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ABSTRACT

This study sought to identify factors that explained variations in state support for higher education during the 1990s, particularly in view of declining federal support and greater pressure on states to fund other programs. The literature points to a complex array of factors that shape state budgets for colleges and universities. These include: economic and demographic factors (per capita taxes/income, population, unemployment rate, number of college age residents, number of public and private universities, and per capita expenditures on education, health care, and corrections); political influences; the governance structure; state culture and educational policy; and institutional characteristics and strategies (total full-time enrollment, tuition and fees, and campus expenditures on instruction, research, and public service). Fifty-nine public research I universities were sampled. Cross-case and multiple regression analysis mutually supported three main factors to explain the differences in unrestricted state support for research universities: (1) campus commitment to outreach and public service; (2) strength of the higher education governance system with a single governance system more likely to receive higher assistance than those with coordinating board systems; and (3) extent of gubernatorial and legislative support. Appended are a list of the institutions, data sources, statistical tables, and the interview protocol. (Contains 40 references.) (RH)

Understanding Differences in State Support for Higher Education: A Comparative Study of State Appropriations for Research I Universities

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The relationship between states and public colleges and universities is symbiotic: each depends on the other for survival. State governments play a critical role in financing higher education, while higher education institutions educate state residents and improve local economies. But most would concede that this relationship has been strained in recent years. A common measure pointing to this erosion between the state-university partnership is seen in the drastic cuts in appropriations for higher education during the past two decades. Historically, state appropriations have been, and continue to be, the most important source of funds for all higher education (Gold, 1990). But adjusting for inflation, appropriations for post-secondary education have plummeted by more than 32 percent since 1979 (Mortenson, 1997).

During the last two decades, the sources of higher education funding have shifted away from state appropriations toward private grants, gifts, student tuition and fees. Trend data from the University of Wisconsin (UW) System provides an example of how the landscape of higher education financing is changing dramatically. In the FY 1973-74, Wisconsin general purpose revenue (GPR) accounted for 52 percent of funding for the UW system budget, while gifts, grants, and trust funds supplied 35 percent of the budget. Tuition and fees covered the remaining 13 percent of UW System expenses during that period. Today, the sources of higher education funding in Wisconsin look much different. In FY 1998-99, Wisconsin GPR accounted for only 33 percent of UW System expenses, whereas gifts, grants, and trust funds covered 50 percent. These statistics

reveal that the primary burden of the expenses has virtually flip-flopped between the state and private or other sources. While not as dramatic, tuition and fees have also absorbed more of the costs at 17 percent in FY 1998-99 as opposed to 13 percent in FY 1973-74 (UW System Administration, 1999.)

State appropriations for the University of Wisconsin-Madison campus have similarly declined. In 1985-86, state support totaled 32.4 percent of the University's operating budget. In 1996-97, this support fell to 23.3 percent. It was during this fiscal year, that total state dollars allocated to UW-Madison fell below the previous year's figure. The cut marked the only time this has happened in the history of the institution. Again, private sources and rising tuition have picked up the budget shortfall at the Madison campus. Fundraising has especially emerged as a high priority, as gifts to the UW Foundation exceeded $108 million in 1998—a record year for the nonprofit corporation (University of Wisconsin Foundation, 1999).

There are many factors that explain the nation-wide decline in state support for public colleges and universities, but most place the majority of the blame on the economic recession of the early 1980s and 1990s (Mortenson, 1997). Specifically, two major cuts between FY 1980-83 and FY 1990-94 contributed heavily to the slide in support for higher education. The drop during the 1990-91 fiscal year was especially formidable. During that period, 30 states cut their higher education budgets in the middle of the budget cycle—and for the first time in 33 years, the 1991-92 state budgets allotted less money to higher education than for the previous year (Schuh, 1993).

Drops in state support for discretionary programs such as higher education have also been attributed to a conservative shift in the federal government's role. During the

last ten years, the federal government has transferred partial or full responsibility for many programs to the state and local level. This shift in philosophy known as "new federalism" has resulted in steep cuts in federal and state aid for municipal and county governments (Peterson, 1995). Not surprisingly, this shift has resulted in a significant squeeze in higher education appropriations for most states. The funding pinch occurs because public universities are forced to more intensely compete for dollars with other state programs such as Medicaid, K-12 schools, social services, and corrections. Coupled with a struggling economy, this increased competition for resources accounts for the major reductions in higher education funding during the early-mid 1990s (Schuh, 1993).

If present trends continue, some analysts forecast a doomsday scenario for public higher education. A study conducted by a subsidiary of the RAND policy and research institute suggests that the monetary difficulties of colleges and universities, once thought to be temporary, are part of long-term trends in the demand for enrollment and the supply of funding. The reason is that demand has increased sevenfold since World War II and is expected to continue growing over the next two decades. At the same time, operating costs have escalated and public-sector financial support has flattened (Commission on National Investment in Higher Education, 1997).

The study further suggests that the current trend in funding and the costs of higher education will mean a quadruple deficit in operating expenses for the nation's colleges and universities by 2015. Assuming tuition increases no faster than inflation, higher education in the U.S. will fall $38 billion short of the annual budget they need to educate the student population expected in 2015 (Commission on National Investment in Higher Education, 1997).

While these long-term concerns prevail, it is important to note that some higher education institutions have enjoyed a recent boost in state appropriations thanks to a mid-1990s boom in the economy. The economy, which continues to be strong through 1999, is credited with promoting increases in many state university budgets over the past three years. An important statistic is that state appropriations for higher education increased an average of 9 percent during the 1996-97 fiscal year (Strang, Funk, & Onofrio, 1997). The 1997-98 fiscal year showed similar growth, increasing higher education appropriations by 8 percent across the country (Grapevine, 1998).

But while the statistics reveal a national trend to revive, or at least sustain state support for higher education, there is a marked distinction between states during this period. While the majority of states have increased their support for higher education during the late 1990s, others have not made the same investment. For example, during FY 1996-97, six states actually decreased funding for higher education, whereas the others increased appropriations for their public colleges and universities.

The previous discussion suggests that state support for higher education has been widely unstable during the past two decades and looks to be even shakier in the future. As the UW-Madison example demonstrates, the current relationship between state governments and the major public research campuses is especially tentative. New terms used to describe this relationship make this point. For example, many public research universities, including the University of Virginia, University of Michigan, and University of Wisconsin-Madison are now regarded as "state-assisted" as opposed to "state-supported" institutions (Ward, April 26, 1997). The switch from the label "supported" to "assisted" not only demonstrates these states' lessened financial commitment, but also

suggests a significant shift in philosophy—that public research universities may not be wholly linked to their states as they once were.

This shift has had a strong effect on ways in which public institutions aim to compete and survive in the higher education marketplace. As already mentioned, one clear strategy is that public universities have concentrated more heavily on obtaining program revenue and private sources to maintain the quality of their academic programs in the absence of state dollars (Ward, April 26, 1997). In addition, many universities have turned to tightening enrollments and significantly increasing tuition as a way to remain competitive (Serban & Burke, 1998).

But many argue that the financial crisis is only one piece of the concern. The other is the drastic change in philosophy—that public research universities are beginning to look more like private research universities. Put simply, some fear that the public mission of the state research university is increasingly compromised and dwindling in importance. Land grant institutions in particular are viewed as losing their identity. A recent column written in the Madison Capital Times summed up one writer's concerns, "...our land grant system has largely been captured and derailed from its mission. Its publicly owned research facilities have become a sweet opportunity for those able to pay researchers and their graduate students—catering to large corporations or national research funders whose agenda mirrors theirs," (Krome, 1999).

The National Association for State Universities and Land Grant Colleges (NASULGC) is addressing these issues through the work of the *Kellogg Commission on the 21st Century State and the Future of the Land Grant University*. Established in January 1996 with a grant from the Kellogg Foundation, the panel of university

presidents is re-evaluating the way in which public universities interact with their states. The Commission has considered the funding crisis that faces public research universities and has begun to address the impending critical question—how the downward trend in support will affect an institution's ability to effectively fulfill its public mission and what institutions might do to regain financial and public support (NASULGC, 1996).

The study of state support for higher education is important because it addresses two critical issues: the survival of the public university and institutional commitment to the public university mission. As the introduction suggests, colleges and universities should be concerned about the future of state support and what it means for their prospect of long-term viability. While current economic conditions have resulted in healthier budgets in recent years, the issue remains fundamental in the face of unforeseen changes in the market. The point is that long-term solutions must be formulated to encourage a healthier funding stream between states and public colleges and universities.

The second point is inextricably linked to the first. The argument is that public universities have a duty to reconnect with their states and will only earn the support of government officials if they successfully do so. Regaining state support relies on the integrity of institutions to return to their roots. National Association for State University and Land Grant College (NASULGC) President Peter Magrath sums up this point, "Public universities must be financially stable and enjoy public confidence in order to perform their vital mission as the intellectual and educational service centers for America in the 21st century. But to earn this support, they must examine themselves... and then change and reform to better serve society" (Magrath, 1996). In sum, higher education institutions need the support of their states to survive, and an institution's commitment to

its public role should be of paramount concern as it looks to strengthen its relationship with its state.

Purpose of the Study

The purpose of this study is to identify and more deeply understand the factors that best explain variations in state support for public research universities during the last decade. In broad strokes, this study seeks to understand important contextual differences that exist between states and institutions varying significantly in their support or receipt of higher education appropriations. An important goal of the analysis is to provide clues about those factors that promote strong funding streams between states and public universities. These clues would greatly benefit scholars, campus administrators, and policy-makers as they wrestle with identifying and understanding critical elements involved in planning for the future of state-supported higher education.

Anchored in this rationale, this study poses the underlying question: "What factors best explain the variation in state support for public research universities during the 1990s?" To that end, this study aims to accomplish three objectives: 1) to identify those factors which are the best predictors of state support for public universities. 2) to identify states that vary in their support of public higher education as a way to explore critical reasons behind their variations in appropriations. 3) to learn about differences in institutional practices in states that vary in their support of higher education.

Conceptual Framework: Factors that Influence State Support for Higher Education

The literature points out that a complex array of factors play an important role in

shaping state budgets for colleges and universities. These critical elements comprise this study's conceptual framework. As will be discussed in the methodology section, these factors are used to set up the regression analysis employed in this study. These elements include economic and demographic factors, political influences, the governance structure of higher education, state culture and educational policy, and institutional characteristics and strategies. Following a discussion of each family of factors, the conceptual framework is presented graphically in Figure 1.

Economic and Demographic Variables

The forecast or status of a state's economy significantly affects the rate of higher education funding in a particular state. Specifically, the unemployment rate, per capita income rate, availability of state revenues, and tax capacity help to determine the level at which the state will fund its public universities. Put simply, the overall wealth of a state is an important factor in determining the level of support for support for higher education (Layzell & Lyddon,1990).

In addition, the composition of the population in a state is a factor that influences levels of appropriations for colleges and universities. Changes in the overall population of the state. percentage of the population that are college age (18-24), and enrollment or participation rates are varying conditions that adjust the level of higher education funding over time (Layzell & Lyddon,1990). Demographic information is critical when planning for the future of higher education and education in general. Demographic trend data can provide rational arguments for where states should invest in education in the future and is

sometimes used as a means to gain political support for certain types of programs (Blumenstyk, 1988).

Evidence of the power of economic and demographic factors as determinants of higher education appropriations is seen in the fact that support for higher education varied considerably among populous and wealthy regions during the mid-1980s. During that period, West Coast and New England states enjoyed a more prosperous economy, resulting in greater appropriations for higher education. Also, support for higher education increased in the sun-belt states due to a surge in population growth in these areas. In contrast, the Midwest experienced an "out-migration" of residents, and some states, such as Ohio and Indiana, struggled to make the transition from an industrial to service economy. These factors explained much of the variation in state higher education funding during that period (Layzell & Lyddon,1990).

Beyond issues of state wealth and population, the relationship between higher education and economic growth is known to be important. Linking higher education to economic goals positively affects the level of higher education funding in a particular state primarily because investing in universities is considered one means of improving the economic health of a state. During the late 1980s, states with large increases in appropriations for higher education explicitly linked higher education with economic development. These states invested more heavily in higher education because it was considered a means to improve tax capacity (Hines, Hickrod, & Pruyne, 1989).

Political Factors

The legislature and governor are the ultimate players in the budget creation

process and set the stage for the public investment in higher education. Because of variations in constitutional power among states, one can not make general assumptions about the power of governors across the county. However, it is clear that the governor's role in higher education has become extremely important in the last two decades. It was during the 1980s that governors emerged as visible, active policy makers with significant influence on postsecondary education. In fact, some scholars suggest that they have become the single most important player in higher education in many states (Hines, 1988). And in recent years, governors have become more vocal than ever about their agenda and role in planning for higher education. In a 1998 survey conducted by the Education Commission on the States, governors viewed themselves as bearing the primary responsibility for bringing about needed changes in the direction of state-college systems (Schmidt, 1998).

While the role of governors has evolved, so too have state legislatures. Since the 1950s, legislators have become more active and informed on all issues including higher education (Hines, 1988). In a recent survey by the National Education Association (NEA), state legislators regarded themselves and more "action-oriented" than their predecessors when it came to higher education (Ruppurt, 1997). But at the same time, legislators of both parties express concerns about the adverse effect of tax reform and other cost cutting measures on the state's investment in higher education. In addition, other state priorities have taken precedent during the 1990s. For instance, state governments have taken a tougher stance on crime which has inadvertently resulted in diminishing support for discretionary programs including higher education. A clear example is in California. During the early 1990s higher education funding in that State

declined by 25 percent while corrections grew by the same amount. Beyond prisons, property tax relief has become an important issue with many states shouldering more responsibility for funding elementary and secondary education. Furthermore, Medicaid costs have surpassed higher education as the second largest outlay for state budgets (Ruppurt, 1997).

As was mentioned, the impact of federal deregulation has had far-reaching ramifications for state lawmakers and their subsequent support for higher education (Schuh, 1993). For example, California's Medicaid program grew at double-digit rates during the early 1990s, in part because the federal government was asking California, and other states, to expand the number of services covered by the program (Peterson, 1995). The result was less support for higher education. Because of the shift towards federal deregulation, legislators are addressing a far wider range and complex set of issues than ever before (Ruppurt, 1997). This has, of course, had important effects on legislative attention to higher education.

Higher Education Governance

Differences in higher education governance and authority are important to consider when discussing state support for higher education. Two authority structures dominate at this time: governing boards and coordinating boards (MacTaggart, 1996). Governing boards, such as the University of Wisconsin Board of Regents, have authority not found in coordinating boards in three main areas: authority over how individual campuses are governed, authority over the internal affairs of campuses, and authority over how campus budgets are carried out. Coordinating boards, such as the Ohio Board

of Regents, do not govern institutions, rather they focus on state and system needs and priorities. Essentially, these boards aim to plan for state postsecondary education as a whole but do not have authority over the campuses (McGuinness, 1997).

A disadvantage of governing boards is that they are often seen as being more closely aligned with the campuses than with state officials—this may not ingratiate governing boards with governors and legislators. However, they have better control over institutional matters which is argued to be best handled by a more hierarchical structure (Hines, 1988). Coordinating boards, on the other hand, have a weaker but broader scope of authority than governing boards. They are said to relate better to legislators and the private sector and tend not to get as engulfed in campus matters as their governing board counterpart. One disadvantage however is the board's lack of influence over a campus results in campus governing boards and president acting on their own in inappropriate times—sometimes showing little concern for the coordinating board or other institutions in the state (Hines, 1988). These "end-runs" may place strain on relationships and cause instability in funding streams among institutions.

At present 23 of the 50 states are run by consolidated governing boards, and 21 states operate coordinating regulatory boards. Six states and Washington D.C. use a planning agency to direct the activities of the institutions. These agencies have little authority beyond a voluntary planning and convening role to ensure good communications among institutions and sectors (McGuinness, 1997).

State Culture

In broad strokes, historical, religious, social, and ethnic values define a states overall culture and views toward supporting higher education (Marshall, Mitchell, & Wirt, 1989). Wisconsin provides a compelling example of how history and tradition provided the deep commitment for higher education in this particular state. As the first act of the legislature, the Wisconsin forefathers clearly set the stage for a strong University of Wisconsin System. Out of the vision of these pioneers grew a statewide commitment to quality, access, and affordability. These values have been historically backed by sufficient state tax dollars and low tuition policy. Evidence of this support can be seen in the strong participation rates and flow of state GPR. The mid-1980s marked a high point in support for the UW System. In FY 1983-84, Wisconsin ranked 3rd in the nation in the percentage of its residents enrolled in higher education, and 5th in per capita expenditures on higher education. In addition, Wisconsin's total spending for postsecondary education as a percentage of personal income ranked 10th and was 52 percent above the national average.

Beyond quality, access, and affordability, Wisconsin became famous for its commitment to applying the expertise of the academy to the common people of the State. In the early part of the century, the Wisconsin Idea was born through the vision of UW President Charles Van Hise and Governor Robert M. LaFollette. The concept provided the bedrock for the outreach and public service values still evident in Wisconsin's higher education culture today. The cultural significance of the Wisconsin Idea is still alive as UW administrators look to update it for the 21st Century. A recent UW policy paper

stated its importance arguing that "Without a strong Wisconsin Idea, our state will be unable to rise to its challenges..." (Kettl, 1999).

Beyond these examples, historical precedents may shape culture in other ways. For instance, the strength and numbers of private universities in a particular state may affect citizens' feelings toward public higher education. (Layzell & Lyddon, 1990). In states with historically strong private schools, legislators may feel less pressure to invest in state institutions. In particular, this may be true in the northeastern states where they have developed "systems" of higher education that include heavy reliance on private institutions. Other states, such as Wisconsin, have concentrated on developing diverse public institutions to meet the varying needs of citizens (McKeown & Layzell, 1994). Thus, this private school factor may make a difference when legislators determine budgets for public higher education.

Institutional Characteristics and Strategies

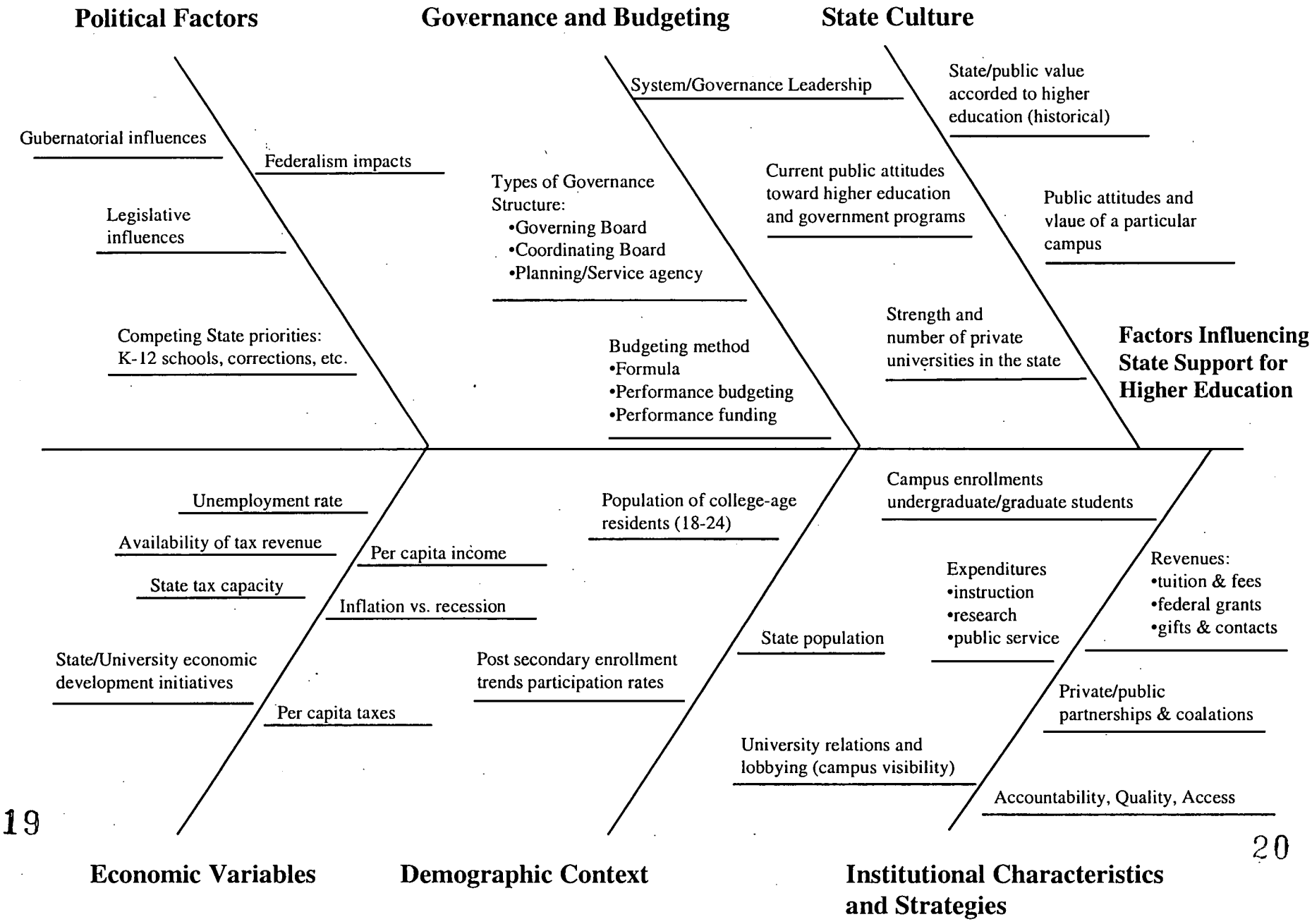
The aforementioned factors touch on the broad influences affecting state support for all higher education institutions in a particular state. Focusing on major research campuses, the attributes of a particular institution have a strong impact on the level of appropriations for a research university. The obvious characteristics include total enrollment of undergraduate and graduate students, tuition and fees revenue, total federal grants and contracts, and total private gifts and grants.

Where the university spends its money may also make a difference in how well the state supports that particular institution's mission. For example, a state may accord a higher value on one institutional goal than another, thereby basing the size of the

university budget on how well the institution advances this piece of its mission. In addition, the campus attention to accountability, quality, and access might affect how states respond to particular institutions. In other words, the success of campus stewardship for public education goals might have an impact on how well they are supported.

Institutional strategies and lobbying efforts have been known to influence the levels of support campuses receive from their states. State lobbying for higher education has grown significantly during the last twenty-five years and have focused on key ingredients: establishing trust with legislators, providing accurate and reliable information, maximizing communications among law makers and educators, and building coalitions (Hines,1988). Recently, public institutions in Virginia benefited immensely from the help of a political action group working on behalf of higher education needs. From 1995-1997, the Virginia Business Council played a prominent role in increasing support for public institutions in the Commonwealth. The Council, which includes more than 40 top executives of Virginia's largest companies as well as the presidents of its leading colleges and universities, was credited with bringing about these changes: 1) state spending on higher education increased by $230 million from 1995-1997; 2) a tax cut proposal by Republican Governor George Allen was defeated, after business leaders testified against it; 3) Council members helped to elect state legislative candidates who were supportive of higher education and to defeat some who were not (Trombley, 1997). Thus, the characteristics and strategies employed by institutions matter a great deal when it comes to determining levels of state appropriations.

Figure 1: Conceptual Framework



Research Question and Definition of Terms

The conceptual framework provides a foundation for understanding the complex array of factors that shape the level of appropriations for higher education in a particular state. The methods of this study are designed to identify which of these factors are most compelling to explain differences in support for the major public research campuses during the last decade. Restated, the research question is as follows: What factors best explain the variation in state support for public research universities during the 1990s? Before the methods to answer this question are introduced, it is necessary to clearly define two important terms: *state support* and *public research universities*.

State Support

In this study, state support is defined as unrestricted state appropriations for public research I universities. This definition is made clear with the help of the annual finance survey conducted by the National Center for Education Statistics. The Center's Integrated Postsecondary Education Data System (IPEDS) survey solicits financial and other data from U.S. colleges and universities for the purpose of comparison and policy research. The survey defines unrestricted state appropriations as state dollars received by the institution through acts of a legislative body, except for gifts and contracts. These state funds are provided to an institution with no limitations or stipulations placed on them by legislature. These funds are typically used for meeting current operating expenses, not for specific programs or projects. This definition excludes facilities budgets, special research programs, and exceptional units such as university hospitals and clinics (IPEDS, 1998).

Alternative definitions for state support might include restricted state appropriations, which focuses on specially funded projects tied to legislative objectives (IPEDS, 1998). In addition, appropriations for capital and faculty salaries could be another indicator of state support. But there were two important reasons why these alternative indicators were not used in this study. First, they were excluded for practical reasons. The fact is that some indicators were not uniformly reported by institutions. For example, I found that faculty salary data was largely incomplete for the fiscal years I sought to review. Thus, I was forced to leave this piece out of my investigation.

But most important, this study argues that the unrestricted state appropriations definition is the most compelling because it represents support that is common to all public research I universities. This exclusive definition aims to avoid inappropriate comparisons of special units, enterprises, facilities costs, or budgets that are not common to all public research I campuses. For example, new facilities at one campus might be a necessary priority at one institution and not at another. Meanwhile, general operating expenses are common for every campus. For all these reasons, I concentrated on unrestricted appropriations as the comparison for the institutions investigated in this study.

Public Research Universities

Public research universities are defined using classification criteria firmly established by the Carnegie Foundation for the Advancement of Teaching. Since 1970, the Carnegie Foundation has classified groups of U.S. colleges and universities according to their missions as a way to improve the precision of the Carnegie Foundation's

research. Over the years, the system has gained credibility and served as a helpful guide for scholars and researchers. The Carnegie Foundation defines public research I universities as those state institutions that offer a full range of baccalaureate programs, are committed to graduate education through the doctorate, give high priority to research, award 50 or more doctoral degrees each year, and receive annually $40 million or more in federal support (Carnegie Foundation for the Advancement of Education, 1994). In the most recent edition, 1994, the Carnegie Foundation reported that fifty-nine institutions meet this criteria. Appendix 1 provides a list of all 59 institutions. The sample in this study investigates the entire population of institutions meeting the Carnegie definition of public research I university.

The public research I definition is used to segregate a group of institutions that are most alike and appropriate for comparison. A focus on this unique category of universities provides an "apples to apples" comparisons of those institutions with similar characteristics and missions. In particular, research I universities were selected because they represent major institutions most often regarded as the state's flagship campus. These institutions share similar positions of prominence within their state and community, often assuming the role as the state economic generator. An investigation of comprehensive or regional campuses would not be as compelling because of the various complexities and confounding factors that might distort a true comparison of these types of universities. For example, regional campuses often vary more dramatically in their missions because of their concentration on particular niches to provide for the needs of their communities. Conversely, research I universities have all encompassing missions which makes an across-the-board comparison more reliable.

Sequential Mixed Method Design

Many scholars including Eisner (1981), Firestone (1987), and Howe (1988) point out the virtues of using a variety of methods—both quantitative and qualitative—to gain an understanding about various phenomenon. The main argument is that the diversity of approaches allows one to better know and understand different things about the world (Glesne & Peshkin, 1992).

Recognizing the legitimacy of using multiple approaches, the methods of this study are founded on the sequential mixed method design as defined by Tashakkori & Teddlie (1998). The authors' explain that the approach involves employing both quantitative and qualitative methods in two distinct phases of a study: a quantitative phase and then a qualitative phase, or vice versa. One purpose of the sequential method is to use the results from the first method to inform the use of the second method (Greene, Caracelli & Graham 1989). Jick (1983) discussed the use of across methods triangulation as a way of offsetting the weakness of one method by using the strength of another. This study uses these precise methods and rationale. Specifically, the results from a regression analysis will be used to build a multi-case study. Upon completion of the case studies, I will triangulate the findings with the regression model to form my conclusions.

This dual methodology is grounded in the pragmatist paradigm, which was formed in an attempt to bridge the positions of the positivist and constructivist paradigms (Tashakkori & Teddlie, 1998). Howe (1998) and Reichart & Rallis (1994), are among the many scholars that have advanced the compatibility of the mixed methods paradigm. A pragmatic paradigm allows for deductive and inductive logic and an epistemology accommodating for both objective and subjective points of view. It further acknowledges

that values play a large role in interpreting results. But the most important premise of the approach is that the research problem drives the philosophical framework and methodology employed in the study. To that end, it supports the highest degree of mixing paradigms and methodology (Tashakkori & Teddlie, 1998). This study relies on the duality of quantitative and qualitative approaches to make informed conclusions in response to the research question. The following sections present the methods and findings for the quantitative phase of the study.

Multiple Regression Analysis and Data Collection

Data were collected from existing databases of all variables in the conceptual framework that were readily quantifiable and for which data were available. These data were analyzed using multiple regression to explore which factors identified in the conceptual framework best explain differences in unrestricted state appropriations for public research I universities.

Multiple regression is useful for this study because it allows researchers to examine separately the relationships between a series of independent variables and the dependent variable. The dependent variable in this study is unrestricted state appropriations for public research I universities. The independent variables are the multiple factors outlined in the conceptual framework that the literature cites as being useful to predict state appropriations for higher education. Again, the variables in this framework can be reviewed in Figure 1, the fishbone diagram presented earlier in this paper.

From this framework, twenty-six variables that were quantifiable and for which data were available were selected for analysis. Consequently, a number of variables were not included in the regression analysis. For example, variables such as public attitudes toward higher education and university relations strategies were not readily measurable or quantifiable and were therefore excluded from the analysis. On the other hand, data for state population and campus enrollment were easily accessible and reliable and therefore included.

Table 1 outlines the description of each of the variables included in the regression analysis and how they fit into the study's conceptual framework. The data include economic and demographic variables such as per capita taxes and income, state population, state unemployment rate, population of "college age" residents (18-24 years old), the number of private and public universities in the state, and per capita expenditures on education, health care, and corrections. In addition, institutional characteristics were accounted for at each of the 59 public research I universities sampled. These factors include total enrollment of full-time undergraduate and graduate students, total tuition and fees revenue, total federal grants and contracts, and total campus expenditures on instruction, research, public service.

Several dichotomous variables were also included in the analysis. These include the political party of the governor and majority of the legislature in office during budget creation. Republican governors and legislative majorities were given the value "1" while their Democratic counterparts were entered as a "0."

In addition, the governance structure was entered as a dichotomous variable, depending on whether the state operated a consolidated governing board structure,

coordinating board (regulatory or advisory power), or planning and service agency. Each structure received a "0" or "1" value based on whether it operated each of these structures listed. "1" indicates that the structure is present in that state and "0" indicates that it is not present.

Table 1: Conceptual Framework and Regression Model Variables

Economic and Demographic	Political Influences and Priorities	Type of Governance Structure	Institutional Characteristics
Total state population	Party majority (republican or democrat) lower house during budget creation	Consolidated governing board	Total enrollment: full time undergraduate students
Population of "college age" residents (18-24)	Party majority (republican or democrat) upper house during budget creation	Coordinating board: regulatory power	Total enrollment: full time graduate students
Per capita income	Republican or democratic governor during budget creation	Coordinating board: advisory power	Total tuition and fees revenue
Per capita taxes	Per capita spent on health care	Planning and service agency	Total private gifts and contracts
Employment rate	Per capita spent on corrections	Number of private 4-year institutions in the state	Total federal grants and contracts
	Per capita spent on education	Number of public 4-year institutions in the state	Expenditures on instruction
			Expenditures on research
			Expenditures on public service

The data used in the regression model were analyzed in one consolidated database covering two time periods, FY 1991-92 and FY 1996-97. FY 1991-92 was selected because it marked a critical downturn in state appropriations for higher education. For the first time in 33 years, the 1991-92 state budgets allotted less money to higher

education than for the previous year (Schuh, 1993). Data was selected from this period because it captured a budget year that was uniformly poor among colleges and universities. Fiscal year 1996-97 was selected because it was the most recent data available. A dummy variable was entered to account for differences between the two time periods. The model as specified assumes that the relationships to state appropriations did not change between the two time periods.

The consolidated database focuses on aggregate state support for institutions as opposed to the change in support from FY1991-92 to 1996-97. The purpose of the aggregate focus is to capture the most compelling factors that predict state support in periods of both low support (1991-92) and recovering support (1996-97). The goal of the analysis is to draw out the most stable factors which explain differences in state support over a longer term, regardless of short-term fluctuations in budgetary conditions. Combining the two databases provided a way to meet this objective.

The database was composed of data derived from state and federal government publications and websites, including the Integrated Postsecondary Education Data System (IPEDS). IPEDS is a widely used database compiled by the National Center for Educational Statistics. The center collects these data through an annual survey of all U.S. postsecondary institutions. Appendix 2 provides a complete list of the data sources used to create the database and the metric used for each variable.

Regression Model Selection

Since the goal of the quantitative phase of the study was to identify a "best fit" model, three criteria were established to select the variables for inclusion in the final

model. These criteria focus on the theoretical appropriateness, significance, and whether the model satisfies basic assumptions of normality and homogeneity. Stated another way, three questions were answered affirmatively to create the best model for this analyses:

1) Does the model inform the theoretical framework in this study? Do the findings add to a conceptual understanding of the research question?

2) Does the data analysis suggest that the variables are significant or an important factor in predicting state support for research universities?

3) Does the model satisfy basic regression assumptions?

Driven by these criteria, I employed a three-phase method to generate findings to be used in forming conclusions. First, I conducted a significance test with the standard for variable exclusion set at .05. Thus, t-statistics that exceeded or fell below the critical values of 1.96 or −1.96 were regarded as significant. In the first phase, simple regressions were run for each independent variable one the dependent variable—unrestricted state appropriations. Conducting this analysis helped me consider important variables to include in subsequent phases of the model building procedure.

In phase two, I included all combinations of variables in the model to see the effects of variable interaction on the significance levels among all variables. In other words, I reviewed whether the addition or subtraction of certain variables impacted the significance of other variables. Three model-building techniques were used to understand these effects, and ones that emerged as most useful for predicting unrestricted state appropriations. These techniques are the family or block testing and the stepwise technique.

Entering families or "blocks" of variables was used to determine the usefulness of the main theoretical strands as predictors of state support for research universities. In this approach, the variables found under the main "bones" of the fishbone diagram in Figure 1 were entered together as one factor. This was done to evaluate the relative significance of each family of variables as determinants of unrestricted state appropriations. The four families entered were economic and demographic variables, political influences and priorities, type of governance structure, and institutional characteristics.

Of these families, the institutional characteristic grouping was most significant. This family included enrollment, revenue, and expenditure data from each institution. The strength of this block is logical since appropriations are likely to be tied closely to budgetary needs and enrollment demands.

Then, the forward stepwise and backward stepwise model-building approach was used to determine the best predictors for each block. Forward and backward stepwise was also used to analyze all variables entered together. In a forward stepwise regression, variables are tested for entry into the model one-by-one, based on the significance level of the t-statistic. The variable with the smallest significance is entered into the model, and after each entry, variables that are already in the model are tested for possible removal, based on their significance. Then the variable with the largest probability is removed and the model is re-estimated. Variables in the model are then reevaluated again for removal. Once no more variables satisfy the removal criterion, co-variates not in the model are reevaluated again for entry. Model building stops when no more variables meet entry or removal criteria, or when the current model is the same as the previous one. The backward model follows a similar procedure, except that all variables

are entered in the model together first and then tested for removal one-by-one (SPSS, 1999).

The stepwise method is a useful way to identify variables that produce the highest predictor value. It allows researchers to identify the least amount of variables that explain the most. Although I used the stepwise method to identify variables to produce the best model fit, a straight application of stepwise regression did not produce my final model. Rather, the method was used to provide important clues about relationships between variables and families, and their usefulness in predicting unrestricted state appropriations. Put simply, stepwise regression was only one tool I used to make an informed decision about which variables to include in the final model.

After selecting a small group of models based on the theory and these model-building techniques, I entered the last phase of the analysis. In this phase I analyzed the residuals of each model to determine whether they met basic regression assumptions of homogeneity and normality. To analyze homogeneity, a scatterplot of residuals versus fitted values was created. If the residuals are scattered randomly, the homogeneity assumption is satisfied. This indicates that important variables have not been left out of consideration and that the model can be used to explain the relationship between "x" and "y." Similarly, the normality test reviews the percentage of residuals with one, two, and three standard deviations of their mean. The appearance of a tightness of the band of points surrounding the line above and below indicates that the distribution of the observations is normal (Cryer & Miller, 1991). In this study, both tests were conducted to judge the adequacy of a given model. The model that best fit these assumptions was selected as my final model.

Regression Model Findings

While the results of any regression should be interpreted cautiously, the multi-step approach pointed to seven variables that best predict unrestricted state appropriations for research I universities. The model variables and scores are presented in table 2.

The description of the means, standard deviation, and correlation for the variables used in the regression can be found in appendix 3, while the scatter and normality plots for the model are presented in appendix 4 and 5.

Table 2: Regression Model: Factors for Predicting Unrestricted State Appropriations for Research I Universities

	Unstandardized		Standardized	
Variable	Beta	Std. Error	Beta	t-stat
Per capita taxes	43,687.125	12,143.110	.172	3.958*
Total state population	2.171	.662	.226	3.2778*
Democratic/Republican controlled State Senate	-26,656,832	9,560,708.70	-.148	-2.7888*
Democratic/Republican controlled State Assembly	-3,815,534	9,162,350.7	-.022	-.416
Research I University and all other state universities governed by a consolidated governing board	48,763,178	8,799,326.8	.253	5.542*
Number of public universities in the state	-783,341.9	477,112.67	-.109	-1.642
Total expenditures on public service	.663	.118	.271	5.620*
Total enrollment of full-time graduate students	10,040.236	2,819.615	.281	3.561*
Total expenditures on instruction	.416	.083	.428	4.983*

N= 118 (combined sample of 1991-92 and 1996-97 databases)
r^2 = .821
Adjusted r^2 = .806
* indicates significance at .05

This regression model provides some important clues to understanding variation in state support for research I universities. Specifically, it suggests that a state's tax rate, political climate, higher education governance structure, and institutional enrollment and expenditures on public service are important factors determining the level of state support for these types of institutions. A few compelling findings offer some important contributions to the study's conceptual framework.

First, the model suggests that research I universities governed by a consolidated governing board are more likely to have higher appropriations than those governed by a coordinating board or planning and service agency. Specifically, the regression suggests that research institutions governed under this system, on average, receive $48.7 million dollars more in unrestricted state appropriations than institutions governed by other structures.

In addition, this model suggests that the political affiliation of the state legislature is also an important factor predicting support. In particular, research I universities are likely to have higher appropriations in states where Democrats control both the senate and assembly. The political composition of the assembly seems to especially make a difference. On average, research I universities receive an additional $26.6 million dollars a year in unrestricted appropriations when Democrats control the assembly as opposed to Republicans.

An important economic, and arguably political indicator, is the effect of the tax rate on state support. For every additional dollar in taxes collected per capita, one could forecast an additional $43.6 million dollars in unrestricted support for the research I university. Put simply, research I universities are likely to have higher appropriations in

states with higher per capita taxes. This could be considered a logical indicator since higher taxes generally equate to more money spent on government programs.

Finally, institutional characteristics were shown to be the most important predictors of unrestricted appropriations. The high standardized coefficients for instruction and public service indicate that expenditures are highly correlated and an important predictor. Regardless of the model-building technique used, public service expenditures emerged as a top predictor of support, suggesting that this factor is a critical piece meriting deeper investigation.

Limitations and Implications for Qualitative Investigation

The regression model has some limitations which are important to note. First, the two datapoints cover only a short five-year time period. Additional data covering a longer period would provide a more robust and comprehensive picture of reasons behind differences in state support for research universities. The consolidated database in this study provides only a snap-shot of state support during one decade—the 1990s.

Furthermore, the small sample size may amplify the explanatory power of the variables. Since nine variables were used to explain 118 observations, it is not surprising that the final r^2 of the model was high at .821. At the same time, the adjusted r^2 accounts for the sample size and still produced a high adjusted r^2 of .806, suggesting the strength of the model's predictive power.

Another limitation is that there are many alternative definitions for the variables used in the regression, and I was forced to make choices about how to define various support indicators. Making choices such as these naturally affects the results of the

regression model. For example, state tax capacity is one factor that could be measured in a number of ways. Layzell and Lyddon (1990) define state tax capacity as the amount of state revenue that would be generated if the revenue bases were tapped at the maximum allowable rates for taxes and service fees. The authors argue that the best measure of determining tax capacity is the underlying economic activity in a state, but that general sales volume, corporate income, personal income, and property values are other indicators to consider. Despite the many possibilities and complexities, I made a decision to use per capita income as the main tax capacity indicator. Although the literature argues that this indicator is compelling, using this variable over others may have had an effect on the final results of the model.

Finally, the model does not address the rich contextual differences that are likely to be present at each of the observed states and institutions. Important differences would include the supporting theoretical strands not captured by the regression model such as state culture, historical support for the institution, and public attitudes toward the institution. Similarly, the effects of institutional strategies can not be considered in a strict application of the regression analysis. The fact is that relying on the regression model alone places limits on understanding complete landscape of differences in state support for research universities.

In order to try to understand these differences, I sought to identify specific states and institutions that varied in model predictions in order to explore their differences more deeply. To identify these states and institutions, I plotted the regression residuals against fitted values as illustrated in Figure 2. Figure 2 demonstrates how identifying outliers in the scatterplot can provide important implications for qualitative investigation.

Reviewing the plot, one can see institutions that appear above or below the expected appropriations level based on model predictions. In other words, the model indicates a range of institutions receiving higher or lower state appropriations than predicted based on the nine variables in the model. The figure illustrates the actual appropriation received by all public research I universities and the regression model predicts what each of these institutions should receive in appropriations. On the standardized residuals on the "X" axis, "0" represents the predicted appropriations line. 1 and 2 Standard deviations above the line are those institutions that receive higher support than the model predicts, while –1 and –2 below receive lower support than predicted.

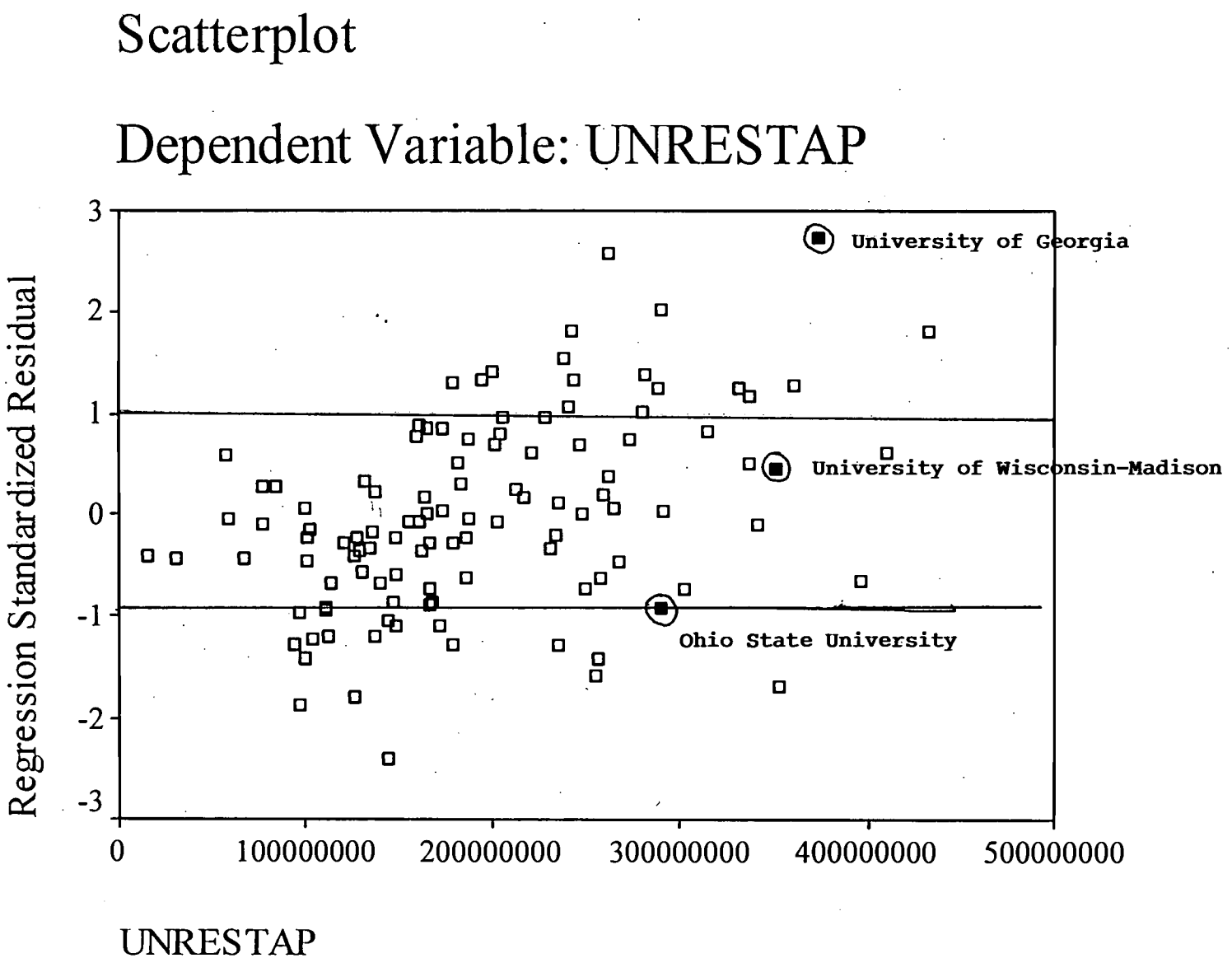
To explore unexplained factors in the model I sought to conduct a more in-depth analysis of three institutions falling under different levels of standard deviations: one falling 1 standard deviation below expected appropriations, one observation a standard deviation higher than predicted, and one well predicted by the model. The goal of this investigation was to isolate three institutions representing various support levels—low to high—based on model predictions.

Figure 2 highlights three institutions that meet these specifications. Specifically, the model suggested that Ohio State University (OSU) received less unrestricted appropriations than predicted based on the statistical analysis. The implication is that OSU received less state appropriations than its peers, based on this analysis. State appropriations for the University of Wisconsin-Madison (UW) were well predicted by the model, indicating that the variables were good indicators to predict unrestricted state appropriations for the UW. Finally, the model showed that the University of Georgia (UGA) received greater appropriations than predicted by the variables in the regression

model. The implication is that UGA received more state support than its peers.

There is another important reason why these three institutions are highlighted over others in the scatterplot. These three institutions consistently appeared in each of their respective standard deviation levels, regardless of the variable or method of model building used to generate the graph. This observation is important because it suggests that there are other stable, less tangible factors present in these states and institutions that explain the reasons behind their placement on the graph. This important observation led me to a deeper investigation of the three institutions using qualitative methods.

Figure 2: Case Study Selection Plot



Qualitative Methods

Three institutions were investigated in this second phase of the study: Ohio State University, (less than predicted appropriations) the University of Wisconsin-Madison, (predicted appropriations) and the University of Georgia (higher than predicted appropriations). In this phase of the study, qualitative methods are employed to provide a more in-depth look at each of these institutions and their host states. Again, the goal of the qualitative analysis is to understand important contextual differences that exist between these entities which are difficult to capture using quantitative methods alone.

Multi-Case Study

A multi-case study is a method in which researchers study two or more subjects, settings, or depositories of data in order to show generalizability or diversity of data (Bogdan and Biklen, 1992). In this study, an investigation of the three universities and states was undertaken to show diversity of data; or the reasons for differences in state support for research I universities based on the regression model prediction. As the next sections explain, Bogdan and Bicklen (1992) and Conrad, Haworth, and Millar (1993) provided the main guidelines for conducting the multi-case study investigation.

Data Collection and the Positioned Subject Approach

Interviews and a document review were the primary methods of data collection employed in the multi-case study. My data collection role as a qualitative researcher was uniquely different than my role using quantitative methods. As Glesne & Peshkin, (1992) suggested, my role as a quantitative researcher was generally detached and

impartial, whereas I was more intimately involved in the process using qualitative methods. Being the primary data collection instrument, I had close interaction with subjects through in-depth, confidential interviews. To guide my interaction with the interviewees, I used a positioned subject approach as defined by Conrad, Haworth, and Millar (1993).

The authors' define the positioned subject approach by outlining some important assumptions. First, it is assumed that the researcher interprets and makes meaning of interview data based on his or her experiences and perspectives. Accordingly, it supposes that interviewees are people with particular needs, perceptions, and capabilities for action, and that an individual's position within the environment affects his or her responses. The totality of these factors influence the way subjects interpret and respond to the interview questions as well as the way that researchers' interpret and code the responses (Conrad, Haworth, Millar, 1993).

This positioned subject approach provided me with a strategy for analyzing the interview data. My charge was to focus on how interviewees understood and interpreted their roles vis-a-vis their interaction with the state governments and institutions under investigation. Consonant with the approach defined by Conrad et al, I viewed each institution and its host site as positioned subjects. I recognized that each institution was located within a particular setting, and that reviewing patterns across states and institutions would help me formulate broad-based conclusions about important differences affecting state appropriations.

Conrad et al also pointed out that a major premise in multi-case study design is that the sample must be representative of the population that it claims to represent. To

provide this representativeness, characteristics of the population which may be theoretically relevant must be represented in the sample (Conrad, Haworth, Millar, 1993). Stated another way, the study must enlist the perspectives of a diverse group of stakeholders that most affect or are most affected by the particular phenomena. Using this reasoning, I aimed to interview the actors most integral to the higher education appropriations process as outlined in my conceptual framework.

Informed by my framework, I decided that campus administrators, board of regents staff, governance system executives, state relations staff, state legislators, department of administration staff, and the governor's office, were among the most important stakeholders to involve in my interviews. Furthermore, I acknowledged that informants among each stakeholder group must be evenly represented to reduce bias based on political ideologies or the shared perceptions of a given stakeholder group. Thus, I designated a small number of interviewees from each group to make up the entire sample representing each institution and state. The list and number of individuals interviewed by each stakeholder group are found in Table 3. The table shows that I interviewed between twelve to fourteen individuals at each site, or a total of thirty-nine individuals.

Table 3: Distribution of Interviewees by Stakeholder Group and Site

	State of Georgia, University of Georgia Campus	State of Wisconsin, University of Wisconsin-Madison Campus	State of Ohio, Ohio State University Campus
Campus state relations staff	1	1	1
Campus administrators	2	3	3
Governance system staff	2	1	1
State Department of Administration staff	3	2	2
State legislators (R)	2	3	1
State legislators (D)	2	3	2
Governor's Office staff	1	1	1
Total:	13	14	12

To identify the most informed individuals in each stakeholder group, I used the snowball sampling technique as explained by Bogdan & Bicklen, (1992). Snowball sampling means that the first interviewee was asked to recommend others to be interviewed, and so on. The first person I interviewed was the state relations professional for each institution sampled. This individual was selected because I viewed them as most central to the activities involving state budgeting for the campus. I relied on this individual to provide names of others to interview from the other stakeholder groups. In turn, these individuals provided names of other informants in each stakeholder group to be approached for interviews.

Consistent with Conrad, Haworth, and Millar's positioned subject approach, I designed my interviews to be open dialogues between positioned subjects, thus, I viewed myself not as an observer, but as a participant in a conversation. While I initially led the conversation, my intention was to encourage interviewees to do the majority of the talking. Anchored in Conrad et al's technique, I asked questions that were open ended, allowing interviewees to direct the discussion. This was done to prevent the introduction of "themes" that may not necessarily be those of the subject. My goal was to let the subjects develop their own themes.

In keeping with this approach, I began interviews with the broad question, "Tell me about the factors that you believe best explain the level of state support for Institution X." Stating it a different way, I often outlined the question more informally: "From your perspective, what is happening in the state or on campus that best tells the story about state support for Institution X."

While this open-ended approach guided my interviews, I also created an interview protocol to assist my efforts. My protocol consisted of a broad set of topics and supporting questions that I derived from my conceptual framework. My interview protocol can be found in Appendix 6. These topics and supporting questions were addressed when the interviewee began to speak to these thematic areas on their own. When interviewees addressed areas relevant to my framework, I used the questions in my interview protocol to probe deeper into the particular area discussed.

It is important to note that I did not explicitly point out to interviewees whether their state was higher than predicted, predicted, or lower than predicted state appropriations according to my regression model. This information was withheld so not

to encourage participants to collaborate around my statistical findings. Instead, I relied on interviewees to support or refute this information on their own.

Finally, I enriched my interviews by reviewing documents that were useful to inform my analysis. These documents included speeches from university executives or state representatives, campus and state internet websites, campus and governing board documents, state policy studies, and related written materials. Most often these documents were referred by subjects during the interviews. The documents added detail to the concepts espoused by the interviewees. This also helped significantly with my interpretation of the interview data.

Data Analysis and Procedures for Assuring Fidelity and Accuracy of Interpretation

Interviews were tape-recorded and transcribed with the permission of each subject. For those subjects interviewed in Wisconsin, I met privately with each in their office. Interviews with subjects in Ohio and Georgia were conducted over the phone due to limits on travel time and expenses. All interviews were conducted between July-September 1998.

To analyze the data, I used the coding procedure as suggested by Bogdan & Bicklen (1992) to categorize my data. First, I searched through my initial data for regularities, patterns, and general topics my data cover. Second, I recorded words and phrases to represent these topics and patterns. Third, I recorded these phrases or codes as they emerged during my data collection. Finally, I created indicators to match related data in my field notes. The coded areas represented the main themes or factors learned in the study. These themes are the headings that appear in the forthcoming case study

sections. In keeping with the guidelines outlined by Bogdan and Bicklen, (1992) I collected interview data until I reached saturation. The authors' explain that saturation is the point where the information one receives becomes redundant.

As I already explained, two methods of data collection were employed in this study—interviews and a document search. This dual method of data collection is known as *between methods* triangulation (Bogdan & Bicklen, 1992). Evidence from Guba, (1978), Jick, (1983), and Van Maanan, (1983) suggest that triangulation is useful for the cross-validation of data, and thereby strengthens the accuracy of interpretation.

Limitations

The primary limitation of this study is the small number of institutions from which to draw conclusions about high, moderate, and low support conditions. As such, I can not rely on the three institutions alone to explain the entire universe of factors explaining differences in state support for research universities. In other words, an important limitation is that the findings from the qualitative study may not be fully generalizable across institutions and states.

A secondary limitation of this study is the modest number of interviews conducted in each state and institution. While data saturation was achieved among the sample, a more comprehensive list of interviewees would arguably have strengthened my findings and subsequent conclusions. Put simply, adding other voices would have provided greater wealth of perspectives. But due to time and financial limitations, I resolved to focus my efforts on key informants representing each major stakeholder group.

Finally, I recognize that some interviewees may have responded in ways that were politically savvy. Although I assured all subjects of complete confidentiality, it is possible that informants may have been inhibited to address areas that they perceived as politically sensitive. At the same time, I felt that most interviewees were genuine in their responses. In fact, most were eager to inform me on the topic from their point of view.

Findings and Conclusions

The cross-case analysis and final regression model mutually supported three main factors to explain the differences in state support for the research universities during the 1990s. These factors are the campus commitment to outreach and public service, strength of the higher education governance system, and extent of gubernatorial and legislative support. In other words, the extent of state support for research universities is seemingly contingent on the actions and commitment of three critical entities: the campus, the governance structure, and state government.

THE CAMPUS

Commitment to Public Service

The regression analysis from this study suggested that greater state appropriations for research universities are highly correlated with institutional expenditures on public service. Stated another way, the deeper campus commitment to public service in dollars, the greater state support for the institution. The case studies of UGA, UW and OSU supported this finding, and further suggested that the visibility of public service activities is a critical element in garnering state appropriations.

As a percentage of total expenditures, UGA spends significantly more on public service and outreach than UW and OSU. During the 1996-97 fiscal year, 24 percent of UGA's budget was allocated for these activities compared to 12 percent at OSU and 11 percent at UW (IPEDS, 1996-97). The differences in structure, depth of operation, and visibility speak greatly to the differences in expenditures between the institutions.

Unlike UW and OSU, UGA operates a centralized outreach structure that coordinates and promotes all campus public service activities. Under the leadership of the Provost and Vice Chancellor for Public Service, the unit oversees outreach in every Georgia County including small business development centers in 18 offices, and outreach coordinators in every school. It is reported that UGA faculty made over 300 outreach appearances in 1997. As part of its commitment to outreach, UGA has adopted an alternative public service career ladder that encourages faculty to focus on matters of public concern. Faculty members joining this program focus primarily on the public-policy needs of the state. They have direct contact with citizens and officials in their own environment and are involved with state and local leaders in the areas of educational needs assessment, program development, training, consultation, and technical assistance. Individuals are promoted in a ranking system similar to traditional faculty ranks—from the public service assistant to the senior public service associate. This career track is growing in prominence, as there are now 800 UGA faculty members on this program. In the case study it became clear that UGA's commitment to public service is widely known and highly regarded by Georgia legislators and the public at-large.

Meanwhile, outreach at UW and OSU look quite different from UGA. Both campuses are very decentralized in the areas of public service and outreach—conducting these activities primarily at the school, college, and department level. At OSU, outreach is well recognized within the agricultural unit of the university, but is not as apparent in other areas of the institution. At UW, interviewees agreed that the Wisconsin Idea is becoming a fading notion among state officials and the public. Once famous for faculty in the farmers' fields and assistance in public policy issues, many Wisconsin legislators report that the UW faculty of today are not as visible as their predecessors.

In short, the study suggests that outreach activities at both UW and OSU are significantly less known and revered by government officials in Ohio and Wisconsin than they are in Georgia. An important conclusion is that the visibility of campus public service is critical as it pertains to garnering state support for research universities—especially land grant institutions. Moreover, the effectiveness in sharing this message with the public is paramount. Interviewees at both OSU and UW suggested that public service is alive and well, but that the messages often get lost due to the breadth of activities and size of the campus. There is a consensus that news about these activities are not well coordinated and thus, not effectively revealed to legislators and the greater public. On the other hand, UGA reports that its central structure is an effective clearinghouse for promoting the public service message to all constituencies.

In sum, this study suggests that research universities that have a strong commitment to public service clearly have stronger relationships with their states, and institutions that make this a central part of the campus mission are likely to receive greater state support. Sturdy, recognizable structures set up to coordinate and

communicate these initiatives to the public are seemingly a critical element in the success of these ventures.

Accountability

The case studies brought to life the importance of accountability in government decisions about supporting research universities. Interestingly, interviewees from the legislature broadened the definition of accountability beyond the usual discussion of efficiency to focus on the outcomes of the work being done on campus. For example, interviewees in Ohio and Wisconsin stated that it was unclear about how "in-touch" the faculty are with the needs of the people in these states. Added to this view is an impression that many faculty don't work as hard as they should—and often not working hard enough on the right things. Simply put, many legislators are not clear about the workload of university professors and the impact of their work on state residents. It is apparent that the accountability issue goes hand-in-hand with a discussion about public service.

But efficient and appropriate use of funds is also important. In June 1993, Governor Thompson's *Task Force on Accountability* recommended that the UW System report its progress in seven key areas: access, quality, effectiveness, efficiency, diversity, stewardship of assets, and contribution to compelling state needs. In Ohio, former Governor Vonovich established similar requirements for institutions in that state. In both states there remains a contingent of legislators and state officials that believe that both UW and OSU must do more to be efficient and accountable for use of state tax dollars.

In Georgia, the State University of Georgia Systems Chancellor's volunteered the creation of an accountability report as a way to win the respect of the Governor and legislators in that state. Interviewees report that this proactive stance was well received by the administration and state legislators. But more than this savvy measure by the system CEO, Georgia legislators told me that the comprehensive public service program remains the best evidence of UGA's accountability to the needs of Georgia residents.

In sum, accountability must go beyond costs and efficiencies to be defined in terms of outcomes. As one Ohio legislator put it, "Showing cost efficiencies is important, but demonstrating that our School of Education has improved local schools so that business owners will move here with their families is just as, if not more, valuable."

HIGHER EDUCATION GOVERNANCE

Effective Management and Coordination

The statistical analysis suggests that research universities governed under a single governance system are likely to receive higher appropriations than those research institutions in coordinating board systems. The reason behind this finding was animated througout the case studies.

UGA and UW operate under single governance systems, managed by the University System of Georgia and the University of Wisconsin System, respectively. Interviewees suggested that both systems are strong and effective in planning for the research university and for the higher education needs of the state. In particular, the UW System was cited as a stable, mature system that has worked well to manage campuses, maintain discipline, and prevent competition between campuses. Similarly, the

University System of Georgia is regarded as strong. innovative and useful for coordinating and planning for higher education needs of the State. Like Wisconsin, institutional missions at Georgia public universities are generally regarded as distinct and complimentary.

But an analysis of Ohio revealed a different story. Interviewees noted the historical strength of the metro areas in the state has made it difficult to unify higher education in Ohio. The fact is that Ohio is more of a collection of large cities, or "city states" that have strong commitments to their regional or metro universities and less regard for viewing overall state needs. The coordinating board system—the Ohio Board of Regents—was often cited as being weak in its attempt to reconcile and coordinate the missions of these institutions. Ohio interviewees suggested that institutional missions in Ohio are competitive and duplicative, and that the OSU budget competes more directly and intensively with regional universities due to the weak authority of the coordinating board.

But most acknowledged that the Board has been strengthened due to recent initiatives led by the Ohio Board of Regents Office. Specifically, the Higher Education Funding Commission has restored some unity among campuses because of its push to tie state appropriations to institutional missions. The Board in general has taken a more comprehensive look at the needs of the State and how the particular campuses can fulfill these needs. However, most argue that the problem is still difficult to hurdle. As one OSU official put it, "Not having a system hurts OSU because too many institutions are trying to offer the same programs that we are. There is jealousy among campuses, and for the most part, legislators are only concerned about the University in their backyard."

In conclusion, research universities appear to be financially healthier when they are part of a strong university system. In these systems, research institutions are recognized has having a unique role within the overall picture of higher education in the state as opposed to having competitive relationships with other campuses. System governance has greater authority, innovation, and success in planning for the state's higher education needs as a whole, resulting in more equitable distribution of resources for campuses and better stewardship with state dollars.

Economic Development Focus

The case studies also suggest that a system-wide focus on the economic development needs of the state is critical to garnering support for research universities. The findings are backed by the aforementioned literature suggesting that university systems and institutions that clearly demonstrate and effectively communicate a commitment to economic development are likely to receive higher support from their states.

Again, Georgia provides a good example of innovation at the system level. In 1995, Georgia created a University System of Georgia Office of Development and Economic Services to leverage the vast resources of the state's 34 public colleges and universities on behalf of Georgia's economic development. The program began with a needs assessment—determining the educational and training needs for employees in high-quality, high-growth, knowledge-based industries. Once determined, the University System compared the needs with the numbers of graduates produced in these areas to help the Board of Regents decide which programs should be created or expanded. These

programs were then developed or expanded in Georgia public colleges and universities. This program, called the Intellectual Capital Partnership Program (ICAPP), is credited with retaining and attracting top businesses to Georgia and has reportedly forged strong partnerships between public and private universities and local communities in Georgia. Interviewees suggest that state legislators recognize the value of these programs and financially support it because it is clearly linked to economic benefits. The visible success of these endeavors has reportedly strengthened the relationship between the state and universities.

STATE GOVERNMENT

Gubernatorial and legislative support

The statistical analysis revealed that the state political climate has a significant impact on levels of support for research universities. The case study supported this finding and the literature suggesting that governors may have the strongest impact on support for higher education. In fact, there is clear evidence that political priorities of the governor and legislators may be a better predictor of higher education appropriations that the economic condition of a state. For instance, it was learned that Wisconsin, Ohio, and Georgia all enjoy healthy economies at the time, but that state officials simply choose to spend additional resources differently.

According to interviewees, former Governor Zell Miller led the charge in making higher education the top priority in Georgia. Interviewees suggest that one of Miller's motivations behind his support is the fact that Georgia has historically been ranked low in educational quality rankings. Said one Georgia official, "What drove the Governor to

support higher education is that we need an educated workforce in order to be a national center. Higher education became the centerpiece of his administration."

Of his most famous contributions, Miller developed the HOPE scholarship program funded through the Georgia lottery. The nationally recognized program allows all state high school graduates who earn a "B" average to be eligible for a tuition-free education at any Georgia public university for as long as that student retains a "B" average in college. State legislators rallied around this plan because of the great boost it provides to the state. Said one member of the assembly, "The HOPE scholarship keeps our best students here... our reputation goes up, and it ultimately improves our tax base. It's just a positive cycle."

Similarly, the Governor's plan to redirect the budget for faculty salaries was well supported by the legislature because it was promoted as a way to boost the state's economy. Miller's theory was that salary increases allow Georgia institutions to attract, retain, and recruit the best faculty—and faculty bring with them knowledge and high tech industry, which in turn boosts the state's economy.

In Wisconsin, higher education has enjoyed a recent surge in support as Governor Thompson submitted an ambitious budget proposal for the UW, endorsing special initiatives for the Madison campus. But prior to the 1999 biannual budget, Governor Thompson's agenda focused primarily on K-12 financing, corrections, and tax cuts. It was learned that the Governor's priorities have made a major impact on the level of support for higher education in Wisconsin. Interviewees suggest that these gubernatorial priorities have dominated the budget in recent years. In particular, the Governor's plan for covering two-thirds of the cost of K-12 was cited as a major detriment to expanded

funding opportunities for the UW. Among education initiatives, Governor Thompson is especially supportive of school-to-work and technology in the classroom. Adequately training people for jobs is a high priority for Governor Thompson.

Interviewees said that corrections is a major piece of the Governor's agenda, and has had a significant impact on flattened support for the UW System. In a five-year period, the corrections budget has grown by 105 percent, accounting for 4.6 percent of the budget in 1997. According to interviewees, corrections and the K-12/property tax initiative has had a phenomenal impact on the budget, and consequent spending on higher education. As one interviewee put it, "After two-thirds of K-12 costs and corrections are covered there's just not much left in the pot to spend on higher education."

As for the Wisconsin legislature, interviewees declared that three main priorities dominate: K-12 refinancing/property tax relief, corrections, and cutting taxes. Legislators supported Thompson's K-12 financing plan because of its implications for property tax relief. In addition, legislators argued that corrections is growing rapidly because there is no alternative to handling the crime problem in the state. Said one legislator, "It's not a priority to do corrections, but we feel we have no choice but to deal with this. The same holds true for health care and our aging population." Third, there is a continual push to cut state taxes so that they are closer to national average. When it comes to prioritizing funding for higher education one Wisconsin legislator summed it up: "The UW stands on top of the 'nice-to-do' list. The fact is that full attention can't be given because of other obligations and statuary commitments."

Like Wisconsin, former Ohio Governor George Voinovich focused on K-12 reform and tax cuts throughout his term in the 1990s. Interviewees reported that the

Governor had different priorities than higher education during his years in office. Specifically, Voinovich was most supportive of the two-year college system because he viewed it as a more direct link to helping business and industry in the State. Also, K-12 schools, corrections, and medicare had a major stake in the governor's budget. At the same time, the Governor's goal was not to raise taxes.

Like most states, Ohio has a number of priorities that compete with higher education. K-12 schools is a high legislative priority that has taken even more attention due to a supreme court calling for restructuring of Ohio's K-12 financing plan. Corrections was also identified as an area that is continuing to take a bigger slice of the state budget. Overall, it is reported that the top areas of attention for the Ohio legislators are K-12 schools, corrections, medicade and human services, and higher education. Finally, it was emphasized that some legislators greatly favor two-year schools than four-year colleges. The reason is that there are 50 two-year schools in the state, which means that almost every legislator has a technical school in their district.

In sum, this study shows that during the early to mid-1990s, higher education was viewed as a secondary priority in Wisconsin and Ohio, while a top priority in Georgia. From this analysis, it is clear that gubernatorial and legislative influences are crucial indicators of state support for higher education.

Implications for Policy and Strategy

The findings from the study have some profound implications for strengthening state-university partnership and raising state appropriations for research universites. The following strategies and policy considerations intend to provide discussion points for

campus administrators and state officials to address while planning for the future of higher education.

Research Universities

Commitment to Public Service and Outreach

This study suggests that research universities must find new ways to update their public service outreach mission in order to earn greater support in the 21st Century. A deeper campus commitment to these efforts would help institutions, land-grant universities in particular, reclaim their image as the state problem solver. Evidence also suggests that this tactic would garner greater gubernatorial, legislative, and public support for the institution.

One way to spur this necessary change is to reevaluate the current structure of outreach and public service at research univerisities. This report suggests that placing the extension under the management of the research land-grant university (as opposed to an independent extension campus) is the most useful way to help the institution reclaim its identity as the state's problem solver. As evidenced by the review of UGA, a more formalized outreach structure seems critical to helping the research universities track, coordinate, and communicate the existing outreach activities of institution.

But the commitment to public service must go beyond a change in structure. Rather, the programs and reward system of research universities must accurately reflect the commitment to serving the State. Put differently, campus administrators and faculty governance must fully support and reward professors who pursue public service

activities. The University of Georgia's public service career ladder may provide one model for institutions to consider.

Focus on Accountability

On the efficiency side, faculty workload, time-to-degree and other accountability issues must continue to be addressed and clearly communicated to the legislature and public at-large. Public support for research universities depends on the institution's credibility as a good steward of state tax dollars. But, as it was learned in the case studies, the ultimate accountability comes with the public understanding and appreciation of the "outcomes" of the university—that the university is using public resources to help the people of the state.

Higher Education Governance

Innovative Approaches to Economic Development

State higher education governance structures should consider strategies aimed at building stronger partnerships between institutions and private industry for the purpose of developing state economy and assisting with social problems. Like Georgia's ICAPP program, a needs assessment might be conducted with business and community leaders to determine important initiatives. These needs could be linked to existing or new educational opportunities to achieve these goals. Collaborative efforts with the private sector might also be an important component, including the participation of a state's private universities. The research I university has the expertise and responsibility to take a leadership role in the development of these programs.

In addition, state higher education governance structures must work with the research I campus to develop more effective means to communicate its impact to the state. This study pointed out that the full impact of UW-Madison and Ohio State University's public service and economic assistance to the State is unknown. The message is largely one-dimensional—that students who attend these institutions receive a high-quality education. To gain more support, research universities must be viewed as providing a broader benefit to the state's economy and residents' quality of life. This approach must go beyond economic impact report about jobs and revenue. Rather, it must bring to bear tangible examples or stories of how the investment in the System raises the quality of life for state residents.

State Government

Investment in Higher Education

This study suggest that former Georgia Governor Zell Miller's political influence has revolutionized higher education in Georgia. For a long time, many Georgians battled with the sacrifices they would make in order to send their kids to the University. But the investment of the former governor and legislature has eliminated these once formidable barriers and redefined the university role as the state's economic engine and problem solver. The point is that the act of the governor and legislature has a colossal impact on the state-university partnership and the extent of state support for the research I university.

Recent conservative approaches to funding higher education threatens the quality, access, and affordability of U.S. colleges and universities. Present trends continued,

sacrifices to one or more of these goals will wittingly or unwittingly be made. Doing its part, a refocused research university and governance structure that better serves the public service and economic development goals would merit more support. The challenge for states is to provide the necessary resources to help governing boards and campuses achieve these objectives.

Final Thoughts

This study intends to spark a more meaningful dialogue about the challenges that states and research universities face as they plan for the future of higher education. The findings assert that the partnerships between the institutions, governance boards, and state governments are crucial to improving higher education budgets in the 21st century. In sum, the financial stability of state universities is contingent on their ability to earn state support. Just as important, higher education governing boards have a key role in helping campuses meet their objectives—striving to improve the economic health and quality of life in a state. Finally, the state needs to provide its institutions with the necessary resources to make these goals a reality. It is the commitment of the three partners that will bring about a stronger and brighter future for public colleges and universities.

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Appendices

APPENDIX 1: CARNEGIE PUBLIC RESEARCH I UNIVERSITIES

Source: The Carnegie Foundation for the Advancement of Teaching. A Classification of Institutions of Higher Education (1994). Foreword by Ernest Boyer, San Francisco: Jossey-Bass, Inc. Publisher

ALABAMA
University of Alabama at Birmingham

ARIZONA
Arizona State University
University of Arizona

CALIFORNIA
University of California at Berkeley
University of California at Davis
University of California at Irvine
University of California at Los Angeles
University of California at San Diego
University of California at San Francisco
University of California at Santa Barbara

COLORADO
Colorado State University
University of Colorado at Boulder

CONNECTICUT
University of Connecticut

FLORIDA
Florida State University
University of Florida

GEORGIA
Georgia Institute of Technology
University of Georgia

HAWAII
University of Hawaii at Manoa

ILLINOIS
University of Illinois at Chicago
University of Illinois at Urbana—at Champaign

INDIANA
Indiana University at Bloomington
Purdue University, Main Campus

IOWA
Iowa State University
University of Iowa

KANSAS
University of Kansas, Main Campus

KENTUCKY
University of Kentucky

LOUISIANA
Louisiana State University and Agricultural
and Mechanical College

MARYLAND
University of Maryland College Park

MASSACHUSETTS
University of Massachusetts at Amherst

MICHIGAN
Michigan State University
University of Michigan at Ann Arbor
Wayne State University

MINNESOTA
University of Minnesota at Twin Cities

MISSOURI
University of Missouri at Columbia

NEBRASKA
University of Nebraska at Lincoln

NEW JERSEY
Rutgers the State University of New Jersey, New Brunswick Campus

NEW MEXICO
New Mexico State University, Main Campus
University of New Mexico, Main Campus

NEW YORK
State University of New York at Buffalo
State University of New York at Stony Brook

NORTH CAROLINA
North Carolina State University
University of North Carolina at Chapel Hill

OHIO
Ohio State University, Main Campus
The University of Cincinnati, Main Campus

OREGON
Oregon State University

PENNSYLVANIA
Pennsylvania State University, Main Campus
Temple University
University of Pittsburgh, Pittsburgh Campus

TENNESSEE
University of Tennessee at Knoxville

TEXAS
Texas A & M University
University of Texas at Austin

UTAH
University of Utah
Utah State University

VIRGINIA
University of Virginia
Virginia Commonwealth University
Virginia Polytechnic Institute and State University

WASHINGTON
University of Washington

WEST VIRGINIA
West Virginia University

WISCONSIN
University of Wisconsin at Madison

Appendix 2: Multiple Regression Variables, Metric, and Data Sources

Variable	Metric	Data Source
Dependant Variable		
Unrestricted state appropriations	In dollars	National Center for Educational Statistics, Integrated Postsecondary Education Data System (IPEDS). Finance and enrollment data files used for FY 1991-92 and FY 1996-97 http://nces.ed.gov/ipeds/data.html
Independent Variables		
Total state population	Total number	U.S. Census Bureau, United States Department of Commerce. Website: http://www.census.gov/
Population of "college age" residents (18-24)	Total number	U.S. Census Bureau, United States Department of Commerce. Website: http://www.census.gov/
Per capita income	In dollars	Bureau of Economic Analysis: United States Department of Commerce. Website: http://www.bea.doc.gov/
Per capita taxes	In dollars	U.S. Census Bureau, United States Department of Commerce. Website: http://www.census.gov/
Employment rate	In dollars	Federal Interagency Council on Statistical Policy (FEDSTATS) Website: http://www.fedstats.gov/
Party majority (republican or democrat) lower house during budget creation	Dummy variable: "1" signifies a republican majority, "0" signifies a democratic majority.	1991-1992 data: Vital statistics on American politics (1996). Washington, D.C.CQ Press. 1996-97 data: Project Vote Smart. Website: http://www.vote-smart.org/
Party majority (republican or democrat) upper house during budget creation	Dummy variable: "1" signifies a republican majority, "0" signifies a democratic majority.	1991-1992 data: Vital statistics on American politics (1996). Washington, D.C.CQ Press. 1996-97 data: Project Vote Smart. Website: http://www.vote-smart.org/

Republican or democratic governor during budget creation	Dummy variable: "1" signifies a republican governor, "0" signifies a democratic governor.	1991-1992 data: Vital statistics on American politics (1996). Washington, D.C.CQ Press. 1996-97 data: Project Vote Smart. Website: http://www.vote-smart.org/
Per capita spent on health care	In dollars	U.S. Census Bureau, United States Department of Commerce. Website: http://www.census.gov/
Per capita spent on corrections	In dollars	U.S. Census Bureau, United States Department of Commerce. Website: http://www.census.gov/
Per capita spent on education	In dollars	U.S. Census Bureau, United States Department of Commerce. Website: http://www.census.gov/
Consolidated governing board governing all state higher education institutions	Dummy variable: "1" indicates that the institution is governed under this arrangement, "0" signifies that it is not.	All governance structure data taken from: State Postsecondary Education Structures Sourcebook: State Coordinating and Governing Boards. Education Commission of the States: Denver, Colorado. (Volumes 1994 & 1997)
Coordinating board: regulatory power	Dummy variable: "1" indicates that the institution is governed under this arrangement, "0" signifies that it is not.	(see governance structure source above)
Coordinating board: advisory power	Dummy variable: "1" indicates that the institution is governed under this arrangement, "0" signifies that it is not.	(see governance structure source above)
Planning and service agency	Dummy variable: "1" indicates that the institution is governed under this arrangement, "0" signifies that it is not.	(see governance structure source above)
Number of public 4-year institutions in the state	Number of institutions	Digest of Education Statistics. U.S. Dept. of Health, Education, and Welfare, Education Division, National Center for Education Statistics: Washington, D.C. (Volumes 1992 & 1997).

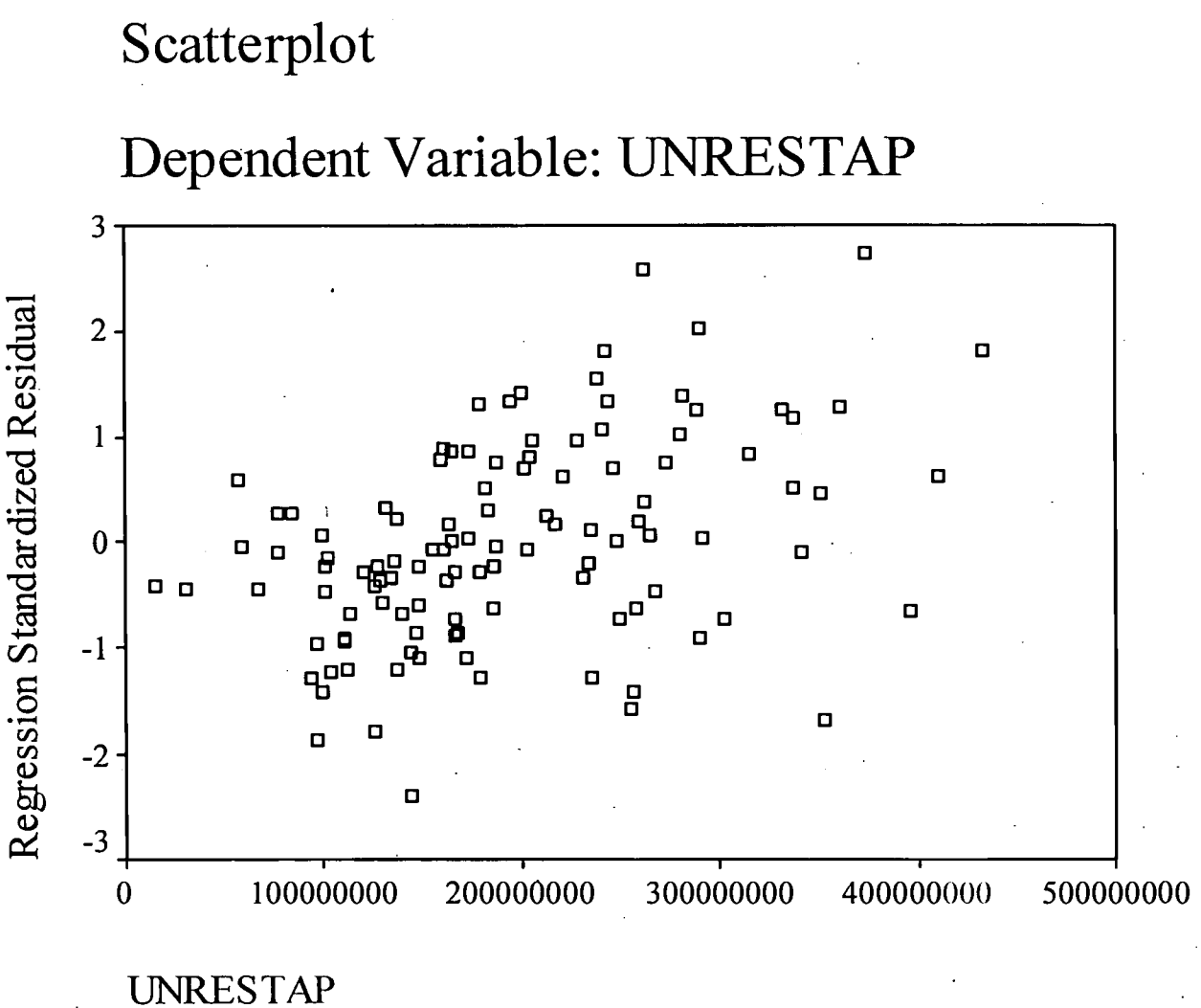
Number of private 4-year institutions in the state	Number of institutions	Digest of Education Statistics. U.S. Dept. of Health, Education, and Welfare, Education Division, National Center for Education Statistics: Washington, D.C. (Volumes 1992 & 1997).
Total enrollment: full time undergraduate students	In numbers of students	All institutional characteristic data taken from the National Center for Educational Statistics, Integrated Postsecondary Education Data System (IPEDS). Finance and enrollment data files used for FY 1991-92 and FY 1996-97 http://nces.ed.gov/ipeds/data.html
Total enrollment: full time graduate students	In numbers of students	(see institutional characteristic source above)
Total tuition and fees revenue	In dollars	(see institutional characteristic source above)
Total private gifts and contracts	In dollars	(see institutional characteristic source above)
Total federal grants and contracts	In dollars	(see institutional characteristic source above)
Expenditures on instruction	In dollars	(see institutional characteristic source above)
Expenditures on research	In dollars	(see institutional characteristic source above)
Expenditures on public service	In dollars	(see institutional characteristic source above)

Appendix 3: Means, Standard Deviations, and Correlations for the Regression Variables

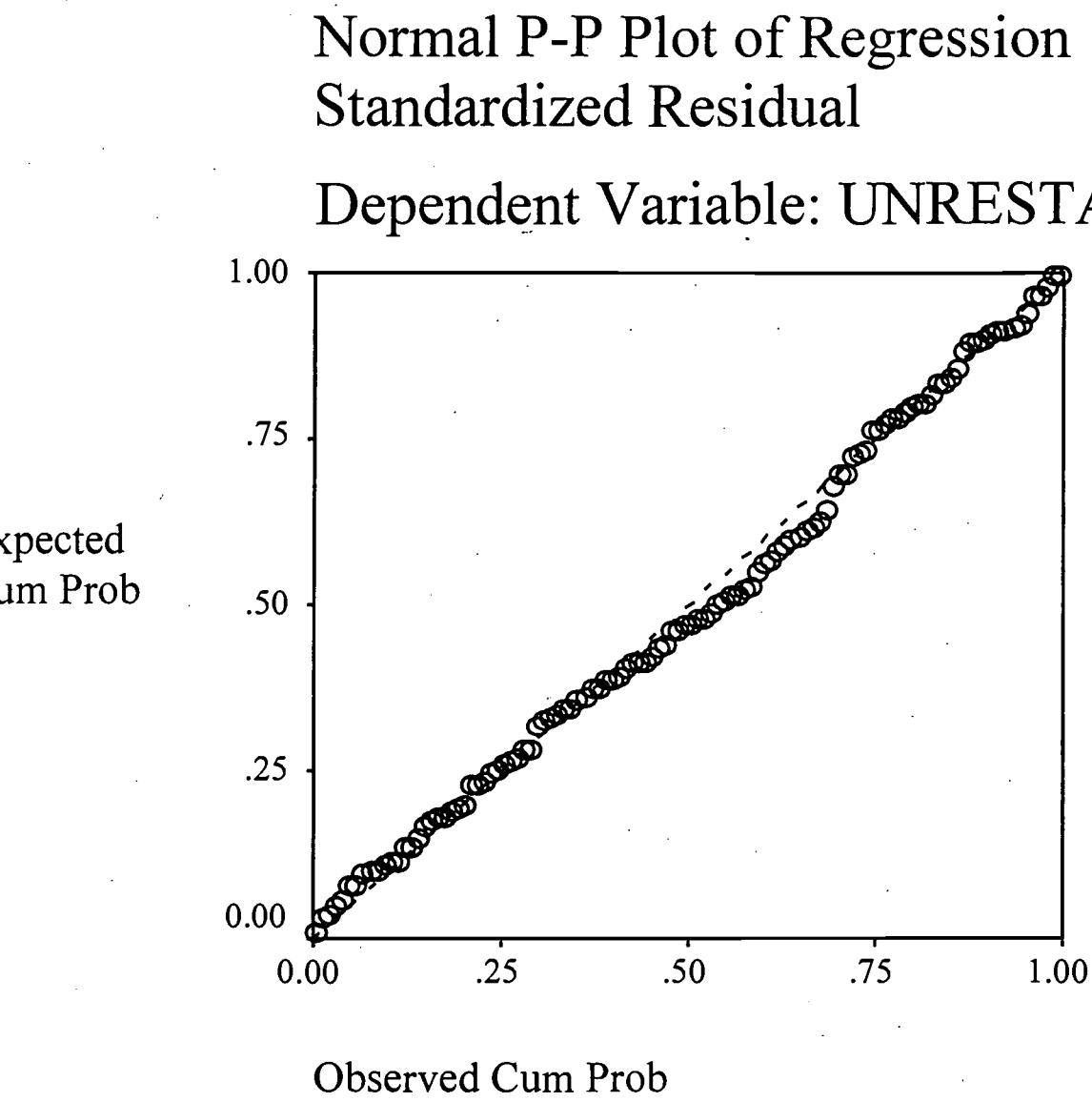
Variable	Mean	SD	1	2	3	4	5	6	7	8	9
Per capita tax	1421.24	333.8	1.00								
Total population	9,955,980.5	9,019,758	.170	1.00							
Republican or Democrat majority in the State Senate	.41	.49	.217*	.025	1.00						
Republican or Democrat majority in the State Assembly	.34	.48	.011	-.180	.495**	1.00					
Consolidated Governing Board	.26	.44	-.038	-.281**	.069	-.017	1.00				
Number of 4-year Public Universities	17.65	12.08	-.009	.707**	-.054	.025	-3.64**	1.00			
Expenditures on Public Service	40,297,431	35,011,101	-.004	-.300**	.001	.022	.188*	-.327**	1.00		
Expenditures on Instruction	177,744,533	88,496,389	.319**	.302**	.189*	.117	-.060	.156	.243**	1.00	
Total enrollment of full-time graduate students	4,472.12	2,356.45	.075	.255**	.027	.118	-.021	.174	.186*	.816**	1.00
Dependent Variable: Unrestricted State Appropriations	1.9E +08	85,590,019	.325**	.228*	-.006	-.052	.226*	-.003	.442**	.780**	.719**

* Correlation is significant at the .05 level (2-tailed)
** Correlation is significant at the .01 level (2-tailed)

Appendix 4: Scatterplot of Residuals versus Fitted Values
Dependant Variable: Unrestricted State Appropriations
(UNRESTAP) measured in dollars



Appendix 5: Normality Plot of Regression Standardized Residual Dependant variable: Unrestricted State Appropriations (UNRSTAP)



Appendix 6: Interview Protocol

"Tell me about the factors that you believe best explain the level of state support for Institution X."

"From your perspective, what is happening in the State or on campus that best tells the story about the level of state support for Institution X."

Topical Areas

Economic and Demographic factors:

To what extent is funding for higher education in your state based on economic measures such as state tax capacity, availability of state revenues, and general economic conditions?

To what extent is funding for higher education and subsequently Institution X, based on changes in the overall population of the state, enrollment levels, and participation rates of the particular institutions?

Political factors:

Describe the politics of the budgeting process within your state, and explain how it affects appropriations for higher education, and Institution X, in particular.

To what extent does the Governor affect the level of appropriations for Institution X, and higher education in general? Historically, how important has the Governor been in planning for the future of higher education in your state?

Describe the political climate surrounding legislative support for Institution X. To what extent has this climate, or the actions of individual legislators, influenced the level of appropriations during the past decade?

What priority is given to higher education in your state, in particular Institution X, compared to other competing state agencies or programs such as corrections, K-12 schools, etc?

Higher Education Governance:

Describe the relationship between Institution X and the system or board that governs it. How does the governance structure of higher education in your state affect the level of appropriations allocated to Institution X?

Within this governance structure, how does the method in which higher education funds are allocated influence the level of appropriations for Institution X?

Cultural Factors: (historical traditions/public attitudes)

Historically, to what degree has the state supported Institution X and higher education?

Describe the current level of citizens' collective value accorded to Institution X. What significant events or historical precedents may have shaped citizen's attitudes toward this institution?

To what degree do public attitudes reflect the growth of appropriations for Institution X?

Historically, how has the legislature treated Institution X? What degree of autonomy or flexibility (e.g. tuition) has been afforded to Institution X since its existence?

Institutional Strategies and Characteristics:

Have institutional strategies been employed to maintain or strengthen state support for Institution X? Explain the reasons behind the success or failure of these strategies.

What characteristics does Institution X posses that may lend it more state support than other state campuses?

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