

Helping students or just taking their cuts? How prioritization of state student aid programs responds to downturns in higher education appropriations

Cover Page

* One- or two-sentence description of the article (for the contents page):

Using data on the 50 American states from 1980 to 2013, this study examines the prioritization of state student aid relative to institutional support during periods of substantial declines in higher education spending. Student aid is found to be most often prioritized in such downturns and this is generally consistent within states over time, while states with higher aid funding per student and lower unemployment rates at the onset of a downturn are more likely to prioritize aid during the downturn.

Author 1:

Name: Amy Y. Li

Email: amy.li@unco.edu

Phone: 970-351-3796

Address:

University of Northern Colorado

Department of Leadership, Policy, and Development

McKee Hall 418, Campus Box 103

Greeley, CO 80639

Amy Li is an Assistant Professor of Higher Education at the University of Northern Colorado. Her research focuses on higher education finance and policy, specifically performance funding, financial aid and student loan debt, “free” college programs, state appropriations, and state policy adoption. Her recent works include “Performance Funding Policy Impacts on STEM Degree Attainment” in *Educational Policy*, “Dramatic Declines in Higher Education Appropriations: State Conditions for Budget Punctuations” in *Research in Higher Education*, and a co-authored piece on “Institutional Accountability: A Comparison of the Predictors of Student Loan Repayment and Default Rates” published in the *ANNALS of the American Academy of Political and Social Science*.

Author 2:

Name: William Zumeta

Email: zumeta@uw.edu

Phone: 206-543-0743

Address:

University of Washington

Evans School of Public Policy & Governance

Box 353055

Seattle, WA 98195-3055

William Zumeta is Professor of Public Policy & Governance and of Higher Education at the University of Washington in Seattle. He is a TIAA Institute Fellow and served as President of the Association for the Study of Higher Education in 2009-10. His research interests are in state higher education policy and finance, including accountability policies and policies affecting private institutions and community colleges, among others. He is first author of *Financing American Higher Education in the Era of Globalization*, with D. Breneman, P. Callan, & J. Finney (Harvard Education Press, 2012). He is co-author, with Alicia Kinne-Clawson, of, "The State Higher Education Executive Officer and Higher Education Finance," a chapter in D. Tandberg, B. Sponsler, R. Hanna, & J. Guilbeau (eds.), *The State Higher Education Executive Officer*, in press at Teachers College Press.

Structured Abstract

Background/Context

During downturns in state higher education support, state student aid becomes especially important for affordability because colleges react by increasing tuition, and other aid sources may not fully respond. From a policy perspective, states might be expected to protect aid support in response to fiscal stringency, yet this key relationship is understudied. We use social construction theory framing, hypothesizing that, because college students are positively construed as a “deserving” target population, policymakers prefer allocating benefits to them relative to institutional support, particularly in hard times.

Purposes:

We seek to better understand the long-term shift in state higher education funding away from institutional support toward student aid, with particular interest in whether this trend accelerates during fiscal stringencies when tuition spikes increase the salience of students’ needs. Further, we aim to understand structural, political and economic characteristics of states that prioritize student aid during downturns versus not.

Research Design:

Across 50 states from 1980-2013, we identify periods of substantial downturn in higher education appropriations, observing 109 such cases. Within these state-specific downturns, we compare percentage changes in student aid funding versus institutional support, classifying budgetary responses into three priority categories: *student aid*, *institutional support*, or *budgetary equity*. We conduct a regression across 1700 state-years to investigate whether the share of appropriations allocated to student aid differs in downturn versus non-downturn years, and employ a random effects model to explore trends within states. A logistic regression estimates the relationship between student aid prioritization and state-level factors.

Findings:

States prioritize funding for student aid in most downturns, fewer in the 1980s, but consistent at around 80% across more recent sub-periods (1990s, early 2000s, late 2000s-2010s), indicating considerable stability in this dimension of state higher education policy cultures. On average, states increase student aid’s share of higher education appropriations more sharply during downturn years (2.6 percentage points higher aid share) than other years. States with more aid per student and a lower unemployment rate at downturn onset are more likely to prioritize aid. Magnitude of tuition increase during downturns was not a significant factor.

Conclusions:

This study contributes to discussions about higher education affordability policies by illuminating both the relative resilience of student aid support in downturns and that the long-term increase in aid’s share of higher education appropriations is more likely a reaction to tuition growth than an explicit “voucherization” of higher education finance policy.

Keywords: financial aid; state funding; higher education; higher education finance; social construction

Executive Summary

During increasingly frequent periods of substantial downturn in state support of higher education, to what extent do states protect their programs of financial aid to students relative to their support for institutions? Virtually all states have student aid programs in place which in total provide more than \$10 billion annually to (largely undergraduate) students, with the primary objective of making college more affordable and broadly accessible. These programs also serve as a policy tool for states to advance their college completion and equity agendas. The role of student aid is particularly important during downturns because public institution tuition levels tend to increase sharply in such times, while federal and other sources of aid do not necessarily respond to increased state-level needs.

We investigated whether state policymakers do indeed prioritize student aid over support for institutions when overall cuts to state higher education budgets are deemed necessary. We defined downturns as years in which inflation-adjusted state appropriations to higher education fell by 5% or more across two consecutive years. A downturn was considered to be in effect until either the state's appropriation recovered to the pre-downturn level or had three consecutive years of real increases. Using these criteria, we identified 109 state-specific downturns over 1980-2013. All states experienced at least one downturn, most states experienced two or three, and three states experienced four downturns.

Applying concepts from the politics of public policy literature on social construction and public budgetary processes, we hypothesized that during downturns policymakers would respond to undergraduate students' needs more than to those of public institutions because students are more favorably constructed than are large institutions, and this favorable construction should be especially salient in periods of budgetary stress. On the other hand, institutions could be more

successful in pressing their budgetary claims because they are better organized to lobby legislators and can marshal support from influential local economic interests and alumni (some of whom are legislators). We also expected that there would be cases where the two types of claimants—"policy targets" in social construction language—would be perceived as equally compelling so that changes in allocations would be similar, following common equity norms in budgeting.

We defined the relative prioritization of *student aid* versus *institutional support* by comparing the percentage change in these two major categories over each downturn period. Thus, if the percentage-change in one of the two categories was at least 5 percentage points more favorable than the percentage change in the other category (say, a 1% cut versus a 6% cut), then the first category was counted as prioritized. Where the difference in relative treatment was less than 5 percentage points, the state was categorized as practicing *budgetary equity*.

We further hypothesized that the relative treatment of the two policy targets might be related to characteristics such as: a state's commitment to student aid (state aid spending per enrolled student); whether or not a substantial portion of the state's student aid was distributed on the basis of academic merit; share of enrollment in private nonprofit institutions, which are likely more dependent on student aid; governance structure for higher education (statewide governing board versus state coordinating or planning board); political party control of the senate, house, and gubernatorial seat; and the unemployment rate, all at the onset of a downturn. We additionally accounted for other state-level characteristics commonly used in studies of higher education spending (per-capita personal income, Gini coefficient, region, public higher education tuition level). Finally, our analyses took into account the extent to which each state's public tuition, per-capita income and unemployment rate changed over each downturn.

Findings:

As predicted, we found that most states generally treated student aid more favorably than institutional support during their downturns in overall higher education support, although this usually meant smaller reductions in student aid than in institutional support rather than increases in aid spending. More favorable treatment of student aid occurred in 75% of the state downturns overall and in around 80% of cases in each of the three more recent downturn eras (1990s, early 2000s, and Great Recession-2010s). Institutional support was prioritized in 17% of the downturns and budgetary equity prevailed in the remaining 7%.

We also found considerable consistency in state classifications across downturns in the different decadal periods, suggesting that states have embedded higher education “policy cultures,” or established ways of coping with common problems—in this case periodic and difficult fiscal circumstances. Generally, these patterns were consistent with more favorable construction of students’ needs than those of institutions. Among the 38 states that experienced two or more significant downturns in higher education support, 24 (63%) retained a policy priority for student aid across their multiple downturns. Only one state, Wyoming, prioritized institutional support across multiple (two) downturns.

Since the share of state higher education dollars going to student aid was increasing overall during the period examined, we explored whether downturns tended to boost the upward trajectory of student aid’s share of higher education support. We hypothesized that downturns might produce such a boost because a favorable construction of students’ needs becomes more salient given sharp tuition increases. Using a regression analysis of state student aid share across the 1,700 state-years, we discovered that downturn years were associated with a 2.6 percentage point higher student aid share compared to non-downturn years (against a context of a 5.7%

mean student aid share across all state-years). When we constructed a random effects model and interacted state-specific downturns with individual state indicators in order to allow the direction and size of effects to vary by state, the overall coefficient on the downturn identifier was no longer statistically significant. However, eight states showed a positive and significantly higher student aid share during their respective downturn years, while the majority showed a positive yet non-significant coefficient estimate, and none allocated significantly less to student aid during these periods. These patterns suggest that downturn conditions are at least in some cases conducive to the growth of student aid share, as we expected.

Lastly, we conducted a logistic regression to analyze the relationship between a state's prioritization of student aid in its downturn years or not (collapsing together the institutional support and budgetary equity categories) and the various state characteristics mentioned earlier. In our preferred model, we found that a state's commitment to student aid at onset of a downturn positively predicted prioritizing student aid during the downturn, with every 10% increase in aid dollars per student associated with a 6% increase in the likelihood of prioritizing student aid. On the other hand, a higher state unemployment rate at the onset of a downturn was negatively associated with student aid prioritization, with a 1-percentage point increase in unemployment rate lowering the likelihood of prioritizing student aid by 36%. This suggests that states with weaker economies may be less willing to reduce appropriations to institutions that they already fear reach uncomfortably close to institutional core needs. Although limited degrees of freedom may be a factor, we were mildly surprised to find no significant relationships between student aid prioritization and: *political party control*; *public tuition level*; *magnitude of public tuition increase during the downturn*; *presence of a substantial merit aid program in a state*; *region*;

state *governance structure*; or *private enrollment share*. We experimented with more parsimonious models, which resulted in consistent findings.

Implications:

Given the context of a secular trend toward an increasing student aid share of state appropriations relative to institutional support, we questioned initially if this might signify an explicit policy move toward “voucherization” of higher education finance, i.e., deliberately directing more state funding to students who then chose where to take their subsidies. We conclude that the tendency of the aid share to increase during downturns, for aid share growth in these periods to be significantly associated with a stronger state aid orientation, and the lack of an association between aid prioritization and political party control together suggest that something else is at work. More likely, state policymakers are responding to the long upward march in real tuition charges to favorably constructed students by trying to allocate more benefits to students in the form of financial aid, at a relatively modest cost. In substantial downturns, the need to protect this vulnerable group is more salient, so the tendency to prioritize aid is perceived as more urgent than institutional needs, perhaps because institutions have more options for reducing inefficiencies and generating alternative revenue. This favorable construction of students is a bright spot in the contemporary higher education finance landscape and provides some assurance that the state policy tool of need-based student aid can continue to be used, and perhaps honed further with appropriately designed incentives, to advance the completion and equity agendas prominent in state higher education policy today.

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Introduction and Motivation

Economic recessions are recurring and fairly frequent phenomena. The U.S. has experienced eight periods of negative economic growth since 1980, with four of these long enough to be considered recessions (National Bureau of Economic Research, n.d.).¹ These events substantially and disproportionately impact state higher education funding (Delaney & Doyle, 2011; Zumeta, 2009; 2014) and their implications for important policies, such as state student aid, need to be better understood. State student aid funding is especially important in periods of recession and their aftermath because the typical reaction to state revenue shortfalls includes both cuts in appropriations for higher education and sharp tuition increases by public colleges and universities. Virtually all states have one or more programs of grant aid to college students, or “student aid.” The total grant aid to students provided by these programs exceeds \$10 billion, of which 98% goes to undergraduates (College Board, 2017), demonstrating their considerable importance in the array of governmental efforts to make college affordable. In some states, as will be seen, the relative importance of these programs for student affordability is quite high.

This study examines patterns of prioritization of state student aid programs in relation to the broader budgetary treatment of higher education by states over a period of 34 years (1980 – 2013 inclusive). From a public policy perspective, one might hope that states would seek to respond to the recurring pattern of sharp public university tuition increases during difficult economic times by amply funding student aid in order to help students afford such price hikes and persist through college. This would be expected to occur if students are a target population

that is *favorably constructed* by citizens and their agents (policymakers) within the framework suggested by social construction theorists (Schneider & Ingram, 1993; Schneider, Ingram, & DeLeon, 2014). Alternatively, in such times of fiscal stress when competition for available resources is particularly intense, student aid programs—which in nearly all states are available to state residents attending private as well as public institutions—may have difficulty competing with public colleges that could be better positioned to lobby legislators (Li, 2017; McLendon, Hearn, & Mokher, 2009; Tandberg, 2010). Finally, the literature on public budgeting processes indicates that equity norms are generally influential in the relative treatment of budgetary claimants (Rubin, 1997; Wildavsky, 1984), so it would not be surprising to find that in some states, student aid programs receive similar treatment to institutional appropriations during economic downturns in higher education spending.

Our research seeks to understand which of these three plausible alternative patterns characterizes more states—and which types of states—in each of the periods of sharp downturns in state support for higher education since 1980, including the most recent period associated with the “Great Recession” of 2007-09. As will be explained, we define a period of *downturn* in higher education appropriations at the state-specific level but, since many of the state reductions closely match U.S. recession periods and their immediate aftermath, we generally refer to the downturns in relation to these well-known national recessions. Further, we examine the characteristics of states that fall into each of the three categories using state-level postsecondary education, economic, and political variables expected to relate to budgetary allocations. Better understanding of the factors associated with the resilience of key student assistance programs in hard times should help in assessing how much difference they can make in supporting the

national college completion agenda (Gates Foundation, n.d.; Lumina Foundation, 2013; Zumeta, Breneman, Callan, & Finney, 2012).

By 2013, the U.S. had largely emerged from the worst recession since the 1930s and its lingering hangover (Zumeta, 2014). Per-student appropriations had reversed an annual decline that began in 2009, although much of this apparent gain was due to enrollment decline. Although increases have been painfully slow and not uniform across states, nationwide, states were providing about 20% more (in current dollars) for higher education in fiscal year 2017 than they were five years earlier (Zumeta, 2017). This uptick follows a long-standing cyclical pattern, likened to a “balance wheel” (Delaney & Doyle, 2011), whereby higher education support tends to take disproportionate cuts in recessions and their immediate aftermath but eventually recovers as times improve. While the majority of cuts made to state higher education appropriations from 1980 to 2009 have been incremental, many states have also experienced punctuated (unusually large) cuts to appropriations (Li, 2017).

Each successive recession period since that of the early 1980s has affected more states with larger cuts and longer periods of decreased state support (Delaney & Doyle, 2011; Zumeta et al, 2012; Zumeta 2017). When state support for higher education stagnates or declines, public colleges and universities typically respond by increasing tuition sharply (see Figure 1), with (often veiled) acquiescence from state policymakers.

[Insert Figure 1]

Tuition increases and declines in state support, exacerbated in recessionary periods, have shifted more of the cost of higher education onto students and families. Net tuition as a share of

total educational revenues grew extensively during the Great Recession and aftermath, from 36.0% in 2008 to 48.5% in 2013, then declined slightly to 47.3% in 2016 as state support inched up (State Higher Education Executive Officers, 2017). Over a longer period, the reliance of public higher education on tuition revenue has grown from approximately 26% in 1991 to the levels just mentioned approaching 50% of total educational revenues. As tuition has climbed, state student aid programs have become increasingly important to the key policy goal of ensuring affordability of higher education for students so that they can enter college, persist, and complete degrees. In 2016-17, 8% of all grant aid for students came from state governments (College Board, 2017, Figure 3). Support for federal student aid programs, while much larger in total, has its own rhythms and is not necessarily responsive to state fiscal conditions (Zumeta et al, 2012). Moreover, federal grant aid has been slowly declining in constant dollar terms in recent years (College Board, 2017). State policymakers, on the other hand, can adjust state student aid programs and funding to be responsive to “unavoidable” tuition escalation in periods of economic stress to at least mitigate price effects on students. Here we explore to what extent they have done this over three decades, focusing on periods (defined at the state level) when overall state support for higher education was significantly reduced, and we also examine the state characteristics associated with more versus less prioritization of student aid funding during these periods.

State Student Aid Grant Programs

In recent decades, nationwide, state grant aid programs have grown faster than state appropriations to public higher education. In 1980-81, state grant expenditures constituted just 3.3% of total state support for higher education, with this share rising to 8% in 2001-02, and to 12.8% in 2014-15 (College Board, 2015; NASSGAP, 2015). This long-term trend has occurred

over an era when total state higher education support has grown relatively little in real per-student terms. In current dollars, state undergraduate grant aid increased from \$2.15 billion in 1990-01 to nearly \$10.5 billion in 2014-15, according to the National Association of State Student Grant and Aid Programs (NASSGAP, 2015).

This growth in the relative emphasis on student aid in states' higher education budgets raises the obvious question: Why? Does it reflect an explicit, philosophically-based “voucherization”² of state higher education finance policy in the sense of deliberately linking more money to students and letting them choose where to enroll? Or, is the trend a function of hard-pressed states simply seeking to reduce higher education subsidies overall by allowing tuition to rise while providing the needy—at least where need is the primary criterion for aid eligibility—more to help compensate? Perhaps the latter pattern is driven in important measure by responses to episodic downturns when appropriations fall, tuition spikes, and many or most states seek to mitigate the impacts on students by treating student aid budgets relatively favorably. In this study, we focus specifically on the role of this last phenomenon—the relative treatment of student aid by states during periods when overall higher education appropriations are significantly reduced—which we term higher education *downturns*.

“Merit” aid. When state student aid programs first emerged, largely in the 1960s and 1970s, the vast majority of the funding was provided to students on the basis of their financial need. After all, the *raison d'être* for these programs was to help students who could not afford tuition costs. Beginning in the early 1990s a new pattern began to emerge (Doyle, 2010a). Although some state programs had long existed that awarded student aid on bases other than financial need—such as to children of deceased public safety officers, to a small number of honors students in each legislative district or to students studying fields thought to be

undersupplied within the state—the total dollar amount of such awards was generally quite small compared to the dollars for need-based aid.

Starting with Georgia's HOPE Scholarship program in 1993, a surge in so-called "merit-based" aid began. These programs offered state grant aid, generally without regard to financial need, to large numbers of high achieving students (e.g., those with high GPAs or college entrance examination scores). The higher achieving group tends to include many more middle-income and affluent than truly needy students, and generally includes fewer underrepresented students (Heller, 2004; Zhang & Ness, 2010). States vary in the sources utilized to fund merit aid programs, which include tobacco settlements, land leases and sales, turnpike tolls, state lotteries, and, to a limited extent, state general funds (Tennessee Higher Education Commission, 2012). Many programs, including the Georgia HOPE Scholarship, are financed by state lottery proceeds (Doyle, 2010b; Heller, 2004), and thus tap a separate source of revenue than does need-based student aid, which mostly comes from state general funds. Largely funded from a new, nontax source and in an era when tuition was already climbing fast, merit aid programs proved to have strong political appeal in addition to advancing policy objectives such as keeping capable students from leaving a state and, arguably, increasing the state's college attendance rates (Cornwell & Mustard, 2005; Doyle, 2010a; Monks, 2009). Largely as a result, the nationwide proportion of state grant aid awarded to undergraduates primarily on the basis of student financial need fell from 76.7% in 1999-2000, to 61.5% in 2015-16 (NASSGAP, 2000; 2016).

Hence, our empirical analysis takes into account whether or not a state operates a broad-based merit aid program, defined as a program that is large in terms of the proportion of students who are eligible and the dollar amount of the award (Doyle, 2006). It would not be surprising to find that the resilience of state aid support in downturn periods varies with this variable since

merit aid programs have notably different objectives and funding sources, and therefore plausibly different politics, from traditional need-based aid.

Conceptual Framework

We conceptualize this study using social construction theory from the public policy and political science literature, which posits that the portrayals of policy targets contain value-laden, emotional, and powerful signals and images that influence policy decisions (Schneider & Ingram, 1993). The positive and negative associations of target populations as well as their political power influences policymakers' decisions to allocate resources. Policymakers prefer to allocate benefits to populations perceived as "deserving" and to minimize benefits to "undeserving" populations, which in turn appeals to the public, increases policymakers' political capital, and supports their continued re-election (Schneider, Ingram, & DeLeon, 2014). For example, college students are generally positively constructed as hardworking, worthy, and deserving of benefits, so policymakers may tend to provide—and safeguard when necessary—benefits to this group. Yet, students lack the political power to effectively demand more resources, so they are often the first to feel the effects (via higher tuition) of cuts when budgets are tight. A question arises, however, as to whether policymakers might prefer to expend modest resources on (or minimize cuts to) student financial aid to try to mitigate these effects on a group that is mostly positively constructed.

On the other hand, public colleges might be constructed more negatively by many as greedy, costly, and inefficient, yet wield considerable influence by virtue of their lobbying. Even though public universities usually face limits on lobbying expenditures and cannot make direct campaign contributions, supporters such as alumni and economic interests in universities' locales can be mobilized to enhance institutions' influence. Also, public colleges and universities

typically have a number of alumni among legislators. If colleges are framed as undeserving contenders, policymakers may not want to openly appear to be swayed by lobbyists or help colleges more than absolutely necessary. Consequently, public colleges would be likely to receive relatively few contested benefits, and some of the benefits they do receive may be buried within the details of legislation and hard to identify (Schneider et al., 2014). However, public colleges may also be constructed as essential, innovative, and contributing to the public good, which would support the maintenance of taxpayer funding for direct institutional support during hard times.

When the financial interests of students and public colleges are in direct competition with each other in terms of state funding, policymakers must make decisions on how to allocate “benefits” and “burdens” (Schneider & Ingram, 1993). We propose that social construction theory frames the differing values that policymakers place on protecting student aid programs versus safeguarding funding for public colleges but that it is difficult *a priori* to specify which claims will most often win out. Of course, it is possible that state policymakers are not so intentional about their allocation decisions in some cases, and that allocations sometimes depend on which target population voices its needs most loudly. In any case, beneath these competing claims is the underlying norm in budgetary processes of equity of treatment. When claimants seem roughly equally deserving (or equally loud in their clamor), rough equity in allocation of pain or gains is likely to be the “default” posture of policymakers (Rubin, 1997; Wildavsky, 1984).

Research Questions

In this study, we are primarily interested in how states behave with respect to funding of state student aid programs during the evidently increasingly frequent periods of downturn in

higher education support. We classify each state's budgetary allocation response in each of its downturns into one of three categories: 1) cases where funding for student aid programs is treated more favorably meaning, typically in a downturn, that it declines less than appropriations for public colleges and universities—*student aid* is assumed to be a high policy priority in these cases; 2) cases where student aid programs are treated less favorably than appropriations to public institutions—*institutional support* is judged to be the higher policy priority; and 3) a third category where states treat student aid about the same as institutional appropriations, in which case we term *budgetary equity* to be the prevailing value. We describe the precise basis for placing states into these categories in specific downturns in a subsequent section.

Our research questions can be grouped as follows.

First, which of our three student aid funding priority categories contains the most (and the fewest) states? In short, do most states make an effort to protect higher education's affordability for positively constructed students through student aid during downturn periods? In those that do not, is it public institutional interests or equity norms across budget categories that seem to be the prevailing values at work?

Second, are more recent downturns different from earlier ones? Do states tend to stay in the same policy priority category over time with respect to their relative treatment of student aid support? Or, do many behave differently in successive downturns? One might expect some stability over time in "state policy culture"-driven approaches to higher education funding and student affordability issues. Yet, downturns have usually occurred some years apart and, overall, our data covers more than 30 years of state fiscal history so much could change within states.

Third, we explore to what extent state student aid funding behaves differently during periods of higher education downturn as compared to more "normal" periods, that is, in periods

between downturns. In other words, do downturns alter the underlying secular trend, which in most states is toward allocating a greater share of state funding to student aid? We tentatively hypothesize that downturns would tend to produce upward inflection points to the general trajectory of increase in student aid's share on the theory that state policymakers make special efforts to mitigate the effects of substantial appropriations cuts and their associated tuition hikes on students, who are positively constructed. If this proves to be the case, does the pattern apply universally or are some states exceptions? In what ways do states that are exceptions differ from those that follow the general pattern?

Finally, we examine the major state-level variables that are associated with states' behavior in protecting student aid (or not) during downturns as captured by the policy priority categories. We explore postsecondary, political, and economic characteristics within each state to determine whether they are associated with the prioritization of student aid. The specific variables we consider and our hypotheses are described later.

Data and Descriptive Analysis

Definition and Anatomy of Downturns

We use the term “downturn” to distinguish periods of serious state fiscal stress that result in significant reductions in state support for higher education. These periods often coincide with national recessions and their immediate aftermath years so, for ease of reference, we refer to them by the decade in which one of the national recessions occurred (i.e. 1980s, 1990s, 2000's, and, for the Great Recession and aftermath, 2010's). We gathered annual data on higher education appropriations from the State Higher Education Executive Officers' (SHEEO) Finance reports. Higher education appropriations consist of state (but not local) operating support for higher education institutions and student aid (plus a few other small items). We included higher

education operating funds that were provided through the federal American Recovery and Reinvestment Act (ARRA) during the fiscal years 2009 to 2012 because these temporary supplementary funds were allocated by the states and reported (State Higher Education Executive Officers, 2017). Among all 50 states across years 1980 to 2013, the total annual appropriations allocated to higher education (including ARRA funds where applicable) ranged from \$62.2 million to \$12.6 billion, with a mean of \$1.39 billion (in 2013 CPI-adjusted dollars).

Operationally, we define a downturn as a period when total state appropriations of operating funds for higher education (including state student aid) declined by at least 5%, in inflation-adjusted terms, over a period of two years, i.e., higher education appropriations were at least 5% lower in real terms in year 2 of the focal period than they were in the baseline year (the year before the onset of the downturn). Also, year 2 of the downturn period must have shown some decrease from year 1. This definition thus excluded cases where there was a short period of decline that quickly recovered (e.g., when there was a 5% decline across two years, but it was based on a 10% decline in year 1, followed by a 5% increase in year 2). This definition does not consider enrollment, which typically increases in hard economic times, thus making a 5% real cut even larger in per-student terms. We assert that a 5% real cut over two years is quite substantial in an enterprise such as higher education with a large proportion of skilled personnel costs and a consequent tendency for unit costs to grow over time at a greater rate than the economy-wide rate of inflation (Archibald & Feldman, 2006). Our focus was thus on periods of substantial (and not evanescent) fiscal stress.³

Further, by our basic definition, a period of budgetary downturn continues until inflation-adjusted appropriations to higher education return to at least their level in the baseline year. After examining the multiple downturns since 1980 state-by-state, however, we discovered a number

of cases after 2000 (but none before that year) in which the level of real appropriations to higher education in the baseline year was not reached before the onset of a substantial new decline. Therefore, if certain conditions were met, we define a state as having reached a “new normal” condition of fiscal recovery even if it did not reach the previous peak. Specifically, we assume that effective recovery had occurred after three consecutive years of real growth in higher education appropriations following the lowest point of the downturn. In such cases the third year of appropriations growth was not coded as part of the downturn period. If there were two years of growth, but the third year showed a decline, the downturn was coded as continuing provided that the previous baseline appropriations level was not reached. All in all, we found 109 state-specific periods of significant downturn in state higher education support from 1980 to 2013 that met our rather stringent definition.

Determining State Policy Priorities During Downturn Periods

Our first research question asks whether, in periods of fiscal stress, states are more likely to prioritize student aid, support for public institutions, or simply treat both functions relatively equally. We collected data on student aid funding from annual surveys conducted and reported by the National Association of State Student Grant and Aid Programs (NASSGAP), incorporating the “total aid awarded” amount by state (listed in Table 3 for the 2012-13 NASSGAP annual survey). Total aid includes aid to undergraduates (who receive about 98% of it) and graduate students in the form of need-based and non-need-based grants, as well as a relatively small amount of non-grant aid consisting of loans, loan assumption/forgiveness, conditional grants, work-study, and tuition waivers (NASSGAP, 2013). We created a variable for “institutional support” by subtracting each state’s total aid awarded (CPI-adjusted) from its total

higher education appropriations, since other components of higher education appropriations were found to be quite small.

To contextualize, there was substantial range in the amounts of student aid allocated by each state. Across all states from 1980 to 2013, the mean level of annual student aid support was \$105 million, with a standard deviation of \$184 million (in 2013 dollars). Student aid allocations ranged from a minimum of zero up to a maximum of \$1.55 billion. There were several years in which Alaska (1999 to 2005), Nevada (1985 to 1987, and 2003), and South Dakota (1998 to 2005) allocated no funds to student aid. On the other end of the spectrum, California and New York commonly awarded the highest amount of aid by virtue of their large student populations, while Vermont and New York consistently had the highest proportion of total student aid expenditures compared to state higher education spending (Authors' calculations). In regard to regional differences, the northeastern, upper Midwestern and some southern states typically allocated more to student aid, while the Rocky Mountain states allocated less.⁴ We later explore the interesting question of how the size of a state's student aid program (per enrolled student), a plausible indicator of favorable construction of students in a state's "higher education policy culture," is related to whether the state prioritizes aid during downturns.

To determine which of the three categories of hypothesized policy priorities best represents a state's student aid funding pattern in each downturn, we compared the percentage change in student aid to the percentage change in all other higher education appropriations over the downturn period. We operationalized the policy priority categories as follows. First, if the percentage change in student aid funding over the downturn period was *more favorable by five or more percentage points* than the percentage change in all other higher education appropriations (say, a one percent cut versus a six percent cut), we placed the state in the *student*

aid priority category for the focal downturn. Second, if the percentage change in all other higher education appropriations was five or more percentage points more favorable than the percentage increase in student aid (the mirror image of the previous category), we characterized the state as prioritizing *institutional support*. This would presumably be reflective of policymakers attributing less favorable constructions of students compared to institutional needs in downturn periods. Such institutional needs might be particularly salient where the colleges were already perceived to be “underfunded.” Finally, if the percentage change in student aid was less than five percentage points different from the percentage change in all other appropriations, we categorized the state as employing a policy of *budgetary equity*, which we characterize as reflective of underlying budgetary norms that carry the day when competing claims are perceived as being equally compelling.

Within the total of 109 downturn periods, we found 82 downturns (75% of the total) in which student aid was prioritized, 19 downturns (17%) in which institutional support was prioritized, and 8 instances (7%) of budgetary equity as defined. To test the sensitivity of our definition for classifying state policy priorities, we also examined thresholds of 2.5 and 7.5 percentage point changes in allocations to the two major categories to compare with our results using the base 5 percentage point differences.⁵ By all definitions, the data was quite clear that states generally prioritized student aid support in periods when higher education appropriations decreased significantly.

Policy Priorities Across Decades

We examined patterns to see how many states fell into each of the three hypothesized categories during each of the four national downturn periods.⁶ All 50 states experienced at least one downturn by our definition (Table 1). We found that the largest share of states that

experienced downturns prioritized student aid funding in each of the four national downturn periods and this was true by a large margin in the three most recent decades (Table 2). In each of these latter three decadal periods, about 80% of states prioritized student aid, while institutional support placed a distant second (tied with budgetary equity in the 2010s decade) and equity across categories was in third place. Even in the 1980s, more states prioritized student aid than institutional support or budgetary equity. This answers our first research question as to *which of our three student aid funding priority categories contains the most and the fewest states*. Student aid funding has clearly been most often prioritized by states in periods when higher education appropriations fell significantly.

[Insert Tables 1 and 2]

Next, we addressed our second research question: *Are more recent downturns different from earlier ones?* Do states tend to stay in the same one of the three policy priority categories over time with respect to treatment of student aid support? In other words, are states' policy cultures with respect to student aid vs. institutional support prioritization stable over long periods? Reading horizontally across Table 1 (states across decades) provides a sense of the degree of stability in states' prioritization in the downturns it experienced. To summarize, there was considerable consistency in states' policy priorities across the decades. Among the 38 states that experienced two or more of these significant downturns in higher education support, 24 states (63%) retained a policy priority for student aid across their multiple downturns. Notably, California and Oklahoma each had four downturns during which they consistently prioritized student aid.

There were, however, a few states that failed to prioritize student aid during any downturns in higher education support. Wyoming was one of only two states to give priority to

institutional support across multiple downturns, in its case two downturns that both came before 2000. South Carolina also prioritized institutional support in two downturns (one in the 1980s and one in the early 2000s), while treating the two higher education budgetary components relatively equally in its 1990s downturn. Mississippi had two downturns, prioritizing public institutional support in the 1980s and distributing higher education resources equitably across the two major components in the 2000s downturn. Massachusetts prioritized institutional support in its 1980s and early 2000s downturns but favored student aid in the Great Recession era (2010s) downturn. Alabama, Alaska and New Hampshire each had only one downturn that met our criteria during which they all prioritized institutional support.

In summary, over the decades, the large majority of states consistently gave priority to student aid during periods when overall higher education support was significantly reduced, some consistently favored institutional support, and only a few states varied in their priorities across the decades. There does seem to be considerable stability in this aspect of state higher education policy cultures, consistent with the idea that student needs are more favorably constructed than institutional needs in difficult financial times.

Multivariate Analyses and Results

Student Aid Share of Funding

Next we turn to our third research question: *Does the pattern of state student aid funding as a proportion of all higher education support change during periods of significant downturn in state higher education support compared to the non-downturn periods across 1980 to 2013?* We expected that downturns might prompt most states to increase the student aid share of state higher education support more sharply during these periods to help students shoulder the burden of steep tuition increases. As previously noted, states in aggregate have gradually increased the

share of their higher education appropriations devoted to student aid over several decades, so we were curious to see if the general pattern of increase in student aid share significantly accelerated in downturn periods. Framed within social construction theory (Schneider et al., 2014), policymakers may view students as more deserving and needing direct support through financial aid programs as compared to public colleges, which may be conceptualized as large enterprises that are more resilient and advantaged in their capacity to absorb cuts and generate alternative revenues.

To contextualize, of the 1700 state-years included in our dataset covering 50 states from 1980 to 2013, any given state was experiencing a downturn period by our definition during approximately 37% of the state-years. Student aid's share across all state-years ranged from 0% to 40%, with a mean of 5.7% and a standard deviation of 6.0 percentage points. In the downturn years, student aid's share of state higher education funding across all states had a mean of 7.6%. During years that were not defined as part of a downturn, student aid's share was notably lower, with a mean of 4.6%.

We employed a regression analysis to investigate more fully the relationship of downturns to allocations to student aid as a share of all state higher education appropriations. We first analyzed the overall trend of student aid share across all states:

$$Y_{it} = X_{it} \beta_I + \varepsilon_{it} \quad (1)$$

where Y_{it} is the amount allocated to student aid as a proportion of all higher education appropriations for state i in year t , X_{it} is a binary variable indicating whether state i is in a downturn in year t , and β_I is a coefficient estimated across all states.

Against the general background nationally of a growing student aid share of all higher education appropriations, our analysis of this share over the time span supports the hypothesis

that states on average have increased their student aid share more sharply in downturn periods, compared to the overall trend (results reported on first line in Table 3, coefficient of “Downturn Year” = 0.026, $p < .001$). That is, across all states, student aid share during downturn periods was 2.6 percentage points higher than in non-downturn periods.

[Insert Table 3]

To determine whether individual states treated student aid differently during downturn periods, we constructed a random effects model with state-specific parameters:

$$Y_{it} = \alpha_i + X_{it} \beta_1 + S_i X_{it} \beta_2 + \varepsilon_{it} \quad (2)$$

where Y_{it} is the amount allocated to student aid as a proportion of all higher education appropriations for state i in year t , α_i is a dummy variable representing each state, X_{it} is a binary variable indicating whether state i is in a downturn in year t , β_1 is a coefficient estimated across all states, $S_i X_{it}$ is the interaction of state i 's dummy with X_{it} , and β_2 is a coefficient for each state (adapted from Snijders & Bosker, 2012, p. 43). The state-specific estimates allow the direction and size of the effect of downturn versus non-downturn years on the share of student aid to vary from state to state.

Table 3 reports the average difference between downturn and non-downturn years across all states after the inclusion of state-specific estimates, in the second row (coefficient is 0.005, and not statistically significant). More importantly, Table 3 displays each state's coefficient, or the estimated difference in the share of all higher education appropriations allocated to student aid between the state's downturn and non-downturn years, in order of largest positive coefficient to largest negative coefficient. To interpret, Arkansas has a coefficient of 0.131, which is statistically significant at the $p < .001$ level. After adding on the averaged base difference of 0.005, results indicate that Arkansas allocated 13.6 percentage points more of its share of higher

education funding to student aid during downturns. In all, eight states showed significant positive coefficients for downturn years, implying that their long-term trajectory received a meaningful boost in the direction of an increased student aid share during downturns. The states with significant positive coefficients include Georgia, Indiana, and Pennsylvania, all which, in the majority of years, had a relatively high commitment to student aid, measured as aid dollars per student distributed above the 75th percentile of all states. These three states, along with Arkansas, Kentucky, New Mexico, Tennessee, and West Virginia, all distribute relatively high levels of grant aid per state population (NASSGAP, 2013), suggestive of a favorable construction of students and their needs. Thus, at least some states that emphasize student aid in their higher education spending seem to be particularly prone to protecting it in difficult economic times.

The majority of states did not treat student aid share differently between downturn and non-downturn periods. Yet, there were no states with significant negative coefficients for their downturn periods. The nine states whose proportion of funding for student aid was lower (but not statistically significantly so) in downturn periods versus other periods include states with low commitment to aid, specifically Hawaii, Montana, Nebraska, New Hampshire, North Dakota, and Wyoming. Additionally, Hawaii, Montana, and Nebraska are ranked near the bottom for grant aid funding per population (NASSGAP, 2013), suggesting a less favorable construction of students and their needs. An exception was Texas, which was at the median level in terms of aid dollars per student and among the more generous in terms of total grant dollars per capita.

Correlates of State Policy Priority Classifications

Finally, to address our fourth and last research question, *we examined whether certain higher education structural, political, economic, and geographic variables were associated with states' policy priority classifications*. Since our primary interest was in the determinants of

student aid priority and relatively few states fell into the budgetary equity category, we combined the budgetary equity and institutional support categories to create a dichotomous variable, which also served to better balance the number of states in each category. That is, states were coded as either prioritizing student aid or not in each downturn they experienced. Next, we describe the independent variables in our analysis (definitions listed in Table 4) and our hypotheses.

[Insert Table 4]

Variable Definitions and Hypotheses

The value of each independent variable analyzed (change variables excepted) was its value during the year before each downturn began (the baseline year), in order to capture the state-level influences at work just before the onset of a downturn. These variables consisted of state commitment to student aid, level of public higher education tuition, the proportion of undergraduate students enrolled in private institutions, higher education governance structure, the presence of a substantial merit-based aid program, per capita income, the state's unemployment rate, its Gini coefficient (a measure of income inequality), political party control, and region of the country. To illustrate, for a downturn that started in 2001, we used the value of tuition in 2000. In the case of the change variables (per capita income change, unemployment rate change, public tuition change), we calculated the percentage change across the entire downturn period in order to capture how simultaneous changes in such variables related to the prioritization of student aid.

State commitment to student aid. As mentioned, states vary widely in the share of their higher education funding directed to student aid programs (NASSGAP, 2013). We expect that states showing stronger commitment to student aid, as measured by state student aid spending per fall enrollment, would, all else held constant, be more likely to treat aid funding relatively

favorably in times of fiscal stress in higher education since a larger overall aid commitment signals a more favorable construction of students and their needs. This variable was compiled from the National Association of State Student Grant and Aid Programs (NASSGAP).

Public tuition level. We hypothesize that states charging higher tuition would be more inclined to prioritize student aid during downturns, as they would be well aware of the impact of higher tuition on affordability. Data was collected from the Integrated Postsecondary Education Data System (IPEDS) and represents the average undergraduate tuition price charged to state residents by public institutions in each state in the baseline year.

Change in public tuition. For many reasons, all states will not see the same increases in tuition in their public colleges and universities in response to fiscal stringency. Since the rate of tuition growth could quite plausibly affect budget allocations to student aid, we accounted for the percentage change in a state's average resident, undergraduate tuition level across the entire downturn. We expect that states experiencing greater tuition growth during downturns would tend to treat student aid more favorably in order to mitigate effects on students. To generate more interpretable coefficients, we multiplied this and all of the percentage change variables by 100 (i.e., a range of 0 to 100 instead of 0 to 1).

Private sector share of enrollment. The larger the private, non-profit sector's share of all state higher education enrollments, the more favorably we expect to see student aid treated in downturns, since the unsubsidized private sector's higher tuition structure implies more dependence upon student aid for its competitiveness (Zumeta, 1996), and larger private sectors are more influential in state policymaking (Zumeta, 1992). Private sector enrollment share was calculated from IPEDS institutional enrollment data, and multiplied by 100 for more interpretable coefficients.

State higher education governance structure. For the purposes of this study, states were divided into two broad categories of state-level higher education governance arrangements as is fairly standard in the literature: 1) centralized governing board, and 2) coordinating or planning board (Education Commission of the States, 2007; Smith & Fulton, 2013). Coordinating board states have missions that encompass a broader constituency, including private institutions that typically depend substantially on student aid dollars, so we expect these states to be more supportive of student aid when times are difficult (Zumeta, 1992).⁷ By contrast, centralized governing boards are concerned primarily with the health of the public institutions they oversee, so we would expect to see greater emphasis on sustaining public institutional funding in these states. State governance structure information was obtained from state profiles and published reports by the Education Commission of the States. Coordinating and planning board states were coded 0 and governing board states were coded 1.

Emphasis on need-based vs. merit-based aid. As suggested earlier, state student aid programs that select students primarily on the basis of academic performance criteria comprise a substantial share of total student aid in a number of states, and for many years these types of aid grew at a faster rate nationally than need-based aid (NASSGAP, 2013). We expect that states emphasizing need-based aid would fund their aid programs relatively better through a downturn since the need emphasis more closely aligns with favorable construction of students and the policy objective of helping them afford tuition increases. Yet, this policy impetus may be offset by the political appeal to legislators of protecting merit-based aid to hard-pressed middle-class families and by the fact that most of this aid comes from non-general-fund sources that may be more protected from general downturns, so the direction of the relationship is uncertain. We

identified merit aid states as those defined by Doyle (2010b) to have “broad-based merit aid programs” in a given state-year. These state-years were coded 1, and others were coded 0.

State personal income per capita. We expect that states with higher per capita income at the outset of a downturn might be in a better position to protect student aid during it. We obtained data on this variable from the U.S. Bureau of Economic Analysis. State personal income per capita data were CPI-adjusted to 2013 dollars.

Change in personal income per capita. This variable was measured as the percentage change in the income measure across the entire downturn, that is, from the baseline year before a downturn started to the last year of the downturn. The idea was to capture state differences in growth of this basic indicator of state prosperity. As with the underlying state personal income variable, we expect that stronger income growth might facilitate support for student aid.

Gini coefficient. The Gini coefficient measures the level of state income inequality. Previous research on higher education spending suggests that, holding other factors constant, greater income inequality is associated with a lower likelihood of states drastically cutting higher education appropriations (Li, 2017). To the extent that a state has high levels of inequality, consistent with Li’s finding and the notion of positive construction of students and their needs, we hypothesize that the state may be more likely to exert efforts to remedy this inequality by protecting student aid funding during downturn periods to provide lower-income students the means to afford college. The Gini coefficient ranges from 0 to 1, where 0 represents perfect equality and 1 represents perfect inequality. We obtained data on the Gini coefficient from the Bureau of Economic Analysis.

Unemployment rate. Previous research has shown that higher unemployment and more rapid increases in state unemployment rates are associated with the onset of major cuts to higher

education appropriations (Li, 2017). A higher unemployment rate is an indicator of greater state economic distress, so we expect that, *ceteris paribus*, during a downturn in state support for higher education, higher state unemployment might be correlated with less favorable relative treatment of student aid. Greater economic distress implies deeper overall budget cuts, which may mean cutting closer to the “institutional core” of higher education budgets. In such circumstances, policymakers may be more likely to feel that they must mitigate budget reductions to institutions as best they can. Annual state unemployment rates were compiled from the Bureau of Labor Statistics.

Change in unemployment rate. This variable was calculated as the percentage change in the state’s unemployment rate across the entire downturn. Consistent with our expectations regarding the previous variable, we anticipate that more rapid growth in unemployment, another indicator of extent of economic distress, might be associated with less favorable treatment of student aid.

Political control. Partisan control has been found to influence a state’s commitment to funding higher education, as basic philosophical differences exist between political parties with regard to subsidization, taxation, and market mechanisms (Li, 2017; McLendon, Hearn, & Mokher, 2009; Tandberg, 2013). We predict that Republican-controlled states would be more likely to sustain funding for student aid programs in times of budgetary stress, at least compared to public institutional funding. The student-centered model of resource allocation implied by portable student aid is more consistent with other market-based policy approaches that Republican ideology tends to favor. In Democrat-dominated states, we theorize that appropriations changes during periods of fiscal stress on higher education would be more likely to favor public institutional appropriations, as this is more consistent with the Democratic Party’s

philosophy of supporting public policy goals primarily through public sector institutions. We expect politically divided states to fall between these two strategies and so did not have strong prior expectations about their prioritization of student aid.

We created a collapsed ordinal variable representing political control using: 1) party affiliation of the state's governor; 2) party majority in the Senate; and 3) party majority in the House in each state-year. This variable has four categories: 1) Strong Republican government in which all three power centers were controlled by Republicans (coded 0); 2) moderate Republican government in which two of the three power centers were controlled by Republicans (coded 1); 3) moderate Democratic government in which two of the three centers of power were controlled by Democrats (coded 2), and finally; 4) strong Democratic government with all three power centers controlled by Democrats (coded 3).⁸ Data for this variable was collected from the National Governors Association and the Census Bureau.

Regional compact membership. Since regional differences in state higher education policies are often considerable, we accounted for these by utilizing states' membership in regional higher education compact organizations. There are four regional higher education compacts, which are designed to provide a forum for sharing policy ideas and in some cases to coordinate regional policies. All but three states belong to a compact; the exceptions are New York, New Jersey, and Pennsylvania. These three states were included with their near neighbors, the New England Higher Education Compact states, for purposes of constructing this variable. The other three compacts are the Southern Regional Education Board, the Midwestern Higher Education Commission, and the Western Interstate Commission for Higher Education.⁹

Variable definitions are shown in Table 4 and summary statistics for the variables are shown in Table 5.

[Insert Tables 4 and 5]

State Characteristics and Student Aid Prioritization during Downturns

We conducted a logistic regression analysis to estimate the relationship between states' prioritization of aid during downturns in higher education support and the state-level postsecondary education, political, and economic variables described:

$$Y_{it} = \alpha + X_{it} \beta + \varepsilon_i \quad (2)$$

where Y_{it} is a dichotomous variable representing whether a state prioritizes student aid versus not during its downturn period(s) starting in year t , X_{it} is a vector of independent variables for the i th state in year t ($t-1$ for level variables and across the entire downturn for change variables), and β is a vector of estimated parameters (Long, 1997). We used robust standard errors to account for the effect of some states appearing multiple times in the analysis.¹⁰

Estimates are reported in Table 6. We conducted analyses using a stepwise modeling approach (Tabachnick & Fidell, 2013), first analyzing the block of higher education variables only (column 1); then adding the economic variables (column 2); next adding the political variables (column 3); and finally adding the region variables (column 4). Columns 1-3 show exploratory models designed to allow us to better understand the contributions of these specific categories of variables. The full model in column 4 is our preferred model because it includes all of the variables and shows the best model fit as indicated by the smallest negative value for the log pseudo-likelihood statistic.

As seen in Table 6, most of the coefficients vary little across the models and signs are almost uniformly the same. Although we were somewhat worried about degrees of freedom with many variables and only 109 downturns to work with, it seems clear that the full model (column

4) not only covers the most ground conceptually but performs best statistically as well. Hence, we focus on its results in our interpretation below.

[Insert Table 6]

State commitment to aid. All the models analyzed except the one excluding regions (in which the coefficient has similar magnitude as in the other models but falls short of significance) indicate that high levels of commitment to aid, captured by the dollar amount of state spending on financial aid per student, was significantly associated with a greater likelihood of prioritizing student aid during downturn periods. Thus, in states where the initial level of spending on student aid was higher, there exists a preference for prioritizing student aid spending over direct appropriations to public institutions during periods in which total higher education appropriations decreased 5% or more across two consecutive years of declines. According to estimates from the full model, every 10% increase in a state's initial aid expenditures per student, equivalent to \$29.50 based on a mean of \$295, was associated with a 6% increase in the likelihood of its prioritizing student aid funding during a downturn [$1.10^{0.62} = 1.06$]. This result is consistent with our earlier finding that states with relatively large underlying commitments to student aid are generally more likely to increase the share of their support going to aid (relative to institutions) during downturn periods. It suggests that, in these types of states, students have been positively constructed by policymakers in a way that is embedded in state policies or policy cultures and that makes it more likely efforts will be made to mitigate the effects of hard times on students.¹¹

Unemployment rate. Results also suggest that, as expected, a higher state unemployment rate in the year before a downturn began significantly decreased the odds of a state prioritizing student aid during the downturn. A one-percentage point increase in the

unemployment rate was associated with a 36% decrease in the likelihood of favoring student aid, based on estimates in Table 6, column 4. (This was calculated by exponentiating the log odds and subtracting from 1.) The state unemployment rate variable ranges from 2.6% to 13.2% over our years of analysis, with a mean value of 5.8%. Thus, a one-percentage point increase is fairly substantial. A higher unemployment rate, indicative of a weaker state economy, seems to make it harder for a state to prioritize student aid relative to basic support for public institutional operations. This is consistent with our hypothesis that states in a weaker economic position may feel that cuts to institutions reach uncomfortably close to their core operations and so have to be alleviated to the extent possible.

Other state characteristics. None of the other independent variables were significantly associated with whether or not a state prioritized student aid during downturns in higher education support. We were surprised to find no evidence of a relationship between the magnitude of public institution tuition increases (percentage change in tuition) over the downturn period and student aid prioritization. One possibility is that the locus of tuition setting authority differs across states in ways that blur the link between the magnitude of tuition increases and decisions about student aid. In some states, the legislature or governing/coordinating board determines tuition levels across all public colleges in the state, in a sector, or in a system. In other states, the higher education board guides tuition levels and imposes limits to increases, while other states place tuition-setting authority fully in the hands of colleges (Kim & Ko, 2015). Therefore, it may be difficult to calibrate state student aid funding to institutional decisions about tuition, especially when the timing of the respective decisions are not necessarily coordinated.

States with a coordinating or planning agency for all of higher education, as distinct from a consolidated governing board responsible only for public institutions, were expected to be

more prone to prioritize student aid in a downturn due to presumed greater responsiveness to private higher education's needs, but this did not appear to be the case. State governance arrangements evidently operate on a largely separate track from state student aid decision-making. Perhaps this is not surprising since state student aid agencies are often separate from governing agencies.

Results also indicate that the share of enrollment in private nonprofit institutions in a state did not make any discernible difference, nor were significant differences found between states with substantial merit-based aid programs and other states in the tendency to prioritize student aid during downturns. This was somewhat surprising since merit aid programs usually have their own funding sources (notably from state lotteries). On the other hand, lottery revenues are also subject to the effects of economic downturns, even if less strongly so than general tax revenues.

Moreover, the partisan political control pattern of a state at the outset of a downturn was not associated with its prioritization of student aid.¹² Still, the positive direction of the coefficients in the full model and their magnitude relative to their standard errors suggests that, compared to the omitted category of uniformly Republican states (where Republicans control all three power centers), moderately Republican, moderately Democratic, and strong Democratic states may be somewhat more likely to prioritize student aid. This would be contrary to our party philosophy-grounded hypothesis but would not be altogether surprising in that less strictly conservatively governed states may be more sympathetic to (may more favorably construct) needy students. Finally, the regional compact variables were not meaningfully associated with the prioritization of student aid during downturns in higher education appropriations.

Summary and Discussion of Implications

In this study, we sought to better understand the fiscal dynamics of state student aid programs during troubled fiscal periods (downturns) when state support of higher education declines substantially (specifically by 5% or more in inflation-adjusted terms over at least two years). We studied a 34-year period spanning 1980 through 2013 that included four major national recessions and associated fiscal travails for higher education, while capturing variation across states. The motivation for this study was that it is precisely during such downturn periods that tuition rates at public institutions tend to spike and students typically have greater financial needs in order to sustain their ability to enroll. So, we should seek to understand to what extent states prioritize student financial aid when times are tough in higher education. Conceptually, we framed the study in terms of social construction theory (Schneider et al, 2014), whereby in this case undergraduate students may be more or less favorably constructed in a state's policy culture around higher education, relative to public colleges and universities themselves.

We summarize our results briefly before suggesting some implications. First, our analysis across all states over the years 1980 to 2013 suggests that the general upward trend over time in student aid's share of state appropriations to higher education tended to be strengthened during downturns. Individual states that exhibited this tendency to protect aid more strongly in downturns were generally those with proportionately larger commitments to aid and that distributed larger grant aid funding per capita. This implies that students are, in social construction theory terms, favorably constructed in such states and aid to them is a significant part of the state's affordability strategy. Unsurprisingly, the states that did not significantly change their trajectories in regard to student aid share during downturns included mainly states with relatively low aid effort in the first place, suggesting less favorable construction of students and their affordability needs. In sum, it makes sense that states with a strong, embedded

commitment to aid, with associated expectations and institutional pressures built on top of more favorable construction of students, would be more prone than those lacking such a commitment to try to sustain it to the extent possible when students need help the most.

Across the 109 downturns that met our rather strict criteria for a significant retrenchment period in higher education support, in fully 82 (75%) of the cases states prioritized student aid over institutional support in their allocations of available funds (which generally meant that institutions experienced greater funding cuts than student aid programs). Institutional support was prioritized over student aid in 19 (17%) of the state-downturn periods while in only 8 cases (7%) were these two budgetary components prioritized relatively equally. The pattern favoring prioritization of aid was weaker in the 1980s downturns (50% of cases) but was clear and quite consistent across the more recent downturn sub-periods (1990s, early 2000s, late 2000s-2010s), with around 80% of states prioritizing student aid in each. This increased focus on aid prioritization in more recent decades may reflect some policymaker appreciation of the effects on affordability of the long upward march in real tuition charges that began in the early 1980s. Moreover, states showed considerable consistency as to which of the above categories they fell in across successive downturns, most often consistently prioritizing student aid. This consistency suggests that states often do establish “policy cultural” norms about topics such as the priority of student aid.

A logistic regression analysis of states’ prioritization of student aid during downturns in higher education support on a variety of postsecondary education, economic, and political variables revealed that a higher level of state aid spending per student and a lower state unemployment rate during the year before the onset of a downturn were both significantly associated with a greater likelihood of prioritizing student aid during the downturn. On the other

hand, a state's level of public sector tuition at the onset of a downturn, percent changes in tuition during a downturn, enrollment share in private higher education institutions, state governance structure for higher education, existence of a broad-based merit aid program, income per capita and percentage changes in income, income inequality as measured by the Gini coefficient, percentage change in unemployment rate over the downturn, political control, and regional compact membership were not found to be significantly associated with its prioritization of aid during downturns.

Researchers may want to further understand why student aid's priority in state higher education budgets has increased over time, and particularly during downturns for select states, by qualitatively examining the nature of state budgetary deliberations during downturn periods to the extent these can be documented. It is important to investigate whether a shift toward student aid in state allocations is due to explicit policy philosophies (e.g., "voucherization" of higher education finance) versus the relative political appeal of student aid compared to institutional support in hard times (the logic behind which is suggested by our social construction theory framework).

The evidence found here suggests that political philosophy, i.e., explicit voucherization, is not the dominant factor. Rather, a state's shift towards aid prioritization over time seems more likely to be a logical response to the long upward movement in public university tuition as it has become a major source of institutional financing. For states that feel that they cannot afford to spend as heavily as in the past on higher education, and who thus allow real tuition to creep up over time, supporting student aid is a relatively inexpensive way to provide a semblance of affordability for some students, a group that is likely to be positively constructed in most states. The statistical analysis shows that the small number of states that do not prioritize student aid

during downturns tend to be states without a large historic policy commitment to student aid, which may suggest less favorable construction of students as a group in these states. Also, the analysis shows that states with less favorable economic conditions at the outset of a downturn, as measured by state unemployment rate, are less likely to prioritize student aid during it, perhaps because they felt their public colleges and universities were already stretched thin.

We expected that structural factors in state budgeting for student aid (e.g. nontax funding from lotteries and quasi-entitlements of individuals to student aid according to a formula such as in Georgia's HOPE scholarship and others like it) might play a significant role in aid's resilience during downturns in general higher education support. The lack of an apparent link between a state's merit aid emphasis and its priority on student aid suggests that the most obvious of such factors do not seem to play a significant role. Similarly, no links were found between student aid's resilience in downturn periods and such structural factors as the relative share of private sector enrollments in a state or its form of statewide governance. Looking ahead, the more we can learn about why state student aid programs are relatively resilient, the better policies can be designed to pursue aid-related policy goals by building on such features. Clearly, additional research will be needed to establish which additional factors are associated with resilience in state support for student aid.

A puzzle worthy of research attention is why the wide differences across states in commitment to student aid are so persistent. We have seen that student aid is generally more resilient budgetarily in hard times than other forms of higher education support and that states with stronger aid commitments show at least some tendency to prioritize it when cuts in higher education need to be made. Yet, there is more to be learned about how states get "over the hump" to the point of such a strong commitment and the apparent associated relative budgetary

resilience. Social construction theory as it applies to the framing of undergraduates and their needs may be helpful here in discerning factors affecting this tipping point.

Additionally, since state student aid programs are likely to continue to play an important role in many states, policymakers should consider ways to more tightly link aid receipt and continuation to timely student academic progress so as to further the emerging degree completion agenda in state policies. One possibility is to provide an aid bonus for full time students to take more credits per term, which is known to be a factor that increases student completion chances (Belfield, Jenkins & Lahr, 2016). Another idea is to ensure that aid continues to be tenable at reputable private institutions and that grant sizes at least keep up with inflation, so that states continue to reap the benefit of appropriate private sector capacity at low taxpayer cost (Zumeta, 1996; Zumeta & Huntington-Klein, 2015). Finally, states could consider modest matching grants to public and perhaps private institutions that are willing to invest some of their own funds to further develop proven or promising degree completion support programs for aided students. We know that aided students are in many cases more likely than others to need such extra support to complete their degrees. In sum, state student aid programs are important for achieving historic and emerging policy goals and policy analysts should seek to make the most of them while taking advantage of their relative cyclical resilience.

Notes

1 The National Bureau of Economic Research acts as the official arbiter of U.S. recession periods. The recession periods of interest in this study are: January – July 1980 and July 1981 – November 1982; July 1990 – March 1991; March 2001 – November 2001; and December 2007 to June 2009 (<http://www.nber.org/cycles.html>). The two recession periods of the early 1980s are often viewed as one long recession and are considered so here. Here, we focus on periods of *downturn* in state support of higher education that typically start during an official recession but last for several years after the recession ends.

2 Colorado is a unique case of explicit voucherization in the funding of higher education. In 2004, the state introduced the College Opportunity Fund (COF), which provided stipends paid

directly to public (and eligible private) institutions on behalf of eligible, resident students according to credit hours enrolled at an institution of the student's choosing. Funds came from allocations that would otherwise be considered direct state appropriations (Colorado Department of Higher Education, 2011) and, according to SHEEO, funds for the COF were counted as state appropriations in the reported data.

3 We explored using both 1% and 3% real declines across two years as alternative ways to define downturns. These less stringent cutoff points generated only a few more downturn periods and few differences in our results. We propose that the 5% cutoff better captures the idea of a significant, non-temporary cut in higher education support that is likely to generate the budgetary allocation behaviors about which we hypothesize.

4 These patterns persist when aid amounts are normalized for state population or student enrollments.

5 For example, in one variant if the percentage change in student aid support over a downturn period was less than 2.5 percentage points different from the percentage change in all other appropriations, the state was placed in the budgetary equity category and consequently fewer cases would fall in the other two categories. This 2.5 percentage point difference threshold for the categories resulted in 85 classifications of student aid priority (compared to 82 in the base case) among the 109 downturns. An analogous 7.5 percentage point difference threshold resulted in 80 state downturns with a student aid priority classification. Therefore, we concluded that our 5-percentage point difference-in-allocations threshold definition was reasonable for our purposes and not unduly sensitive to alternative specifications.

6 For purposes of presentation we identified the four most common downturn periods with decades as follows: 1980s, 1990s, 2000s, and 2010s. The 2000s period corresponds generally to the "dotcom" recession of the early 2000s and the period identified as 2010s corresponds to the Great Recession and its aftermath that began around 2008 and continued in many states until the end of our data in 2013. (A state downturn starting in 2008 or 2009 was associated with the Great Recession period and grouped in the 2010s decade.) In the few cases where a state experienced a downturn in higher education support during a period different from the national recession pattern, we placed it in the nearest decadal period for purposes of our discussion.

7 This variable (coordinating vs. governing board) and the previous one, private enrollment share, were not significantly correlated, so we retained both in the multivariate model.

8 Nebraska, which has a unicameral legislature, had just one downturn and was coded as 0 to represent a strongly Republican government since that party controlled the legislature and the governorship at the onset of this downturn period.

9 We thus classified states into regions as follows: New England/Mid-Atlantic: CT, ME, MA, NH, RI, VT, PA, NY, NJ; Southern: AL, AR, DE, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV; Midwestern: IL, IN, IA, KS, MI, MN, MO, NE, ND, OH, SD, WI; Western: AK, AZ, CA, CO, HI, ID, MT, NV, NM, OR, UT, WA, WY.

10 As an alternative analytic approach, we utilized the full dataset of 1700 state-years instead of the 109-downturn periods. In this alternative analysis, we included a dummy variable indicating whether a state was in a downturn in each year. We created interactions between this indicator for downturns and all the independent variables of interest and conducted a logistic regression analysis identical to the reported model with the same independent variables. By adding interaction variables, we intended to net out pre-existing state differences and differential prioritization of state aid in downturn versus non-downturn years. However, the addition of independent variables created by interactions with the downturn variable caused so much collinearity in the models that they did not converge, rendering this approach unfeasible.

11 As an alternative analysis, we removed all of the level variables (tuition, per capita income, unemployment rate at outset of downturn) and analyzed a model incorporating only the corresponding change variables over the downturns (percent change in tuition, percent change in income, percent change in unemployment rate). Results from this model also indicate that commitment to aid was positively associated with student aid prioritization and the coefficient was of similar magnitude (log odds = 0.57, $p < .05$).

12 We also ran models using alternative definitions of the political control variables. One variant placed each state-year into one of three categories of political control: unified Democratic, unified Republican, and divided government across the governorship, House, and Senate. Results were substantively similar to those in Table 6. We also ran the two models shown in the table using a strong Republican government compared to all other mixes of political control (moderately Republican, moderately Democratic, and strongly Democratic, combined), based on whether all three power centers were controlled by Republicans or not. Results were essentially the same as in the reported models, which used the four categories of political control.

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Table 1. State Policy Priorities by State and Decade

	1980s	1990s	2000s	2010s
Alabama			Institutions	
Alaska	Institutions			
Arizona			Equity	Student aid
Arkansas				Student aid
California	Student aid	Student aid	Student aid	Student aid
Colorado		Student aid	Student aid	Student aid
Connecticut		Student aid	Institutions	Student aid
Delaware			Student aid	Student aid
Florida		Student aid	Student aid	
Georgia		Student aid	Student aid	
Hawaii		Institutions	Student aid	
Idaho	Institutions		Student aid	Equity
Illinois		Student aid	Equity	
Indiana			Student aid	
Iowa			Student aid	Student aid
Kansas			Student aid	
Kentucky			Student aid	
Louisiana	Student aid		Student aid	
Maine		Student aid	Student aid	
Maryland		Student aid	Student aid	Institutions
Massachusetts	Institutions		Institutions	Student aid
Michigan			Student aid	
Minnesota		Student aid	Student aid	Student aid
Mississippi	Institutions		Equity	
Missouri	Institutions	Student aid	Student aid	Equity
Montana	Student aid		Student aid	
Nebraska		Student aid		
Nevada		Student aid		Student aid
New Hampshire			Institutions	
New Jersey	Student aid		Student aid	Student aid

New Mexico		Student aid	Student aid	Student aid
New York	Student aid	Student aid	Student aid	
North Carolina		Student aid	Student aid	
North Dakota	Student aid	Institutions	Student aid	
Ohio	Student aid	Student aid	Student aid	Institutions
Oklahoma	Student aid	Student aid	Student aid	Student aid
Oregon			Student aid	Student aid
Pennsylvania			Student aid	
Rhode Island	Institutions		Student aid	
South Carolina	Institutions	Equity	Institutions	
South Dakota	Student aid		Student aid	
Tennessee	Equity		Student aid	
Texas	Equity			
Utah			Student aid	
Vermont		Student aid		Student aid
Virginia		Student aid	Student aid	Student aid
Washington	Student aid	Student aid	Student aid	
West Virginia			Student aid	Student aid
Wisconsin		Institutions	Student aid	
Wyoming	Institutions	Institutions		

Table 2. State Policy Priorities by Decade

	1980s	1990s	2000s	2010s	All Decades
Student aid	10	20	35	17	82
Institutions	8	4	5	2	19
Equity	2	1	3	2	8
Total	20	25	43	21	109

Percent of Total in Policy Priority

	1980s	1990s	2000s	2010s	All Decades
Student aid	0.50	0.80	0.81	0.81	0.75
Institutions	0.40	0.16	0.12	0.10	0.17
Equity	0.10	0.04	0.07	0.10	0.07

Table 3. Association Between Downturn Period and Student Aid Share of All Higher Education Appropriations:

Percentage Point Change in Student Aid Share

	Coefficient		SE		Coefficient	SE
Downturn Year	0.026	***	(0.002)			
Average across all states						
Downturn Year	0.005		(0.017)			
Average across all states, with inclusion of state-specific estimates						
Arkansas	0.131	***	(0.031)	Louisiana	0.014	(0.021)
West Virginia	0.124	***	(0.022)	Missouri	0.012	(0.021)
Kentucky	0.098	***	(0.024)	Oklahoma	0.011	(0.021)
Tennessee	0.091	***	(0.022)	California	0.010	(0.021)
Indiana	0.076	**	(0.025)	South Dakota	0.008	(0.022)
Pennsylvania	0.066	**	(0.021)	Iowa	0.004	(0.022)
Georgia	0.057	*	(0.022)	Arizona	0.003	(0.022)
New Mexico	0.055	*	(0.022)	Ohio	0.003	(0.021)
Delaware	0.042		(0.022)	Washington	0.003	(0.021)
New Jersey	0.040		(0.021)	Idaho	0.002	(0.021)
Oregon	0.037		(0.021)	Massachusetts	0.002	(0.021)
Virginia	0.035		(0.021)	Connecticut	0.001	(0.021)
Florida	0.034		(0.021)	Mississippi	0.001	(0.021)
Maryland	0.034		(0.021)	Rhode Island	0.001	(0.021)
New York	0.031		(0.021)	Kansas	0.000	(0.021)
Colorado	0.030		(0.021)	Hawaii	-0.004	(0.021)
North Carolina	0.029		(0.022)	Nebraska	-0.004	(0.027)
Maine	0.028		(0.021)	South Carolina	-0.005	(0.021)
Nevada	0.027		(0.024)	Alaska	-0.009	(0.021)
Minnesota	0.025		(0.021)	Montana	-0.009	(0.021)
Utah	0.024		(0.024)	Wyoming	-0.010	(0.021)
Vermont	0.022		(0.021)	New Hampshire	-0.011	(0.025)
Wisconsin	0.021		(0.021)	North Dakota	-0.011	(0.021)
Illinois	0.016		(0.021)	Texas	-0.033	(0.025)
Michigan	0.016		(0.021)	Alabama (omitted)		

N (state-years) = 1700

Standard errors in parentheses

Student aid share is in units from 0 to 1 (0 to 100 percent)

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4. Descriptions for Independent Variables

Variable	Description
Value in year before downturn starts	
State commitment to aid	Student aid dollars per fall enrollment
Tuition	Average resident undergraduate tuition and fees
Private enrollment	Percent of enrollment at private institutions
Governing board	Higher education governance structure (omitted is planning or coordinating board)
Emphasis on merit aid	Broad-based merit program
Unemployment	Unemployment rate
Income	Personal income per capita
Gini coefficient	Measure of income inequality
Strong Republican	3 chambers of government (governor, house, senate) are Republican-controlled or Republican-majority (omitted)
Moderate Republican	2 chambers Republican; 1 Democrat
Moderate Democratic	2 chambers Democrat; 1 Republican
Strong Democratic	3 chambers of government are Democrat-controlled or Democrat-majority
Change across downturn period	
Tuition change	Percent change
Income change	Percent change
Unemployment rate change	Percent change
Time-invariant regions	
New England / Mid-Atlantic	CT, ME, MA, NH, RI, VT, PA, NY, NJ (omitted)
Midwestern	IL, IN, IA, KS, MI, MN, MO, NE, ND, OH, SD, WI
Southern	AL, AR, DE, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV
Western	AK, AZ, CA, CO, HI, ID, MT, NV, NM, OR, UT, WA, WY

Table 5. Summary Statistics for Independent Variables

Variable	Mean	Std. Dev.
Commitment to aid	295.05	271.04
Commitment to aid (logged)	5.15	1.20
Tuition	2801.94	1782.04
Tuition (logged)	7.69	0.79
Tuition percent change (*100)	53.65	46.60
Percent private enrollment (*100)	20.90	12.40
Governing board (omitted is planning or coordinating)	0.42	
Merit aid program	0.16	
Income per capita (in 1000s)	38.27	7.66
Income percent change (*100)	6.52	6.50
Unemployment rate (*100)	5.82	1.91
Unemployment rate percent change (*100)	6.98	38.12
Gini coefficient (*100)	57.61	4.46
Strong Republican (omitted)	0.17	
Moderate Republican	0.15	
Moderate Democratic	0.32	
Strong Democratic	0.36	
New England compact, and NJ, NY, PA (omitted)	0.45	
Southern compact	0.30	
Midwestern compact	0.24	
Western compact	0.28	

N (downturn periods) = 109

For discrete variables, the mean displays the percent of downturns

All financial variables are CPI-adjusted

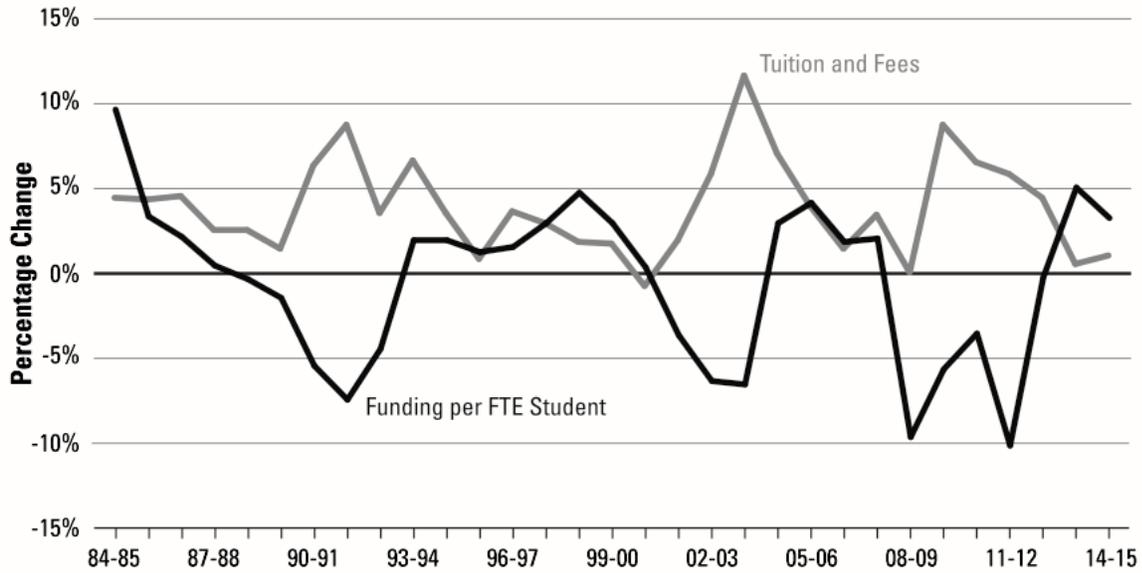
Table 6. State Prioritization of Student Aid during Downturns (Log Odds)

	1	2	3	4
	HE	HE+Econ	HE+Econ+Pol	Full
Commitment to aid (logged)	0.49*	0.55*	0.53	0.62*
	(0.24)	(0.27)	(0.29)	(0.29)
Tuition (logged)	0.33	0.02	0.17	0.36
	(0.40)	(0.54)	(0.59)	(0.63)
Tuition percent change (*100)	0.00	0.01	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)
Percent private enrollment (*100)	-0.03	-0.04	-0.04	-0.05
	(0.02)	(0.02)	(0.03)	(0.04)
Governing board (omitted is planning or coordinating)	-0.02	0.02	0.06	-0.10
	(0.52)	(0.64)	(0.70)	(0.69)
Merit aid program	-0.20	-0.24	-0.27	-0.24
	(0.77)	(0.82)	(0.87)	(0.89)
Income per capita (in 1000s)		0.02	0.02	-0.01
		(0.06)	(0.06)	(0.06)
Income percent change (*100)		-0.06	-0.05	-0.06
		(0.05)	(0.05)	(0.05)
Gini coefficient (*100)		0.05	0.07	0.09
		(0.08)	(0.09)	(0.09)
Unemployment rate (*100)		-0.28	-0.34*	-0.44*
		(0.15)	(0.16)	(0.20)
Unemployment rate percent change (*100)		-0.01	-0.01	-0.01
		(0.01)	(0.01)	(0.01)
Moderate Republican (omitted is strong Republican)			1.33	1.47
			(1.07)	(1.13)
Moderate Democratic			0.53	0.91
			(0.81)	(0.86)
Strong Democratic			0.71	1.41
			(0.82)	(0.91)
Southern region (omitted is New England/Mid-Atlantic)				-0.80
				(1.21)
Midwestern region				0.31
				(1.08)
Western region				0.57
				(1.17)
Log pseudo-likelihood	-56.65	-54.37	-53.44	-51.91
<i>N</i> (downturn periods) = 109				

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure 1. Annual percentage change in inflation-adjusted per-student state funding for higher education and in tuition and fees at public institutions, 1984-85 to 2014-15



Source: College Board (2015). Reprinted with permission.