion 1993).

Interparty Competition

Many scholars have argued that without sufficient party competition, there is little impetus for government to expand the level of benefits beyond that of the status quo. At the core of this theory is the assumption that the absence of party competition suggests a lack of electoral representation for lower income voters. Given the Downsian median voter model discussed in detail below, heightened competition for political office translates into efforts by candidates and parties to attract support via the promise of government benefits.

Perhaps next to Wagner's Law, the role of interparty competition is the most durable explanation for government growth. According to Key (1949), when competition between parties increases, it becomes necessary for one of the parties to appeal to previously unmobilized voters. The greatest number of potential voters comes from the ranks of the poor. Hence, parties seeking to gain votes will promise the expansion of programs designed to alleviate poverty. The success of a party in gaining office through mobilization of the poor is hypothesized then to increase the size of the public sector.

Given the redistributive implications of Key's theory, the role of interparty competition on state welfare policy has been studied extensively. In general, these studies point to increased competition as a positive and significant factor in increased state welfare spending (Broach 1973; Wright 1975), though there is some evidence

that controlling for state socioeconomic characteristics lessens the role of interparty competition (Dawson and Robinson 1963). Fry and Winters (1970) analysis, which controls for a number of socioeconomic factors, finds interparty competition to have a negative effect on state welfare expenditures. Other research suggests the importance of state wealth (DeLeon 1973; Lockard 1959), state legislative professionalism (Carmines 1974), and the existence of a class-based party cleavage (Jennings 1979) as mediating influences between party competition and higher levels of state welfare spending. Some scholars argue that the cross-sectional research designs employed in many of these studies render the results inconclusive. Using time-series analysis, interparty competition is found to have little effect on state expenditures on welfare (Gray 1976; Marquette and Hinckley 1981). In short, cross-sectional designs are useful in explaining the level of state welfare spending but not the *change* in the level of state welfare spending.

Along with interparty competition, some scholars have suggested that as an election draws near government spending may increase. If politicians (or parties) believe increased state spending will increase their likelihood of reelection, then this increased spending should be more likely to occur before an election. There is less of an incentive to push for spending increases when the next election is still distant. Evidence that government spending increases in response to an upcoming election is well-documented (see Keech 1980 for a theoretical treatment; Kiewiet and McCubbins 1985; Lindbeck 1976; Nordhaus 1975; Tufte 1978). A similar, though opposite, dynamic holds for the adoption of state tax increases (Berry and Berry 1992; 1994; Mikesell 1978).

The election proximity theory of government spending does not maintain that spending increases are contingent on high levels of interparty competition. However, the presence of heightened party competition and an upcoming election may increase pressure to boost expenditures. The effect of the interparty competition and election year interaction on public sector size has received limited attention in the government growth literature. Exceptions, however, have either found a tenuous relationship (Cameron 1978), or none at all (Berry and Lowery 1987; Lowery and Berry 1983; Rice 1986). Based on a perusal of the literature, there has not been a test of either the interparty competition or the competition-election year interaction in state-level analyses of government growth.

As the level of interparty competition increases, parties will seek votes from previously unmobilized voters. Since these voters are generally from lower income groups, candidates may promise programs designed to better the condition of such voters. The establishment of such programs is expected to drive up state expenditures and increase the size of state government. Moreover, the effect of interparty competition on state government growth may increase prior to an election. Support for this interaction theory is scant. However, there has been no test of this explanation for government growth at the state level.

Median Income Voter Model

The median income voter model of government growth is closely related to the interparty competition model. The fundamental difference is that the role of parties is downplayed and the focus is more on median income voter participation. This theory finds its roots in de Tocqueville's (1835) notion that government growth is a product

of the expansion of the voting franchise and the distribution of wealth. A widening of the franchise is expected to bring in more lower income voters who will in turn elect candidates in favor of redistribution of income.

The modern version that emerges from the de Tocquevillian tradition suggests that the size of the public sector is contingent on the relation of the political unit's mean per capita income to the income of the decisive voter (Meltzer and Richard 1978; 1981). Given universal suffrage and the democratic requirement of majority rule, theorists have shown that the decisive voter is the median income voter (Hotelling 1929; Downs 1957). It is the median income voter and those that fall below the median income that constitute the largest potential voting block in a citizenry. Since income distribution is skewed to the left (or on the right side of the distribution), the median income voter will have less income than the mean voter. In other words, the majority of citizens have incomes that fall below the mean. The median income voter, therefore, will have an income that is less than the mean income in the state. Thus, as the voting privilege is extended to more citizens that fall below the mean, given that these citizens exercise their voting rights, the more a government will grow in size due to demands for redistribution. What prevents a democracy from becoming completely redistributive is that if taxes become sufficiently high to reduce incentives to work then total income is lowered and the benefits derived from redistribution decline. This changes the ratio of mean to median income voters in society and renews interest in lowering the tax burden and decreasing the size of the public sector (Meltzer and Richard 1978).

Critical to the median income voter theory of government growth is the assumption that government activity consists primarily in redistributing income.[6] Some scholars have gone so far as to assert that redistribution is an integral part of all government spending (Aranson and Ordeshook 1981). Bridges must go either here or there. The decision as to who gets the contract implies that some will benefit and others will not. Moreover, as universal suffrage has become the norm in the United States and in other countries, there has been a corresponding increase in the transfer portion of government budgets (Berry and Lowery 1987; Borcherding 1977b; Mueller 1984; Tiegen 1980). This increase in government redistributive activity is suggestive of the sort of relationship posited by the median income voter explanation of public sector growth.

Despite the strong theoretical basis of the median income voter model, empirical evidence is mixed. The indicator usually used to test the median income voter model is the level of turnout. Increased turnout, in these studies, implies a greater participation rate for median income voters. In their analysis of OECD countries, Mueller and Murrell (1986) find a linkage between higher voter turnout and increased government spending, as do Husted and Kenny (1997) in their time-series analysis of American state government spending from 1950 to 1988. The median income voter model also receives support at the local level. Inman's (1978) study finds median family income voter turnout for local school budget initiatives is related to corresponding education spending increases. On the other hand, Murrell (1985)

[6] In essence, the assertion that government exists to redistribute is equivalent to arguing that all elections are single-issue affairs. Given this assumption, it is the

finds that voter turnout does not coincide with higher levels of public employment. Indirect tests of the median income voter relationship that examine the impact of the spread of the voting franchise on subsequent increases in the public sector have also failed to find evidence in support of the theory (Brosio and Marchese 1988; Peltzman 1980).

One problem with all of these studies, with the possible exception of Husted and Kenny (1997), is that they assume that increased turnout means that a higher proportion of lower income voters are coming to the polls. This is probably true in most instances. However, the proportion of lower income voters that vote in a series of elections is not necessarily in direct proportion to the level of turnout over and above the "normal" turnout. For example, turnout in two election years could be 55% and 60% respectively. It is impossible to say whether the difference represents an actual five percent increased participation rate of lower income voters or some combination of mobilized "above-median" and median income voters. In short, the median citizen might not be the same thing as the median income voter. Because of the difficulty of measuring precisely (or at least more accurately) the participation rates of the median income voter, assessing the strength of the median income voter theory is problematic. Husted and Kenny's (1997) analysis which did find evidence of a positive relationship between median income voter participation and government growth represents the best attempt at measuring median income voter turnout among the studies reviewed here. Their measure is based on county by county turnout rates weighted by county family median income and aggregated to the state-level.

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median voter that is decisive (see Tridimas 1993 for an extensive theoretical treatment

The median income voter theory suggests that government growth is a function of the participation rates of voters with incomes that fall below the mean income of the state. As turnout rates for median income voters increase, reelection-oriented politicians will seek their votes through the promise of government benefits. This theory has generally used overall turnout rates as a proxy for median income voter participation. This measure of median income voter participation has failed to uncover the proposed relationship in most studies. Husted and Kenny's (1997) more precise measure of median income voter turnout, however, yields strong evidence in favor of the theory.

Fiscal Constraints Explanation

Growth in the size of state government has not only attracted scholarly attention, but has also resulted in active efforts within state electorates and legislative bodies to enact institutional mechanisms designed to restrict the size and growth of state government. This body of statutory and constitutional restraints includes restrictions on tax and expenditure increases that are generally in the form of fiscal caps requiring state expenditures to conform to some proportion of the total state economic output, tax initiatives, line item veto, and balanced budget requirements.[7]

Much of the force behind the imposition of these limitations on state government growth came from the 1978 adoption in California of Proposition 13 (Cox

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of this issue).

[7] Virtually all states have balanced budget requirements of one form or another. For many of these states, the requirement of a balanced budget is built into the state's constitution and date from the mid 1800's. There is, however, considerable variation in the stringency of each state's requirements (Advisory Commission on Intergovernmental Relations 1986)

and Lowery 1990). While Proposition 13 focused on property tax cuts, a number of other states adopted more general restraints on the ability of state government to both raise and spend money. Much of this effort occurred between 1978 and 1980, though five additional states adopted such measures between 1981 and 1987 (Shadbegian 1996). In all, there are 18 states that currently have tax and expenditure limitations in place.

Since these institutional constraints were designed specifically to curb state government growth, it is surprising that the majority of empirical evidence has failed to find any relationship between such limitations and the size of the state public sector (Bails 1990; Cox and Lowery 1990; Eribes and Hall 1981; Howard 1989; Joyce and Mullins 1991; Kenyon and Benker 1984). Others argue that the focus on state expenditures is misplaced and that states with limitation measures have experienced a decline in state *revenue* (Elder 1992). Moreover, direct participation in state fiscal matters through use of the voter initiative has been found to lead to less state spending (Matsusaka 1995). Evident from much of the literature on tax and expenditure limitations is the absence of a number of important political and socioeconomic factors that play a role in the growth of state government.

Several explanations have been offered as to why these fiscal constraints are unable to effectively restrain state government spending. First, fiscal caps generally constrain government expenditures to some percentage of the total state economy. Therefore, the use of fiscal caps does not require a state to decrease spending and states with at least modest income growth continue to experience government growth

(Shadbegian 1996).[8] However, the presence of fiscal caps does prevent states from increasing the size of government in comparison to states without such limitations. Second, in the case of line item veto authority there is evidence to suggest that the propensity of a governor to use the power of the item veto is often contingent on favorable political incentives (Holtz-Eakin 1988). A third explanation argues that because of the endogenous character of the decision to impose tax and expenditure limitations in response to "fiscally irresponsible politicians," the resulting legislation will be crafted to "minimize the real world impact of these limitations" (Bails 1982, 129). Suggestive of this dynamic is Garand and Kapeluck's (2000) analysis of state budget deficits. They find that tax and expenditure limitations are positively and significantly related to state budget surpluses when government is under divided control. This finding suggests that such limitations may only work when there is some degree of oversight by partisan opposition. Fourth, state government often circumvents tax and expenditure limitations through revenue diversification schemes such as increased user fees and increased tax complexity (Sharp and Elkins 1987) as well as an increased reliance on debt financing (von Hagen 1991). Finally, individual-level analysis of Michigan voters on their reasons for voting either for or against a number of tax limitation proposals suggests that the primary motive for their support was a desire to exercise control over government as opposed to any effort to reduce the size of the public sector (Courant, Gramlich, and Rubinfeld 1980).

In order to curb government growth, voters in many states have approved constitutional and statutory constraints on spending. With the possible exception of

[8] Since government growth in this analysis is operationalized as the ratio of state

the voter initiative, these fiscal constraint mechanisms have failed to achieve the desired effect. The vast majority of studies fail to find a negative relationship between such constraints and the size of the state public sector. Scholars have argued that these limitations on state spending are often ineffective because they are generally passed in states with a history of fiscal irresponsibility. Politicians can bypass revenue constraints through debt financing or manipulation of the tax code.

Political Needs Explanation

Meriting some attention in the government growth literature is the role of certain government service-dependent subgroups within the population that require additional public sector spending. Government growth is hypothesized to be partly a function of the number of people that fall into the high-demand category. Two such groups in this category are school-age children and the elderly. A higher proportion of school-age children in a state places greater demand on education-related expenditures. Likewise, health-related demands of citizens over 65 are expected to translate into greater state assistance. Empirical evidence generally confirms the role of age distribution as a positive factor in government growth. This has been found in international studies (Karavitis 1987; Rice 1986; Swank 1988), studies of United States' government growth (Berry and Lowery 1984; 1987; Lewis-Beck and Rice 1985), and in state-level public sector growth models (Dye and MacManus 1990; Ehrenberg 1973). Garand's (1993) state-level analysis reveals a strong positive effect for the proportion of under eighteen residents; however, a state's elderly ratio led to a decline in state expenditures. Garand and Kapeluck's (2000) analysis of state budget

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public sector spending to total state income, similar findings may be obtained here.

surpluses and deficits reveals that states with comparatively larger young and elderly populations experience smaller surpluses than similarly-situated states.

In addition to age-related political need variables, economic-based factors are posited to contribute to the demands placed on government. In periods of relative economic hardship, more individuals may require governmental assistance than during periods of robust economic performance. High levels of unemployment and inflation, as well as weakening state economic performance have been positively related to public sector expansion in a variety of governmental contexts (Garand 1993; Lewis-Beck and Rice 1985; Rice 1986). In a similar vein, members of minority groups may be particularly susceptible to economic hard times. There is some evidence that the proportion of blacks in a state population increases demand for government services (Garand 1993). Analysis of budget deficits and surpluses in the states also indicates that states with relatively large black populations have significantly lower budget surpluses than other, similarly-situated states (Garand and Kapeluck 2000).

In short, empirical evidence for the political needs explanation of government growth is strong. Economic variables such as inflation, unemployment and changes in a state's economic performance have all been found to exert a positive influence on state government growth. Support for the economic aspect of the political needs government growth theory is evident at the international, national, and state levels. The demographic component of this theory has received limited attention. That which has been done indicates some evidence that certain state population characteristics have a generally positive impact on government growth.

Political Culture Explanation

An additional explanation that has received very little empirical testing in the government growth literature is the role of a state's political culture (but see Garand 1993). It is reasonable to expect that a state with a well-developed liberal tradition may be less reticent in employing the powers of government to pursue policies that result in an increase in the overall scope and size of the public sector. In contrast, a state comprised of relatively conservative citizens will be reluctant to expand the size of government.

The relevance of political culture was identified in early empirical work on the effect of state political systems on public policy (Hofferbert 1968; Sharkansky and Hofferbert 1969; see also Wildavsky 1985 for a theoretical treatment of political culture and expenditure growth). Later work that employed more sophisticated measurement techniques to identify state political culture has demonstrated that states with more liberal political cultures tend to adopt more liberal public policies (Erikson, Wright, and McIver 1989; 1993). Evidence that a state's political culture is instrumental in the growth of its public sector is strong though limited to only one analysis. Garand (1993) finds state policy liberalism to be positively and significantly related to state government size.

The political culture explanation of state government growth has received little attention in the literature. However, given the importance of public opinion on state legislative output, it seems likely that a state with a more liberal population should be more likely to embrace a larger, more active government versus a state with a relatively more conservative citizenry. The one study that has employed a measure of

a state's liberalism indicates a positive relationship between the liberalism of a state's policy output and the size of state government.

Excessive Models of State Government Growth

Excessive models of government growth suggest that government institutions do not faithfully reflect the wishes and demands of the citizens. Rather, the institutions of government work to expand its share of the economy beyond that which is desired by the citizens. The six theories discussed below can be characterized as excessive explanations of state government growth.

Fiscal Illusion

Fiscal illusion refers to a theory of government growth in which taxpayers systematically underestimate the amount they are paying in taxes. Politicians, it is argued, create an illusionary revenue structure through indirect revenue raising techniques (Buchanan and Wagner 1977; Downs 1960; Wilensky 1975). The result is that citizens demand more government than they would if they could accurately assess the attendant costs.

Of course, the question naturally arises as to why taxpayers underestimate their tax payments rather than overestimate them. Buchanan and Wagner (1977) argue that as revenue systems rely on an increasing array of tax instruments (e.g. withholding taxes, sales tax, corporate tax) this complexity weakens taxpayer perceptions of the true tax cost. This not only results in error on the part of taxpayer, but it is also illusionary because the perceptual bias is weighted in one direction—underestimation of tax burden. This hypothesis rests upon a psychological model of information processing that suggests "that the degree to which any message is understood varies

directly with the strength of the particular signal to be received and inversely with the noise present at the time the signal is transmitted" (Buchanan and Wagner 1977, 131). Relating information process theory to revenue structure, Buchanan and Wagner argue that indirect taxing has a less profound impact on taxpayer cost perception than does a simple direct tax. For instance, taxpayer cost perceptions should be more accurate if they are directly billed for their taxes than if the taxes are withheld before the taxpayer receives his paycheck.

Despite empirical evidence that taxpayers do underestimate the amount of tax paid (Buchanan 1967; Goetz 1977; Stubblebine 1963), scholars have questioned the logic of the fiscal illusion hypothesis. First, fiscal illusion requires an active manipulation on the part of reelection-oriented politicians, who through indirect taxation seek to avoid conflicts between "what citizens want and what they pay" (Meltsner 1971). Such manipulation can be thwarted by both the incremental nature of income tax policy (Witte 1982) and social and economic factors that influence tax policy decision-making (Bingham, Hawkins, and Herbert 1978). Second, others (Hansen 1983) have argued that the considerable degree of tax ignorance among taxpayers suggests that "specific tax structures have little additional impact on miscalculations of tax burdens" (Lowery and Berry 1987, 43). Finally, the theory suggests that taxpayers demand greater government expenditures yet fail to see (or downplay) the link with an increased tax burden (Berry and Lowery 1987).[9]

Perhaps the most contentious issue in the fiscal illusion literature concerns just what tax instruments are illusionary and which ones are highly visible (Buchanan

1967). Lowery (1987, 7) writes that "the fiscal illusion construct is difficult to evaluate given the lack of any agreement on precisely what revenue mechanisms are illusionary...[V]irtually every type of revenue mechanism and many major characteristics of the tax system as a whole have been identified as illusionary." Nevertheless, fiscal illusion remains an integral component in many studies of government growth (Berry and Lowery 1984a; 1987; Garand 1988a; 1993; Goetz 1977; Lowery and Berry 1983; Pommerehne and Schneider 1978).

Four characteristics in particular have been cited as having illusory effects. First, withholding provisions, in which taxes are deducted from a taxpayer's wages, are seen as altering taxpayer assessments as to their total tax burden. Since the citizen never sees the money, it is comparatively easier to discount the impact of these taxes on their take-home pay than it would be if they were presented with a weekly bill. Indeed, research indicates that citizens are unable to estimate accurately their income tax payments, the majority of which are collected through withholding mechanisms (Enrick 1964; Farber 1954; Wagstaff 1965). A second source of fiscal illusion is the indirect tax. The corporate tax is an oft-cited example; taxes levied on corporations translate into higher costs for goods and services. Because it is difficult, if not infeasible, for the citizen to calculate the tax-related portion of the price the impact of the corporate tax is effectively concealed (Cameron 1978; Goetz 1977; Wildavsky 1975). A third way for government to obscure the true cost of public sector goods and services is through deficit financing (Buchanan 1967; Buchanan and Wagner 1977; Niskanen 1978; Vickrey 1961). When government expenditures are financed through

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[9] This criticism, however, ignore the real possibility that those demanding greater

debt, fiscal illusion can result since (1) the costs of borrowing money to finance the deficit are postponed, and (2) taxpayers are likely to discount the costs of future taxes as opposed to current taxes. Lastly, the complexity of a revenue system can lead to inaccurate and illusionary perceptions of the cost of government (Craig and Heins 1980). Wagner (1976: 51) provides an insightful (if not inciting) illustration of such a complex revenue system:

> But let a government levy simultaneously a sales tax with various exemptions, a variety of excise taxes, some perhaps collected at the wholesale level, sundry license fees bearing little or no relation to services rendered, and a tax on the profits of business corporations. The formation of an accurate perception regarding the price of public output would be vastly more difficult under this more complex revenue structure.

Wagner's (1976) empirical analysis revealed a strong impact for tax complexity on municipal expenditures, though a subsequent reanalysis, controlling for heteroscedasticity, failed to find a significant effect for the same variable (Munley and Greene 1978). Coneybeare's (1978) analysis of 100 countries finds that the more diverse a country's tax base the higher the tax revenue. Lybeck's pooled cross-sectional time-series (1986) reveals an impact for fiscal illusion, though Cameron's (1978) cross-national study suggests that a reliance on "hidden" taxes led to a decline in public sector expansion. In his analysis of Greek public sector growth, Karavitis (1987) finds the ratio of indirect taxes to total tax revenues has a positive effect on government revenue. Evidence of United States government growth as a function of fiscal illusion, however, is less clear. Of the four indicators discussed above, only the tax complexity variable was found significant and in the expected positive direction

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government expenditure are not the ones paying the taxes.

(Berry and Lowery 1987).[10] On the other hand, the share of government revenues collected through withholding is found to have a *negative* effect on public sector size (Berry and Lowery 1984; Berry and Lowery 1987; Lowery and Berry 1983). Government size is also unaffected by deficit spending levels (Berry and Lowery 1987). It should be noted that the three studies by Berry and Lowery aggregated national, state, and local government spending, therefore their conclusions are subject to the caveats discussed in the preceding chapter.

Empirical evidence for the role of fiscal illusion in state-level government growth studies remains inconclusive. Garand finds the most support for the effect of withholding taxes (1988). His time series analysis suggests that 48% of the states have experienced growth in their public sectors due to this component of fiscal illusion. More modest evidence is found for the complexity of state revenue structures. A later analysis, utilizing a pooled cross-sectional time series research design, however, reveals little support for the revenue system complexity explanation of government growth and an *inverse* effect for the ratio of personal income tax receipts to total state revenue (Garand 1993). On the other hand, Dye and MacManus's (1990) pooled cross-sectional analysis of state government growth indicates a positive impact for the same ratio, though the coefficient falls just short of significance at the .05 level.

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[10] To the author's knowledge, there has been no test for the effect of indirect taxes on United States' government growth. Such a measure is used in state-level analyses (Garand 1988; 1993) and is operationalized as proportion of state government revenues collected through corporate income taxes. Given that it is unlikely that a corporation's sole customer base resides in the taxing state, the lack of significance for this variable should not be taken as evidence against fiscal illusion as a source of

From this discussion, it is evident that citizens are relatively unaware of their full tax burden. This disconnect between what citizens think they pay and what they actually pay constitutes *fiscal illusion*. Despite the identification of an illusionary aspect to taxes, it is difficult to determine which taxes are the most illusory. Indeed, the majority of taxes have some illusionary component. Nevertheless, four such revenue mechanisms have received varying degrees of support in the literature. First, indirect taxes, such as that levied on corporations, are merely passed on to consumers. Since corporations solicit business outside of state borders, determining the effect of such taxes on state government growth rates is problematic for this analysis (see 49n14). Deficit financing and the proportion of tax deducted from a citizen's wages have both been related to increases in government size. Finally, the degree to which a government's revenue sources become more complex (or diversified) has been found to have a positive relationship with government size.

The Bureau Voting Model

One strand of research on government growth has focused on bureaucratic behavior. Couched in a rational-choice framework, this explanation attributes increased public sector size to the self-interested behavior of bureaucrats (Downs 1967). This theory is built largely on Niskanen's (1971) work on bureau behavior, in which the bureaucracy has an effective monopoly on the information required for budgetary decision-making. The bureaucracy is assumed to have an interest in maximizing their budget. The combination of an information monopoly and the

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government growth. Rather, this aspect of the theory should be incorporated in national level studies.

dominant goal of budget-maximization suggests that government spending will exceed that which could be produced in the market-driven private sector. For instance, Niskanen's analysis suggests that whereas a comparable private sector firm will produce the optimal level of output, the budget-maximizing bureau will supply an output that is precisely double the optimal amount of output (1971, 175).

Niskanen's theory of bureaucratic behavior has come under some criticism. Bureaucrats may have other interests besides pure budget maximization. For example, bureaucrats may prefer sufficient discretionary funds, or "slack resources", over and above or in conjunction with a larger budget (Migue and Belanger 1974). Reductions in agency budgets may lead to promotions (Breton and Wintrobe 1975). Bureaucrats also may face constraints on budget-maximization from executive branch politicians (Kamlet and Mowery 1983). A third criticism suggests that the congressional committee that oversees the particular agency is in a superior bargaining position (Thompson 1973). Bureaucrats failing to produce output at the committee's preferred price can be replaced. Thus, budget maximization is dependent on the bureaucrat's skill at "misrepresenting the actual expected costs and outputs" (Amadar et al. 1975) so that legislative committees choose the agency's preferred budget and production level. In light of this criticism, attention has focused on congressional oversight procedures and the role of high-demand committees as essential determinants of public sector growth (Miller and Moe 1983).

Finally, evidence that bureaucrats maximize their budgets through their control of information has proven difficult to test. As Borcherding notes, "testing this requires a competitive budget benchmark and a direct test has so far eluded empiricists in the

field" (1985, 373).[11] Scholars instead have tested the hypothesis indirectly by examining the elasticity of the demand for public services. If a bureaucracy's information monopoly permits it to claim greater demand for government goods and services than currently provided, then increased costs should bear no relationship to a decline in agency output. In economic terms, demand for public goods and services should be inelastic. The majority of empirical tests of this implication have found this not to be the case (Bergstrom and Goodman 1973; Borcherding and Deacon 1972; McGuire 1981; Mushkin 1972; though see Ott 1980 for confirmatory evidence).

Lybeck (1986), on the other hand, makes the sweeping assertion that the relationship between government employees and government expenditures can never be disentangled. Because the value of public output is not determined by market-driven factors, as are private sector goods and services, the value of the output is indistinguishable from the cost of the inputs. In the context of the bureau behavior theory as envisioned by Lybeck, increased public sector expenditures are more or less equivalent to increases in public sector employment. Thus Lybeck (1986, 84) argues that "when regressing the change in the public sector share of production on the change in public employment, one basically has the same variable on both sides." Lybeck, however, fails to consider the extent to which government expenditures are devoted to non-labor purposes. For instance, a rise in welfare payments does not require additional government workers. Additionally, an increase in government expenditures may be due to a raise in government wages with no corresponding increase in public sector personnel.

[11] Niskanen also concedes that "no available study, to my knowledge, directly

Given what seem to be the insurmountable difficulties of testing Niskanen's original theory, attention has turned to the role of the self-interested bureaucrat as voter. Tullock (1972) argues that the growth in public expenditures is a consequence of the increase in the ratio of public to private sector employees. It is that proposition that has garnered the most attention in the government growth literature. Tullock's explanation assumes that government employees are self-interested actors who desire increases in the size of the public sector for their own well-being (Garand, Parkhurst, and Seoud 1991; Sears and Citrin 1982). The bureau-voting model makes three specific assumptions:

1. Public employees hold political attitudes that are more supportive of government spending than those held by other citizens.
2. Bureaucrats are more likely to vote than other citizens.
3. The voting behavior of bureaucrats is significantly different. They are more supportive of candidates advocating increased government spending than are other citizens.

These assumptions find considerable support in a number of individual-level studies. Wolfinger and Rosenstone's (1980) study of voter participation finds that 83% of government workers voted in the 1972 general election versus only 65% of non-governmental workers. Frey and Pommerehne's (1982) analysis reveals that state government workers have 13% higher turnout than private sector workers sharing similar characteristics. A study of Michigan public school teachers reveals a stronger preference for increased school spending than non-teachers (Rubinfeld 1977). Using survey results from the American National Election Study series for 1982, 1984, and 1986, Garand et al.'s (1991) study indicates that government workers are 1) more liberal than their private-sector counterparts, 2) much more likely to vote than other

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addresses the oversupply hypothesis" (1975, 624).

citizens, and 3) support Democratic candidates at a higher rate than non-public sector employees. Similar results are found in cross-national studies as well (Blake 1991; Blais, Blake, and Dion 1991). This self-interested behavior is also revealed in Sears and Citrin's (1982) study of support for California's Proposition 13, a 1978 anti-tax initiative. State government workers were much less likely to support the initiative than other similarly situated citizens, presumably because public workers sensed the spending cuts that would follow the passage of Proposition 13 were incompatible with their self-interest.

Despite consistent evidence of self-interested bureaucratic behavior at the individual-level, aggregate-level research uncovers mixed support. Nonetheless, the bureau voting explanation receives more confirmation than many of the other theories tested in the literature. On the one hand, research by Lowery and Berry (Berry and Lowery 1984; Berry and Lowery 1987; Lowery and Berry 1983) suggests that the ratio of public to private sector workers is *negatively* related to the size of the United States government. On the other hand, Ferris and West (1995) find public employment to exercise a positive influence on United States government growth. Garand (1988) finds considerable support for the bureau voting explanation at the state level. In 36 of the 50 states, the proportion of state government workers is a positive and significant factor in his model of public sector growth. Later research by Garand (1993) confirms this finding. Dye and MacManus (1990) report similar results in their analysis of state public sector growth.

As noted in the text, Niskanen's (1971) original theory of bureaucratic behavior, positing government growth as a function of a bureau information monopoly

has metamorphosed into a theory which attributes increases in the public sector to self-interested voting behavior on the part of the bureaucrat. Bureaucrats, the theory argues, see an advantage in growing the size of government. Thus, they tend to vote for candidates that promise increased spending. There is strong evidence that not only are bureaucrats more supportive of government spending and vote accordingly, they also turn out to vote at higher rates than their public sector counterparts. Thus, the core hypothesis of the bureau-voting explanation is that a higher proportion of government employees in a state will lead to an increase in the size of the public sector. Empirical evidence in support of this hypothesis is strong, particularly at the state-level.

The Intergovernmental Grant Explanation

The intergovernmental grant explanation attributes government growth in the American states to increased levels of federal aid. This may seem like an obvious consequence—additional fiscal resources should result in a growth of state government if growth is measured as state government expenditures as a proportion of total state income. Fundamental to this interpretation of the role of intergovernmental grants is the notion that such grants are merely added to internal state fiscal resources so that an additional federal dollar translates into a corresponding one dollar increase in state expenditures.

If intergovernmental grants lead to increased state expenditures without a concomitant increase in state-derived revenue, then it can be concluded that they perform a replacement function. Federal money takes the place of state funding, with the savings passed on to the state taxpayer. However, there is considerable debate as

to whether these grants substitute for state revenue or actually serve to stimulate state spending. Of course, it is possible that intergovernmental grants do both simultaneously. The question then becomes to what degree do intergovernmental grants increase state expenditures over and above the dollar amount of the original grant.

There is considerable empirical evidence that intergovernmental grants result in state spending that is higher than what it would have been otherwise (Gramlich 1969; Gramlich 1977; Gramlich and Galper 1973; Kurnow 1963; Sacks and Harris 1964; Wilde 1968). This phenomenon has been labeled the "flypaper effect" because federal money "sticks" with the recipient government rather than resulting in lower taxes (or a decreased state revenue burden). This effect is not only found in conditional or matching federal grants, both of which require an investment from the grant-recipient government, but also from non-matching grants such as general revenue sharing and unconditional grants-in-aid. On the other hand, there are a number of studies that find that intergovernmental grants play more of a replacement or substitutive role (Borcherding 1977a; Dye and MacManus 1990; Horowitz 1968; Garand 1988; O'Brien 1971). The coefficient for the intergovernmental grant variable in these analyses is less than one, which indicates a less than one-to-one correspondence between federal aid and state spending. Thus, while grants increase the size of the state public sector, they tend to do so with little increased burden on state taxpayers.

In sum, intergovernmental grants can have three effects on state government growth. The influx of federal aid can substitute for state-derived revenue. If this is

the case, there is no effect of federal grants on government growth. State government size is unchanged. While state spending does increase, the cost of such spending is not borne by the state citizens. On the other hand, intergovernmental grants can stimulate state spending. For instance, many federal grants require state matching funds or come with strings attached (conditional grants). This form of intergovernmental aid serves to stimulate state spending. Finally, the third possible effect of intergovernmental grants on state government size is that federal aid can both substitute for state revenue and result in some increased expenditure. Overall, there is strong empirical evidence that intergovernmental grants result both in a replacement of state-derived funds and serve as a stimulant for greater state spending.

The Constituency Size Explanation

The constituency size explanation is among one of the more recent explanations for why government expenditures increase over time. This theory suggests that the number of constituents per legislator is positively related to government growth. At the core of this explanation is the proposition that public bills become more "expensive" to produce as the number of constituents per legislator declines. Furthermore, as the production of legislation declines, so will the size of government. Thornton and Ulrich (1999) undergird their constituency size theory with three premises. First, the cost of monitoring a representative increases the greater the number of constituents per legislator. The citizen is less likely to know their representative or have direct knowledge of their voting record. Second, as a district becomes larger there is a greater degree of heterogeneity among the constituents. District heterogeneity not only makes it difficult for the representative to achieve a

clear signal from his constituents (Ardoin and Garand 2000), but also makes trading votes with other representatives less costly. A district with diverse interests is less likely to present a legislator with a clear majority in favor of a particular bill, thus the potential for electoral retribution poses less of a threat. Third, smaller constituency size implies a larger legislature. The larger the legislature the less influential the individual representative, a result that McCormick and Tollison (1981, 33) term the "small-fish-in-the-pond effect." Based on these premises, Thornton and Ulrich (1999) suggest that the cost of a vote to organized interest groups will decline in a large legislature. However, there will be an increase in cost as well because more votes must be purchased. Moreover, since larger legislatures will experience greater turnover than smaller legislatures, this will also increase the price of producing legislation. And increased legislative costs leads to diminished production.

In short, Thornton and Ulrich (1999, 592) argue that, "smaller constituency size ... acts as a check on the expansion of government because it makes public bills more difficult to pass and forces legislators to better represent the interests of their constituents." The critical assumption is that citizens will desire less government spending than elected officials themselves. Two recent studies suggest this assumption may be warranted. Peltzman's (1992) analysis indicates that citizens tend to be more fiscally conservative than their representatives. Other research indicates that in states with the initiative process, which requires more active participation from the citizens on fiscal matters, taxes and spending levels are lower (Matsusaka 1995).

Support for the constituency size theory is strong. First, Gilligan and Matsusaka (1995) find that state expenditure is positively and significantly related to

the number of seats in the legislature. More direct evidence is found by Thornton and Ulrich (1999), who measure constituency size as the ratio of constituent population to legislator. The constituency size in both a state's House and Senate positively and significantly impact state government per capita spending. This effect is considerably stronger for the Senate versus the House; an additional representative results in a spending reduction of 5.5 million dollars and an additional senator leads to a reduction of 40.5 million dollars (Thornton and Ulrich 1999, 597n15).

In sum, the constituency size theory of state government growth suggests that a decline in the ratio of senators and house members to constituents is positively related to public sector size. This explanation is a combination of principal-agent theory and transaction cost theory. Principal-agent theory suggests that the agent, or legislator, is subject to less monitoring as the number of principals, or constituents, increase. First, the cost of monitoring is hypothesized to increase as constituents become more numerous. Second, legislator perceptions of the policy preferences of his or her constituents declines as additional constituents are added to the district. This lack of consensus leads to diminished accountability and, it is argued, diminished accountability enables trading votes with other legislators less costly. Transaction costs theory, on the other hand, suggests that the cost of producing legislation should decline as the price of an individual's vote decreases. The argument is that a smaller constituency size is related to a larger legislature. A larger legislature suggests increased costs for interest groups due to the greater number of votes that must be "bought". In addition, the higher turnover rate in a larger legislature should make the cost to interest groups of "purchasing" votes over time will also increase. And at low

costs, constituents may be better able to compete with the incentives offered by interest groups.

There is strong evidence that smaller constituency size is related to a smaller state public sector. However, this evidence is confined to only one study.

Divided Government

Divided government may also be a factor in state public sector growth. The hypothesis advanced here is that the conflicting policy aims of a divided state government delegation lead to increased spending as a result of political compromise. The conventional wisdom has held that divided government causes gridlock and prevents government action (Cutler 1988; Ginsberg and Shefter 1990; Sundquist 1988). However, empirical analysis has failed to link divided government with diminished legislative output. Mayhew's (1991) landmark analysis of the effect of divided or unified control of the federal government on the production of important legislation reveals no significant differences (though see Kelly 1993). Whether government is divided or unified seems to make no difference in such diverse political decision-making areas as treaties (King and Ragsdale 1988), Senate Supreme Court Justice confirmations (Cameron, Cover, and Segal 1990; Lemieux and Stewart 1990), and presidential nominations to executive office (Fiorina 1996).

Briefly stated, the notion that divided government stands in the way of an activist government is far from certain. The important question for this analysis is whether the presence of divided government leads to greater government expenditures. This question has been tested empirically by McCubbins (1991). He argues that parties in an environment of divided government control seek compromise to avoid

policy gridlock. In order to assure increased expenditures on one party's favored program, the party will agree to increase spending on the other's preferred program. This budgetary outcome, in turn, leads to an overall increase in total government expenditures in times of divided government. Examining divided control of the United States House and Senate from 1948 to 1985, McCubbins finds the presence of split control positively related to congressional appropriations levels.

The evidence that divided control leads to increased spending has led others to examine the relationship between split control and deficits. While McCubbins (1991) in the same study finds a significant increase in deficit spending under conditions of a divided United States legislative branch, divided control of the executive and legislative branches does not exhibit a similar dynamic. Alt and Stewart (1990) also find no relationship between divided control and unbalanced budgets at the national level. Evidence at the state-level is also lacking that divided party control leads to a significant difference in deficits or debt accumulation. Clingermayer and Wood (1995) report that the only divided government variable that has an impact suggests that a Democratic governor with a Republican legislature actually leads to *less* debt, and not more debt as the gridlock theory predicts. A recent analysis by Garand and Kapeluck (2000) also indicates little effect of divided government on state budget deficits and surpluses. Indeed, divided control of state government actually results in modestly higher surpluses than states under unified control. Alt and Lowry's (1994) study of state budgets from 1968 to 1987 reveals no significant differences between state governments with either unified or split-branch control in their ability to react to budget shortfalls (or revenue shocks). However, they do identify disparities between

the level of spending "preferred" by different party configurations in state government. State government under complete Democratic control prefers a higher percentage of per capita income for public spending. The second highest share belongs to the split legislature configuration, followed closely by the split branch configuration. The lowest "target" share belongs to a unified Republican configuration.

One possible reason that divided government has failed to lead to deficit spending at the state level is due to the prevalence of state balanced budget requirements. Many of these were put into effect in the early to mid-1800s (Heins 1963). Balanced budget requirements, long a source of debate at the national level, have been instituted in all states, save Vermont. There is, however, significant variation in the stringency of the provisions. According to the National Association of State Budget Officers (1992), balanced budget requirements in the 49 states fit into roughly three classifications. The weakest provision requires that the governor submit a balanced budget. More stringent is the requirement that balanced budgets must be passed by the legislature. The strictest provision requires that not only must the budget be balanced, but also that no deficit is permitted to be carried over into subsequent years. Categorizing states by the stringency of their balanced budget requirements, Alt and Lowry (1994) find that states with more restrictive requirements are less likely to incur ongoing deficits. This finding is also supported by Poterba's (1994) analysis of state divided government reaction to revenue shocks.

Two conclusions emerge from the preceding discussion. First, there is a lack of evidence that divided government at the state level is related to deficit spending.

This may be due to balanced budget requirements. Second, national-level studies have linked split control with increased government expenditures. There remains, however, an option for divided state government under pressure to increase expenditures for their preferred programs. Spending can increase without running a deficit if state revenue is increased. One obstacle to minority governors seeking to pass budgets that will require greater state revenue is assembling a majority of legislators willing to support such bills. Overcoming this impediment should be partly a function of the percent of votes required to pass tax increases. Thus, the presence of supermajority requirements for passage of tax bills should make achieving compromise more difficult in a government under split control. It should be comparatively easier for governors to marshal support for and pass a budget that requires state revenue increases if they need the support of 50% plus one instead of two-thirds of the legislatures in both houses. As of 1992, 11 states have supermajority voting requirements for tax increases.[12] Arkansas was the first state (1934) with supermajority requirements, though they have become steadily more popular (Tolbert 1998).

Thus, the tentative hypothesis offered in this analysis is that prolonged divided control of state government will lead to growth in the size of the public sector. Divided government leads to conflicts over the prioritization of spending in different policy areas and programs. Minimization of this conflict is achieved through a compromise resulting in spending increases in programs favored by both opposing parties-in-government. Given the virtual omnipresence of balanced budget

[12] These states are Arizona, Arkansas, California, Colorado, Delaware, Florida,

requirements in the states, the degree to which divided state governments are successful at raising expenditure levels is dependent on the number of legislators required to pass a tax increase.

Unfunded Mandates

One final explanation of government growth concerns the role of unfunded mandates on state government growth. The United States' federal system has gone through at least four permutations since the nation's founding (Inman and Rubinfeld 1997).[13] Until the War Between the States, federalism could be characterized as a system of "dual sovereignty" in which both the national and state governments had separate responsibilities. Dual sovereignty gave way to "centralizing federalism" that ushered in an increased, yet still moderate, role for the federal government. Depression Era policies designed to mitigate the economic hardships faced by many led to increased federal government influence. Finally, in the mid 1960's the federal government turned its attention to issues of civil rights. Beginning with the Civil Rights Acts of 1964 and the Voting Rights Act of 1965, the federal government has taken a more active and coercive role in shaping and prioritizing state-level policy goals (Scheiber 1969). Passage of civil rights bills was followed by President Johnson's series of Great Society programs that directed national government attention to alleviating conditions of poverty and inequality in the states. Though much of this federal activity was financed through grants-in-aid, there were also a number of regulations passed at the federal level that imposed significant costs on

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Louisiana, Mississippi, Oklahoma, South Dakota, and Washington.

state government. The lack of federal funding for the implementation of these new regulations gave rise to the term "unfunded mandate." More recent examples of unfunded mandates include welfare reform enacted in 1988, the Clean Air Act Amendments of 1990, the Americans with Disabilities Act of 1990, and the Brady Bill of 1993. The proliferation of unfunded mandates inspired a number of state and local officials to call for a "National Unfunded Mandates Day" in October of 1993. Recognition of the problem has also prompted national legislation prohibiting the passage of regulatory laws that impose costs on state and local government without compensation, though the legislation applies only to future laws.

This explanation of state government growth, it could be argued, belongs in the responsive category. Citizens are represented at both the federal and state level, hence federal legislation requiring greater state expenditures is legitimate because people are promulgating their policy goals in their capacity as federal citizens. However, some theorists have argued that the interplay of federalism and legislative incentives undermines the voter's ability to reign in government growth. Paul Peterson (1995) has suggested that the increase in unfunded mandates is linked to the declining importance of the parties. In an era of dealignment, members of congress have come under increased electoral pressure. When voters are less concerned about a candidate's party affiliation and more concerned about what the legislator has done for the district, there is a heightened incentive for members of congress to be responsive to their constituents. This increased responsiveness has led to more pork barrel projects and growth in government expenditure. While the modern congressman is

[13] Some argue that there have been five phases of federalism in the United States, with

willing to be identified with bringing federal projects and programs into the district, he or she is reluctant to pass the tax increase required to fund such expenditures. Moreover, the relative lack of party discipline prevents the individual member of congress from being held accountable. The combination of these factors has led members of congress to pass the redistributive burdens on to state and local governments. In this way, they are credited for providing goods and services to their constituents but escape blame for the increased taxes required to finance such activity.

It is argued here that since the mid 1960s unfunded federal mandates have positively impacted the size of state government. As Peterson (1995) suggests, the increase in unfunded mandates may be a function of the declining importance of party affiliation in congress. Legislators want to be identified with bringing federal projects and programs to their district but are unwilling to raise the taxes required to finance such endeavors. Because the federal government lacks the resources necessary to fund many of these expenditures, it simply passes the revenue burden on to state governments. The consequence is an overall increase in the size of state government.

Summary

The preceding review of the government growth literature highlights thirteen distinct models that explain increases in the size of the public sector. These models can be classified broadly as either excessive or responsive explanations for government growth (Buchanan 1977; Lowery and Berry 1983). This classification relies on a particular model's assumptions regarding the role of choice in the institution that is hypothesized to result in a larger public sector. The following

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the latest period of "new federalism" beginning under President Reagan.

section summarizes the essential facets of the thirteen models by placing them either in the excessive or responsive category of government growth. Not included in these categories is the effect of the different public and private price deflators. This government growth explanation is theoretically difficult to classify as either responsive or excessive. An explanation for government growth that represents an unavoidable economic dynamic that is due to a market economy is in a class by itself.

Responsive Explanations

Responsive government growth explanations assume that any increase in the size of the public sector is a reflection of the underlying wants or demands of the population. The institutions of government through which decisions affecting the size of government are made are neutral in regard to whether the choice is to expand or reduce the public sector. Seven of the models tested in this analysis may be considered responsive explanations of government growth: Wagner's Law, party control, interparty competition, median income voter, tax and expenditure limitations, political needs, and political culture. Wagner's Law claims that externalities resulting from industrialization require an increased role for the public sector. The party control theory makes the argument that left-leaning parties are more likely to turn to public-sector solutions to societal problems. Parties looking for votes may also promise and deliver government benefits in the face of increased party competition. The likelihood of increased government redistribution, so argues the median income voter theory, is greater the more disparity there is between the mean income and the median income among voters. The combination of the practically universal right of suffrage and the voting power of the median income voter suggests that government redistribution will

occur as the median-mean voter income ratio declines. The political needs explanation points to government service-dependent groups within a population and economic downturns as factors driving increases in the size of the public sector. The political culture of a state may also lead to different attitudes regarding the role of government. More liberal state political cultures should be more accepting of a large public sector. Finally, tax and expenditure limitations passed by state government represent a desire by a state's citizens to stem the growth of the public sector.

Excessive Explanations

Excessive explanations of government growth interpret increases in the public sector as a consequence of institutions that expand the size of government beyond that desired by the public. There are six explanations tested herein that fall in this category: fiscal illusion, bureau voting, intergovernmental grants, constituency size, divided government, and unfunded mandates. Fiscal illusion suggests that taxpayers systematically underestimate the taxes they pay. Bureau voting theory argues that an ever-increasing pool of government workers exhibits self-interested voting behavior. Grants from the federal government, it is proposed, do not necessarily substitute for state-derived funds. A higher ratio of constituents to representatives leads to an increased probability of a heterogeneous district and a reduction in the clarity of the constituency signals. This leads to an unresponsive legislature. Divided government leads to an inability for state government to pursue a consistent policy vision. The multiplicity of demands, coupled with balanced budget requirements, leads to an overall increase in state government expenditures. Government expenditures, in the absence of supermajority tax legislation voting requirements, are financed through tax

increases. Finally, unfunded mandates are the result of federal-level politicians enacting policies and regulations that place financial burdens on sub-national governments. Unfunded mandates, it is argued, are the product of the interplay of federalism and the incentive structure of a dealigned legislative branch. What makes these six theories excessive is that their effects are not neutral, rather all tend to expand the size of the public sector regardless of the actual needs or demands of the public. Barring a change in the law or the Constitution, the processes underlying these six models are beyond the control of the citizen.

Chapter 3: Data and Methods

Estimating a Pooled Model of State Government Size

As noted in the introduction, past research on the size of the public sector in the American states has used either cross-sectional or longitudinal designs to determine the empirical validity of competing models of government growth. One notable exception is Garand's (1993) analysis of state government growth. Although these approaches are not inappropriate, each allows one to examine only one part of the covariation among the dependent variable (i.e. government size) and a number of independent variables over a given period. In many instances, variation in a given dependent variable occurs both cross-sectionally and longitudinally, yet the reliance on either a cross-sectional *or* longitudinal research design means that only part of that variance is subjected to analysis. When data are available across cases and across time, a pooled cross-sectional and time-series design can be utilized to explore more fully the relationships of theoretical interest. Pooled models are particularly appropriate for studying the American states, and have been used in a number of research settings (e.g. Brace 1989; 1991; 1993; Garand and Monroe 1991; Peterson and Rom 1989).

Pooled cross-sectional time-series designs involve pooling data from the N cross-sections and T time points to create a data matrix of N * T cases (Kmenta 1986; Sayrs 1989; Stimson 1985). When pooled data are available, ordinary least squares (OLS) regression can occasionally be used to estimate the parameters of the

theoretical model of interest. As Sayrs (1989, 11) notes, the standard pooled OLS model would be as follows:

$$Y_{nt} = a + X_{knt}B_k + u_{nt}$$

where Y is the dependent variable, measured for the n_{th} case and the t_{th} time period, X is the independent variable, a is the intercept term, B is the unstandardized regression coefficient for the k_{th} independent variable, and u is the error term for the n_{th} case and the t_{th} time period.

Unfortunately, while pooled designs are quite powerful, they often involve two violations of OLS assumptions concerning the error term. First, because of the temporal component of the data, the error terms are not independent over time, meaning that within each time series errors are often correlated over successive lags. Although unbiased, OLS coefficients will be inefficient if autocorrelated error terms are present, with the result being that standard errors will be inflated and traditional tests for statistical significance will be affected. Second, there is a possibility that error terms across cross-sections may be heteroscedastic, meaning that the residuals derived from the OLS estimates will have unequal variances across units. Here again, to the extent that the error terms derived from a model are heteroscedastic, OLS coefficients will be unbiased but inefficient.

Correcting for these two potential violations involves a two-step process. First, one must diagnose the OLS version of the government size model to identify the existence of autocorrelated and/or heteroscedastic errors. An examination of the autocorrelation function (ACF) and partial autocorrelation function (PACF) revealed

strong evidence of first-order autocorrelation for all specifications of the government growth model. Moreover, examination of the residual variances derived from the OLS estimates across states and across years revealed that the residual variances were unequal across both states and years. Overall, it is evident that OLS estimates of the government growth models were inefficient due to violations of both the serial independence and homoscedasticity assumptions pertaining to the error term.

In order to correct the OLS estimates for violations of both serial independence and homoscedasticity, several alternatives are available. One of the most commonly used approaches is the Least Squares Dummy Variable (LSDV) technique, which involves including in one's model a series of state and year dummy variables to capture the contaminating influences of cross-sectional heteroscedasticity and cross-temporal autocorrelated errors. While this is a commonly used technique, the inclusion of dummy variables representing each state and year reduces significantly the degrees of freedom available for estimating the parameters of the model. Another oft-used technique is feasible generalized least squares (FGLS). This procedure corrects for serial correlation of the errors by first estimating the equation with OLS and then uses the residuals derived from this estimation to estimate the unit-specific (in this case the state-year) serial correlation of the errors. These estimates are then used to turn the model into one with serially independent errors (Beck and Katz 1995, 637). Once cured of serial correlation, the transformed model is re-estimated and the resulting residuals are then used to estimate the contemporaneous correlation of the errors and the data is transformed one final time to allow for OLS estimation.

In this analysis, I rely on OLS with Panel Corrected Standard Errors (PCSE), a procedure developed by Beck and Katz (1995). This technique has two advantages over feasible generalized least squares (FGLS). First, it is more appropriate when the number of cross-sections approximates the number of years covered in the data set. Second, OLS in combination with PCSE yields more accurate estimates of the standard errors of the estimated coefficients than FGLS. Estimates derived using the PCSE approach provide a more precise indication of the true variability of the estimated standard errors.

Data and Measurement for 13 Models

The following section discusses the measurement of the variables used to test the 13 theories discussed in the preceding review of the government growth literature. A summary of the measurement of the variables described below can be found in Appendix 2. Descriptive statistics for the two dependent variables and all independent variables are presented in Appendix 3. Appendix 4 contains a table of bivariate correlations between the independent variables used in this analysis. The dependent variable in the models covered below is either state government expenditures as a proportion of total state personal income (Undeflated State Government Size) or state government expenditures deflated by the state and local government deflator (Deflated State Government Size). Ideally, this study would want to incorporate state-specific price deflators. These have recently become available (Berry, Fording, and Hanson 2000) for private sector inflation rates, though they are only available as far back as 1960. Because of this, the following analysis uses national-level price deflators. Price deflators for state government are based on public sector inflation rates obtained from

the U.S. Bureau of Economic Analysis. The lack of state-specific public sector inflation rates presents the possibility that for those states enjoying economies better than the national average, the national-level price deflator will underestimate the actual public sector inflation rate. Conversely, states with economies that fall below the national average will be assigned a public sector inflation rate that exceeds their actual rate. Unfortunately, there are states that consistently fall either below or above the national average. The consequence of this is that for those states that exceed the national average, it may be that the deflated size of their government is actually larger than the value used in this study. The opposite holds true for those states falling below the national mean. Unfortunately, there is no adequate solution to this problem.

The population of a state is a control variable used in all the models of state government growth. As discussed in the previous chapter, states with larger populations enjoy an economy of scale that can push down costs on certain public goods. For instance, a country with 1000 residents is better able to finance the construction of a $100,000 lighthouse than one with only 100 residents. The more populous country faces a per capita bill of $100 versus $1000 for the smaller population country. Thus, residents of a more populous state should be better able to bear the cost of public projects than residents of smaller states. Hence, if the primary activity of state government is providing public goods, the population variable should have a negative coefficient. On the other hand, much of state government expenditures could be devoted to redistribution of wealth, through transfer programs like welfare and public housing. Redistributive efforts by the state government are not helped by economies of scale. Therefore, a positive coefficient for population

suggests a greater role for redistribution. With these issues in mind, the core model of state government growth is:

$$\text{Government Expenditures}_{i,\,t-1} = a + b_1(\text{Population}_{i,\,t-1}) + e_{i,\,t-1}$$

Responsive Theories of Government Growth

Wagner's Law

An exhaustive modeling of the processes underlying Wagner's Law would require a wide array of many independent variables representing the full contours of industrialization, income, population density, and urbanization. A reasonably full specification of Wagner's Law is estimated by Lowery and Berry (1983) and Berry and Lowery (1984; 1987), and Garand (1988; 1993) estimates for each of the American states a somewhat circumscribed version of the Lowery and Berry model. The variables used in these studies are employed below, with some modification and addition. Following Boix (2001), per capita income is logged to take into account the possible non-linear relationship to government growth. Second, this study will test for the effect of industrialization on public sector growth using manufacturing income as a proxy. The following model is suggested to capture the more salient components of Wagner's theory:

$$\text{Government Expenditures}_{i,\,t-1} = a + b_1(\text{Population}_{i,\,t-1}) +$$
$$b_2(\text{Logged Per Capita Income}_{i,\,t-1}) + b_3(\text{Population Density}_{i,\,t-}) +$$
$$b_4(\text{Urban Population}_{,\,t-1}) + b_5(\text{Manufacturing}_{i,\,t-1}) + e_{i,\,t-1}$$

where Logged Per Capita Income is an indicator of state wealth. Population Density is the state population divided by the number of square miles in the state; Urban Population is the proportion of the state population that lives in urban areas as reported

by the U.S. census; and Manufacturing is manufacturing income as a proportion of total state income. The coefficients for all four of these variables should be positive for Wagner's Law to have empirical support.

Party Control

The party control model suggests that Democratic Party-controlled state government should result in higher spending than Republican Party-controlled state government. As discussed in the literature review, evidence that party control of government effects public sector size is scant. One of the few studies to report a strong relationship cites the impact of party control over a given number of years (Blais, Blake, and Dion 1993). Blais, Blake and Dion (1993, 55) make the argument that "parties matter only in the long haul." It takes time for government programs to be established and exert an upward influence on the budget, thus the effect of party control is only evident after a number of years.

The following model tests this variation of the party control theory of government growth. Following the measurement convention set forth by Berry and Lowery (1987), an index of Democratic Party control of state government is created. Democratic Party control of the governorship translates into a value of .50, while Democratic Party control of the Senate and the House is given a value of .25 for each. The use of a dummy variable rather than a continuous measure of Democratic Party strength in the two legislative bodies is warranted, since, as Kiewiet and McCubbins (1991, 187) have held, "The possession of a majority is in and of itself of critical importance" for the execution of the controlling party's policy preferences.

To test for the effect of how long a state's party composition has remained unchanged on state government growth, I incorporate the research design of Blais, Blake and Dion (1993). A dummy variable is created that distinguishes unchanged party composition in a state from one that does change. This paper adopts the threshold of .25 or less fluctuation in the party composition score to classify unchanging from changing state governments. The variable indicating change equals zero if a state's party composition score changes by more than .25 for each of the previous five years and one if there has been no change. This variable is then used to create the interaction variable: party composition score for state year * change. For illustrative purposes, Table 1 below gives all the possible values for this variable. This variant of the party control explanation of government growth suggests the following model:

$$\text{Government Expenditures}_{i,\,t-1} = a + b_1(\text{Population}_{i,\,t-1}) + b_2(\text{Party Control}_{,\,t-1}) + b_3(\text{Party Tenure}_{,\,t-1}) + e_{i,\,t-1}$$

where Party Control is an index of Democratic Party strength in a given state year. For instance, a state with a Democratically-controlled governorship and House would take a value of .75. Party Tenure is an interaction variable that controls for the impact of an unchanging Democratically-controlled state government (in the previous five years). For instance, if the current party composition score for a state is .50, and has not fallen below .25 or gone above .75 for the past five years, then this would be considered an unchanging state government and would be assigned a value of one multiplied by the value of Party Control. The value of the interaction would be .50 * 1.00, or .50. To take an extreme case, if both the state's governorship and both

Table 1. All Possible Values for the Party Control and Party Tenure

Value of Party Tenure	Changed in the past 5 years? 1 = No, 0 = yes	Value of Party Control Variable (Sum of →)	Democratic Governor .50 = Yes 0 = No	Democratic Senate .25 = Yes 0 = No	Democratic House .25 = Yes 0 = No
0 (0)	1 (0)	0 (0)	0 (0)	0 (0)	0 (0)
.25 (0)	1 (0)	.25 (0)	0 (0)	.25 (0)	0 (0)
.25 (0)	1 (0)	.25 (0)	0 (0)	0 (0)	.25 (0)
.50 (0)	.50 (0)	.50 (0)	0 (0)	.25 (0)	.25 (0)
.50 (0)	1 (0)	.50 (0)	.50 (0)	0 (0)	0 (0)
.75 (0)	1 (0)	.75 (0)	.50 (0)	.25 (0)	0 (0)
.75 (0)	1 (0)	.75 (0)	.50 (0)	0 (0)	.25 (0)
1 (0)	1 (0)	1 (0)	.50 (0)	.25 (0)	.25 (0)

branches of the legislature had been under complete Democratic control for the past five years, *and* Democrats also controlled both branches and the governorship in the current year, the interaction variable would take a value of 1.[1] This is the highest value the variable can take. Because a value of one indicates Democratic hegemony in the state, it is precisely in this situation that one should expect the most growth in state government. So to conclude, the coefficients for both variables (Party Control and Party Tenure) should be positive and significant, if growth in a state's public sector is a function of party control of state government.

Interparty Competition

The theory of interparty competition suggests that government will grow as a result of political parties expanding their pool of potential supporters in the face of stiff competition for office. In a state with 70% of the vote regularly going to Democratic candidates, the incentive for the Democratic Party to broaden its base of support is less than in an electoral environment where the margin of victory is closer to zero.

The level of interparty competition is measured by using the absolute value of the difference between the Democratic vote percentage and 50%. Ideally, this analysis would employ a variable based on party competition in state-level elections. This

[1] Blais, Blake and Dion's (1993) operationalization of this variable is admittedly difficult to understand. Though I have tried to simplify the explanation of the variable construction above, it may be useful to read the explanation given by the authors: "An unchanging government is here defined as one whose party composition (my Party Control) has remained the same over the previous five years. The "change" variable takes the value of one whenever that condition is not fulfilled. It should be noted that I coded my "change" variable to be one if there is "no change", in order to facilitate interpretation of the coefficient.

would involve data on both gubernatorial and state legislative races. Unfortunately, such data are not available for the entire period. The alternative measure used here employs state presidential election results. In order to control for certain candidate or election-specific deviations from a state's normal presidential election vote, the variable is measured as an average of the previous two presidential elections. High scores for this variable indicate relative safety for the party in power while low scores indicate a high degree of interparty competition in a state.

Along with interparty competition, the frequency of elections is also posited to play a role in increased government spending and state government growth. The interplay of an upcoming election and the need for parties in a competitive context to appeal to unmobilized voters may lead to additional state government spending. To capture this effect, a dichotomous variable is included to indicate the presence of an election year. Below is the model to be estimated:

$$\text{Government Expenditures}_{i,t-1} = a + b_1(\text{Population}_{i,t-1}) + b_2(\text{Interparty Competition}_{,t-1}) + b_3(\text{IPC}_{,t-1} * \text{Election Year}_{,t-1}) + e_{i,t-1}$$

where Interparty Competition is the absolute difference between the average Democratic presidential election margin from the previous two elections and 50%. A higher value for this variable indicates less party competition. If interparty competitiveness fosters government growth, Interparty Competition should be negative and significant. If state government growth is contingent on the interplay of partisan competition and election timing, then IPC * Election should be negative and significant. The inclusion of this interaction variable requires some caution in

interpretation. The coefficient for IPC * Election indicates the difference in the effect of competition in election and non-election years.

Median Income Voter Model

Typically, the median income voter model has used levels of turnout to measure median income voter participation. Since the likelihood of voting is positively related to income (Franklin 1996; Rosenstone and Hansen 1993), increased turnout translates into increased voting participation of lower income voters. As argued in the discussion on the median income voter model, this measurement method is problematic. Increased turnout does not necessarily entail greater participation of lower income voters, nor do turnout differences between elections imply precise differences in the level of median income voter turnout.

Husted and Kenny (1997) have created a more nuanced measure that better estimates the income differential between those voting and the general population. They use turnout, population, and data on median income at the county level to create a ratio to test the median income voter model of government growth. The measurement of this variable is as follows: INC_{VOT}/INC_{POP}, where INC_{VOT} weights each county's median family income by the number in the county who voted, and INC_{POP} weights each county's median family income by the county's voting-age population. The county-by-county estimates are then aggregated to the state level. Essentially, this measure is an estimate of the ratio of the income of voters to that of the voting-age population. An increase in turnout among lower income voters should correspond to an increase in turnout in poor counties. This well lead to a decline in the ratio INC_{VOT}/INC_{POP} . Thus, as the ratio becomes smaller, this suggests a fall in the

income of those voting relative to that of the population. Turnout levels come from the highest level election in each year (i.e. from president, governor, senate, to house). Voting age population and median family income are interpolated from nearby censuses, if necessary. This variable will be used to estimate the participation levels of the median income voter in each election, in each state, from 1951 to 1990. Regressions using Husted and Kenny's (1997) median income voter variable are based on a 46 state sample. Their data set, for various reasons, excludes Alaska, Hawaii, Minnesota, and Nebraska. These states, with the exception of Alaska, are included in my analysis. The median income voter participation level then is included in the following model:

$$\text{Government Expenditures}_{i,t-1} = a + b_1(\text{Population}_{i,t-1}) + b_2(\text{Median Income Voter}_{,t-1}) + e_{i,t-1}$$

where Median Income Voter is the estimated participation rate of the median income voter in a given state election as a proportion of the total voting-age electorate. For the median income voter explanation of government growth to be supported empirically, the coefficient for Median Income Voter should be negative and significant.

Because this data is available for only a part of the period under examination, this analysis will also employ the conventional level of turnout as well in separate model estimations. The median income voter participation level using turnout levels is specified in the following model:

$$\text{Government Expenditures}_{i,t-1} = a + b_1(\text{Population}_{i,t-1}) + b_2(\text{Turnout}_{,t-1}) + e_{i,t-1}$$

where Turnout is the proportion of the voting-age population casting votes in the previous election. If median income voter participation is a factor in state government growth, then the coefficient for Turnout should be positive and significant.

Fiscal Constraints

This model of government growth suggests that institutional constraints in the form of tax and expenditure limitations contributes to a climate of fiscal conservatism. These limitations should make the expansion of state government more difficult. Falling somewhat outside the scope of tax and expenditure limitations are voter initiatives. Voter initiatives, as suggested by the literature, exert restraint on state government efforts to increase revenue and expenditures. Given this, the following model of government size is estimated:

$$\text{Government Expenditures}_{i,\,t-1} = a + b_1(\text{Population}_{i,\,t-1}) + b_2(\text{Tax and Expenditure Limitations}_{,\,t-1}) + b_3(\text{Initiatives}_{,\,t-1}) + e_{i,\,t-1}$$

where Tax and Expenditure Limitations is a binary variable with the value of 1 if a state has some form of tax and expenditure limitation and 0 otherwise. The effect of voter initiative is captured with the dichotomous variable Initiatives, which equals 1 if a state's voters are able to engage in state initiatives and 0 otherwise. If this model of state government growth is empirically valid, the coefficients for both Tax and Expenditure Limitations and Initiatives should be negative and significant.

Political Needs

Some portion of government growth may be a function of the demands placed on state government by citizens that are dependent on government goods and services.

The preceding discussion of the political needs explanation of government growth suggests that two population subgroups, school-age children and the elderly, fall into this category. As the ratio of young and old increase in proportion to the other citizens, states may face additional costs for education and health care. A third population subgroup is minorities, who may require more government assistance than other state citizens. Finally, macroeconomic downturns in the state may prompt additional government spending on behalf of those hurt by economic hardship. Unemployment, inflation, and slowing state economic growth are hypothesized to increase the strain on a state's citizens and positively impact state spending. These four need-based factors suggest the following model:

$$\text{Government Expenditures}_{i,t-1} = a + b_1(\text{Population}_{i,t-1}) + b_2(\text{Over 65}_{,t-1}) + b_3(\text{Under 18}_{,t-1}) + b_4(\text{Black Population}_{,t-1}) + b_5(\text{Unemployment}_{,t-1}) + b_6(\text{Inflation}_{,t-1}) + b_7(\text{Economic Growth}_{,t-1}) + e_{i,t-1}$$

where Over 65 is the proportion of a state's citizens 65 or older, Under 18 is the proportion of citizens under 18 in a state, and Black Population is the black proportion of the state's population. Unemployment is the proportional change in the state unemployment rate from the previous year (current year / previous year). Inflation is the proportional change in the state-specific inflation rate in the past year (current year / previous year). Economic Growth is the proportional change in a state's per capita income from the previous year (current year / previous year). If the political need explanation of government growth is valid, b_2, b_3, b_4, b_5 and b_6 should be positive and b_7 should be negative.

Political Culture

This explanation of government growth attributes higher levels of state spending to cultural predispositions within the electorate. A state with a liberal political culture is expected to be more receptive to a large public sector. Until recently, scholars have relied upon demographic factors such as income, racial composition, and education (e.g. Miller and Stokes 1963), simulated opinion models based on individual-level data that has been extended to the aggregate district level (Erikson 1978), results of referenda voting (McCrone and Kuklinski 1979), and state presidential election returns (LeoGrande and Jeydel 1997) to measure a state's political culture. While these different methods are certainly of some utility, the measurement of state political culture could benefit from large-sample estimates of state-level political ideology.

Such estimates are now available. Erikson, Wright, and McIver (1989; 1993) have combined individual responses from a number of ABC News/Washington Post surveys to construct aggregate-level estimates of state political ideology. Respondents' answers to where they place themselves ideologically (i.e. liberal, moderate, or conservative) are aggregated by state to create a measure of each state's political ideology. Erikson, Wright, and McIver (1993) have also constructed an index of a state's policy liberalism based on the liberalism of policies passed by the state. These two indicators of a state's political ideology are used in the model below to test the political culture explanation of government growth:

$$\text{Government Expenditures}_{i,t-1} = a + b_1(\text{Population}_{i,t-1}) + b_2(\text{Opinion Liberalism}_{,t-1}) + b_3(\text{Policy Liberalism}_{,t-1}) + e_{i,t-1}$$

where Opinion Liberalism is a measure of the liberalism of a state's citizens, and Policy Liberalism indicates the liberalism of a state's policy choices. Empirical support for the theory of political culture is provided if Opinion Liberalism and Policy Liberalism are positive and significant.

Excessive Theories of Government Growth

Fiscal Illusion

Four characteristics of a state revenue system were cited as having illusory effects: 1) income tax through the withholding provision; 2) indirect taxation through corporate taxes; 3) the accumulation of state debt; and 4) a complex revenue system. These characteristics of a state's revenue system are captured below, save for the effect of the corporate income tax. This has not been found to have an impact in previous studies on state government growth (Garand 1993). The problem is probably rooted in the fact that in-state corporations do not manufacture goods solely for use within that state, and hence the effect of corporate taxes will be felt by citizens of other states as well. If fiscal illusion is a factor in government growth, the effect of corporate taxes should be evident at the national level, but not at the state level.

In order to test the fiscal illusion explanation of state government growth, this analysis follows the model of Lowery and Berry (1987), though without the control for corporate taxation:

$$\text{Government Expenditures}_{i,t-1} = a + b_1(\text{Population}_{i,t-1}) + b_2(\text{Income Tax}_{,t-1}) + b_3(\text{Revenue Concentration}_{,t-1}) + b_4(\text{Deficit}_{,t-1}) + e_{i,t-1}$$

where Income Tax is the proportion of state revenue derived from personal income taxes and Revenue Concentration is a variable reflecting the complexity of the tax code. This measure of complexity is calculated using Wagner's (1976) Herfindahl index of revenue concentration, which assigns scores based on the number of different ways a state derives income weighted by the sum obtained through these disparate revenue sources. Higher scores indicate that state revenue is more highly concentrated in one or more tax instruments. For instance, a state that received all tax revenue from a corporate tax would receive a score of 1. A state that received half of its income from a corporate tax and half from an income tax would get a score of .5. The formula for this measure is:

$$\sum_{j=1}^{n} (x_j)^2$$

where n equals the number of revenue sources and x equals the proportion of income derived from each revenue source. In this study, I used six primary sources of state revenue: income tax, corporate income tax, charges, fuel taxes, automobile and operators' license tax, and general sales tax.

The proposed illusory effect of delayed cost through debt financing is represented by Deficit. This variable is a state's deficit as a proportion of current expenditures. The fiscal illusion explanation of state government debt is supported empirically if the Income Tax and Deficit coefficients are positive and significant, and Revenue Concentration is negative and significant.

Bureau-Voting Model

The bureau-voting model suggests that as the proportion of bureaucrats increases in the population, their self-interested voting behavior will result in a larger state public sector. This explanation is tested using the model below:

$$\text{Government Expenditures}_{i,t-1} = a + b_1(\text{Population}_{i,t-1}) + b_2(\text{Federal Employees}_{,t-1}) + b_3(\text{State Employees}_{,t-1}) + b_4(\text{Local Employees}_{,t-1}) + e_{i,t-1}$$

where Federal Employees, State Employees, and Local Employees represent the number of full-time federal (civilian), state, and local government employees as a proportion of the state population. Excluded from the rolls of federal government employees are members of the military, who are overwhelmingly supportive of conservative candidates (Holsti 2000). Previous empirical work suggests that public sector workers tend to vote for candidates that support an increased role for government (Garand, Parkhurst, and Seoud 1991). Past analysis has used the number of state government employees (Garand 1988), though there is no theoretical reason to expect local government employees to vote differently in local elections versus national elections. On the other hand, the link between federal employee self-interest and public sector growth is more tenuous. While federal employees may be more liberal than their private sector counterparts and may turnout at higher rates, they may not perceive an increase in state government expenditures as in their self-interest. Given the competition for publicly provided goods and services that occurs between the state and federal level, federal employees may be less likely to support state public sector expansion. If the bureau voting explanation is supported, the coefficient for

State Employees and Local Employees should be positive and significant. The expected relationship for Federal Employees is positive. A negative and significant coefficient would indicate that federal employees see their self-interest fulfilled through a smaller role for state government.

The Intergovernmental Grant Model

This explanation suggests that federal grants-in-aid contribute to growth in state government. This may happen three possible ways. First, intergovernmental aid may *substitute* for state-derived funds. In this scenario, federal aid would have no effect on state government expenditures, instead there would be concomitant decrease in the state taxpayer's revenue burden. A second possibility is that because of federal matching funds requirements state expenditures may increase over and above the amount received from the federal government. Such federal funds may also be earmarked for purposes that the state public sector has had little or no involvement. In this case, intergovernmental grants should also have a more than one to one correspondence with increased state expenditure levels. Finally, most research suggests that the effect of intergovernmental grants is a combination of substitution (or replacement) and increased state spending (Dye and MacManus 1990, Garand 1988, 1993). In order to estimate the effect of intergovernmental grants on state government growth, the following model is specified:

$$\text{Government Expenditures}_{i,t-1} = a + b_1(\text{Population}_{i,t-1}) + b_2(\text{Intergovernmental Grant}_{,t-1}) + e_{i,t-1}$$

where Intergovernmental Grant is federal grants-in-aid to state governments as a proportion of total state economic output. If the coefficient for Intergovernmental

Grant is significant, but close or equal to zero, we can conclude that federal grants substitute for state funds. A positive and significant coefficient for Intergovernmental Grant that is 1 or below (yet above 0) suggests a combination of state revenue as well as an increase in state government expenditures as a result of the federal grant.[2] If Intergovernmental Grant is positive, significant, and greater than one, then this is evidence that intergovernmental aid increases state government expenditures over and above the amount received from the federal government.

Constituency Size

The constituency size model of government growth proposes a relationship between the number of constituents per legislator and public sector size. The greater the number of constituents per legislator, the more government is hypothesized to grow. This straightforward theory of government growth is estimated using the following model:

$$\text{Government Expenditures}_{i,t-1} = a + b_1(\text{Population}_{i,t-1}) + b_2(\text{Senate}_{,t-1}) + b_3(\text{House}_{,t-1}) + e_{i,t-1}$$

where Senate is the number of Senate seats divided by the state population and House is the number of House seats divided by the state population. Since a higher ratio indicates comparatively "better" representation, negative and significant coefficients for both House and Senate lend support to the constituency size theory of government growth.

[2] This interpretation of the Intergovernmental Grant coefficient is possible since the federal aid is included on both sides of the equation.

Divided Government

The discussion of divided government in the literature review above suggests that a history of split-party control is necessary before significant shifts in the size of state government will occur. The hypothesis is that divided state government delegations will prefer a compromise that results in greater government spending to a policy gridlock that may lead to lower expenditures in both parties' favored policy areas. This will result in overall increased government size if state government has been under split control for some time. Moreover, the degree to which a state's public sector grows because of divided government is contingent on the presence of legislative supermajority voting requirements for tax increases.

Rather than test for the effect of divided government in the previous state-year, I have chosen to base my measure on a history of divided state government. Since divided government in the majority of states is by virtue of split control of the executive and legislative branches (Fiorina 1992), I felt it important to include at least two gubernatorial administrations so as to allow sufficient variation for this variable. To determine the effect of divided government on public sector growth, I use a variable based on the incidence of divided government in the past five years. An average based on a five-year period ensures that a state's executive branch has at least undergone one intervening election.

Secondly, the hypothesis set forth in the previous chapter was that there may be a tendency when government is divided for the opposing parties to acquiesce to each other's spending preferences so as to achieve a victory for both parties. Lack of consensus, or gridlock, may lead to reduced funding of programs favored by either

party. However, if politicians in the context of split control perceive that divided government is a temporary condition, there may be an advantage to resolutely opposing the spending preferences of the opposing party. On the other hand, if divided government is the norm, politicians in either party may be resigned to split control and be more likely to work toward a consensus resulting in an overall increase in state expenditures. Toward this end, I have measured divided government as the proportion of state-years under split control in the previous five years. An interaction variable for the presence of supermajority voting requirements is also included in this model. To estimate the effect of divided government on state public sector growth, the following model is specified:

$$\text{Government Expenditures}_{i,\,t-1} = a + b_1(\text{Population}_{i,\,t-1}) + b_2(\text{Divided}_{,\,t-1}) + b_3(\text{Divided} * \text{Supermajority}_{,\,t-1}) + e_{i,\,t-1}$$

where Divided is the proportion of divided state government delegations (house, senate, and governor) in the past five years. This computation includes the then-present administration. A state-year is considered "divided" if the house, senate, or governorship of a state is controlled by other than one party. A positive coefficient for this variable suggests that divided control results in state government growth. If a state has no legislative supermajority requirements for raising taxes then the Supermajority component of the interaction variable is equal to 1. The interaction variable Divided * Supermajority is equal to the value for the Divided variable multiplied by 1 if a state has no supermajority voting requirements. Otherwise, the variable is zero. If a state government is under split control at any time in the previous five years and there are no supermajority requirements, this variable will be greater

than zero. A positive and significant coefficient for this variable indicates support for this perspective of the divided government theory of state government growth.

Unfunded Mandates

The incidence of unfunded mandates, as suggested in the preceding literature review, began roughly in the mid-1960s (Peterson 1995). It would be ideal if data were available that estimated the cost of unfunded mandates for each state in each year of our sample. Efforts to gauge the monetary effect of unfunded mandates, however, are confined either to the cost of one particular category of federal mandate or pertain only to cities. For instance, a report by the U.S. Conference of Mayors calculates that urban areas would have to spend 54 billion dollars over the next five years to meet the requirements set forth in ten federal mandates.[3] No such measure exists for the entire span of this study, nor for each state. Because of these data limitations, this analysis uses two dummy variables to uncover the effect of unfunded mandates on state government growth. First, a dummy variable is created that takes the value of one for years 1966 onward. Second, a dummy variable is used that takes the value of 1 in 1966, 2 in 1967, 3 in 1968, and so on. The reason these two dummy variables are used is because unfunded mandates may affect state government spending in two ways (or not at all). After 1965, the trend line for state expenditures could jump a level. For instance, state expenditures could be 1 billion, 2 billion, and 3 billion dollars in the previous three years. Then in 1966, because of unfunded mandates passed in 1965, spending jumps in the next three years to 7 billion, 8 billion, and 9 billion dollars. It is this relationship that will be captured by the dummy variable.

[3] This information comes from Lashutka (1994), and is cited in Peterson (1995).

Alternatively, in the years following 1965 there may be an increased tendency for the federal government to pass unfunded mandates. In this case, state budget trend lines after 1965 should have a steeper slope. An example of this dynamic would be if the trend in state expenditures was 1 billion, 2 billion, and 3 billion in the three years prior to 1966, then in the following years spending surged to 5 billion, 7 billion, and 9 billion, and so on. This dynamic will be captured by the counter variable.

Of course, unfunded mandates could contribute to government growth both through an initial jump in state spending as well as increasing the slope of the state spending trend line. To estimate the effect of unfunded mandates on state public sector growth, the following model is estimated:

$$\text{Government Expenditures}_{i,t-1} = a + b_1(\text{Population}_{i,t-1}) +$$

$$b_2(1965\ \text{Dummy}_{,t-1}) + b_3(\text{Trend}_t) + b_4(1965\ \text{Counter}_{,t-1}) + e_{i,t-1}$$

If unfunded mandates are a factor in state government growth, then either the 1965 Dummy or 1965 Counter, or both, should be positive and significant. The variable Trend is coded 1 in 1946, 2 in 1947, 3 in 1948, and so on. It is necessary to include this variable so that the 1965 Counter variable can be compared against a baseline.

Data Considerations

Before proceeding to the empirical analysis, some mention should be made of the methods used to overcome problems with missing data. Many time-series of this length find gaps in the available data. A second concern is with Alaska and its outlier status. This brief section discusses the implications of including Alaska in this analysis. It also itemizes the variables and states where data was missing and the solution used in this analysis.

Alaska Outlier

Alaska poses special problems in state-level analyses of government growth and state finance studies in general. Because of the state's considerable natural resources, particularly oil, much of the public sector is financed through corporate taxes and fees. The state even pays its citizens yearly dividends on proceeds derived from oil-based revenues. The degree to which the public sector is financed by out-of-state corporations has led Alaskan state government to grow, at least in terms of how state government growth is operationalized in this study, at a very high rate. For example, the average proportion of total taxes derived from corporate taxes for Alaska is .135 while the other 49 states have an average of .062. This corporate tax differential does not even take into account the revenue from fees and licenses.

Important for this analysis is the degree to which state government places burdens on its citizens as the result of either responsive or excessive mechanisms. Thus in a state like Alaska, which maintains a large public sector (almost twice as large as the next largest state), estimates of the various models of government growth examined herein bear little relationship to the actual determinants of Alaska's state government size. Preliminary analyses that have included Alaska have less explanatory power than analysis run with Alaska excluded. This is due primarily to Alaska's outlier status on such economic variables measuring revenue system complexity (Revenue Concentration), proportion of income derived from income taxes (Income Tax), and the demographic variable population density (Population Density). Finally, exclusion of Alaska in studies of state government growth is more the norm than the exception (e.g. Bails 2000; Husted and Kenny 1997; Thornton and Ulrich

1999; though see Garand 1988; 1993)[4]. Because of the use of lagged values for variables measuring divided government and historical party control, the elimination of Alaska from the data set results in a loss of 23 cases.

Missing Data Issues

Many demographic variables were only reported by the U.S. Statistical Abstract on a decennial basis. This was especially the case in the early years used in this study. Four variables, all part of the political needs explanation of state government growth, were reported only every ten years until the mid-1970s. These variables are urban population, population 65 years of age and older, population under 18 years of age, and the black population. The values for missing data for these demographic variables were interpolated using the linear interpolation command in SPSS 10.0 for Windows.

A second problem, common to research on state government, concerns the states of Nebraska and Minnesota. These states posed special problems for the testing of the party control, divided government, and constituency size theories of state government growth. Nebraska has a unicameral and non-partisan legislature. Minnesota, until 1973, had a non-partisan legislature as well. Rather than exclude these two states, as many scholars do, this analysis has included the two states by

[4] A sense of the outlier status of Alaska is given by Garand's (1993) analysis of state government growth. He reports the mean absolute error (MAE) for both his deflated and undeflated models of state government growth in Table 6. The true government size ratio for Alaska was .29 in both models and the MAE between this value and his predicted values for both the deflated and undeflated models was roughly .10. This MAE is three times the MAE for any of the other 49 states. Hawaii is the state with the next highest with an MAE of approximately .03. The average MAE for all states was roughly .01 for all states.

setting the values for partisanship in the house and senate at the sample mean for partisanship in the respective legislative chambers. Dummy variables representing the two states (Minnesota only up to 1972) are then included in the model estimation. Setting these values to the sample mean prevents these fictitious values from altering the regression estimates and permits the two states to remain in the data set.

A third difficulty arises when testing the political culture theory of government growth. The source for state opinion and policy liberalism used in this study come from Erikson, Wright and McIver (1993). These data are based on CBS/NYT survey responses. Unfortunately for Erikson, Wright and McIver and this analysis, there were not enough survey responses gathered from Hawaii (and Alaska) to estimate that state's mean ideological and policy preferences. Also, the author's note (1993, 20n2) that their scores for Nevada are "substantively implausible" (p. 20) and opt to exclude Nevada from their subsequent analyses. In order to include these states in the following analysis, the scores for these two "problem" states are set to the average opinion liberalism and policy liberalism values. As explained above, by setting these states' ideological scores at the sample mean, the regression coefficients for this variable are unaffected and Hawaii and Nebraska's state government growth, as captured by the other variables for which the state has values, may be included in the full model.

Finally, a full test of the political needs explanation of government growth required unemployment statistics for each state for the full fifty-two years under analysis. With the exception of 1950, these were only published from 1960 onward. Rather than exclude this important variable, the missing unemployment rates for the

states in this period were modeled using Tobit regression to control for left and right censoring of the data (bounds set at 0 and 100). Variables used to predict state unemployment rates were national unemployment rate, the under 18 and over 65 percentages of the state population, the state's black population percentage, and the number of initial insured unemployment benefits claimed per year per state divided by state population to predict state-level unemployment rates. State dummy variables were also used in the regression equation to capture any state-specific relationships. The coefficients derived from the equation using data that were not missing were then used to estimate values for the periods in which state unemployment rates were unavailable. Table 2 below presents the results of the state unemployment Tobit regression used to model the missing unemployment rate data. Coefficients and standard errors for state dummy variables are not presented. The excluded state is Arkansas.

Table 2. Model Estimates for State Unemployment

Variable	b	Standard Error	T
Constant	-7.36	(1.33)	-5.534
Initial Uninsured Unemployment Benefits / State Population	0.030	(0.00)	11.29
National Unemployment Rate	0.817	(0.03)	27.23
Black percentage of State Population	0.171	(0.03)	5.70
Over 65 Percent of State Population	0.211	(0.05)	4.22
Under 18 Percent of State Population	0.076	(0.02)	3.80
Adjusted R^2		.73	

Summary

The various models detailed above will be incorporated into full models of state government growth that test all 13 theories together. The analysis will be done using both the undeflated and state and local government-deflated dependent variables. As discussed, the statistical procedure used to estimate the models is OLS with Panel Corrected Standard Errors. This technique corrects for autocorrelation, heteroscedasticity, and for the possibility of correlation between the error terms of states (contemporaneously correlated errors). There will also be a separate analysis using Husted and Kenny's (1997) median income voter variable.

There are 33 component variables among the 13 separate government growth models and there are 36 overall in the complete model. The other three are control variables for Nebraska, Montana, and a variable for each year (Trend). Since data for the median income voter variable are only available for the years 1951 to 1990, estimation of this variable's effect on state government growth must be tested in a separate model. The combination of the two dependent variables and median income voter variables yields four different regression analyses to be discussed in Chapter 5. The basic model of state government growth is shown on the following page.

The Full Model of State Government Growth

$$\text{Government Expenditures}_{i,t-1} = a + b_1(\text{Population}_{i,t-1}) + b_2(\text{Logged Income}_{i,t-1}) + b_3(\text{Population Density}_{i,t-1}) + b_4(\text{Urban Population}_{i,t-1}) + b_5(\text{Manufacturing}_{i,t-1}) + b_6(\text{Party Control}_{i,t-1}) + b_7(\text{Party Tenure}_{i,t-1}) + b_8(\text{Interparty Competition}_{i,t-1}) + b_9(\text{IPC} * \text{Election Year}_{i,t-1}) + b_{10}(\text{Turnout}) \text{ [or } b_{10}(\text{Median Income Voter}_{i,t-1})] + b_{11}(\text{Tax and Expenditure Limitations}_{i,t-1}) + b_{12}(\text{Initiative}_{i,t-1}) + b_{13}(\text{Over 65}_{i,t-1}) +$$

$b_{14}(\text{Under 18}_{i,\,t-1}) + b_{15}(\text{Black Population}_{i,\,t-1}) + b_{16}(\text{Unemployment}_{i,\,t-1}) +$

$b_{17}(\text{Inflation}_{i,\,t-1}) + b_{18}(\text{Economic Growth}_{i,\,t-1}) + b_{19}(\text{Opinion Liberalism}_{i,\,t-1}) +$

$b_{20}(\text{Policy Liberalism}_{i,\,t-1}) + b_{21}(\text{Income Tax}_{i,\,t-1}) + b_{22}(\text{Revenue Concentration}_{i,\,t-1}) +$

$b_{23}(\text{Deficit}_{i,\,t-1}) + b_{24}(\text{Federal Employees}_{i,\,t-1}) + b_{25}(\text{State Employees}_{i,\,t-1}) +$

$b_{26}(\text{Local Employees}_{i,\,t-1}) + b_{27}(\text{Intergovernmental Grant}_{i,\,t-1}) + b_{28}(\text{Senate}_{i,\,t-1}) +$

$b_{29}(\text{House}_{i,\,t-1}) + b_{30}(\text{Divided}_{i,\,t-1}) + b_{31}(\text{Divided * Supermajority}_{i,\,t-1}) +$

$b_{32}(\text{1965 Dummy}_{i,\,t-1}) + b_{33}(\text{Trend}_{i,\,t-1}) + b_{34}(\text{1965 Counter}_{i,\,t-1}) +$

$b_{35}(\text{Minnesota}_{i,\,t-1}) + b_{36}(\text{Nebraska}_{i,\,t-1}) + e_{i,\,t-1}$

Chapter 4: Patterns of State Growth

As a beginning point, it is useful to examine the patterns of state government growth over the time period covered in this analysis. In particular, has state government grown from 1946 to 1997? Table 3 below reports both the undeflated and deflated measures of government size (1996 = 1). These trends are displayed graphically in Figures 1 and 2 respectively. Figures 3 and 4 display government growth patterns at the federal level, using both the undeflated and deflated measure. These two graphs are provided for comparison. It is apparent that state government has exhibited a strong pattern of growth over the 52 year span. This is true for either measure of government growth. Undeflated state government mean size has gone from 4% of total state economic output in 1947 to almost 14.5% in 1997. Deflated state government growth is less dramatic with an increase from 7% of state economic output to over 14%.

State government growth has also tapered off beginning roughly in the early 1980s for both measures of the dependent variable. This trend is more apparent for deflated state government size. Government size up until the 1980s exhibits a steady incline, though two bumps in the late 1940s and early 1970s are evident when the dependent variable is deflated. The primary explanation for the break in the trend in 1947 is based on the difference between the state and local government deflator and the GDP deflator. In 1947, the state and local government deflator was 10.10 (1996 dollars) and the GDP deflator equaled 16.35. This is a difference of 6.25%, which is the largest disparity among the years examined here. This margin remains as high as 6% until 1951.

Table 3. Mean Size of Government in the American States, By Year, 1946-1997

	Government Size (Undeflated)		Government Size (Deflated)	
Year	**Mean**	**Standard Deviation**	**Mean**	**Standard Deviation**
1946	.0425	.0121	.0697	.0198
1947	.0504	.0142	.0816	.0230
1948	.0571	.0143	.0873	.0218
1949	.0692	.0198	.1048	.0300
1950	.0713	.0200	.1083	.0304
1951	.0653	.0195	.0964	.0288
1952	.0660	.0193	.0948	.0277
1953	.0682	.0205	.0972	.0292
1954	.0687	.0212	.0972	.0300
1955	.0691	.0198	.0977	.0280
1956	.0717	.0202	.0983	.0277
1957	.0745	.0206	.1011	.0280
1958	.0795	.0216	.1092	.0297
1959	.0841	.0243	.1142	.0330
1960	.0832	.0245	.1125	.0331
1961	.0864	.0262	.1154	.0350
1962	.0862	.0251	.1132	.0330
1963	.0896	.0249	.1164	.0323
1964	.0921	.0267	.1191	.0344
1965	.1013	.0283	.1299	.0362
1966	.1048	.0300	.1316	.0377
1967	.1106	.0305	.1357	.0374
1968	.1126	.0300	.1368	.0364
1969	.1131	.0282	.1350	.0337
1970	.1202	.0295	.1396	.0343
1971	.1284	.0299	.1463	.0341
1972	.1286	.0289	.1442	.0324
1973	.1215	.0296	.1335	.0325
1974	.1226	.0259	.1324	.0280
1975	.1346	.0258	.1446	.0277
1976	.1419	.0279	.1518	.0299
1977	.1347	.0265	.1442	.0284
1978	.1285	.0252	.1383	.0271
1979	.1252	.0248	.1340	.0265
1980	.1286	.0249	.1350	.0261

Table 3. cont.,

	Government Size (Undeflated)		Government Size (Deflated)	
Year	**Mean**	**Standard Deviation**	**Mean**	**Standard Deviation**
1981	.1302	.0252	.1360	.0264
1982	.1302	.0272	.1357	.0284
1983	.1319	.0284	.1369	.0295
1984	.1266	.0303	.1304	.0312
1985	.1272	.0304	.1300	.0311
1986	.1316	.0320	.1338	.0325
1987	.1316	.0323	.1321	.0324
1988	.1296	.0293	.1352	.0306
1989	.1311	.0290	.1324	.0293
1990	.1329	.0280	.1335	.0281
1991	.1381	.0285	.1397	.0288
1992	.1433	.0292	.1458	.0297
1993	.1454	.0290	.1477	.0295
1994	.1444	.0275	.1459	.0278
1995	.1457	.0285	.1462	.0285
1996	.1424	.0279	.1424	.0279
1997	.1438	.0293	.1429	.0291
All years	.1087	.0394	.1250	.0358

The break in the trend line in 1973-74, on the other hand, is apparent in both the deflated and undeflated measures of government growth. State government growth drops sharply in these two years. There is also relatively little difference between the GDP and state government deflator (2.69-3.04%) in these years.

One final note regarding Figures 1 and 2 concerns the reference line at year 1965. This analysis has chosen 1965 as the starting point for both the dummy and counter variables representing the impact of unfunded mandates on state government growth. State growth at both points fails to make a sharp incline in either variation of

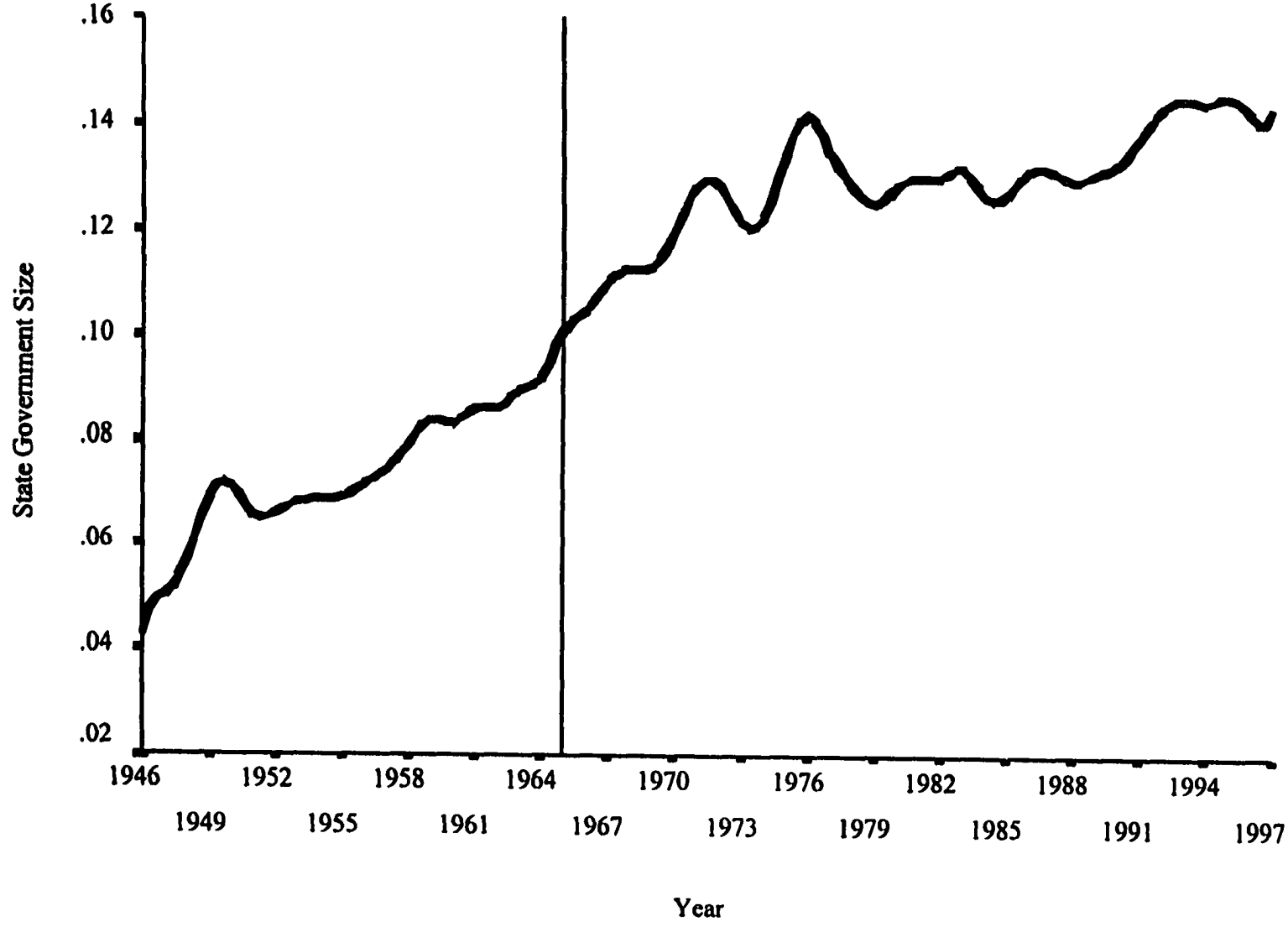

Figure 1. Undeflated State Government Growth, 1946-1997

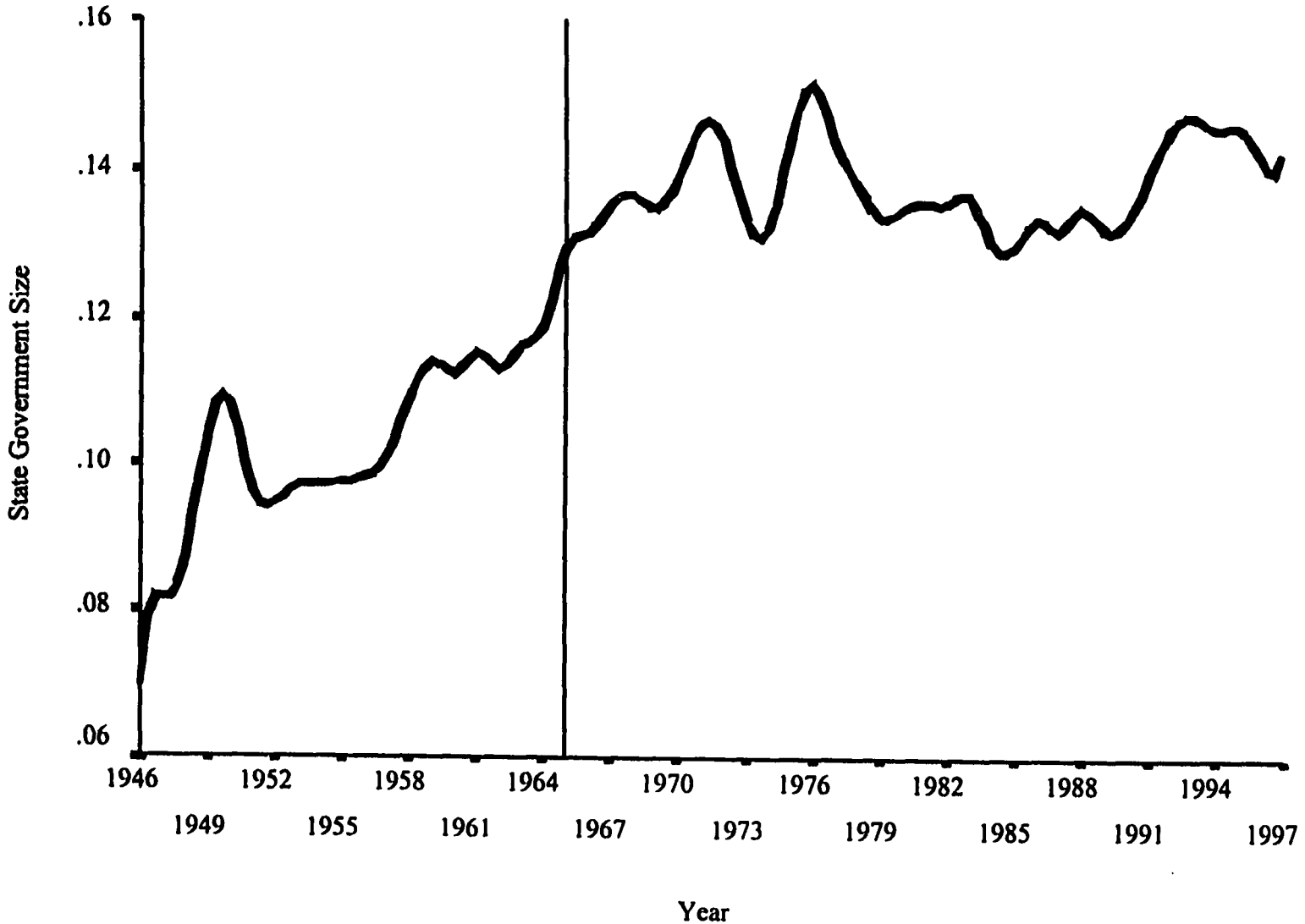

Figure 2. Deflated State Government Growth, 1946-1997

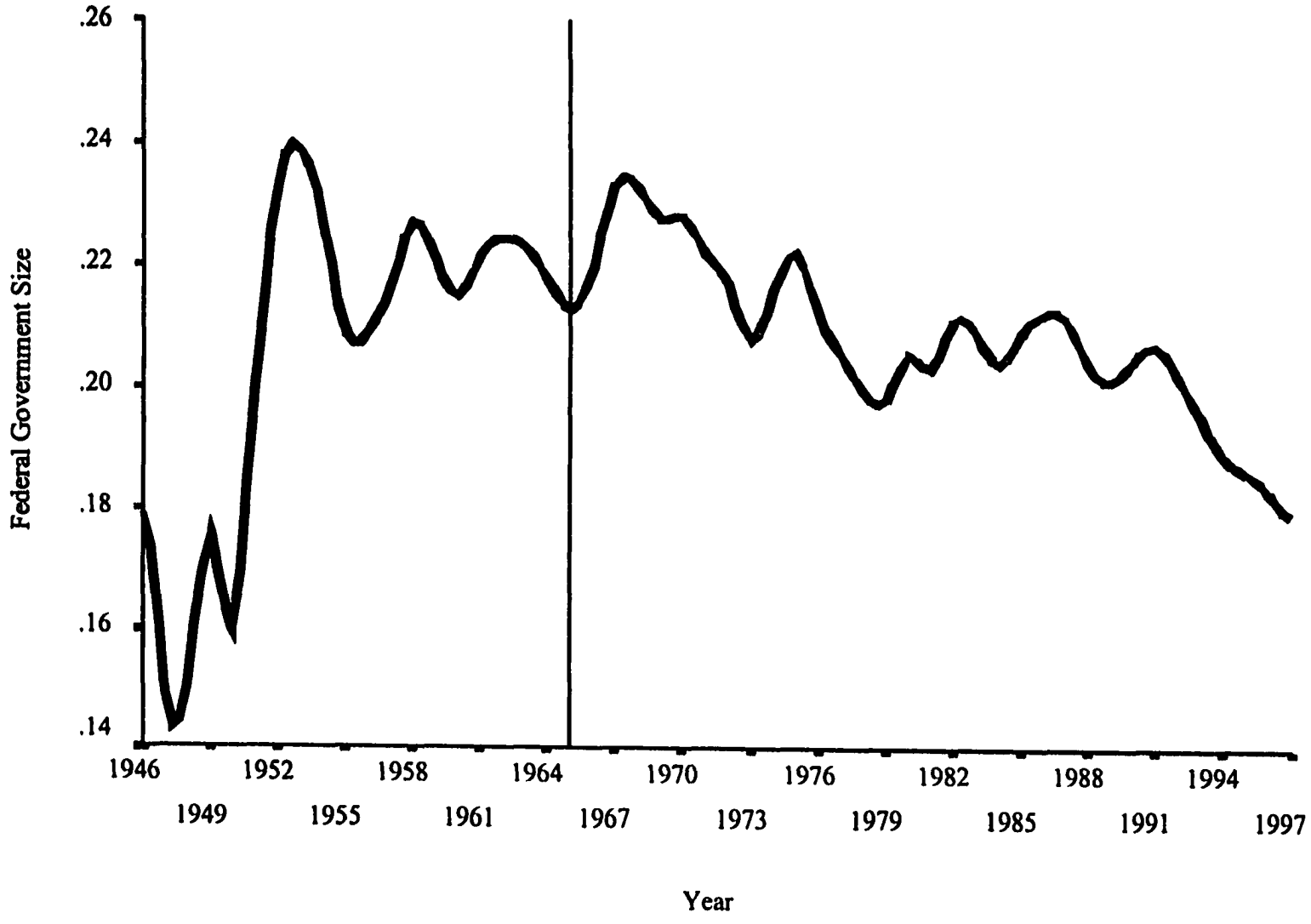

Figure 3. Undeflated Federal Government Growth, 1946-1997

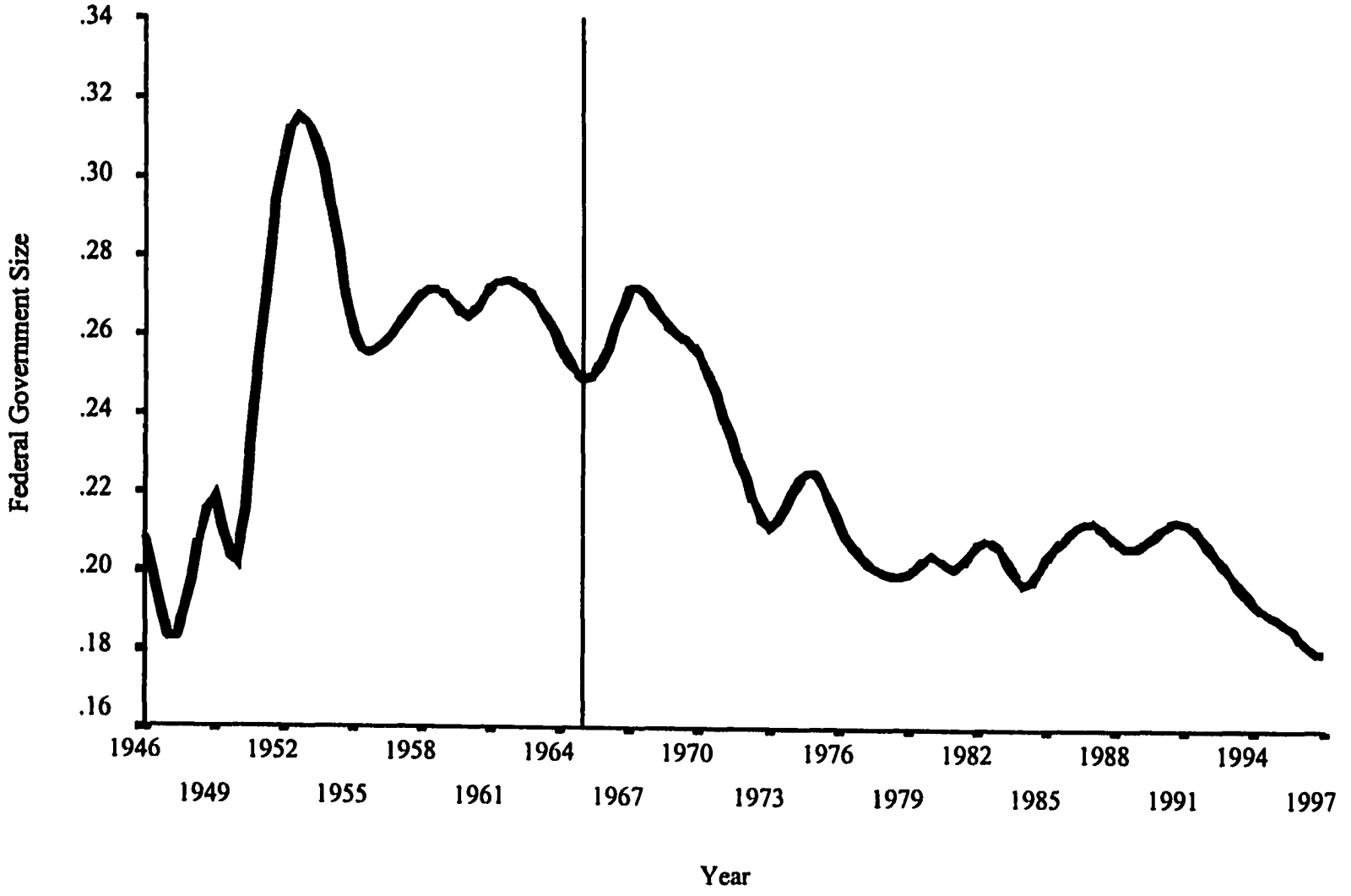

Figure 4. Deflated National Government Growth, 1946-1997

the dependent variable, though the effect is modestly more pronounced using the undeflated measure. Nonetheless, this figure is based on mean values and the impact of unfunded mandates may be contingent on a number of other factors. For instance, it is probable that state governments in the South bore more of the brunt of the civil rights reforms passed in the 1960s, given that region's racial makeup and history.

Table 4 presents data on trends in government size for each of the American states from 1946 to 1997. It is clear that there are considerable differences in the size of government in the individual states. In the undeflated measure of state government growth, Hawaii ranks as the largest government with a public sector that consumes almost 18% of the state's total personal income. Close behind Hawaii is New Mexico with government expenditures approximating 16% of state economic output. These two states' respective rankings remain the same in the deflated measure of government size with little change in the mean share. At the low end of state government growth are Missouri, New Jersey, and Texas. Each of these states has an average government size of less than 8% of total economic output.

For the undeflated measure, all states exhibit a pattern of growth from 1946 to 1997 and have trend coefficients statistically significant at the .01 level or better. However, it should be noted that Hawaii is distinguished by a considerably lower t-statistic for its trend coefficient, which implies that its state government size is less subject to growth as a function of time. The three states with the highest growth are Rhode Island, West Virginia, and New Hampshire with trend coefficients of .00299, .00296, and .00291 respectively. These coefficients indicate that these state governments increase their size by one percent every three years. States that grow

Table 4. Trends in Mean Size of Government in the American States, By State, 1946-1997

	Government Size (Undeflated)				Government Size (Deflated)			
State	**Mean**	**a**	**b**	**t**	**Mean**	**a**	**b**	**t**
Alabama	.1171	.07351	.00164	12.16	.1194	.11541	.00077	4.90
Arizona	.1077	.07637	.00118	11.05	.1099	.11966	.00024	1.95
Arkansas	.1121	.07479	.00141	15.46	.1144	.11877	.00045	3.90
California	.1042	.05237	.00196	18.09	.1062	.08649	.00125	10.09
Colorado	.0936	.07051	.00087	9.66	.0955	.10900	.00003	0.32
Connecticut	.0828	.03435	.00183	17.55	.0843	.06002	.00130	11.01
Delaware	.1194	.05846	.00230	15.72	.1217	.09596	.00154	8.98
Florida	.0819	.06264	.00073	9.64	.0836	.09819	-.0001	-0.76
Georgia	.0958	.06442	.00118	12.29	.0977	.10069	.00041	3.77
Hawaii	.1771	.14132	.00107	2.88	.1802	.20434	-.0003	-0.81
Idaho	.1153	.06663	.00184	14.94	.1176	.10639	.00101	7.15
Illinois	.0745	.02721	.00179	15.94	.0759	.04833	.00136	11.41
Indiana	.0820	.03520	.00176	37.22	.0835	.06125	.00122	21.71
Iowa	.1018	.04945	.00197	25.07	.1038	.08317	.00127	12.64
Kansas	.0861	.05211	.00128	19.25	.0878	.08447	.00058	6.69
Kentucky	.1167	.05461	.00234	17.54	.1190	.09052	.00162	9.70
Louisiana	.1434	.11289	.00115	8.37	.1464	.17428	-.0002	-1.05
Maine	.1193	.05485	.00243	15.67	.1216	.09200	.00167	10.42
Maryland	.0893	.04589	.00164	12.24	.0911	.07472	.00104	7.71
Massachusetts	.0971	.03856	.00221	18.61	.0990	.06774	.00161	13.43
Michigan	.1045	.05167	.00199	20.62	.1065	.08697	.00124	12.27
Minnesota	.1102	.05443	.00210	17.82	.1123	.09023	.00136	10.89
Mississippi	.1353	.09097	.00167	11.50	.1380	.14208	.00058	3.45
Missouri	.0753	.03810	.00141	23.78	.0768	.06342	.00087	12.95
Montana	.1275	.05450	.00276	25.63	.1210	.09336	.00197	14.23
Nebraska	.0792	.03353	.00172	35.38	.0807	.05872	.00120	22.97
Nevada	.1061	.06908	.00140	11.11	.1083	.10846	.00056	3.96
New Hampshire	.0880	.06153	.00100	6.38	.0898	.09533	.00028	1.69
New Jersey	.0781	.01549	.00236	19.37	.0795	.03512	.00197	14.98
New Mexico	.1584	.09440	.00242	23.42	.1616	.15238	.00118	9.00
New York	.1054	.02842	.00291	19.45	.1074	.05459	.00241	14.99
North Carolina	.1064	.07127	.00132	13.78	.1085	.11290	.00042	3.95
North Dakota	.1391	.07629	.00237	14.56	.1419	.12414	.00137	6.10
Ohio	.0869	.02318	.00240	26.11	.0884	.04582	.00196	18.65
Oklahoma	.1193	.09135	.00106	12.15	.1218	.14272	-.0001	-0.70
Oregon	.1154	.06420	.00193	17.40	.1177	.10399	.00110	8.70
Pennsylvania	.0931	.03781	.00208	13.78	.0948	.06462	.00155	9.43

Table 4. cont.,

	Government Size (Undeflated)				Government Size (Deflated)			
State	**Mean**	**a**	**b**	**t**	**Mean**	**a**	**b**	**t**
Rhode Island	.1144	.03505	.00299	23.70	.1165	.06583	.00239	17.34
South Carolina	.1216	.06976	.00196	21.62	.1240	.11470	.00098	10.19
South Dakota	.1081	.06670	.00156	12.07	.1102	.10512	.00076	4.60
Tennessee	.0940	.06289	.00117	13.13	.0959	.09901	.00040	3.81
Texas	.0767	.04276	.00128	20.65	.0782	.06975	.00071	8.97
Utah	.1291	.07315	.00211	13.90	.1316	.11747	.00119	6.77
Vermont	.1401	.07897	.00231	7.79	.1429	.12268	.00144	4.33
Virginia	.0872	.05419	.00125	12.13	.0890	.08577	.00058	5.51
Washington	.1241	.07807	.00174	14.20	.1266	.12461	.00074	5.41
West Virginia	.1390	.06064	.00296	18.88	.1417	.10326	.00209	11.54
Wisconsin	.1062	.04705	.00223	17.12	.1082	.07884	.00159	11.34
Wyoming	.1569	.07188	.00321	13.43	.1599	.12045	.00223	7.53
All States	.1087	.0587	.0019	51.41	.1250	.0957	.0011	26.19

least on a yearly basis are Florida, Colorado, New Hampshire, Oklahoma, and Hawaii with trend coefficients of .0073, .0087, .0010, .0011, and .0011 respectively. These trend coefficient values imply that percentage growth in their state governments is roughly one-third that of the three highest growth states. Overall, the slope coefficient calculated for all states is positive and highly significant ($b = .0019$, $t = 51.41$, prob(t) $< .00001$). This slope coefficient indicates that the percentage of total state income consumed by state government increases by approximately one percent every five years.

The positive trend found for all states in the undeflated measure is not found when deflated state government size is employed. All state trend coefficients are less in the deflated trend model. In addition, the effect of time as a predictor of state government growth is insignificant at the .05 level in six of the forty-nine states.

Indeed, Hawaii, Florida, Louisiana, and Oklahoma all exhibit a decline in state government size from 1946 to 1997. Nevertheless, the overall effect of time on state government growth is positive and significant at the .00001 level. The trend slope coefficient is .0957, which suggests that deflated state government grows by one percent of total personal income every ten years. Though this still indicates an upward trend for government growth, it appears that undeflated state government exhibits an almost double growth rate.

This finding suggests that a considerable proportion of state government growth is attributable to the differential inflation rates of the public and private sector. Garand (1988b; 1991) has shown that the proportion of increase in the public sector attributable to a real growth in government goods and services can be determined by dividing the trend slope coefficient for the deflated indicator by the trend slope coefficient for the undeflated indicator. The remainder then represents growth in government as a function of the differential deflator rate. For example, the trend slope coefficients for Connecticut are .00183 (for the undeflated measure of government size) and .00130 (for the deflated measure). It is clear that even after the effects of differential inflation rates are accounted for, there remains a substantial growth rate for Connecticut. Based on Garand's (1988b; 1991) procedure, one can estimate that 71% of the growth in the public sector in Connecticut is real growth, i.e. representing growth in government goods and services. The remaining 29% is due to the fact that the prices for government goods and services rises at a faster rate than private sector prices.

Table 5 presents the growth in state governments that can be attributed to the differential deflator. The states are ranked by the degree to which their government's growth is a function of the expense incurred by the higher inflation rate. It is clear that there is ample variation for the differential deflator effect among the states. Growth in Florida, Hawaii, Louisiana, and Oklahoma is entirely a function of the differential deflator. These are the same four states that have exhibited a decline in deflated state government size. Colorado, which had one of the lowest values of both the undeflated and deflated trend coefficients attributes close to 97% of its growth to the fact that the inflation rate for the public sector exceeds that of the private sector. Deflator-related growth for the remaining state ranges from a high of 80% for Arizona to a low of 17% for New York and New Jersey. The average deflator-related growth for all states is 41%.

Altogether, it is evident that there is extensive variation in the size of state government, both over time and across the forty-nine states examined here. For the most part, the size of the public sector has increased over time, though the effects of time on state government size is more apparent when state expenditures are not deflated. There is also substantial variation between the states and the rate at which the different state government grow. Before moving to the multivariate analysis, it is useful to examine the trends of growth for the two states that diverge the most in the size of their governments. The state with the smallest state government is Illinois and the largest is Hawaii. The comparison chosen here will be with New Mexico, a state that has data points for the entire length of the study.[1] Growth in these two states is

[1] The largest state is actually Alaska, which will not be included in this study. Alaska

Table 5. Percent of Growth in State Government Attributable to Differences in Public and Private Sector Inflation Rates By State, 1946-1997

State	State Government-Deflated Coefficient	GDP-Deflated Coefficient	Deflator-Related Growth (%)
Florida	-.00007	.00073	100.00
Hawaii	-.00030	.00107	100.00
Louisiana	-.00020	.00115	100.00
Oklahoma	-.00008	.00106	100.00
Colorado	.00003	.00087	96.52
Arizona	.00024	.00118	79.64
New Hampshire	.00028	.00100	72.45
North Carolina	.00042	.00132	68.48
Arkansas	.00045	.00141	67.73
Tennessee	.00040	.00117	66.19
Georgia	.00041	.00118	65.43
Mississippi	.00058	.00167	65.17
Nevada	.00056	.00140	60.06
Washington	.00074	.00174	57.56
Kansas	.00058	.00128	54.46
Virginia	.00058	.00125	53.76
Alabama	.00077	.00164	53.44
South Dakota	.00076	.00156	51.50
New Mexico	.00118	.00242	51.17
South Carolina	.00098	.00196	49.74
Idaho	.00101	.00184	45.10
Texas	.00071	.00128	44.46
Utah	.00119	.00211	43.82
Oregon	.00110	.00193	43.12
North Dakota	.00137	.00237	42.06
Missouri	.00087	.00141	37.76
Michigan	.00124	.00199	37.56
Vermont	.00144	.00231	37.55
Maryland	.00104	.00164	36.39
California	.00125	.00196	36.16
Iowa	.00127	.00197	35.70
Minnesota	.00136	.00210	35.34
Delaware	.00154	.00230	33.17
Maine	.00167	.00243	31.28

has an undeflated state government size of .3220 and a deflated government size of .3473.

Table 5. cont.,

State	State Government Deflated Coefficient	GDP Deflated Coefficient	Deflator-Related Growth (%)
Kentucky	.00162	.00234	30.78
Indiana	.00122	.00176	30.66
Wyoming	.00223	.00321	30.49
Nebraska	.00120	.00172	30.48
West Virginia	.00209	.00296	29.37
Connecticut	.00130	.00183	29.00
Wisconsin	.00159	.00223	28.63
Montana	.00197	.00276	28.56
Massachusetts	.00161	.00221	27.13
Pennsylvania	.00155	.00208	25.66
Illinois	.00136	.00179	23.79
Rhode Island	.00239	.00299	20.28
Ohio	.00196	.00240	18.49
New York	.00241	.00291	17.21
New Jersey	.00197	.00236	16.55
All States	.00110	.00188	41.21

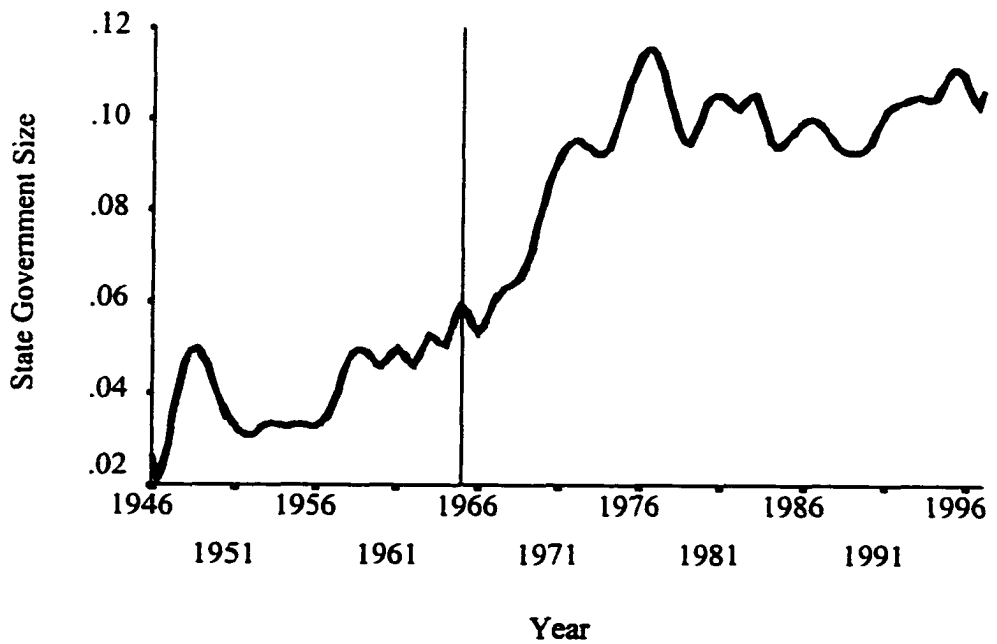

Figure 5. Undeflated State Government Growth in Illinois, 1946-1997

plotted in Figures 5 and 6. South Dakota's government growth, which exhibits growth closest to the mean for the states, is presented in Figure 7 for a comparison.

Four essential differences can be noted from a comparison of these three figures. First, the trend line for New Mexico begins around .07, whereas both Illinois and South Dakota have government growth in 1946 at roughly .03. Second, the trend lines for both Illinois and New Mexico are steeper than the trend line for South Dakota. South Dakota's rate of government growth is considerably slower over time, though the slope remains on average positive. On the other hand, the size of South Dakota's government demonstrates more volatility than either New Mexico or Illinois. In the mid-1970s, South Dakota's government grew from a little over 10% of the state's economic output to about 15% by 1976. Government growth subsequently subsided to about 12% by the late 1970s. This volatility is not seen in New Mexico, though Illinois' trend line exhibits volatility also in the 1970s. The difference is that South Dakota's government seems to resume earlier levels of spending as illustrated by the sharpness of the trend line peaks in comparison to the more rounded trend line of Illinois.

The tables and graphs presented here indicate that states differ widely in their both the size of their public sectors and the patterns of growth they have exhibited in the time period under analysis. A leveling off of state government growth is also apparent. Since the early 1980s state government growth noticeably declines; this is particularly so when state government size is deflated. Preliminary evidence that state public sectors grew in response to federal unfunded mandates is lacking. Neither the trend line for undeflated or deflated state government growth appears to exhibit any

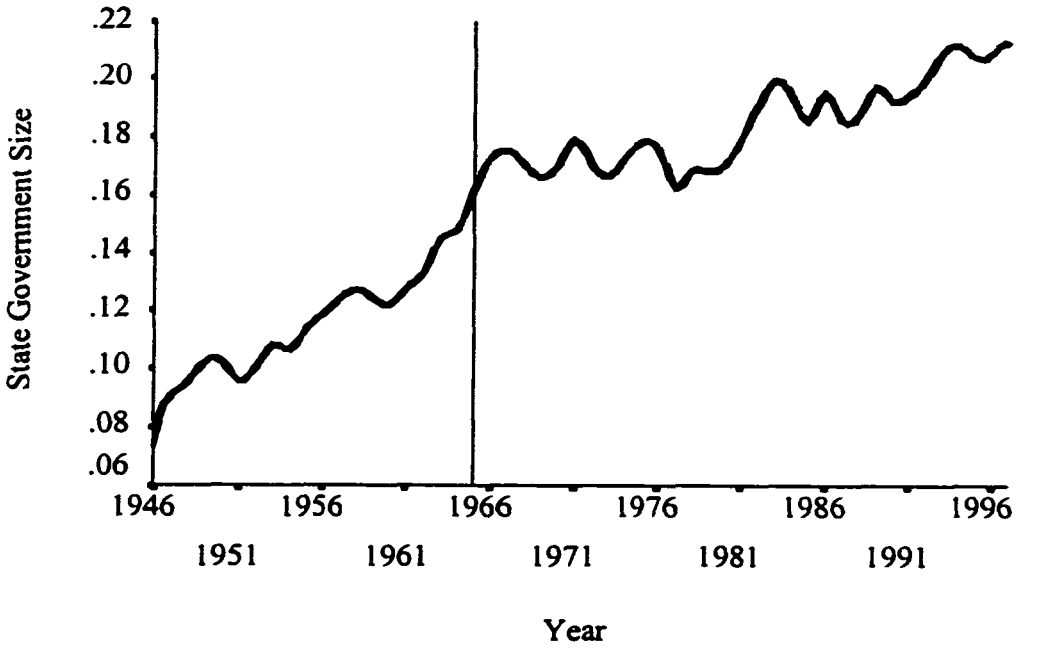

Figure 6. Undeflated State Government Growth in New Mexico, 1946-1997

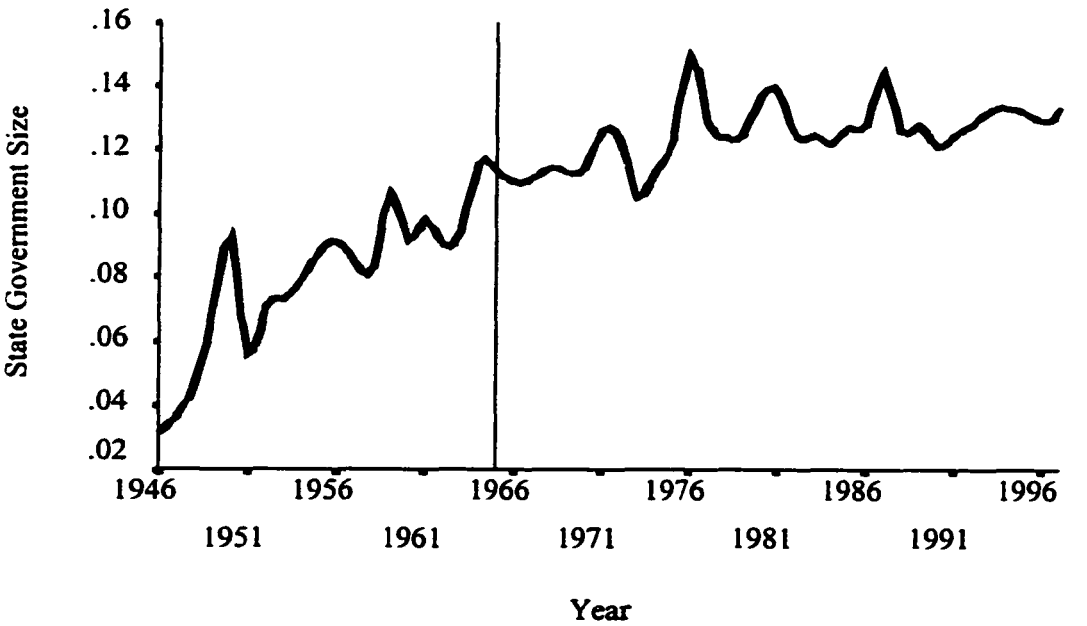

Figure 7. Undeflated State Government Growth in South Dakota, 1946-1997

appreciable change in the years immediately after 1965. Finally, Table 5 clearly shows that the differential inflation rate of the public and private sector makes a difference for state government growth. All state governments are positively affected by the higher public sector inflation rate, though there is substantial variation. Indeed, government growth in four of the states in this study can be entirely attributed to the effect of the public sector price difference.

Chapter 5: Multivariate Analysis of Thirteen Models of State Government Growth

In Chapter 2, I describe a comprehensive theoretical model of government size, as well as a pooled cross-sectional time-series design to be used in estimating the parameters of that model. I noted that there are theoretical and normative implications of using either deflated or undeflated measures of state government growth. This debate is resolved by including in this analysis two tests of the model using both variations of the dependent variable. In addition, the decision to model government growth using Husted and Kenny's (1997) data on median income voter turnout means that the state-years that could be included the model are confined to 1951-1990. Therefore, this is conducted separately using this more precise measure, rather than the turnout variable used for the full time-series. This yields four separate models of state government growth. I concentrate on the models using the full time-series in this chapter and turn to the two models using the Husted and Kenny measure (1997) in the median income voter section. The model estimates using this measure of median income voter turnout are found in Appendix 1.

In the following discussion, I examine the undeflated and deflated models of government growth using the familiar responsive-excessive dichotomy discussed in preceding chapters. Working within this framework, I focus on each individual explanation of public sector growth and how each fares in the different time-series estimations. I first analyze the results obtained using the undeflated measure of state government growth. Next, I discuss the results for the deflated model, with a focus on any substantial differences that emerge when state government size is deflated using

the state and local government price deflator. The chapter concludes with an estimation of the predicted impact of the thirteen theories in order to determine to what degree state government is a function of responsive or excessive explanations of public sector growth. Before investigating the performance of the individual theories of government growth, it should be noted that both model estimations fit the data well. Most successful is the model using the undeflated measure of government growth. The undeflated model, presented in Table 6, explains 91% of the variance in the dependent variable and thirteen of the coefficients are both statistically significant and in the expected direction. The deflated model, presented in Table 7, performs well too. The deflated model explains 85% of state government growth. Once government expenditures are deflated, there is a small decline in the number of statistically significant and correctly signed coefficients. However, twelve coefficients in the deflated model met these criteria.

One last observation before moving to the discussion on the component theories concerns the control variable, population. The population coefficient is not significant in either model, though it is positive in the undeflated model (b = .00002, t = .181) and negative in the deflated model (b = -.00004, t = -.423). As noted in Chapter 2, it is essential to control for the size of a state's population when analyzing the factors behind state government growth. A large population provides an economy of scale that lowers the per capita expense of certain public goods. Therefore, if the raison d'être for state government is to provide public goods, the size of the population should have a negative relationship with government size. However, state government spending devoted to wealth redistribution does not benefit from an economy of scale.

Table 6. Parameter Estimates for Undeflated Model of Government Growth in the American States,1946-1997 (OLS with Panel Corrected Standard Errors)

	Government Size (Undeflated)			
Variable	**b**	**Panel-Corrected Standard Error**	**T**	**Beta**
Intercept	0.06197***	.01214	5.106	
Population	0.00002	.00008	.181	.0017
Responsive Theories				
Logged Income	**-0.04033+++**	**.00310**	**-13.000**	**-.4168**
Density	**-0.00267**	**.00192**	**-1.388**	**-.0141**
Urban	**0.01099*** **	**.00318**	**3.454**	**.0437**
Manufacturing	**-0.02242+++**	**.00440**	**-5.094**	**-.0484**
Party Control	0.00114*	.00086	1.322	.0108
Party Tenure	0.00219***	.00073	2.976	.0238
Inter-Party Competition (IPC)	**0.00485**	**.00446**	**1.086**	**.0079**
IPC * Election Year	**-0.00046**	**.00511**	**-.090**	**-.0006**
Turnout	-0.00007+++	.00002	-3.109	-.0272
Tax and Expenditure Limits	**0.00205**	**.00089**	**2.313**	**.0167**
Initiatives	**0.00106+**	**.00061**	**1.730**	**.0133**
Over 65	-0.15258+++	.02183	-6.989	-.0928
Under 18	0.02637**	.01542	1.711	.0325
Black Population	-0.01000++	.00416	-2.402	-.0253
Unemployment	0.03624**	.01910	1.897	.0125
Inflation	-0.00001	.00009	-.132	-.0010
Economic Growth	-0.05064***	.00556	-9.115	-.0623
Opinion Liberalism	**0.01037***	**.00734**	**1.412**	**.0186**
Policy Liberalism	**0.00660*** **	**.00060**	**1.986**	**.1619**

Table 6., cont.

	Government Size (Undeflated)			
Variable	**b**	**Panel-Corrected Standard Error**	**T**	**Beta**
Excessive Theories				
Income Tax	**0.00320**	**.00402**	**.795**	**.0063**
Revenue Concentration	**0.00270**	**.00266**	**1.015**	**.0089**
Deficit	**0.07452*****	**.00564**	**13.218**	**.0879**
Federal Employees	-0.37404^{+++}	.05715	-6.544	-.0517
State Employees	2.03131***	.09666	21.015	.3060
Local Employees	-0.08148	.06335	-1.286	-.0171
Intergovernmental Grant	**1.58182*****	**.03849**	**41.097**	**.5341**
Senate	-0.00272	.02301	-.118	-.0015
House	-0.00930***	.00321	-2.896	-.0249
Divided Government	**-0.00261**$^{+}$	**.00160**	**-1.635**	**-.0258**
Divided * Supermajority	**0.00445*****	**.00154**	**2.889**	**.0440**
1965 Dummy	0.01332***	.00115	11.610	.1647
Trend	0.00109	.00013	8.748	.4169
1965 Counter	0.00039***	.00012	3.421	.1084
State Dummies				
Minnesota	-0.00096	.00238	-.402	-.0025
Nebraska	-0.02259	.00198	-11.392	-.0812
N		2529		
Model F		26947.18		
Prob. > F		.0000		
Buse R-Square		.9142		

*** Prob (T) < .01, one-tail test.
** Prob (T) < .05, one-tail test.
* Prob (T) < .10, one-tail test.
$^{+++}$ Prob (T) < .01, two-tail test, coefficient in unexpected direction.
$^{++}$ Prob (T) < .05, two-tail test, coefficient in unexpected direction.
$^{+}$ Prob (T) < .10, two-tail test, coefficient in unexpected direction.

Table 7. Parameter Estimates for Deflated Model of Government Growth in the American States,1946-1997 (OLS with Panel Corrected Standard Errors)

	Government Size (Deflated)			
Variable	**b**	**Panel-Corrected Standard Error**	**T**	**Beta**
Intercept	0.05893	.01456	4.046	
Population	-0.00004	.00010	-.423	-.0052
Responsive Theories				
Logged Income	**-0.04042^{+++}**	**.00372**	**-10.858**	**-.4590**
Density	**-0.00383^{+}**	**.00231**	**-1.658**	**-.0222**
Urban	**0.01054*****	**.00382**	**2.761**	**.0460**
Manufacturing	**-0.04417^{+++}**	**.00528**	**-8.363**	**-.1048**
Party Control	0.00071	.00103	.683	.0073
Party Tenure	0.00280***	.00088	3.182	.0335
Inter-Party Competition (IPC)	**0.00216**	**.00536**	**.403**	**.0039**
IPC * Election Year	**-0.00303**	**.00613**	**-.495**	**-.0042**
Turnout	-0.00009^{+++}	.00003	-3.147	-.0363
Tax and Expenditure Limits	**0.00150**	**.00106**	**1.406**	**.0134**
Initiatives	**0.00148^{++}**	**.00074**	**2.014**	**.0204**
Over 65	-0.11272^{+++}	.02620	-4.303	-.0753
Under 18	0.12574***	.01850	6.797	.1703
Black Population	0.00035	.00499	.069	.0010
Unemployment	0.02297	.02292	1.002	.0087
Inflation	-0.00029^{+++}	.00010	-2.845	-.0277
Economic Growth	-0.05723***	.00667	-8.585	-.0774
Opinion Liberalism	**0.02398*****	**.00881**	**2.723**	**.0474**
Policy Liberalism	**0.00716*****	**.00072**	**9.941**	**.1932**

Table 7., cont.

		Government Size (Deflated)		
Variable	**b**	**Panel-Corrected Standard Error**	**T**	**Beta**
Excessive Theories				
Income Tax	**0.00740***	**.00483**	**1.532**	**.0159**
Revenue Concentration	**0.00216**	**.00319**	**.677**	**.0079**
Deficit	**0.10184*****	**.00676**	**15.054**	**.1320**
Federal Employees	-0.38046^{+++}	.06858	-5.548	-.0578
State Employees	1.97533***	.11599	17.030	.3270
Local Employees	-0.19212^{+++}	.07601	-2.527	-.0443
Intergovernmental Grant	**1.75948*****	**.04619**	**38.096**	**.6529**
Senate	0.00390	.02761	.141	.0024
House	-0.00539*	.00385	-1.400	-.0158
Divided Government	**-0.00223**	**.00191**	**-1.167**	**-.0243**
Divided * Supermajority	**0.00381****	**.00185**	**2.061**	**.0414**
1965 Dummy	0.01116***	.00138	8.102	.1515
Trend	0.00047	.00015	3.129	.1966
1965 Counter	0.00049***	.00014	3.552	.1484
State Dummies				
Minnesota	-0.00102	.00285	-.357	-.0029
Nebraska	-0.02604	.00238	-1.945	-.1028
N		2529		
Model F		14367.73		
Prob. > F		.0000		
Buse R-Square		.8504		

*** Prob (T) < .01, one-tail test.
** Prob (T) < .05, one-tail test.
* Prob (T) < .10, one-tail test.
$^{+++}$ Prob (T) < .01, two-tail test, coefficient in unexpected direction.
$^{++}$ Prob (T) < .05, two-tail test, coefficient in unexpected direction.
$^{+}$ Prob (T) < .10, two-tail test, coefficient in unexpected direction.

Responsive Theories

Wagner's Law

Wagner's Law suggests that externalities associated with industrialization lead to an increase in public sector size. Higher levels of industrialization result in greater urbanization and a need for public services such as police, and fire protection. Industrialization also requires a substantial infrastructure such as ports, highways, and mass transit. Finally, Wagner's Law argues that citizens will demand proportionally more from government as wages rise with increase industrialization.

Of the four variables used here to test Wagner's Law, only one has a coefficient that is correctly signed and significant. The urban population of a state is in the expected positive direction and highly significant (b = .01099, t = 3.454). The proportion of the population living in urban areas is positively related to a larger state public sector. Presumably, a larger urban population generates more crime, a need for mass transportation, increased fire hazards, along with other externalities that must be addressed by state government. The impact of urbanization on state government growth, when holding the effects of all of the other variables constant at their means, can be gauged by comparing the predicted values derived using 1) the variable mean, and 2) the variable mean plus (or minus) one standard deviation.[1] This procedure indicates that a one standard deviation increase in state urbanization yields a

[1] Mean values and standard deviations used here and elsewhere are found in Appendix 3. This value is obtained by re-estimating the model holding each variable to its mean value while increasing the variable of interest by one standard deviation. The predicted value of state government size when holding all variables to their mean is then subtracted from the predicted value obtained by increasing (or decreasing) the variable

proportional increase of .0017, or an almost .17% growth in state government size as a proportion of total state income, when controlling for the effects of the other variables in the model (results not shown). The standardized beta coefficient suggests that urbanization has had a relatively small effect during the period of this study (beta = .0437).

Interestingly, population density is not a factor in determining the size of state government. The coefficient is negative, though it never reaches conventional levels of statistical significance (b = -.00267, t = -1.388). One possible explanation for this contradictory finding may be that urban population is a more precise measure to use for the hypothesized relationship than population density. It may be that density would have a positive effect if the variable for urban population were excluded from the model.[2] To test for this, I estimate all the models without the urban variable to see if population density became statistically significant. In none of the parameter estimates is the density coefficient significant, though with the urban population removed it is positive.

The effect of per capita income on state government growth is contrary to expectations. The coefficient for the variable is highly significant and in the negative direction (b = -04033, t = -13.000). I should note that the negative coefficient for the income variable is based on a logged transformation of real per capita income and reflects a slope that is initially static and begins a positive trend once state government

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of interest by one standard deviation. This procedure indicates the relative effect one variable has on state government growth.

[2] The correlation between density and urbanization in this data is .521.

size reaches a certain size.[3] This relationship is shown below in Figures 8 and 9. Figure 8 plots average real per capita income by average undeflated state size. The non-linear relationship of per capita income to state government size is apparent. This dynamic is even more evident in Figure 7, which plots deflated per capita income by deflated government size. If government expenditures are undeflated, then per capita income positively affects growth once income reaches roughly 7000 dollars. This effect is delayed until per capita income reaches about 11,000 dollars when state government expenditures are deflated.

Given the obvious positive relationship illustrated in Figures 8 and 9, the negative coefficient reported is perplexing. While cold comfort can be taken from the fact that this negative relationship is also found by Garand's (1993) pooled time-series analysis of state government growth, the results of a number of other studies reveal a positive relationship for per capita income (Berry and Lowery 1983; Boix 2001; Thornton and Ulrich 1999). One reason the coefficient may be negative could be linked to the lack of a positive relationship, and in a few cases a negative relationship, at lower levels of per capita income. A second possibility is that at high levels of per capita income government growth actually declines. This is a reasonable hypothesis as wealthier citizens are less likely to support the additional taxes needed to finance an expansion of state government. Moreover, the need for public goods and services diminishes as a population becomes more affluent.

In short, interpretation of the negative coefficient for per capita income is problematic for this analysis. The scatter plots in Figures 8 and 9 indicate a positive

[3] I also estimate the model with the untransformed values for per capita income.

Figure 8. Per Capita Income and Undeflated Government Size

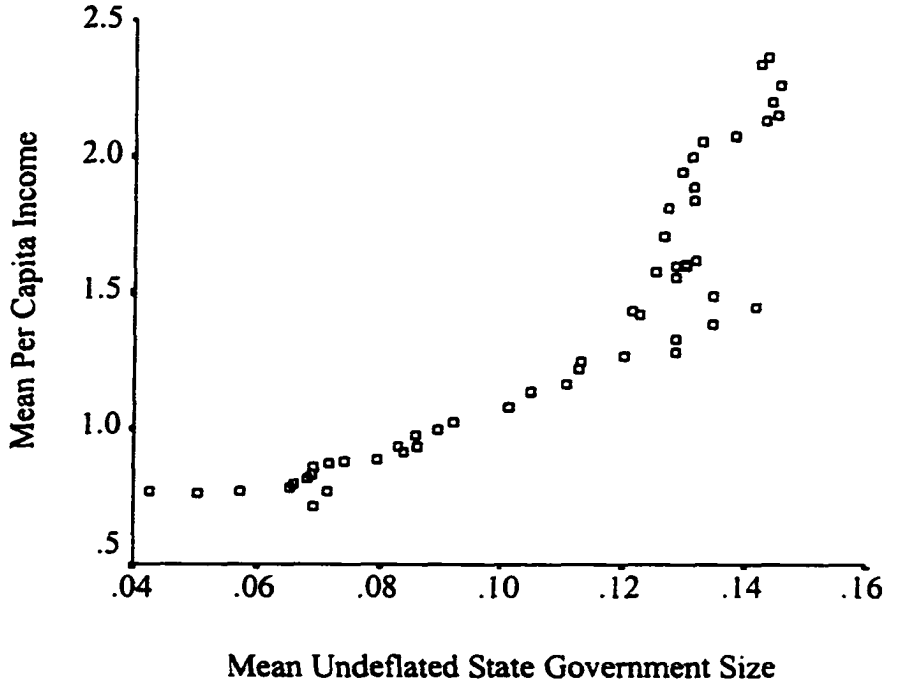
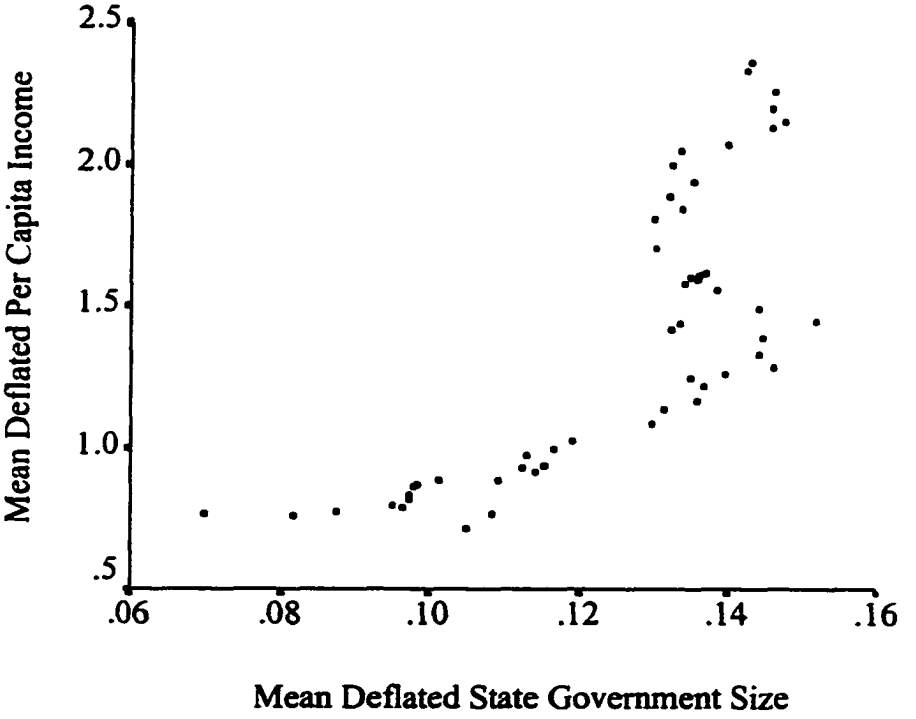


Figure 9. Per Capita Income and Deflated Government Size



relationship between the variable and state government growth, though it appears as if this is conditional on the level of per capita income. It is clear that the relationship is non-linear. Despite the difficulty of interpretation, it should be noted that per capita income exerts a powerful impact on the size of government. The standardized beta coefficients reported in the right column of Table 6 indicates that the influence of per capita income on government growth is substantial.[4] The magnitude of the standardized beta coefficients for this variable is the second largest in the model.

Finally, the proportion of total state income derived from manufacturing is unexpectedly negative and highly significant (b = -.02242, t = -5.094). Controlling for the effect of the other model variables, a one standard deviation increase in the mean value of the manufacturing variable translates into a .19% decrease in undeflated state government growth (results not shown). The magnitude of the standardized beta coefficient is -.0484. This reveals a relatively modest impact compared to the effect of some of the other variables in the model.

Wagner's Law suggests that the externalities that drive government growth are a function of industrialization. Industry generally requires significant investment in infrastructure like bridges, highways, and ports. Thus as industry becomes more vital to a state's economy, there should be a corresponding increase in public sector spending. An increased manufacturing presence could also increase the ratio of the state government and private sector deflators, as predicted by Baumol (1967).

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[4] STATA does not provide standardized beta coefficients for Panel-Corrected Standard Error OLS regression, therefore these values are computed using the standard equation where if b_I is the least squares estimate of the regression coefficient β_I in a multiple regression equation, then $b_I = b_I(\sigma\text{-hat}_{X_i} / \sigma\text{-hat}_Y)$ is the estimate of the standardized regression coefficient b_I (Agresti and Finlay 1986).

However, as Boix (2001) has noted, Wagner ignores the possibility that the presence of large manufacturing firms also has a positive effect on the state's tax base. The increased productivity of the industrial sector drives up costs for state government, but the profits engendered by higher productivity precludes state government from automatically taking a larger proportion of total economic output. In other words, the efficiency derived from manufacturing increases the denominator in the measure of state government size faster than the numerator. While Boix (2001) does not include a measure of industrialization in his study of government growth in 65 nations, his analysis reveals a negative and significant impact on public sector size for the share of GDP derived from the agriculture sector.

Only one of the four components of Wagner's Law finds support in this analysis. As a state's population becomes urbanized, there is an accompanying increase in the size of the public sector. This variable, which taps into the externalities that emerge from a metropolitan environment, would seem to be related to the population density of a state. However, population density is negatively related to public sector size and the coefficient is non-significant. The proportion of income derived from the manufacturing sector of the state economy exerts a significant and, contrary to expectations, a negative impact on the size of state government. State government shrinks in size as per capita income increases, though as Figures 6 and 7 this relationship is nonlinear.

Party Control

The party control theory argues that state government should grow when a left-leaning party is in power. The party control variable reflects the degree to which the

Democratic Party controls the state's senate, house, and governorship. While the coefficient for this variable is in the expected positive direction, it is only weakly significant (b = .00114, t = 1.322). The second component of the party control theory suggests that government growth is contingent on a legacy of Democratic Party domination of state government. The party tenure variable controls for the impact of an unchanging Democratically-controlled state government (in the previous five years). This variable coefficient is correctly signed and highly significant (b = .00219, t = 2.976). Using the coefficients reported in Table 6, it may be seen that the Democratic control of state government can have a substantial influence on undeflated public sector size. When the other variables in the model are held constant at their mean values, complete Democratic control in the previous five years yields a growth in the undeflated state government measure of .22% (results not shown). Democratic hegemony, however, has not contributed substantially to state government growth in this data set. The standardized beta coefficient is only .0238.

Overall, support for the party control theory of state government growth is strong. Both the coefficients for the component variables are positive. Though the party control coefficient is only significant at relaxed levels, the coefficient for the party tenure variable is highly significant.

Interparty Competition

The interparty competition theory of state government growth does not fare well in this model. Heightened levels of interparty competition should lead parties and candidates to expand their base of electoral support through increased public sector spending. This increased electoral support, it is hypothesized, will come from

previously unmobilized voters. Because unmobilized voters generally are drawn from the lower income segments of the population, interparty competition should drive government expenditures upward, thereby increasing the size of government.

Since the variable is actually a measure of one party dominance (or safety), rather than competition, the interparty competition coefficient should be negative. However, the coefficient is positive, though not significant (b = .00114, t = 1.086). Because of the election interaction variable, these regression results imply a positive relationship between low levels of interparty contribution in non-election years.

The relationship between interparty competition and election year suggested in Chapter 2 is that the presence of heightened levels of party competition in conjunction with an election year should lead government to grow in an effort to attract votes from lower income voters. However, the coefficient for the interaction variable representing the importance of election timing for interparty competition and government growth is not significant and unexpectedly negative (b = -.00046, t = -0.090).

Thus, there is no evidence in these analyses that interparty competition is positively related to state government growth.[5] The coefficient is incorrectly signed in and non-significant. Moreover, the influence of interparty competition as indicated by the standardized beta coefficient is among the lowest in this analysis (beta = .0079). It

[5] I also test for the possibility that the mere presence of an election year may spur state spending, and drive state government growth upward. Including both the interparty competition variable and the presence of an election year yielded the following estimates for Interparty Competition: (b = .00469, t = 1.129), and Election Year (b = .00025, t = .494). I also estimate the model with just the election year variable, this procedure also indicates little effect for the presence of an election on state government growth (b = .00025, t = .499).

appears that heightened levels of interparty competition do not result in parties and candidates mobilizing support via state spending increases.

Median Income Voter

The theory described in Chapter 2 suggests that state government will respond to increased turnout of lower income voters (or median income voters) by increasing state expenditures, thus driving state government size upward. However, whether turnout is employed as proxy for median income voter participation or Husted and Kenny's (1997) measure is used, the median income voter theory of state government growth receives no support in this analysis.

Using turnout levels as a proxy for median income voter turnout fails to uncover the hypothesized relationship. Indeed, as the proportion of the voting-age population that votes increases, public sector size *decreases*. The coefficient for turnout is negative and highly significant ($b = -.00007$, $t = -3.109$). Thus, if higher levels of turnout do indicate increased participation by median income voters, then such participation actually contributes to a decline in the size of government. Controlling for the other model variables, a one standard deviation increase in turnout levels yields a decline in public sector size of approximately .12% (results not shown). However, as noted in preceding chapters, increased turnout may not actually reflect increased levels of turnout by median income voters.

Estimates of median income voter participation using the more precise Husted and Kenny (1999) measure, however, reveal similar results. Model estimates using this variable are found in Tables 13 and 14 in Appendix 1. Again, the coefficient for this variable indicates a strong and unexpectedly positive relationship between the

income levels of those voting and the size of undeflated state government (b = .00674, t = 4.564). Holding the effects of all other variables constant at their means, a one standard deviation increase in the relative wealth of those voting to the voting-age population translates into .12% increase in undeflated state government growth (results not shown).

Altogether, it appears that median income voter participation is relatively inconsequential for state government growth. This is the case if one uses either turnout levels or Husted and Kenny's (1997) measure of median income voter turnout. If Husted and Kenny's measure better captures the income disparity between those voting and the voting-age population, the results reported here indicate that as more lower income voters go to the polls, public sector size decreases. The standardized beta coefficient for this variable, however, indicates that the impact of median voter participation on government growth is small (beta = .0351).

As for the contrary finding for the turnout variable, higher turnout levels could be the result of a number of factors. For instance, it may be the case that higher turnout reflects anger or exasperation with government. Higher turnout, in this example, may lead to a decline in government activity. Turnout is also a function of party competition, candidate appeal, campaign spending, registration requirements, and the education levels of the population (to name just a few of the predictors found in the literature). Voter participation levels could be a proxy for a better-educated, more affluent citizenry. This sort of population may be less likely to be lured to the polls by the promise of increased government spending than voters with median incomes or less.

Fiscal Constraints

The obstacles imposed by state fiscal constraints should curb growth in state government. However, the coefficients for both state tax and expenditure limitations and the presence of citizen initiatives are positive. This indicates that states with such fiscal constraints actually have larger state governments. The coefficient for tax and expenditure limitations (b = .00205, t = 2.313) and initiative (b = .00106, t = 1.730) are both significant. Thus, there is an indication that initiatives are positively related to state government growth.[6] However, standardized beta values for both variables are small.

On first glance, these are curious findings since these fiscal mechanisms were designed to be obstacles to further state government growth.[7] Nevertheless, the findings here echo those found in a number of other studies that point to the ineffectiveness of such limitations (Bails 1990; Cox and Lowery 1990; Eribes and Hall 1981; Joyce and Mullins 1991; Kenyon and Benker 1984). As discussed in the literature review, this contradiction is likely due to two factors. First, in states subject to such restraints there has been a concomitant increase in off-budget borrowing

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[6] Tolbert (1998) argues that tax and expenditure limitations and state citizen initiatives are often found together. Her analysis reveals that knowing whether a state allows citizen initiatives is a significant predictor of whether the state has tax and expenditure limitations. Thus, she claims that including both in a regression model is inappropriate. Since initiatives precede tax and expenditure limitations, only the presence of initiative should be incorporated in the model. In light of this, I excluded tax and expenditure limitations, however there was no difference in the result. Neither the significance levels nor the direction of the coefficient changed noticeably.

[7] I also tested a full range of state policy instruments that have been cited in the literature as having a constraining effect on fiscal policy. These include line-item veto power, supermajority tax and spending requirements, legislative term limits, as well as

(Bennett and DiLorenzo 1982; Bunch 1991). Politicians are able to circumvent tax and expenditure limitations through such revenue instruments as general obligation and revenue bonds (Bunch 1991) or by the exemption of certain tax and spending categories from limitation (Abrams and Dougan 1986; Bails 1990). Second, others argue that states that have such limitations are also the states with the least fiscally responsible politicians. Thus, the decision to impose tax and expenditure limitations is endogenous. Consequently, legislation in these states will be crafted "to minimize the real world impact of these limitations" (Bails 1982, 129).

Given the results I report here, it appears that there is little support for the fiscal constraints theory of state government growth. The positive and statistically significant results for the coefficients indicate a positive relationship between these forms of fiscal restraint and government growth.

Political Needs

The political needs explanation of state government growth suggests that increases in the size of the public sector are a result of high-demand sub-groups within the population, such as school-age children and the elderly. Support for this explanation of state government growth, however is mixed. Of the coefficients for the six variables used to test whether public sector size is a function of the population needs of the state, only three are significant and in the hypothesized direction. The proportion of the state under the age of 18, unemployment and economic growth all exhibit coefficients that are statistically significant and in the expected direction. On

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interactions controlling for the signature requirements of citizen initiatives. None of these policy instruments had a negative effect on government size.

the other hand, the over 65 and black proportions of the population are associated with smaller government. A rise in inflation rates is also inversely related to government growth, though the coefficient is not significant. These disparate results are explored further below.

The coefficient for the proportion of a state's under 18 population is significant and positively related to state government size (b = .02637, t = 1.711). Presumably, a higher proportion of residents under 18 requires increased state education expenditures. Holding all other model variables to their mean, a one standard deviation increase in the proportion of the population over 18 generates a .13% increase in undeflated state government size (results not shown). The standardized beta coefficient suggests that the impact of this variable is minimal (beta = .0325).

The proportional change in total state personal income from the previous year is in the expected negative direction and highly significant (b = -.05064, t = -9.115). The negative coefficient for this variable indicates that those states experiencing gains in total state personal income have a reduction in government size in the following year. The effect of a one standard deviation increase for this variable is a decline of .25% in the size of the state public sector (results not shown). Likewise, a one standard deviation decrease leads to .25% increase in state government growth (results not shown). The standardized beta value implies that changes in a state's total personal income from year to year exerted only a modest effect on state government growth from 1946 to 1997 (beta = -.0623).

Contrary to the hypothesis put forth in this analysis, rising inflation is not associated with variation on the size of the state public sector. The coefficient for

inflation, measured as the proportional change in the Consumer Price Index, is negative though not significant.[8] Surprisingly, the proportion of the population sixty-five and older is negatively related to state government growth (b = -.15258, t = -6.989). This undermines the hypothesis set forth in Chapter 2 that a greater proportion of elderly citizens should result in greater state health-related expenditures. Controlling for all other variables in the model, a one standard deviation increase in the proportion in the state over 65 population yields a .37% decrease in state government size (results not shown). The inverse relationship between a state's elderly population and public sector size could be related to the fact that older people are generally wealthier than younger people. Thus, states with substantial elderly populations may have relatively greater total state personal income than those with populations that are more youthful. Since total state personal income is the denominator in the formula used for the dependent variable, the presence of a relatively more affluent elderly subpopulation would result in a smaller value for state government size.

The effect of the change in the unemployment rate from the previous year is in the expected positive direction and if a one-tailed t-test is used, the coefficient falls within conventional levels of statistical significance (b = .03624, t = 1.897). The positive and significant coefficient indicates that rising unemployment leads to greater

[8] Because of this contradictory finding, I used a variety of other inflation indices. The proportional change in the GDP and GNP deflator was used. I also tried lagging the proportional change by one year under the supposition that there was a delay between the effect of inflation and an increased need within the state population. None of these alternatives provided different results. Indeed, all were negative and highly significant.

state government spending. Overall, the standardized beta coefficients for this variable suggest a relatively modest effect on state government growth (beta = .0125).

Contrary to the hypothesis set forth here, the black proportion of the state population is positively related to state government growth. The coefficient is highly significant (b = -.01000, t = -2.402). A one standard deviation increase in the black population proportion indicates that state government can be expected to decline by .10% (results not shown). The standardized beta coefficient value of -.0253 indicates that the overall negative effect of a state's black population on state growth is small for the years in this data set.

The political needs theory of state government growth finds moderate support in this analysis. Economic downturns, a positive change in the unemployment rate, and the proportion of school-age children in a state are all positively related to public sector growth. The regression results, however, imply that an older population is negatively related to government size and this may be due to their relatively higher incomes. Perhaps the most contrary finding is that high inflation is inversely related to government growth. The possibility discussed here suggested that state government might postpone large-scale projects with the expectation that borrowing rates will decline in the future. Little support is found for the hypothesis that the black proportion of the population has a positive impact on state growth. The results here suggest that states with large black populations have smaller public sectors.

Political Culture

The political culture explanation of government growth asserts that a larger public sector is a function of the liberalism of the population, which is reflected in

public opinion and liberal state legislation. Higher values for these two variables indicate higher liberalism scores. The two political culture coefficients, for state opinion liberalism and policy liberalism, are both in the expected positive direction and significant. States with higher values for the public opinion liberalism measure have a larger state government than those that are more conservative. The policy liberalism variable (b = .00660, t = 10.986) performs notably better than the variable measuring state public opinion liberalism (b = .01037, t = 1.412). The latter variable achieves a weak level of statistical significance when a one-tailed t-test is used. The effect of a one standard deviation increase in the value of the state opinion liberalism measure, when holding the value of the other variables in the model to their mean, translates into a .07% increase in the size of state government (results not shown). The standardized beta coefficient of .0186 in the indicates only a modest impact.

Results for the policy liberalism variable indicate very strong support for this aspect of the political culture theory of state government growth. Holding other variables to their mean value, a one standard deviation increase in the value of the variable results in a .63% increase in undeflated state government size (results not shown). The standardized beta coefficient, however, suggests that the impact of policy liberalism on undeflated state government growth is small (beta = .1619) when compared to some of the other variables in this model.

Responsive Theories in the Deflated Model

In general, the findings reported in the undeflated model of government growth are supported when state government size is measure using the deflated measure. Several variables that are significant in the undeflated model, however, do fall below

conventional levels of significance in the deflated model. The coefficient for Democratic control of government (party control) is no longer statistically significant, though it retains a positive sign (b = .00071, t = 0.683). I should note that the coefficient for party control is only weakly significant in the undeflated model. Perhaps more interesting is the effect of unemployment in the deflated model. While a rise in unemployment is still positively related to state public sector size, the coefficient is no longer statistically significant (b = .02297, t = 1.002). Apparently, changes in state unemployment rates are not associated with real (or deflated) state government growth.

Unemployment-related costs to state government generally take the form of transfer payments; therefore, evidence that unemployment rates have more of an impact on undeflated state growth than deflated state growth is not a wholly unexpected finding. Since it is only the public sector "basket of goods and purchases" that is affected by the differing inflation rates, an argument can be made that such expenditures are more subject to private sector inflation rates.[9]

On the other hand, the effect of inflation on state government growth in the deflated model is substantial and again in the negative direction (b = -.00029, t = -2.845). These results show that inflation has considerable more effect when controlling for the differential inflation rates of the public and private sector. Increasing the value of the variable by one standard deviation results in a .10% decline in deflated state government growth versus a .001% decline when using the undeflated measure (results not shown).

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[9] Attempts to distinguish between state government transfer expenditures and non-

One plausible explanation of this unexpected finding may lie in public sector decision-making. The rationale given in this analysis is that higher inflation should lead to diminished buying power, business closings, and an overall decline in the health of the economy. These factors should lead to an increased need by citizens for government welfare spending along with other policies to ameliorate the economic conditions in the state. However, higher inflation could lead state officials to postpone expensive public undertakings. For instance, the financing of capital projects requires significant borrowing by the state. Far-sighted politicians may prefer to put such endeavors on hold until interest rates, buoyed by inflation, revert to lower levels. Borrowing at the current high interest rates will constrain future spending. This interpretation of the effect of inflation on state government growth would then no longer involve a response to citizen needs, but rather an economically sound political decision made at elite levels of government.

Two other differences between the undeflated and deflated model estimates merit attention. The coefficients for a state's black population proportion is positive in the deflated model of state government size though not significant (b = .00035, t = 0.069). Second, the under 18 and over 65 proportions of a state population have a markedly greater impact in the deflated model than in the undeflated model. The coefficient for the under 18 proportion of the population is also positive in the deflated model, though the explanatory power of the variable is noticeably better (b = .12574, t = 6.797). The over 65 population coefficient retains a similar significance level in the deflated model and is also in the unexpected negative direction.

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transfer expenditures in the data collection stage of this analysis proved unsuccessful.

The chief difference between the two models for the under 18 proportion and over 65 variables lies in their impact on state government size. Holding all other variables in the model to their mean values, a one standard deviation increase in the proportion of the population over 18 generates a .13% increase in undeflated state government size compared to a .61% increase when a deflated measure of growth is used (results not shown). The same comparison for the over 65 population variable indicates a decline of -.37% in the undeflated model and a -.27% in the deflated model (results not shown). Since deflated state government growth, which reflects the higher inflation rates incurred by state government, is partly a function of the rising costs of education, i.e. teacher salaries, buildings, textbooks, the substantial impact revealed for the under 18 population proportion in the deflated turnout model is likely due to these education-related expenses. In other words, the under 18 variable primarily affects real state government growth. One conclusion that can be made from the smaller negative impact in the deflated model for the over 65 population proportion is that the purported health costs incurred by state government as a result of an aging population may be less than what was hypothesized in Chapter 3. Or at least, the positive impact of such costs are overshadowed by the affluence of an older population.

Summary of Responsive Theories

Taken as a whole, the responsive explanations contribute to our understanding of state government growth. In particular, the political culture, party control, and political needs explanations of state public sector size receive moderate-to-strong support in both the undeflated and deflated models. Both political culture variables

have uniformly positive and significant coefficients in the two models of state government growth. For the party control explanation, it appears that state government growth is more likely to grow as the Democratic Party sustains control of government over a number of years. Indeed, the coefficient reflecting Democratic control of government in the previous year is not a significant predictor of state public sector size in the deflated model and only weakly significant in the undeflated model. Interesting results are obtained for the political needs variables. Surprisingly, increases in inflation rates and the over 65 proportion of state population lead to smaller state government. Black population seems unrelated to government growth. On the other hand, the under 18 population, state economic growth, and unemployment are related to an increase in government growth. Moreover, a comparison of the different effects of the political needs variables in the undeflated and deflated models enriches our understanding of the dynamics of state government growth.

On the other hand, several responsive explanations fail to find much support in these models. Inter-party competition seems to have no relationship with state government growth, and this is the case whether it is a state election year or not. Likewise, this analysis confirms the findings of other scholars regarding the effect of fiscal constraints on state government growth. Neither tax and expenditure limitations nor the presence of state voter initiatives has the proposed negative effect on public sector growth. This perplexing finding may be due to the possible endogenous character of the variable. Confirmation of the median income voter theory was sought using two different variables and both variable specifications indicate that increased median income voter turnout actually depresses state government growth.

Finally, I find little support for Wagner's Law. While this study confirms that urbanization has a positive impact on state government growth, the results reveal contrary evidence for the other three component variables. The logged value of per capita income I use in this study is an improvement over the untransformed version of the variable; however, like Garand (1993), I find that per capita income has a negative effect. Moreover, the effect is quite strong. My measure of state industrialization, a variable heretofore not analyzed in state-level government growth studies, also points to an unexpected inverse effect. Though this finding contradicts a central hypothesis of Wagner's Law, it does mirror the effect of industrialization found in international public sector growth studies (Boix 2001). Finally, the effect of density on state public sector size is in contradiction to Wagner's Law. Indeed, density may have a modest positive impact on state government growth, particularly when state government size is deflated.

Excessive Theories

Fiscal Illusion

The fiscal illusion explanation of state government growth asserts that citizens, because of the illusionary nature of the tax system, systematically underestimate the amount they pay in taxes. Because of this underestimation, state government size is larger than it would be if citizens were fully aware of their tax burden.

Support for the fiscal illusion explanation of government growth is weak. Only one of the three component variables of the fiscal illusion explanation of state government growth, deficit spending, finds support in the model. There is considerable evidence that state deficit spending leads to increased government size.

The state deficit spending coefficient is positive and highly significant (b = .07452, t = 13.218). The effect of deficit spending on state government growth is relatively large. Holding the value of all other variables in the model to their mean value, a one standard deviation increase in the proportion of the state budget financed through deficit spending yields a .35% increase in the undeflated size of state government (results not shown).

As expected, the proportion of state revenue derived from income tax receipts is positively related to state government growth, though the coefficient is well below conventional levels of statistical significance (b = .00320, t = 0.795). Thus, it appears that if there is any element of fiscal illusion in income taxes, it does not seem to be related to a corresponding increase in the undeflated size of the state public sector.

The coefficient for the variable measuring the concentration of a state's revenue system is unexpectedly positive, though not significant (b = .00270, t = 1.015). Since high values for this variable indicate a more concentrated revenue system, the expectation is that this coefficient will take a negative sign. The coefficient's lack of significance and negative direction is in contrast to Garand (1993), who finds a strong positive relationship between revenue system complexity and state government growth. On the other hand, a positive relationship for revenue concentration is found in international (Cameron 1978) and national-level (Lowery and Berry 1983) empirical analyses.

In sum, the fiscal illusion explanation of government growth receives weak support in this model. One exception is the effect of deficit spending, which is positively related to state government growth. The standardized beta coefficient

reported in the undeflated state government growth model suggests that deficit spending has a relatively strong impact on public sector size (beta = .0879). State revenue concentration, on the other hand, has no effect on public sector size. The proportion of state revenue derived from income taxes, while exhibiting a positive relationship to state government growth in the model, fails to achieve conventional levels of statistical significance.

Bureau-Voting

The bureau-voting theory suggests that the self-interested voting behavior of bureaucrats translates into a larger public sector. It is hypothesized that bureaucrats see an advantage in growth in the size of government. Thus, as the ratio of public sector workers to private sector workers increases, there should be an attendant growth in government. Empirical evidence, however, for the bureau-voting theory of state government growth is mixed. While the proportion of federal and local employees in a state tends to depress public sector size, the proportion of state employees exerts a positive impact on state government growth. From a theoretical standpoint, it is the state employee proportion of the population that benefits the most from an expansion of the public sector. Thus, the positive and highly significant coefficient for the state employee coefficient provides substantial support for the bureau-voting model.

The coefficient for the federal employee proportion variable is negative and highly significant (b = -.37404, t = -6.544). A one standard deviation increase in the proportion of federal employees in the previous year, holding other variables to their mean values, leads to a decline in state government growth of .21% in the following year (results not shown). The effect of the local employee proportion of the

population is similar, though with considerably less impact. The coefficient for this variable is negative, though not significant (b = -.08148, t = -1.286).

The centerpiece of this model, the proportion of state employees in a state population, has a strong positive impact on state government size (b = 2.03131, t = 21.015). Holding the effects of all other variables constant at their means, a one percent increase in the proportion of the state population employed by the state increases the size of government by .20% (results not shown).[10] The effect of a one standard increase in this variable, again holding all other variables to their mean values, is more dramatic, yielding a growth in state government of 1.20% (results not shown). The value reported for the standardized beta coefficient is also quite high (beta = .3060). With the exception of intergovernmental grants and per capita income, this is the strongest positive impact in the study.

The bureau-voting explanation of government growth provides an interesting insight on the role of self-interest in public sector growth. It was argued in Chapter 3 that given the job similarity of local, state, and federal workers, an increase in their respective proportions within a state population should result in an expanded public sector. Moreover, as Garand, Parkhurst, and Seoud (1991) have shown, public employees are both more liberal than their private sector counterparts and turn out to

[10] One important objection to these findings is that the number of state employees in a state will increase government size because of the state employee wages paid. Thus, an argument could be made that the proportion of state employees is actually an endogenous variable. To account for this possibility, I estimated all the models with state expenditures – state employee wages in the numerator of the dependent variable. The proportion of state employees in a state was still a very powerful predictor of state government growth. The decision to retain the original dependent variable, unpurged of state wages paid, was based on the recognition that state personnel expenditure is a

vote at higher rates. The results of this analysis demonstrate, however, that it is state employees that matter most for state government growth. Federal and local employees actually contribute to a decline in state public sector size. Since state employees are the principal beneficiaries of state government growth, the findings reported here should be taken as confirmatory evidence of the bureau-voting model.

Intergovernmental Grant

Intergovernmental grants are hypothesized to have a positive impact on state government growth. The theory suggests that while federal aid can substitute for state-derived revenue, it is also possible that such aid can result in greater spending, over and above the amount received by the federal government. For instance, intergovernmental grants are often conditional on state matching requirements. The model of state government growth provides abundant empirical evidence that intergovernmental grants lead to greater state government growth. The intergovernmental coefficient is positive and highly significant (b = 1.58182, t = 41.097). The coefficient exceeds a value of 1.00, which indicates that intergovernmental grants increase the size of state government beyond a simple one-to-one ratio. Recall from Chapter 3 that a value greater than 1 for the intergovernmental grant coefficient implies that the influx of federal funds increases state spending more than the amount received from the federal government. For instance, the model reports a coefficient of 1.58. This means that federal grants to state government generates additional spending by state government. For every dollar

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very real component of state government size. Indeed, it is likely that state wages are contingent on the voting power of state employees.

of federal aid, an additional 58 cents is contributed from a state's own revenue base. This represents a substantial impact on state government size. A one standard deviation increase in the value of the intergovernmental grant variable, when holding all other variables to their mean values, results in a 2.10% increase in state government size as a proportion of total state personal income (results not shown). The value of the standardized beta coefficient indicates that intergovernmental grants exert the greatest impact on state government growth (beta = .5341).

It is evident that the federal government plays a large role in government growth at the state level. Rather than substitute or enhance state revenue, federal aid results in a remarkable increase in public sector expenditures. One dollar of federal aid translates to 58 cents of state-derived spending, according to the model estimate in this analysis. Of all the variables tested in this study, the impact of intergovernmental grants on state government growth is the largest. Thus, it is clear that intergovernmental aid has an overall positive effect on the size of the state public sector. The notion that federal aid plays a substitutive role in state budgets is belied by the results of this analysis. The positive impact of intergovernmental aid is likely due to the matching requirements and stipulations that often accompany federal grants.

Constituency Size

The constituency size theory suggests that as the number of constituents per representative increases there is a corresponding increase in the size of state government. First, a larger constituency leads to a more heterogeneous district and weaker constituency signals. This makes trading votes less difficult and legislation easier to pass. Second, the smaller legislature implied by increased constituency size

results in an increase in the "price" of a legislator's vote. This increased price, it is hypothesizes, makes it more difficult for citizens to compete with the "deep pockets" of interest groups.

Evidence for the constituency size explanation of government growth is strong for the effect of house constituency size. The coefficient for the house constituency size variables is in the expected negative direction and highly significant (b = -.00930, t = -2.896). The coefficient for the senate constituency ratio, while negative, is not significant (b = -.00272, t = -0.118). It is noteworthy that the coefficient for the senate constituency variable is overshadowed by the house constituency coefficient. The house coefficient is almost four times larger than the senate coefficient. This finding is in contrast to that of Thornton and Ulrich (1999), who concluded that the impact of constituency size is more pronounced for the senate.

An examination of the effect of a one standard deviation decrease in the ratio between representative and represented, when holding the values of all other variables to their mean, confirms that house constituency size has a greater influence on state government growth than the constituency size of a senate member. Such a decrease in the value for the house variable suggests that state government increases by .10%, whereas the same decrease for the senate variable yields only a .001% increase in public sector growth (results not shown). The effect of house constituency size is roughly ten times that of senate constituency size. This disparity is reflected in the standardized beta values for the two variables, beta = -.0249 and beta = -.0015 for the house and senate respectively. Nevertheless, these values indicate that constituency size has had a relatively small impact on state public sector growth.

Overall, the model indicates that as the proportion of the population per representative increases, government growth declines. While only the coefficient for the house variable is significant, the coefficient for senate is in the expected negative direction. It appears that the impact of the representative-constituent ratio on state public sector size is greater for the house than the senate.

Divided Government

The effect of divided government on state government growth reported in Table 6 is contrary to the hypothesis set forth in Chapter 3 that a lack of consensus within state government would result in a compromise in which the opposing parties would both see their spending preferences satisfied. At first glance, it appears that a history of divided state government leads to a reduction in state government growth. The divided government coefficient is negative and weakly significant (b = -.00261, t = -1.635). The divided government coefficient indicates that a state government under split control for all of the previous five years leads to a decline in state government size.

However, a corollary to this hypothesis argues that whether a state government is able to finance such a spending increase is contingent upon the ability to muster a coalition within the legislative branch in favor of a tax increase. The absence of legislative supermajority requirements for tax increases should make such coalition-building comparatively easier.[11]

[11] I also estimate a model that does not include the legislative supermajority interaction variable. These estimates indicate that divided government does lead to growth in state government, especially when state public sector size is undeflated. The coefficient for the divided government variable is .00150 (t = 2.082) in the

The inclusion of the divided government-supermajority requirement interaction variable suggests that divided government in a state with no such requirements may in fact result in greater state government growth. The variable coefficient is positive and highly significant (b = -.00261, t = 2.889).[12] An indication of the impact of divided government in a state with no supermajority requirements can be ascertained by using the coefficients reported in Table 6. For instance, a state government that is 1) able to pass a tax increase with only a majority of both houses and 2) has had divided government for the previous 5 years has a public sector that is proportionally .0018 (or .18%) larger than a supermajority-state with a five year history of unified control

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undeflated model, and .00129 (t = 1.485) in the deflated model. I have chosen to retain the interaction variable because it demonstrates the importance of the supermajority requirement. The positive and significant findings for the model excluding the interaction variable reflects the fact that the vast majority of the states in this sample (38 of 49) do not have such supermajority requirements. Computing the effect of a completely divided state government delegation in the past five years, while holding all other variables in the model constant at their mean, indicates that undeflated state government should grow by .15%. This is comparable to the value of .18% given in the text that includes the effect of the interaction variable.

[12] I hypothesized that the effect of divided government should be more apparent as it becomes the norm rather than the exception, hence the use of the five-year average. Moreover, using five years assures at least one intervening gubernatorial election. However, an argument can be made that if divided government leads to an increase in state government growth, then this effect should be apparent in the year immediately following a year of split control. A test for this possibility yielded virtually identical results as those reported here. The divided government coefficient was negative and significant in all models with the exception of the deflated turnout model of state government growth. The supermajority interaction variable coefficient was positive and significant in all models as well. The divided government coefficient in the undeflated turnout model was -.0033, and was .0047 for the supermajority interaction coefficient. These coefficients indicate that a state public sector with divided government in the past year and no supermajority requirement is .14% larger in the following year. The cumulative effect is somewhat smaller (.07%) in this divided government scenario than that under the variable operationalization used in this analysis. Aside from this difference, there were no changes in the sign or significance levels for the other variables tested.

((1 * -.00261) + (1 * .00445)) (results not shown). This is an admittedly extreme example, however, 18% of the state-years from 1946 to 1997 fall into this very category.[13]

In sum, the empirical evidence suggests that divided government has a positive impact on state government size as the passage of tax increases becomes less difficult. When legislative supermajority requirements in place, divided government results in a smaller state public sector. Given the fact that so few states have such requirements, the overall effect of divided government on government growth (.18% increase) is similar to that of a state with a legacy of unified Democratic control (.22% increase).[14]

Unfunded Mandates[15]

The unfunded mandates explanation of state public sector growth suggests that the proliferation of unfunded mandates from the mid 1960s onward has placed a financial burden on state government that has resulted in an overall increase in the size of government. As noted in Chapter 3, the effect of unfunded mandates on state government growth can occur in two different ways. First, the increase in unfunded mandates since 1965 could lead to a break and upward shift in the trend of state government growth in the years from 1966 onward. To control for this possibility, I

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[13] I also tested for the possibility that the significance of the interaction variable was due more to the lack of state supermajority requirements than an interaction with divided government. Including a dummy variable equal to one if a state had such requirements did not alter the results reported here. Indeed, the coefficient for this variable was positive and non-significant.

[14] The coefficient values for the party control and divided government variables come from the undeflated turnout model estimates reported in Table 6.

[15] The control variable, Trend, facilitates the interpretation of the 1965 counter variable. The variable indicates that state government has grown in the years 1946 to 1997. Since it is a control variable, the significance and direction of its coefficients in the four models will not be discussed here.

use a dummy variable that takes the value of one in all state-years from 1966 to 1997. This variable operationalization should capture any substantial upward shifts, or breaks in the overall government growth trend line. That state governments experienced such an upward shift is evident from the regression results. The model reveals a positive and highly significant (b = .01332, t = 11.610) coefficient for the post-1965 dummy variable. A second possibility is that the effect of unfunded mandates on state public sector growth has led to a steeper slope in the years since 1965. To account for this steeper slope, I created a variable that takes the value of one in 1966, two in 1967, three in 1968, and so on. This variable coding should reveal whether the state government growth trend line became steeper in the years following 1965. Again, the coefficient for this counter variable is positive and highly significant (b = .00039, t = 3.421) in the model estimation.

Therefore, it appears that in 1966 state government size both shifted upward and grew at a higher rate in the years following the mid-1960s. The coefficient for the 1965 dummy variable indicates that when holding the effects of all other variables constant at their means, state government became 1.3% larger than would otherwise be expected as a result of unfunded federal mandates. The same procedure for the 1965 counter variable implies that state government grew by an additional .04% in every year since 1965. Multiplying this coefficient by the 22 remaining years in the data set suggests that .86% of the growth since 1965 is attributable to the proliferation of unfunded mandates. This accounts for a substantial percentage of the overall state growth in this era. Table 4 reports a mean state government size of .1048 in 1965 and .1438 in 1997, a four percent increase. Depending on the degree to which the 1965

counter variable is an accurate measure, about a fifth of this growth may be linked to unfunded mandates.

As noted in Chapter 3, the ideal measure of the effect of unfunded mandates would indicate the financial burden placed upon the states. The use of the post-1965 dummy variables, however, does provide a crude estimate of the impact of such mandates on the size of state government. With this caveat in mind, the unfunded mandate explanation of state government growth fares well in this analysis. The coefficients for the 1965 dummy variable and counter variable are positive and highly significant. The standardized beta coefficients suggest that unfunded mandates have had a considerable effect on state government growth since the mid-1960s.

Excessive Theories in the Deflated Model

There are only a few differences between the findings reported for the undeflated model and deflated model when testing the component variables of the excessive explanations of state government growth. This in contrast to the relatively large disparities noted in the responsive explanation section.

Perhaps the most notable difference is that intergovernmental grants seem to have a greater effect on deflated state growth than in the undeflated model. When government growth is deflated, intergovernmental grants translate into comparatively larger public sector size. Here, the intergovernmental coefficient equals 1.75948 ($t = 38.096$). This coefficient value indicates that one federal grant dollar yields state spending of 1.76 dollars. Every federal dollar results in an additional 76 cents that comes from a state's own revenue base. This is 18 cents more than when state

government size is deflated. The impact of intergovernmental grants on state government growth is also the single largest impact in the deflated model (beta = .6529).

Coefficients for two variables are significant in the deflated model that were not in the undeflated model. The first of these, from the fiscal illusion theory, is the proportion of state revenue derived from income taxes. The coefficient for this variable is in the expected positive direction and significant at relaxed levels in a one-tailed test (b = .00740, t = 1.532). The effect of an increase in the income tax proportion of state revenue, however, is not as dramatic as that found for deficit spending. Holding the effects of all the other variables constant at their means, suggests that an increase of one standard deviation for this variable yields only a .06% increase in state government size (results not shown).

The proportion of local employees in a state population is still negatively related to state government size in the deflated model; however, the coefficient is highly significant (b = -.19212, t = -2.527). One conclusion that can be taken from this finding is unrelated to any notion of self-interested voting behavior. It may be that devolution of certain responsibilities from state government to local government results in a decrease in deflated state expenditures. For instance, this may be the state-level version of unfunded mandates. The state makes local government responsible for the administration and funding of programs, but does not provide the local government with any compensation. Thus, the proportion of local workers may be serving as a proxy for state-level unfunded mandates. On the other hand, local government in some states may willingly assume a greater role in the provision of

public goods and services. Thus, states with higher proportions of local employees may be states with more active local governments.

Two minor differences concern changes in the significance levels of the house constituency size and divided government coefficients. First, the house constituency size coefficient retains the expected negative sign, but is only significant at a marginal level (b = -.00539, t = -1.400). Second, the divided government coefficient, while still negative, no longer attains conventional levels of statistical significance (b = -.00223, t = -1.167).

Summary of Excessive Theories

Overall, the excessive explanations do a good job at enlarging our understanding of the determinants of state government growth. There is substantial empirical support for the theory that intergovernmental grants dramatically increase the size of the state public sector. Contrary to the argument that such grants play a replacement or substitutive role, the result of this analysis demonstrate that there is a considerable increase in state government size well over the amount received from the federal government. One dollar of federal aid translates into anywhere from 58 cents (undeflated model) to 76 cents (deflated model) in additional state spending. Moreover, the impact of this variable, as measured by the standardized beta coefficients, is the largest of all variables in the model.

The regression results also indicate that a state's proportion of state employees has an important effect on the size of the public sector. The categorization of public employees by levels of government is also particularly useful for understanding the dynamics of state government growth. Since the basis of the bureau voting theory

suggests that government growth is a function of the self-interested voting behavior of bureaucrats, the findings of this analysis present a refinement of the theory. In particular, this variable, which has been operationalized by some scholars (Garand 1988; 1993) as the proportion of state and local employees, seems to be better measured as just state employees. The negative coefficient reported for the local employee variable suggests that either an expanded state public sector is not in the self-interest of local employees or that a larger local employee proportion indicates that local government has relatively greater responsibility for the administration and funding of government programs and policies.

The mixed findings for the fiscal illusion theory of state government growth also suggest that this explanation needs to be refined. The positive effect of revenue concentration on state government size may be because a more simplified tax system actually aids state revenue efforts. On the other hand, it appears that the proportion of revenue derived from income tax receipts exerts a positive impact on state government growth, though this hypothesis only finds support in the deflated model. Deficit spending, however, is an important determinant of state public sector size. Moreover, the standardized beta coefficients for both models suggest a relatively strong positive effect.

The effect of divided government on government size, which has not been tested at the state level, finds moderate support. The conventional wisdom that divided government leads to gridlock (e.g. Cutler 1988) does not seem to the case. While I make no claim regarding the effectiveness of the policies that emerge from a divided state government, it appear that when there are no legislative supermajority

requirements, split-control results in an expansion of the state public sector. I should note, however, that the impact of divided government is relatively minor when compared to some of the other variables in this model.

There is some evidence that constituency size is positively related to state government size. However, this effect is confined to the house constituency size variable. This is a noteworthy finding since previous analysis suggests that it is the senate constituency size ratio that has the most effect on public sector growth.

Finally, empirical support for the notion that unfunded mandates have resulted in an upward shift in the size of state public sectors receives some tentative support in both the undeflated and deflated models. As noted, I would prefer to have a better estimate of the fiscal impact of unfunded mandates on the states. Nonetheless, the positive and significant coefficients for both the 1965 dummy and counter variables provide some indication that such mandates have resulted in increased state government growth.

Comparing Predicted and Observed Values

Before summarizing the overall results of the analysis, some indication of how well the model performs for each year and state in the data set is in order. In Tables 8 and 9, I present the predicted and observed values for each year in the data set. The residual values in the fourth column of the two tables indicate that both the undeflated and deflated models of government growth do a good job at generating accurate predictions of mean state government size. For the undeflated measure, the mean predicted value (.10834) is virtually identical to the actual mean value (.10843).

Similar results are obtained when the deflated measure of government growth is used, though the difference between the two values is modestly greater.

Among the 52 years in the data set, the predicted values fit the actual mean size of state government best in 1990, with an underestimation of the true proportion in the undeflated model of only .00013, or .013%. Similarly, the underestimation in 1969 is just .0034%. The best fit in the deflated model is for 1953, with an overestimation of only .004%. On the other hand, the years 1976 and 1986, in the undeflated model, have the worst fit when comparing observed to predicted values. However, the absolute value of the residuals for these two years is still relatively small. This value is .00669 and .00642 for 1976 and 1986 respectively, representing an almost one percent difference in the actual mean size of state government in these two years. The worst fit in the deflated model of state government size is for 1950. The model predicts a value of .10051 and the observed value is .10835, a difference of .00784. The second worst fit in the model is 1949, with an underestimation of .00656.

Tables 10 and 11 contain the predicted and observed values for mean state government size, broken down by state. Again, my model of state public sector growth does a good job at explaining government size within the states. Overall, there is little difference between the observed size of state government and that predicted by the model. When the undeflated measure is used, the mean predicted value of state government size is .10904 compared to an actual size of .10918. The difference between observed and predicted values when using the deflated measure is also small. Though all the state-by-state residuals are small, it is evident that the model explains government growth in some states better than in others. Table 11 indicates that

Table 8. Mean Observed and Predicted Undeflated Government Size in the American States, By Year, 1946-1997

Year	Observed Government Size	Predicted Government Size	Absolute Value of Residual
1946	.04255	.04376	.00121
1947	.05042	.05343	.00301
1948	.05708	.05588	.00120
1949	.06918	.06772	.00146
1950	.07134	.06692	.00442
1951	.06531	.06739	.00208
1952	.06603	.06462	.00141
1953	.06821	.06728	.00093
1954	.06872	.06973	.00101
1955	.06915	.06976	.00061
1956	.07167	.07125	.00042
1957	.07448	.07307	.00141
1958	.07954	.08031	.00077
1959	.08407	.08709	.00302
1960	.08322	.08559	.00237
1961	.08636	.08514	.00122
1962	.08619	.08331	.00287
1963	.08959	.08763	.00196
1964	.09213	.09046	.00167
1965	.10135	.10441	.00306
1966	.10477	.10793	.00316
1967	.11064	.11242	.00179
1968	.11264	.11400	.00136
1969	.11311	.11277	.00034
1970	.12015	.11672	.00343
1971	.12839	.12612	.00227
1972	.12860	.12601	.00260
1973	.12145	.12295	.00150
1974	.12264	.12393	.00129
1975	.13459	.13512	.00053
1976	.14185	.13516	.00669
1977	.13466	.13323	.00142
1978	.12854	.13161	.00307
1979	.12521	.13097	.00576
1980	.12855	.13404	.00549
1981	.13017	.13204	.00187
1982	.13023	.12773	.00250

Table 8. cont.,

Year	Observed Government Size	Predicted Government Size	Absolute Value of Residual
1983	.13192	.12810	.00382
1984	.12658	.12444	.00214
1985	.12715	.12451	.00264
1986	.13162	.12519	.00642
1987	.13160	.12993	.00167
1988	.12963	.12881	.00081
1989	.13106	.12937	.00169
1990	.13292	.13278	.00013
1991	.13811	.13877	.00066
1992	.14330	.14194	.00136
1993	.14538	.14492	.00046
1994	.14438	.14513	.00075
1995	.14575	.14668	.00094
1996	.14241	.14617	.00376
1997	.14383	.14926	.00543
All Years	.10843	.10834	.00219

***Note**: Predicted values computed from the model coefficients reported in Table 6.

government growth in Idaho is best explained by my model.[16] The difference between the actual mean size of government in Idaho is .11528 compared to a predicted value of .11500. The predicted mean size of government for Vermont is also quite close to the observed mean size. The model slightly underestimates the proportion of the total state economy consumed by Vermont state government by .00036. The model does worst in predicting government growth in Washington. The error here is an underestimation of approximately 2%. Close behind Vermont is Texas. The size of Texas state government is overestimated by almost 1.5%.

[16] Nebraska actually has the lowest residual with all variation explained. This is due to the inclusion of the Nebraska dummy variable.

Table 9. Mean Observed and Predicted Deflated Government Size in the American States, By Year, 1946-1997

Year	Observed Government Size	Predicted Government Size	Absolute Value of Residual
1946	.06975	.07579	.00605
1947	.08162	.08466	.00303
1948	.08729	.08459	.00270
1949	.10484	.09827	.00656
1950	.10835	.10051	.00784
1951	.09637	.09868	.00231
1952	.09476	.09358	.00117
1953	.09718	.09723	.00004
1954	.09723	.09905	.00183
1955	.09770	.10008	.00239
1956	.09831	.10067	.00237
1957	.10113	.10161	.00047
1958	.10921	.10869	.00052
1959	.11417	.11655	.00237
1960	.11254	.11414	.00161
1961	.11543	.11270	.00272
1962	.11316	.11019	.00297
1963	.11642	.11464	.00178
1964	.11907	.11642	.00265
1965	.12985	.12886	.00099
1966	.13156	.13165	.00009
1967	.13566	.13557	.00009
1968	.13677	.13567	.00110
1969	.13504	.13295	.00209
1970	.13961	.13528	.00433
1971	.14626	.14521	.00106
1972	.14424	.14296	.00128
1973	.13353	.13911	.00558
1974	.13237	.13840	.00603
1975	.14459	.14815	.00356
1976	.15179	.14747	.00432
1977	.14417	.14499	.00082
1978	.13829	.14142	.00313
1979	.13395	.13935	.00540
1980	.13499	.14035	.00536
1981	.13596	.13698	.00102
1982	.13572	.13194	.00378

Table 9. cont.,

Year	Observed Government Size	Predicted Government Size	Absolute Value of Residual
1983	.13686	.13368	.00318
1984	.13038	.12961	.00076
1985	.13001	.12833	.00168
1986	.13377	.12893	.00484
1987	.13214	.13359	.00145
1988	.13520	.13113	.00407
1989	.13243	.13062	.00180
1990	.13346	.13311	.00034
1991	.13970	.13958	.00012
1992	.14578	.14291	.00286
1993	.14767	.14599	.00168
1994	.14585	.14560	.00025
1995	.14624	.14668	.00044
1996	.14241	.14509	.00267
1997	.14294	.14800	.00506
All Years	.12488	.12475	.00255

***Note**: Predicted values computed from the model coefficients reported in Table 7.

In the deflated model, the predicted mean size of state government in North Carolina is only .007% higher than the observed mean size. The size of deflated state government in Vermont is only .013% higher than the observe size. On the other hand, the model does worse for Washington and Montana. The absolute value of the residual is .02562 and .01686 for Washington and Montana respectively.

Summary

At this point, it is useful to summarize the chief findings of the preceding discussion. The thesis of this dissertation is that growth in state government is primarily a function of public sector responsiveness to citizen needs and demands. On the other hand, it may be that public sector growth is largely beyond the control of the

Table 10. Mean Observed and Predicted Undeflated Government Size in the American States, By State, 1946-1997

State	Observed State Government Size	Predicted State Government Size	Absolute Value of Residual
Alabama	.11706	.11454	.00252
Arizona	.10771	.09872	.00900
Arkansas	.11209	.11911	.00701
California	.10419	.09995	.00424
Colorado	.09359	.10462	.01103
Connecticut	.08276	.08794	.00519
Delaware	.11938	.11529	.00409
Florida	.08191	.08135	.00056
Georgia	.09578	.10424	.00846
Hawaii	.17711	.18531	.00820
Idaho	.11528	.11500	.00029
Illinois	.07452	.08025	.00573
Indiana	.08195	.07718	.00477
Iowa	.10178	.10008	.00170
Kansas	.08608	.09690	.01082
Kentucky	.11673	.12036	.00363
Louisiana	.14336	.13247	.01089
Maine	.11934	.11390	.00544
Maryland	.08931	.09391	.00460
Massachusetts	.09713	.09923	.00209
Michigan	.10447	.10064	.00383
Minnesota	.11015	.10378	.00638
Mississippi	.13526	.13413	.00112
Missouri	.07535	.08722	.01187
Montana	.12754	.13915	.01161
Nebraska	.07921	.07921	.00000
Nevada	.10609	.09862	.00747
New Hampshire	.08803	.09031	.00227
New Jersey	.07810	.08067	.00257
New Mexico	.15845	.14717	.01128
New York	.10544	.10378	.00166
North Carolina	.10636	.10748	.00112
North Dakota	.13914	.12740	.01175
Ohio	.08685	.08551	.00134
Oklahoma	.11932	.11354	.00578
Oregon	.11543	.12215	.00672
Pennsylvania	.09305	.08677	.00628

Table 10. cont.,

State	Observed State Government Size	Predicted State Government Size	Absolute Value of Residual
Rhode Island	.11439	.11146	.00293
South Carolina	.12165	.11214	.00950
South Dakota	.10806	.11879	.01073
Tennessee	.09402	.10305	.00903
Texas	.07668	.09127	.01459
Utah	.12906	.13261	.00355
Vermont	.14009	.13972	.00036
Virginia	.08723	.09123	.00401
Washington	.12414	.10364	.02050
West Virginia	.13903	.13551	.00351
Wisconsin	.10621	.09912	.00709
Wyoming	.15687	.16342	.00655
All States	.10904	.10918	.00014

Note: Predicted values computed from the model coefficients reported in Table 6.

Table 11. Mean Observed and Predicted Deflated Government Size in the American States, By State, 1946-1997

State	Observed State Government Size	Predicted State Government Size	Absolute Value of Residual
Alabama	.13569	.13313	.00256
Arizona	.12604	.11590	.01014
Arkansas	.13081	.13891	.00810
California	.11958	.11436	.00522
Colorado	.10980	.12220	.01239
Connecticut	.09439	.09855	.00417
Delaware	.13668	.12955	.00713
Florida	.09643	.09520	.00122
Georgia	.11153	.12230	.01077
Hawaii	.19439	.19716	.00277
Idaho	.13310	.13404	.00094
Illinois	.08439	.09222	.00784
Indiana	.09367	.08633	.00734
Iowa	.11682	.11465	.00217
Kansas	.09994	.11097	.01103

Table 11. cont.,

State	Observed State Government Size	Predicted State Government Size	Absolute Value of Residual
Kentucky	.13352	.13985	.00633
Louisiana	.16897	.15350	.01547
Maine	.13632	.13064	.00568
Maryland	.10234	.11136	.00902
Massachusetts	.11043	.11248	.00205
Michigan	.11994	.11388	.00606
Minnesota	.12626	.11942	.00684
Mississippi	.15751	.15798	.00047
Missouri	.08661	.09990	.01329
Montana	.14553	.16240	.01686
Nebraska	.09049	.09049	.00000
Nevada	.12324	.11500	.00825
New Hampshire	.10263	.10509	.00246
New Jersey	.08736	.09189	.00452
New Mexico	.18365	.17038	.01327
New York	.11836	.11658	.00178
North Carolina	.12396	.12403	.00007
North Dakota	.16056	.14869	.01187
Ohio	.09772	.09742	.00029
Oklahoma	.14052	.12940	.01112
Oregon	.13313	.13858	.00545
Pennsylvania	.10569	.09954	.00615
Rhode Island	.12908	.12569	.00339
South Carolina	.14078	.13102	.00976
South Dakota	.12518	.13837	.01319
Tennessee	.10954	.11854	.00901
Texas	.08859	.10588	.01729
Utah	.14888	.15504	.00616
Vermont	.16084	.16072	.00013
Virginia	.10105	.10708	.00603
Washington	.14416	.11854	.02562
West Virginia	.15862	.15505	.00358
Wisconsin	.12105	.11285	.00821
Wyoming	.17953	.18522	.00569
All States	.12541	.12547	.00006

Note: Predicted values computed from the model coefficients reported in Table 7.

state citizen. From the results discussed above, it seems that growth in state government is a function of both. Factors identified in both the responsive and excessive categories are found to positively influence public sector size.

Of the seven responsive theories I test, three fail to explain any of the growth in state government. Coefficients for interparty competition, fiscal constraint, and median voter variables are either non-significant or were wrongly signed. However, moderate support is found for some of the component variables of the Wagner's Law, party control, and political need explanations of state government growth. Finally, there is firm evidence that a state's political culture was an important predictor of public sector size.

All six theories of excessive growth are successful at explaining state government growth, though some more than others. One of the three component variables, state deficit spending, in the fiscal illusion explanation is identified as playing a role in public sector size. The proportion of state government employees in a state and intergovernmental grants both exert a strong positive influence on government growth. There is some indication that house constituency size is positively related to public sector growth. Divided government, at least in the absence of supermajority requirements, is another important factor. Last, substantial support is found for the hypothesis that much of state government growth is attributable to an increase in unfunded mandates.

At this point, it is tempting to conclude that state government growth is due to both responsive and excessive influences. The explanatory success of both categories

is roughly even: five for responsive and six for excessive. However, how do the theories within the two categories compare in the magnitude of their effect? The answer to this question can be determined by comparing the relative effect of the different variables as measured by their standardized beta coefficients. Table 12 below presents those variables identified in Tables 6 and 7 as significant predictors of government growth. The impact of the median income voter variable comes from the standardized beta coefficient given in Table 13 and 14, both of which are found in Appendix 1. These variables are listed in descending values so as to compare the relative effects of the variables found in the responsive and excessive categories.

Overall, there are 13 variables from the responsive category in the table and 11 from the excessive category.[17] However, five of the responsive category variables, over 65 proportion, state manufacturing income, turnout/median income voter, and inflation, actually decrease the size of state government. On the other hand, three excessive category variables have impacts opposite of what was hypothesized. These are divided government, the proportion of federal employees, and the proportion of local employees.

A review of the top five variables in Table 12 will give some sense of the degree to which state government grows as a result of the wishes or demands of a majority of the population (responsive) or whether state government size is beyond that which would be desired by the state's citizens (excessive). In the undeflated model, three of the top five variables, as measured by their impact, come from the

[17] There are actually only 12 responsive variables that were significant, the inclusion of both measures of median income voter turnout means that 13 are included in Table 11.

excessive category. These are intergovernmental grants, state employee proportion, and the effect of the 1965 dummy variable. On the other hand, two responsive variables, per capita income and state policy liberalism, are represented in the top five. The deflated model column lists three responsive category variables, per capita income, policy liberalism, and the under 18 proportion of the population. Common to both measures of the dependent variable is the finding that intergovernmental grants have had the greatest impact on state government growth. A close second is the impact of per capita income. Third in impact is the proportion of the population employed by state government.

In sum, it appears that state government growth can not be attributed primarily to either responsive or excessive explanations. As Table 12 suggests, growth in a state's public sector is the result of a wide range of factors. Indeed, several factors identified as excessive actually contribute to a decline in state government. Likewise, the state government response to certain citizen demands also results in a diminished public sector. Ironically, such a contraction of state government size may be more aptly considered as excessive. State government shrinks despite the apparent needs of its population.

Table 12. Estimated Impact of Variables on Undeflated and Deflated State Government Growth

Undeflated Model Variables	Beta	Deflated Model Variables	Beta
Intergovernmental Grant	.5341	Intergovernmental Grant	.6529
Logged Per Capita Income	-.4168	**Logged Per Capita Income**	-.4590
State Employees	.3060	State Employees	.3270
1965 Dummy	.1647	**Policy Liberalism**	.1932
Policy Liberalism	.1619	**Under 18**	.1703
1965 Counter	.1084	1965 Dummy	.1515
Over 65	-.0928	1965 Counter	.1484
Deficit	.0879	Deficit	.1320
Economy	-.0623	**Manufacturing**	-.1048
Federal Employees	-.0517	**Economy**	-.0774
Manufacturing	-.0484	**Over 65**	-.0753
Divided * Supermajority	.0440	Federal Employees	-.0578
Urban	.0437	**Opinion Liberalism**	.0474
Median Income Voter	.0351	**Urban**	.0460
Under 18	.0325	Local Employees	-.0443
Turnout	-.0272	Divided * Supermajority	.0414
Divided Government	-.0258	**Turnout**	-.0363
House	-.0249	**Party Tenure**	.0335
Party Tenure	.0238	**Inflation**	-.0277
Opinion Liberalism	.0186	Divided Government	-.0243
Local Employees	-.0171	House	-.0158
Unemployment	.0125	**Median Income Voter**	.0140
Inflation	-.0010	**Unemployment**	.0087

Chapter 6: Conclusion

In this dissertation, I explore the determinants of state government growth in the American states from 1946 to 1997. The empirical tests I conduct have several advantages over tests found in much of the literature. First, past research on state government growth, with some exceptions (e.g. Garand 1993), has typically relied on either longitudinal or cross-sectional research designs. While both of these approaches can inform us of the factors driving growth in state public sectors, it prevents researchers from taking full advantage of the cross-sectional and longitudinal covariation between government size indicators and various explanatory variables. In this analysis, I develop and test models of government growth that utilize pooled data for the American states for the years 1946 to 1997, and hence allow for consideration of the full range of interrelationships between dependent and independent variables. Second, the considerable time span covered in this analysis (52 years) is one of the longer time-series studies in the state government growth literature. The inclusion of these additional years permits 1) greater variation for both the dependent and independent variables, and, 2) when using the pooling procedure greatly increases the sample size, thus improving the statistical efficiency of the resulting estimates. Finally, my focus on government growth at one level in our federal system, the American states, rather than on aggregated growth at the local, state, and federal levels, allows for exploration of growth patterns specific to state governments. This disaggregated approach also permits the testing of theories that apply only to sub-national growth, such as unfunded mandates and intergovernmental grants.

In this analysis, I also test several explanations of state government growth that have received little or no attention in the previous literature. Though the effect of divided government on state budget outcomes has received some attention (Alt and Lowery 1994; Clingermayer and Wood 1995; Garand and Kapeluck 2000), no study has included it as a determinant of overall public sector size. My conclusion that divided government is related to state government size enhances our understanding of the dynamics of split-control on state policy outcomes. A second explanation that has gone unexamined in the literature relates unfunded mandates to state government growth. While the measure I use is rudimentary, there seems to be a strong positive relationship between the increase in unfunded mandates and government growth at the state level. Finally, state-level empirical analysis of both the median income voter and interparty competition theories of government growth is relatively lacking in the literature. My analysis suggests that interparty competition is unrelated to state public sector growth, and median income voter participation is actually inversely related to growth in state government.

Finally, this study benefits from the inclusion of certain theoretically important variables that either for lack of data or refinements in theory specification have gone untested in past research. First, the effect of industrialization on state government growth, an important component of Wagner's Law, is explored in this analysis. My findings suggest that state industrialization, measured here as the proportion of total state income derived from manufacturing income, in fact leads to a decline in the size of the state public sector. Second, logging per capita income leads to a substantially better model fit than when using untransformed per capita income. However, here

again, the empirical evidence is contrary to the hypothesis set forth in Wagner's Law. Last, it is apparent from the results of my models that sustained Democratic control of state government has a decidedly greater impact than merely control in the previous year. This modification of the party control theory confirms similar results found in studies of government growth at the international level (Blais, Blake, and Dion 1993).

Evidence that the size of the public sector varies considerably over time and across states confirms the findings of past research (Garand 1988b; 1993). However, the extension of this time series into the late 1990s suggests that, overall, the trend of state government growth has tapered off. Nevertheless, it is clear that over time the public sector has grown. This is particularly the case when using a government size measure in which it component parts are not deflated to account for the different inflation rates for the public and private sectors. Though all state governments have grown over time when the undeflated measure is used, growth in four states has actually declined when accounting for the effect of the public sector price deflator. The difference in growth rates for the undeflated and deflated measures in all the states in this analysis indicate that a considerable amount of growth in undeflated size of state government is due to the effect of the differential inflation rate. Indeed, state government growth in four states is due entirely to the deflator effect.[1]

It is also evident that the degree to which states are willing to commit resources to their respective public sectors varies considerably. Some states, such as Hawaii and New Mexico, give the public sector a relatively high priority, allocating a

[1] State government growth in Colorado is also almost completely a function of the differential rate. The percent of Colorado government growth attributable to the deflator effect as reported in Table 5 is 96.52.

comparatively high proportion of total state income to the public sector. On the other hand, there are states, such as Illinois and Missouri, which allocate substantially lower amounts of total income to the government sector.

How does this study of public sector growth fit in the larger corpus of government growth research? First, the effects of many of the variables included here confirm the findings of previous research, though a number of several novel findings emerge from this analysis. The results for the Wagner's Law explanation of government growth are in general accord with that found by others. In particular, findings for density, manufacturing proportion of state income, and per capita income are similar to those reported by others (e.g. Berry and Lowery 1987; Boix 2001; and Garand 1993). However, evidence that an increase in per capita income is related to a decline in government size is in contrast to other results found at the state (Thornton and Ulrich 1999), national (Berry and Lowery 1983), and international (Boix 2001) levels. Finally, evidence that urbanization has a positive effect on state government growth is more support than has generally been found in previous studies.

Support for the party control theory of government growth receives support in my model of government growth, which is in general agreement with that of Garand (1993). Moreover, the Blais, Blake, and Dion (1993) operationalization of the party tenure variable confirms their finding that party control of government has a relatively greater account when accounting for the length of time the party has been in power. On the other hand, competition between the parties does not seem to result in a larger public sector. Whereas past studies have typically focused on the effect of this variable on state welfare expenditures, I find that it has no effect on the size of overall

state government. Indeed, a heightened level of interparty competition is related to a smaller state public sector.

The median income voter theory, a government growth explanation related to interparty competition, also fails to uncover the expected relationship in this analysis. I find that the effect of an increase in median income voter participation is related to a smaller public sector. This finding is in stark contrast to that of Mueller and Murrell (1986) and Husted and Kenny (1997). The inverse relationship between median income voter turnout and government growth is strong whether such participation is measured simply by turnout or Husted and Kenny's (1997) county-by-county estimates.

My analysis confirms the findings of previous analyses regarding the effect of fiscal constraints and the role of political culture on government growth. It appears that fiscal constraints are ineffective in combating pro-spending pressures in state government. Moreover, it is likely that the variable is endogenous, meaning states with tax and expenditure limitations and citizen initiatives are probably those with a history of fiscally irresponsible politicians. As for political culture, both opinion liberalism and policy liberalism have a strong positive effect on state government size. The positive effect for policy liberalism confirms earlier work by Garand (1993). Moreover, the positive relationship between state opinion liberalism and government growth, an effect not found by Garand (1993), receives moderately strong support here.

Some of the more interesting, and seemingly contradictory, findings come from the political needs theory of state government growth. In contrast to past

research (Garand 1993; Lewis-Beck and Rice 1985), my models reveal that an increase in inflation results in a smaller public sector. As I note in Chapter 5, this may be due to state government postponing expenditures on large capital projects that would require borrowing at high interest rates. Another surprising finding is that a relatively high proportion of elderly citizens is related to smaller state government size. This finding is in stark contrast to results found in previous work on government growth. Moreover, this finding suggests that the use of median age (e.g. Garand 1993) or the ratio of young and elderly to total population (Lewis-Beck and Rice 1985) may be flawed measures. When these two population ratios are separated, it is apparent that it is the under 18 population that is driving state government growth.

On the other hand, past analysis suggesting that unemployment leads to an increase in the size of the public sector (Garand 1993; Rice 1986) finds confirmation in this analysis. Likewise, the proposed negative relationship between state economic health is empirically supported in my model of government growth. Previous research that indicates a strong positive relationship between the black proportion of the population and state government growth finds conditional support here. It appears that the black population has a positive effect only on deflated state government size. When government size is undeflated, the relationship is unexpectedly negative. This in contrast to Garand's (1993) government growth model that reveals a strong positive relationship for this variable for both undeflated and deflated state government growth.

Turning to the excessive theories of government growth, my results are in agreement with much of past research. Among the component variables of the fiscal

illusion explanation, only deficit spending demonstrates a consistently strong positive effect on state government growth. The lack of explanatory power for other two fiscal illusion variables is not surprising given the generally weak or nonexistent empirical support revealed in the literature. An important exception concerns the effect of the revenue concentration measure. While I report a strong and unexpectedly positive relationship between state revenue concentration, Garand's (1993) analysis indicates that as a state's revenue system becomes more complex there is an increase in the size of state government, particularly when the undeflated government size measure is utilized.

Evidence for the bureau-voting theory of government growth, an explanation with considerable empirical support in the literature (Dye and MacManus 1990; Ferris and West 1994; Garand 1988; 1993), is strong in this analysis. Perhaps the most important finding is that public employees are not monolithic in their support of a larger public sector. I find that it is only the proportion of state employees that have a positive effect on state government growth. Moreover, the impact is quite large, the third largest in both the undeflated and deflated model. Interestingly, past analysis that relies on a measure of government growth that aggregates public sector size across federal, state, and local levels indicates a negative relationship between public employees and overall government growth (Berry and Lowery 1984; Berry and Lowery 1987; Lowery and Berry 1983). It is likely that the effect of lumping local, state, and federal workers into one measure conceals the true impact of public employees on public sector growth.

Past analysis revealing a positive relationship for intergovernmental grants on state public sector size find confirmation here, though it appears that the impact is noticeably greater than that previously found. For instance, Garand (1993) reports a coefficient for his intergovernmental grant variable that is less than one. This implies that though federal aid increases state government spending it also functions as a substitute for state derived funds. The coefficient I report here is well over one, indicating that every federal dollar leads to a substantial increase over and above the amount received from the federal government. Moreover, the impact of intergovernmental grants on state public sector size is the largest among all the variables in the model.

I find modest evidence that the ratio of constituents to house members is related to state government growth. The impact of this variable is relatively small, however. In contrast to the findings of Thornton and Ulrich (1999), which suggest a greater impact for senate constituency size, I find only a small effect for this variable and this effect is confined to the undeflated measure of government growth.

Finally, my study has contributed to the literature by testing two theories that have yet to receive empirical analysis. The divided government thesis finds moderate support in this analysis. The results of both the deflated and undeflated models suggest that divided government does lead to a larger public sector, though this effect is contingent on the absence of legislative supermajority requirements for the passage of new taxes. Second, the hypothesis that state government has grown because of an increase in unfunded mandates since the mid 1960s receives ample support. Future

research on the effect of unfunded mandates, however, should use a more precise measure than the two dummy variables employed here.

What is noteworthy about all of this is that there is more support for many of these models than has been found in previous studies. A majority of the studies cited here have a more circumscribed research design with the empirical analysis focused on one or two explanatory variables. Rare is the analysis that takes the comprehensive approach employed in my government growth model. Among the studies that survey a raft of government growth explanations and test the theories competitively, this study yields relatively more support for the component explanations than is generally found. Representative of such studies are those conducted by Lowery and Berry (1983) and Berry and Lowery (1987), both of which find comparatively little support for their models of government growth. While research by Garand (1993) does generate substantial support for many of the models I test here, the full model tested here has more explanatory power. Though much of this improvement in model fit is due to the longer time-series under examination, a portion of this improvement may be attributed to the inclusion of theoretically important variables and changes in the measurement of certain variables.

I hypothesized in Chapter 1 that growth in state government should, from a normative standpoint, be the result of the public sector responding to the needs and wishes of its population. The broad picture painted here suggests, however, that much of the growth in the public sector from 1946 to 1997 can be attributed to factors beyond the control of the average citizen. In other words, it appears that state government has grown beyond that demanded by the citizens. The analysis reveals

that the largest positive impact on state government growth is intergovernmental grants. The third largest impact is the proportion of state employees. For undeflated state government growth, the impact of state employees on public sector size is almost twice the impact of the nearest responsive variable (policy liberalism). The impact of state employees is similar in the deflated model.

Lewis-Beck and Rice (1986) conclude their analysis of government growth at the national level with the admonition that efforts to curb the size of government that focus on a reduction in spending are likely to be ineffective. To a degree, the same conclusion can be made based on the results I present here. State government growth is substantially influenced by demand, factors such as a state's under 18 population, changes in economic prosperity, opinion and policy liberalism, and urban population all exert upward pressure on state government size. This is particularly the case when using the deflated measure of public sector size. On the other hand, it could be argued, from a conservative standpoint, that a healthy portion of state government growth could be stemmed through a reduction in spending. First, a reduction in the monetary amount of intergovernmental grants would lead to a substantial decline in the size of the state public sector. Second, and somewhat perversely, state government is acting "responsively" when it reacts to the "demand" of state employees that is given a greater voice as their population proportion increases. Thus a reduction in state expenditures, leading to a smaller public sector workforce, would minimize the power of state bureaucrats to enlarge state government beyond that desired by the population.

Where do we go from here? First, this analysis raises several interesting issues that merit further research. For instance, the negative relationship found between per capita income and state government size merits additional study. The scatterplots presented in Figures 8 and 9 suggest that higher per capita income is associated with a larger public sector, though the regression estimates indicate a strong negative relationship. Studies on this dynamic could focus on whether this relationship varies in different time periods. It could be that the negative relationship observed is contingent on alterations in state liberalism or "public mood". A second compelling avenue of research might investigate more in depth the fiscal effects of a centralized revenue system on state government size. The relationship found here suggests that a complex or diversified revenue system may be more cost-effective for state government. Third, the apparent negative relationship between median income voter participation and state government growth suggests a number of unanswered questions and presents a fertile field for assessing the various forces that affect electoral politics within the states.

Finally, future research should consider the impact of government size on a range of policy and societal outcomes. For example, Garand and Monroe (1993) find that divorce rates in the states from 1960 to 1984 are partly a function of growth in the welfare state. Others have studied the impact of government size on citizen's attitudes toward risk (Greene 1973; Hatzinikolaou 1997; Hatzinikolaou and Ahking 1995). Perhaps more important are attempts to link growth in state government size to economic development with in the states (Conte and Darrat 1988; Jones 1990). Does government growth impede private sector economic development in the states? It

could be that a larger state government creates inefficiencies in the private sector that hinder economic growth, as many economic conservatives maintain. On the other hand, a large public sector may benefit the private sector through policies designed to enhance economic development. In sum, state politics scholars and domestic political economy ought to begin to think of the public sector size as an independent variable to explain various social, political, and economic outcomes.

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Appendix 1: Median Voter Models

Table 13. Parameter Estimates for Undeflated Median Voter Model of Government Growth in the American States,1951-1990 (OLS with Panel Corrected Standard Errors)

	Government Size (Undeflated)			
Variable	**b**	**Panel-Corrected Standard Error**	**T**	**Beta**
Intercept	0.05251	.01566	3.353	
Population	0.00011	.00010	1.078	.0138
Responsive Theories				
Logged Income	**-0.04405+++**	**.00387**	**-11.391**	**-.4314**
Density	**-0.00381+**	**.00224**	**-1.701**	**-.0230**
Urban	**0.01584*****	**.00402**	**3.937**	**.0684**
Manufacturing	**-0.02290+++**	**.00526**	**-4.353**	**-.0548**
Party Control	0.00124*	.00099	1.260	.0133
Party Tenure	0.00011	.00084	.127	.0013
Inter-Party Competition (IPC)	**0.00497**	**.00535**	**.930**	**.0083**
IPC * Election Year	**0.00059**	**.00604**	**.098**	**.0008**
Median Income Voter	0.00674+++	.00148	4.564	.0351
Tax and Expenditure Limits	**0.00176**	**.00113**	**1.558**	**.0142**
Initiatives	**0.00112+**	**.00069**	**1.627**	**.0157**
Over 65	-0.16412+++	.02661	-6.169	-.0988
Under 18	0.07795***	.02131	3.658	.1010
Black Population	0.00397	.00473	.838	.0112
Unemployment	0.00656	.02269	.289	.0024
Inflation	-0.00016	.00011	-1.371	-.0145
Economic Growth	-0.07298***	.00764	-9.556	-.0807
Opinion Liberalism	**0.01200+**	**.00827**	**1.452**	**.0247**
Policy Liberalism	**0.00675*****	**.00070**	**9.634**	**.1888**

Table 13. cont.,

Government Size (Undeflated)

Variable	b	Panel-Corrected Standard Error	T	Beta
Excessive Theories				
Income Tax	**-0.00251**	**.00448**	**-.560**	**-.0055**
Revenue Concentration	**0.01040**$^{+++}$	**.00314**	**3.315**	**.0343**
Deficit	**0.06766*****	**.00660**	**1.258**	**.0894**
Federal Employees	-0.56055^{+++}	.07205	-7.780	-.0804
State Employees	2.16093***	.13860	15.591	.2870
Local Employees	-0.08422	.08723	-.965	-.0167
Intergovernmental Grant	**1.54895*****	**.04537**	**34.143**	**.5489**
Senate	-0.00275	.02760	-.100	-.0017
House	-0.00772**	.00366	-2.109	-.0233
Divided Government	**-0.00654**$^{+++}$	**.00218**	**-3.004**	**-.0706**
Divided * Supermajority	**0.00811*****	**.00214**	**3.790**	**.0875**
1965 Dummy	0.01244***	.00126	9.897	.1706
Trend	0.00105	.00018	5.942	.3450
1965 Counter	0.00089***	.00019	4.711	.2131

N	1840
Model F	16244.11
Prob. > F	.0000
Buse R-Square	.8984

*** Prob (T) < .01, one-tail test.
** Prob (T) < .05, one-tail test.
* Prob (T) < .10, one-tail test.
$^{+++}$ Prob (T) < .01, two-tail test, coefficient in unexpected direction.
$^{++}$ Prob (T) < .05, two-tail test, coefficient in unexpected direction.
$^{+}$ Prob (T) < .10, two-tail test, coefficient in unexpected direction.

Table 14. Parameter Estimates for Deflated Median Voter Model of Government Growth in the American States,1951-1990 (OLS with Panel Corrected Standard Errors)

	Government Size (Deflated)			
Variable	**b**	**Panel-Corrected Standard Error**	**T**	**Beta**
Intercept	0.05918	.01869	3.167	
Population	0.00009	.00012	.734	.0117
Responsive Theories				
Lagged Income	**-0.04377^{+++}**	**.00461**	**-9.486**	**-.4470**
Density	**-0.00495^{+}**	**.00268**	**-1.850**	**-.0311**
Urban	**0.01481*****	**.00480**	**3.084**	**.0666**
Manufacturing	**-0.04522*****	**.00628**	**-7.204**	**-.1129**
Party Control	0.00059	.00118	.499	.0065
Party Tenure	0.00044	.00100	.442	.0057
Inter-Party Competition (IPC)	**-0.00035**	**.00638**	**-.056**	**-.0006**
IPC * Election Year	**0.00314**	**.00721**	**.436**	**.0044**
Median Income Voter	0.00258	.00176	1.462	.0140
Tax and Expenditure Limits	**0.00044**	**.00134**	**.326**	**.0037**
Initiatives	**0.00135^{+}**	**.00082**	**1.638**	**.0196**
Over 65	-0.12711^{+++}	.03175	-4.004	-.0798
Under 18	0.16761***	.02542	6.592	.2266
Black Population	0.01718***	.00565	3.042	.0504
Unemployment	-0.00565	.02708	-.208	-.0022
Inflation	-0.00045^{+++}	.00014	-3.341	-.0440
Economic Growth	-0.07924***	.00911	-8.695	-.0914
Opinion Liberalism	**0.02258****	**.00986**	**2.289**	**.0485**
Policy Liberalism	**0.00240*****	**.00084**	**8.925**	**.2176**

Table 14. cont.,

Government Size (Deflated)

Variable	b	Panel-Corrected Standard Error	T	Beta
Excessive Theories				
Income Tax	**0.00107**	**.00534**	**.201**	**.0024**
Revenue Concentration	**0.01104^{+++}**	**.00374**	**2.950**	**.0380**
Deficit	**0.08470*****	**.00787**	**1.760**	**.1167**
Federal Employees	-0.58212^{+++}	.08597	-6.771	-.0871
State Employees	2.13263***	.16539	12.895	.2953
Local Employees	-0.27372^{+++}	.10409	-2.630	-.0565
Intergovernmental Grant	**1.74952*****	**.05413**	**32.319**	**.6465**
Senate	0.01257	.03293	.382	.0080
House	-0.00573*	.00437	-1.311	-.0180
Divided Government	**-0.00723^{+++}**	**.00260**	**-2.785**	**-.0815**
Divided * Supermajority	**0.00852*****	**.00255**	**3.337**	**.0958**
1965 Dummy	0.01029***	.00150	6.864	.1472
Trend	0.00058	.00021	2.737	.1977
1965 Counter	0.00071***	.00022	3.173	.1786

N	1840
Model F	9841.82
Prob. > F	.0000
Buse R-Square	.8425

*** Prob (T) < .01, one-tail test.
** Prob (T) < .05, one-tail test.
* Prob (T) < .10, one-tail test.
$^{+++}$ Prob (T) < .01, two-tail test, coefficient in unexpected direction.
$^{++}$ Prob (T) < .05, two-tail test, coefficient in unexpected direction.
$^{+}$ Prob (T) < .10, two-tail test, coefficient in unexpected direction.

Appendix 2: Description of Variables

Table 15. Description of Variables

Variable	Source	Description
Deflated State Government Expenditure	U.S. Statistical Abstract	Deflated state government expenditures as a proportion of total state personal income. State government expenditures are deflated using state and local government price deflator, and total state personal income is deflated with GDP price deflator.
Undeflated State Government Expenditure	U.S. Statistical Abstract	Undeflated state government expenditures as a proportion of undeflated state personal income.
Population	U.S. Census Data	State population is the total population of a state in a given year (in millions)
Logged Per Capita Income	U.S. Statistical Abstract	Logged state per capita income, 1996 dollars (untransformed income in 10,000s).
Population Density	*Book of the States*	State population (in 1000s) divided by state square miles (measured in thousands).
Urban Population	U.S. Census Data	Proportion of population living in urban areas.
Manufacturing	U.S. Department of Commerce	Proportion of total state personal income derived from manufacturing.
Income Tax	U.S. Statistical Abstract	Income tax is the proportion of state revenue derived from personal income tax.
Revenue Concentration	U.S. Statistical Abstract	Revenue concentration is based on a Herfindahl index measuring the complexity of the state's revenue system.
Deficit	U.S. Statistical Abstract	This is the absolute value of the deficit as a percentage of total state expenditures. States without deficits or running surpluses are given the value of 0.

Table 15., cont.

Variable	Source	Description
Federal Employees	U.S. Statistical Abstract	Federal employees is the number of full-time civilian federal government employees as a proportion of state citizens 18 years of age and older.
State Employees	U.S. Statistical Abstract	State employees is the number of full-time state government employees as a proportion of state citizens 18 years of age and older.
Local Employees	U.S. Statistical Abstract	Local employees is the number of full-time local government employees as a proportion of state citizens 18 years of age and older.
Intergovernmental Grant	U.S. Statistical Abstract	Intergovernmental grant is the total amount of intergovernmental aid as a proportion of total state personal income.
Party Control	*Book of the States*	Party control is measured with Democratic governor equal to .5, and Democratic House and Senate equal to .25 respectively. Otherwise, these values are zero.
Party Tenure	*Book of the States*	Party tenure is equal to 1 if the party composition score for a given state has changed by .25 or less in the past five years. Otherwise the variable is zero.
Divided Government	*Book of the States*	This is the percentage of divided state government delegations (governor, senate, and house) in the past five years (including the then-present administration).
Supermajority Tax and Spending Requirements	*Book of the States*	This variable takes the value of one if a state does **not** have supermajority voting requirements for the passage of a spending or tax bill. Otherwise the variable is zero.
Divided * Supermajority	*Book of the States*	This variable takes the value of Divided in states without supermajority voting requirements for passage of a spending or tax bill and 0 otherwise.

Table 15., cont.

Variable	Source	Description
Interparty Competition	*Book of the States*	This is the average Democratic presidential election margin from the previous two elections. It is the absolute value of the difference between the Democratic vote percentage minus fifty.
IPC * Election Year	*Book of the States*	This variable takes the value of Interparty Competition in election years and 0 otherwise.
Turnout	U.S. Statistical Abstract	This variable is equal to the highest proportion of the voting-age population voting in either the previous presidential, senate, or house race.
Median Income Voter Turnout	Husted and Kenny (1997), U.S. Census Data, and Statistical Abstract	This variable is equal to a state's average county median family income, weighted by the turnout in the county, divided by the average county median family income, weighted by the county's voting-age population.
Tax and Expenditure Limits	Advisory Council on Intergovernmental Relations (various years)	This variable equals 1 if a state has tax and expenditure limits in place and 0 otherwise.
Initiatives	Advisory Council on Intergovernmental Relations (various years)	This variable equals 1 if a state permits initiatives by voters and 0 otherwise.
Opinion Liberalism	Erikson, Wright, and McIver (1993)	This variable is a measure of a state's mass liberalism. Higher scores indicate a more liberal population.
Policy Liberalism	Erikson, Wright, and McIver (1993)	This variable is a measure of the liberalism of a state's policy output. Higher scores indicate policies that are more liberal.

Table 15., cont.

Variable	Source	Description
Over 65	U.S. Statistical Abstract	This variable is the proportion of the state's population 65 years of age or older.
Under 18	U.S. Statistical Abstract	This variable is the proportion of the state's population 18 years of age or younger.
Black Population	U.S. Statistical Abstract	This is the number of blacks in a state as a proportion of the total population.
Unemployment	U.S. Statistical Abstract (and Bureau of Economic Analysis)	This is the proportional change in the state unemployment rate from the previous year (current year/previous year). Unemployment rates from 1945 to 1959, with the exception of 1950, were modeled.
Inflation	U.S. Statistical Abstract	This is the proportional change in the Consumer Price Index from the past year (current year/ previous year).
Economic Growth	U.S. Statistical Abstract	This is the proportional change in a state's total per capita income from the past year (current year/previous year).
Senate	*Book of the States*	This variable is the number of senate seats in a state divided by the state population (in thousands).
House	*Book of the States*	This variable is the number of lower house seats in a state divided by the state population (in thousands).
1965 Dummy		Variable equals 1 in 1966 and all following years.
Trend		Variable is 1 in 1947, 2 in 1948, 3 in 1949, etc.
Count 1965		Variable is 1 in 1966, 2 in 1967, 3 in 1968, etc.

***Note**: All variables are lagged one year with the exception of the variables controlling for economic change (unemployment, inflation, and economy), trend, and deficit spending.

Appendix 3: Mean Values for Independent Variables

Table 16. Mean Values for Continuous Independent Variables Used in Modeling State Government Growth*

Variable	Mean	Standard Deviation	Minimum	Maximum
Population	4.14287	4.42257	.14300	31.76200
Responsive Theories				
Real Per Capita Income	1.34659	.53062	.36985	3.42218
Density	.14351	.20810	.00130	1.07231
Urban	.63663	.15644	.23570	.94351
Manufacturing	.17369	.08503	.01766	.43521
Party Control	.60142	.37255	.00000	1.00000
Party Tenure	.33185	.42793	.00000	1.00000
Interparty Competition	.07430	.06410	.00002	.45357
Turnout	51.13253	14.61443	2.49876	82.38806
Median Income Voter	1.01575	.18383	.61625	1.57746
Over 65	.10150	.02394	.04496	.18774
Under 18	.32066	.04883	.21381	.44148
Black Population	.09165	.09956	.00036	.47281
Unemployment	5.61476	2.04790	.34489	18.00000
Change in Unemployment	.000468	.0135327	-.10300	.07100
Change in Inflation	4.35192	3.42550	-1.20000	14.40000
Economic Growth	1.02202	.04845	.73204	2.05976
Opinion Liberalism	.85400	.07074	.72000	.99200
Policy Liberalism	-.00688	.96590	-1.54000	2.12000
Excessive Theories				
Income Tax	.09295	.07718	.00000	.32866
Revenue Concentration	.27371	.13056	.01447	1.07303
Deficit	.01819	.04644	.00000	.42221
Federal Employees	.01280	.00545	.00074	.06261
State Employees	.01281	.00593	.00190	.04508
Local Employees	.02781	.00825	.00345	.05680
Intergovernmental Grant	.02609	.01329	.00201	.08827

Table 16., cont.*

Variable	Mean	Standard Deviation	Minimum	Maximum
Excessive Theories				
Senate	.02189	.02184	.00000	.11888
House	.06935	.10522	.00252	.86928
Divided Government	**.42630**	**.38992**	**.00000**	**1.00000**

*A description of how each variable is measured is found in Appendix 2.

Appendix 4: Correlations between Independent Variables

Table 17. Correlation Matrix of Independent Variables Used in Model

	LAGPOP	LOGINC	LDENSITY	LURBAN	LMANUF	PARTY	PARTYINT
LAGPOP	1.000						
LOGINC	0.2843	1.000					
LDENSITY	0.2363	0.2907	1.000				
LURBAN	0.4863	0.5484	0.5219	1.000			
LMANUF	0.2009	-0.1807	0.3361	0.0726	1.000		
PARTY	0.0259	-0.0516	0.0622	-0.0065	-0.0950	1.000	
PARTYINT	-0.0197	-0.2137	0.0091	-0.1101	-0.0802	0.5874	1.000
INTPART	-0.1403	-0.1997	-0.0647	-0.1664	-0.0753	0.0692	0.1683
IPCELECT	-0.0862	-0.1351	-0.0276	-0.1038	-0.0196	0.0095	0.0617
LTURNOUT	-0.1216	0.0682	0.0702	0.1163	0.1096	-0.3763	-0.4070
LTELS	-0.1554	-0.3731	0.0070	-0.2210	0.1438	-0.0453	0.0119
LINIT	-0.0350	0.0790	-0.2325	0.0908	-0.2803	-0.1596	-0.1610

Table 17., cont.

	LAGPOP	LOGINC	LDENSITY	LURBAN	LMANUF	PARTY	PARTYINT
LOV65	0.1401	0.6534	0.1824	0.1619	-0.1032	-0.0524	-0.1746
LUND18	-0.2655	-0.8040	-0.3213	-0.3830	0.0727	0.0431	0.1271
LBLACK	0.1794	-0.1609	0.0404	-0.1317	0.1388	0.4347	0.4387
UNEMP	-0.0149	-0.0501	-0.0114	-0.0340	0.0506	-0.0765	-0.0292
INFL3	0.0182	0.1665	0.0144	0.0264	-0.0539	0.0288	0.0172
ECON1	0.0003	0.0025	0.0049	0.0174	-0.0338	0.0897	0.0301
OPLIB	0.3055	0.2815	0.6222	0.4653	0.3812	-0.0992	-0.1679
POLLIB	0.3633	0.3140	0.4983	0.4625	0.3077	-0.2395	-0.2739
LINCTAX	0.1447	0.4120	0.1384	0.1628	0.0358	0.0330	-0.0480
LCOMPLEX	-0.1083	0.5546	-0.0811	0.0643	-0.3749	-0.0629	-0.1073
DEFICIT	-0.0544	-0.2562	0.1351	-0.0173	0.2938	-0.1056	-0.0324
LFGOVEMP	-0.1419	-0.0642	-0.1236	0.1522	-0.3705	0.0541	0.0531

Table 17., cont.

	LAGPOP	LOGINC	LDENSITY	LURBAN	LMANUF	PARTY	PARTYINT
LSGOVEMP	-0.2394	0.6218	-0.0251	0.1263	-0.3794	0.0895	-0.0241
LLGOVEMP	0.2576	0.7430	0.0009	0.3184	-0.3471	-0.0149	-0.1602
FEDGRANT	-0.1929	0.3584	-0.2118	-0.1393	-0.4671	0.1052	-0.0107
LSENATE	-0.5394	-0.1795	-0.1824	-0.4047	-0.3489	-0.2499	-0.1448
LHOUSE	-0.3690	-0.1500	-0.1209	-0.3408	0.0119	-0.276	-0.1678
PERCDIV5	0.0637	0.3961	0.0662	0.2272	-0.0492	-0.2068	-0.3333
DIVSMAJ	0.0213	0.3026	0.0690	0.1724	-0.0131	-0.1881	-0.3054

Table 17., cont.

	INTPART	IPCELECT	LTURNOUT	LTELS	LINIT	LOV65	LUND18
INTPART	1.0000						
IPCELECT	0.4136	1.0000					
LTURNOUT	-0.2382	-0.0454	1.0000				
LTELS	0.0489	0.0424	0.0941	1.0000			
LINIT	-0.0026	-0.0127	0.2425	-0.1497	1.0000		
LOV65	-0.1530	-0.0787	0.0725	-0.2032	0.1015	1.0000	
LUND18	0.2381	0.1252	0.0311	0.3590	-0.0177	-0.7386	1.0000
LBLACK	0.2183	0.0495	-0.6031	-0.0201	-0.3822	-0.1702	0.1115
UNEMP	0.0189	0.0543	0.0821	0.0398	-0.0034	-0.0824	0.0597
INFL3	-0.0016	-0.0264	-0.1681	-0.0541	0.0168	0.0738	-0.2052
ECON1	-0.0214	-0.0069	-0.0230	0.0021	-0.0170	0.0641	-0.0045
OPLIB	-0.2566	-0.0928	0.2168	-0.0063	-0.0954	0.1473	-0.3587
POLLIB	-0.2348	-0.0909	0.3548	-0.0152	0.0330	0.1825	-0.3262

Table 17., cont.

	INTPART	IPCELECT	LTURNOUT	LTELS	LINIT	LOV65	LUND18
LINCTAX	-0.1031	-0.0786	-0.0107	-0.1577	-0.0601	0.2641	-0.3314
LCOMPLEX	-0.0206	-0.0424	0.0330	-0.2992	0.1392	0.4176	-0.4135
DEFICIT	0.0065	0.0017	0.1047	0.1241	-0.1004	-0.2019	0.1305
LFGOVEMP	0.0498	0.0450	0.0038	0.0053	0.1952	-0.3112	0.1416
LSGOVEMP	-0.0371	-0.0667	-0.0312	-0.3103	-0.0260	0.3692	-0.4185
LLGOVEMP	-0.1053	-0.1064	-0.0163	-0.2456	0.1846	0.5562	-0.5414
FEDGRANT	0.0115	-0.0391	-0.0241	-0.1217	0.1043	0.2953	-0.1176
LSENATE	0.0608	0.0600	0.2903	0.1233	0.1605	-0.1404	0.2176
LHOUSE	0.0867	0.1072	0.1913	0.1276	-0.0555	-0.0040	0.0921
PERCDIV5	-0.0865	-0.0472	0.2125	-0.1640	0.2405	0.2417	-0.2698
DIVSMAJ	-0.0648	-0.0348	0.2365	-0.0314	0.1955	0.1587	-0.1768

Table 17., cont.

	LBLACK	UNEMP	INFL3	ECON1	OPLIB	POLLIB	LINCTAX
LBLACK	1.0000						
UNEMP	-0.0096	1.0000					
INFL3	-0.0013	0.2746	1.0000				
ECON1	0.0392	-0.3500	-0.1927	1.0000			
OPLIB	-0.2654	-0.0001	0.0000	-0.0248	1.0000		
POLLIB	-0.4171	0.0017	0.0000	-0.0409	0.8211	1.0000	
LINCTAX	0.0197	-0.0300	0.0784	0.0209	0.2209	0.3516	1.0000
LCOMPLEX	-0.1612	-0.0748	0.0536	0.0652	-0.0910	-0.0726	0.1359
DEFICIT	-0.0346	0.0304	-0.1086	-0.0197	0.1729	0.1613	-0.0684
LFGOVEMP	-0.1191	0.0389	0.0143	0.0003	-0.1472	-0.1519	-0.0796
LSGOVEMP	-0.0850	-0.0473	0.1775	0.0812	-0.1074	-0.0783	0.3183
LLGOVEMP	-0.0396	-0.0738	0.1671	0.0769	0.0042	0.0580	0.2744
FEDGRANT	-0.0289	-0.0739	0.1215	0.0859	-0.2678	-0.2565	0.1052

Table 17., cont.

	LBLACK	UNEMP	INFL3	ECON1	OPLIB	POLLIB	LINCTAX
LSENATE	-0.3678	0.0234	-0.0163	-0.0039	-0.2065	-0.1364	-0.1787
LHOUSE	-0.2903	0.0150	-0.0287	-0.0040	-0.0246	-0.0163	-0.1621
PERCDIV5	-0.2947	-0.0135	-0.0046	0.0091	0.1549	0.2344	0.0776
DIVSMAJ	-0.3208	-0.0073	-0.0066	0.0078	0.1595	0.2379	0.0557

Table 17., cont.

	LCOMPLEX	DEFICIT	LFGOVEMP	LSGOVEMP	LLGOVEMP	FEDGRANT	LSENATE
LCOMPLEX	1.0000						
DEFICIT	-0.2278	1.0000					
LFGOVEMP	0.0460	-0.0472	1.0000				
LSGOVEMP	0.6002	-0.2166	0.1178	1.0000			
LLGOVEMP	0.4730	-0.3245	-0.1104	0.4079	1.0000		
FEDGRANT	0.4886	-0.3060	0.0817	0.6567	0.5170	1.0000	
LSENATE	0.1266	0.0386	0.1602	0.1915	-0.1191	0.3292	1.0000
LHOUSE	0.0055	0.1466	-0.0331	0.0527	-0.1889	0.0887	0.6009
PERCDIV5	0.2134	-0.1023	-0.0164	0.1796	0.2998	0.1370	0.0785
DIVSMAJ	0.1309	-0.0712	-0.0025	0.1047	0.2402	0.1079	0.0997

Table 17., cont.

	LHOUSE	PERCDIV5	DIVSMAJ
LHOUSE	1.0000		
PERCDIV5	-0.0257	1.0000	
DIVSMAJ	0.0029	0.9084	1.0000

Where model variable equals the following code:

Interparty Competition	=	INTPART	Policy Liberalism	=	POLLIB
IPC * Election Year	=	IPCELECT	Income Tax	=	LINCTAX
Turnout	=	LTURNOUT	Revenue Concentration	=	LCOMPLEX
Tax and Expenditure Limitations	=	LTELS	Deficit	=	DEFICIT
Initiatives	=	LINIT	Federal Employees	=	LFGOVEMP
Over 65	=	LOV65	State Employees	=	LSGOVEMP
Under 18	=	LUND18	Local Employees	=	LLGOVEMP

Black Population	=	LBLACK	Intergovernmental Grant	=	FEDGRANT
Unemployment	=	UNEMP	Senate	=	LSENATE
Inflation	=	INFL3	House	=	LHOUSE
Economic Growth	=	ECON1	Divided Government	=	PERCDIV5
Opinion Liberalism	=	OPLIB	Divided * Supermajority	=	DIVSMAJ

Vita

Branwell DuBose Ravenel Kapeluck was born in Manassas, Virginia, on July 11, 1969. He attended both elementary school and junior high in Columbia, South Carolina, and then moved with his family to Clemson, South Carolina. He remained there until graduating from D.W. Daniel High School in 1987. DuBose enlisted in the Marine Corps Reserve and completed basic training in November of 1987. He then went to Charleston, South Carolina where he attended the College of Charleston, receiving a Bachelor of Arts in history. DuBose subsequently moved to Durham, North Carolina, and began graduate studies at North Carolina State University. He was awarded a Master of Arts degree in political science in 1997. His thesis advisor was Dr. Andrew Taylor. In 1997, DuBose continued his graduate studies at Louisiana State University under the direction of Dr. James Garand. His major field of study is American politics, with an emphasis on congressional behavior and public policy. His second field of study is political theory.

DuBose will obtain a degree of Doctor of Philosophy in August of 2001. He has accepted a faculty position at Georgia Southern University where he will have an appointment with the Political Science Department.

DOCTORAL EXAMINATION AND DISSERTATION REPORT

Candidate: Branwell DuBose Ravenel Kapeluck

Major Field: Political Science

Title of Dissertation: Testing Theories of Government Growth in the Fifty States, 1945 to 1998

Approved:

Major Professor and Chairman

Dean of the Graduate School

EXAMINING COMMITTEE:

Date of Examination:

June 29, 2001