POLICY BRIEF

State Performance Funding for Higher Education: Silver Bullet or Red Herring?

By: David A. Tandberg and Nicholas W. Hillman

States typically finance public colleges and universities according to the number of students enrolled and the faculty, staff, and other resources needed for delivering an education. However, this "input-oriented" financing model has come under increased scrutiny in recent years from state governors and legislators as well as from certain high-profile advocacy groups and philanthropic organizations. These critics often cite reports that the U.S. is falling behind other countries in educational attainment and that the new economy requires more college-educated workers.[1] Arguing that the traditional financing model does little to address these concerns, they say that colleges should be funded according to their performance on outputs, such as graduation rates or job placement. Twenty states currently operate some form of so-called performance funding, with several more actively pursuing versions of this funding model.[2] States measure "performance" in a variety of ways (see the box on the next page).[3]

While it may make intuitive sense that paying colleges based on their outputs will encourage them to alter their behaviors in ways that align with state performance goals, there is little empirical evidence that it actually works. Over the past year, we set out to fill this research gap by asking: *"to what extent does the introduction of performance funding programs impact baccalaureate and associate degree completions among participating states?"*[4] We focused on

Abstract

This policy brief summarizes the results of a recent analysis of state performance funding for higher education. Results suggest the policy has not been significantly effective for increasing associate or baccalaureate degree completions in performance funding states, and it may even have had negative effects in some states.

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Common Performance Funding Measures

- Degree completions
- Student retention
- Graduation rates
- Transfer rates
- Student scores on licensure exams
- Job placement rates
- Faculty productivity
- Campus diversity

degree completions, because this is the only measure that is common among all states currently using performance funding.

Our results may serve as a cautionary tale for policymakers looking to performance funding as a quick fix or silver bullet to increase college completion rates in their states. We found that, on average, performance funding programs had little impact on college completions. In the few cases where there were positive effects, they did not appear until, at earliest, seven years after introducing the new funding model (for baccalaureate degrees) and there were some negative effects for associate degrees. When looking at specific states, performance funding more often than not failed to yield a significant effect on degree completions. In the few instances where it had a significant effect, it was slightly more likely to be negative than positive. Below we discuss our methods and results in greater detail.

An Overview of Performance Funding in the U.S.

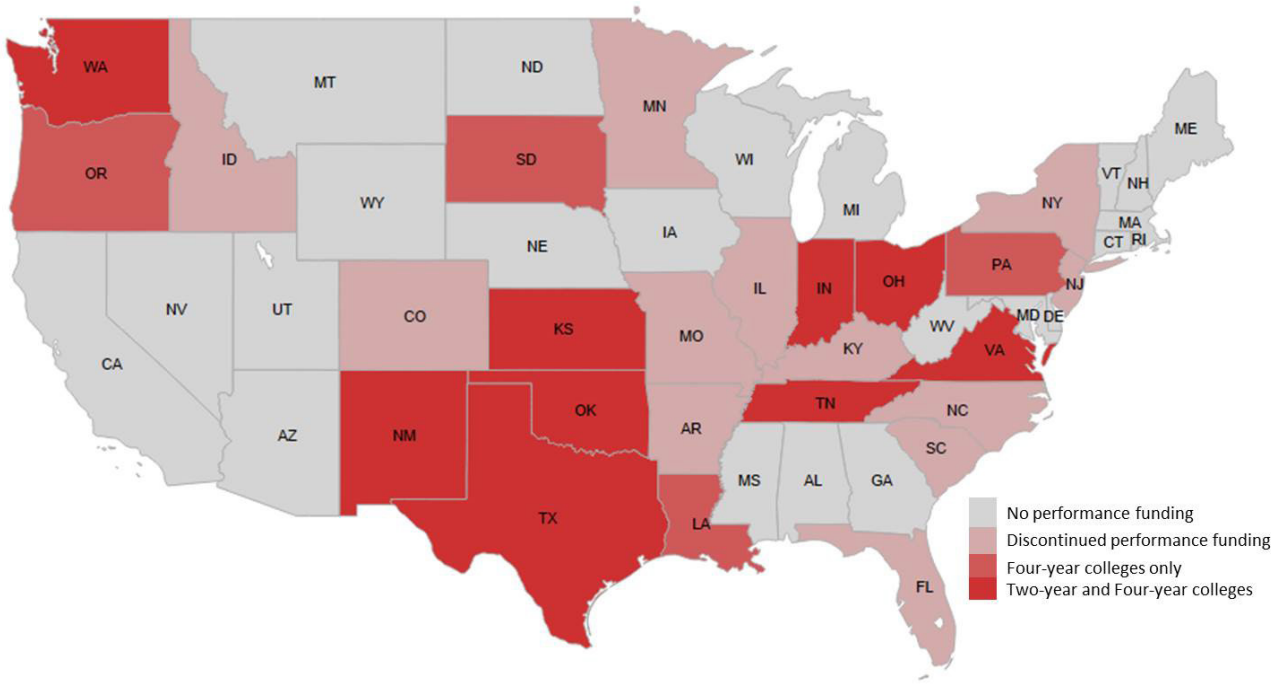
Performance funding is not a new idea in higher education finance. Tennessee launched the nation's first program in 1979, but most other states did not follow suit until the 1990s. While only two states used performance funding in 1985, by 2001 23 states used it in some form.[5] In the early 2000s, however, performance funding's popularity waned and several states discontinued their reform efforts.[6] Since 2007, a number of large-scale initiatives backed by several foundations have advocated for the development of new state higher education performance funding programs. This renaissance has been dubbed "Performance Funding 2.0," and several states are now in the process of adopting (or in many cases readopting) this financing model.[7]

During the period of our analysis (1990 to 2010), Twenty-five states operated performance funding programs at one point or another. Some states even started, discontinued, and then restarted their programs during this period. One of the challenges of studying performance funding

Summary of Key Findings

- On average, performance funding had little to no impact on associate or baccalaureate degree completions.
- In some cases, baccalaureate degree completions rose but only after several years.
- In other cases, associate degree completions fell in the years after performance funding was introduced.
- More often than not, performance funding failed to increase degree completions, although a few states have experienced positive outcomes.

Figure 1: Status of Performance Funding (1990-2010)



programs is collecting accurate data on which states have operated the programs, when they were implemented and funded, and when they were discontinued and/or defunded. Previous efforts to document performance funding trends have been incomplete, relying on periodic surveys or unverified sources, or they have not accounted for whether the policies were actually funded. For this reason, we consulted a number of data sources and experts in the field to ensure the accuracy of our information in forming our analysis.[8]

Methods and States Included in Our Study

In order to evaluate whether performance funding impacts degree completions, we employed a quasi-experimental research design that approximates causal relationships. This technique, called difference-in-differences, utilizes pre-intervention observations (i.e., the number of degree completions for several years before the implementation of performance funding), post-intervention observations (i.e., the number of degree completions after the implementation of performance funding), and multiple comparison or control groups of states without performance funding programs (i.e., all states, neighboring states, states with similar higher education governance arrangements). By comparing the differences between pre/post outcomes, along with differences between performance and non-performance funding states, this technique offers stronger explanatory power over alternative statistical models.[9]

The method required us to have several years of data before and after states implemented performance funding, so we examined changes in degree productivity between the years 1990 and 2010.[10] We also accounted for a number of other factors that might impact state-level degree completions, such as the distribution of enrollments between four-year, two-year, and private institutions; state population; tuition levels; state finance policy; and state unemployment and poverty rates. In addition, we included both state and year "fixed effects" to account for unobserved factors that are relatively stable over time within

the individual states (e.g., regional culture, political institutions, etc.) and that occur across all states over time (e.g., recessions and other economic shocks).[11]

In our study, we ran separate analyses for bachelor's and associate degree productivity, examining three separate factors:

- The overall (average) effect across all of the performance funding states;
- The effect of performance funding over time; and
- The effect of performance funding within each state.

Findings

On average, the introduction of performance funding programs had little to no effect on degree completions. In fact, there were slightly more examples of it having a negative impact on degree completions and far more examples of it having no significant effect. In those states where it had a positive effect, it took a very long time (approximately seven years) to show positive results and this was for four-year degrees only. For two-year degrees, we observed no effect until year five, when we observed a significant negative effect in some states. Our key findings are described in more detail below.

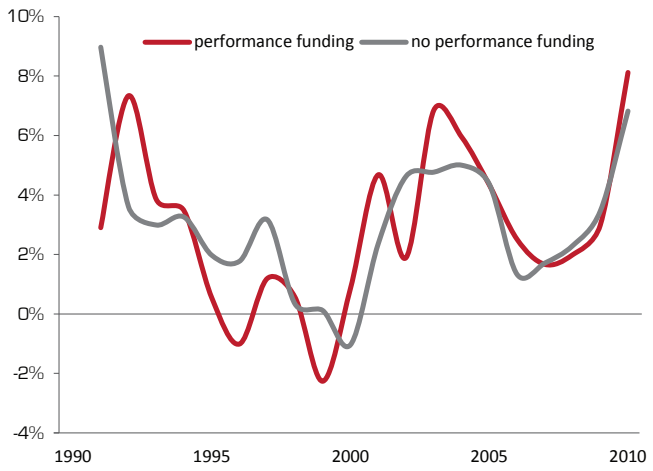
Key Finding #1: On average, states using performance funding yielded no systematically different outcomes than other states.

Our first analysis shows that, controlling for other factors, the introduction of performance funding did not have a statistically significant impact on the total number of associate and baccalaureate degrees earned within the states where the policy was in force. Additionally, there was a slight negative, though statistically insignificant, effect on two-year completions.

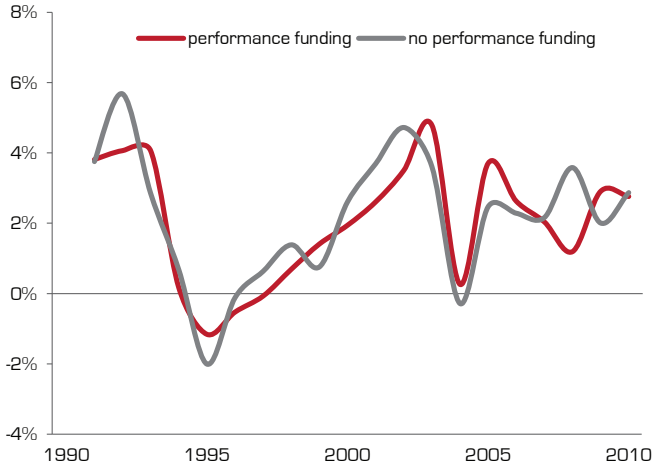
Figure 2 plots the annual change in the production of degrees in states using performance funding versus states without performance funding over the time frame of our study. Our difference-in-differences regressions confirm what these time-series trends illustrate: for both associate degree and baccalaureate degree completions, performance funding states and non-performance funding states followed similar trajectories over time. There is no real difference in degree completions between the groups, even as they trade place periodically in their rate of growth or

Figure 2: Annual Change in Degree Production in States With and Without Performance Funding

Annual change in AA production



Annual change in BA production



decline. On average, performance funding has not yielded the sort of positive impact states may have hoped or expected to see. Our results suggest performance funding may not be an effective policy mechanism for raising state educational attainment levels.

Key Finding #2: In the states where there were effects, they did not occur for several years.

While we found performance funding had no significant effects on average, we looked beyond these averages to see if effects occurred a number of years after implementation. To test for this possibility, we used a time interaction term to determine if at any point over time a significant effect was observed. What we found is that for associate degree completions, there were no effects until five years after performance funding began. After five years, states using performance funding actually produced fewer associate degrees than other states (i.e., the policy effect was negative over time). With regard to four-year completions, no significant effect was observed until programs had been in place for at least seven years. After seven years, performance funding had a small but positive effect on baccalaureate degree completions.[12]

Therefore, states ought to exercise significant caution in pursuing performance funding as a quick fix, and in particular in community colleges as there appears to be a delayed negative impact on completions. States should also expect a long wait before performance funding has any impact on degree completions at four-year institutions. With regard to both community colleges and four-year institutions, if state policymakers desire quicker positive results they should consider other policy solutions.

Key Finding #3: Few states have experienced positive gains from performance funding.

The previous analyses leave open the question about what effect each individual performance funding program had within their respective states. Using state interactions we found very few examples of performance funding programs having a positive and statistically significant effect on degree completions. There were, however, four states where performance funding seemed to have a positive effect on associate degree production (MN, MO, NJ, and WA) and four others where it had a positive effect on baccalaureate degree production (CO, IN, NM, and SD). There are far more examples of performance funding having no statistically significant impact on completions (six states for associate degree completions and 12 states for baccalaureate completions). More concerning, there are as many (associate), or more (baccalaureate), examples of performance funding having a negative, and statistically significant, impact on degree completions.

Table 1: Performance Funding's Effects Over Time

Number of Years	Effect on Two-Year Completions	Effect on Four-Year Completions
1	None	None
2	None	None
3	None	None
4	None	None
5	Negative	None
6	None	None
7	None	Positive
8	Negative	Positive

Table 2: The Impact of Performance Funding Within Individual States, 1990-2010

	Effect on Two-Year Completions	Effect on Four-Year Completions
Arkansas	Mixed	None
Colorado	Negative	Positive
Florida	None	
Idaho	Negative	Negative
Illinois	None	
Indiana	None	Positive
Kansas	Mixed	None
Kentucky	None	None
Louisiana		None
Minnesota	Positive	None
Missouri	Positive	None
New Jersey	Positive	None
New Mexico	Negative	Positive
New York		None
North Carolina	None	
Ohio	None	Negative
Oklahoma	Mixed	None
Oregon		None
Pennsylvania		Negative
South Carolina		None
South Dakota		Positive
Tennessee[13]		
Texas	Negative	Negative
Virginia	Negative	None
Washington	Positive	

Note: Where box is shaded, no performance funding program exists.

While it may be worthwhile to examine the program features of those states where performance funding had a positive impact on degree completions, the overall story of our state results serves as a cautionary tale. In the vast majority of states, performance funding had either no effect or a negative effect on degree completions.

Conclusion

Our analyses revealed that performance funding is not the silver bullet some are making it out to be. Instead, it may be a red herring, distracting policymakers from dealing with more fundamental policy problems, such as inadequate state funding or student financial aid. While performance funding may have brought forth other outcomes not examined in our studies (e.g., greater accountability and oversight), it has generally not achieved the most basic goal all states believe is central to their performance efforts—improving degree productivity.

Those advocating for Performance Funding 2.0 argue that previous versions were unsuccessful because they were not designed or implemented properly. Performance Funding 2.0 aims to produce better outcomes by distinguishing itself from the earlier efforts in at least two ways. First, states are utilizing intermediate achievement indicators, such as overall course completions and development course completions, to evaluate institutional performance. Second, most performance funding today is embedded into the regular base funding institutions receive from their states, as opposed to treating it as a bonus on top of the institutions' regular appropriation.[14] Additionally, some states are allocating significantly larger portions of the institutions' annual appropriations through their performance funding programs. Advocates argue that these innovations have the potential to significantly improve the outcomes associated with performance funding.[15]

However, a compelling theory of action needs to be developed and articulated that explains how program design characteristics will change institutional behaviors, and ultimately increase degree completions. Recent studies indicate that performance funding advocates have had difficulty articulating how financial incentives will build the institutional capacity necessary to achieve performance goals.[16] We believe there may be a fundamental misalignment taking place, where performance funding is a solution that isn't fully aligned with the problem. There may be better and potentially more impactful ways to increase college completions. The negative results found in this study should encourage state policymakers to reevaluate performance funding and consider other evidence-based alternatives to achieving the important state and national priority of increasing college completions.

Endnotes

1 Carnevale, A, Smith, N, and Strohl, J (2013). Recovery: Job Growth and Education Requirements through 2020. Georgetown Center on Education and the Workforce. Washington, DC. See also Zumeta, W, Breneman, D, Callan, P, and Finney, J (2012). Financing American Higher Education in the Era of Globalization. Harvard Education Press. Cambridge, MA.

2 See Dougherty, K J and Reddy, V (2013). Performance Funding for Higher Education: What Are the Mechanisms What Are the Impacts? *ASHE Higher Education Report, 39*(2); and Friedel, J, Thornton, Z, D'Amico, M, and Katsinas, S (2013). *Performance-Based Funding: the National Landscape*. Tuscaloosa, AL: University of Alabama Education Policy Center. Retrieved from http://www.uaedpolicy.ua.edu/uploads/2/1/3/2/21326282/pbf_9-17_web.pdf.

3 McKeown-Moak, M P et al (2013). The "New" Performance Funding in Higher Education. *Educational Considerations, 40*(2), 3-12.

4 See Tandberg, D, Hillman, N, and Barakat, M (2013). State higher education performance funding for community colleges: diverse effects and policy implications. Accepted, *Teacher's College Record;* Tandberg, D and Hillman, N (2013). State higher education performance funding: data, outcomes and policy implications. Accepted, *Journal of Education Finance;* Hillman, N, Tandberg, D, and Gross, J (2013). Performance funding in higher education: do financial incentives impact college completions?; Hillman, N, Kelchen, R, and Goldrick-Rab, S (2013). Recommendations for the effective and equitable implementation of performance-based funding for Wisconsin higher education. WISCAPE. Madison, WI.

5 McLendon, M, Hearn, J, and Deaton, R. (2006). Called to account: analyzing the origins and spread of state performance-accountability policies for higher education. *Educational Evaluation and Policy Analysis, 28*(1), 1-24.

6 Dougherty, K, Natow, R, and Vega, B (2012). Popular but unstable: explaining why state performance funding systems in the United States often do not persist. *Teachers College Record, 114*(3), 1-41.

7 Dougherty, K and Reddy, V (2013). Performance Funding for Higher Education: What are the Mechanisms? What are the impacts? *ASHE Higher Education Report, 39*(2).

8 These resources include: state documents (e.g., statutes, planning documents, codes, and reports); AFT (2012). What should count? Retrieved June, 2012 from: http://www.whatshouldcount.org/; Aldeman, C and Carey, K (2009). Ready to Assemble: Grading State Higher Education Accountability Systems. *Education Sector;* Altstadt, D (2012). *Tying funding to community college outcomes: Models tools, and recommendations for states*. Indianapolis, IN: Achieving the Dream; Harnisch, T L (2011). *Performance-based funding: A re-emerging strategy in public higher education financing*. Washington, DC: AASCU; Joseph Burke's surveys of state chief financial officers (e.g., Burke, 2002), Kevin Dougherty's various reports and publications (e.g., Dougherty, Natow, and Vega, 2012), and the data collection efforts of Alexander Gorbunov at Vanderbilt University. Finally, we shared our list with associates at the National Center for Higher Education Management Systems and Kevin Dougherty as a peer-check to ensure the states and dates were correct.

9 For an introduction to this technique, see Angrist, J and Pischke, J S (2008). *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton University Press. Princeton, NJ, or Imbens, G and Wooldridge, J (2007). What's New in Econometrics: difference-in-differences estimation. National Bureau of Economic Research, Summer Workshop Series: http://www.nber.org/WNE/lect_10_diffindiffs.pdf.

10 Since Tennessee adopted performance funding prior to 1990, they are excluded from the analysis. Note, this analysis does not account for the newer adopters, e.g., those states that adopted performance funding since 2010.

11 For a comprehensive discussion of our methods please see: Tandberg, D, Hillman, N, and Barakat, M (2013). State higher education performance funding for community colleges: diverse effects and policy implications. Accepted, *Teacher's College Record;* Tandberg, D and Hillman, N (2013). State higher education performance funding: data, outcomes and policy implications. Accepted, *Journal of Education Finance*.

12 Some states operated performance funding for more than eight years, but their results are not displayed here. They are available in the original studies.

13 Our methods would not allow us to examine the impact of performance funding within Tennessee. However Sanford and Hunter (2011) found that performance funding had no impact on graduation and retention rates in Tennessee over the 15 year period of their study.

14 See Dougherty, K J and Reddy, V (2013). Performance Funding for Higher Education: What Are the Mechanisms What Are the Impacts? A*SHE Higher Education Report, 39*(2).

15 See: Complete College America, www.completecollege.org; Jones, D (2012). *Performance funding: From idea to action*. Washington, DC: Complete College America; Dougherty, K J and Reddy, V (2013). Performance Funding for Higher Education: What Are the Mechanisms What Are the Impacts? *ASHE Higher Education Report, 39*(2).

16 Dougherty, K, Jones, S, Lahr, H, Natow, R, Pheatt, L, and Reddy, V (2013). *Envisioning performance funding impacts: the espoused theories of action for state higher education performance funding in three states* (Working Paper No. 63). New York, NY: Community College Research Center.

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