Public College Lobbying and Institutional Appropriations: The Role of Lobbying in State Higher Education Budgets

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PUBLIC COLLEGE LOBBYING AND INSTITUTIONAL APPROPRIATIONS:
THE ROLE OF LOBBYING IN STATE HIGHER EDUCATION BUDGETS

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Abstract

The higher education literature has developed a growing number of frameworks identifying the economic, demographic, and political influences on state support for public colleges and universities. Among the important political factors that affect state support, the role of lobbying has been highlighted by many authors as an important factor for future study, especially in light of the growing state lobbying forces present in legislatures across the country. Although some studies have incorporated aggregate measures of lobbying in comparative state support studies, the power of institutional lobbying as it relates to appropriations and other forms of support remains understudied in the literature.

This study examined institution-level data for 534 public 2- and 4-year colleges in 15 states over a period of 10 years, with the goal of examining institutions working under similar lobbying disclosure laws. A unique lobbying expenditure dataset was collected from state government websites, and a multilevel model using panel data was employed to examine the effects of institutional lobbying on state support measures.

The results of analysis reveal that institutional lobbying has increased over 80% in real terms over the 10-year dataset. Significant differences also exist in lobbying expenditures by institutional type, with research universities spending an average of 10 times more than community colleges. No statistically significant relationship between an institution’s lobbying expenditures and measures of state support were found, suggesting future scholars should continue to examine lobbying from different perspectives and consider expenditure data as a new source for the creation of institutional and state measures.
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CHAPTER 1
INTRODUCTION

Public college budgets have been suffering from a hemorrhage of state support lasting almost 4 decades. In terms of the share of spending within state general fund budgets, the American Academy of Arts and Sciences (2015) found that higher education went from 14.6% in 1990 to 9.4% in 2014. The drop in state support alone is not the only problem, as over the same period of time that states have lessened their role in supporting institutions, enrollments have increased. The amount of state appropriations per FTE for state institutions was 25% lower in 2009–2010 compared to 1999–2000 (Baum et al., 2013). The fallout from reduced support has not been overlooked by the media, and some of the direct costs from less state support have come in the form of rising institutional tuition, student debt, and criticism of the value of public colleges.

Illinois State University’s Grapevine Study helps provide funding data to outline the decline of higher education appropriations annually. Combining funding data with student enrollment totals from the Integrated Post-secondary Education Data System (IPEDS), Figure 1 shows the clear negative trend line representing the drop in state appropriations for higher education per full-time equivalent student among state budgets over a 30-year period.

*Figure 1-1. Inflation Adjusted Appropriations per FTE to Public Institutions in all 50 States (Grapevine, 2016; IPEDS, 2015)*
This phenomenon has not gone unnoticed by other authors (Tandberg, 2008, 2010a, 2010b; Toutkoushian & Shafiq, 2010).

A cursory look at overall funding trends shows a cyclical pattern exists in state higher education funding. State appropriations for higher education maintain a second order position within the political business cycle (Shaw & Heller, 2007). Hovey’s (1999) balance wheel hypothesis was the first to coin the second order moniker while explaining the cyclical rise and fall of various appropriated programs in state legislative budgets. In short, legislatures spend more on higher education in good times and cut more in bad times; this is an observation that has been replicated in research multiple times in the past 10 years (Delaney & Doyle, 2007, 2011). The balance wheel hypothesis emphasizes the political nature of state higher education support, and other authors utilizing Hovey’s paradigm note that the internal characteristics of state politics and policy-making such as government institutional differences, partisanship, and party control are important in analyzing whether a certain policy will pass, or whether the view of higher education as a public good will be considered favorably (Berry & Berry, 1999; McGuinness, 2005; Orkodashvili, 2008).

If higher education has taken up a second order status among budget priorities, what are first order priorities and how do they relate to second order priorities? First order items are generally guided by specific laws stating their required funding formulas, and these items often have no internal source of self-funding as higher education institutions do (Weerts & Ronca, 2006). Medicaid, K–12 education, and corrections spending are three state budget items considered first order, and have a different historical funding pattern compared to higher education. Medicaid and corrections shares in state budgets have skyrocketed during the period in which higher education has slowed down (Kane, Orszag, & Apostolov, 2005). Medicaid, in particular, as a counter-cyclical budget item, has been found to “crowd-out” higher education spending in state budgets (Kane, Orszag, & Gunter, 2003; Okunade,
Scholars who have written on the crowding-out effects of first order budget items and second order items such as higher education funding have put in context what is happening. This has partially tied the hands of legislators, who cite higher education’s ability to self-fund as a reason for its shifting importance as a state budget item.

Internal characteristics of government, and competing state priorities are not the only concerns related to the politics of state higher education. Several scholars have highlighted how state indebtedness and public resistance to tax increases have played a role in reducing public support for higher education (Archibald & Feldman, 2006; Mumper, 2003; Okunade, 2004). Skepticism towards public support of education and the positive externalities it presents has fed into a change in public priorities that stretches back to at least the 1980s (Palmer, 2013). These themes related to public opinion play out amidst the more obvious divisions in political attitudes toward higher education including differences in political party platforms, level of partisanship in legislatures, and gubernatorial influence over the budget process, to name a few.

It cannot be understated just how important state political context is to financial support outcomes for higher education. With the decline of public support for higher education, rising state indebtedness, and competing priorities, the state higher education sector has turned to generating revenue from tuition as appropriations have stagnated. Where net tuition revenue in 2002–03 for 2-year colleges was 24%, and 4-year bachelor’s degrees was 35%, by 2012–2013 it had reached 35% and 49%, respectively (College Board, 2015). These increases have drawn further political scrutiny about the worth of higher education as a public good (Kane, et.al., 2005; Zusman, 2005). In fact, the recommendation of private and public cost-sharing made in the 1970s through a government commission provided the impetus for reductions in higher education support per student in the 1980s, representing a political shift in attitudes about the role of government in supporting education (Hauptman, 2001).
Government scrutiny has continued under the auspice of accountability, with states launching numerous initiatives to control costs, limit tuition increases, or tie student outcome measures directly to funding (Daigle & Cuocco, 2002; McKeown-Moak et al., 2013). Many scholars such as Zumeta (2001) have suggested that the relationships between political leaders and higher education has always been somewhat adversarial, and when combined with political and economic pressures, higher education will continue to be faced with challenges of public scrutiny regarding how they handle their own self-preservation financially (McLendon & Mokher, 2009; Vedder, 2007).

Although it is important to point out the emerging or continuing trends of falling support, increasing price, and political or public scrutiny of higher education across the United States, it is of equal value to note these are not equitable across all states. In the same period of great average increases in tuition noted above, there are counter examples of states with little or even negative average tuition increases such as Montana, Maine, New Hampshire, or North Dakota (College Board, 2015). The same lack of equity can be shown with appropriations, where even the cyclicality of state funding for higher education varies greatly between states who decrease, hold equal, or maintain increases in funding during recessional periods (Pernsteiner & Carlson, 2015).

The differences in state outcomes related to higher education support, and the rich diversity of state political, economic, and demographic environments are in large part the reasons why the cross-state study is valuable when trying to answer questions about how educational stakeholders may be able to influence support for higher education both locally and nationally. Beyond controlling state differences, researchers should be interested in determinants of state funding that allow for actionable conclusions. Economic and demographic characteristics of states have clearly shown to be important in funding outcomes across states, but these types of characteristics such as unemployment level, age distribution, and income levels are unlikely to be influenced by higher education institutional decisions (Kane, et. al., 2003; Okunade, 2004).
In the same way economics and demographics of states cannot be altered by higher education institutions, many internal and external political factors affecting state funding are beyond the reach of colleges to influence. Factors such as state citizenry and political culture, state representative ideology, gubernatorial control of the budget process, political polarization among parties in the state, and legislative professionalism are examples of these important but exogenous influences on state budgets with respect to how colleges influence their positions in the state budget picture (Gray & Lowery, 1996, 2001; McLendon, Deaton, & Hearn, 2007; Shaw & Heller, 2007; Tandberg, 2008, 2010, 2010a). With all of these exogenous variables affecting state budget decisions, higher education scholars must further study the political context colleges exist as actors in, but also single out mechanisms, if they exist, which colleges have to influence the decisions legislators make in terms of supporting public institutions.

**Higher Education Lobbying as a Determinant of State Budgets**

Researchers are continually trying to reconcile higher education institutions and state political context. Dar (2012) succinctly iterates this observation, and laments the dearth of research when she states:

> ... politics matters in higher education policy outcomes, but much less is known about how it matters. The effects of public opinion, politicians' preferences, and political institutions vary according to the context, timing, and nature of the higher education policy under evaluation (p. 770).

Many authors have been creating political frameworks and conducting studies, consistently growing a list of political, economic, and demographic variables affecting state finance (Barrilleaux, Holbrook, & Langer, 2002; Delaney & Doyle, 2007; McLendon, et al., 2007; McLendon & Hearn, 2007; Rigby, 2007; Tandberg, 2008, 2010a; Weerts & Ronca, 2012). What Dar’s quote helps to articulate is that within these existing political frameworks, a strong need exists to investigate *how* and *how much* state political characteristics influence higher education funding outcomes.
Although many authors have designed frameworks for state political context in the higher education landscape, a seminal approach was taken by McLendon and Hearn (2007) to gather literature bases across higher education and political research bodies. Their framework highlights seven categories of factors that affect higher education finance policy within states: (a) higher education demography and organization, (b) socioeconomic climates, (c) political culture and ideology, (d) legislative organization and membership, (e) gubernatorial influence, (f) party strength and control of governmental institutions, (g) interest group climates, and (h) interstate policy diffusion. Tandberg’s (2008, 2010b) work encapsulates these framework variables, amongst others, in the building of a *State Fiscal Policy Framework*. These two frameworks are important because they have strong theoretical grounding in the political and higher education literature, but also because they make room for the emerging focus on interest group influence in state politics.

Collectively, public colleges and universities within states represent an interest group in the state political landscape. Broadly defined, this means they represent “organizations trying to influence government” (Berry, 1997, pg. 4). Interest groups influence governments in several important ways: they spend money on campaigns to elect representatives friendly to their positions, and they utilize multiple manners of influence on elected officials to provide them a return for their efforts in the form of advantageous policy. Some forms of interest group influence, such as campaign spending, have been closely scrutinized and tracked on a national level for quite some time. The other type of influence directed towards currently elected officials, known as *lobbying*, has had a relatively short history of study in comparison (de Figueiredo and Silverman, 2006; McLendon & Hearn, 2007). The passage of the 1995 Federal Disclosure Act helped initiate the registration and tracking of lobbying at the federal level. States were in many cases slower to act on measuring and reporting lobbying in the political

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1 Federal Election Campaign Act (1975), Bipartisan Campaign Reform Act of 2002.
process, with the earliest state included in this study tracking information only back to 1992 and the latest in 2009.²

Higher education institutions and other stakeholders have a strong reason to care about this issue. Interest groups are an important influence on legislative and executive actions, and this includes matters of state budgets (Jacoby & Schneider, 2001; John et. al., 1993; Nice, 1984). Interests with more resources (money, access, information, etc.) usually will obtain better results than interests with fewer assets, or those who employ them less effectively (Berry, 1997; Dahl, 1982; Loomis & Cigler, 2007). Considering the many state variables impacting a budget beyond the control of higher education institutions, lobbying is something every individual institution must decide its involvement in. For this reason many authors have suggested it as a future variable of interest in state higher education finance models (Bowling and Ferguson, 2001; Gray and Lowery. 1996; Jacoby & Schneider, 2001; McLendon & Hearn, 2007; Wiggins, Hamm, & Bell, 1992).

Lobbying, in addition to other measures of political spending, has been increasing steadily for the past 20 years. To gain an empirical sense of this increase, the number of registered lobbyists within states has more than doubled between 1980 and 2009 (National Institute on Money in State Politics, 2011). An explanation for the explosion in interest group representation included changing of federal finance guidelines issued in the 1970s as well as court decisions and the development of so-called “soft money” contributions that provide a loophole for organizations to funnel money and resources to candidates outside of established limits. This process has played out over 4 decades and continues in the 21st century (Laskow, 2006; Loomis & Cigler, 2007).

The rise in monetary contributions to state politicians from interest groups through campaigns and committees has exploded alongside the rise in registered lobbyists. By 2005, expenditures on lobbying and campaign contributions reached over $1 billion among all 50 states. A report from the

² Appendix C includes the historical dates of lobbying registration & transaction law.
Council of State Governments suggests that universities and colleges are actively lobbying in over 45 states, and they are consistently ranked as being between the 11th and 20th most effective lobbies on a 12-factor measure including financial resources, organization, and ability to work with lawmakers and other groups (Thomas, Hrebenar, & Nownes, 2008). It should be noted that the relative position of higher education in this study was in the third (lowest group) in order. Notably, several important state-related groups, such as local government and other state departments, boards, and commissions are also ranked in the lower end of the top 20 lobbying groups. The status of the higher education lobby as a top 20 group, as well the increased spending by organizations in the group, suggest that education stakeholders see value in spending money on lobbying.

**Current Literature on Higher Education Lobbying**

One way to analyze the existing literature on higher education lobbying is to focus on the data sources researchers have used. De Figueiredo and Richter (2014) categorized the empirical literature, separating out *surveys, registries, and transaction reports* as the main sources for research. Survey research on state lobbying and higher education holds a minor foothold in the literature. This research focuses on the views of lobbyists, legislators, or college administrators, measuring their attitudes on strategy and effectiveness of lobbying. A few major examples include Ferrin’s work on in-house college lobbyists’ methods for communicating with state legislators (Ferrin, 2003, 2005). Several dissertations have focused on the effectiveness and relationships between lobbyists in particular situations, focusing on a single state in a single time period (Avery, 2012; Brumfield, 2007; Burkum, 2009). Much of this work is descriptive, learning about the differences between higher education lobbyists compared to other industries. Some of the useful findings include the emphasis on budget matters as a top priority of college lobbyists. One drawback to these types of survey methods is that they mostly do not examine systematic impacts of lobbying.
Most of the existing research in the higher education lobbying literature focuses on registration data of lobbyists. Because this information has been publicly available and is relatively standardized across many states, a state-level study of questions related to lobbying registrations has become the predominant method of modeling interest groups in large-scale higher education studies on financial support (McLendon, Hearn, & Mokher, 2009; Tandberg, 2008, 2010a; Weerts & Ronca, 2012). The major issue with the use of registration data, as de Figueiredo and Richter (2014) point out, is that its use is “particularly problematic if the goal is to identify how ‘active’ or ‘effective’ interest groups are in lobbying” (p. 177). Lobbyists can register while expending no funds and receiving no compensation in an active period. This does not discount the findings of the existing literature, but it does mean that very important questions about the effects of lobbying require more than looking at how many registered lobbyists an interest group wields in a given state and time.

Even with the drawbacks to using registration data, these major studies on higher education state lobbying environments have provided valuable evidence that lobbying matters. The theoretical basis for using registration data is justified using Gray and Lowery’s (1996) Population Ecology Theory. This biological theory stresses the importance of “density” within an environment, which in this case references the ratio of higher education lobbyists compared to other lobbyists in a state. The most comprehensive studies have used this measure of lobbying environment within a greater State Fiscal Policy Framework developed by Tandberg (2008, 2010b; Tandberg & Griffith, 2013). Almost all of the major studies including this density measure have found that more dense higher education lobbying environments tend to have a positive effect on state higher education budgets. Multiple outcome measures have been used in these works, including higher education shares of state budgets and measures directly tied to appropriation levels.

The final lobbying data type available to researchers is transaction reports. These are actual measurements of lobbying expenditures done within a specific time period. Very few studies have
attempted to utilize this data, with de Figueiredo and Silverman (2006) being a prominent example. This research involved college-lobbying expenditures used to affect committee members in charge of federal committee research funding. The results of this study included that lobbying was a significant determinant of academic earmarks to individual institutions, and that institution size mattered as a mitigating factor. De Figueiredo and Richter (2014) posit that transaction records are valuable because they are the closest thing to an accurate measure of the “intensity” of lobbying, and they also exist at an institutional level of analysis, which together make them a very fruitful area for studying the impact of lobbying.

One major organization attempting to catalogue lobbying expenditures across all sectors is the National Institute on Money in State Politics (NIMSP), which recently released a 19-state database of expenditures in 2016. The use of records being put together by the NIMSP, or the direct collection of lobbying expenditure data from state records for examination in cross-state studies in higher education, has been recommended in recent years as one potential avenue for researchers to expand the literature in this part of the field (de Figueiredo & Richter, 2014; Ness, Tandberg, & McLendon, 2015).

**Statement of the Problem**

Three related problems emerge in an examination of the state of lobbying research in the higher education literature. Although several recent studies have focused on how state-level lobbying efforts may impact state budget decisions, many scholars have commented on the lack of depth in this area of study, particularly with respect to the quality of proxy variables and the unit level of analysis (McLendon & Hearn, 2007; McLendon, et al, 2009; Ness, et al., 2015; Tandberg, 2008; Weerts & Ronca, 2012). Many of these same scholars have helped push the literature forward with their own work, testing out aggregate proxies for lobbying within state-level studies of higher education budget outcomes. As Dar (2012) points out, political variables are of rising interest to higher education scholars in modeling determinants of state support, and there are large gaps in *how* and *how much* these
different factors may impact state budget outcomes. It is likely no coincidence that interest in this variable coincides with the rise in lobbying expenditures across states and the growing literature on lobbying effects in other industries.

The lack of studies on this topic is due in part to a lack of data. All studies on higher education and lobbying that intend to use state data, such as registries or transaction reports of lobbyists, are limited to what is publicly available from state governments. Most states have provided lobbying data publicly beginning in the 1990s (de Figueiredo & Richter, 2014). The wide variety of laws related to the storing and release of lobbying records as well as the differences in what is recorded create significant methodological challenges which have impacted the ability of scholars to research trends in lobbyist spending. Although many organizations, such as the Council of State Governments or the National Association of State Budget Officers, track characteristics of state government, they do not consolidate state databases of lobbying registrations or transactions. The NIMSP’s recently released database did take a step forward with aggregate transaction record data for campaign finance and lobbying activities, but specific lobbying data including compensation and other specific expenditure information cannot yet be parsed from other forms in the database. Individual collections from state government websites or from staff requests are the only way to secure this kind of data.

Political scientists and sociological researchers have spent decades examining how groups of individuals actively utilize channels of influence to change public policy. Interest groups use many tactics such as soft money donations, promises of constituency delivery in elections, and public campaigns across legislative and gubernatorial branches of state governments to pressure lawmakers and bureaucrats (Nownes & Freeman, 1998). These actions have been found to have substantial sway on public priorities of state politicians (Bowling & Ferguson, 2001; Jacoby & Schneider, 2001; McLendon, et al., 2007). One big problem highlighted in the literature is that interest group influence has not been well understood, compared to mobilization, formation, and tactics of interest groups
(Hojnacki, Kimball, Baumgartner, Berry, & Leech, 2012; Sloof, 1998). Sloof’s (1998) explanation relies on the “black box” that represents how interest groups actually impact policy in studies of interest group influence. Although many theories can be drawn upon for how it is possible, limits in data and operationalizing interest group influence remains difficult, especially in terms of repeatable research performed in political subfields. This lack of available proxies for lobbying represents a third problem related to the lack of data and studies to date.

The existing studies in the higher education literature rely on Gray and Lowery’s (1996, 2001) political ecology theory as a representation of interest group influence, though it would be better described as relating the density of higher education lobbyist environments within states to appropriations outcomes. One competing tactic to create a proxy for interest group influence is to look directly at college lobbying expenditures. This method does have drawbacks, including aggregating spending directed towards other lobbying goals like policy change, which may be unrelated to budget outcomes; however, utilizing transaction records as a source of data has benefits that other methods do not, and many studies have tried to connect spending on lobbying or campaign contributions and outcome measures as a “return on investment” (Barber, Pierskalla, & Wesché, 2014; de Figueiredo & Silverman, 2006; Fellowes & Wolf, 2004; Hogan, Long, & Stretesky, 2010; Kang, 2012; Richter, Samphantharak, & Timmons, 2009).

**Purpose of the Study**

The purpose of this quantitative study is to examine the relationship between lobbying expenditures of public higher education institutions, and the institution funding outcomes, controlling for state and institutional context. Tandberg’s (2010b) *State Fiscal Policy Framework* served as a guide for the study design to control for state characteristics, as were other relevant studies testing similar outcome measures. Institutional-level studies examining characteristics relevant to appropriations outcomes were also culled to design a set of controlling institutional factors. This study also expands
the knowledge base on what institutional lobbying expenditures from public institutions look like, considering this data has not been gathered and assembled in other reports or research.

This study will utilize a model at the institutional level of analysis, and test the hypothesis that variations in institutional lobbying expenditures may have a causal effect on variations in institutional appropriations and other types of non-appropriational support. This will inform future researchers in understanding, in a systematic way, the growth of lobbying expenditures over time, differences in lobbying efforts across types of institutions, and whether institutional lobbying efforts may directly affect appropriational returns.

**Research Questions**

This study uses data at the institutional level of analysis. The first research question pertains to finding out about descriptive measures related to new data on institution-level lobbying expenditures. The second 2 questions require inferential analysis to determine relationships between institutional lobbying and returns from the state in the form of financial support (appropriational and non-appropriational).

1. How are lobbying expenditures distributed among public 2- and 4-year institutions within the states included in this study, and how do lobbying expenditures differ based on institutional-level and state-governance models?

2. Does a relationship exist between a public institution’s expenditures on lobbying and its state appropriation received, when holding constant economic, political, and demographic differences in institutions?

3. Does a relationship exist between a public institution’s expenditures on lobbying and its overall state support received from all sources, when holding constant economic, political, and demographic differences in institutions?
Research Methodology

Participant Dataset and Model Variables

Considering the vast differences in state laws related to what information must be collected on lobbying, rules for state inclusion are required to maintain internal validity in this study. The goal of state selection is to winnow out states that do not include the most important aspects of lobbying in their disclosure requirements, cannot connect lobbyists with lobbyist employers, or do not have substantial temporal records. Research published by the NIMSP provides an initial definition for what “comprehensive” expenditure records are, with a primary requirement being records on lobbyist compensation (King, 2011). Although 27 states met initial criteria for the reporting of compensation, only 15 states (containing 534 public 2- and 4-year colleges) reported and made available data for study over a long enough period of time to be included. 13 states had data for more than half the period of the dataset, and were used for most of the descriptive analysis in the study. The collection of lobbying data occurred between January of 2014 and May of 2015.

The collection of lobbying expenditure data in a cross-sectional time-series, or panel, format represents a unique contribution to the literature on state higher education research. This is the only data that requires collection in this manner, as other institutional and state data is available through existing databases operated by the US Department of Education and Department of Labor as well as organizations such as the National Association of State Budget Officers (NASBO), the State Higher Education Executive Officers Association (SHEEO, 2012), and the Council of State Governments (CSG).

One factor guiding the overall study is a desire to use panel data, considering that the interest in lobbying effects coincides with the rise of lobbying across states over the past 30 years. The dataset spans a timeline of 2002–2003, through 2013–2014. Although it would be desirable to include older data, the majority of states in the study did not have consistent data prior to 2002–2003, and
minimizing missing data while having the largest panel possible is desirable for descriptive comparisons. The independent variables are all lagged by one year, outside of lobbying expenditure data for biennial budget states that is combined and overlaid on a 2-year period as each budget is expended. The dependent variables span from 2004–2005 through 2013–2014, making the length of dataset span 10 years.

The dependent variables in this study include adjusted state appropriation per full-time equivalent student, adjusted appropriations plus operating and non-operating grants per full-time equivalent student, year-to-year percentage change in adjusted appropriations, and year-to-year change in adjusted appropriations plus operating and non-operating grants. The use of appropriation level and appropriation change allows for modeling of the dependent variable in a way that may deal with the autocorrelation issues inherent to this data (Weerts & Ronca, 2012). The appropriations plus grants dependent variable provides an additional test of the effectiveness of lobbying, especially since other authors have recently broadened the scope of research on state support and its determinants using state fiscal frameworks to analyze forms of support, such as financial aid and capital appropriations (Tandberg, 2013).

Independent variables for this study include institutional measures of prestige, size, private support, and cost as well as state economic, demographic, and political variables. Although the foundation for choosing these variables came from the existing major frameworks modeling state policy outcomes, research using these models was evaluated to determine which variables best fit this institution-level analysis (McLendon, et al., 2009; Okunade, 2004; Tandberg, 2008, 2010a, 2010b; Weerts & Ronca, 2012).

**Data Analysis**

Following the lead of many other researchers examining higher education finance, this study utilized panel-data regression to evaluate a 10-year dataset. This method has been referenced
extensively in modern recommendations for the analysis of higher education data (Tandberg & Griffith, 2013; Zhang, 2010). To provide for sensitivity analysis of missing data, a balanced panel and an unbalanced panel were created. Imputations were required for the independent variable of lobbying expenditures to make a balanced panel, with only about 7% of the lobbying variable requiring treatment to make the dataset balanced. An unbalanced 15-state panel of 534 institutions was analyzed along with the smaller 13-state panel with balanced data, to see the effects of fuller early lobbying data compared to the effects of more state data and overall observations.

Following the analysis of a similar dataset and dependent variable of interest, this study considered the work of Weerts and Ronca (2012) in analyzing nested panel data using a Mixed-Effects model. This is a multilevel model, consisting of observations within an institution over time (first-level), nested within states (second-level). The reason for analyzing the data in this way is to include important time invariant variables, such as Carnegie classification and higher education governance structure as well as to capture across-subject variation in the dependent variable. Like Weerts and Ronca (2012), this study includes an AR(1) term to account for the high level of autocorrelation in the residuals, but does not take a pairwise approach to variable selection, choosing to test all model constructs together.

**Significance of the Study**

This study will inform its readers in two separate ways. Past studies have focused mostly on a state-level study of lobbying. Such an approach does help test the assumptions about lobbying environments and state policy outcomes, but it ignores institutional actions individually. This study focuses on the institution level of analysis first. Institutional leaders may find results of this kind of research more appealing. Second, past studies have utilized proxy measures for lobbying that do not represent the intensity of the lobbying effort put forth by institutions. This study will utilize a proxy measure for lobbying that represents actual intensity of the lobbying effort through expenditure. Such
an approach will yield results that tell readers the value of dollars spent. Beyond the results of the first two research questions, an institution-level approach to organizing lobbying expenditures will allow future researchers to better understand how much lobbying efforts differ across institutional strata.

From a theoretical perspective, this study represents a test of the theoretical link between lobbyists, who are information brokers, and their influence on legislators who control budget outcomes. This relationship is defined in theories such as Wright’s *Communications Theory of Lobbying* (Wright, 1996). Since organizations spend money on lobbyists who directly communicate with legislators, the more money spent by institutions, the more information is shared regarding the benefits of higher education support, and this should result in higher returns for colleges willing to commit the most resources. The use of lobbying expenditure data as the measure of energy will provide for an examination of this theoretical relationship. Additionally, this study contributes to the growing body of literature integrating political variables into state budget frameworks, similar to Tandberg’s (2010b) *State Fiscal Policy Framework*. This integration helps to inform future studies about the contextual importance of different political, economic, and demographic factors in the process of state budget outcomes.

**Definition of Terms**

The following terms are utilized throughout this study, and these definitions are provided for the purpose of comprehension and consistency. The researcher developed all definitions not accompanied by a citation.

**Interest Group:** A voluntary organization of individuals, outside of government, with similar interests or occupations, who are attempting to influence the government (Berry, 1997)

**Lobbying:** An attempt to influence current government decisions or create a relationship conducive to shaping future government decisions (Nownes & Newmark, 2013).
**Lobbyist:** “In-house” employees and “contracted” individuals working on behalf of colleges and universities (Nownes & Newmark, 2013). These lobbyists are considered government lobbyists in the greater lobbying literature.

**Lobbying Expenditures:** Costs for direct and indirect activities related to lobbying, including gifts to legislators, event costs, travel, meals, lodging, and salaries paid to lobbyists and lobbying staff (King, 2011). Differences in what states collect are outlined in the study Appendices.

**Higher Education:** US institutions providing post-secondary education including vocational/trade programs, 2-year degrees, 4-year degrees, and post-graduate degrees. References in this study to higher education refer to publicly supported higher education institutions and ignore private and for-profit institutions.

**State Support:** This study describes state support as state appropriations and non-appropriation support decided on by state legislators through the budget process. This includes direct appropriations as well as operating and non-operating grants. The research questions delineate how these are grouped in the model for this study.

**Organization of the Study**

Chapter 1 contains the introduction, a primer on state higher education budget research as well as the current state of the literature on lobbying in higher education, a statement of the problem, research questions, research methods, a definition of terms, and the significance of this study. Chapter 2 contains a history of higher education funding research, and delineates the role of lobbying within the frameworks of state higher education finance. A model developed specifically for this study is also introduced based on the existing literature. Chapter 3 describes the methodology and procedures used to gather and analyze data for this study. Chapter 4 covers the results of the data analyses and findings that emerged from the research questions. Chapter 5 includes a summary of overall study findings,
conclusions drawn from the model and methods employed as well as a discussion and recommendations for future studies and use of results.
CHAPTER 2

LITERATURE REVIEW

The relationship between states and higher education institutions is complex. Interest in attendance has certainly shaped the relationship, along with the increased use of higher education as a driver for research and the growing criticism of the fiduciary role of state institutions. This literature review will focus primarily on the political, economic, and demographic aspects of the relationship between higher education financing and states. The goal is to determine a model that maximizes explanation of higher education funding outcomes within states and to examine the specific role that institutional-level lobbying has on institutional appropriations.

The determinants of higher education finance as well as the theory base have been understudied within the literature (Dar, 2012; John & Parsons, 2005; Lane, 2007; McLendon & Hearn, 2007; Ness, et al., 2015; Tandberg & Griffith, 2013). In part, this is likely due to the interdisciplinary nature of the subject, where politics, public policy, and higher education research come to a crossroad. This means that critical theoretical gaps will be filled using explanations from political and public policy research. Reaching across disciplines to examine the political, economic, and demographic forces that effect state higher education financing, this literature review seeks to provide: (a) an overview of higher education funding and history, (b) an examination of interest group lobbying theory, and (c) a review of political, economic, and demographic variables that affect higher education financing at both the state and individual levels.

The History of Higher Education Funding

The funding of public higher education in the United States can be marked by several large decisions made by the federal government as well as many divergent decisions made by state legislatures. Beginning in the mid-19th century, the 1862 Morrill Act represents a burgeoning of access and
proliferation from a few North and Southeast states to the establishment of higher education across the country (Heller, 2006). From the Morrill Act in the mid-19th century to the beginning of the 20th century, attendance in higher education more than quadrupled, and the amount of public institutions nearly doubled. The funding for these institutions was almost entirely received from state and federal appropriations, with only nominal fees received from students in the form of tuition.

For a time, there seemed to be widespread agreement about the return on investment for public institutions. Enhancements were made to further the role of science funding from the federal government within public institutions in the late 19th century, but a general consensus about how states and the federal government should continue to fund colleges with standard formulae created based on enrollments was upheld (Thelin, 2004). This consensus began to unravel as the aims of higher education grew among various stakeholders beginning in the 1940s (John & Parsons, 2005).

The GI Bill and Higher Education Act introduced 9 years later were major injections of both demand and support for higher education from the federal government. Consistent with the transition phases described by Martin Trow, the US higher education system went from serving the academic and culturally elite to providing for all manner of citizens, complete with new funding in the form of financial aid grants directly from the federal government (Altbach & Peterson, 2007). Even with some growing concerns within the federal government about the return on public investment in higher education, funding for public institutions was still highly favored. From 1940 to 1980, funding from state and local governments was still the largest source of increased revenue to public higher education (Heller, 2006).

Parity across states in terms of governance and funding structure was present for most of the 20th century. The Higher Education Act of 1965 required states to form coordinating bodies for higher education institutions, which became governing political forces that manage the funds provided by legislators (Cohen, 2007). Although funding for higher education institutions was always a political
decision, the change in federal policy to provide more financial aid instead of institutional aid made enrollment the compass point for institutional survival. By the 1960s, state legislatures had virtually all elected a funding formula chiefly based on enrollment (Bowen, 1980; Thelin, 2004).

Two major changes occurred in the 1970s and 1980s with respect to higher education funding. John and Parsons (2005) describe these changes as the loss of “consensus” on the social and economic value of institutions and education as a public good.

The first change in this period was described as New Conservatism in the 1970s and 1980s, which drove federal and state governments to begin believing higher education was unproductive, and that aid increases should be scaled back. This theory is consistent with the revenue data for higher education, which shows the share of total revenue from federal sources beginning in the 1980s remaining flat at about 13%, and state aid as a source of revenue declining through the 1980s and 1990s (Heller, 2006). One product of the decline in funding as a part of institutional budgets was a rise in institutional tuition rates, which further fueled questions about the worth of education in the eyes of New Conservatives (Marklein, 2006).

The second major change in this period of American history was the rise of Performance Funding. States originally favored accountability schemes for state higher education through the development of state coordinating boards that would guide institutions from a central body. Over the 1980s and 1990s, states started to adopt a more direct approach to requiring accountability that included specific student outcomes by which legislators could judge institutional worthiness (Burke, 2002; Zumeta, 1998). A number of recent studies testing the impact of these types of policies on outcomes have determined they’ve had little or no impact since creation (Hillman, Tandberg, & Fryar, 2015; Hillman, Tandberg, & Gross, 2014; Rutherford & Rabovsky, 2014).

The story of higher education support among states in the late 20th and early 21st century, beyond the increased skepticism of its mission and efficiency, has been the reduction of support on a
variety of measures. The share of state budgets going to higher education has declined by more than one third in the time between 1974 and 2004 (Ehrenberg, 2006a, 2006b). A more recent evaluation from 1990 through 2014 revealed that the share of state general revenue going to higher education dropped from 14.6% to 9.4% (AMACAD, 2015). In terms of real dollars, Quinterno (2012) posits that in the 20-year period between 1990–1991 and 2010–2011, states added 10 billion dollars in adjusted support to public education, but that number doesn’t take into account the rise in student enrollment, and ignores the per-capita support trend suggesting that states are choosing to spend less on higher education as a share of their state income. Quinterno found a 26% drop in public FTE funding over the 20-year period from 1990–1991 to 2010–2011, while looking at more recent data suggests the drop is close to 30% if looking at data from 2000 to 2013–2014 (AMACAD, 2015). These trends suggest that states have changed their views on the importance of funding higher education in the past 30 years, leading scholars to take an interest in why and how states make decisions related to higher education funding.

**Defining Interest Groups and Lobbying**

Before understanding the connection between interest groups, higher education institutions, and state funding, it is important to explore the overall definition of interest groups and lobbying as well as explain the underlying theory base behind how they work. Interest group theory is a branch of “group theory,” which has roots in 19th century political theories put forth by scholars such as John Calhoun in the *Disquisition of Government* and Karl Marx’s *Conflict Theory*; these both emphasize the importance of groups in society and their impact on political processes. Calhoun's theory of the “concurrent majority” applied group theory to the government process. Calhoun believed that decisions in a constitutional government weigh most heavily on private interest groups affected directly by the outcome of proposed policies. Preferences of numerical majorities are second in importance to the preferences of groups affected by the policies up for votes. Minority groups at the receiving end of a
policy’s effects must have methods to veto potential policies. One of Calhoun’s chief criticisms of our constitutional system is that the “separation of powers” approach between government branches can often be at odds with the concurrent majority, favoring a numerical majority over one of those most affected by a proposed policy. This early group theory integrates well into the idea of interest group efforts working as a “veto” method for concurrent majorities.

In defining an interest group, early theorists such as Marx or Calhoun focused on physical or economic characteristics that bind individuals. Later, 20th century scholars such as John Truman (1951) interpreted an interest group as simply a group of people with “shared attitudes” attempting to influence government. By abstracting the definition of groups from having physical characteristics to ideological ones, we broaden the idea of who fits in a group, and how he or she might shift between groups or have “co-membership.” In more recent scholarship, Berry (1997), defines the modern interest group as “…an organization that tries to influence government” (pg. 4), while not being part of the government. Scholars within the public policy fields and higher education research field have shared similar definitions that focus on the idea of a group with a common interest attempting to influence government policy (Nownes, 2006; Thomas, 2004; Thomas & Hrebenar, 2004). Recent research has focused on the delineation of lobbyists by field, organization type, and area of specialty; most relevant to this study is the specification of government lobbyists as specialists working with state legislators and bureaucrats to effect change in state policies such as budget appropriations (Nownes & Newmark, 2013).

With the understanding that any collective or group of organizations attempting to influence government can be considered an interest group, the next step is to understand the nature of their influence. William P. Browne (1998) describes the way interest groups lobby to affect policy in *Groups, Interests, and Public Policy*, whereby he outlines ways social institutions such as colleges utilize their resources. Interest groups hire “lobbyists” to carve out special budgetary earmarks or to
maintain public support, provide soft money for political campaigns, and utilize their employees to act on behalf of the institutions’ interests since they are limited by their non-profit status.

Many qualitative and quantitative studies have examined the questions of what lobbying is and how it is carried out. Specific studies looking at higher education data suggest that the responsibility of lobbying generally falls on high-ranking college administrators who may be specifically hired for this purpose, or from professional lobbying groups hired through contracts (Avery, 2012; Ferrin, 2003). Where lobbying takes place is a more complex matter depending on the issue being lobbied. Since budget determinations are made through state legislatures, we know that lobbyists often target legislative committees and subcommittees to influence bill creation and amendments (Berry, 1997).

**Lobbying Influence**

Beyond defining the term “lobbyist” and understanding how they work in policy arenas, it is important to clarify how and to what extent they influence policy. Hojnacki et al. (2012) surveyed the literature on interest group theory and empirical evidence in the 1990s and 2000s, concluding that significant developments have been made in the literature on lobbying advocacy and influence. The authors discuss the grouping of *Empirical Theory* as that which is directed towards policy studies and the development of frameworks for how specific interests impact policy beyond the more normative or formal theories of lobbying built in the mid 20th century. Gray and Lowery’s (1996) interest group density theory fits into this category, as an attempt to model interest group influence by examining the strength of particular interest groups compared to others within a system (states within the USA). This theoretical development and accompanying studies have occupied the majority of the research agenda on lobbying in higher education.

The idea of measuring the impact of lobbying by looking at the size and power of groups within a system stretches back to some of the earlier formal theories in the lobbying literature. Olson’s (1965) *Logic of Collective Action* served as a focal point for understanding interest groups and policy change,
concluding that individuals in small groups seeking private benefits will have lower costs to mobilize, and will be more likely to succeed than large groups, which suffer from higher mobilization costs, higher likelihood for “free riders,” and the diffusion of benefits to any one individual. Baumgartner, Berry, Hojnacki, Leech and Kimball (2009) provide evidence congruent with Olson’s theory in their book *Lobbying and Policy Change*, where they look at the influence of a sample of organizations through the lens of individual resources and then group resources and how they affect results. They found that only the size of the assets of individual organizations surveyed impacted whether or not they were successful in seeking policy change (including budgetary impact). They found evidence that group power and resources mattered more, though it should be noted that the methods employed consisted only of correlations among their one sample group of 186 businesses.

Despite the fact that the majority of literature on lobbying influence focuses on system level models comparing different lobbying groups and outcomes, some critical literature has appeared. Barber, Pierskalla, and Weschle (2014) point to a body of studies finding firm-level variables that are critical determinants of a firm’s willingness to engage in political lobbying. This finding suggests that firms may not conform to the principles Olson lays out in his theory for collective action, as decisions to lobby may reach beyond the type of result, size of a lobbying interest’s collective group, and strength of opposition; firms may seek to lobby based on internal characteristics and not external stimuli. Barber et al. (2014) suggest that firms may be able to have some individual effect on their ability to acquire private resources, citing one study connecting firm-level lobbying expenditures to reductions in their effective tax rates (Richter et al., 2009).

A number of studies have found connections between lobbying on behalf of firms and financial outcomes, suggesting lobbying as an investment at the federal level. Hill, Kelly, Lockhart, and Ness (2013) found excess lobbying beyond industry norms was associated with firms increasing their market values. They also pointed out some of the benefits of lobbying expenditures as a way of measuring
returns to a firm, such as the fact that no cap exists on this type of measure compared to others, such as campaign contributions. De Figueiredo and Richter (2014) expand significantly on this topic, describing the value of expenditures as a measure of lobbying intensity. De Figueiredo and Silverman (2006) used lobbying expenditures to examine outcomes of federal earmarks given out at the committee level, and found significant relation between variables where the lobbying university had representation on the appropriations committee. Hedge and Sampat (2015) found that lobbying expenditures of organizations seeking research funding could increase earmarks from the National Institutes of Health.

Incorporating measures of lobbying to examine their impact on policy outcomes is difficult regardless of the level of study or choice of measure. De Figueiredo and Richter (2014) describe these difficulties as issues of econometric identification and causal mechanisms. Knowing exactly how a firm or entire industry makes a difference in the policy process is often not something easily observable or measurable. Hojnacki et al. (2012) describe the category of Empirical Theory as a catchall area of research, that is often made up of very specific policy arenas. While previous authors have elected to utilize group-level theories to explore lobbying in higher education, this study approaches the matter of lobbying from an alternative perspective, seeking to use similar methods applied in other business and public policy research on the returns of lobbying, with the fairly in-depth models for appropriation decisions at the institutional and state level.

**Lobbying and State Budget Decision Theory**

With an understanding of the basic identity and role of interest groups, we can comprehend lobbying in the context of legislative decision-making. Early legislative decision-making theory did not leave room for the role of special interest actions in policy outcomes. Median Voter theory, for instance, suggests that legislators will vote purely based on how they feel the “median” voter would prefer (Downs, 1957). If ideology is based on a one-axis scale between liberal and conservative citizen
preferences, then capturing all voters on a legislator’s own side as well as the median voter will lead to a majority (or plurality) of voters come reelection. Ignoring the role of government and external influences on legislators has long fallen out of fashion, and many criticisms of Downs’ theory have come forward (Krehbiel, 2004; Shepsle & Weingast, 1994). Major criticisms include: (1) outcomes in legislative voting have been found inconsistent with citizen ideology; (2) the theory ignores all influence of government on legislator action; and (3) the theory ignores the legislator’s own ideology, polarization, and personality (Dar, 2012).

**Legislative Organization theory**, popularized in the 1970s, provides theoretical solutions to the weaknesses in Median Voter theory. Legislative organization theory expresses legislative decisions as being a combination of two forces: constituent demands, and the priority of legislators to maintain reelection (Fiorina, 1977; Mayhew, 1974; Fenno & Fenno, 1978; Mitchell & Munger, 1991). This policy has two central strengths from the perspective of studying political factors on legislative decisions. First, legislative organization theory includes room for government influence on decision-making in the form of how legislators consider the factors that affect their reelection. A second valuable contribution of this theory is that it leaves room for external factors, such as interest groups, to influence legislative decisions in different ways. Firstly, interest groups can influence legislators directly, by offering campaign funds, promises of votes, positive press, and pressure within other branches of government, etc. Secondly, lobbyists can utilize methods to affect constituents that will assist legislators in reelection.

Converging on the center-point between legislators and lobbyists, we turn to John R. Wright’s (1996) *Communications Theory of Lobbying*. Similar to Legislative Organization theory, Wright holds first that legislators are concerned with reelection. Their second and third order goals are to craft good policy and rise to positions of influence within their respective legislative branches. To guide legislators towards the completion of all these goals, lobbyists serve in the position of providing
information to legislators, which has been labeled *information lobbying* in the literature (Wright, 1996). The value of *information lobbying* is that it reduces uncertainty in decision-making about the consequences of policy decisions. Nownes and Newmark (2013) discuss the relevance of this theory for higher education by discussing how government lobbyists utilize their specific knowledge of policy and their closeness with clients who hold stake in the college system to secure increased funding for higher education. Studies focused on examining higher education leaders and their lobbyists motivations emphasize that budget matters are the primary concern in lobbying state legislatures (Avery, 2012; Burkum, 2009; de Figueiredo & Richter, 2014). These types of findings indicate a relationship between institutions and lobbying efforts. Institutions expend effort to lobby for bigger budgets—the more energy they expend in those efforts, the more potential return they hope to receive through conveying information about the needs of their institutions over others.

As the development of a lobbying theory has helped interpret the relationship between institutions, lobbying, and legislators, the higher education literature has developed an overarching framework for higher education state budget decisions that includes the role of interest groups. Tandberg’s (2010b) *State Fiscal Policy Framework*, and the empirical literature utilizing it, has helped explain some of systematic decreases in state support seen over the past several decades. Where earlier theories such as *Median Voter theory* or *Legislative Organization theory* relied on legislator-centric explanations for budget decisions, the *State Fiscal Policy Framework* saves room for the role of institutional forces affecting legislators and their decisions.

The *State Fiscal Policy Framework* is an attempt to describe a decision situation, a situation where actors and characteristics of a system interplay to create an outcome. The role of the political institution in affecting actors can be dated to Shepsle’s (1989, 2006) work on *New Institutionalism theory*. The contribution of political system characteristics takes into account the “influence institutions have on individual preferences and actions” (Tandberg & Griffith, 2013). Not unassociated to this
perspective, *Institutional Rational Choice theory* highlights the idea of “action areas,” which is where actors in a system carry out exchanges affected by the norms, rules, structures, and strategies inherent to social space (Ostrom, 1991). *Institutional Rational Choice theory* focuses on decision situations, and how internal and external forces impact decisions in a legislative institution.

There has been no shortage of higher education research employing these institutional theories as a basis for state higher education budget frameworks. It was at the core of McLendon and Hearn’s (2007) framework for political models in state higher education research, and has been utilized in many other studies within the past 10 years (Cornwell, Mustard, & Sridhar, 2006; McLendon, et al., 2007; McLendon & Hearn, 2010; McLendon, Heller, & Young, 2005; McLendon, Mokher, & Flores, 2011; Ness & Tandberg, 2013; Tandberg, 2008, 2010a, 2013; Weerts & Ronca, 2012). By focusing on decision situations and taking into account the economic, demographic, and political characteristics of legislative institutions, the use of a state framework to examine the outcomes for institutions provides a good model for differences across states.

**Modeling Higher Education Support**

After examining the most relevant theories to understand how state higher education budget decisions are made, variables were chosen and grouped for this study using Tandberg’s *State Fiscal Policy Framework* (2010b) as a guide. Some key differences between this study and much of the current literature are a focus on institutional outcomes, and the addition of institutional controls to established state-level controls. Instead of using a state-level *Interest Group Activity* variable to control for differences in lobbying across states, this study disaggregates lobbying to the campus level, where decisions about resource allocation to lobbying are generally made. Finally, variables in Tandberg’s model were vetted using both his findings and those across the wider body of literature examining determinants of state higher education appropriation decisions. Elements not found significant in Tandberg’s model as well as the greater body of literature were omitted.
This section will first examine the state-level research on determinants of state appropriations. These variables are grouped according to how they appear in this study’s model, and mirror the groupings set out in Tandberg’s model at the state level. A review of research on institution-level variables that impact state decisions will be included in the next section. The dependent variables measuring institutional support are then discussed. Last, this study’s model is visualized and the variable relationships to legislators and budget decisions are shown.

**Mass political attributes.**

**Citizen ideology.**

In Tandberg’s (2010b) framework, mass political attributes included measures of citizen ideology, among other measures of citizen engagement. McLendon and Hearn (2007) also reference this idea in their state higher education budget model, defining them as “systemic political influences” within a state. These differ from what scholars might consider “internal political characteristics,” since mass political attributes describe the engagement and orientation of citizenry within a state, while internal political characteristics describe characteristics of the way states organize their legislature or government, and the way rules govern the process of legislating. The theoretical body of work related to this type of variable leads back to multiple theories, while the empirical evidence has been divided down two avenues of thought.

Elazar’s (1966) *Political Culture theory* is often referenced as an explanation for how state citizen preferences and engagement can determine legislative outcomes (Tandberg, 2008, 2010a). Elazar looked at settlement patterns for early US settlers as a way of parsing political subcultures across the country. Elazar believed that state legislatures acted similar to marketplaces, and catered to different demographic groups based on the values each group held. Certain factions of people who held similar beliefs, and shared other common characteristics such as race or ethnicity often dominated states. Gray, Lowery, Fellowes & McAtee (2004) carried forward the term “political culture” later to
describe climate within legislatures based on this same concept of measuring legislator preferences as a determinant of decisions. Beyond focusing specifically on what happens within state legislatures, changes in state citizenry may be the actual causal force behind changes in support for public higher education.

Berry et al. (1998) developed a measure to determine state citizen leanings on a liberal-conservative continuum, focusing on actual voter data on an electoral district level to examine competition within states. The measure has been widely used by scholars to explain differences in state policy and budget outcomes (Archibald & Feldman, 2006; McLendon, Heller, & Young, 2005; Tandberg, 2010b; Yates & Fording, 2005). The empirical results suggest that liberal citizenry value higher education more, which may explain increases in institutional appropriations if states become considerably more liberal over the course of the dataset timeframe.

Some of the more recent studies on higher education appropriations have found citizen ideology to not be a significant variable in overall models of state budget determinants. Weerts and Ronca (2012) found this when utilizing a stepwise model, suggesting that other state factors better explained appropriation changes. Other large models, which included state citizen ideology, also found the measure insignificant (McLendon, et. al., 2009). Dar (2012) has suggested that polarization measures (differences between legislator ideologies) may be more predictive than citizen or legislator ideology on a liberal-conservative scale when predicting appropriations within states. Shor and McCarty (2011), who started from a base of looking at elections and roll-call voting, included data from the National Political Awareness Test (NPAT) into existing vote data to try and better gauge polarization and ideology across parties. A response paper by Berry, Fording, Ringquist, Hanson, and Klarner (2012) examined differences between their government ideology measure and Shor and McCarty’s measure, highlighting the very high correlation between them.
Although there has been substantial debate over which ideological measures (citizen or government) are more effective in determining state budget decisions, this study will focus on citizen ideology as a measure of mass state political culture. Legislator characteristics are captured in other variables described as “internal political characteristics.” Additionally, there are reasonable arguments made by some scholars that measuring state legislator ideology accurately is difficult in practice (Jenkins, 2006). Finally, when comparing datasets available for the time period in this study, data availability was also an issue between state citizen and state government ideology scores. Using Berry’s two measures available and updated through the 2014 elections, government ideology in some states across several years are incomplete, due likely to missing roll-call data in some states. For these reasons, citizen ideology was chosen to measure state political culture in this study’s model.

**Governmental institutions.**

Governmental institutions as a category in Tandberg’s (2010b) *State Fiscal Policy Framework* represent characteristics of state political structures, which have an impact on state budget decisions. McLendon and Hearn’s (2007) political framework for postsecondary education does not group these variables in the same way, but points out *legislative design* and *gubernatorial influence* as separate but important political indicators in comparing state higher education policy. Theoretically, *New Institutionalism* (Shepsle, 1989) concludes that characteristics of political bodies can affect decisions of its members, and this includes both legislative bodies as well as executive ones. This underlying idea has driven multiple lines of research into the characteristics of each body affecting higher education budgets: legislatures, state executives, and higher education governing bodies.

**Legislative professionalism.**

State legislatures can vary in many ways, and higher education researchers have investigated how many of these differences may affect the state budget process. Featured prominently in the higher
education research on this topic is the idea of professionalism. Some states have full-time legislatures, while others have part-time legislatures. Some states pay their legislators significantly more, and have larger staffs operating for longer periods of each calendar year. Professionalism represents a set of characteristics that vary both across and within states (Bowen & Greene, 2014a). These differences have existed for as long as states have, and professionalism as a determinant of state legislative decisions has been found to matter greatly (Kousser & Phillips, 2012; Mooney, 1994; Squire, 1992, 2007).

Mentioned in many of the frameworks utilized to build this study, Squire’s (2000) index uses measures of staff/resources, legislator salary, and session length, to create an indexed variable modeling professionalism. It borrows heavily from Grumm (1971), who was the first to collect and label differences in legislative characteristics dichotomously for state studies. Squire followed up his original work in indexing concepts related to professionalism by detailing how more professional legislators lead to more power in influencing policy compared to the executive branch, due to longer tenure by members and increased time and ability to evaluate policy (Squire, 2007).

Although Squire’s approach has dominated much of the research on legislative professionalism, some authors have taken alternative approaches to modeling its concept. Rosenthal (1996) provided criticism of Squire’s index, suggesting that salary is a variable constituting “careerism,” a measure of professionalism that encompasses the dimension of Squire’s analysis that would theoretically affect legislator experience, ability to focus on legislating, and tenure. Woods and Baranowski (2006) broke down the professionalism variable along the lines of Rosenthal’s theory, and concluded that legislative professionalism as measured by Squire’s index can actually be separated into resources and careerism. Careerism was represented by legislator salary, while staff and time in session represented resources. Careerism was more a determinant of a legislator’s interest in visible, vote-getting activities than bureaucratic oversight, with a body of support from political research on its effects on political
outcomes (Barilleaux & Berkman, 2003; Carey, Niemi, & Powell, 2000; Fiorina, 1994). Considering the relationship careerism seems to have on lobbying activity, and the high correlation it holds with other measures in Squire’s index, a measure of salaries was an attractive choice for inclusion in this study.

Turning to the research specifically on higher education funding, previous studies have sought out simple measures to model legislative professionalism. Tandberg (2008, 2010a) included the measure of legislator salary and found it a significant predictor of several forms of state support including percentage change in appropriations. Tandberg also tested Squire’s index measures to determine correlation, and found the individual Squire measures highly correlated. Another similar study confirmed these findings (Tandberg & Ness, 2011). Bowen and Greene (2014b) found salaries highly correlated with other measures of professionalism, even when those other measures varied significantly from each other, which likely explains the findings of previous high correlations between salaries and the overall index. For more recent studies that chose to use Squire’s compound measure of professionalism, the results were mixed, with one study finding a significant result and the other finding it insignificant (McLendon, et al., 2009; Weerts & Ronca, 2012). In light of these findings and the theoretical relevance of careerism in a study of higher education appropriations, legislator salaries were chosen to model professionalism in this study.

It should be noted that some other characteristics related to legislatures as governmental institutions have been examined in the higher education literature. Term limits have been looked at as to their effect on legislative decisions. Recent large-scale higher education appropriation studies have included this variable as well as other noted characteristics such as tax and expenditure limitations (TELs) and found them either significant at only the .1 level with a small effect, or insignificant in their analysis when included with legislative professionalism as a standalone variable (McLendon, et al., 2009; Tandberg, 2008, 2010a; Tandberg & Ness, 2011).
**Budgetary powers of the governor.**

One variable often found in comprehensive higher education studies of state appropriations are gubernatorial budget powers. The role of the governors in the budget process varies greatly from state to state as well as to some degree over time with changes in state law (Barrilleaux & Bernick, 2003; Beyle, 2003). Explained in Gray et. al.’s (2012) *Politics in the American States*, Thad Beyle lays out a six-variable “institutional power rating” for gubernatorial powers. This original index borrowed from Schlesinger’s (1965) indices of powers held by the governor. The indices contain measures for governor tenure potential, appointment power, budget power, veto power, extent to which the governor’s party controls the legislature, and whether or not the state provides for separately elected executive branch officials.

Several frameworks for studying political variables have pointed to gubernatorial budget powers as an important determinant of budget outcomes (McLendon & Hearn, 2007; Tandberg, 2010a). There are theoretical and empirical reasons to reconsider the use of this variable in a new state fiscal policy framework.

First, Kousser and Phillips’s (2012) recent book on gubernatorial power found that budgetary powers as measured by Beyle did not have a significant impact on the governor’s ability to pass desired legislation. This was based on 25 years of state comparative analysis as well as state-based case studies. The measure of legislative professionalism was found to be a key intervening variable in gubernatorial power in the budget process. The party of the governor also mattered, and both legislative professionalism and gubernatorial party are already included in this study’s framework. Second, the most recent studies using measures of gubernatorial budget powers, including Tandberg’s own study with gubernatorial budget power as a framework variable, have failed to find the measure significant (Tandberg, 2008, 2010a; Weerts & Ronca, 2012).
State higher education factors.

Higher education governance structure.

Higher education governance structures play an important role in the relationship between state lawmakers and individual public colleges. Before the construction of more complex political models of budgetary outcomes, scholars found significant differences in budget outcomes for higher education based on differences in state higher education governance systems (Thompson & Felts, 1992; Wilson & Sylvia, 1993). Newer scholarship has delved further into how different governance structures affect funding outcomes. In addition to governance structure as an intermediary between government budget processes and colleges, the latest higher education studies suggest that governance structures may have an impact on the level of lobbying performed by individual institutions.

Just as models of higher education support have increased in complexity over the past 20 years, so have studies of governance structures as an intermediary between institutions and government. A group of studies around the beginning of the 21st century focused on whether or not states with more controlling education boards were better at raising funds for state colleges from legislatures. The general consensus was that more “consolidated” boards enabled higher education to speak with one voice, improving funding outcomes (Elling, 1999; Gormley, 1996; Jacoby & Schneider, 2001; Lowry, 2001). McGuinness (2003) created a fairly common variable representing the level that control boards have over individual campuses, which became popular in later academic studies.

More recent studies examining the power of governance structures within states suggest that the previously understood theoretical explanations may not be correct. Many recent studies found no significant relationship between governance structure type and higher education finance outcomes (Delaney & Doyle, 2011; McLendon, et al., 2009; Tandberg, 2008, 2010a; Weerts & Ronca, 2006, 2012). These studies tested a variety of outcome variables with a similar design and the same governance structure variable from previous studies. More interestingly, some studies have actually
contradicted earlier findings about the strength of one type of governing board (consolidated) in aggressively pushing for more financial support. Tandberg and Ness (2011) found that more consolidated governance boards had a significant negative effect on financial outcomes for higher education capital expenditures. Their explanation is that more consolidated boards may act as an “academic cartel” that restrict individual campuses form directly interacting with legislators for their own projects.

The theory that certain types of governing boards may serve as a screen between institutional lobbying activities and legislative decisions is worth further examination. Tandberg (2013) addressed this idea directly in a later work looking at state-level data, simplifying states as either consolidated or non-consolidated entities. He found that consolidated boards have a muting effect on the power of overall higher education interest groups in state-level analysis. In states without a consolidated board, the power of college lobbying using the state-level lobbying density variable was found to be significantly larger. This analysis looked at state-level data, but came to conclusions about institution-level outcomes including the muting of lobbying activities. This study will contribute to the literature by looking at whether or not resources put forth by institutions to lobby differ significantly in consolidated governing board states. This analysis will not answer the question of which direction guides the relationship. If institutional lobbying resources are lower in consolidated governing board states, is it due to pressure from governing boards, or fewer incentives from institutional leaders to represent themselves directly to legislators?

*Enrollment in private and 2-year colleges.*

State enrollment patterns in higher education are an important theoretical construct in models of higher education appropriations. Both McLendon and Hearn’s (2007) groupings for political factors in comparative state study and Tandberg’s (2010b) *State Fiscal Policy Framework* include enrollment trend measures as controls of state higher education factors. The reason these trends matter according
to these frameworks are that legislators are affected by the trends they see in citizen preferences for higher education. Higher enrollment in private higher education within a state represents a decrease in demand for public higher education and, therefore, a corresponding decrease in legislator support through appropriations. An increase in demand for public 2-year institutions compared to public 4-year institutions creates a similar signal of preferences leading to decreases in appropriations.

Empirically, the findings for the relationship expressed in these frameworks are mixed, suggesting they should be included, but the results should be considered critically. For instance, recent studies have found that the percentage of private enrollment compared to public enrollment has a negative relationship with appropriation outcomes (Delaney & Doyle, 2011; McLendon, et al., 2009). Alternatively, Tandberg (2008, 2010a) has found the opposite conclusion when using an outcome variable of share of state budget to higher education, compared to measures of appropriation outcome in dollars. Tandberg’s explanations for his findings that oppose the theoretical constructs include: private enrollment serving as a proxy for overall state enrollments, and private enrollment serving as a proxy for increased state financial aid money. The second explanation relates to issues with the source of those studies’ dependent variable data. IPEDS data separates out appropriations from state financial aid money received by individual institutions, and should, therefore, not encounter that issue with this independent variable.

State 2-year college enrollments as a percentage of overall public enrollments have a similarly checkered set of findings in the higher education literature. Tandberg (2010b) finds it insignificant when looking at the share of state budgets going to higher education, as do several other major studies (Tandberg & Ness, 2011; Weerts & Ronca, 2012). McLendon, Hearn, and Mokher (2009) find it to be a significant predictor of appropriation results, and find it to be negatively related to appropriation outcomes. Delaney and Doyle (2011) have results that also find the variable significant and negative in relation to appropriations. It is tempting to consider that the dependent variable design may be an
important factor in the study results finding significance, since Tandberg’s studies were looking at shares of state budgets to higher education versus the other studies, which looked at appropriation outcomes. The findings of Weerts and Ronca (2012) are the most unique and similar to this study, as they look at logged change in appropriations at the institution level in their analysis. This study will employ multiple dependent variables representing institutional appropriations, allowing for a comparison of results across multiple different studies in the last decade using similar theoretical approaches.

**Economic and demographic factors.**

**State income and unemployment.**

The relationship between education and state economics is complex, and considering the goal of education is to build human capital, it has been hypothesized that education and economies have two-way effects (Aghion et al., 2005; Curs, Bhandari, & Steiger, 2011). This section will examine the literature on how state economies affect state policy and, by extension, what concepts should be included as variables in this study. Two central measures of state fiscal health frequently seen in higher education budget studies include state income measures and the share of the unemployed population, which have been shown empirically to matter in the funding of higher education within states (Rizzo, 2006; McLendon & Hearn, 2007; McLendon, et al., 2009; Tandberg, 2008, 2010a; Weerts & Ronca, 2012).

Theoretically, the income of a state is tied to its available resources for higher education and other budget items. It would seem as though increases in per capita income should correspond to increases in support for higher education, all things being equal. Several studies have pointed out that the relationship between income and higher education funding may not be quite that simple, even if most studies have found a significant positive relationship between the two. Alexander (2001) found
that some poorer states might actually fund higher education more than richer states. There are also intervening variables that may matter. Layzell and Lyddon (1990) found a link between large private institutions within a state and reduced state appropriations for public colleges, a finding that has been confirmed through many studies since then (Lowry, 2001; McLendon, et al., 2009; Rizzo, 2006; Weerts & Ronca, 2012). Preferences for public spending on higher education among citizenry as well as preferences in what forms of aid to supply in relation to supporting private institutions over public ones may interfere with a hypothesized linear relationship between state income and public higher education support. For these reasons, state income alone is not the only measure of state economics that will be included in this study.

Hovey (1999) contributed a theory about the role of economic cycles on higher education funding. His balance wheel hypothesis is still viewed as valuable for explaining the overall cyclical reduction in public higher education funding among states. This theory has served as a jumping off point for studies such as one by Kane, Orszag, and Gunter (2003), who focused on other state expenditures such as Medicaid and corrections, and their intervening effect on higher education subsidies. The unemployment rate is seen as a good measure of economic cycles, and has been used to approximate the relative strength of an economy over time within major studies on the topic (Lowry, 2001; McLendon, et al., 2009; Toutkoushian & Hollis, 1998). Delaney and Doyle (2007) address the importance of including multiple measures of economic health in any large-scale study of higher education support, as individual measures may not fully capture the changes in state fiscal health on their own.

State demographics.

Just as the economic trends in a state have been found to affect legislator views on higher education as a budget item, so too have state population trends been found significant as a factor in higher education support. Major frameworks speak only briefly about how these trends specifically
impact higher education appropriations, though certain demographic groups show up reliably in large-scale higher education budget studies. Tandberg (2010b) posits that larger shares of the college-aged population within a state will drive up support in the form of appropriations. Similarly, larger shares of the elderly population will drive down support for higher education, as priorities for college shift based on larger shares of younger people.

Much of the recent literature confirms what higher education support frameworks state about demographics and finances. Most studies utilized “share of” population groups, which yielded significant results (McLendon, et al., 2009; Rizzo, 2006; Tandberg, 2008). Weerts and Ronca (2012) used a different measure, tracking a 6-year average of high school graduate totals, and also found the measure significant and positive with respect to a relationship with appropriations. For this reason, both the share of college-aged population, as well the share of elderly population will be included in this study.

**Other budgetary demands.**

A number of authors have sought to examine how other budgetary demands influence state higher education appropriation outcomes (Kane et al., 2003, 2005; Okunade, 2004; Toutkoushian & Hollis, 1998; Weerts & Ronca, 2012). There is much evidence for the inclusion of some measures of other budgetary demands [beyond higher education], since the expansion of individual state programs can affect all others in the context of finite state resources. One explanation of the relationship is portrayed by Hovey’s (1999) balance wheel hypothesis, suggesting that a crowding-out effect is occurring between mandatory state spending categories such as corrections, Medicaid, and K–12 education, which negatively impacts higher education support. Delaney and Doyle (2007) explored this hypothesis, finding that these mandatory budget items have a more linear relationship with state budgets compared to the more cubic relationship of higher education that the balance wheel hypothesis
suggests. This idea is carried forward in other frameworks such as Tandberg’s (2010b) State Fiscal Policy Framework.

There is empirical evidence to suggest that other budgetary demands impact higher education state support. Tandberg (2008, 2010a) and Weerts and Ronca (2012) both include other budgetary demands along with robust political, economic, and demographic variables into their analysis. Tandberg found Medicaid’s shares of state budgets to be a statistically significant explanatory variable for shares of state budgets to higher education as well as appropriations to higher education directly. Weerts and Ronca utilized similar methods, though with a dependent variable of institutional appropriations, and found a significant negative relationship between spending on corrections and institutional appropriation outcomes. For higher education, Ness and Tandberg (2011) focused on capital expenditures at the state level, and confirmed a negative relationship between Medicaid spending and general fund expenditures. They also found that the same relationship did not extend specifically to Medicaid and capital expenditures for higher education, which they took as confirmation of their hypothesis that the process for determining capital expenditures should not be assumed as congruent to general fund expenditures for higher education.

Earlier studies on the topic of competing budget items also found significant results, but lacked some elements of the more recent comprehensive studies. Kane, Orszag, and Apostolov (2005) utilized a long, temporal dataset to examine Medicaid and the business cycle within states, determining that Medicaid indeed has crowded out state funding for higher education in the past several decades. Toutkoushian and Hollis (1998) also reached similar conclusions when examining the relationship between Medicaid spending and higher education appropriations. They also found K–12 spending in states to be an important determinant of higher education appropriations. Both studies neglected political characteristics as intervening variables, and Kane et al. (2005) did not consider some important higher education factors such as enrollments. Okunade (2004) utilized economic,
demographic, and political variables in a study of higher education appropriations determinants, and also found that increases in support for Medicaid crowded out investments in higher education within states. Okunade (2004) also confirmed that relationships between political variables, such as control of the legislature and gubernatorial party, were important determinants of higher education support. One weakness in Okunade’s (2004) study is that it utilized only 2 years of data across 50 states.

The most compelling findings in the research come from the more recent and comprehensive studies of Weerts and Ronca (2012), and Tandberg (2010a), which conform to the hypothesis set out in the State Fiscal Policy Framework and in Hovey’s (1999) original theory. The findings from this area of the research base suggest that both Medicaid and K–12-education funding should be included in an analysis of differences in funding patterns for public higher education across and within states.

**Attributes of policymakers.**

**Party strength in legislature.**

Outside the characteristics of government institutions, the attributes of individual legislative members are considered an important determinant of higher education support in the state budgets. Theoretically and empirically, this idea has been explored in prior studies, with the most recent and interesting findings suggesting that there may be some differences in the type of support provided by different parties instead of a clear difference between one party’s overall support compared to the other’s.

McLendon and Hearn (2007) describe the relationship between parties and state financial support as stemming from Democratic Party ideals for taxing and spending more willingly on things such as education. They cite a number of studies in support of this theoretical link (Alt & Lowry, 2000; Barilleaux et al., 2002; Berry & Berry, 1990). Tandberg’s (2010b) State Fiscal Policy Framework also cites these findings, and suggests that there are clear differences between party support for higher
education within states. The past 12 years have produced several studies confirming this directional relationship (Delaney & Doyle, 2007; McLendon, et al., 2009; Tandberg, 2008; Delaney & Doyle, 2011; Rizzo, 2004). These findings all suggest that legislator party is an important indicator in explaining differences in state support from year to year.

Beyond looking at whether the variable is important, there are more recent findings that suggest the relationship may be more complex than originally thought. Several recent studies have found that Republicans in the legislature are more likely to increase spending for higher education compared to Democrats (Dar, 2012; Tandberg & Ness, 2011; Weerts & Ronca, 2012). To help in understanding these conflicting findings, Dar (2012) presents two possible suggestions after testing political variables against several outcome variables representing state support. She concluded that depending on whether the outcome measure was absolute spending, such as appropriation dollars, or higher education share of state budget, findings for party influence would be different. Dar’s other explanation relates to the role polarization plays in affecting legislator choice. In highly polarized environments, legislators on both sides will value the “redistributionist” definition of education over the “public good” dimension of higher education, leading to less popularity and funding because higher education is a “second order” good in state funding decisions (McLendon & Mokher, 2009; Rigby & Wright, 2008).

The arguments put forth about the complexity of party interactions with funding are interesting; it should be noted that the majority of higher education finance studies have not included a variable for polarization. Another explanation for party support differences comes from Weerts and Ronca (2012) who focused on how competing sectors of higher education may have explained past differences. Associate’s degree level institutions received constant increasing support from all governors, while Bachelor’s and beyond received much less steady support based on many state factors. Weerts and Ronca (2012) argue that the level of education matters when discussing party
support for higher education. Because of the lack of polarization variables available for the timeframe of this study and the consistent findings related to party presence and higher education support, percentage of legislature held by Republicans will be utilized as a variable to represent the attributes of policymakers.

**Party of the governor.**

Considering the role governors play in passing laws across the 50 states, taking into account the party of the governor has been covered extensively in both theoretical and empirical examinations of state budget determinants. State higher education fiscal frameworks acknowledge the role that governors play in the process, and have found a significant role for the gubernatorial party either by itself or as part of an indexed variable (Alt & Lowry, 1994; Archibald & Feldman, 2006; Bailey, Rom, & Taylor, 2004; Garand, 1985; Kane et al., 2003; McLendon et al., 2009; Tandberg, 2008, 2010a). The theoretical explanation for including this variable rests on the idea that Democratic governors tend to be more favorable to taxing and spending and, in general, this can lead to higher levels of spending on education. There is some disagreement over this theoretical premise (discussed in this section) as well as some findings about the overall role of governors in the budget process that merits further evaluating gubernatorial influence.

Beginning with the most recent important theoretical and empirical findings, Kousser and Phillips (2012) published a book on the power of governors, focusing on their importance in the political and budget process. Their findings related to the gubernatorial influence over the budget process contradict some of the assumptions about what is important in a political model of budget determination. In particular, two intervening variables impact whether or not a governor will have the ability to influence budget bills. First, the professionalism of the legislature has an impact on whether or not a governor can exert his or her will on the legislature. This study already includes a variable to represent professionalism of the legislature. Second, the partisanship of the legislature has an effect on
whether or not a governor will have significant influence in the passage of budget legislation. For this reason, examining whether or not the governor’s party aligns with the legislature is important in measuring the governor’s impact on state budgets.

One oft-used measure of gubernatorial party power is *Beyle’s index*, which uses a mix of different characteristics including party affiliation. This measure has been explored and found to be significant in state budget studies (Knott & Payne, 2004; McLendon & Hearn, 2007; Nicholson-Crotty & Meier, 2003); however, Barrilleaux and Berkman (2003) provided an important critique of such a compound measure, suggesting that different gubernatorial characteristics may impact the budget process in different ways. They separated out party affiliation and other factors to slim down the index for only budgetary powers of the governor. This separation has been adopted more recently in Tandberg’s (2010b) framework. Using Kousser and Phillips’ (2012) results, it seems wise to separate different types of gubernatorial characteristics when examining the governor’s overall influence on the budget, especially since party seems to play a more significant role than particular budgetary powers. Considering the fact that only the gubernatorial party was significant alongside intervening political variables, only the governor’s party was included in this study’s analysis.

Even though many studies have reported a significant relationship between the party of the governor and appropriations outcomes, the findings are not ubiquitous. Some studies have found the relationship between gubernatorial party and appropriations insignificant (Delaney & Doyle, 2011; Tandberg & Ness, 2011; Weerts & Ronca, 2006, 2012). Tandberg (2010a) found a significant result but in the opposite direction of the party hypotheses. Tandberg’s explanation for his opposite finding is that the dependent variable chosen for the analysis is important in predicting the finding. Dependent variables that look at appropriations in dollar amounts are more likely to see the relationship between Democratic governors’ appropriations outcomes, compared to other measures that look more at budget item priorities within state budgets. He further states that although Democratic governors are more
likely to spend in state budgets overall, they may spend in areas outside of higher education more than
within, leading to results that make it look like Republican governors favor more higher education
spending compared to Democrats. This idea does not conflict with overall ideas of Democratic
spending priorities assumed by other scholars (Alt & Lowry, 1994; Barrilleaux & Bernick, 2003;
Barrilleaux et al., 2002; Yates & Fording, 2005).

Tandberg provides only one explanation for why findings on the significance of the governor’s
party in budget outcomes may look counter to theoretical explanations. This study will include the
gubernatorial party as an explanatory variable, with the expectation that Democratic governors will
favor higher education spending more than Republican governors, but the explanation of Tandberg’s
findings should be reviewed after running this study’s statistical analysis.

**Institution-level variables.**

The majority of studies examining determinants of state higher education budgets focus on
state-level outcomes (McLendon & Hearn, 2007; McLendon et al., 2009; Tandberg, 2008, 2010a). This
study utilizes frameworks built to explain state fiscal policy outcomes from the perspective of state-
level studies, and draws on a rich literature base of previous study’s testing state-level determinants.
The interest in examining institution-level outcomes was driven by the nature of this study’s focus on
lobbying by higher education institutions. Since the decision to levy lobbying resources is often made
on the campus level, it makes sense to analyze the results of those decisions with respect to the
relationship between lobbying resources and budgetary outcomes. Weerts and Ronca (2012) provide a
good example of a state fiscal framework adapted for an institution-level analysis, drawing on similar
frameworks as this study does. Similar to Weerts and Ronca’s (2012), adding institution-level control
variables to state-level controls was a necessary step in modelling institutional appropriations
outcomes. This section discusses the institution-level variables used for this study and their place in the
literature.
**Lobbying effort.**

It would be best to describe the empirical and theoretical literature on lobbying and higher education finance as young. Ness, Tandberg, and McLendon (2015) conclude that we are still in an “exploratory” state with regard to the major research questions linking lobbying and state higher education policy outcomes. Research into these questions relies heavily on research in other fields such as public policy and politics, which has a larger number of authors examining relationships between lobbying efforts and attempts to accumulate larger budget apportionments from state and federal legislatures (de Figueiredo & Silverman 2006; Helland 2008; Kelleher & Yackee, 2009).

Having already discussed the theoretical basis for how lobbying impacts legislative decisions on higher education state budgets, the empirical findings on lobbying in the higher education research provide guidance on why and how it can be used in this study. A number of researchers have investigated the power of lobbyists on behalf of public institutions in influencing government policy decisions in the past 25 years (Browne, 1990; Gray & Lowery, 1988, 1996; Jacoby & Schneider, 2001; Nownes & Freeman, 1998). The contribution of these early studies caught the attention of higher education researchers; however, the majority of research prior to the turn of the century was based on case studies and cross-sectional analysis, which made making inferences about the impact of lobbying across states difficult (McLendon & Hearn, 2007).

Some notable advances in the empirical literature include work by Hrebenar and Thomas (1992) which led to creating group influence rankings by state, used in at least one large scale study of higher education accountability mandates and university governance systems (McLendon et al., 2006). The most recent higher education research looking at lobbying and the state budget process has relied on Gray and Lowery’s (1996) *Population Ecology theory*, which states that as groups within a population increase their energy, size, and area, they grow in influence within their environment (Tandberg, 2008, 2010a; McLendon et al., 2009; Ness & Tandberg, 2013; Weerts & Ronca, 2012).
These studies model lobbying and assess outcome variables at the state level with the exception of Weerts and Ronca (2012), which still model lobbying at the state level on institution-level outcome variables. The actual variable approximating interest group power in these studies uses state lobbyist registration data (higher education lobbyists divided by all other lobbyists in a state). The term used to describe this measure is *interest group density*.

There is a comparatively smaller body of research on institution-level lobbying and its relationship to state or federal level budgetary outcomes. De Figueiredo and Silverman (2006) examined lobbying expenditures by institutions and their effect on federal congressional committee earmarks, determining that lobbying provided a return on investment, which also varied by institutional characteristics including the institution’s size and prestige. One reason for the focus on state-level aspects of lobbying in the research was discussed early in the chapter; it mostly stems from the theoretical and empirical analysis suggesting the importance of group-level resources compared to firm-level resources when it comes to impacting government budgetary outcomes (Baumgartner et al., 2009). Recent scholarship has raised a number of questions about whether or not ignoring firm-level decisions is the right approach to studying the impact of lobbying (Barber et. al., 2014). A number of studies have been produced in the past 10 years suggesting firm-level resources may impact their outcomes in relation to government policy, warranting more research on the connection between the firm and their returns on investment lobbying (Hill, Kelly, Lockhart, & Ness, 2013; Richter et al., 2009).

In addition to theoretical reasons to consider further study of lobbying at the campus level and its impact on state budgets, there are issues related to the construction of variables representing lobbying efforts or influences that should be considered. De Figueiredo and Richter (2014) catalogued different measures for lobbying across the political and higher education research. When examining the use of registration data on lobbying, they point out that registration laws do vary across states,
something that may affect 50 state studies attempting to utilize registration as a universal tool for comparison (LaPira & Thomas, 2013). Registration data also does not describe the intensity of lobbying efforts, since registered lobbyists can spend nothing and receive no compensation in a session but still register. This will make it difficult to connect actual energy spent by institutions with outcomes of lobbying. Transactional data, like that used in de Figueiredo and Silverman (2006), presents a more accurate depiction of the effort expended by universities on their aims. Policies on lobbying transaction records (expenditure records) also vary across states, presenting a weakness similar to registration data, but they do more accurately portray the amount of effort and resources an institution is seeking to spend on lobbying activities within a recorded period than registrations. These reasons, along with the theoretical and empirical findings about the relationship between institution-level lobbying and policy outcomes, suggest modeling lobbying expenditures at the institution-level—as this study plans to do—will represent a significant contribution to higher education literature.

**Enrollment and prestige.**

Hossler (2004) discussed the historical issues that have pressured institutions into worrying about increasing enrollment and prestige. As states have increasingly pushed the marketization of higher education, institutions have become pressured to grow and compete more fiercely for students of higher aptitude, sending signals to state legislators that they should be rewarded with higher levels of funding, a sentiment echoed by Alexander and Layzell (2006) in their investigation of the Illinois public university system. The origin of this notion is summed up in Bowen’s (1980) *Laws of Higher Education*, which stresses the fact that colleges have an unending hunger to improve and grow for their own posterity.

Though institutional size seems like a straightforward metric for how legislators may examine institutional needs, it is important to use caution when considering enrollment directly in an analysis of determinants for state appropriations. There is a dual-causality concern with using enrollment as an
explaining the appropriation level, since increased appropriations can lead to school expansion and higher enrollments (McLendon & Hearn, 2009; Tandberg, 2010b; Trostel & Ronca, 2009). There is a significant body of research that has examined this relationship and suggests that enrollments have a relatively one-to-one relationship with appropriations, and that utilizing an outcome variable such as appropriations per FTE can help control for enrollments while measuring state support (Tandberg & Griffith, 2013). This study utilizes appropriations per FTE as an outcome variable in one model of state appropriations determinants, which does not include enrollments, while utilizing a second model for appropriation change as an outcome variable that does.

Institutional prestige is another factor that is often considered when trying to determine differences in how states support their institutions. Sweitzer (2008) surveyed empirical literature on the topic, concluding that institutional size, faculty productivity, and admissions selectivity have emerged as longstanding trends related to prestige (Astin, 1970; Astin & Lee, 1972; Astin & Solmon, 1981; Grunig, 1997; Porter & Toutkoushian, 2002; Schmitz, 1993; Solmon & Astin, 1981; Volkwein, 1989; Volkwein & Sweitzer, 2006). Weerts and Ronca (2006, 2012) performed multiple studies focusing on institution-level support outcomes utilizing Carnegie classification grouping to capture differences in the research focus of institutions. The “basic” Carnegie classification system tracks the number and type of degrees offered by an institution, and places institutions into six categories based on the number of undergraduate and graduate-level programs the institution offers. The only other institution-level study looking at higher education support outcomes with a focus on lobbying also included Carnegie classifications and found it to be an important determinant of federal committee earmarks (de Figueiredo & Silverman, 2006). This study utilizes the Carnegie classification in a similar way to Weerts and Ronca (2012), which serves similarly to a variable representing institutional level.

Looking at studies that examine selectivity measures for colleges, many have employed admission selectivity as a proxy. A common measure of this is applicants admitted to an institution,
divided by the amount of applicants, which has been used consistently as a measure of institutional selectivity over time in the higher education literature (Geiger, 2004; Hoxby, 1997; Meredith, 2004; Monks & Ehrenberg, 1999a, 1999b).

*Private gift-giving.*

Private gifts to universities represent an alternative revenue source for institutions similar to tuition and have competing explanations in the theory base as well as contradicting empirical findings in the literature. Rizzo (2006) reasoned that private giving would be seen as an alternative revenue source to appropriations by state legislators, and that they would reduce future appropriations based on increases in private giving. His state-panel analysis confirmed the hypothesis that private giving and appropriations would have a negative relationship. These findings are congruent with the crowding-out hypothesis of other researchers, who found support from states dropping as institutions increased their private fundraising (Sav, 2012). An alternative explanation to the theoretical link of legislators reacting to institutions is that institutions may be reacting to legislators. If institutional leaders foresee future reduced appropriations, they may act to increase fundraising.

Adding to the complexity of this measure is that not all authors have found a negative relationship between private fundraising and state support. Cheslock and Gianneschi (2008) provide several hypothesized reasons for why that may be. Their research using panel data found a positive relationship between private giving and appropriations, and they suggest that the motivations of donors are important for understanding what hypothesis to form about the effects that giving will have. Donors may be focused on specific outcomes of the university, such as research. They may be sensitive to the existing prestige and support for the university, an example of the *Matthew Effect*, where advantage begets advantage in terms of resources (Rigney, 2013).
Weerts and Ronca’s (2006) study looked at institutional appropriation determinants across all 50 states in a cross-sectional, one-year model. It was found to have a positive relationship with appropriations, which the authors concluded might mean that private giving is a proxy for general support of higher education within the state. This effect was not found in Weerts and Ronca’s (2012) later work also focusing on institutional appropriations, which was more statistically rigorous compared to the 2006 study, relying on a longer temporal period instead of a one-year snapshot. Overall, the research on the effect of private giving on state support is mixed in terms of the directional effect and its power. This study includes private giving as a measure and expects that it may have a positive relationship to state support as other authors in the higher education literature have found.

**Tuition and fees.**

The inclusion of average state tuition rates are found in some of the theoretical frameworks and studies built to explore determinants of state appropriations, but several scholarly works suggest that including tuition as a determinant should be interpreted cautiously. Starting at Hovey’s (1999) balance wheel hypothesis, higher education is in the unique position as a public body to self-fund its activities. Legislators may see this as an advantage for higher education over other state bodies that can use tuition as a pressure valve if state support is reduced. Economic downturn leads to reductions in state appropriations for higher education, which triggers increases in tuition. Several scholars have pointed out an issue of dual-causality where it appears that increases in tuition are driving reductions in appropriations, while it is actually intentional reductions in aid by legislators guided by the knowledge of higher education’s self-funding ability equation (Archibald & Feldman, 2006; Rizzo, 2006; Tandberg, 2010a, 2010b). The hypothesis of tuition increases driving reductions in support comes from the idea of “tax revolt,” where public opinion about high tuition leads legislators to punish higher education institutions for increases in tuition. This can put institutions in a double bind when it comes
to asking for support from legislators, where they are seen as being self-sufficient through tuition funding but greedy for utilizing tuition as revenue.

Tandberg (2010b) acknowledges this dual-causality issue in his framework for higher education appropriations but still chooses to include the variable. His study cites a number of previous works that also included tuition as a control variable for explaining state appropriations (Dar, 2012; Geiger, 2004; McLendon et al., 2009; Rizzo, 2006). Looking further into these studies, Dar (2012) and Geiger (2004) consider a limited set of explanatory variables compared to more comprehensive studies of higher education appropriations. There are also other comprehensive studies that do not focus on state-level outcome variables which either did not find tuition significant, or did not include it as an explanatory variable (Weerts & Ronca, 2006, 2012). Aside from the significant findings of Tandberg’s (2010a) work, Rizzo (2006) actually presents the strongest finding for tuition driving appropriations when he instrumented for lagged tuition with other common factors, but found that tuition uniquely affected drops in appropriations. For these reasons, tuition deserves to be included as a factor in determining appropriations despite its cautionary nature.

**Outcome variables.**

In a recent chapter of the *Handbook for Higher Education Research and Theory*, Tandberg and Griffith (2013) dive deeply into the reasoning behind the choice of dependent variables in state support studies, with the goal of helping researchers match up their questions with the best outcome measures. This study is interested in how institutional and state factors are impacting the welfare of institutions, which is well modeled by appropriations per FTE. Tandberg and Griffith (2013) describe the use of appropriations per FTE as measuring how well states are meeting the needs of institutions. Measuring institutional appropriations this way also helps control for the effects of enrollment on appropriations, which has been the subject of considerable research over endogeneity concerns (Tandberg, 2008, 2010a; Trostel & Ronca, 2009). Tandberg and Griffith (2013) suggest that, in fact, enrollment may
actually be a bigger driver of appropriations than vice versa.

Looking beyond the overall measure of appropriations, this study is fundamentally interested in what drives change in state budgets. Weerts and Ronca (2012) asked this same question with a similar set of data. The advantages of modeling change include the conversion of appropriations data into percentages from year to year. This removes some of the correlation issues between appropriations from year to year and other variables that may be related to appropriations within the budget.

Another recent trend in the higher education literature is taking a broader view of what kinds of state support may be affected by state contextual forces. This is evident through Tandberg’s (2013) research on capital expenditures and how they are similar to appropriations in terms of their determinants. Especially in the case of political variables such as lobbying, it seems prudent to include other non-appropriational forms of support within the control of legislators. This study included a measure of higher education support including state appropriations, state institutional operating grants and contracts as well as state non-operating grants and contracts. The IPEDS data description makes particular mention of research grants or contracts from the state as a form of direct operating grant but also includes all other types of contracts or grants provided to the institution. No further delineations are made in the survey related to the data. The appropriations, its changes, and other grant aid were measured as inflation-adjusted-percentage change from year to year.

This Study’s Model

Returning back to the purpose of this study, the possible relationship between lobbying efforts of public colleges and universities and their state support can only be examined within the greater context of political decision-making. To adopt a relevant framework, Tandberg’s (2010b) State Fiscal Policy Framework presented a fruitful and up-to-date reference point for determining important variables. Theoretically, this study relies on the same theory base as Tandberg’s model, borrowing from New Institutionalism and Institutional Rational Choice Theory to model how state legislative decisions
are shaped by their state environment and legislator beliefs, culture, and norms. Following recommendations from the literature and past studies on the topic of state support determinants, a panel dataset was used with a panel regression equation to examine how changes in independent variables affected the outcome measures over time.

An important point where this study’s model diverges from the State Fiscal Policy Framework is in the utilization of institution-level control variables. Fig. 2.1 reflects these changes in the overall study design. Similar studies in higher education examining state support at an institutional level include Weerts and Ronca’s (2012) study, which adopted a similar set of variables to examine the role of institutional- and state-level variables impacting support decisions.

![Fig. 2.1. Study Framework for State Higher Education Budget Decisions](image)

The other significant change from past models is the disaggregation of lobbying to an institution level. This data was collected specifically for this study through the collection and combination of institutional data across state government websites. The decision to disaggregate lobbying to the institutional level is based on recommendations from De Figueiredo and Richter (2014), who advocate
for examining lobbying data in specific time periods and situations instead of in aggregate measures, as well as the critical findings of Barber et al. (2014) which suggest institution level study on lobbying may be valuable to the theory base.
CHAPTER 3

METHODS

This chapter begins with a review of this study’s purpose as well as the research questions designed to address problems in the literature. The methodology for this study is then described, broken down into four sections. The first section covers data collection procedures, highlighting the process of collecting and treating a new variable to represent higher education lobbying efforts. This section also involves a conversation on variables and their operationalization based on the study’s model presented in Chapter 2. The second section describes the overall dataset, how states and institutions were included or excluded from the analysis, and how the dataset differs from a national sample as well as issues related to missing data. The third section describes the design of the study and analytical method. Finally, a closing section explains a brief summary encapsulating the relevance of the study and descriptive analysis to better understand college-lobbying behavior.

Purpose of the Study

There is no shortage of data on the increasing pressure applied to state budgets over the past several decades. The higher education literature has put a focus on the ways in which this has led to declining support for colleges and universities when taking into account the rising demand for enrollment in these institutions. State political context has developed as a partial explanation for changes in higher education support in addition to economic and demographic factors; some authors have chosen to focus on competing interest groups as a political force.

The purpose of this study is to examine the possible relationship between college spending on lobbying efforts of state government and the returns to those colleges in the forms of appropriations and other financial support. Due to the limitations of current data on higher education interest groups and college lobbying, the decision was made to compile new data about lobbying that represents a measure of college resource allocations in the form of institutional expenditures on lobbying activities.
This decision guided many of the methodological aspects of the study, including the level of analysis, and the inclusion criteria for states and institutions as well as the analytical methods employed. Additionally, the decision to compile new lobbying data on institutions allows for a better understanding of how much different types of institutions spend on lobbying, and how different state environments relate to lobbying expenditures.

It is also not well known how lobbying expenditures interact with other institutional and state characteristics, such as institutional prestige or size as well as state economic cycles or educational governance structure. To best utilize the new dataset created for this study, it is important to find out more about college lobbying characteristics that may provide future research questions in a still-exploratory area of the literature.

Research Questions

The first research question addresses the distribution of institutional lobbying expenditures across institutions—by type and level—as well as across state governance models. The second and third research questions for this study explore the existence of a relationship between institutional lobbying efforts and state appropriations as well as other forms of direct support. The idea of measuring “effort” in this sense is to understand more about the effectiveness of lobbying, a critical piece of information for institutional decision-makers. Past research in the higher education literature has focused on lobbying density in states, which suggests that where higher education institutions can concentrate lobbying efforts compared to other groups in the state, higher education support will be stronger (Ness & Tandberg, 2013; Tandberg, 2008, 2010a). Others have investigated federal-level lobbying of congressional committees and found that high research-level universities, lobbying specific individuals on the committees, were more effective in attaining research grants (de Figueiredo & Silverman, 2006). This study attempts to take an institution-level approach similar to de Figueiredo and Silverman’s study, but focused on appropriations and controlling for state-level context similar to
Tandberg (2008, 2010a) and others such as Weerts and Ronca (2012). To do this, research questions must be shaped around controlling state- and institution-level intervening variables.

Tandberg and Hillman (2014) comprehensively explored the many dependent variables that have been used to model state support for higher education, with each form having benefits and drawbacks when used in large state studies. This study utilizes both appropriations per full-time equivalent as well as log appropriations and non-appropriations support. These two dependent variables have some historical precedence in recent studies (Tandberg, 2008; Tandberg & Ness, 2011).

1. How are lobbying expenditures distributed among public 2- and 4-year institutions within the states included in this study, and how do lobbying expenditures differ based on institutional-level, and state-governance models?

2. Does a relationship exist between a public institution’s expenditures on lobbying and its received state appropriations when holding constant economic, political, and demographic differences in institutions?

3. Does a relationship exist between a public institution’s expenditures on lobbying and its overall state support received from all sources, when holding constant economic, political, and demographic differences in institutions?

Section 1: Data Collection and Operationalization

When studying public colleges in the United States, several unique features of the American higher education system should be kept in mind. States within the United States vary contextually in their political and economic structures as well as in their demographics. They also interact heavily with in-state public colleges and universities, though the level of control exercised as well as the level of support provided varies greatly. Because of this context, it is important to control for the differences in states and their political environments, while controlling for institutional differences that matter in
funding outcomes from state legislatures. Thankfully, there are ample empirical and theoretical examples for modeling many of these differences (McLendon & Hearn, 2007; Tandberg, 2008, 2010a; Ness & Tandberg, 2013; Weerts & Ronca, 2012).

Contrary to the ample theoretical and empirical literature on most political, economic, and demographic variables related to state higher education support, lobbying as a measure has much less of a literature base in existence to discuss aspects of operationalization and the pros and cons of proxy choices for college lobbying efforts. De Figueiredo and Richter (2014) provide the best overall critique of the empirical literature on lobbying; they were an important source for guiding the way lobbying could be operationalized using accessible state data. The first part of Section 1 focuses on the lobbying expenditure variable compiled for this study. The general collection procedure, issues related to missing data, and transformations as well as internal and external validity are discussed. In this study's analysis, the only variable including missing data was lobbying expenditures—and by extension—lobbying yearly change. The second part of Section 1 contains information about the collection and operationalization of all dependent and independent variables included in this study.

Lobbying expenditure record collection process.

To utilize lobbying expenditure reports to build a dataset including multiple states, several hurdles had to be overcome. The first part of the data collection process consisted of extracting transaction records and the recording of expenditure amounts for compensation, gifts, and other expenses on behalf of higher education institutions. This required decisions related to what would not be included in the calculation of institutional spending. All records in state databases that could be directly attributable to public colleges and universities were included. Organizations such as faculty and student unions and private foundations linked to institutions were excluded, due to these organizations not being under the direct control of public colleges and universities. It would dilute the ability to draw conclusions about the spending of college resources, if resources outside the college’s
control are included in the analysis of lobbying impacts.

The largest concern in the data collection process and one shared with the design of other measures such as registration data is the internal validity of lobbying expenditures as a similar measure across states. The major issues discussed below include: (a) Issues related to state disclosure laws including minimum reporting amounts and what must be disclosed, (b) Missing data in several states requiring imputation, (c) Adjustments required for states with biennial budgeting processes, and (d) Other issues encountered during data collection that affected the dataset in minimal ways. Appendix B includes source definitions for lobbying, lobbyists, and expenditure disclosures.

**State Disclosure Laws for Lobbyists.**

There are several internal validity concerns regarding the comparison of lobbying across states where laws and regulations differ. This was discussed earlier in relation to other work that utilized registration laws for lobbyists in creating a measure of lobbying density. In the same way that registration laws for lobbyists differ from state to state, so, too, do disclosure laws for lobbying expenditures by institutions. Although the basic definitions of what lobbying is do not differ widely across states, regulations related to what must be recorded as well as who must be recorded doing so are known to differ (Buck, 2011). In short, it is somewhat clear what lobbying is, but there are exceptions for how much needs to be recorded and who may be exempt.

Appendix C provides an overview of minimum disclosure amounts, expenditure types tracked, and exemptions for certain individuals. Most states require tracking of common expense types such as travel, lodging, food, entertainment, communication costs, and gifts (though some states ban gifts on behalf of public institutions). Because this study overall used certain expenditure types as requirements for inclusion, this was less of a concern for internal validity of the lobbying measure.

Differences in minimum disclosures represent an internal validity threat in several states. Pennsylvania requires reporting once institutions spent more than $2,500 per 3-month session in
lobbying expenditures, with New Jersey having a $2,500 minimum in a one-year period. New York requires disclosure after hitting the $5,000-per-year mark. California represents the other state with a minimum threshold deviation from most states, where either employers spending more than $5,000 or compensation to a lobbyist equaling more than $2,000 annually will trigger requirements to disclose. It is a concern that this could under-record the amount lobbying institutions spend, representing a threat to internal validity. Table 3-1 below shows the relative average expenditure rank of a handful of states from the analysis. The existence of a minimum requirement does not appear to affect institutions equally in terms of their relative ranks. In fact, some of the highest average-spending states have minimum disclosure requirements.

Although some states with minimum reporting rules do tend to have high average spending, they also have significantly more non-reporting institutions. The four states with minimum rules of $2,500 or more have 46% of institutions reporting no expenditures in 2012–2013, compared to only 17% in all other states that do not have such high minimum rules. In the combined states without $2,500 or higher minimum disclosure rates, 43% have total expenditures of $2,500 or less. There is no way to know how institutions would report differently without these minimum disclosure regulations, but there is some evidence to suggest that this dataset may exclude a number of institutions spending at least some yearly amount on lobbying activities.

Table 3-1

<table>
<thead>
<tr>
<th>Average Lobbying Expenditure Rank (10-Year Dataset)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>State</strong></td>
</tr>
<tr>
<td>California</td>
</tr>
<tr>
<td>New York</td>
</tr>
<tr>
<td>New Jersey</td>
</tr>
<tr>
<td>Pennsylvania</td>
</tr>
<tr>
<td>Kentucky</td>
</tr>
</tbody>
</table>

The second internal validity issue related to differences in disclosure laws is exemptions for
certain individuals to not file as lobbyists. A useful study for understanding these significant differences in addition to King’s (2011) study was the Pacific Research Institute’s (PRI) 2010 examination of government lobbying across all 50 states (Clemens et al., 2010). Of the states labelled as having acute issues with exemptions for state employees, four states included in this study were of interest: Colorado, Kentucky, New Jersey, and New York. In the case of New York, colleges and universities are specifically named in the lobbying law as not being exempt from state disclosure laws. In the case of Colorado, some state agencies are completely exempt, but higher education institutions are not included on that list. There are differences in registration rules for state employees, but state colleges and universities in Colorado must designate state liaisons who are required to include data on their time spent lobbying as well as their compensation. Pennsylvania, Kentucky, New Jersey, and California do represent significant concerns for underreporting due to state employee exemptions that include compensation data. In all these states, exemptions do not include hired lobbyists or local government employees such as those working at community colleges, which is why there are still records for many state colleges and universities included in the analysis. Appendix C contains information related to exemption regulation, and the average expenditure data rankings in Table 3-3 suggest that these exemptions may mean that Kentucky and New Jersey, in particular, are underreported compared to other states in the dataset.

**Missing lobbying data.**

To understand the effects that missing lobbying expenditure data might have on the study’s model, imputation is used on a 13-state subset of the model to generate a balanced panel for analysis. Excluding South Carolina and Wisconsin creates a 473-institution dataset that is missing only 10.8% of lobbying data overall. The reason for this missing data is due to states passing lobbying registration laws within different periods of time since the year 2003 as well as record retention laws that allow states to only maintain records for a certain number of years. This necessitates imputation of data,
which was something already surmised during the collection phase. In this smaller dataset, 100% of institutions have reported lobbying data from Fiscal Year 2008 and later, while only 73% of the data from the first 4 years exists. The states requiring the most imputation were New York and Oregon, which required the first 4 years of data to be imputed. Pennsylvania required 3 years of imputation.

The process for imputing this variable used the interpolation command in STATA, consistent with methods and recommendations of other higher education researchers (Chen, 2012; Zhang, 2010). Data for the expenditure variable was examined before and after imputation set-wide as well as examined on a state basis pre- and post-imputation. Table 3-2 reflects the overall change in means for the variable before and after imputation. As expected, imputation had a minor additive effect, raising the mean lobbying expenditure-per-institution dataset wide. This is due to New York and Pennsylvania being some of the highest average states for lobbying expenditures. It should also be noted that early years of the dataset had a noticeably lower skew and kurtosis compared to later years pre-imputation. The addition of imputed years for the three states with missing data raised the skew and kurtosis in the variable to where it was consistent across years. Lobbying expenditure data is highly skewed, since larger institutions tend to spend a lot, while smaller institutions tend to spend little or nothing on lobbying. This also helps explain the kurtosis of the variable.

<table>
<thead>
<tr>
<th>Year</th>
<th>Pre-Imputation</th>
<th>Post-Imputation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003–04</td>
<td>$11,932</td>
<td>$12,603</td>
</tr>
<tr>
<td>2004–05</td>
<td>$12,035</td>
<td>$12,449</td>
</tr>
<tr>
<td>2005–06</td>
<td>$13,045</td>
<td>$13,143</td>
</tr>
<tr>
<td>2006–07</td>
<td>$14,233</td>
<td>$14,484</td>
</tr>
</tbody>
</table>

The purpose of this imputation was primarily for descriptive analysis of lobbying data in the 10-year time period. An unbalanced panel with the larger 15-state dataset is of primary interest for
answering the second and third research questions about relationships between lobbying state support outcomes. Descriptive statistics discussed in Chapter 4 will focus on the smaller imputed dataset to better understand changes in lobbying over the past 10 years. Table 3-5 reflects that overall the imputation altered the mean lobbying expenditures no more than 5% in the year with the most missing data and only 1.7% in the year with the least missing data.

**Adjusting lobbying data in biennial and annual budget states.**

Another challenge to examining lobbying data for different states is being able to compare states with biennial and annual budgets. Biennial and annual budget states both release yearly budgets for their states; however, the deliberation of budget decisions in biennial states occurs over a 2-year period. When examining the reporting of state lobbying disclosures, it became obvious that lobbying expenditures were very uneven between budget and non-budget decision years. To compensate for the difference in allocation of funding for lobbying, biennial state lobbying data was averaged in every 2 years leading to a budget decision. This also required adjustment of the data when integrating it into the dataset.³

Institutions in biennial states accounted for just over 26% of the overall dataset. The states in this study with biennial budgets are Nebraska, Oregon, South Carolina and Washington. Arizona has a biennial budget, but many departments have annual budget votes including institutions of higher education.

**Other lobbying data issues during collection.**

Aside from the major issues related to the collection and design of the lobbying variable, there were other decisions that should be included in the overall discussion of how this variable was designed for measuring state lobbying. The record search of state databases was in most cases straightforward.

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³ For instance, 2001–2002 and 2002–2003 years of lobbying expenditure data leading up to a June 2003 adopted budget are matched up to predict variation in the 2003–2004 and 2004–2005 budget for institutions in a biennial state. This is different from the 1-year lag for each year of lobbying applied to annual state budgets.
Most college or university records were properly labeled and could be aggregated if the database only included lobbyists with records that tied them back to institutions. It was also fairly straightforward to determine private higher education lobbying groups not directly tied to institutions such as faculty groups, unions, student groups, and independent colleges. In several cases, however, system-level lobbying occurred when a community college network or public university system chose to lobby on behalf of all its constituent members. This occurred in less than 5% of the overall dataset, particularly for community colleges in Colorado, New Jersey, and Michigan, and in California (CSU system). Lobbying funds from these associations were distributed proportionally by constituent institutional size. Where possible, systems with branch campuses were aggregated to a single institution if an IPEDS data file existed that matched the lobbying entry for the system. Private foundations or other groups such as student government or faculty union representation were not included in compiling state lobbying expenditures. The rationale for excluding these bodies was that they are not under the control of institutions and may have different lobbying goals than financial support. These were not prevalent across institutions or states, but appeared mostly in addition to doctoral-level institutions.

**Variable operationalization.**

*Institution-level variables: lobbying.*

As discussed in Chapter 2, the lobbying expenditure variable in this study was derived to create an accurate measure of effort by higher education institutions to influence the state political budget process. Previous to this study, the use of registry data has almost exclusively been chosen to model interest group effects on state finance, and the measure has only been used at the state level through a derived measure of interest group density (McLendon, et al., 2009; Tandberg, 2008, 2010; Weerts & Ronca, 2012). The advantages of registration data include its relative longevity compared to other tracked data, and its use in examining state environments when looking at density of registered lobbyists by industry.
After reviewing the validity threats to utilizing transaction records for lobbying expenditures in the previous section, it is clear that registration data shares some of those same threats. As noted by de Figueiredo and Richter (2014), registration laws differ significantly across states, just as expenditure records do. Registration can also occur even when the lobbyist reports no lobbying activities, and the institutions they represent report no expenditures. Institutional lobbying expenditures do not suffer from this drawback. For these reasons, the decision was made to compile a new institution-level variable representing lobbying expenditures by institution, and to utilize this variable in an institution-level study of state higher education support. This first variable, LOBBY, represents expenditure data in real 2013 dollars. Other studies outside higher education have utilized this variable in studies of state policy outcomes (Kang, 2012).

De Figueiredo and Silverman (2006) utilized institutional federal lobbying expenditure data to model earmark distributions on a congressional committee, which is the closest similar use of this type of data in the higher education literature. The authors chose to model expenditures not in real terms, but as a percentage change from year to year. This measure addresses the idea of how changes in lobbying expenditures can impact policy decisions. To utilize this study’s new data to its fullest, raw lobbying data was transformed for a second variable, LOBCHANGE, which is the percentage change in lobbying expenditures from year to year. In addition to the first two variables, this study also sought to explore lobbying expenditures controlling the size of an institution. Larger institutions may inherently have a greater capability to hire staff, and controlling for such a variable will allow for measuring the lobbying expenditures made by institutions of the same approximate size. This variable is calculated by taking the total lobbying expenditures for an institution and dividing it by the institution’s full-time equivalent students.

Variable List:
- Institutional Lobbying Expenditures (LOBBY)
- Institutional Lobbying Expenditures Change (LOBCHANGE)
- Institutional Lobbying Expenditures per FTE (LOBFTE)
Other institution-level variables.

Outside of the literature on institutional lobbying and its effects, many authors have addressed the role that institutional characteristics play in explaining differences in appropriations across institutions and states. Size and prestige have been often noted as important characteristics for state support (Hossler, 2004; Sweitzer, 2008), while other authors have addressed the issue of institutional support through private gift-giving as a measure of state support by state citizens (Weerts & Ronca, 2012). Additionally, average tuition and fees are included in the initial analysis as control variables.

Size is measured by using full-time equivalent undergraduate and graduate enrollments. As discussed in the previous chapter, it is built into one of the dependent variables used for the second research question in this study. It is utilized as a separate independent variable when explaining the log of appropriations and non-appropriations grants and contracts addressed in the third research question. Prestige is measured through two variables. Institutional selectivity is modeled with the admission rate, which is calculated by dividing admitted students by applied students, and was derived automatically by IPEDS for 8 of the 10 years included in this study. The variable was derived outside of IPEDS for 2003–2004 and 2004–2005, using the requisite values downloaded from IPEDS. Carnegie classification was also included using the “basic” measure available through IPEDS. This measure is grouped into a simple categorical variable representing institutional level, with community colleges being 0, baccalaureate institutions being 1, and doctoral/graduate institutions being 2. The reason for both measures being included is that faculty research and selectivity were separately found to affect appropriations in previous research, and faculty research is linked to institutional type (Sweitzer, 2008).

Private gift-giving represents a form of alternate revenue for institutions. As discussed in the last chapter, institutions that continually show increases in support through private methods may send signals to legislators that less public support is necessary. In this way, it can be looked at similarly to tuition and fee increases. The difference in these two variables is that institutions may have little or no
control over tuition and fee setting, while having some control over efforts to attract private donorship. Both of these variables were collected through IPEDS. Private gifts were measured in their own category, “gifts and contracts, outside organizations,” a part of the Finance Survey. Tuition and fees, as defined by IPEDS, is the tuition and fee costs for a first-time, in-state freshman student.

Variable List:
- Total institutional enrollment (FTE)
- Institutional admissions selectivity (PRESTIGE)
- Institutional Carnegie classification (CARNEG)
- Private institutional gifts (PRIVGIFT)
- Average tuition and fees (TUITFEE)

**State contextual variables.**

Most of the data collected for this study were gathered from several sources. The National Center for Education Statistics IPEDS database stores a great deal of information on state characteristics tied to institutions, while the State Higher Education Executive Officer group maintains state higher education finance survey data. Finally, the *The Book of the States*’ databook handles much of the structural data pertaining to legislative and executive makeup, which is important for capturing political variations across states. These sources have been written about thoroughly as the most common sources for data on this type of analysis (Tandberg & Griffith, 2013). In one case, a derived variable was used for citizen ideology, based on previous work by William Berry, and maintained by higher education scholar Richard Fording, as detailed in Appendix A (Berry et al., 1998). This was for the political culture measure of citizen ideology, which has a rich empirical background at this point in the literature. To organize this section on state context, variables are grouped according to the major policy frameworks outlined above.

**Higher education demography, organization, and governance.**

McLendon and Hearn (2007) describe the characteristics of state-governing boards for higher
education as a measure of the “overall statewide approach to governance.” This is a reference to whether or not states have a more restrictive consolidated governing board for public higher education, compared to looser forms of administration that provide higher levels of autonomy to states. Theoretically, these differences in the approach to managing institutions can influence the outcome of how state appropriations and other forms of aid are doled out to individual campuses. There is a wide body of evidence examining the effects of these boards on state policy outcomes (Lowry, 2001; McLendon et al., 2006). When operationalizing this variable for study, the Council of State Governments maintains a dichotomous variable in The Book of the States, which classifies a 0 for coordinating, regulating, and other forms of state board for higher education that exert only partial or no control over individual institutions, and a 1 for consolidated governing boards that exert significant power over the actions and characteristics of individual colleges.

Higher education demography is measured by two variables meant to model preferences for higher education within states: (1) the share of state college enrollment in 2-year colleges, and (2) the share of state college enrollment in private colleges. These are preference signals to legislators (McLendon & Hearn, 2007). If more students choose to pursue 2-year educational opportunities, or show a preference for private colleges, legislators may see this as a signal that 4-year public colleges and universities (the more expensive institutions) are becoming less desirable and decide to cut public education funding. The creation of these variables was done using SHEEO (2012) data on enrollment totals found in annual SHEF surveys. The variable is represented in percentage terms, similar to other studies on this topic (Tandberg, 2008, 2010; Weerts & Ronca, 2012).

Variable List:
- State governing board type (HESTRUCT)
- Share of state enrollment in 2-year colleges (PER2YR)
- Share of state enrollment in private colleges (PERPRIV)

Socioeconomic climates.
There are ample findings to conclude that economic health and population diversity within states can impact their overall wealth and preferences for higher education (Delaney & Doyle, 2007; Rizzo, 2006). McLendon and Hearn (2007) attribute these connections to greater differences in population preferences and resources that shape policy outcomes within states across many topics. This study utilizes GSP per capita, and state unemployment levels as distal measures of economic state climate. GSP per capita, in particular, has shown to have a strong relationship with public funding (Tandberg, 2010a). These measures were available through the United States Census Bureau website using the annual population survey tool.

To examine population differences, the share of state college-aged population (between 18 and 25) was included. Elected officials will attempt to bring benefits to the college-aged population if they represent a growing constituency in states (McLendon et al., 2009; Rizzo, 2006; Tandberg, 2010b). These statistics were derived from United States Census Bureau data using the Annual Population Survey tool. The elderly population is also considered a control variable; it is included as a share of state population for ages 65+. Both measures were derived from the United States Census Bureau’s yearly estimates.

Variable List:
- Gross state product per capita (GSPCAP)
- State unemployment rate (UNEMP)
- Share of state population college-aged (POPCOLL)
- Share of state population aged 65+ (POPELD)

Political culture and ideology.

In an attempt to measure the political will of state citizens, many scholars have tried to build ideological measures of state political cultures (McLendon & Hearn, 2007). Much of the more recent literature utilizes a compound measure of citizen ideology created by Berry et al. (1998) to gauge differences among state constituents which explain their voting preferences, and by proxy, the types of legislators they choose to elect. The citizen ideology index is a compound variable measured on a scale
between 1 and 100. The score uses interest group ratings of elected officials as well as challengers and
looks at election outcomes to determine district ideology. Those scores are averaged to determine state-
level ideology scores. Higher scores are associated with more liberal ideologies, while lower scores are
associated with more conservative ideologies. The index is maintained online by its original author,
among others. The online location can be found in Appendix A.

Variable List:
- Compound measure of state citizen ideology (CITIDEO)

Legislative organization and membership.

Much of the focus on past operationalization of legislative organization and membership has
been on the use of compound indices such as Squire’s Index (1992, 2000), to capture many of the
variables related to legislatures and public policy outcomes. This kind of compound analysis fell out of
favor as many authors questioned the underlying assumption of each factor of membership having a
unique effect on policy outcomes. Many authors have opted for a simpler measure of professionalism:
schemes and indices do not provide a more significant predictor of state finance outcomes. This study
continues with the trend of utilizing legislator salary data and retrieved average salary data from The
Council of State Government’s The Book of the States.

Variable List:
- Average state legislator salary (LEGPROF)

Party strength in government institutions.

The national parties in the United States tend to have different preferences for higher education.
There is a long list of study frameworks including measures of party strength and control that examine
how party composition and control affect budget and policy outcomes within states (Alt & Lowry,
2000; Barrilleaux et al., 2002; Yates & Fording, 2005). The prevalent theoretical explanation for why
parties matter as an intersecting force in higher education appropriations is that Democrats generally hold higher education as a higher priority and will support more funding for this budget item compared to Republicans.

Recent research has found mixed results for how measures of political party affiliation affect appropriation outcomes, and challenge some of the assumptions of earlier political science frameworks on the issue. Dar and Lee (2014) found that Democratic legislature representation was positively associated with appropriations per $1,000 in personal income, but this effect was lessened when unemployment or polarization increased in legislators. Dar’s (2012) previous study found Democratic representation negatively impacted state spending, though a number of studies involving comprehensive frameworks found the opposite effect (McLendon, et al., 2009; Tandberg, 2010a). Dowd and Shieh (2013) found that Republicans have an affinity for community colleges over 4-year institutions, as they are seen as a cost-effective form of higher education. Weerts and Ronca’s (2012) results also led to a conclusion that Republican representation may lead to higher levels of support. This study used a percentage measure for party representation of Republicans across all houses, averaged together. The measure used is consistent with operationalization in other recent studies, with percentage of Republican legislators drawn from United States Census Bureau *Statistical Abstract.*

Variable List:
- Percent of state legislature held by Republicans (LEGPARTY)

_Gubernatorial influence._

Choosing to avoid more complicated indexed variables to measure the role of governors on state appropriations for public colleges, this study focuses on the gubernatorial party, which has been repeatedly found to be important in impacting state policy outcomes (Dometrius & Wright, 2009 Krupnikov & Shipan, 2012). It has also been found important in the more targeted research on state support for higher education in the form of budget share and appropriations (McLendon, et al., 2009;
Tandberg, 2008). The Council of State Governments collects this measure annually. Party affiliation is measured as a straightforward dichotomous variable. All governors in the dataset were either Republican or Democrat. The measure in this study is operationalized using Republican governors as 0, and Democratic governors as 1, interpreted as the effect of a Democratic governor.

Variable List:
- Party of the governor (GOVPARTY)

*Competing state interests.*

Although not specifically categorized in the McLendon and Hearn (2007) framework for postsecondary state-budget determinants, other state-budgetary items and their effects on higher education funding have been studied aggressively in the past several decades (Archibald & Feldman, 2006, 2008; Hovey, 1999; Jenny & Arbak, 2004; Kane et. al., 2003; Schuh, 1993). Of particular importance is K–12 education funding, which may have similar bases for support along political party affiliations, but is seen as a first-order expense among legislators, without the ability to raise its own revenues (Rizzo, 2006; Toutkoushian & Hollis, 1998).

Spending on Medicaid, which has increased during recent fiscal downturns in state revenue due to recessions, has also had special attention paid to it by scholars. Recent state support studies have consistently found changes in Medicaid spending significant in explaining higher education appropriations and share of state budgets (Tandberg, 2010a). Including these two competing interests as controlling variables will help control political differences in state legislatures which may put a higher priority on these other items, impacting the overall appropriations received by institutions across states. Since the reason for inclusion of these competing state interests is the same, both variables are structured as a percentage of state budget. The data was derived from the National Association of State Budget Officers’ (NASBO) State Expenditure Reports.

One concern in using these variables is that they may be highly correlated if they both share
similar patterns of elasticity to changes in state economic cycles. Delaney and Doyle (2007) explored the differences in how K–12 budgets and Medicaid budgets within states reacted as compared to the balance wheel hypothesis for higher education. Both K–12 and Medicaid did not conform to the cubic-form nature that the balance wheel proposes for higher education budgets. It did note that K–12 funding was closer to higher education spending in its shape over time, which implies that these budget items may not be highly correlated. Pairwise correlation of the two variables revealed virtually no correlation across the dataset (Pearson coefficient of .0091), so both variables were retained for analysis.

Variable List:
- Percent of state budget dedicated to Medicaid (MEDICAID)
- Percent of state budget dedicated to K–12-education funding (K12EDU)

**Dependent variables.**

Many higher education studies focusing on state or institutional budgets have utilized higher education appropriations, appropriations per capita, or appropriations per student FTE as a dependent variable (Ness, et al., 2015; Tandberg, 2010a, 2010b; Toutkouishian & Hillman, 2012; Weerts & Ronca, 2012). Other studies have focused on percentage share of state budgets (Rizzo, 2006; Tandberg, 2008, 2010a). The dependent variable is chosen and justified based on the goal of what the author is attempting to measure and sometimes to control for effects that may have dual-causality with the desired outcome measure (Tandberg & Griffith, 2013). Most studies in the higher education literature have focused on state-level outcomes and how higher education fits or fairs within a state environment. Other studies have taken an institutional-level approach, using state-level controls to account for differences across states. This study joins the latter group focusing on institutional outcomes with state-level controls. The choice of including appropriations and total support by FTE represent an interest in how lobbying and other variables are affecting the outcome representing an institution’s need for state aid.
Weerts and Ronca (2012) conducted the most similar study to this one, pointing out the importance of not only focusing on levels of appropriations, but on modeling change in appropriations. This was shown to reduce issues of autocorrelation in the residuals of their study’s models. This study utilizes logged appropriations per FTE, to examine institutional and state effects with relation to the needs of institutions. The APPCHANGE and TSCHANGE variables are year-to-year percentage changes in appropriations or appropriations plus grants. These variables are created through the use of log differences, which approximates percentage. These different dependent variables will allow for the research questions to be explored in terms of both what affects appropriation levels as well as what drives change in appropriations and other types of support. The measures of support used in this study can be derived entirely from IPEDS data, and were transformed using the Consumer Price Index to adjust for inflation through 2013. This source and transformation is similar to other studies (Tandberg, 2008; Weerts & Ronca, 2012).

Variable List:
- Inflation-adjusted state appropriations per FTE student, logged (APPFTE)
- Inflation-adjusted state appropriations and grants per FTE student, logged (TOTSUPPFTE)
- Inflation-adjusted, 1-year percentage change in state institutional appropriations (APPCHANGE)
- Inflation-adjusted, 1-year percentage change in institutional appropriations and grants (TSCHANGE)

Section 2: Study Dataset

A wide variety of data sources were utilized to attain information about lobbying, state finance outcomes, and state/institutional characteristics, however, the size and shape of the overall study dataset was guided by the desire to add institution-level lobbying data to the study’s analysis. Sources such as King (2011) and the NCSL (2015) lobbying disclosure law summaries were valuable in creating inclusion guidelines and then checking state fitness for inclusion in the study. In the end, 15 states met inclusion requirements determined from the sources above, and lobbying data was then
compiled from state databases on public websites. This section outlines the creation of inclusion criteria for states and institutions, as well as how the dataset was compared to a larger national sample.

The specific department or office with the responsibility for collecting lobbying reports varied from state to state, usually housed within ethics-related offices, or departments of state. A list of these database locations is outlined in Appendix D and discussed later in this chapter.

**State and institutional inclusion.**

Considering one purpose of this study was the examination and comparison of institutional lobbying expenditures, inclusion of states was driven first by the availability and comparability of institutional lobbying data. Much of the empirical literature on lobbying includes small-scale studies focusing on a single state, or multiple states (Burkum, 2009; Grasse & Heidbreder, 2011; Lewis, 2013). Even groups focusing on large-scale compilation of all lobbying expenditure records such as the National Institute on Money in State Politics examines only 19 states in their compilation of state lobbying records. This is due to legal differences across states limiting collection—or outright not requiring it—on top of differences in laws that may exclude public sources or portions of public spending. For these reasons, recent studies focusing on comparability of records done by the NIMSP and Sunlight Foundation drove inclusion guidelines for states, and led to the overall decision to include only 15 states in this study.

Results for inclusionary guidelines are displayed in Table 3-3. The inclusion rules for states were: (1) the state mandated the tracking of aggregate lobbying expenditure amounts per lobbyist employer or client for all public higher education institutions, and (2) disclosure requirements included compensation for lobbying and other direct expenditures on events, gifts, or legislative communication. The final guiding inclusionary rule was that (3) records were made publicly available on the state website or by request through the governing body responsible for lobbying registration and tracking.
The decisions on state inclusion were inspired by a desire to maintain as much internal validity as possible in the lobbying expenditure measure while still keeping adequate institutional cases for statistical analysis. The guiding literature that helped develop the rules for inclusion was King’s (2011) study for the Sunlight Foundation and National Institute on Money in State Politics. The first two guidelines for state inclusion were at the root of King’s analysis comparing state lobbying disclosures. Out of the 50 American states, only 28 met the second inclusionary guideline of reporting lobbying compensation as a part of their disclosures (King, 2011). Inclusion of compensation data was a key measure of whether or not state disclosure was considered comprehensive, as was ready available data, which was the third guiding criterion.

Disclosure by what are called lobbyist employers or clients (the first inclusion criteria) in this context refers to entities within the state that either lobby directly using in-house lobbyists, or hire
independent lobbying firms to lobby on their behalf. Without this information, there is no way to connect organizations that seek to lobby with the lobbyists registering within the state. In summary, the first two inclusionary guidelines allow for connecting institutions with lobbyists and ensuring that what is reported contains important expenditure categories. The National Conference of State Legislatures (NCSL) keeps up-to-date records on reporting guidelines for state lobbying, and serves as a confirmatory source for information on what entities are required to disclose as well as the relevant statutes and codes that provide further detail (NCSL, 2015).

The first and second inclusion rules removed 31 states from the analysis. The third inclusionary rule required the elimination of four additional states which made the data unattainable through a public records search online or through request. Of the final 15 states, two lacked significant available data within the desired time period of this study. South Carolina was missing all data prior to the 2008–2009 fiscal year, which provides only 5 years of data on lobbying expenditures. South Carolina is also a biennial budget state, which leads to 1 year of additional lost data while converting biennial state lobbying expenditure data to annual data. Wisconsin only had data on institutional lobbying for the 2011–2012 year and beyond. To examine the effects of missing data from earlier in the dataset due to these two states, and the other states missing up to 3 years of early data, two versions of the overall dataset are run through this study’s model. An unbalanced panel is run with 15 states, which will be discussed throughout the rest of this chapter and is featured in Chapter 4. A second, balanced panel, using imputation was run with only 13 states to compare a balanced version of the dataset with a larger unbalanced version.

Beyond setting rules for state inclusion in the study, institutional inclusion in the study was based on at least one factor. As this study seeks to answer questions about state funding determinants, institutions that received no state appropriations or non-appropriations support were excluded, which required the exclusion of five institutions, all federal tribal colleges in mid-western states. All other 2-
and 4-year institutions as defined by the IPEDS survey data are included in this analysis.

Two other circumstances required decisions related to how institutions were included within the dataset; both related to how lobbying expenditures and IPEDS data are recorded in their respective databases. Pennsylvania State University (Penn State) is recorded in state lobbying databases as having one central office for lobbying expenditures. In IPEDS, appropriations data is offered both centrally and by campus. To match up these two data sources, Penn State is considered as one system in the analysis. This same issue also presented itself in New Jersey with Rutgers University, and was dealt with by consolidating the state university system campus data into one institution for the purpose of analysis. Finally, California community colleges have individual IPEDS entries per campus as well as grouped entries by district. California lobbying disclosure records indicate lobbying data is broken down by district; therefore, California community colleges are grouped by district for the purposes of this analysis. Jaquette and Parra (2014) discuss this type of parent-child consolidation of data from IPEDS based on campus groupings and revenue sources.

Overall, 534 institutions from 15 states are included in this study’s analysis, which represents all public institutions in the 15 states, excluding those dealt with through the inclusion criteria and those adjusted for through consolidation. It should be noted that there is considerable variation in the size of state public college systems. California (96 institutions) and New York (78 institutions) represent 32% of the overall institutions included. To examine how this group of states may differ from a greater national analysis, mean differences for the first year of analysis are included in Table 3-4 below.
The results of comparing national and sample means suggest there are both similarities and differences between this study’s sample and the greater population of institutions and states. The majority of demographic and economic state-level variables reflect that this study’s sample does resemble a national sample. Additionally, the average citizen ideology and legislative ratios are close to this study’s sample and the national population, suggesting that in some ways this study approximates the nation with respect to political views and representation.
The differences between this study and a nationwide population show in the institutional characteristics and some political variables. General support appears to be lower in this study’s sample when measured by appropriations per FTE or appropriations change, though overall state support change appeared to be higher in these states than the national population. Only 5 of the 15 states included have consolidated governing boards (CGBs), where almost half of the nation’s states have CGBs. The legislative professionalism measure of this sample suggests the states in the sample have a more professionalized legislature than the average state of the nation. Finally, there is a disproportionate amount of Democratic governors in this state sample compared to the nation at large.

These differences suggest that the results of this study should be viewed with caution when trying to make generalizations about other states or the nation as a whole. The trend of increasing numbers of states tracking and disclosing lobbying expenditures, exhibited by the increasing number of states that began doing so throughout this study’s timeline, suggest that future studies will have a larger number of states to include when examining lobbying effort. Even if the differences between this study’s sample and a national population can be considered a constraint, the new data compiled for this study represents the best possible measure for examining the intensity of lobbying efforts by colleges (de Figueiredo & Richter, 2014). Even without the ability to extrapolate beyond the bounds of the states included in this study, exploring whether or not a relationship exists between institutional lobbying expenditures and appropriation outcomes will provide a test of the underlying theories about the effectiveness of lobbying as a tool for colleges to improve their financial returns in the state budget process.

Section 3: Analytic Method

To study determinants of state budget outcomes over time, data is required that is both cross-sectional and time-series, also called panel data. The goal is to analyze the factors that impact a policy decision and analyze the variations across and within states and institutions. The use of panel data to
analyze decision-making has a number of advantages over cross-sectional or time-series data alone. Panel datasets allow one to control for individual heterogeneity, by studying both within and across unit variations (Zhang, 2010). In the case of this study, there are likely to be many differences among states, both demographically and politically. There are also likely to be changes in each state over the course of 10 years, such as the strength of political parties in control of government or employment trends. Using panel data analysis allows for control of these differences; it produces accurate parameter estimates for the effect of each independent variable.

To investigate the first research question for this study, the descriptive analysis in Chapter 4 will feature tables examining interstate differences and measurements of growth for lobbying expenditures in the sample. Comparisons of mean lobbying expenditures will also be performed for institutions by level and Carnegie classification as well as by state governance model. Better understanding of how institutions of different Carnegie classification lobby across states as well as the intensity of the divide between levels are important contributions to the higher education literature, as trends in lobbying expenditures may raise questions about where and when they are effective in changing public policy. Additionally, state-level variables such as governance models have been hypothesized as having an effect on state-level interest group variables. Understanding how different governance models interact with lobbying expenditures represents another significant finding from this research.

To address the second and third research questions about the relationship between lobbying, appropriation levels, and appropriation change, this study employs a linear mixed-effects model. Much of the scholarship on this topic to date has focused on the state level, and has ignored the role of time-invariant variables on changes in state support for higher education (McLendon, et al., 2009; Tandberg, 2008, 2010a; Tandberg & Griffith, 2013). These studies utilized methods for analyzing panel data after surveying the available methods for state comparative research (Zhang, 2010). The difference between this study and much of the literature is that examining institutional outcomes in a cross-state study
requires the acknowledgement of working with nested data. Yearly observations are nested within institutions, which are nested within states. To examine the across-subject and within-subject variations across the panel dataset, multilevel analysis must be used. The closest study in analytical design to this one is the work of Weerts and Ronca (2012), who utilized a similar design to examine institutional outcomes. The biggest difference between this study and that one is the disaggregation of lobbying as a variable and the limited states included in this analysis due to data restrictions.

Diagnostics were performed to examine the overall dataset’s fitness for a multilevel mixed-effects model. Procedures for these diagnostics were obtained from Chapter 2 of Rabe-Hesketh and Skrondal’s (2012) *Multilevel and Longitudinal Modeling for Stata* guide. It was hypothesized that residuals for the model would be highly correlated, considering the longitudinal nature of the data and utilizing a pooled-OLS model that reflects that within-subject residuals are correlated in many cases between .85 and .95 across years. For this reason, a multilevel approach that attempts to manage the serial correlation issues in the data is required to examine relationships in the data. The STATA package was used to carry out statistical analysis, using the xtmixed (mixed) syntax, and including an AR(1) term to compensate for residual autocorrelation.

Other regression diagnostics were performed to determine that significant issues related to multicollinearity do not exist. A VIF post-estimation test was run on all variables using the *regress* and then *VIF* commands in Stata to determine any issues with multicollinearity. This test resulted in no variables returning a VIF over 10, with the highest being 5.42, and the mean VIF being 3.26. No tolerance levels were below .18. This suggests that no multicollinearity issues exist between the independent first-level variables (UCLA, 2016).

The basic random intercept model for nested data is written below reflecting the cross-sectional unit of observation (institutions) as *i*, with the temporal reference (year) of *t*. The *y* represents an individual institutions appropriations or state support for the purposes of answering research questions
1 and 2. The $a$ represents the intercept coefficient, while the $p$ and $c$ represent independent controlling variables such as prestige or size. The $\delta^{(2)}$ and $\delta^{(3)}$ represent the random intercept for state $s$ at institution $i$ and intercept for just institution $i$, and $e$ designates institutional error terms. The combination of the three final terms should represent all variations not explained by the model predictors.

$$\gamma_{it} = a + b_2 p_{2it} + b_3 c_{3it} \ldots + \delta_{si}^{(2)} + \delta_{i}^{(3)} + e_{ist}$$

This model addresses the study’s second and third research questions, by providing estimates of the effects for institutional characteristics while also accounting for across-state and institution variations, which allow for the inclusion of time-invariant variables important to this analysis.

The reasons for using the model specified above and analytical approach are many. First, a mixed-effects model is appropriate in this case due to the nature of institutional data being nested, and a multilevel model allows for the accounting of first- and second-level variations. Second, although many other studies on this topic utilized a fixed-effects model to examine economic, political, and demographic variables and their effects on support outcomes, time-invariant predictors would need to be dropped from the model, which would eliminate important possible predictors such as the Carnegie classification or higher education governance structure. Finally, there is reason to believe this data has high autocorrelation in the residuals, and the use of an AR(1) structure for the residuals allows for measurement and account of that problem across the models using different dependent variables. This issue of autocorrelation is discussed by Rabe-Hesketh and Skrondal (2012), who note that AR(1) terms should only be included when there is a reason to understand the autocorrelation in the dependent variable. In this case, the AR(1) term allows for a simple explanation of how much of this year’s appropriations are explained by the previous year’s appropriations in the sample.
Section 4: Summary and Expectations

This study attempts to bring new data on lobbying expenditures into the existing base of studies utilizing panel data methods to examine relationships between lobbying and state-support outcomes for higher education. This task is something that has been widely advocated for in the research on lobbying and politics as well as higher education (de Figueiredo & Richter, 2014; McLendon & Hearn, 2007; Ness & Tandberg, 2013; Ness et al., 2015; Tandberg, 2010b; Tandberg & Griffith, 2013). The theoretical literature that crosses these topics has also come a long way in enveloping political variables into existing higher education finance studies, borrowing from theories across disciplines. Because the nature of this type of investigation is exploratory, there is still much that isn’t known about the way lobbying interacts with other forces in state budget decisions.

The central hypothesis for this study is that, controlling for other factors and time, lobbying provides a return for institutions through the state budget process. As presented in this chapter, there are certainly some caveats to this expectation. State lobbying data is not collected in the same fashion across states. The guidelines for inclusion in this study attempted to account for those differences by including only states with some minimum levels of accounting that were considered comprehensive according to other professional evaluations (King, 2011). Even so, future authors should recognize that differences in data collection rules across states are something with which any author examining lobbying expenditure data will be presented (de Figueiredo & Richter, 2014).

The statistical methods utilized in this study follow in a similar path of existing studies adopting similar frameworks of state fiscal policy (Tandberg, 2010a; Weerts & Ronca, 2012). The biggest difference between this study and some of the past panel models predicting higher education appropriations, is a focus on institutional variables being added to measure lobbying on an institutional basis as well as controlling other institutional factors likely significant in state funding decisions. Expectations for the results of this analysis include the determination that lobbying expenditures vary
widely across institutions and states, but are also related to the institutional type and governance model employed by states. It is also expected that a relationship exists between lobbying expenditures and levels of state support.
CHAPTER 4
RESULTS

Chapter 4 focuses on the descriptive statistics for the dataset, and the results of statistical analyses to answer the three research questions asked in this study. The first research question is addressed by examining the descriptive statistics for lobbying expenditures by inter-group differences, growth, and relationship with relevant state characteristics. The second two research questions are then addressed, beginning with the impact of lobbying within the study model and followed by a breakdown of significant political, economic, and demographic influences on institutional appropriations.

Descriptive Characteristics

Examining the economic and demographic changes over the dataset first, there are some important findings to note. First, trends in institutional support for this sample confirm the many foundation report findings and research of the past 5 years on reductions in state support. Table 4-1 details the sample descriptive changes from the beginning to end of this dataset. Political and demographic changes within the states are not surprising based on the differences between the beginning and end of this sample’s timeframe. Most important to the purpose of this study is the very clear upward trend in inflation-adjusted lobbying expenditures over just a 10-year period. That trend is discussed more in the next section of this chapter.
## Table 4-1
Descriptive Statistics including all 15 States (Standard Deviations in Parenthesis)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean 2003-04</th>
<th>Mean 2012-13</th>
<th>Difference</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appropriations per FTE (04-05 and 13-14)</td>
<td>5,998</td>
<td>4,842</td>
<td>-1,156</td>
<td>-19.27%</td>
</tr>
<tr>
<td>(APPFTE)</td>
<td>(9561)</td>
<td>(8881)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appropriations, One-Year Percentage Change (04-05 and 13-14)</td>
<td>-0.12%</td>
<td>0.06%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>(APPCHANGE)</td>
<td>(1.05)</td>
<td>(0.556)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total State Support per FTE (04-05 and 13-14)</td>
<td>7,098</td>
<td>5,832</td>
<td>-1,266.00</td>
<td>-17.84%</td>
</tr>
<tr>
<td>(TOTSUPPFTE)</td>
<td>(10334)</td>
<td>(8345)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total State Support, One-Year Percentage Change (04-05 and 13-14)</td>
<td>0.0079%</td>
<td>0.0874%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>(TSCCHANGE)</td>
<td>(.159)</td>
<td>(.176)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergraduate and Graduate FTE enrollment</td>
<td>7,670</td>
<td>8,802</td>
<td>1,132</td>
<td>14.76%</td>
</tr>
<tr>
<td>(FTE)</td>
<td>(8432)</td>
<td>(9522)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carnegie Class</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0: (2-year colleges)</td>
<td>349 institutions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1: (4-year Bach/Masters)</td>
<td>132 institutions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2: (4-year Doctoral/Graduate)</td>
<td>53 institutions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private Gift-giving</td>
<td>$3,641,714</td>
<td>$4,632,871</td>
<td>$991,157</td>
<td>27.22%</td>
</tr>
<tr>
<td>(PRIVGIFT)</td>
<td>($19,155,161)</td>
<td>($20,351,318)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institutional Prestige</td>
<td>86.81%</td>
<td>87.03%</td>
<td>0.22%</td>
<td>0.25%</td>
</tr>
<tr>
<td>(PRESTIGE)</td>
<td>(19.6%)</td>
<td>(19.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuition &amp; Fees</td>
<td>$4,590</td>
<td>$5,513</td>
<td>$923</td>
<td>11.96%</td>
</tr>
<tr>
<td>(TUITION)</td>
<td>($3,140)</td>
<td>($3,608)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross State Product per Capita</td>
<td>$47,546</td>
<td>$50,743</td>
<td>$3,197</td>
<td>6.72%</td>
</tr>
<tr>
<td>(GSPCAP)</td>
<td>($7,436)</td>
<td>($9,066)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of Enrollment in 2-Year Colleges</td>
<td>32.43%</td>
<td>29.01%</td>
<td>-3.42%</td>
<td>-10.55%</td>
</tr>
<tr>
<td>(PER2YR)</td>
<td>(8.9%)</td>
<td>(8.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of Enrollment in Private Colleges</td>
<td>26.01%</td>
<td>28.64%</td>
<td>2.63%</td>
<td>10.11%</td>
</tr>
<tr>
<td>(PERPRIV)</td>
<td>(11.49%)</td>
<td>(14.26%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>State Unemployment Rate</td>
<td>6.18</td>
<td>7.97</td>
<td>1.79</td>
<td>29.03%</td>
</tr>
<tr>
<td>(UNEMP)</td>
<td>(1.06)</td>
<td>(1.63)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share of State Population College-aged</td>
<td>10.16%</td>
<td>9.92%</td>
<td>-0.24%</td>
<td>-2.36%</td>
</tr>
<tr>
<td>(POPCOLL)</td>
<td>(.87%)</td>
<td>(.43%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share of State Population 65+</td>
<td>12.58%</td>
<td>14.48%</td>
<td>1.90%</td>
<td>15.10%</td>
</tr>
<tr>
<td>(POPELD)</td>
<td>(1.35%)</td>
<td>(1.1%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share of State Budget to Medicaid</td>
<td>21.6%</td>
<td>22.5%</td>
<td>0.94%</td>
<td>4.4%</td>
</tr>
<tr>
<td>(MEDICAID)</td>
<td>(5.3%)</td>
<td>(4.8%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share of State Budget to K-12 Education</td>
<td>20.3%</td>
<td>19.4%</td>
<td>-0.92%</td>
<td>-4.5%</td>
</tr>
<tr>
<td>(K12EDU)</td>
<td>(4.2%)</td>
<td>(4.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Citizen Ideology Score</td>
<td>49.51</td>
<td>48.19</td>
<td>-1.32</td>
<td>-2.67%</td>
</tr>
<tr>
<td>(CITIDEO)</td>
<td>(10.34)</td>
<td>(8.08)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legislative Professionalism</td>
<td>$46,473</td>
<td>$41,411</td>
<td>-5,062</td>
<td>-10.89%</td>
</tr>
<tr>
<td>(LEGBPROF)</td>
<td>(35979)</td>
<td>(27961)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Party of the Governor</td>
<td>0.733</td>
<td>.466</td>
<td>-0.27</td>
<td>-36.43%</td>
</tr>
<tr>
<td>(GOVPARTY)</td>
<td>(1.55)</td>
<td>(1.62)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legislative Party Ratio</td>
<td>47.40%</td>
<td>31.10%</td>
<td>-1.32</td>
<td>-34.39%</td>
</tr>
<tr>
<td>(LEGPARTY)</td>
<td>(7.7%)</td>
<td>(5.7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher Education Gov Structure</td>
<td>0.333</td>
<td>0.333</td>
<td>0.00</td>
<td>0.00%</td>
</tr>
<tr>
<td>(HESTRUCT)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institutional Lobbying Expenditure, One-Year Change</td>
<td>0.16%</td>
<td>0.36%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(LOBCHANGE)</td>
<td>(1.55)</td>
<td>(2.62)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institutional Lobbying Expenditures*</td>
<td>$11,708</td>
<td>$21,365</td>
<td>$9,657</td>
<td>82.48%</td>
</tr>
<tr>
<td>(LOBBY)</td>
<td>(33201)</td>
<td>(60669)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institutional Lobbying Expenditure per FTE</td>
<td>$1.61</td>
<td>$2.83</td>
<td>$1.22</td>
<td>75.93%</td>
</tr>
<tr>
<td>(LOBFTE)</td>
<td>(4.00)</td>
<td>(11.81)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Any monetary measure adjusted to 2013 dollars using CPI

*Data includes imputation and excludes SC and WI, Research Questions 2 and 3 include non-imputed results
Addressing the institutional descriptive statistics, three trends emerge beyond the growth of lobbying expenditures. First, support for institutions both per full-time equivalent and on a total support basis (including appropriations and non-appropriations) declined over the course of the 10-year dataset. Appropriations per full-time equivalent student dropped 19% over the course of the dataset, while the overall total state support through appropriations and non-appropriations dropped about 17%. Although inflation-adjusted appropriations levels have remained fairly flat for several decades, results from this study’s descriptive analysis complement the reported declines found by other scholars, who’ve detailed higher education dropping as a share of overall state budgets as well as on a full-time equivalent basis (American Academy of Arts and Sciences, 2015; Mitchell & Leachman, 2015; Mortensen, 2012).

![Figure 4-1: Appropriations per FTE over Dataset (15 states)](image)

One important distinction to make when exploring the trend of declining appropriations per FTE is that the drop in support has not affected all types of institutions the same. Figure 4-1 provides a basic view of the trend lines for institutions by type. The drop in 2-year support between the beginning and end of the dataset is approximately 10.5%. For baccalaureate/master’s institutions, the drop was
14%, and for doctoral and graduate institutions, the drop was almost 20% on average. This provides significant detail to what kinds of institutions have been more affected in terms of their needs for state aid.

Another trend apparent in this study’s dataset is the rise of alternative revenue sources for institutions. Tuition and fees rose by nearly 12% while private gift-giving rose by 27%. It should be noted that overall private gift-giving changed on average by about one million dollars, a small sum when considering the expenses of a college or university. The rise in private gift-giving is not surprising considering the professionalization of fundraising in public higher education and the rising drive to replace dropping state support with other funding sources (ASHE, 2011; Cheslock & Gianneschi, 2008). The rise in tuition unsurprisingly relates to the loss of state support and rising enrollment, also detailed in the descriptive statistics (American Academy of Arts and Sciences, 2015).

Many of the changes in the dataset reflect wider changes in the political landscape of the United States. The rise in Republican governors corresponds with an overall rise in the country’s Republican governors who currently occupy 31 out of 50 states. This study’s sample shows how the prevalence of Democratic governors have dropped from almost 75% to less than 50%. The legislative professionalism variable reflected a 10% drop in salaries, which is consistent with other research on multiple measures of professionalism (Bowen & Greene, 2014b).
Research Question One

1. *How are lobbying expenditures distributed among public 2- and 4-year institutions within the states included in this study, and how do lobbying expenditures differ based on institutional-level and state-governance models?*

The study’s first research question aims to reveal information about the shape and relative size of institutional lobbying expenditures as well as their relation to variables found relevant when discussing other measures of lobbying such as number of registered lobbyists. This type of analysis has been brought up before in both higher education and political lobbying, to examine the idea of lobbying efforts by institutions (de Figueiredo & Richter, 2014; Ness, et al., 2015). The descriptive analysis of institutional appropriations is broken down into sections discussing *inter-group differences*, *growth*, and *relationships with state characteristics*.

Overall, institutional lobbying expenditures throughout the 10-year period of this study amounted to about $84 million dollars\(^4\) across the smaller, more complete, 13 state dataset. This amount was not spread equally amongst all institutions, as 114 institutions spent nothing on lobbying or at least did not meet minimum thresholds for disclosure by state law. The remainder of the 473 institutions had some expenditures throughout the 10-year period. Growth was substantial across all states included in the study. The additional states of South Carolina and Wisconsin are not accounted for in this section due to their partial records, but trends for growth and inter-group differences are similar to other states for the years where records are available.

**Intergroup differences.**

Lobbying expenditures varied extensively across states in the sample. As figure 4-1 shows,

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\(^4\) This figure would likely be higher if Kentucky and New Jersey did not have exemptions for state employees, where only contract lobbying and local employee compensation is included.
Pennsylvania, Michigan, Oregon, Colorado, and New York had the highest average spending per institution over the entirety of the dataset, spending between $20,000 and $30,000 per institution each year. Most other states were spending between $10,000 and $15,000 per year on lobbying per institution outside of Kentucky.

These results align to some degree with conclusions made by Burkum (2009) who described the Pennsylvania lobbying atmosphere as more competitive than other states such as Arizona or Iowa in this sample, meaning Pennsylvania colleges would be more likely to apply resources to lobbying institutionally. Considering Pennsylvania’s governance structure allows relative freedom for institutions to lobby state legislators directly, this may explain their relatively high spending compared to other states in the sample. A state such as New Jersey or Kentucky, with a non-consolidated governing board, may have their low average spending explained by their more lenient lobbying law requiring only contract lobbying and non-state employee lobbying compensation data collected.

Differences across states help visualize some of the variation in lobbying expenditures, but other divisions can better show who is, and is not, lobbying within their states. Table 4-2 displays the spending per level of institution over the dataset using grouped Carnegie classifications. Two-year
institutions spent the least amount of money on lobbying, which in itself is not surprising considering the different size budgets and appropriations levels for 2-year institutions compared to 4-year institutions. Another consideration is the fact that 2-year institutions can rely on local support; in many cases, that leaves them less reliant upon and in need of state lobbyists. More interestingly, doctoral-level research universities spent about 10 times what 2-year institutions did on average over this study’s timeframe. Baccalaureate-level institutions spent twice as much as 2-year institutions. This data on expenditures aligns with information about the location and number of state relations agents within institutions in past survey-based studies (Murphy, 2001). The curve of expenditures can be seen from this analysis, suggesting that lobbyists for doctoral-level institutions may be more numerous, more highly paid, and more active.

Table 4-2

<table>
<thead>
<tr>
<th>Institutional Level</th>
<th># of Institutions</th>
<th>Total Lobbying</th>
<th>Yearly Spending per Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: 2-Year institutions</td>
<td>311</td>
<td>$25,997,450</td>
<td>$8,359</td>
</tr>
<tr>
<td>2: 4-Year Baccalaureate/Masters</td>
<td>113</td>
<td>$18,229,348</td>
<td>$16,132</td>
</tr>
<tr>
<td>3: 4-Year Doctoral/Graduate</td>
<td>49</td>
<td>$40,361,789</td>
<td>$82,371</td>
</tr>
</tbody>
</table>

Table 4-3 accompanies the previous table in examining the frequency of lobbying amongst institutional types. Only 72% of all 2-year institutions reported lobbying expenditures over the 10-year study time period. This suggests several possibilities. These institutions may have no dedicated staff specifically working on state-level lobbying, or lobbying expenditures may not have reached state-minimum thresholds for reporting, or both. On the other end of the spectrum, virtually all doctoral-level institutions are lobbying their state legislatures. Two of the four doctoral institutions without any lobbying expenditures listed are Kentucky flagship universities, which likely spend significant resources on lobbying, but do so in-house only, since contract lobbying would require disclosure.
A number of scholars have reported on rising levels of state lobbying activity spanning over the past several decades (Berry, 1997; Browne, 1998; de Figueiredo & Richter, 2014; Laskow, 2006; Tandberg, 2008; Whyte, 2016). The rise in lobbying registrations by higher education institutions and interest groups indicated that institutions were expending more resources on the act of lobbying. The data from this study align with this expectation of rising resource allocations to these activities. Figure 4-3 and 4-4 reflect the growth of overall lobbying expenditures in 2013 dollars and average yearly expenditures.

Table 4-3

<table>
<thead>
<tr>
<th>Institutional Level</th>
<th># of Sample Institutions</th>
<th># of Lobbying Institutions</th>
<th>% of Institutions Lobbying</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: 2-Year Institutions</td>
<td>311</td>
<td>224</td>
<td>72%</td>
</tr>
<tr>
<td>2: 4-Year Baccalaureate/Masters</td>
<td>113</td>
<td>100</td>
<td>80%</td>
</tr>
<tr>
<td>3: 4-Year Doctoral/Graduate</td>
<td>49</td>
<td>45</td>
<td>92%</td>
</tr>
</tbody>
</table>

Growth.

Figure 4-3: Total Lobbying Expenditures across Dataset
Over the course of this study’s 10-year timeline, total institutional lobbying rose 82% between 2003–2004 and 2012–2013. The average institution went from spending $11,708 in 2003–2004 to over $21,000 one decade later. This finding represents a significant contribution to the literature to date on lobbying in higher education, as the limitation on available data of this type has muted the ability of researchers to collect and measure comprehensive records on lobbying by institutions.

In addition to only looking at expenditures, the number of disclosing institutions also increased significantly. Figure 4-5 shows the proliferation of lobbying within the sample, whereby only 217 of the 473 institutions examined were disclosing expenditures meeting the threshold in 2003–2004, about 46% of institutions. By 2012–2013, 319 institutions were disclosing lobbying expenditures, about two thirds of all institutions. These findings support previous reports of the rise in lobbying by higher education entities, and show that not only are institutions spending more, but more institutions are spending.
Table 4-4 takes our understanding of differences in growth between institutional levels further. Both 2-year colleges and doctoral-level institutions have increased their spending per institution by almost 100% over the 10-year period of this study, while baccalaureate/master’s level institutions only increased their expenditures by about 33%. There is no reason in the literature why this may be the case nationally, but it is an interesting finding worth further research exploration. Another interesting finding is the peak in lobbying expenditures around 2008–2009 and 2010–2011. This can also be seen in some of the previous figures where around the time of the 2008–2009 financial crisis, a large spike in lobbying expenditures can be seen in all sectors. It may be that lobbying expenditures have a relationship with state economies, and that institutions in more unsettled economic times turn to lobbying as a way to fight for state resources.
Relationships with state characteristics.

Research on the political variables affecting state support for higher education have singled out higher education governance structures as being related to lobbying density outcomes (Tandberg, 2013). Burkum (2009) also suggests that a relationship exists between governing boards and lobbying in his case study analysis of Pennsylvania and other states. The findings from descriptive analysis suggest that lobbying institutions do spend more in states with non-consolidated governance structures. Five states in this study’s sample had consolidated governing boards over the timeline of the sample, while 10 states maintained a looser form of governance.

Table 4-4

<table>
<thead>
<tr>
<th>Year</th>
<th>2-Year Colleges</th>
<th>4-Year Baccalaureate/Masters</th>
<th>Doctoral/Research Universities</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>$5,549</td>
<td>$12,090</td>
<td>$49,924</td>
</tr>
<tr>
<td>2004-05</td>
<td>$5,751</td>
<td>$11,733</td>
<td>$51,898</td>
</tr>
<tr>
<td>2005-06</td>
<td>$6,730</td>
<td>$13,231</td>
<td>$54,031</td>
</tr>
<tr>
<td>2006-07</td>
<td>$7,331</td>
<td>$15,414</td>
<td>$65,997</td>
</tr>
<tr>
<td>2007-08</td>
<td>$8,631</td>
<td>$17,727</td>
<td>$83,842</td>
</tr>
<tr>
<td>2008-09</td>
<td>$10,084</td>
<td>$17,810</td>
<td>$100,519</td>
</tr>
<tr>
<td>2009-10</td>
<td>$10,005</td>
<td>$19,650</td>
<td>$105,901</td>
</tr>
<tr>
<td>2010-11</td>
<td>$10,178</td>
<td>$18,335</td>
<td>$102,685</td>
</tr>
<tr>
<td>2011-12</td>
<td>$9,706</td>
<td>$18,442</td>
<td>$102,722</td>
</tr>
<tr>
<td>2012-13</td>
<td>$9,628</td>
<td>$16,889</td>
<td>$106,190</td>
</tr>
</tbody>
</table>

Using the larger non-imputed data encompassing 15 states, the analysis in Table 4-5 shows that
means are relatively close between the two groups, with the larger average spending changing between institutions in non-consolidated and consolidated governing board states. Two different years were examined, since these years represent the most populated years of the sample with respect to lobbying expenditures. Using an independent T-test of means, it could not be stated that there was a statistically significant difference in the means between institutions in states with strict or looser forms of governance. There was a large difference in the institutional count across the sample for each group, with many more lobbying institutions in the 10 states with non-consolidated governing boards. Breaking down institutions into 2-year vs. 4-year institutions for sub-groups across governing board types did not change the T-test results. Future research will hopefully include more states that choose to make lobbying information publicly available. Additionally, a deeper analysis of governance structure could yield multiple categories to utilize in an analysis of variance.

**Research Question Two**

2. *Does a relationship exist between a public institution’s expenditures on lobbying and its state appropriations received, when holding constant economic, political, and demographic differences in institutions?*

The results for Research Question Two include tests of two different dependent variables, both with the objective of looking at appropriations and how they relate to institutional and state characteristics. The first test examines appropriations per full-time equivalent, while the second test looks at adjusted 1-year appropriational changes from the previous year. The results will focus on the different groups of characteristics and their relationships to the literature overall. Many of the included variables were found significant in the direction predicted in the literature review for this study, while measures of lobbying were found to not have a significant effect on either dependent measure and are
discussed further at the end of the section. All tests were run on non-imputed data including 15 states. Additional tests run on the imputed data and without the states with weaker lobbying records laws did not change the model results significantly, though the loss of observations reduced the size of coefficients in many cases.

One surprising result in the first two models was the issue of serial correlation affecting this sample differently from the findings of Weerts and Ronca (2012). This study’s first model found residual autocorrelation explaining about 40% of the variation in the dependent measure of appropriations per FTE. In the second model using logged differences as an approximation of percentage change in appropriations from 1 year to the next, half of the variation could be explained by the previous year’s percentage change. One possible reason why the first measure of appropriations did not have the high serial correlation found by Weerts and Ronca, was the decision to use appropriations per FTE as a dependent measure instead of only logged appropriations. The reason for the second model having high autocorrelation could be due to numerous issues. First, this sample is smaller than a nationwide sample, with fewer observations. Additionally, there could have been less variation in appropriations levels in this study’s time period compared to other, longer time series. Regardless of the reason, future researchers should consider the issue of autocorrelation and attempt to control for this measure in panel data analysis of appropriations measures.

Table 4-6 shows that many of the state characteristics hypothesized as important in this study’s framework are significantly predictive of appropriations levels. Only Carnegie classification and institutional tuition and fees were significant from the institutional factors in the model. Institutional lobbying expenditures both in total and per FTE were insignificant, but also had a negative directional relationship with support. This may be related to the broader trends of the data, where the highest supported institutions lost the most in support while also increasing their lobbying expenditures the most. The institutional results almost mirror Weerts and Ronca’s (2012) findings, where only Carnegie
classification was significant. The results for significant institutional predictors are in the direction hypothesized in this study’s model, with each higher sector from 2-year colleges, to bachelors/master’s and doctoral levels seeing a 50% increase in appropriations per FTE. Every $1,000 increase in tuition and fees was associated with 3% higher appropriations levels per FTE. These results are unsurprising, since higher level and more expensive institutions within any state generally receive more support from legislative appropriations decisions.

<table>
<thead>
<tr>
<th>Table 4-6</th>
<th>Final Model - Dependent Variable (Log Appropriations per FTE)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Random Effects</strong></td>
<td>SD</td>
</tr>
<tr>
<td>State</td>
<td>0.51308</td>
</tr>
<tr>
<td>Institution</td>
<td>0.44066</td>
</tr>
<tr>
<td><strong>First-Order Serial Autocorrelation AR(1)</strong></td>
<td>φ = 0.40039</td>
</tr>
<tr>
<td><strong>Fixed Effects</strong></td>
<td>Value</td>
</tr>
<tr>
<td>(Intercept)</td>
<td><strong>10.27972</strong> *</td>
</tr>
<tr>
<td>CARNEG</td>
<td><strong>0.50348</strong> *</td>
</tr>
<tr>
<td>PRIVGIFT</td>
<td>-5.66E-10</td>
</tr>
<tr>
<td>PRESTIGE</td>
<td>0.00012</td>
</tr>
<tr>
<td>TUITFEE</td>
<td><strong>0.00003</strong> *</td>
</tr>
<tr>
<td>LOBBY</td>
<td>-3.57E-07</td>
</tr>
<tr>
<td>GSPCAP</td>
<td><strong>-0.00001</strong> *</td>
</tr>
<tr>
<td>UNEMP</td>
<td><strong>-0.05347</strong> *</td>
</tr>
<tr>
<td>POPCOLL</td>
<td>6.21691</td>
</tr>
<tr>
<td>POPELD</td>
<td><strong>-7.71200</strong> *</td>
</tr>
<tr>
<td>CITIDEO</td>
<td><strong>-0.00289</strong> *</td>
</tr>
<tr>
<td>LEGPROF</td>
<td><strong>-3.44E-06</strong> *</td>
</tr>
<tr>
<td>GOVPARTY</td>
<td><strong>-0.05344</strong> *</td>
</tr>
<tr>
<td>LEGPARTY</td>
<td><strong>-0.24517</strong> *</td>
</tr>
<tr>
<td>HESTRUCT</td>
<td>-0.20826</td>
</tr>
<tr>
<td>PER2YR</td>
<td>-0.46639</td>
</tr>
<tr>
<td>PERPRIV</td>
<td><strong>-1.08792</strong> *</td>
</tr>
<tr>
<td>MEDICAID</td>
<td><strong>-0.88277</strong> *</td>
</tr>
<tr>
<td>K12EDU</td>
<td>-0.37777</td>
</tr>
</tbody>
</table>

* Significance at the .05 level

Variables from separate iterations in place of LOBBY

| LOBCHANGE | -0.00015 | 0.0007 | -0.21 | 0.834 |
| LOBFTEE | -0.00071 | 0.0013 | -0.53 | 0.598 |
The results from the first model suggest that many state economic, political, and demographic factors explain variation in appropriations levels. Most state-level variables were found significant in the direction hypothesized. Unemployment was found to be a significant determinant of both overall appropriations support and change in appropriations from year to year. Higher levels of unemployment were associated with lower levels of appropriations, where a 1% increase in state unemployment was met with 5.3% less appropriations per FTE in the following year. Gross State Product (GSP) per capita had a relationship opposite of what was hypothesized, but suggests that when state income does increase, higher education may not be a high priority in new spending compared to other state priorities. Every $1,000 increase in GSP per capita equates to 1% lower appropriations per FTE for institutions. Unemployment findings and measures of the economy mirror past research performed in similar analyses (Tandberg, 2008, 2010a; McLendon, et al., 2009; Weerts & Ronca, 2012).

Four other measures were found significant in the direction hypothesized. Higher proportions of private enrollment in a state are associated with lower levels of state funding, as are higher proportions of residents aged 65+. A 1% increase in the percentage of state enrollment going to private colleges led to a 1% decrease in appropriations levels per FTE; a 1% increase in the share of elderly population led to a 7% drop in appropriations levels. Higher levels of funding for Medicaid also impacted institutional appropriations negatively, supporting the crowding-out hypothesis for other state priorities when it came to direct aid for institutions. A 1% increase in the share of Medicaid in state budgets corresponds to a .88% decrease in appropriations per FTE. The relationship direction for competing political interests and demographic variables in the model is consistent with prior research as well as the original frameworks for state appropriations determinants (McLendon & Hearn, 2007; Tandberg, 2008).

The political variables in the first model have a set of mixed results. Political party representation has the highest t-value of all the political variables, and has a directional relationship as hypothesized in this study’s model. The results suggest that Democratic representation in the legislature
is aligned with higher levels of support for higher education when it comes to appropriations levels; a 1% increase in Republican representation is associated with a .24% decrease in appropriations per FTE. This implies that Democrats may be more sympathetic to making higher education a high priority budget item. Opposite to this hypothesized result is that of the governor party and citizen ideology. Democratic governors are associated with 5.3% lower appropriations per FTE than states with Republican governors. These results suggest that Republican-led states and more conservative states (to a lesser degree) are associated with slightly higher levels of appropriations per FTE. The result of the governor party variable may be attributed to that variable’s deviation from national samples, as this study overrepresented states with conservative governors. The result does run counter to several studies with similar dependent and independent variables (Kramer, 2011; McLendon, et al., 2009). Legislative professionalism also had a result opposite to this study’s hypothesis, though similar to citizen ideology: The coefficient size was very small compared to other significant variables in the model. These findings suggest that the connection between political parties and overall funding levels for institutions may not be as clear as hypothesized in current frameworks for political cross-state studies.

Table 4-7 presents an important comparison for the discussion of appropriations per FTE funding. Table 4-6 discussed predictors explaining variations in funding levels, while Table 4-7 discusses predictors explaining variations in funding changes from year to year. The findings of Weerts and Ronca (2012) suggest that there may be differences across model constructs in how demographic and political variables impact higher education support level versus change. The findings in Table 4-7 will focus on those differences as well as any unique relationships worthy of note based on the study model.
The most important finding from Table 4-7 is that autocorrelation in the residuals of appropriations changes is high. Fifty-three percent of the appropriations changes from the previous year predict changes in the next year. This may be tied to the way appropriations are decided on by legislatures, if legislators are looking at the previous year’s appropriations as a baseline for the next year. One issue specific to this study was the limited sample of states included. During the timeframe

| Table 4-7 |
| Final Model - Dependent Variable (Appropriations, One-Year Percentage Change) |

<table>
<thead>
<tr>
<th>Random Effects</th>
<th>SD</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td>0.03849</td>
<td>0.01305</td>
</tr>
<tr>
<td>Institution</td>
<td>3.19E-10</td>
<td>3.37E-10</td>
</tr>
</tbody>
</table>

| First-Order Serial Autocorrelation AR(1) | \( \phi = 0.53116 \) |

<table>
<thead>
<tr>
<th>Fixed Effects</th>
<th>Value</th>
<th>SE</th>
<th>t value</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>-0.72300</td>
<td>0.3852</td>
<td>-1.88</td>
<td>0.061</td>
</tr>
<tr>
<td>CARNeg</td>
<td>-0.01416</td>
<td>0.0160</td>
<td>-0.88</td>
<td>0.378</td>
</tr>
<tr>
<td>PRIVGift</td>
<td>3.92E-11</td>
<td>4.00E-10</td>
<td>0.10</td>
<td>0.922</td>
</tr>
<tr>
<td>PRESTIGE</td>
<td>0.00021</td>
<td>0.0004</td>
<td>0.52</td>
<td>0.603</td>
</tr>
<tr>
<td>TUITFEE</td>
<td>4.84E-06</td>
<td>3.87E-06</td>
<td>1.25</td>
<td>0.211</td>
</tr>
<tr>
<td>LOBBY</td>
<td>-2.87E-08</td>
<td>1.40E-07</td>
<td>-0.20</td>
<td>0.838</td>
</tr>
<tr>
<td>FTE</td>
<td>1.14E-07</td>
<td>7.78E-07</td>
<td>0.15</td>
<td>0.884</td>
</tr>
<tr>
<td>GSPCAP</td>
<td>-8.04E-07</td>
<td>1.98E-06</td>
<td>-0.41</td>
<td>0.684</td>
</tr>
<tr>
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<td>0.000</td>
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<td>2.3976</td>
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<td>0.375</td>
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<tr>
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<td>1.0316</td>
<td>4.79</td>
<td>0.000</td>
</tr>
<tr>
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<td>0.0009</td>
<td>-3.91</td>
<td>0.000</td>
</tr>
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<td>LEGPROF</td>
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<td>4.69E-07</td>
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<td>0.82</td>
<td>0.413</td>
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<tr>
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<td>0.1006</td>
<td>-0.80</td>
<td>0.424</td>
</tr>
<tr>
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<td>-0.77</td>
<td>0.440</td>
</tr>
<tr>
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<td>0.1910</td>
<td>3.29</td>
<td>0.001</td>
</tr>
<tr>
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<td>0.1282</td>
<td>-0.44</td>
<td>0.657</td>
</tr>
<tr>
<td>MEDICAID</td>
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<td>0.2409</td>
<td>-2.39</td>
<td>0.017</td>
</tr>
<tr>
<td>K12EDU</td>
<td>0.76316 *</td>
<td>0.3024</td>
<td>2.52</td>
<td>0.012</td>
</tr>
</tbody>
</table>

* Variables from separate iterations in place of LOBBY
  - LOBCHANGE | 0.00081 | 0.0015 | 0.53 | 0.599
  - LOBFTE    | 0.00004 | 0.0008 | 0.06 | 0.952

* Significance at the .05 level
of this study, 64% of states nationwide had annual budgets (Oregon changed in 2011 to annual budgets), while 36% had biennial budgets. This study closely represents a national sample in this regard, with 33% of the sample being biennial budget states.

It is also clear from the institutional standard deviation in Table 4-7 that significantly more deviation occurs at the state level with respect to appropriations changes than at the institution level. Different states maintain different systems for determining their year-to-year appropriations. These can include more incremental base-plus models that make small adjustments to the previous year’s appropriations, enrollment-based models that adjust support by measures of enrollment, or more recent funding models based on metrics such as performance or outcomes chosen by state legislatures (Hearn, 2015). It is possible that this study’s inclusion of only 15 states misses out on considerable variations in appropriations across other states with different appropriations formulas.

Findings from Table 4-7 for economic and demographic measures are mixed in relation to their hypothesized relationships. Unemployment continues to explain variations in appropriations levels and change. Larger unemployment levels are associated with both lower appropriations levels, and decreases in support. A 1% increase in unemployment is associated with a 2.6% decrease in appropriations. Surprisingly the proportion of elderly residents in a state-impact appropriations growth counter to appropriations levels, where a one-percentage point increase in 65+ residents leads to a 4.9% increase in appropriations support. This suggests that although states with high elderly populations may prefer lower appropriations levels, they are not opposed to increasing appropriations support to colleges in their states.

Competing state interests played an important role in affecting changes in institutional appropriations. K–12 spending also had a relationship counter to what was expected. Even though states with higher shares of spending going to K–12 were associated with lower levels of higher education support, states more sympathetic to increasing K–12 funding may also be more likely to fund
higher education increases. A 1% increase in the share of state general funds going to K–12 funding was associated with a .76% increase in institutional appropriations. This phenomenon has been found by other authors trying to understand the relationship between budget sectors, leading to a conclusion that preferences for education can often make secondary and post-secondary sectors complementary (Buhler, 2014). Medicaid growth had a negative relationship with institutional appropriations, where a 1% increase in the share of Medicaid in state budgets led to a .57% decrease in appropriations.

With respect to the political variables in the model, the only two found significant were legislative professionalism and citizen ideology. Citizen ideology had the opposite effect as hypothesized, with more conservative state constituencies being associated with increases in support while higher salaried (more professionalized) legislatures were associated with appropriations increases. Although both of these effects were significant, their affect on appropriations change was very small. Several possible explanations can be considered for the contrary findings for political variables in this study. First, it is possible that this 15-state study isn’t close enough to a national sample to match the findings of other studies. Second, it is possible that some of the hypothesized relationships between party and political leanings toward higher education are incorrect. Tandberg (2010b) discusses this possibility, when his study found Republican governors were more favorable toward higher shares of state budgets going to higher education. His explanation is that Republicans may favor different types of higher education such as community colleges over Democrats and may favor increases that rival or even overtake Democratic preferences. This study’s findings related to governor party and levels of appropriations per FTE suggest that such a hypothesis can be supported.

Returning to the study’s main interest of lobbying and its role in state budget decisions, neither variable approached the .05 significance threshold worthy of reporting. The results of the first two models should be considered in conjunction with Table 4-8. Lobbying expenditures and changes thereto have very little correlation with appropriations levels or measures of appropriations change. The
largest Pearson value can be found between lobbying expenditure levels and total support per FTE, where there is a very weak positive association. That is to say, that to a small degree larger lobbying expenditures in 1 year are associated with higher levels of appropriations and grants in the next, though no statistically significant relationship can be found to suggest that lobbying effort predicts appropriations outcomes.

<table>
<thead>
<tr>
<th>Variable</th>
<th>APPFTE</th>
<th>APPCHANGE</th>
<th>TOTSUPPFTE</th>
<th>TSCHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOBBY</td>
<td>0.147</td>
<td>-0.003</td>
<td>0.171</td>
<td>-0.003</td>
</tr>
<tr>
<td>LOBCHANGE</td>
<td>0.026</td>
<td>0.005</td>
<td>0.023</td>
<td>0.017</td>
</tr>
<tr>
<td>LOBFTE</td>
<td>0.057</td>
<td>0.002</td>
<td>0.037</td>
<td>-0.001</td>
</tr>
</tbody>
</table>

These findings should be considered complementary to the findings of de Figueiredo and Silverman (2006), where a significant relationship was found between institutions increasing their lobbying expenditures and higher earmark returns from a federal committee process. This study attempted to test a similar hypothesis on the appropriations process, hypothesizing that lobbying may have a systematic effect on appropriations outcomes across states and over time within institutions, mediated by the level of institution. In this study, a weak positive correlation was found between institutions that spend more and institutions that receive more.

One explanation for why this relationship may not be as strong as hypothesized, is in light of the descriptive findings in Figure 4-1 and Table 4-4. Over the course of the dataset, doctoral institutions lost the most in their appropriations per FTE while also spending the most on lobbying, which may be muting the positive correlation expected. It is also possible that a dual-causality issues exists between lobbying and appropriations, where institutions have advanced knowledge of an appropriations decrease, and start spending more on lobbying to counteract future cuts. This is cause for further examination of the relationship.
Research Question Three

3. *Does a relationship exist between a public institution’s expenditures on lobbying and its overall state support received from all sources, when holding constant economic, political, and demographic differences in institutions?*

Research Question Three was designed to take a broader look at support including operating and non-operating grants to public institutions, which are referred to below as total state support. Table 4-8 shows that appropriations change and total state support change are very weakly correlated in a positive direction, which makes sense, but also suggests that there may be some significant divergences worth investigating between lobbying and total support compared to lobbying and appropriations alone. Analysis in this chapter will focus mainly on the differences between appropriations determinants and total state support determinants, referencing Table 4-6 and 4-9 as well as Table 4-7 and 4-10.
The dependent variable of total state support was the only change in variables for the model presented in Table 4-9 from the one in Table 4-6. The issue of autocorrelation in the dependent variable appears to be similar to the appropriations model in Table 4-6, and the trend of larger variation at the state level compared to institution level also remains. The role of political variables in total state support and appropriations decisions themselves appear to be similar regarding the directional
relationships between dependent and independent variables. Two highlights emerge from the results on model variables. First, the lobbying variable of most interest in this study is still not found significant; however, the directional relationship of lobbying expenditures has changed from negative to positive. This also occurred in Table 4-10, looking at total support percentage change.

The second highlight emerging from the results in Table 4-9 is that institutional variables became more important while other state demographics (with the exception of percentage enrollment in private institutions) became less important. Private gift-giving to the institution became a significant variable, but the results show that for every $1,000 increase in private gift-giving to the institution, the total support level increased by only .0001%. Prestige had a surprising result, where a 1% increase in the admission rate led to a small .2% decrease in total support. This very small effect could have to do with the way grant programs are administered within states; it deserves further study, considering the fact that how state grants are distributed is understudied in the higher education literature. The percentage of private enrollment in the state had a much stronger effect on total state support, where a 1% higher share of private college enrollment is related to 1.7% lower state support levels. This suggests that private institutions also may be competing with public colleges for state operating and non-operating grants, or that private enrollment in the state sends a message that they can reduce certain forms of grant aid to public institutions.

Table 4-10 addresses the question of what drives total state support changes. This model resulted in the lowest autocorrelation in residuals, suggesting that variation in total support percentage change is not very well predicted by previous support changes. No institutional factors were found significant in the model, including Carnegie classification, which suggests that increases or decreases are not significantly related to the level of the institution. In both models measuring change in appropriations and total support, changes in lobbying effort were of central interest to the study’s focus. The LOBCHANGE variable was not significant in either model, but in Table 4-10 it does have a
positive coefficient and p-value lower than Table 4-7 looking at appropriations alone as a dependent variable. Considering past studies have found connections between lobbying and the procurement of earmarks for individual institutions, it may be worth looking deeper at the state process for grant or contract distribution. This area of direct institutional support may be more susceptible to lobbying efforts, and future research could also consider whether or not private institutional lobbying competed for similar funds.
The variation in total state support appears more affected by changes in state characteristics and political processes than appropriations alone. Many of these significant relationships are in the direction predicted by this study’s literature review. One example of this is the share of state budget appropriations going to Medicaid negatively impacting state support changes for colleges. This finding is in line with results from Delaney and Doyle (2007, 2011), who conclude that budget forces such as

| Table 4-10 |
| Final Model - Dependent Variable (Total State Support, One-Year Percentage Change) |
| Random Effects | SD | SE |
| State | 0.16857 | 0.03600 |
| Institution | 4.55E-12 | 9.73E-09 |
| First-Order Serial Autocorrelation AR(1) |
| $\phi = 0.19913$ |
| Fixed Effects | Value | SE | t value | p value |
| (Intercept) | 0.28926 | 0.2798 | 1.03 | 0.301 |
| CARNPEG | -0.00859 | 0.0071 | -1.21 | 0.227 |
| PRIVGIFT | 2.13E-11 | 1.74E-10 | 0.12 | 0.902 |
| PRESTIGE | 0.00033 | 0.0001 | 1.86 | 0.063 |
| TUITFEE | 2.58E-06 | 1.73E-06 | 1.49 | 0.136 |
| LOBBY | 2.91E-08 | 6.06E-08 | 0.37 | 0.713 |
| FTE | 4.18E-07 | 3.42E-07 | 1.22 | 0.222 |
| GSPCAP | -0.00001 | 1.77E-06 | -7.21 | 0.000 |
| UNEMP | -0.04048 | 0.0032 | -12.42 | 0.000 |
| POPCOLL | 2.30136 | 1.8375 | 1.25 | 0.210 |
| POPELD | 6.1595 | 0.6269 | 9.82 | 0.000 |
| CITIDEO | -0.00579 | 0.0004 | -11.76 | 0.000 |
| LEGPROF | -1.52E-06 | 5.13E-07 | -2.97 | 0.003 |
| GOVPARTY | 0.05322 | 0.0068 | 7.81 | 0.000 |
| LEGPARTY | -0.20517 | 0.0633 | -3.24 | 0.001 |
| HESTRUCT | -0.21466 | 0.0943 | -2.28 | 0.023 |
| PER2YR | 0.56027 | 0.1560 | 3.59 | 0.000 |
| PERPRIV | -0.05562 | 0.1231 | -0.45 | 0.652 |
| MEDICAID | -0.80674 | 0.1290 | -6.25 | 0.000 |
| K12EDU | 0.16830 | 0.1730 | 0.97 | 0.331 |
| Variables from separate iterations in place of LOBBY |
| LOBCHANGE | 0.00076 | 0.0005 | 1.34 | 0.182 |
| LOBFTE | -0.00004 | 0.0003 | -0.14 | 0.892 |

* Significance at the .05 level
Medicaid are crowding out spending on higher education. For every 1% increase in the share of state budget going to Medicaid, an institution would experience a .80% loss in total state support. Unemployment also had a predicted negative impact on total state support changes. A different, but not necessarily surprising, finding is that the percentage enrolled in 2-year institutions positively impacts total support changes. This suggests that as 2-year institutions flourish in relation to other levels of higher education, legislators are willing to dedicate higher increases in total support, possibly in the form of direct operating and non-operating grants. Of the remaining state characteristic variables, the population aged 65 years and older had a very strong positive effect on change in total state support, which is not in the direction hypothesized but does suggest that in this study’s sample, states with older populations may be more sympathetic to supporting higher education support increases.

Higher education structure appears to play a role in impacting changes to institutional total state support. Consolidated governing boards are associated with lower levels of appropriations and grant support when considered together. This suggests a possible link between institutions being freer to speak with their own voices to their legislature, and communicate for forms of aid that may be more possible to secure in the form of a grant than as a change to their appropriations.

Turning to political variables in the analysis, there are several variables that should be highlighted. First, governor and legislative party proportions were significant in the hypothesized direction. Democratic governors and legislatures were more sympathetic to increasing appropriations and grants compared to Republicans. This result more closely aligns with past findings of studies reflecting how Democrats may treat higher education more favorably in the budget process (McLendon, et al., 2009; Tandberg, 2008, 2010; Weerts & Ronca, 2012). The broader partisan measure of citizen ideology and the legislative professionalism variables remained significant just as in the first model for this study, but they also had very small coefficients.
The third research question in this study serves as an excellent complement to models focused purely on appropriations decisions, since institutions are supported by state government through numerous sources affected by legislatures and government agencies. The results from all three models reveal some surprising facts about political variables in models of higher education support decisions. Just as Weerts and Ronca (2012) discovered in their analysis, this study found that there are differences in how state and political characteristics affect the level of support, versus change in support over time. The result of the third model in this study found another layer of complexity, where grouping appropriations with other forms of direct support activates predictors in the model differently. This was found with respect to competing state interests, higher education governance structure, institutional characteristics, and the lining up of democratic support in a unifying way.
CHAPTER 5
CONCLUSION

This chapter will provide an overall summary of the study and its purpose, possible explanations for the results including the contribution of study findings, and recommendations for future research on the topic of lobbying and state support. For the past several decades, higher education support for states has either stagnated or slightly declined based on a measure of interest utilized by the researcher. The American Academy of Arts and Sciences (2015) detailed these declines both in terms of state budget priority and institutional needs. Higher education as a share of state general fund spending went from 14.6% in 1990 to 9.4% in 2014. Between 2000 and 2014, funding per FTE dropped almost 30%, due largely to increases in the demand for higher education. These significant changes in support warrant investigating the determinants of state budget decisions and what, if anything, institutions and advocates of public higher education can do to reverse this trend.

Ample frameworks have been designed to understand how states make decisions about higher education appropriations. McLendon and Hearn’s (2007) framework for cross-state study of political, economic, and demographic factors affecting support as well as Tandberg’s (2010b) State Fiscal Policy Framework helped shape the literature in this area. A number of authors since then have attempted to empirically examine the political side of legislating higher education, and have provided a base for comparing the usefulness of framework factors in cross-state studies (Dar, 2012; Delaney & Doyle, 2007, 2011; McLendon, et al., 2009; Tandberg, 2010a, 2013). Although these studies have tested framework-dependent and independent variables in different ways and using different analytical methods, interest group impacts on the legislative process appropriating higher education funds have received significantly less attention. In fact, outside of the use of Tandberg’s Higher Education Interest Ratio, only a handful of studies exist focusing on the role of interest groups in the higher education research literature.
The absence of studies on lobbying in higher education mostly arise from the challenges of data and design as well as a limited theoretical base. There are many measurement and design challenges related to utilizing interest group measures in state- or institution-focused research, such as little publicly available data at different levels of government as well as omitted variable bias and issues of endogeneity in decisions to lobby (de Figueiredo & Richter, 2014). The majority of the formal theory base on the role of lobbying in state politics is borne out of Olson’s (1965) Collective Action Theory, which has dominated the research agenda for much of the 20th century, focusing on the concentration of markets as a key factor in whether or not individual firms lobby and whether or not they attain results (Hojnacki et al., 2012). This study chose to more closely mimic studies that were considered by Hojnacki et al. (2012) as residing in the Empirical Theory category.

The reasons for straying from the more formal theories in lobbying research regarding market concentration entailed in Olson’s theory stem from two observations. First, the empirical evidence that concentration (number of firms) in a market guides lobbying decisions and activity is weak (Barber et. al., 2014). Second, there is a growing vein of research finding private goods attained from government by individual firm lobbying efforts (de Figueiredo & Silverman, 2006; Hedge & Sampat, 2015; Richter et al., 2009). These studies employed a direct measure of lobbying expenditures or lobbying expenditure growth to look at the returns to individual firms at attaining government benefits, and found that expenditures were in some way tied to a policy outcome such as earmarks or effective tax rates for the individual firm.

This study was not able to find a return to institutions in the form of state support based on their level of lobbying expenditures or growth of expenditures over time. Examining what de Figueiredo and Richter (2014) call the Challenges to Conducting Empirical Analysis on Lobbying, some compelling possible explanations arise for this study’s results. Omitted variable bias is a threat to all cross-state studies of policy outcomes. In the case of studying the effects of lobbying, this study did not take into
account other forms of political influence individual institutions may have to impact legislators, 
lobbying expenditures of private institutions, or the influence of competitive interests in the state that 
may outweigh lobbying by individual institutions. The issue of endogenous selection is also something 
that is difficult to avoid when utilizing measures of lobbying, since the decision to lobby is not a 
random event, but a purposeful strategy of institutions that may already understand the stakes and 
benefits to employing lobbying resources. By that same effect, other institutions may choose not to 
lobby due to already perceiving the lack of benefit from lobbying, or by knowing the outcome of state 
negotiations prior to making decisions about lobbying, calling into question the causal relationship of 
lobbying and budget outcomes.

With hypotheses of why lobbying expenditures may not be a significant force in shifting budget 
allocations explored, the next section will discuss how study findings contributed to the higher 
education literature. Future researchers will benefit from examining the new data source of state 
lobbying databases, and may attempt to continue examining individual returns to lobbying from this 
source, or combine these figures for further state-level study.

**Contribution**

This study set out to explore the relationship between lobbying expenditures and measures of 
institutional financial support from state legislatures, with a secondary objective of detailing how 
lobbying expenditures vary across institutions, and how they relate to select institutional and state 
factors explored by other authors in the higher education literature. To do this, guiding private 
foundation reports were used leading to a sub-sample of 15 states with similar lobbying disclosure 
laws. Beyond descriptive analysis of lobbying expenditure data, a multilevel model was used to analyze 
the role of lobbying expenditures in state budget decisions. The descriptive analysis provides future 
researchers with a deeper understanding of how lobbying expenditures have grown and how they are 
dispersed, while the inferential analysis provides another test of modern state fiscal frameworks.
Important results gleaned from this study’s first research question include that average lobbying expenditures vary widely across states, but have increased on average at approximately 82% in adjusted real-dollar terms just in the snapshot between 2003–2004 and 2012–2013. There is also a large divide between average spending by institutional type. Interestingly, correlation analysis discovered that there was very little correlation between lobbying expenditure levels and appropriations levels, though mediating for institution size shows a positive weak correlation between lobbying expenditures and appropriations per FTE. This supports the unsurprising hypothesis that larger, research-focused institutions lobby more, and also see bigger returns in the form of support, even if this was not found to be causally bound. One possible explanation for the lack of individual returns to lobbying found in this study could be tied to the rise in lobbying expenditures across all institutions, at all levels, over the study timeframe. It is possible that as all state institutions increase their lobbying efforts to draw the limited attention of state legislators, no individual effort ends up drawing more attention, leading to a sort of lobbying arms race among competitor institutions fighting for more of a limited higher education appropriations budget.

Following up on results discovered by Tandberg (2013), this study also examined whether or not states with consolidated governing boards had significantly different levels of lobbying expenditures. No statistically significant difference could be found between institutions under consolidated governing boards compared to other types of governing boards. These results could be due to the study’s small sample size or the imbalance of states with and without consolidated boards contributing to a lack of power in the analysis. Regardless of the outcome, further exploring Tandberg’s (2013) conclusions about interest groups and lobbying should be considered a contribution to the literature on higher education state support, even if no statistically significant relationships could be found.
This study further contributed to the higher education literature by creating a unique framework bringing in elements of past frameworks at the forefront of the literature, and performing multilevel analysis of panel data on a newer sample from the last 15 years. Utilizing similar methods to Weerts and Ronca (2012), this study found that Carnegie classification as well as a number of economic, demographic, and political variables are relevant to both appropriations levels, and appropriations change over time. Findings of interest related to political variables include that higher Republican representation in legislatures is related to lower levels of appropriations, but higher increases in yearly support. Lobbying, whether measured by overall level or percentage change from year to year, was not found significant in any model of state support. Considering the small body of research testing state fiscal frameworks, this study’s results represent a contribution to the continued testing of how politics may impact state support at the institutional level, controlling for other state factors.

A final unique contribution of this study was the approach taken to test a more encompassing measure of state support, which included state operating and non-operating grants with appropriations data. This greater measure of support diverged considerably from appropriations measures alone, judging by the only moderate level of correlation in yearly outcomes. The results of testing this dependent variable with study predictors revealed the sensitivity of this measure to competing state budget priorities such as Medicaid, where no significant relationship could be found when testing appropriations alone. IPEDS describes these grant categories as encompassing spending on research projects or other special programs. This may be a fertile ground for testing hypotheses about the value of lobbying, when looking at more politically volatile forms of direct aid to institutions compared to more stable appropriations measures.

In addition to how various state demographic or political variables interacted with total state support, the difference in coefficient for lobbying variables in the study suggests that this may be an important area for state-level research on lobbying. Just as other researchers have honed in on federal
earmarks, examining the relationship between state grant processes and lobbying efforts by institutions could produce important new research on the effects of lobbying on state policy.

Overall, the results of this study’s analyses suggest that there is significant variation within and across institutions and states with respect to state support and lobbying expenditures. Other authors such as Ness et al. (2015) have advocated for further parsing of lobbying data, and this study advanced those recommendations by utilizing the research of outside groups to derive a sample of states that could be considered most similar with respect to lobbying disclosure, then using public records searches to better organize lobbying data for analysis of trends.

**Recommendations for Future Research**

This research was chiefly interested in the effect that lobbying by institutional actors has within state systems, as well as descriptive analysis on who lobbies, how much they lobby, and how that has changed over time. It did not address other important facets of interest group research such as mobilization, modes of lobbying, or motivations and factors that lead an institution to lobby. These are important questions in the literature asked by a number of leading works in the field of political science and higher education research (de Figueiredo and Richter, 2014; Hojnacki et al., 2012; Ness, et al., 2015). Recommendations for further study below will focus on how future researchers may explore the effects of lobbying and how the design and findings of this study may aid in answering those types of questions. The recommendations break down broadly into further parsing lobbying methods as they relate to outcomes, re-examining registration and transaction data to better test the effort of institutional actors in specific circumstances, and reinventing the operationalization of a density variable created by Tandberg (2008, 2010b) to include transaction data.
Consider lobbying patterns—contract vs. in-house, or specific bill targeting.

A number of authors have explored the differences in lobbying methods through the use of surveys since the growth of higher education lobbying has been noticed. Ferrin (2003, 2005) explored characteristics and tasks of in-house lobbyists. More recently, Avery (2012) examined perceptions of how government relations offices work with respect to state legislators and institutional leaders. This sort of work has helped expand the literature on in-house lobbyist strategies and impressions on lawmakers. Ness et al. (2015) analyze the methods in which further surveys or grouping analysis could be performed to examine differences in lobbying strategies and the effectiveness of those strategies. They suggest further addressing questions regarding why institutions choose in-house lobbying versus contract lobbyists. This study observed the recordkeeping systems of 15 states with similar lobbying disclosure laws, but did not parse out the differences in types of lobbying expenditures by actor. All of these states either directly specify expenditures by actor, or have enough information (such as position of lobbyist or address of lobbyist) where a researcher could create a dataset of institutions using internal or external lobbyists. At the least, hypotheses about the amount of money institutions spend on different types of lobbyists, and how much they receive in varying forms of support could be examined using the same source of data as this study.

A second opportunity using a similar design and same dataset as this study includes examining a subset of states that specify bill targets for lobbying in addition to expenditures. Kang (2012) explores this type of research within the energy sector by combining transaction records and bill targets. De Figueiredo and Richter (2014) recommend this approach, with the obvious benefit being reduced danger of omitted variable bias, since expenditure data does not break down the target or purpose of lobbying that can usually only be inferred through theories or by directly surveying individuals within lobbying agencies. A number of the states in this analysis require specific bill target data, with a drawback being that this would be fit for a case-study approach over multiple states and would have
limited generalizability. The combination of bill target and expenditure data would also help address Ness et al. (2015) prospective research agenda for lobbying in higher education, by seeing how expenditures have been spent on different targets over time, addressing questions about how the overall lobbying landscape has changed in terms of the interests of institutions.

Related to the issue of specific bill targeting in transaction records, future research could focus on lobbying and state grant or contract processes. The findings of this study suggest that certain state grants or contracts may be more susceptible to lobbying efforts. An example of this type of research includes Hedge and Sampat (2015), who recently found significant effects of specific non-profit group lobbying on federal earmarks for science funding. Similar work could be done on higher education state grants related to research. This approach can help address issues of omitted variable bias discussed with respect to the target of lobbying expenditures being unclear when taken in the aggregate.

**Consider the relationship between registrations and expenditures.**

As de Figueiredo and Richter (2014) discuss with respect to registration data, there are significant internal validity threats to interpreting the amount of registrations as an approximation of the lobbying effort institutions put forth. This study confirmed some of the threats to using registration databases, and viewed records across each state in which registrations with no expenditures were included. This study did not notate the number of these occurrences across states, but this represents a future way researchers could substantially improve the higher education and lobbying literature. There are fundamentally two questions involved in this recommendation: How are higher education lobbying expenditures and registration records correlated across states?, and What is the incidence rate of registration records involving no resource allocation on behalf of institutions? These are important questions pertaining to the relationship between registration and transaction data, but also address
research questions raised by other authors such as Ness et al. (2015), when they ask about the size and resource base of higher education actors within a state.

**Consider a new lobbying density variable.**

Stepping back from approaches that focus on institution-level lobbying and state budget outcomes, the issue of expenditure data versus registration data deserves revisiting in the context of the wider higher education research agenda. Utilizing a statewide environmental model for lobbying efforts helps address one issue of omitted variable bias related to competing state lobbies, since all lobbying forces within a state are modeled using a variable such as the *Higher Education Interest Ratio*. With the release of disaggregated expenditure data from groups like the NIMSP, future researchers could create a new density variable using expenditure data, which more accurately reflects the resources spent (staff, communication, and events), occupying the time of legislators. A new density variable using expenditure data may be a more accurate reflection of the lobbying ecosystem, since it takes into account the intensity of lobbying efforts through more detailed records of resources.

Utilizing expenditure data in a density variable within a state-level study would still necessitate a smaller multistate study approach compared to a national 50-state study. This is due to considerations discussed by Ness et al. (2015) with regard to sampling *most similar-systems* in the context of states. The results of this study showed that there is significant variation between institutions and states over time in lobbying expenditures. That bodes well for exploring relationships between variation in state higher education lobbying efforts and state support outcomes. The next step to create such a variable would be integration of institutional lobbying expenditure data with aggregate non-higher education lobbying expenditure data available in state databases or yearly summary reports from respective state government agencies overseeing lobbying registration.
Final Thoughts

Up until very recently, little has been known about trends in higher education lobbying. Much focus has been put on state-level aggregated analysis, and only recently have third-party groups started to catalogue individual records on lobbyist clients and their resource expenditures on lobbying activities. These sorts of sources are making it easier to learn about both the methods and intensity of lobbying across the United States. Ness et al. (2015) summarize well the state of the research on higher education lobbying as having large gaps in information on activities, efforts, and impacts. This study helps to fill in some small portion of that information by codifying the efforts of individual institutions, exploring growth within institutional expenditures, and testing the possible impacts of lobbying on state support for a subset of American states. These contributions meaningfully forward the agenda set forth by previous authors in the political science and higher education literature.

The uncertainty facing US institutions of higher education related to future levels of funding, and the financial pressures placed on institutions to maintain access and quality while relying on alternative forms of revenue have made the need to study what impacts state support even more crucial. Considering lobbying efforts are one of the few decisions institutional leaders can directly control out of the many factors identified in state higher education fiscal frameworks, it is important to report on what kinds of impact these decisions have on sources of institutional support. Such a direct relationship would also help explain why lobbying expenditures have dramatically increased over just the last decade. Future survey research and multistate studies should parse the types and methods of lobbying employed by higher education institutions, and seek to measure how institutional lobbying is altering the budgetary and regulatory outcomes that matter considerably to institutional leaders and policymakers.
REFERENCES


Berry, W. D., Fording, R. C., Ringquist, E. J., Hanson, R. L., & Klarner, C. (2012). A new measure of state government ideology, and evidence that both the new measure and an old measure are valid. *State Politics & Policy Quarterly, 1532440012464877.*


Handbook of Theory and Research (pp. 151–186). Springer International Publishing. Chicago


# APPENDIX A

## LIST OF VARIABLES

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Source</th>
</tr>
</thead>
</table>

### State Economic & Demographic Context

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### Competing State Interests

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### Higher Education Demography and Governance

<table>
<thead>
<tr>
<th>Source</th>
<th>Notes</th>
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### Appendix A (cont.)

<table>
<thead>
<tr>
<th>State Political Context</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>CITIDEO</td>
<td>State Citizen Ideology (derived continuous variable) Based on Berry's (1993) derived dataset which uses interest group ratings of candidates and challengers aggregated to show overall political leanings of the state's voting population. Database maintained by Richard Fording, University of Alabama <a href="https://rcfording.wordpress.com/state-ideology-data/">https://rcfording.wordpress.com/state-ideology-data/</a></td>
</tr>
<tr>
<td>LEGPARTY</td>
<td>Percentage of the total 2-party seats held by Republicans in the state's lower and upper chambers. Indicator is the average proportion of Republicans in both chambers. Range 0-1 (Derived continuous variable) US Census Bureau. Statistical Abstract of the United States 2001-2011. The 2012 data for this variable was drawn from the NCSL state data file. <a href="http://www.ncsl.org/documents/statevote/legiscontrol_2012.pdf">State Partisan Composition Table.</a></td>
</tr>
</tbody>
</table>

### Institutional Characteristics
<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOBBY</td>
<td>Inflation Adjusted 2013 Lobbying expenditures (in dollars). Aggregated expenditures by client (Institution or System Board disaggregated to institution). Expenditures include: Compensation, Expenses, Travel, Fees, Communication costs, Gifts, Events. (Continuous variable)</td>
<td>Dataset compiled for this study. Data drawn from state websites in state lobbying databases. Appendix D outlines web addresses.</td>
</tr>
<tr>
<td>LOBCHANGE</td>
<td>Yearly percentage change in Inflation adjusted 2002-2013 Lobbying expenditures (in dollars). Aggregated expenditures by client (Institution or System Board disaggregated to institution). Expenditures include: Compensation, Expenses, Travel, Fees, Communication costs. (Derived continuous variable)</td>
<td>Dataset compiled for this study. Data drawn from state websites in state lobbying databases. Appendix D outlines web addresses.</td>
</tr>
<tr>
<td>LOBFTE</td>
<td>Inflation Adjusted 2013 Lobbying expenditures (in dollars). Aggregated expenditures by client (Institution or System Board disaggregated to institution). Expenditures include: Compensation, Expenses, Travel, Fees, Communication costs, Gifts, Events. Expenditures then divided by Institutional full-time equivalent students. (Derived continuous variable)</td>
<td>Dataset compiled for this study. Data drawn from state websites in state lobbying databases. Appendix D outlines web addresses.</td>
</tr>
</tbody>
</table>
## Appendix B

### Lobbying Law Descriptions

<table>
<thead>
<tr>
<th>State</th>
<th>Expenditure Reporting</th>
<th>Definition of Lobbying</th>
<th>Definition of Lobbyist</th>
<th>Relevant Law</th>
</tr>
</thead>
<tbody>
<tr>
<td>AZ</td>
<td>Public body: Itemized list of all single expenditures, whether or not the expenditures were made in the course of lobbying. Shall be itemized separately, include date, amount, name of member of legislature receiving or benefiting, category of expenditure and name of the designated public lobbyist or authorized public lobbyist who made the expenditure on behalf of the public body. Aggregate amount of all expenditures less than $20 benefiting a member of the legislature. All expenditures attributable to lobbying made for the personal sustenance, filing fee, legal fees, employees' compensation, meals, lodging and travel of the public lobbyist.</td>
<td>Attempting to influence the passage or defeat of any legislation by directly communicating with any legislator, or attempting to influence any formal rule making proceeding pursuant to chapter 6 of this title or rule making proceedings that are exempt from chapter 6 of this title by directly communicating with any state officer or employee.</td>
<td>2. &quot;Authorized public lobbyist&quot; means a person, other than a designated public lobbyist, who is employed by, retained by or representing a public body, with or without compensation, for the purpose of lobbying and who is listed as an authorized public lobbyist by the public body in its registration pursuant to section 41-1232.01. 3. &quot;Designated lobbyist&quot; means the person who is designated by a principal as the single point of contact for the principal and who is listed as the designated lobbyist by the principal in its registration pursuant to section 41-1232. 4. &quot;Designated public lobbyist&quot; means the person who is designated by a public body as the single point of contact for the public body and who is listed as the designated public lobbyist by the public body in its registration pursuant to section 41-1232.01.</td>
<td>Arizona Code Chapter 7, Legislature; Article 8.1; Registration and Regulation of Lobbyists; 41-1231. Definitions; 41-1232.04, Registration, exemptions. AZ 41-1232.02 41-1232.03</td>
</tr>
<tr>
<td>CA</td>
<td>Activity expenses include gifts, honorariums, consulting fees, salaries and any other compensation except campaign contributions. Whenever activity expenses are reportable, include the date, amount or value of each, the full name and position of the beneficiary and the payee, if someone else.</td>
<td>Any individual who receives two thousand dollars ($2,000) or more in economic consideration in a calendar month, other than reimbursement for reasonable travel expenses, or whose principal duties as an employee are, to communicate directly or through his or her agents with any elective state official, agency official, or legislative official for the purpose of influencing legislative or administrative action.</td>
<td>California Code. Government Code Section 82039. Gov't Code 86111-86116.5</td>
<td></td>
</tr>
</tbody>
</table>
**CO**

(2). The secretary of state shall prescribe the form for such disclosure statement, which shall include:
(1) The legislation on which lobbying is being performed;
(II) Any expenditure of public funds used for lobbying and the amount thereof;
(III) An estimate of the time spent on lobbying or preparation thereof by any state official or employee named in the registration statement or any other employee of the principal department.

**IA**

Information on all salaries, fees, retainers, and reimbursement of expenses paid by the lobbyist’s client to the lobbyist for lobbying purposes during the preceding twelve calendar months, concluding on June 30 of each year. The amount reported to the general assembly shall include the total amount of all salaries, fees, retainers, and reimbursement of expenses paid to a lobbyist for lobbying both the legislative and executive branches.

[Included in Lobbyist definition]

<table>
<thead>
<tr>
<th>Colorado Statute 24-6-301, 24-6-301 - 303.5</th>
<th>207x259</th>
<th>68B.38 Joint Rule 4; Iowa Code s 68B.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td>Expenditure reporting</td>
<td>Definition of Lobbying</td>
</tr>
<tr>
<td>-------</td>
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</tr>
<tr>
<td>KY</td>
<td>Employers: Total lobbying expenditures. Itemized list of amounts spent for receptions or other events, date, location, name of the group of public servants invited. Itemized list of other amounts spent for lobbying, including food and lodging, reimbursements to public officials; not including personal expenses. Cumulative compensation paid to legislative agents, prorated to reflect the time they were engaged in lobbying during the period.</td>
<td>to promote, advocate, or oppose the passage, modification, defeat, or executive approval or veto of any legislation by direct communication with any member of the General Assembly, the Governor, the secretary of any cabinet listed in KRS 12.250, or any member of the staff of any of the officials listed in this paragraph.</td>
</tr>
<tr>
<td>MI</td>
<td>Required categories are as follows: food and beverage for public officials that exceeds $25/day or $150/year (include recipient name and amount. for large receptions, list total amount, rather than prorated per attendee); advertising and mass mailings; other expenditures of more than $5. Must provide an account of every financial transaction during the immediately preceding reporting period between the lobbyist or lobbyist agent, or a person acting on behalf of the lobbyist or lobbyist agent, and a public official or a member of the public official's immediate family, or a business with which the individual is associated.</td>
<td>communicating directly with an official in the executive branch of state government or an official in the legislative branch of state government for the purpose of influencing legislative or administrative action.</td>
</tr>
<tr>
<td>Payments to lobbyists, whether salary, fee, reimbursement, other expenses at request of lobbyist; payments for those portions of office rent, utilities, supplies, support personnel attributable to lobbying activities; payments incurred soliciting or urging others to communicate with officials when at the request of the client; purchase, payment, distribution, loan, forgiveness of a loan or payment of a loan by a third party, advance, deposit, transfer of funds, a promise to make a payment, or a gift of money or anything of value for any purpose.</td>
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<tr>
<td>LOBBYIST’S CLIENT means the person in whose behalf the lobbyist influences or attempts to influence legislative or executive action.</td>
<td></td>
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</tr>
<tr>
<td>(i) Influencing or attempting to influence legislative or executive action through oral or written communication; or (ii) Solicitation of others to influence legislative or executive action; or (iii) Paying or promising to pay anything of value directly or indirectly related to legislative or executive action.</td>
<td></td>
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<tr>
<td>The application shall be on a form prescribed by the clerk and approved by the Executive Board of the Legislative Council, and shall include as a minimum the following: (1) The name, permanent residence address, and office address of the lobbyist; (2) The name and address of the principal of such lobbyist; (3) The nature of the business of such principal and the amounts or sums given or to be given the lobbyist as compensation or reimbursement for lobbying. A lobbyist who is salaried or retained by a principal need only report that portion of compensation or reimbursement reasonably attributable to lobbying; a person who is authorized to lobby on behalf of a principal and includes an officer, agent, attorney, or employee of the principal whose regular duties include lobbying.</td>
<td></td>
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</tr>
<tr>
<td>NE The practice of promoting or opposing for another person, as defined in section 49-1438, the introduction or enactment of legislation or resolutions before the Legislature or the committees or the members thereof, and shall include the practice of promoting or opposing executive approval of legislation or resolutions.</td>
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<tr>
<td>Mississippi Code Section 5-8-3, 5-8-9, 5-8-11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Nebraska Political Accountability and Disclosure Act (Neb. Rev. Stat. §49-1433-34, Lobbying, defined; 49-1434. Principal, lobbyist, defined)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>State</td>
<td>Expenditure reporting</td>
<td>Definition of Lobbying</td>
</tr>
<tr>
<td>-------</td>
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</tr>
<tr>
<td>NJ</td>
<td>Expenditures relating to communication with, or providing benefits to, a legislator, legislative staff, the Governor, the Governor’s staff, an officer or staff member of the Executive Branch, or communication with the general public, in these categories: media, including advertising; entertainment; food and beverage; travel and lodging; honoraria; loans; gifts; and salary, fees, allowances or other compensation paid to an agent.</td>
<td>to make any attempt, whether successful or not, to assist a represented entity or group to engage in communication with, or to secure information from, an officer or staff member of the Executive Branch, or any authority, board, commission or other agency or instrumentality in or of a principal department of the Executive Branch of State Government, empowered by law to administer a governmental process or perform other functions that relate to such processes.</td>
</tr>
<tr>
<td>NY</td>
<td>Compensation paid or owed to the lobbyist, and any lobbying expenses, to be listed in the aggregate if $75 or less and individually if more than $75. For items listed individually, disclose the amount, recipient and purpose. Expenses not to include: personal sustenance; lodging and travel disbursements of such lobbyist, printing and mailing less than $500. Expenses paid or incurred for salaries other than that of the lobbyist shall be listed in the aggregate.</td>
<td>any attempt to influence: (i) the passage or defeat of any legislation or resolution by either house of the state legislature including but not limited to the introduction or intended introduction of such legislation or resolution or approval or disapproval of any legislation by the governor</td>
</tr>
<tr>
<td>OR</td>
<td>Lobbyist employers: Total amount of money spent for lobbying activities on the lobbyist’s behalf, excluding living and travel expenses. Name of any legislative or executive official to whom or for whose benefit, on any one occasion, an expenditure in excess of $25 for the purpose of lobbying is made by the person, but not including expenses lobbyists reported on their expense reports; date, name of payee, purpose influencing, or attempting to influence, legislative action through oral or written communication with legislative officials, solicitation of executive officials or other persons to influence or attempt to influence legislative action or attempting to obtain the good will of legislative officials.</td>
<td>(a) Any individual who agrees to provide personal services for money or any other consideration for the purpose of lobbying. (b) Any person not otherwise subject to paragraph (a) of this subsection who provides personal services as a representative of a corporation, association, organization or other group, for the purpose of lobbying. (c) Any public official who lobbies.</td>
</tr>
</tbody>
</table>
An expense report required under this section shall be filed when total expenses for lobbying exceed $2,500 for a registered principal in a reporting period. In a reporting period in which total expenses are $2,500 or less, a statement to that effect shall be filed.

An effort to influence legislative action or administrative action in this Commonwealth. The term includes: (1) direct or indirect communication; (2) office expenses; and (3) providing any gift, hospitality, transportation or lodging to a State official or employee for the purpose of advancing the interest of the lobbyist or principal.

Any individual, association, corporation, partnership, business trust or business trust or other entity that engages in lobbying on behalf of a principal for economic consideration. The term includes an attorney at law while engaged in lobbying.

### Appendix B (cont.)

<table>
<thead>
<tr>
<th>State</th>
<th>Expenditure reporting</th>
<th>Definition of Lobbying</th>
<th>Definition of Lobbyist</th>
<th>Relevant Law</th>
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</thead>
<tbody>
<tr>
<td>PA</td>
<td>Sources, amounts of lobbyist’s income or amounts and recipients of all lobbying compensation the principal paid. Itemized totals of all amounts spent in the performance of lobbying, segregated by: office expenses, rent, utilities, supplies, and compensation of support personnel; expenditures reimbursed by the principal. Name of each member of the judiciary on whose behalf a lobbyist initiated or made expenditures and an itemized account of the amount expended by the lobbyist for each member of the judiciary.</td>
<td>attempting to influence the passage or defeat of any legislation by the legislature of the state of Washington, or the adoption or rejection of any rule, standard, rate, or other legislative enactment of any state agency under the state Administrative Procedure Act, chapter 34.05 RCW. Neither &quot;lobby&quot; nor &quot;lobbying&quot; includes an association's or other organization's act of communicating with the members of that association or organization.</td>
<td>any person who is employed, appointed, or retained, with or without compensation, by another person to influence by direct communication with public officials or public employees: (i) the action or vote of any member of the General Assembly, the Governor, the Lieutenant Governor, or any other statewide constitutional officer concerning any legislation; (ii) the vote of any public official on any state agency, board, or commission concerning any covered agency actions; or (iii) the action of the Governor or any member of his executive staff concerning any covered gubernatorial actions.</td>
<td>South Carolina Code 2-17-10; 2-17-30 2-17-35 2-17-40</td>
</tr>
<tr>
<td>SC</td>
<td>(6) In lieu of reporting under subsection (5) of this section any county, city, town, municipal corporation, quasi municipal corporation, or special purpose district may determine and so notify the public disclosure commission, that elected officials, officers, or employees who on behalf of any such local agency engage in lobbying reportable under subsection (5) of this section shall register and report such reportable lobbying in the same manner as a lobbyist who is required to register and report under RCW 42.17.150 42.17A.005</td>
<td></td>
<td></td>
<td>Chapter 42.17 RCW Dispositions DISCLOSURE — CAMPAIGN FINANCES — LOBBYING — RECORDS RCW 42.17A.005</td>
</tr>
</tbody>
</table>
and 42.17.170. Each such local agency shall report as a lobbyist employer pursuant to RCW 42.17.180.

Aggregate total lobbying expenditures made by principal and all lobbyists employed, excluding expenses for clerical support. Include compensation and reimbursements to lobbyists. Include expenses incurred while preparing to perform lobbying services, if research conducted is less than 3 years old. Include, if over $500, advertising campaigns or costs of other efforts to urge the general public to attempt to influence legislative or administrative action. Names, addresses of lobbyists who made or incurred more than $200 in lobbying expenses during the period, amount. If lobbyist is an employee, officer or director of the principal, include expenses for office space, utilities and employees used in preparing lobbying communications.

the practice of attempting to influence legislative or administrative action by oral or written communication with any elective state official, agency official or legislative employee, and includes time spent in preparation for such communication and appearances at public hearings or meetings or service on a committee in which such preparation or communication occurs.

an individual who is employed by a principal, or contracts for or receives economic consideration, other than reimbursement for actual expenses, from a principal and whose duties include lobbying on behalf of the principal. If an individual's duties on behalf of a principal are not limited exclusively to lobbying, the individual is a lobbyist only if he or she makes lobbying communications on each of at least 5 days within a reporting period.

Wisconsin Statutes

Chapter 13, Subchapter III of Ch. 13

13.62; 13.68
# APPENDIX C

**LOYBING DISCLOSURE LAW MINIMUMS AND EXEMPTIONS**

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<tr>
<th>State</th>
<th>Minimum Disclosure Amount</th>
<th>Expenditure Types Disclosed</th>
<th>Exemptions or Restrictions</th>
<th>Relevant Statute for Lobbying</th>
</tr>
</thead>
<tbody>
<tr>
<td>AZ</td>
<td>No Minimum</td>
<td>Employee Compensation,</td>
<td>None</td>
<td>AZ Rev Stat § 41-1232.01 (2015)</td>
</tr>
<tr>
<td>CA</td>
<td>Employer filing more than $5,000 in a quarter, or Lobbyist receiving more than $2,000 in a calendar month for lobbying.</td>
<td>Non-state Employee compensation, Expenses: Travel, Personal sustenance, Public Communications expenses, Gifts.</td>
<td>Only a designated official representing &quot;the official position of the agency&quot; may lobby.</td>
<td>Colorado Statute 24-6-301 (2015) Colorado Statute 24-6-303.5 (2015)</td>
</tr>
<tr>
<td>IA</td>
<td>No Minimum</td>
<td>Employee Compensation, Expenses: Fees, Retainers, and all other Reimbursements.</td>
<td>Only a designated official representing &quot;the official position of the agency&quot; may lobby.</td>
<td>KY Code 6.821 (2015)</td>
</tr>
<tr>
<td>MI</td>
<td>Lobbying expenditures equaling $10 or more.</td>
<td>Employee Compensation, Expenses: All lobbying related activities as well as Gifts, Advertising and Media costs.</td>
<td>None</td>
<td>MI Comp L § 4.417 (2014)</td>
</tr>
<tr>
<td>MS</td>
<td>Lobbying equal to $200 or less in a calendar year.</td>
<td>Employee Compensation, Expenses: Fees, Personal expenditures, Direct communication costs, and gifts.</td>
<td>None</td>
<td>MS Code § 5-8-7 (2014) MS Code § 5-8-9 (2014)</td>
</tr>
<tr>
<td>NE</td>
<td>Lobbying equal to $100 in any calendar month</td>
<td>Employee Compensation, Expenses: Miscellaneous, Entertainment, including food and drink, Lodging, Travel, Lobbyist personal expenses, Admissions to state-owned facilities or state-sponsored industry or events, and extraordinary office expenses.</td>
<td>None</td>
<td>NE Code § 49-1434(a) (2014) NE Code § 49-1483 (2014)</td>
</tr>
<tr>
<td>State</td>
<td>Minimum Compensation/Expenses</td>
<td>Employee Compensation and Expenses</td>
<td>Statutes/Source</td>
<td></td>
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<tr>
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<tr>
<td>NY</td>
<td>$5,000 or more in compensation and expenses in a given year by any client</td>
<td>Personal sustenance; lodging and travel disbursements of such lobbyist, printing and mailing if total is more than $500. All expenses listed in the aggregate if $75 or less and individually if more than $75.</td>
<td>NY Legis L § 1-A (2014), NY Legis L § 1-H (2014)</td>
<td></td>
</tr>
<tr>
<td>PA</td>
<td>Over $2,500 per year by client.</td>
<td>Office costs, personnel, gifts, hospitality, transportation and lodging, and any other lobbying costs.</td>
<td>65 PA Cons Stat § 13A06 (2014), 65 PA Cons Stat § 13A05 (2014)</td>
<td></td>
</tr>
<tr>
<td>SC</td>
<td>No Minimum</td>
<td>Total expenditures covering all categories within Lobbying Law</td>
<td>SC Lobbying Law Section 2-17-5 (2016)</td>
<td></td>
</tr>
<tr>
<td>WA</td>
<td>Threshold set for some categories, $50 for gifts.</td>
<td>Employee Compensation as measured by proportion of salary spent lobbying; Expenses: Including but not limited to travel, consultant or other special contractual services, brochures and other publications.</td>
<td>WA Rev Code § 42.17A.635 (2014)</td>
<td></td>
</tr>
<tr>
<td>WI</td>
<td>Threshold set at over $500 per year in expense by principal</td>
<td>Total expenditures covering all categories within Lobbying Law</td>
<td>WI Code 13.68 (2016)</td>
<td></td>
</tr>
<tr>
<td>State</td>
<td>Retrieval Tool</td>
<td>Retrieval location</td>
<td>Responsible Agency</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>AZ</td>
<td>Online Database (Principal Search)</td>
<td><a href="http://apps.azsos.gov/scripts/Lobbyist_Search.dll">http://apps.azsos.gov/scripts/Lobbyist_Search.dll</a></td>
<td>Secretary of State</td>
<td></td>
</tr>
<tr>
<td>CA</td>
<td>CAL Access Database (Principal Search)</td>
<td><a href="http://cal-access.sos.ca.gov/lobbying/">http://cal-access.sos.ca.gov/lobbying/</a></td>
<td>Secretary of State</td>
<td></td>
</tr>
<tr>
<td>CO</td>
<td>Online Database (Principal Search)</td>
<td><a href="https://www.sos.state.co.us/lobby/Home.do">https://www.sos.state.co.us/lobby/Home.do</a></td>
<td>Secretary of State</td>
<td></td>
</tr>
<tr>
<td>IA</td>
<td>Online Database (Principal Search)</td>
<td><a href="https://www.legis.iowa.gov/lobbyist">https://www.legis.iowa.gov/lobbyist</a></td>
<td>Iowa Legislature</td>
<td></td>
</tr>
<tr>
<td>KY</td>
<td>Online Database (Registered Employer Search)</td>
<td><a href="http://apps.klec.ky.gov/searchregister.asp">http://apps.klec.ky.gov/searchregister.asp</a></td>
<td>Legislative Ethics Commission</td>
<td></td>
</tr>
<tr>
<td>MI</td>
<td>Online Database (Lobbyist Search)</td>
<td><a href="http://www.michigan.gov/sos/0,4670,7-127-1633_11945---,00.html">http://www.michigan.gov/sos/0,4670,7-127-1633_11945---,00.html</a></td>
<td>Secretary of State</td>
<td></td>
</tr>
<tr>
<td>MS</td>
<td>Online Database (Client Search)</td>
<td><a href="http://sos.ms.gov/elec/portal/mssel2/page/search/portal.aspx">http://sos.ms.gov/elec/portal/mssel2/page/search/portal.aspx</a></td>
<td>Secretary of State</td>
<td></td>
</tr>
<tr>
<td>NE</td>
<td>Online Database (Principal Search)</td>
<td><a href="http://nebraskalegislature.gov/lobbyist/view.php">http://nebraskalegislature.gov/lobbyist/view.php</a></td>
<td>Nebraska Legislature</td>
<td></td>
</tr>
<tr>
<td>NJ</td>
<td>Summary Data Forms from Annual Financial Reports</td>
<td><a href="http://www.elec.state.nj.us/publicinformation/lobby_statistics_archive.htm">http://www.elec.state.nj.us/publicinformation/lobby_statistics_archive.htm</a></td>
<td>Election Law Enforcement Commission</td>
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<td>NY</td>
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<td><a href="https://onlineapps.jcope.ny.gov/LobbyWatch/Menu_reports_public.aspx">https://onlineapps.jcope.ny.gov/LobbyWatch/Menu_reports_public.aspx</a></td>
<td>Joint Commission on Public Ethics</td>
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<td><a href="https://www.palobbyingservices.state.pa.us/Public/wfSearch.aspx">https://www.palobbyingservices.state.pa.us/Public/wfSearch.aspx</a></td>
<td>Department of State</td>
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<td><a href="http://apps.sc.gov/LobbyingActivity/LAIndex.aspx">http://apps.sc.gov/LobbyingActivity/LAIndex.aspx</a></td>
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<td>Wisconsin Ethics Commission</td>
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