Implementing Performance Funding in Three Leading States: Instruments, Outcomes, Obstacles, and Unintended Impacts

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Abstract

In recent years, performance funding has become a particularly attractive way of pursuing better college outcomes in higher education. This paper summarizes findings from a large study on the implementation and impacts of performance funding through the lens of three states that are regarded by many as leaders in that movement: Indiana, Ohio, and Tennessee. Based on extensive interviews with state officials and with staff of 18 colleges and universities in those three states, we describe the policy instruments used by those states to implement performance funding, the impact of performance funding on institutional policies and programs and eventually on student outcomes, the obstacles institutions encountered in responding to performance funding demands, and the unintended impacts that ensued.

We found that while performance funding clearly spurred institutions to make changes to improve student outcomes—particularly in developmental education, course articulation and transfer across two- and four-year colleges, and counseling and advising services—it is difficult to gauge the importance of performance funding because it was only one of several concurrent initiatives aimed at improved outcomes occurring at the colleges. Our interviewees reported obstacles that hindered efforts to respond to performance funding demands or perform well on state performance measures; these included the academic and demographic composition of student bodies, inappropriate metrics, and insufficient institutional capacity. They also frequently reported observed and potential impacts that were not intended by the designers of performance funding policies; the most commonly mentioned were restrictions in college admissions and the weakening of academic standards.

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1. Introduction

For several decades, policymakers have been concerned about increasing the efficiency and effectiveness of postsecondary institutions. In recent years, performance funding—which directly connects state funding to an institution's performance on indicators such as student persistence, credit accrual, and college completion—has become a particularly attractive way of pursuing better college outcomes (Burke, 2002; Burke & Associates, 2005; Dougherty & Reddy, 2013; Harnisch, 2011; Longanecker, 2012a, 2012b; Lumina Foundation, 2009; Jones, 2013; McLendon, Hearn, & Deaton, 2006; National Conference of State Legislatures, 2014; Reindl & Jones, 2012; Reindl & Reyna, 2011; Zumeta & Kinne, 2011). As of September 2014, 30 states have implemented performance funding programs, with several more states planning to start one within the next few years (Dougherty & Natow, in press). We begin this paper by delineating the nature and process of performance funding. We then turn to the five research questions that drove our research on the implementation of performance funding in Indiana, Ohio, and Tennessee.

1.1 Conceptualizing the Nature and Process of Performance Funding

The goal of performance funding is to improve college and university performance, especially with regard to student outcomes such as persistence, completion of developmental education and key college-level courses, accrual of course credits, degree completion, transfer, and job placement. These outcomes constitute the indicators that performance funding programs often use to allocate higher education appropriations.

Two kinds of performance funding programs can be usefully distinguished (Dougherty & Reddy, 2013; Snyder, 2011). Performance funding 1.0 (PF 1.0) takes the form of a bonus, over and above regular state funding for higher education (Burke, 2002; Dougherty & Reddy, 2013). Tennessee established its PF 1.0 program in 1979 (the first in the nation), and it exists to this day. Ohio did so in 1995 and 1997 (with the introduction of the Performance and Success Challenges), and Indiana in 2007 (Dougherty & Natow, in press; Dougherty & Reddy, 2013). Performance funding 2.0 (PF 2.0) programs differ from PF 1.0 in that performance funding no longer takes the form of a bonus but rather is part and parcel of the regular state base funding for higher

education. Ohio and Indiana established PF 2.0 programs in 2009, followed by Tennessee in 2010 (Dougherty & Reddy, 2013).[1]

In order to understand how performance funding operates, we have drawn on various research literatures. These include research on performance funding (see Dougherty & Reddy, 2013); performance management in government (see Moynihan, 2008); organizational learning (see Argyris & Schön, 1996); implementation theory and principal-agent theory (see Honig, 2006; Lane & Kivisto, 2008); and organizational change theory (see Kezar, 2012).

Performance funding policies embody "theories of action" (Argyris & Schön, 1996) involving causal sequences by which desired outcomes will be produced. These sequences typically involve specific "policy instruments" or "mechanisms that translate substantive policy goals into concrete actions" (McDonnell & Elmore, 1987, p. 134). The theory of action typically laid out by advocates of performance funding is that performance funding will stimulate institutional changes in academic and student-service policies, programs, and practices that in turn will result in improved student outcomes. Typically, policymakers do not specify particular institutional changes (Dougherty, Jones, Lahr, Natow, Pheatt, & Reddy, 2014a). The main policy instrument considered by performance funding advocates is the provision of material incentives that mimic the profit motive for businesses (Dougherty et al., 2014a; also see Burke & Associates, 2005, p. 304; Dougherty & Reddy, 2013; Massy, 2011). Applied to higher education institutions, this material-incentives theory of action—which is akin to resource-dependence theory (Pfeffer & Salancik, 1978)—holds that the institutions are revenue maximizers and will make a strong effort to improve their performance if the amount of funding involved is significant enough (Burke, 2002, pp. 266–272; Dougherty et al., 2014a). This policy instrument also flows from principal-agent theory, which stresses that there is often a misalignment between the interests and motives of principals and their agents (Lane & Kivisto, 2008). Monetary incentives flowing from the principals (the state) therefore become a device to bring the interests of the agents (college officials) into better alignment with those of the principals.

[1] Unlike the other two states, Tennessee did not discontinue its earlier PF 1.0 program. It now operates both types of programs.

Despite the primacy of financial incentives, advocates of performance funding programs have sometimes also considered other policy instruments. One is the provision of information to college officials and faculty about the goals and intended methods of performance funding as a means to catalyze institutional change; the aim is to persuade colleges of the importance of improved student outcomes (Dougherty et al., 2014a; Dougherty & Reddy, 2013; Massy, 2011; Reddy, Lahr, Dougherty, Jones, Natow, & Pheatt, 2014; see also Anderson, 2014; Ewell, 1999; Rutschow, Richburg-Hayes, Brock, Orr, Cerna, Cullinan, & Martin, 2011). This policy instrument operates on the theory that once college and university personnel are convinced that a goal is socially valued and legitimate, they will modify their behavior. This instrument parallels the soft side of "coercive isomorphism," which may manifest itself as pressure from governmental mandates and societal expectations (DiMaggio & Powell, 1983). Another informational policy instrument takes the form of making colleges aware of their student outcomes, particularly in comparison with other colleges. The aim is to mobilize curiosity, value orientations, and feelings of pride and status striving (Burke & Associates, 2005; Dougherty et al., 2014a; Dougherty & Reddy, 2013; see also Baldwin, Bensimon, Dowd, & Kleiman, 2011; Dowd & Tong, 2007; Witham & Bensimon, 2012).

Advocates of performance funding have given little attention to another important policy instrument: building up the capacity of colleges to respond to the demands of performance funding, particularly through effective organizational learning in which they examine areas of substandard performance, devise new means to improve that performance, and evaluate the effectiveness of those new means (Reddy et al., 2014; see also Jenkins, 2011; Kerrigan, 2010; Kezar, 2005; McDonnell & Elmore, 1987; Witham & Bensimon, 2012). However, we will examine the degree to which states have actually used this policy instrument as part of their performance funding programs because capacity building has been a major feature of several recent high-profile, foundation-sponsored initiatives to improve community college performance, including Achieving the Dream and Completion by Design (Nodine, Venezia, & Bracco, 2011; Rutschow et al., 2011).

Changes in colleges' revenues from the state, in their awareness of the state's priorities and of their own performance in relation to state priorities, and in their

organizational learning capacities, can be termed the *immediate* impacts of performance funding. To be effective, these immediate impacts must in turn stimulate *intermediate institutional changes* involving changes to institutional policies, programs, and practices that will presumably lead to the *ultimate student outcomes* that policymakers seek, such as more graduates or increased rates of job placement (Dougherty & Reddy, 2013).

We also need to consider the *unintended impacts* of and frequent *obstacles* to performance funding (Dougherty & Reddy, 2013; Lahr, Pheatt, Dougherty, Jones, Natow, & Reddy, 2014; Pheatt, Lahr, Dougherty, Jones, Natow, & Reddy, 2014). Unintended impacts are results that are not intended by the policy creators but that arise as side effects of policy initiatives (see Merton, 1976). In the case of performance funding, unintended impacts may include lowering academic standards for enrolled students or narrowing institutions' missions to focus on areas that are rewarded by performance funding (Dougherty & Reddy, 2013). Such impacts may arise when institutions encounter major obstacles in realizing the intended impacts of performance funding by using conventional means and instead resort to less legitimate means, such as lowering academic standards (Forsythe, 2001; Grizzle, 2002; Heinrich & Marschke, 2010; Moynihan, 2008; Radin, 2006; Rothstein, 2008; also see Merton, 1968, 1976; Mica, Peisert, & Winczorek, 2012). The obstacles are characteristics of the performance funding program or of the target higher education institutions that impede the ability of those institutions to effectively respond to the demands of the performance funding program using legitimate means. They can take such forms as colleges' lack of sufficient organizational capacity to adequately understand their performance problems and develop feasible and effective solutions (Dougherty & Reddy, 2013).

1.2 Research Questions

The analysis in this paper is organized around five main research questions:

- What policy instruments have states used as a part of their performance funding (PF) programs in order to influence the behavior of institutions? How big has been the *immediate* impact of those instruments?
- In what ways have colleges changed in response to PF demands? How have colleges altered their academic and

student services policies, programs, and practices in ways that relate to performance funding goals?

- What have been the impacts of performance funding programs on student outcomes?
- Have there been obstacles to securing the impacts intended by PF advocates? What forms have those obstacles taken?
- Have there been unintended outcomes of PF? What forms have they taken?
- How have states responded to performance funding obstacles and unintended impacts and what further steps should they take?

1.3 Research Methods

To answer these research questions, we analyzed the performance funding experiences of three states (Indiana, Ohio, and Tennessee) and within each state, three community colleges and three public universities. For purposes of data triangulation, we conducted a large number of interviews in each of the three states with a diverse range of individuals involved with performance funding. We also thoroughly analyzed available documentary data, among which are public agency reports, newspaper articles, institutional websites, and academic research studies (books, journal articles, and doctoral dissertations).

Why Indiana, Ohio, and Tennessee? We picked three states that are leaders in performance funding—particularly PF 2.0—but that otherwise differ substantially in the histories of their performance funding programs and in their political and socioeconomic structures, as Table 1 shows.

In terms of policy history, Tennessee established a performance funding 1.0 program in 1979, the first state to do so. Ohio first adopted performance funding much later, in 1995. Indiana adopted it later still, in 2007. In 2009, Indiana and Ohio adopted new PF 2.0 programs, and Tennessee followed suit in 2010 (Dougherty & Natow, in press; Dougherty & Reddy, 2013).

Table 1
Programmatic, Political, Social, and Economic Characteristics of the Case Study States

State Characteristic	Indiana	Ohio	Tennessee
1. Year performance funding was established*			
1.0 program	2007	1995	1979
2.0 program	2009	2009	2010
2. Sectors of public higher education covered by the state's performance funding 2.0 program	Universities and community colleges	Universities and community colleges	Universities and community colleges
3. Proportion of state appropriations based on performance funding 2.0 indicators	6% of higher education funding (fiscal year 2013-2014)	80% of funding for universities and 50% of funding for community colleges (fiscal year 2013-2014)	Approximately 85 to 90% of state higher education appropriations; the remainder is accounted for by utilities, major equipment, and similar expenses
4. State's higher education governance structure at the time performance funding 2.0 was adopted			
Coordinating board for all public higher education in the state	X	X	X
Governing boards for *each* public university or university system in state	X	X	X (for the five University of Tennessee campuses)
Governing board for *all* community colleges	X		X (all public community colleges & universities other than the University of Tennessee)
Governing board for *each* community college		X	
5. State political culture: Proportion in state identifying as conservative (1996-2003)	37.9%	34.4%	39.3%
6. Governor's institutional powers on a scale of 1 to 5 (2010)	3.25	3.75	2.75
7. Professionalism of the legislature (2009)	22nd	5th	37th
8. Index of party competition (2007-2011)	0.871	0.926	0.913
9. State's population as of 2010	6,484,000	11,537,000	6,346,000
10. State's per capita personal income as of 2010	$34,943	$36,395	$35,307
11. Residents over age 24 holding at least a bachelor's degree (2009)	22.5%	24.1%	23.0%

*We chose to focus on the date that performance funding was adopted rather than on a later date of implementation or full phase-in (if applicable), because as of the adoption date, institutions were likely to have been aware that performance funding had been adopted and were probably considering institutional responses by at least that point.

Sources:
1, 2. Dougherty & Reddy (2013).
3. Authors' interviews.

4. McGuinness (2003) and authors' interviews.
5. Erikson, Wright, and McIver. (2005).
6. Ferguson (2013). Ferguson applies a five-point scale to the following six features: the number of executive branch officials separately elected, the tenure potential of the governor, the governor's powers of appointment, the governor's budgetary power, the governor's veto power, and whether the governor's party controls the legislature. The average for all 50 states across all of these features is 3.3.
7. Hamm & Moncrief (2013). Hamm & Moncrief use rankings on Squire's index (based on legislative salary, the amount of permanent staff, and the length of the legislative session).
8. Holbrook & La Raja (2013). Holbrook & La Raja report the Ranney interparty competition index, with larger numbers meaning more competition, on a 0.5 to 1.0 scale.
9, 10, 11. U.S. Bureau of the Census (2012).

The Ohio and Tennessee PF 2.0 programs tie a much larger proportion of state appropriations for higher education to performance indicators than Indiana does: 80 to 85 percent as compared with 6 percent. However, the Ohio and Tennessee programs differ greatly in other ways. Unlike the Tennessee community colleges, the Ohio community colleges until recently have been much less subject to performance funding than the public universities (Dougherty & Natow, in press).[2]

The states also differ in their public governance systems for higher education. All but one of Indiana's community college campuses operate under a single governing board (Ivy Tech), and its university campuses operate under five governing boards.[3] But in Ohio, all 23 of the community colleges and all 13 of the university main campuses have their own governing boards (McGuiness, 2003).

The states also vary significantly in political culture and structures (Gray, Hanson, & Kousser, 2012). Tennessee and Indiana are above average in the conservatism of their electorates, whereas Ohio is very near the national average (Erikson, Wright, & McIver, 2006). The three states also differ in the characteristics of their political institutions, with Ohio's governor having more institutional power, and with its legislature having a higher degree of legislative professionalism than Indiana's or Tennessee's (Ferguson, 2013; Hamm & Moncrief, 2013). Moreover, Ohio and Tennessee tend to have greater political party competition than Indiana (Holbrook & La Raja, 2013).

[2] The 2013 revision of Ohio's State Share of Instruction formula increased the performance funding component of that formula for community colleges from 10 percent in fiscal year (FY) 2011 to 50 percent in FY 2014 and 100 percent in FY 2015 (Dougherty & Natow, in press).
[3] The Ivy Tech system in Indiana operates as a single community college, with the separate campuses reporting to a Central Office. Only one public two-year college—Vincennes University—is not part of the Ivy Tech system.

Finally, the states differ considerably in their social characteristics: population, income, and education. Ohio's population is substantially larger, wealthier, and better educated than those of Indiana and Tennessee, as shown in Table 1.

Which colleges and universities? This study examines the experiences of 18 public higher education institutions with performance funding: nine community colleges and nine universities. The community colleges and universities differ in their expected capacity to respond effectively to performance funding. Using data from the Integrated Postsecondary Education Data System (IPEDS) survey of 2011, organizational capacity was measured based on college resources (revenues per FTE student), data-analytic capacity (ratings by two experts in each state), and number of at-risk students (percentage of students receiving Pell grants and percentage of minority students). We rated the community colleges as being in the top, middle, and bottom third on each of these three dimensions, summed the ratings, and picked one college in each state from each group. We have labeled these colleges as having "high," medium" or "low capacity." For the public universities, we selected two universities that were high and low in their expected capacity to respond to performance funding, using the same capacity measure as for the community colleges. We labeled these universities as "high 2" or "low." The third university in each state is a high capacity research-intensive institution that we labeled as "high 1."

Data collection and analysis. We interviewed 261 state officials, state-level political actors, and institutional administrators and faculty at the 18 institutions (see Table 2). We also drew on documentary sources such as public agency reports, newspaper articles, and academic research studies (books, journal articles, and doctoral dissertations) to supplement our findings.

Table 2
Categories of Interviewees

Category	IN	OH	TN
State-level officials			
State higher education officials	3	5	9
Legislators and staff	4	2	5
Gubernatorial advisors	1	2	3
Business leaders	1	1	0
Other (consultants, researchers, other)	1	1	1
Subtotal	10	11	18
Institutional-level—Community colleges			
Senior administrators	10	16	12
Mid-level administrators—Non-academic	5	4	10
Mid-level administrators—Academic	11	5	10
Faculty	8	13	6
Subtotal	34	38	38
Institutional-level—Universities			
Senior administrators	15	16	11
Mid-level administrators—Non-academic	4	3	9
Mid-level administrators—Academic	6	9	6
Faculty	12	13	8
Subtotal	37	41	34
Total	81	90	90

At the state level, we interviewed higher education officials, gubernatorial advisors, legislators and members of their staff, business leaders, and researchers and consultants. The institutional respondents included senior administrators (the president and the vice presidents reporting to the president), deans and other middle-level academic administrators, non-academic middle-level administrators such as the director of institutional research, chairs of different departments representing a range of disciplines and degrees of exposure to outside accountability demands, and the chair of the faculty senate. We relied on the department chairs and the chair of the faculty senate to illuminate the range of faculty opinion.

The interviews were semi-structured and lasted approximately one to two hours. While we used a standard protocol, we adapted it to each interviewee and to material that

emerged during an interview. All institutions and interviewees were promised confidentiality, and we have masked their identities.

The interviews were transcribed and coded using the Atlas.ti qualitative data analysis software system. We also coded documentary materials if they were in a format that allowed importing it into Atlas. Our coding scheme began with an initial list of "start" or thematic codes drawn from our conceptual framework, but we added and altered codes as necessary as we proceeded with data collection and analysis. To analyze the data, we ran queries in Atlas based on our key coding categories. Using this output, we created analytic tables comparing how different interviewees at different kinds of institutions perceived the implementation and operation of performance funding.

2. Policy Instruments and Their Immediate Impacts

In this section, we begin by describing the four policy instruments that could be used for performance funding: financial incentives; disseminating information about the goals and methods of performance funding; communicating to colleges how they are doing on the state performance funding metrics; and building up institutional capacity to respond to performance funding. We analyze how these instruments were used in our three states and what immediate impacts they had on institutions. Our documentary analysis and interviews with campus personnel yield substantial evidence that the first three policy instruments are all operating and having substantial impact in our three states. However, we find little evidence that building up institutional capacity was a significant policy instrument used by those states and it had very little impact. For our full analysis, see Reddy et al. (2014).

2.1 Financial Incentives

We find evidence that college leaders are following the money and that college personnel further down the institutional hierarchies (e.g., faculty and mid-level administrators) are aware that student outcomes now impact an institution's bottom line. To be sure, of our 141 institutional respondents who felt comfortable assessing the size of annual budget variations, two-thirds indicated that their state's performance funding

program had little to no impact on their college's budget.[4] However, most of our institutional respondents also reported that the financial incentives attached to performance funding were having a substantial impact on campus efforts to improve student outcomes. Of the 124 institutional respondents answering this question,[5] half (61) rated the impact as high. A senior university administrator in Ohio stated: "I think that just knowing that the change is coming and anticipating that it may at some point have a negative impact has influenced our focus on student success."

2.2 Disseminating Information on Performance Funding Goals and Methods

Disseminating information as to what the state priorities are and just how performance funding is intended to function can further help to align the motivations of policymakers and campus personnel (see Anderson, 2011). State actors and institutional personnel in all three states testified to extensive efforts on the part of state higher education officials to communicate the goals and methods of their performance funding programs to local college personnel, either directly or through senior college administrators. However, we also received many responses indicating that awareness of the state performance funding programs was quite uneven within institutions. Nearly one-fifth (17 percent) of our respondents indicated that they had not received any communication from the state on the goals and methods of performance funding, and those reports tended to be concentrated among faculty and middle-level administrators (see Jenkins, Wachen, Moore, & Shulock, 2012, for similar findings regarding Washington). The main explanations that were given for this lack of awareness involved competing demands on faculty time and attention, lack of involvement in decision-making situations where performance funding was relevant, administrative decisions to hold back information when they felt it was not relevant, and communications breakdowns. In the end, however, of the 123 institutional respondents who rated the

[4] Several factors mitigated against a big financial impact: the use of three-year rolling averages rather than annual statistics; hold-harmless provisions in the first few years of the programs that limited their impact; the declining state share of total institutional revenues; and—in Indiana and in Ohio for community colleges until recently—the small proportion of state funding driven by performance indicators (for more detail, see Reddy et al., 2014).

[5] This represented 56 percent of our institutional respondents. This number was kept down in good part by the fact that we did not begin asking this question until after our first round of interviews in Ohio and Tennessee.

impact of the dissemination of information about program goals and methods on college efforts to improve student outcomes, 46 percent rated it as high and 27 percent rated it as medium. For example, a dean at an Indiana community college stated:

> They're really letting people know, "This is a serious issue." And again, like I said, it's not all being driven by the fact that it's money involved, but there's an awful lot of "It's the right thing to do. This is a serious problem for the country; we need to see what we can do to solve that problem."

2.3 Disseminating Information on Institutional Performance

Our data indicate that state efforts to mold institutional action through provision of information about how the institutions were doing on the state metrics were spottier than their efforts to disseminate information about state goals. Over a third (36 percent) of our institutional respondents stated that there was no communication, direct or indirect, from the state. Moreover, a large proportion of our respondents gave us no response when we asked them what impact state communication may have had on institutional efforts to improve student outcomes. Of the 101 who gave us a response, 51 percent rated the impact as high and 27 percent as medium. However, we are struck by the fact that these ratings were coming from a considerably smaller group of respondents than in the case of information about state goals and methods. Still, the impact of information about institutional performance could be considerable. A senior administrator of an Ohio university described the ability of performance funding programs to induce status-competition between universities:

> I'd say the financial impact was completely overshadowed by these other features about this university's reputation and where it really wanted to focus and maintain its status, relative to the other public institutions in the state as well as some of the private schools with whom we know we compete for similar students.

2.4 Building Up Organizational Capacity

We find little evidence that building up organizational capacity—in particular data-analytic capacity—was an important policy instrument used in the implementation of performance funding. To be sure, the state officials we interviewed did mention some efforts to build up the capacity of colleges, such as Ohio's building of a state data

infrastructure that would make it easier for colleges to analyze data (Dougherty et al., 2014a). Still, among the 173 institutional respondents who rated the extent of the state effort to build up institutional capacity, 95 percent rated it as low or nonexistent. While we did receive some reports of workshops for the sharing of best practices, the broad theme was one in which this potential policy instrument was not at work. As a mid-level Tennessee university administrator noted,

> I just think the state is saying, "It's up to you to find efficiencies, and it's up to you to do what you need to do to increase outcomes. And if you do a good job, we're going to give you more money." But they didn't [give] any kind of seed money to start any of these new things.

This very weak effort at capacity building is important because it leads into one of the important obstacles colleges encounter in trying to respond to performance funding. We will return to this point in a later section of this paper.

3. Institutional Changes in Keeping With the Aims of Performance Funding

In this section we examine how universities and community colleges in all three states altered their academic and student services policies, programs, and practices following the advent of performance funding in ways that relate to achieving the goals of performance funding. A major theme is that it is very difficult to disentangle the impact of performance funding from other factors that operated concurrently. For our full analysis, see Natow, Pheatt, Dougherty, Jones, Lahr, & Reddy (2014).

3.1 Determining the Impact of Performance Funding

In our interviews we asked our institutional respondents what changes their institutions made in response to performance funding. However, many of our respondents found it difficult to answer this question in any simple way. They noted that performance funding is but one of several concurrent external influences that seek to improve higher education institutional outcomes. States have legislatively mandated such institutional changes as lowering the number of credits required for degrees, enhancing course articulation and transfer, reforming developmental education, and using degree maps.

Even in the absence of mandates, state agencies and task forces have also made recommendations regarding campus-level policies, programs, and practices that institutions often feel constrained to take into account (see, for example, Ohio Board of Regents, 2012). Institutions are also influenced by accreditors, foundations, and other non-profit associations—such as the Gates and Lumina foundations and Complete College America—that fund or otherwise advocate for particular reforms. In light of all of these concurrent influences, it is very difficult to disaggregate the influence of performance funding from the influence of other external influences occurring around the same time on institutions' decisions to make particular campus-level changes (see Jenkins et al., 2012, for similar findings regarding Washington). For example, when asked about programmatic changes in response to performance funding, a senior administrator at a Tennessee university replied:

> I think part of the challenge with your question is that the things that I'm walking through [with you] are not just simply because of the new [performance funding] formula or the old formula. They are the result of policy directives from the board. They are the results of questions from regional and professional accrediting entities. They are the result of public pressures. So it's not just simply the formula, it's a national mood and a national conversation around the importance of completion.

Perhaps because performance funding was exerting an influence jointly with other forces, most of our respondents perceived performance funding as not having a high degree of influence on institutions' decisions to make the campus-level changes identified above. Among the 198 respondents who rated the impact of performance funding on institutional changes in academic and student-service policies and programs affecting student outcomes, the modal respondent indicated a medium level of influence (86 respondents), with fewer rating the impact as high (38), low (60), or unclear (14) (Natow et al., 2014). Respondents rating the impact of performance funding as low or medium often observed that performance funding was frequently only one force among

many influencing institutional decisions.[6] This finding should temper the reports that performance funding has had a high impact on college efforts to improve student outcomes. While performance funding may have significantly increased *interest* in those outcomes, its impact on any particular changes in institutional policies, programs, or practices has been mediated by the presence of other influences.

3.2 Changes in Academic Policies, Programs, and Practices

The two most common campus-level academic changes following performance funding adoption have been to alter developmental education and change course articulation and transfer. Other commonly adopted student services practices include changes to tuition and financial aid policies, registration and graduation procedures, and student services departments (Natow et al., 2014).

Developmental education. Respondents at ten of our eighteen institutions—particularly at community colleges but also at some universities—reported making changes in developmental education. Changes to developmental education involved both curricular and instructional changes. A way that one community college in our sample restructured its developmental education was through "pre-term remediation," in which students could enroll in remedial classes during the summer before their first fall term. In other instances, developmental education students were enrolled in developmental courses at the same time as college-level courses. In Indiana, this "corequisite" model is a statewide mandate for community colleges, separate from the performance funding program (Ivy Tech Community College, 2014).

Performance funding provided an incentive for this insofar as developmental education success was a performance measure for community colleges in Ohio and Tennessee. However, in all three states, developmental education reform was mandated or incentivized by legislation or other initiatives separate from performance funding, in addition to being incentivized by performance funding itself. For example, Ohio and Tennessee participated in privately sponsored developmental education reform initiatives (Boatman, 2012; Quint, Jaggars, Byndloss, & Magazinnik, 2013), and certain curricular

[6] Other reasons given were that the performance funding program did not involve a lot of money, the institution was already committed to improving, or the institution was already performing well (Natow et al., 2014).

changes to developmental education were required under a statewide policy in Indiana (Ivy Tech Community College, 2014). Thus, although the developmental education reforms in these states are certainly consistent with the goals of performance funding, other forces were influential as well. It is difficult to know the extent that performance funding influenced these changes.

Course articulation and transfer. Another common academic change was to improve course articulation and transfer, which was reported at eight of our 18 institutions. It is evident performance funding certainly played a role because transfer numbers are a performance funding metric in Ohio and Tennessee. Tennessee's performance-based funding formula includes metrics rewarding transfers out with 12 or more credits for four-year and two-year institutions (Tennessee Higher Education Commission, 2011a). Ohio's performance funding program contains a similar metric for community college students who transfer to four-year institutions (Ohio Board of Regents, 2013). At the same time, in Tennessee, there was a statewide legislative mandate to improve articulation that was part of the same legislation that revamped the higher education funding formula, but was separate from performance funding (Complete College Tennessee Act, 2010). Similarly, Indiana also exerted state-level influence to enhance course articulation and transfer in Indiana, even though the state does not have a transfer metric in its performance funding formula (see, for example, Indiana State Senate, 2013).

3.3 Changes in Student-Services Policies, Programs, and Practices

The two most commonly made campus-level student services changes following performance funding adoption have been to alter advising and counseling services and to change tutoring and supplemental instruction. For other changes, see Natow et al. (2014).

Advising and counseling. All eighteen of our institutions made changes in advising and counseling. Such changes included adding more academic advisors or counselors, creating online advising systems, asking faculty members to play more of a role in student advising, and employing retention programs "early alert" or "early warning" systems that notify advisors when students are in danger of dropping out. These changes were clearly seen as helping to improve institutional performance on funding metrics for credit accrual and degree completion. However, some components of

student advising (for example, degree maps in Indiana) were mandated by a statewide policy independent of performance funding.

Tutoring and supplemental instruction. Next to advising, student services changes made with the most frequency involved tutoring and supplemental instruction. Respondents at twelve of our 18 institutions reported such changes. Tutoring changes included creating new tutoring centers, requiring faculty to meet personally with students, and providing online tutoring.

4. Student Outcomes

Given the rather extensive changes that institutions have made in their academic and student support policies in part in response to performance funding, has this resulted in a significant improvement in student outcomes? As it happens, we have no research definitively establishing that.

Determining the impact of performance funding on student outcomes is difficult. Even if student outcomes improve after the introduction of performance funding, these improvements could be influenced by many other factors such as growing enrollments (which alone could produce rising graduation numbers), modifications to state tuition and financial aid policies, and other efforts to improve student outcomes (such as recent state initiatives to improve counseling and advising, developmental education, and course articulation and transfer). Hence, it is important to conduct multivariate statistical analyses that strive to control for all the possible factors that might account for improvements in student outcomes apart from the operation of performance funding.

4.1 Non-Multivariate Results: Changes in Graduation Numbers in Our Three States

Unfortunately, we have as yet no multivariate analyses of the impact of performance funding 2.0 in Indiana, Ohio, and Tennessee. While we wait for such analyses, we can examine what data are available on changes in student outcomes since the advent of performance funding 2.0 in those three states. We have to caution that these data do not control for sources of bias and therefore cannot be regarded as in any way conclusive. As noted earlier, a major issue is that these states—at the same time as they

have pursuing performance funding—have also been making other important policy initiatives involving such things as developmental education reform and improving transfer pathways (Complete College Tennessee Act, 2010; Indiana Commission for Higher Education, 2013a; Indiana State Senate, 2013; Ohio Board of Regents, 2007, 2012). As we saw in the previous section, these other policy initiatives have certainly helped produce changes in institutional policies that might affect student outcomes.

With these caveats in mind, we can note that in Indiana the number of undergraduate and graduate degrees and certificates awarded by public universities rose 16.1 percent from 39,932 in academic year (AY) 2008–2009 to 46,366 in AY 2012–2013 (Townsley, 2014). At the same time, fall enrollments rose only 8.9 percent from 214,536 in fall 2008 to 233,497 in fall 2012 (Snyder & Dillow, 2011, Table 223; 2014, Table 304.60). For community colleges, the number of degrees and certificates awarded doubled, from 9,100 in AY 2008–2009 to 18,129 in AY 2012–2013 (Townsley, 2014). Meanwhile, enrollments increased much less: 21.7 percent, from 82,414 in fall 2008 to 100,272 in fall 2012 (Snyder & Dillow, 2011, Table 223; National Center for Education Statistics, 2014, Table 304.60)

In Ohio, the number of degrees and certificates awarded by the main and regional campuses of Ohio public universities rose 16.6 percent, from 61,090 in 2009 to 71,201 in 2012. Meanwhile, fall headcount enrollments did not increase as much: by 10.9 percent, from 306,261 to 339,760 (Ohio Board of Regents, 2013b, 2013c). Or using a related metric, the number of degrees awarded per FTE rose from 0.219 to 0.254 between 2010 and 2013 (Ohio Board of Regents, 2014). However, while the number of performance funding Success Points generated by community colleges rose 5.8 percent, from 163,471 in FY 2009 to 172,878 in FY 2013, this was less than the 7.4 percent increase in fall headcount enrollments during the same period (Ohio Board of Regents, 2013d).

In Tennessee, there is also evidence of rises in graduation numbers that exceeded increases in enrollment counts. For the universities, the number of graduates rose 12.6 percent, from 26,152 in 2010 to 29,443 in 2013, while enrollments only went up 2.6 percent, from 139,568 in fall 2009 to 143,228 in fall 2012 (Tennessee Higher Education Commission, 2011c, 2014b). Meanwhile, the number of students receiving degrees and certificates from community colleges jumped by 57 percent, from 9,750 in 2010 to

15,312 in 2013, while enrollments barely budged, from 92,226 to 92,742. Most of the increase for community colleges was in certificates, which tripled in number, while the number of associate degrees granted went up by only a quarter (Tennessee Higher Education Commission, 2011c, 2014b). In addition, the number of bachelor's degrees and associate degrees awarded by universities and community colleges rose faster in the years following the introduction in 2010 of the outcomes-based formula than in the years previous. For example, the number of bachelor's degrees rose 4.5 percent annually between 2009 and 2012, whereas the average annual rate of increase for the years 2001 to 2008 had been 2.6 percent (Postsecondary Analytics, 2013). However, it should be noted that some states neighboring Tennessee—such as Georgia and North Carolina—also experienced increases in graduation numbers in those years that exceeded their improvements in previous years, yet they did not have performance funding programs (Postsecondary Analytics, 2013).

While these data are of interest, we cannot in any way conclude that performance funding in these three states is producing higher student outcomes. The comparisons we provide do not control for a host of other influences that could be driving student outcomes. This caution is driven strongly by the results of multivariate analyses that have been conducted on the impact of performance funding programs through 2010. Most of these programs are of the PF1.0 variety and not PF 2.0 programs, but the results of these studies are sobering.

4.2 Multivariate Study Findings

Most of the existing multivariate analyses focus on graduation from public four-year colleges, although some also consider graduation from community colleges and retention in both two-year and four-year colleges. The studies compare states mostly with performance funding 1.0 to states without any performance funding, using a variety of multivariate statistical techniques (e.g., difference in differences or hierarchical linear modeling) and controlling for a variety of institutional characteristics (e.g., median test scores and student income and racial composition), state policies (e.g., average tuition for two-year and four-year colleges, state aid per student, and state appropriations per student), and state socioeconomic conditions (e.g., population size and state unemployment rate) (see Dougherty & Reddy 2013, Table A2; Dougherty et al., 2014b).

Four-year college graduation. Most of these studies focus on baccalaureate completions at public four-year colleges, analyzing either graduation rates or number of awards received. The predominant finding is that performance funding does not have a significant impact on four-year graduation numbers for institutions and states (Fryar, 2011; Hillman, Tandberg, & Gross, 2014; Larocca & Carr 2012; Rutherford & Rabovsky, 2014; Sanford & Hunter 2011; Shin 2010; Shin & Milton 2004; Tandberg & Hillman, 2014). For example, using a difference-in-differences design with state and year fixed effects to compare states with and without performance funding, Tandberg & Hillman (2014) examined the impact of performance funding on number of baccalaureate degrees awarded by public four-year colleges. They controlled for various higher education system characteristics (including percentage of students enrolled in the public four-year sector, instate tuition at public two-year and four-year colleges, state aid per public FTE, and state appropriations per public FTE) and various state-level socioeconomic characteristics (including population size, poverty rate, unemployment rate, and gross state product per capita). Comparing states with and without performance funding for four-year colleges, the authors found no average impact of performance funding on changes between 1990 and 2010 in the number of baccalaureate degrees awarded by states with performance funding. As a robustness check, they did comparisons involving lagged and nonlagged effects and three different comparison groups of states without performance funding: all states, contiguous states, and states with coordinating/planning boards (the type most common among performance funding states).

Although the multivariate analyses of four-year graduation have not found that performance funding on average has an impact, there is an interesting finding. Tandberg & Hillman (2014) found that performance funding had a positive impact on bachelor's degree production beginning seven years after the performance funding programs were established in the few states that had programs lasting that long. They noted that this suggests that performance funding programs may need some time before they produce effects. Programs are sometimes phased in over time. Institutions need time to react to performance funding demands and make necessary changes. And enough time needs to pass to see students through to graduation, which often comes five or six years after college entrance. However, there is no average effect of performance funding in part

because many programs are discontinued after only a few years (Tandberg & Hillman, 2014; see also Dougherty & Natow, in press).

Two-year college graduation. Two multivariate studies have been conducted on the impact of performance funding on student completions at community colleges (Hillman, Tandberg, & Fryar, in press; Tandberg, Hillman, & Barakat, in press). They found a significant impact on short-term certificates but no impact, on average, on the completion of long-term certificates or associate degrees. However, the latter finding has some interesting wrinkles.

Using a difference-in-differences fixed effects analysis comparing institutions in states with performance funding to those in various combinations of states without performance funding (all states and neighboring states),[7] both Hillman et al. (in press) and Tandberg et al. (in press) found that performance funding has no impact, on average, on associate degree completions. The control variables included higher education characteristics and state or local socioeconomic characteristics.[8] However, despite finding no average effect, both studies did find more localized impacts of interest. Tandberg et al. found that—across six separate equations—four states evidence a significant positive impact of performance funding on associates degree completion, even though other states evidence mixed impacts (3), no impact (6), and even a significant negative impact (6). Moreover, Hillman et al. found that performance funding for community colleges in Washington had a delayed impact on associate degree completion beginning four years after the establishment of the program in 2007.

In the case of community college certificates, Hillman et al. (in press) found a positive impact of Washington's Student Achievement Initiative (SAI) on short-term certificate awards in comparisons of Washington to three different combinations of states. However, they found a negative impact on the awarding of long-term certificates.

[7] Tandberg et al. (in press) also included states with state coordinating or planning boards as a comparison group.

[8] For the Tandberg et al. (in press) study, the higher education system control variables included percentage of students enrolled in the community college sector, instate tuition at public two-year and four-year colleges, state aid per public FTE, and state appropriations per public FTE, and the socioeconomic controls included state population size, poverty rate, and unemployment rate. For the Hillman et al. (in press) study, the higher education institution controls included percentage enrolled part-time, percentage White, percentage of revenues from state appropriations, tuition and fees, and federal and state grant aid per FTE, while the socioeconomic control variables were size of county labor force and county unemployment rate.

Retention. A few multivariate studies have also been conducted of retention rates, and almost without exception they found no impact of performance funding. Larocca and Carr (2012) found that two-year colleges in states with performance funding had higher one-year retention rates than their counterparts in states without performance funding. However, Hillman et al. (in press) found no impact of performance funding on community college retention in Washington. Moreover, four other studies found no effect of performance funding on retention in public four-year colleges (Huang 2010; Larocca & Carr 2012; Rutherford & Rabovsky, 2014; Sanford & Hunter, 2011).

In sum, the multivariate studies conducted to date largely fail to find evidence that performance funding improves retention and graduation. However, there are some interesting findings of more localized effects involving delayed effects on four-year college graduation, impacts on short-term community college certificates, and in some states, impacts on community college associate degrees.

It should be noted that these multivariate studies primarily examined PF 1.0 programs, which do not tie provide much state funding to performance indicators. While PF2.0 programs have now become much more common, only a few existed before 2007 (see Dougherty & Natow, in press). Hence, only a few are captured by the existing studies of performance funding impacts that end in 2010. There is an interesting study by Hillman, Tandberg, and Gross (2014) of Pennsylvania's PF 2.0 program, which has been in operation since 2002. They used a difference-in-differences design to compare the change in number of bachelor's degrees conferred by Pennsylvania public four-year institutions to the change in baccalaureate conferrals by similar institutions in non-performance funding states. The authors estimated ten models involving lagged and nonlagged dependent variables and five different comparison groups, controlling for a several institutional characteristics. They found impacts of performance funding in three of their ten models. However, they argued that these three models are not as definitive as four others they had estimated using institutions matched on pretreatment-year patterns. Because performance funding had no impact in those four models, Hillman et al. concluded that performance funding 2.0 in Pennsylvania has no impact.

However, it can be argued that the Hillman et al. (2014) study does not definitively settle the issue of the impacts of PF 2.0. The Pennsylvania program is far

smaller than the PF 2.0 programs in several other states, particularly Ohio and Tennessee: the performance pool was set at 2.4 percent of the total system operating (education and general) budget for the Pennsylvania System of Higher Education, equivalent to 8 percent of the fiscal year 2011 state appropriation for public four-year institutions (Cavanaugh & Garland, 2012, p. 37; HCM Strategists, 2011, p. 17). The Tennessee program, meanwhile, ties 80–85 percent of state appropriations to performance indicators, and Ohio will be reaching that point in fiscal year 2015 (Dougherty & Natow, in press). Before we can reach a definitive conclusion about the impacts of PF 2.0 programs on student outcomes, we need multivariate analyses of the much more intensive PF 2.0 programs in states such as Ohio and Tennessee, particularly after they were fully phased-in and beginning to exert their full impact.

If indeed performance funding does not significantly improve student outcomes despite the changes it spurs in institutional policies and programs, how do we explain this? Could it be in part that the institutional changes being produced are insufficient or misapplied? If so, what is contributing to that? We now turn to consider the obstacles that higher education institutions encounter in responding to the demands of performance funding programs.

5. Obstacles to Effectively Responding to Performance Funding

Consistent with previous research (Dougherty & Reddy, 2013), we find that institutions in our three states encountered several persistent obstacles that hindered their efforts to perform well on the state metrics. Our respondents perceived improvement in student outcomes as primarily inhibited by the demographic and academic composition of their student bodies (in the case of community colleges and broad-access public universities), inappropriate performance funding metrics, and insufficient institutional capacity. Other obstacles mentioned include institutional resistance, insufficient state funding of higher education, insufficient institutional knowledge of performance funding, instability in performance funding, indicators, and measures, and insufficient state funding of performance funding. For our full analysis, see Pheatt et al. (2014).

5.1 Student Composition

With regard to student composition, 63 of our respondents at sixteen institutions stated that the most difficult obstacle they perceived in responding to the funding formula is the fact that open-access institutions enroll many at-risk students who face social and economic challenges that make it difficult for them to persist and graduate and therefore contribute to good institutional results on state performance metrics. When asked about specific ways that student composition hinders institutional performance, 20 respondents at ten of our 18 institutions (mostly community colleges) pointed to student academic preparation. They reported that their institutions take in many students who are not well prepared academically and therefore less likely to do well on the state metrics. An Ohio community college dean noted:

> I think our student population comes in incredibly unprepared and without the foundations skills, without what would be considered college level reading, writing and comprehension. So quite honestly… they just don't have the skills—whether it be that they never learned how to study in high school, whether it be they got passed through high school—but they just don't know how to attack college and the level of work that's required in a college class.

Similarly, 18 respondents at nine institutions (again mostly community colleges) pointed to the fact that a good number of their students come in without a desire for a degree, which also makes it less likely they will graduate. In fact, among college entrants surveyed in their first year as part of the 2003–04 Beginning Postsecondary Students survey, 16 percent of two-year entrants but only 6 percent of four-year entrants stated that they did not intend to receive a certificate or degree (Berkner & Choy, 2008, pp. 7–8). From a high-level community college administrator in Tennessee, we heard:

> I think all of our sister institutions that are community colleges will be experiencing something very similar. ... The students that come to community college may not all be intending to earn an associate's degree. They may be coming to upgrade some of their skills as incumbent workers. There may be some students that are coming back to re-tool in certain areas. So a completion agenda may not always be first and foremost for a community college

> student, the same way it would be for a four-year university student.

While it is clear these sentiments are heartfelt on the part of our community college respondents, we must note that they could have a self-serving element. The great stress on student composition as an obstacle could verge on a "blaming the victim" approach if it were to exempt institutions from having to examine how their own policies and programs might be contributing to poor student outcomes (Kezar, Glenn, Lester, & Nakamoto, 2008; Witham & Bensimon, 2012). On the other hand, it would be unfair to the broad-access two-year and four-year colleges to argue that they do not face obstacles that are greater than those faced by selective, resource-rich four-year institutions.

5.2 Inappropriate Metrics

In good part because of the differences between institutions in student composition and organizational mission, many of our respondents (61 respondents at 17 institutions) also stated that institutional responsiveness to performance funding was hindered by the fact that performance funding metrics are often poorly matched to institutional missions and capacities. Respondents at community colleges often perceived the state performance funding programs as being unfair insofar as they held them to the same graduation expectations as four-year institutions. These community college respondents argued that many students at community colleges do not intend to get a degree, unlike students at four-year institutions, or will have difficulty doing so in a timely fashion given their poorer academic preparation and more difficult life circumstances. A senior community college administrator in Indiana noted:

> The state [is] not understanding the mission of the community college, as compared to four-year universities. And they evaluate us on the same plane, or they try to. For example, people in a community college have a different mission. They may be married, they may be working, and they may be laid off. … It could be all of those things in life that can screw you up. ... We should not be judged the same.

Meanwhile, respondents at high-capacity universities, particularly in Indiana, were frustrated because they felt their institutions had little room to improve. They felt

there was a ceiling effect in that institutions that were already doing well had little room to make big jumps in student outcomes.

5.3 Insufficient Organizational Capacity

Finally, many of our respondents (42 respondents at 16 institutions) pointed to their institutions' lack of sufficient organizational capacity. The most frequently reported deficiency involved too little institutional research (IR) capacity. Nineteen individuals at seven community colleges and five universities reported inadequate IR capability as an obstacle to effectively responding to the performance funding program. A Tennessee community college dean noted: "Any time you talk about implementing any programs or additional assessment … anything of that nature … [it] requires resources. And our IR department is woefully understaffed." This underscores the importance of state provision of support for the development of IR capacity. But as we note above in our discussion of policy instruments, capacity building of this sort is something that the states have not given much attention to (Reddy et al., 2014).

6. Unintended Impacts of Performance Funding

Besides its intended impacts, performance funding can also generate unintended impacts not desired by policy framers. Our respondents reported numerous undesired impacts, actual and potential. These negative unintended impacts are similar to those that have been reported by Dougherty and Reddy (2013) in their review of the literature on performance funding in higher education and by studies of performance management in government (Grizzle, 2002; Heinrich & Marschke, 2010; Moynihan, 2008; Rothstein, 2008; Rutherford & Rabovsky, 2014).

We classified instances as actual or "observed" when the interviewee discussed that an impact has occurred or concrete steps have been taken toward producing it (e.g., specific steps have been already taken by the college to change admission practices in ways that restrict access for certain kinds of students). Unintended impacts are classified as "potential" if the respondent noted that there was the possibility of a certain impact

occurring, but it has not yet occurred or no clear steps have yet been taken toward producing that impact.

The unintended impacts most commonly mentioned by our respondents were restrictions in admissions to college and weakening of academic standards. Other unintended impacts reported by our respondents included compliance costs, lessening of institutional cooperation, decrease in staff morale, reduced emphasis on missions not rewarded by performance funding, and weakening of faculty voice in academic governance. For our full analysis, see Lahr et al. (2014).

6.1 Admission Restriction

Sixty-eight interviewees at six of nine community colleges and eight of nine universities reported that restriction of admissions was an actual or potential unintended impact of performance funding. Forty-one of those respondents were mentioning a potential impact that might occur; twenty-seven were reporting an impact that had occurred. Restriction of admission could improve institutional performance on performance funding metrics by lessening the proportion of students who are less prepared academically and otherwise less likely to graduate. For example, a senior administrator from an Indiana four-year institution said that because of the pressure from performance funding, the institution is less likely to offer admission to "weaker" students "because if they are weaker … there is a chance they will bring down your performance numbers." While this might make organizational sense, it is a very troubling development at the societal level. Community colleges and broad-access four-year colleges have historically been committed to increasing opportunity for higher education for less advantaged students. It is very troubling if they begin to back away from this mission at a time when there is great concern about increasing inequality in access to higher education (Karen & Dougherty, 2005; Mettler, 2014).

According to our respondents, admission of students who are more likely to graduate could occur through a variety of means, such as higher admission requirements, selective recruitment, and focusing institutional financial aid on better prepared students.

Higher admissions requirements. Clearly, colleges can restrict admission of less-prepared students by requiring higher standardized test scores and grade point

averages or by decreasing the number of conditionally admitted students that are accepted. A mid-level non-academic administrator at an Ohio university noted:

> Instead of a graduation rate of 80 percent, we really need to bump that up so that we have a higher graduation rate. And some of that is being achieved by [changing] the type of student that we bring in. … So by raising our average ACT score of our incoming class by one point, the question is, "Can we anticipate then higher course completions, higher number of degrees awarded?" … So yes, there's a deliberate approach being made by our enrollment management office.

Selective recruitment. In order to maximize the likelihood that they enroll students more likely to graduate, institutions are increasing or might increase their efforts to attract better prepared students, including suburban, out-of-state, and international students. At the same time, respondents discussed how their institutions might de-emphasize or are actually deemphasizing recruitment of students from high schools with many less well-prepared students. A senior administrator at a four-year institution in Ohio observed:

> [T]here's a recognition [as has been brought up in some discussions] of the fact … that the more we focus on suburban kids with high GPAs and high ACT scores, the less we're able to serve … an urban population that tends to be from poorer school districts. And even if they do have GPAs that appear to be good, their ACT scores reflect a lack of preparation. ... I mean there's a tension between continuing to recruit a very diverse student population and being an urban-serving institution and being an institution that has high performing students who are successful in getting a degree."

Shift in focus of financial aid. Admissions can also be affected by shifting the focus of the college's own financial aid funds from assisting needy students to attracting better prepared students through so-called merit aid. A senior administrator at an Ohio community college explained how performance funding could encourage the college to offer scholarships to higher performing students who are more likely to complete:

> My theory is that we're going to be raising the bar for who we give some of our scholarships to. As I told the

> president, if it was my business I would be looking for ways to attract people that I thought were very likely to complete. And along with that, I would be looking for what are the tendencies or what are the attributes for those that tend to be non-completers. Now I think that raises some ethical questions because we are an open-access institution, and so we still need to offer that access, but I think we also need to tweak and, again, encourage more completions as opposed to just numbers of enrollment.

6.2 Weakening Academic Standards

Fifty-nine respondents at sixteen of our institutions noted that performance funding could or did result in colleges lowering their academic standards in order to keep up their retention and graduation rates. Two-thirds of these reports involved potential impacts but one-third involved impacts that respondents stated had occurred. Our respondents observed that academic standards are or could be weakened principally by lessening academic demands in class or reducing degree requirements.

Lessening class demands. A senior campus administrator at an Indiana community college worried that the push for completions, which is the most heavily weighted metric within the Indiana performance based funding formula, will force faculty and institutions to move students through to graduation without care for whether or not academic standards are maintained: "It's putting faculty in a position of the easiest way out is to lower the standards and get people through. And so it's something that's of great concern I think." Similarly, a faculty member at an Ohio university discussed a feeling of "pressure" not to fail students by inflating grades:

> Well, in an effort to promote student success, there is a substantial pressure to minimize the failure rates of the students in some of these undergraduate courses. And of course that would translate into inflation of grades in order to make sure that the students are passing all of these courses and so forth. So I as a faculty member have a concern as to the watering down of our course materials as well as the quality of our majors, the programs.

Calling attention to low course or degree completion rates can lead faculty to decrease their academic demands (and therefore to grade more easily) in order to produce higher rates of course completion.

Reducing degree requirements. Several respondents noted that their respective institutions recently have changed degree requirements in order to ensure that students receive their degrees as soon as possible. While this may often be a good change, removing unnecessary barriers to graduation, the focus on rapid credential attainment can also negatively affect learning. Degree requirements can be weakened by reducing the number of credits required to complete a degree and by having students take easier courses. In Tennessee, the watering down of academic demands in order to produce higher completion numbers was cited as a potential unintended impact of performance funding by a college dean:

> The push is to get students to graduate, or at least the message that we get is [that] students have to graduate. There's concern among faculty [that] that's going to become the overriding goal and they're going to be forced to water down the curriculum, which does not sit well with faculty on any level. … A number of the programs have [a] very set curriculum, and there seems to be a push to change that just so that you can get students to be able to graduate. In other words, to substitute courses that aren't necessarily in the curriculum, and that doesn't always sit well [with faculty].

We should underscore that many of our reports of unintended impacts involved *potential* impacts, that is, forecasts of what might happen, particularly if performance funding demands get more intense. These reports of potential impacts could simply be testimony more to our respondents' fears than to their understanding of processes actually unfolding. Still, it should be noted that half of the impacts mentioned were ones that we classified as *observed,* in that they were reports not of possible impacts but of ones that respondents described as having occurred. Furthermore, we have to keep in mind that our interviews occurred before Indiana, Tennessee and, especially, Ohio had fully phased in their performance funding programs. Hence, we have to wonder how many of the potential unintended impacts mentioned might in time become actual. Finally, even if we conclude that the potential unintended impacts will mostly remain only potential, they still testify to a widespread disquiet about performance funding among higher education administrators and faculty that needs to be sensitively addressed by the advocates of performance funding.

7. What State Policymakers Have Done and Could Be Doing to Address Obstacles and Unintended Impacts

This section describes how policy designers of performance funding programs have tried to combat obstacles to and unintended outcomes of performance funding. It assesses these state responses and makes recommendations for further efforts. For our full analyses, see Dougherty, Jones, Lahr, Natow, Pheatt, & Reddy (2014a), Pheatt et al., (2014), and Lahr et al. (2014).

7.1 Attention to Obstacles

Our respondents at 18 public institutions in three states identified six main obstacles to responding effectively to performance funding demands: disadvantageous student composition, inappropriate performance measures, insufficient institutional capacity, institutional resistance, insufficient state funding to allow program innovation, and insufficient knowledge of and responsibility for responding to performance funding on the part of college administrators and faculty (Pheatt et al., 2014). The state-level advocates and implementers of performance funding did anticipate many of these obstacles and took steps to mitigate them. But states need to do even more.

Disadvantageous student composition. State policy designers were aware that colleges and universities with high numbers of students who were poorly prepared, coming from low-income families, and not intending to get a degree would have a more difficult time retaining and graduating students than institutions with better prepared and more advantaged student bodies (Dougherty et al., 2014a; Pheatt et al., 2014). To counter this, Indiana has a completion indicator specifically targeted to low-income students. Ohio weights course and degree completions for the university main and regional campuses by whether students are at risk, defined in terms of varying combinations of family income, race/ethnicity, and age. Moreover, it plans to do the same for community colleges by fiscal year 2016. And Tennessee has extra weighting for adult learners and low-income students on indicators for credit-accumulation and degree-production (Indiana Commission for Higher Education, 2013b; Ohio Board of Regents, 2013a, 2013b; Tennessee Higher Education Commission, 2012a, 2014a).

Our respondents acknowledge this premium but, particularly if they are at community colleges and broad-access universities, they often do not feel it sufficiently addresses the obstacles they face. Consequently, states need to think more deeply about how to help colleges with many students who will have trouble graduating. Are there additional resources that the colleges and the students need, particularly institutional funding to develop new programs to address the needs of less-advantaged students and to provide more financial aid for students? Moreover, states could take into account difference in student composition by such means as allowing performance targets to vary across colleges according to their student characteristics, by comparing colleges to peer colleges with similar student composition, or by comparing a college's performance now to its performance in the past (Bailey, 2012; Jenkins & Shulock, 2013; Shulock & Jenkins, 2011). Moreover, state performance funding programs can build in metrics—on developmental education completion, for example—that reward colleges that admit many at-risk students (Jenkins & Shulock, 2013; Jenkins et al., 2012).

Inappropriate performance funding indicators. State policy designers were also aware of the importance of matching performance funding indicators and measures to institutional missions (Dougherty et al., 2014a). Consequently, the performance funding metrics have been rather different for universities and community colleges, particularly in Ohio and Tennessee. In the case of Ohio and Tennessee, the metrics for universities and community colleges overlap on some indicators, but for the most part the indicators are different. For example, in Ohio and Tennessee the performance indicators for community colleges include completion of developmental education and attainment of certificates, but these are not university metrics. In addition, Tennessee further differentiates its metrics by giving different weights based on an institution's Carnegie classification (Dougherty et al., 2014a; Indiana Commission for Higher Education, 2013b; Ohio Board of Regents, 2013a, 2013b; Tennessee Higher Education Commission, 2012a, 2014b).

Still, the states could do more to tailor performance funding indicators to the circumstances of students entering community colleges and broad-access universities. Graduation measures for community colleges should be broken down by whether or not students intend to get a degree (Bailey, 2012; Committee on Measures of Student

Success, 2011; Offenstein & Shulock, 2010). It has been proposed, for example, that student intention to get a degree could be determined by whether students have taken more than six credits in the first year and have enrolled within the first two years in a college-level math or English course (Offenstein & Shulock, 2010). In addition, performance funding programs should include indicators of successful transfer and pair them with measures of graduation, given the many community college students who transfer to a four-year college without first getting a community college degree (Committee on Measures of Student Success, 2011; Goldberger, Gerwin, & Choitz, 2008; U.S. Department of Education, 2012). In April 2012, the U.S. Department of Education announced that it will take steps in this direction (U.S. Department of Education, 2012).

Many students attend community colleges part-time or have to begin by taking noncredit remedial courses and therefore do not complete a degree within the three-year window used by the federal Graduation Rate Survey. Hence, if states use a time-to-degree indicator, it would behoove them to significantly extend the time frame for tracking outcomes for students, particularly for community college students. When community college students are tracked through six years after entry instead of three, completion rates rise sharply (Calcagno et al., 2008; Goldberger et al., 2008; Offenstein & Shulock, 2010; see also Attewell & Lavin, 2007).

In developing more appropriate performance metrics, it is important that states consult regularly, widely, and deeply with a variety of institutional personnel (Jenkins & Shulock, 2013). Several of our respondents called for periodic revisiting of the performance metrics to make sure they were working well. Others called for allowing the performance funding metrics to include some indicators specific to individual institutions.

Institutional resistance. Performance funding advocates in Indiana, Ohio, and Tennessee were concerned that performance funding could encounter strong institutional resistance if it causes big shifts in funding or uses indicators that are perceived as unfair to institutions. (Dougherty et al., 2014a; see also Lederman, 2009). In order to prevent such funding fluctuations, the states decided to phase in PF 2.0 gradually and calculate changes in performance based on three-year rolling averages (Dougherty et al., 2014a). Policymakers in Tennessee opted to phase in performance funding over three years in

order to give campuses an opportunity to see how the program would work before encountering the full brunt of the new system (Tennessee Higher Education Commission, 2011a, c). Ohio included a "stop-loss" provision that limited how much funding colleges might lose from one year to the next in the first few years of the new performance funding program (Fingerhut, 2012; Ohio Board of Regents, 2009a, 2009b). Finally, Indiana's policymakers chose to increase the percentage of funding attached to the program gradually (Indiana Commission for Higher Education, 2013; Stokes, 2011).

While state officials have clearly given considerable thought to the possibility of institutional resistance and how to prevent it, they may not have considered as deeply as they should the fact that one of the best ways of preventing resistance is fostering colleges' allegiance to the goals of performance funding to begin with. This requires bringing college personnel at all levels into the design of the system so that they see it as embodying their values and professional input. To be sure, states such as Tennessee, Ohio, and Indiana do involve institutional personnel in the design of performance funding programs. However, states need to make sure that they involve not just senior administrators but also mid-level administrators and faculty in the design process. One way to do this is to have performance funding programs be subject to regular review every few years by committees with broad-based institutional representation of senior administrators, mid-level administrators, and faculty.

Insufficient funding for organizational changes. While state officials have been aware that insufficient state funding would erode support for performance funding, they have been less focused on how it would impede an effective organizational response. A good number of our respondents noted that insufficient or even declining state funding for higher education left them without discretionary resources to invest in new programs, especially ones that might take time to pay off (Pheatt et al., 2014).

To meet institutions' need for resources for programmatic and institutional research innovations to improve student outcomes, states should consider establishing competitive programs to fund institutional innovations to improve student outcomes. Colleges should be provided with financial resources to implement new academic and student-service policies, programs, and practices intended to improve institutional performance on state metrics. This aid could be coupled with a requirement that

institutions or the state should evaluate how effective these programmatic changes have been.

Insufficient knowledge about performance funding. The advocates and designers of performance funding were also aware that insufficient knowledge could hinder its effectiveness (Dougherty et al., 2014a). Hence, state officials made substantial efforts to spread the word about the goals and desired methods of performance funding through meetings with local officials, reports, and email (as well as through coverage in local news media). However, these information dissemination efforts focused on senior college administrators and less often targeted faculty and mid-level administrators (Reddy et al., 2014).

To improve on this states have to step up their communication with college personnel at all levels, relying on a host of media, ranging from face-to-face meetings to more impersonal devices such as email blasts and user-friendly websites (see Jenkins & Shulock, 2013; Reddy et al., 2014; Shulock & Jenkins, 2011). However, given the importance of communication within colleges, states also need to encourage senior administrators at institutions to better communicate to faculty and mid-level administrators about the goals and methods of performance funding and about how well the institution is performing on the state metrics. It would be beneficial if state policymakers conveyed what are best practices in intra-organizational communication and provided technical assistance to improve internal college communications.

Insufficient institutional capacity. States did little to anticipate and mitigate institutional needs for greater capacity to respond to performance funding (Dougherty et al., 2014a). To be sure, the states did make some effort to foster discussions among institutions about best practices in academic and student support policies (see above). However, with the partial exception of Ohio, we found no evidence of dedicated state efforts to build up the institutional research (IR) and information technology (IT) capacity of institutions (Dougherty et al., 2014a). More importantly, as discussed in section 2, our institutional respondents overwhelmingly reported that they perceived the state as providing little or no support for building up institutional capacity.

The obstacles colleges encounter in collecting and analyzing detailed data on student outcomes suggest the need for financial and technical support from states to

improve IR and IT systems. At the very least, colleges need more help from states to acquire better IT systems and to develop larger and better-trained IR offices that can conduct sophisticated analyses of student progression and outcomes, train faculty and staff in how to do the same, and evaluate the impacts of programmatic changes by institutions. To improve IT systems, states should not only provide funds to institutions to improve their own systems but also build up state data warehouses that institutions can tap. To improve IR capacity, states can provide funding for institutions to hire more people, particularly with better research skills, and to provide research training for college staff and faculty. However, the state can also play a direct role by conducting research and evaluation analyses at institutional request and by hosting state training institutes.

Resource-poor colleges will also need assistance to improve their capacity to devise solutions to performance problems. This entails providing technical assistance and creating opportunities for colleges to create communities of practice with colleges facing similar challenges (Dowd & Tong, 2007; Jenkins & Shulock, 2013; Jones et al., 2014; Shulock & Jenkins, 2011; see also Kerrigan, 2010; Witham & Bensimon, 2012). States can broker the formation of these communities of practice by convening meetings of colleges and of college officials in relevant occupations such as institutional researchers and chief academic officers. These convenings could be usefully done in tandem with regional accreditations associations. In recent years, those associations have been increasing their emphasis on student outcomes and working with institutions to improve their organizational capacity to monitor those outcomes and devise ways of improving them (Kezar & El-Khawas, 2003).

7.2 Attention to Unintended Impacts

Our interviews with college administrators and faculty at 18 public institutions in our three states found that the unintended impacts they most frequently reported involve the possibility and not infrequent actuality of restriction of admission of less-prepared students, weakening of academic standards, compliance costs, and weakened inter-institutional cooperation (Lahr et al., 2014). Performance funding advocates and implementers in Ohio and Tennessee—and in Indiana less so—did consider these

possible unintended impacts of performance funding and took steps to counteract them (Dougherty et al., 2014a). But again, the states need to be doing more.

Restriction of admission to broad-access colleges. Indiana, Ohio, and Tennessee responded to the threat of "creaming"—in the form of institutions moving to take in more academically prepared students and deemphasizing admission of less-prepared students—by providing extra funding to institutions for graduating students who are deemed at risk. As discussed above, low-income income students are targeted by all three states, with one or another state also addressing race/ethnicity and age (Dougherty et al., 2014a; see also Fingerhut, 2012; HCM Strategists, 2011; Indiana Commission for Higher Education, 2011a; Ohio Board of Regents, 2011b, 2011c; Tennessee Higher Education Commission, 2012a). These premiums can have a considerable impact on institutional allocations. In Tennessee, they can shift institutional allocations by as much as 12 percent, with an average of about 4 percent (Authors' TN interviews). However, it is not clear that this is enough—particularly in Ohio and Indiana—to really deter colleges from becoming more selective and turning away less-prepared (and less-advantaged) students . As we have seen, we have frequent reports in those states—though not in Tennessee—that colleges and universities are restricting admissions now or might end up doing so in the future (Lahr et al., 2014).

At the very least, the premium for graduating at-risk students might have to be even bigger. In addition, colleges with high numbers of at-risk students could be provided with other forms of support such as funds to start new programs for at-risk students. Another step, discussed above, is to avoid simple comparisons between institutions that are quite different in their student compositions and therefore their ability to produce high retention and graduation rates. States can compare colleges to peer institutions with similar student compositions. Another option would be to compare a college's performance now to its performance in the past, as is done by the Student Achievement Initiative in Washington State (Bailey, 2012).

Weakening of academic standards. In all three states, state-level advocates of performance funding expressed concern that it might result in a reduction in academic standards, with institutions weakening degree requirements and with faculty demanding less in class in order keep up course and degree completions (Dougherty et al., 2014a;

Pheatt et al., 2014). To combat the danger of weakening of academic standards, Tennessee policymakers decided to rely on its existing PF 1.0 program, which would continue as a quality assurance adjunct to its new PF 2.0 funding formula. Ohio, meanwhile, decided that faculty professionalism would be its main counter to the danger of weakening of academic standards (Fingerhut, 2012). We have no evidence that Indiana took any steps to address the possibility of a weakening of academic standards.

States have a number of additional policy tools they can use to ensure that academic standards are not lowered. Faculty members can be surveyed anonymously to identify pressures to weaken academic standards. Statewide data on degree requirements and course grade distributions can be compared over time to determine if these have changed greatly since the adoption of performance funding. Moreover, assessments of general student learning also can be used—as in Tennessee—to indirectly assess if curricular requirements and grading standards are being weakened. However, any such assessments of student learning should be developed or chosen in cooperation with faculty, in order to ensure that the assessments are viewed as instructionally valid and institutionally legitimate. Otherwise, as Tennessee found, a state performance funding system may encounter widespread criticism directed at the exams used to assess general learning (Dougherty & Reddy, 2013).

Compliance costs. Our respondents not infrequently reported that the states did not provide sufficient funding to cover the cost of changes colleges need to make in order to respond to performance funding. States can help colleges meet compliance costs by providing dedicated funding to underwrite compliance efforts, whether in the form of enhanced information technology and institutional research capacity or new academic and student-service programs. Also, states need to try to minimize their data demands on colleges, relying as much as possible on data that the colleges are already collecting for other purposes. State efforts to reduce compliance costs will likely work better if they are guided by rigorous research on the costs to institutions of developing effective organizational learning capacity, of mounting initiatives to improve student outcomes, and of evaluating the results of those initiatives.

Lack of institutional cooperation. Performance funding programs that involve measuring state performance relative to that of other institutions can result, as we noted

in section 6, in institutions being reluctant to cooperate with each other. To counter this, states may wish to temper the degree to which they measure institutional performance relative to other institutions. In any case, whatever the method of comparison, states can still act to encourage institutional cooperation by creating venues and rewards for the sharing of best practices. Regular conferences on best practices and awards to institutions that disseminate particularly useful practices may help foster high levels of inter-institutional cooperation.

8. Summary and Conclusions

We have analyzed the implementation and impacts of performance funding through the lens of three states that are regarded by many as leaders in that movement: Indiana, Ohio, and Tennessee. Based on extensive interviews with state officials and with staff of 18 colleges and universities in those three states, we describe the policy instruments used by those states to implement performance funding, the impact of performance funding on institutional policies and programs and eventually on student outcomes, the obstacles institutions encountered in responding to performance funding demands, and the unintended impacts that ensued.

With regard to policy instruments, we found that states clearly deployed three: financial incentives; dissemination of information on the goals and intended methods of performance funding; and communication to institutions about their performance on the state metrics. Our respondents reported that these three instruments had a significant impact on institutional efforts to improve student outcomes. However, we saw little evidence of another possible instrument: building up the capacity of institutions to respond effectively to performance funding. This absence contributes to an important obstacle encountered by colleges in responding to performance funding demands.

Performance funding clearly spurred institutions to change their institutional policies and programs in order to improve student outcomes. However, many of our respondents found it difficult to gauge the relative importance of performance funding, since it has been only one of several concurrent initiatives by states, accrediting

associations, and policy groups designed to improve student outcomes. The two most commonly made campus-level academic changes following performance funding adoption have been to alter developmental education and change course articulation and transfer. Meanwhile, the two most commonly made campus-level student services changes have been to revamp advising and counseling services and to change tutoring and supplemental instruction.

Even if student outcomes improve after the introduction of performance funding, these improvements could be due to many other factors such as rising enrollments, changes in state policies, state and policy group efforts to improve student outcomes, or institutional decisions to admit fewer at-risk students who are not as prepared and less likely to graduate. In Indiana, Ohio, and Tennessee graduation numbers have increased at a greater rate than enrollments since the advent of their PF 2.0 programs. However, we cannot in anyway conclude that performance funding in these three states is producing these better student outcomes, since these figures do not control for a host of other possible causes. This caution is strongly reinforced by the fact that multivariate analyses of performance funding programs largely fail to find evidence that performance funding improves graduation or retention, although there is evidence of some interesting localized impacts. However, these multivariate studies primarily examined PF 1.0 programs. We need multivariate analyses of the much more intensive PF 2.0 programs in Ohio and Tennessee, particularly after they were fully phased-in and beginning to exert their full impact, before we can reach definitive conclusions about performance funding 2.0.

If the impact of performance funding on student outcomes is limited, it may be attributable to obstacles that institutions encounter in responding to performance funding demands. We find that institutions in our three states encounter several persistent obstacles that hinder their efforts to perform well on the state metrics. Our respondents most often pointed to the academic and demographic composition of their student bodies (particularly in the cases of community colleges and broad-access public universities), inappropriate performance funding metrics, and insufficient institutional capacity.

Our interviewees also frequently reported performance funding impacts that were not intended by the designers of those policies. These negative unintended impacts are similar to those that have been reported by studies of performance management in

government (Grizzle, 2002; Heinrich & Marschke, 2010; Moynihan, 2008; Rothstein, 2008; Rutherford & Rabovsky, 2014). The unintended impacts most commonly mentioned by our respondents were restrictions in admissions to college and weakening of academic standards.

Our findings have a number of implications for research. Clearly, we need more multivariate studies of the impact of performance funding. We lack studies of PF 2.0 programs, particularly ones that have been operating for a number of years, are fully phased in, and involve a very large share of state funding for higher education, as in Tennessee and Ohio. We also need more studies that examine the impacts of performance funding on two-year college outcomes. This research should examine not just whether states have performance funding programs but also the features of each program: for example, how long it has been in place; what proportion of total institutional funding it affects; which performance metrics drive funding allocations; and what other state programs affecting student outcomes (such as initiatives to revamp developmental education or improve transfer pathways) are operating alongside performance funding. Researchers should keep in mind that features of a state's performance funding program can vary significantly over time (see Dougherty & Natow, in press). Finally, these new multivariate studies should examine the impacts of performance funding not just on student outcomes but also on intermediate institutional processes that may produce changes in student outcomes: for example, changes in institutional funding and effort in the areas of developmental education, student advising, or institutional research.

Our findings also have important implications for efforts to reduce the obstacles to and unintended impacts of performance funding. As we have noted, states have made efforts to address these obstacles and unintended impacts. However, they need to do even more. In order to reduce obstacles to performance funding effectiveness, states should consider creating new ways of helping colleges with many at-risk students, defining performance indicators and measures better tailored to institutional missions, and improving the capacity of colleges to engage in organizational learning. In order to reduce unintended impacts, policymakers need to find additional ways to protect academic standards and reduce the temptation to restrict admissions of less-prepared (and often less-advantaged) students.

This is a particularly important time to reflect on performance funding for higher education. It is now operating in 30 states, with more in prospect, and it comes with great expectations that it will significantly improve student outcomes. It has seized the attention of college administrators and faculty and spurred—along with other policy initiatives—sizable changes in college academic and student-support policies, programs, and practices. At the same time, we do not have as yet conclusive evidence that performance funding does indeed improve student outcomes in any significant way. Moreover, we have suggestive evidence that it may produce troubling unintended impacts such as a weakening of academic standards and restrictions in the admission of less-prepared and less-advantaged students at a time of rising inequality in higher education. Clearly, performance funding deserves close attention from policymakers and researchers.

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Appendix: Performance Funding Programs in Indiana, Ohio, and Tennessee

The performance funding programs in our three states are all PF 2.0 programs—that is, they all involve embedding performance funding indicators in the base state funding for higher education. However, the programs differ considerably in the amount of state funding they provide based on performance indicators and in the precise way they embed the indicators. Tennessee and Ohio use a formula to determine state funding for higher education operations, and about four fifths of the funding of those operating appropriations is based on performance indicators. In Indiana, however, performance funding involves a much smaller amount (6 percent of state operational funding), and that funding involves both bonus funding and withheld funding that is paid back based on performance.

Indiana

Indiana first adopted performance funding in 2007 in the form of a bonus on top of the base state funding for higher education (HCM Strategists, 2011). However, this program was quickly replaced in 2009 by a new program in which 5 percent of each institution's base allocation is withheld and then awarded based on performance on certain metrics. In the 2011–2013 biennium, this 5 percent withholding amounted to roughly $61 million (Indiana Commission for Higher Education, 2013b, p. 8). In 2013, the state general assembly decided to hold performance funding at 6 percent for both fiscal years 2014 and 2015 but changed the allocation method. The 6 percent devoted to performance funding was split between 3.8 percent in "new money" and 2.2 percent from funds withheld from institutional appropriations. The portion that is withheld is put into a funding pool, and institutions can then earn back some or all of that withheld funding, depending on how well they perform during the year and how well other institutions perform (Authors' interviews IN).

The performance funding indicators are designed to measure change over time, based on comparing two three-year averages of institutional performance (Indiana Commission for Higher Education, 2013b). For each metric, the performance funding formula takes the average performance across three years and compares it to the average for the preceding three years (e.g., for determining funding withheld in 2012, the average number of degree completions each year from 2009–2011 compared to the average

number of completions each year between 2006–2008). If an institution's performance does not improve, the funding formula simply counts their improvement as "zero." An institution's allocation through the performance funding formula is based on how well its performance compares to the performance of all other comparable institutions. For the 2013–2015 biennium, it is possible for the overall effect of performance funding to be a loss if an institution (1) wins only a small portion of the new money bonus and (2) is not able to earn back all of the 2.2 percent that was withheld to help fund the performance funding program. Moreover, an institution is not funded for its performance if its overall rate of completion drops between the two three-year averages (even if the overall number of completions increased). In total, a school's eventual state appropriation includes base funding (which can fluctuate from year to year based on enrollment), new money that is earned on the basis of the performance indicators, and the portion of the funds withheld the year before that the institution was able to win back based on its performance in the previous three years.

The performance funding indicators Indiana has used have changed each biennium. However, certain indicators have persisted (Indiana Commission for Higher Education, 2013b):

- change in number of degrees awarded (2009–2011, 2011–2013, 2013–2015 biennia);
- change in number (or rate) of resident, undergraduate, first-time, and full-time students graduating on time (2009–2011, 2011–2013, 2013–2015);
- change in degree completion by low-income students (2009–2011, 2011–2013, 2013–2015); and
- change in number of successfully completed credit hours (2009–2011, 2011–2013).

Over the years, these four indicators have accounted for 70 to 84 percent of the performance funding allocation. The Indiana Commission for Higher Education added two new metrics in the 2013–2015 biennium: an institutional defined productivity metric and high-impact degree completion.

Ohio

Ohio established two performance funding programs in the mid-1990s and then replaced them with a new program established in 2009. In 1995, Ohio adopted the Performance Challenge, which—though largely not a performance funding program—rewarded community colleges, technical colleges, and branch campuses based on the number of students who transferred or relocated after completing at least 15 quarter hours or 10 semester hours of coursework and on the number of transfer or relocated students who completed baccalaureate degrees (Dunlop-Loach, 2000, Appendix B). The Performance Challenge was abandoned in 2000 (Moden & Williford, 2002, pp. 174, 176).

In 1997, Ohio established the Success Challenge via a funding proviso in the budget bill for the 1997–1999 biennium (HB 215, passed in 1997). Until it ended in 2009, the Success Challenge provided a bonus to universities based on the number of students who earned baccalaureate degrees. Two thirds of the bonus was based on the number of at-risk students graduating in any year; one third was based on number of any students who graduated within four years. The metric was *the number graduating* and not the graduation rate (percentage graduating) within four years (Moden & Williford, 2002, pp. 173–178). The Success Challenge began small, with $2 million in FY 1997, but funding rose rapidly in subsequent years, peaking at $56 million in FY 2004. The money was unrestricted; it could be included in the institutions' overall budget and used in any way the institution elected (Dougherty & Natow, in press; O'Neal, 2007, pp. 49, 179–189).

In 2009, Ohio passed a budget bill embedding performance indicators in the state's formula for funding higher education operations. As a result, the Success Challenge was terminated. For the public universities, the state determined that 80 percent of state operational funding would be based on course and degree completions, with the remainder being set aside for doctoral and medical education. The degree completion share rose from 15 percent in FY 2011 to 50 percent in FY 2013 (Alstadt et al., 2012; Ohio Board of Regents, 2011b, 2012, 2013b). Meanwhile, the proportion based on course completions dropped from 65 percent in FY 2011 to 30 percent in FY 2013. (The 20 percent set aside for doctoral and medical education remained steady.) For the 24 regional campuses of the state universities, funding initially was based solely on course completions. These campuses will become subject to the same formula as the university

main campuses in FY 2014 (Ohio Board of Regents, 2011c, 2013b). Course and degree completions for the university main and regional campuses are weighted by the cost of programs and whether students are at risk, defined initially in terms of eligibility for state need-based aid but later expanded to include other categories of at-risk students as well (Ohio Board of Regents, 2011c, 2013b; Petrick, 2010).

For community colleges, the proportion of the state formula allocated on the basis of performance indicators started at 5 percent in FY 2011, jumped to 50 percent in FY 2014, and will rise to 100 percent in FY 2015 (Ohio Association of Community Colleges, 2013; Ohio Board of Regents, 2011a, 2012, 2013a). For fiscal years 2011 through 2013, the performance indicators took the form of "success points": (1) number of students completing developmental English and math and subsequently enrolling in a college-level course in those subjects; (2) number attaining certain credit thresholds in a given year; (3) number who earn at least an associate degree, from that institution, in a given year; and (4) number who transfer (that is, enroll for the first time at university having completed at least a certain number of semester credit hours of college-level coursework at a community college). Degree completions are weighted by program costs. There has not been any weighting for whether students are at risk. In FY 2014, course completions accounted for 25 percent of the state funding formula for community colleges, the success points made up another 25 percent, and the enrollment-based share dropped to 50 percent (Ohio Board of Regents, 2013a). For FY 2015, a Community College Funding Consultation led by the Ohio Association of Community Colleges has recommended that success points continue to account for 25 percent, course completions rise to 50 percent, and degree completions (previously part of the success points) account for 25 percent. Enrollments would cease to be part of the formula (Ohio Association of Community Colleges, 2013).

Universities and community colleges have been cushioned against losses by a stop-loss provision that ensured they would get at least a certain proportion of their state funding. For FY 2010, the stop loss was 99 percent for universities (community colleges were still not subject to the new formula). For FY 2011, the stop loss was 98 percent for universities and for community colleges. For FY 2012, the figures were 82.5 percent for universities and 88 percent for community colleges (these figures reflected the end of

federal stimulus funding). For FY 2013, the stop-loss figure was 96 percent for both kinds of institutions (Ohio Board of Regents, 2009a, p. 6; 2011a, p. 6; 2011b, p. 11). The stop loss was ended for universities in FY 2014 and will be ended for community colleges in FY 2015 (Ohio Board of Regents, 2013a, 2013e; Ohio Association of Community Colleges, 2013).

Tennessee

Tennessee has established two performance funding programs: a PF 1.0 bonus program that was adopted in 1979 and still operates today, and a PF 2.0 outcomes-based formula funding program that was adopted in 2010 (Dougherty & Reddy, 2013). The older program is intended to serve as a "quality assurance" bulwark for the new program (Authors' interviews TN).

The Tennessee Higher Education Commission adopted performance funding for the state's public two- and four-year higher education institutions in 1979 (Dougherty & Natow, in press; Dougherty, Natow, Bork, Jones, & Vega, 2013). Funds were first allocated to institutions using performance funding in FY 1980. Under that system, higher education institutions could earn a bonus of 2 percent over and above their annual state appropriations for achieving certain goals based on five performance indicators: program accreditation (proportion of eligible programs in the institution's inventory that are accredited); student major field performance (student performance as assessed by major field examinations); student general education performance; evaluation of instructional programs (based on surveys of current students, recent alumni, or employers); and evaluation of academic programs (by peer review teams of scholars from institutions outside the state and/or practicing professionals in a field) (Banta, 1986, pp. 123–128; Bogue & Johnson, 2010). Tennessee added eight performance funding indicators and dropped four between 1979–1980 and 2009–2010. In addition, the percentage of additional funding that institutions could earn based on performance rose from 2 percent to 5.45 percent of the base state appropriation (Bogue & Johnson, 2010; Dougherty & Natow, 2010; Dougherty & Natow, in press).

In 2010, the Tennessee legislature passed the Complete College Tennessee Act, part of which provided for a dramatic redesign of the basic higher education funding formula that would embed performance indicators in that formula (Dougherty, Natow, et

al., 2014; Dougherty & Natow, in press). During the first year of the new system's operation in FY 2011, university funding was based on the following indicators: numbers of students reaching 24, 48, and 72 hours of credit; research and service expenditures; number of degrees awarded (bachelor's and associate, master's and education specialist, and doctoral and law degrees); number of degrees per full-time equivalent (FTE) student; number of transfers with at least 12 credit hours; and six-year graduation rate (Tennessee Higher Education Commission, 2011b, p. 1). Community colleges were funded based on somewhat different criteria: number of students reaching 12, 24, and 36 hours of credit; workforce training contact hours; number of dual enrollment students; number of associate degrees and certificates granted; number of awards per FTE enrollments; job placements; number of transfers with 12 credit hours; and remedial and developmental success. In addition, an institution is eligible for a 40 percent bonus for credit and degree completion for low-income and adult students. To protect institutions, the new program has been gradually phased in over a three-year period, with the phase-in ending after FY 2014 (Dougherty & Natow, 2010; Dougherty & Natow, in press; Tennessee Higher Education Commission, 2011a, 2011b, 2012a, 2012b).

The Tennessee formula and allocation process is quite complex. Each indicator is weighted, but each institution has different weights assigned to each indicator by the Tennessee Higher Education Commission based on a variety of factors, including, but not limited to, the institution's preferences and Carnegie classification. Three-year rolling averages are first scaled, then multiplied by institution-specific weights, and finally totaled for institutional weighted outcomes totals. These totals include extra weighting for adult learners and low-income students on indicators for credit accumulation and degree production (Tennessee Higher Education Commission, 2011b, 2012a, 2012b). The institution's total weighted outcomes value is then multiplied by the average faculty salary, as determined by Carnegie classification and by the Southern Regional Education Board. Fixed costs and equipment costs are added to create a formula subtotal. At this point, the institution's performance funding allocation is calculated by multiplying the institution's percentage on the program indicators by 5.45 percent of the institution's subtotal. This is added to the subtotal to give the institution's total. The formula then assumes a 55/45 subsidy/fee policy, so the total is then multiplied by 55 percent, out-of-

state tuition is deducted, and there is finally a budget recommendation by the Tennessee Higher Education Commission. For the 2014–2015 appropriation, the legislature funded 62.8 percent of the Tennessee Higher Education Commission's recommendation (Tennessee Higher Education Commission, 2014a).