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EXPLORING THE IMPACT OF VARIATIONS IN STATE PERFORMANCE FUNDING POLICIES ON COLLEGE ACCESS

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The majority of U.S. states have enacted performance-based funding (PBF) policies that tie a portion of state funds for public colleges and universities to student outcome metrics, such as retention and degree completion.¹ This popular state policy approach stems from attempts to hold colleges more accountable for their outcomes amid concerns over college affordability and rising student debt alongside relatively stagnant graduation rates.²

A growing body of evidence, however, demonstrates that PBF policies have had little impact on degree production.³

Our findings do not indicate widespread decreases in college access among underserved students with the implementation of either low- or high-dosage PBF systems. However, at the most selective institutions, we find some evidence of decreases in enrollment among racially minoritized and low-income students with the adoption of low-dosage PBF systems. Across institutional types, our findings indicate the presence of equity metrics are not enough to boost enrollment among the subpopulations they target except for racially minoritized students and only at the least-selective colleges.

¹ Dougherty, K. J., Jones, S. M., Lahr, H., Natow, R. S., Pheatt, L., Reddy, V. (2016). *Performance funding for higher education*. Johns Hopkins University Press.; Rosinger, K., Ortagus, J., Kelchen, R., Cassell, A., & Voorhees, N. (2020). *The landscape of performance-based funding in 2020*. InformEd States.

² Kelchen, R. (2018). *Higher education accountability*. Johns Hopkins University Press.

³ E.g., Hillman, N. W., Hicklin Fryar, A., & Crespín-Trujillo, V. (2018). Evaluating the impact of performance funding in Ohio and Tennessee. *American Educational Research Journal*, 55(1), 144-170.; Hillman, N. W., Tandberg, D. A., & Gross, J. P. (2014). Performance funding in higher education: Do financial incentives impact college completions?. *The Journal of Higher Education*, 85(6), 826-857.; Umbricht, M. R., Fernandez, F., & Ortagus, J. C. (2017). An examination of the (un)intended consequences of performance funding in higher education. *Educational Policy*, 31(5), 643-673.; Ward, J., & Ost, B. (2021). The effect of large-scale performance-based funding in higher education. *Education Finance and Policy*, 16(1), 92-124.; For a full review of literature on the intended and unintended consequences of PBF, see Ortagus, J., Kelchen, R., Rosinger, K., & Voorhees, N. (2020). Performance-based funding in American higher education: A systematic synthesis of the intended and unintended consequences. *Educational Evaluation and Policy Analysis*, 42(4), 520-550.

Rather, research indicates that PBF may incentivize institutions to tighten admission standards and restrict enrollment among underserved students who have been identified as less likely to graduate than their more advantaged peers.⁴ In doing so, institutions may improve outcomes by enrolling students who are more likely to graduate at the expense of providing more equitable access to higher education.

Despite evidence regarding the unintended consequences of PBF, states continue to respond to public concerns about the value of higher education by implementing PBF policies. In Fiscal Year 2020, 32 states budgeted funds for public colleges based on student outcome metrics, and 41 states have operated PBF systems at some point. However, PBF policies vary substantially across states and even within states over time regarding the amount of funds at stake under performance systems, whether states include equity metrics for colleges that enroll and/or graduate underserved students, and the specific equity metrics included in the PBF formula (e.g., racially minoritized students, low-income students, adult students).⁵

Design features of PBF systems are likely to play a critical role in the equity and effectiveness of PBF policies. Indeed, recent research indicates equity metrics can support enrollment among some student subpopulations. However, a lack of comprehensive data regarding how PBF policies have been designed and have operated over time has prevented researchers from examining how specific features of PBF—such as the share of funds at stake and the specific student subpopulations included in equity metrics—impact student outcomes. As a result, policymakers are left with little evidence regarding how to design PBF systems to reduce inequities in college access and student success.

In this brief, we draw on the most detailed, comprehensive PBF dataset to date to examine how specific elements of PBF policies shape college enrollment among traditionally underserved student populations. We examine the following research questions:

- **Research Question 1:** To what extent does the share of funds at stake in PBF systems impact college enrollment among racially minoritized, low-income, adult, and first-generation students?
- **Research Question 2:** To what extent do equity metrics in PBF systems impact college enrollment among the subpopulations they target?

⁴ E.g., Birdsall, C. (2018). Performance management in public higher education: Unintended consequences and the implications of organizational diversity. *Public Performance & Management Review*, 41(4), 669-695.; Gándara, D., & Rutherford, A. (2020). Completion at the expense of access? The relationship between performance-funding policies and access to public 4-year universities. *Educational Researcher*, 49(5), 321-334; Li, A. Y., & Ortagus, J. C. (2019). Raising the stakes: Impacts of the Complete College Tennessee Act on underserved student enrollment and sub-baccalaureate credentials. *The Review of Higher Education*, 43(1), 295-333.; Umbricht et al. (2017).; For a full review of literature on the intended and unintended consequences of PBF, see Ortagus et al. (2020).

⁵ Rosinger, K., Kelchen, R., Ortagus, J., Cassell, A., & Brown, L. (under review). New evidence on the landscape and evolution of performance funding for higher education.

- **Research Question 3:** To what extent do the effects of PBF design features vary across institutional types?

Our dataset contains information on the presence and characteristics of PBF policies over the last two decades. To gather this data, our research team reviewed thousands of primary source state policy documents relating to performance funding, including state legislation and budgets and higher education agency commission documents. When we could not locate relevant information or when information about particular aspects of PBF policies was unclear, we reached out to state higher education agency officials for clarification.⁶

The outcome variables we examined were enrollment among four subpopulations of students: racially marginalized students (defined as students who identified as Black, Latinx, or American Indian or Alaska Native, which aligns with how many states define race equity metrics in PBF systems), low-income students (defined as students who received federal grant aid, which primarily consists of the Pell grant program that is directed toward low-income students), adult students (defined as age 25 and older), and first-generation college students.⁷ Data on these outcomes came from the Integrated Postsecondary Education Data System and the College Scorecard. We lagged outcomes by one year to match enrollment outcomes with features of PBF policies from the prior year (e.g., policies put into effect to fund institutions in Fiscal Year 2002, covering July 2001 to June 2002, were matched to enrollment in the 2002-2003 academic year). We restricted our sample to only public four-year universities in the U.S. as defined by Carnegie classifications, and our final analytic dataset contained information from 1999 to 2018.⁸

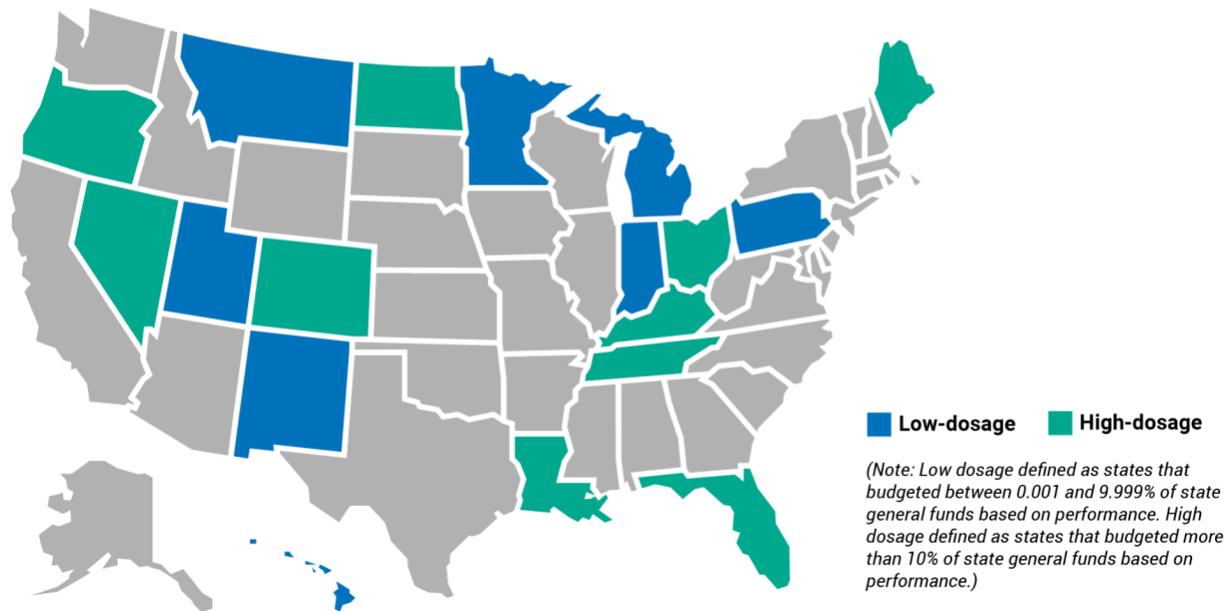
To answer Research Question 1, we separately estimated results using a categorical variable indicating whether a college had no funds tied to performance in a given year (no PBF), whether less than 10% of funds were at stake in a given year (low-dosage PBF), and whether more than 10% of funds were at stake in a given year (high-dosage PBF). The map below shows states with high and low PBF dosage in Fiscal Year 2018. Thirty-one states had funded PBF systems for four-year universities at some point over the last two decades, and 18 states had performance funding for the four-year sector in 2018. Among those 18 states, 10 operated high-dosage PBF policies, tying more than 10% of state funds to performance metrics, and 8 had low-dosage PBF policies, tying less than 10% of funds for four-year universities to performance.

⁶ For more information on our data collection protocol, see Kelchen, R., Rosinger, K. O., & Ortagus, J. C. (2019) How to create and use state-level policy data sets in education research. *AERA Open*, 5(3), 1-14.

⁷ We logged racially minoritized, federal grant recipient, and adult student outcomes to account for a non-normal distribution in sample institutions. Enrollment among first-generation college students is reported as a percent of enrollment in data from the College Scorecard, so we do not log this variable.

⁸ Data on enrollment among first-generation college students ended in 2016 in our dataset, so analyses for this outcome end in 2016.

PBF States with High and Low Dosage Policies for Four-Year Universities (FY2018)



To answer Research Question 2, our treatment variables were categorical variables indicating the presence of specific equity-oriented metrics. These variables indicated whether a college was not subject to PBF (no PBF), whether a college had PBF (PBF), and whether a college had PBF that included an equity-oriented metric (PBF with equity). We separately examined three specific equity-oriented metrics, racially minoritized student metrics, low-income student metrics, and adult student metrics, and estimated their impact on the specific populations they target. For example, we examined the impact of the categorical variable for low-income student metrics on low-income student enrollment. The maps below show groupings of states for each equity-oriented metric we examined in Fiscal Year 2018. Of the 18 states with active PBF systems in 2018, 10 included a metric for colleges that enrolled and/or graduated racially minoritized students, 15 included a metric for low-income students, and 7 included a metric for adult students.

We used a generalized difference-in-differences quasi-experimental research design with two-way fixed effects to estimate the impact of various PBF policy design features on college enrollment. This approach allows for variation in the timing of when states enact PBF policies for four-year universities. We first estimated a model that included only treatment indicators, institution fixed effects (to account for time-invariant features of institutions that may shape outcomes), and year fixed effects (to account for common trends in outcomes across states) to predict enrollment outcomes. We then estimated a model that included a host of college- and state-level control variables to account for differences in college characteristics and state economic and demographic features that could confound our estimates. We clustered standard errors at the state level.

Our findings do not indicate widespread decreases in college access among underserved students with the implementation of either low- or high-dosage PBF systems. However, at the most selective institutions, we find some evidence of decreases in enrollment among racially minoritized and low-income students with the adoption of low-dosage PBF systems.⁹ Across institutional types, our findings indicate the presence of equity metrics are not enough to boost enrollment among the subpopulations they target except for racially minoritized students and only at the least-selective colleges.

Our findings offer several insights for policymakers regarding how to design higher education funding policies that can reduce educational inequities. First, we find that equity metrics typically are not enough to expand enrollment among specific groups of students, even when those groups are prioritized in PBF systems. This may be because the amount of funding states link to equity metrics is too small to change institutional behavior. Thus, states may consider increasing the amount of funds linked to equity metrics in an effort to design more equitable PBF systems. Second, we find some evidence that prioritizing race in equity metrics can improve enrollment among racially minoritized students but only at less-selective institutions. These findings indicate the importance of race-conscious efforts to support equitable outcomes when it comes to college access and student success.

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⁹ States with lower dosage PBF policies for the four-year sector are less likely to include equity metrics than states with higher dosage PBF policies.