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THE LANDSCAPE OF STATE FUNDING FORMULAS FOR PUBLIC COLLEGES AND UNIVERSITIES

Mitchell Lingo, Robert Kelchen, Kelly Rosinger, Dominique Baker, Justin Ortagus, and Jiayao Wu

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With enrollment growth of more than 25% in the past two decades, nearly three in four students in American higher education are enrolled in public colleges and universities.¹ State funding for public higher education has kept pace with inflation over this period but has failed to keep up with rising enrollment.² As a result, per-student state funding has declined in most states, while a more diverse group of students are entering public higher education.

Higher education has traditionally acted as a balance wheel for state budgets by taking disproportionate budget cuts during recessions.³ A sizable body of research shows positive relationships between state funding for higher education and student outcomes.⁴ Higher education funding was partially protected during the coronavirus pandemic by a large influx of federal support,⁵ but it may still take years for colleges

We find growth in the number of “hybrid” funding models that incorporate enrollment, performance, and/or prior year allocation (base+) considerations in both the two- and four-year sectors. At the same time, funding formulas with a student enrollment component remained the predominant funding mechanism in the two-year sector.

¹ de Brey, C., Snyder, T. D., Zhang, A., & Dillow, S. A. (2021). *Digest of Education Statistics, 2019*. National Center for Education Statistics.

² Laderman, S., & Heckert, K. (2021). *State higher education finance: FY 2020*. State Higher Education Executive Officers Association.

³ Delaney, J. A., & Doyle, W. R. (2011). State spending on higher education: Testing the balance wheel over time. *Journal of Education Finance*, 36(4), 343-368.; Delaney, J. A., & Doyle, W. R. (2018). Patterns and volatility in state funding for higher education, 1951-2006. *Teachers College Record*, 120(6), 1-42.

⁴ Chakrabarti, R., Gorton, N., & Lovenheim, M. F. (2020). State investment in higher education: Effects on human capital formation, student debt, and long-term financial outcomes of students. National Bureau of Economic Research Working Paper 27885.; Deming, D. J., & Walters, C. R. (2017). The impact of price caps and spending cuts on US postsecondary attainment. National Bureau of Economic Research Working Paper 23736.; Monarrez, T., Hernandez, F., & Rainer, M. (2021). Impact of state higher education finance on attainment. Washington, DC: Urban Institute.

to fully recover from the losses they incurred.⁶ A sizable body of research shows positive relationships between state funding for higher education and student outcomes.⁷ As a result, changes to higher education funding have direct implications for closing longstanding attainment gaps by race, family income, and parental education.

States fund public colleges and universities primarily through two ways, direct appropriations and financial aid. Ninety percent of all state support for public higher education is through direct appropriations to colleges, but the share of funding allocated to student financial aid programs has risen steadily over the last two decades.⁸ A large body of research examining how states fund higher education has focused on performance-based funding models, which still represent a small portion of funding in most states.⁹ There have been a few efforts to provide snapshots of broader state funding or financial aid mechanisms,¹⁰ but there has not been a systematic longitudinal analysis of state funding mechanisms and how they have changed over time.

In this research brief, we assess the following research questions:

- 1. How did states and systems allocate funds to public two-year and four-year institutions in Fiscal Year 2020?**
- 2. How have these funding mechanisms changed over time?**

Our research team collected the most up-to-date data on the mechanisms through which states and/or higher education agencies or systems allocated funds to public colleges and universities by examining state policy documents, including budgets, legislation, and audit reports, as well as higher education board reports, financial statements, and other documents. In total, our research team reviewed nearly 3,500 documents related to state funding for higher education. To find historical documentation that was no longer

⁵ Laderman, S., & Tandberg, D. (2021). *SHEEO analysis of fiscal year 2021 state funding for higher education*. State Higher Education Executive Officers Association.

⁶ Kelchen, R., Ritter, D., & Webber, D. (2021). *The lingering fiscal effects of the COVID-19 pandemic on higher education*. Federal Reserve Bank of Philadelphia Consumer Finance Institute Discussion Paper 21-01.

⁷ Chakrabarti, R., Gorton, N., & Lovenheim, M. F. (2020). *State investment in higher education: Effects on human capital formation, student debt, and long-term financial outcomes of students*. National Bureau of Economic Research Working Paper 27885.; Deming, D. J., & Walters, C. R. (2017). *The impact of price caps and spending cuts on US postsecondary attainment*. National Bureau of Economic Research Working Paper 23736.; Monarrez, T., Hernandez, F., & Rainer, M. (2021). *Impact of state higher education finance on attainment*. Washington, DC: Urban Institute.

⁸ Laderman & Heckert, 2021.

⁹ Rosinger, K., Ortagus, J., Kelchen, R., Cassell, A., & Brown, L. (2022). New evidence on the landscape and evolution of performance funding for higher education. *The Journal of Higher Education*, 93(5), 735-768.

¹⁰ Custer, B. D., & Akaeze, H. O. (2021). A typology of state financial aid grant programs using latent class analysis. *Research in Higher Education*, 62, 175-205.; Layzell, D. T. (2007). State higher education funding models: An assessment of current and emerging approaches. *Journal of Education Finance*, 33(1), 1-19.; Mullin, C. M., & Honeyman, D. S. (2007). The funding of community colleges: A typology of state funding formulas. *Community College Review*, 35(2), 113-127.; Toutkoushian, R. K., & Shafiq, M. N. (2010). A conceptual analysis of state support for higher education: Appropriations versus need-based financial aid. *Research in Higher Education*, 51, 40-64.

available on active websites, we used the Internet Archive: Wayback Machine to track down older versions. To ensure accuracy in data reporting and coding, we met weekly as a research team to discuss data collection procedures and interpretations of documents. Finally, we reached out to higher education agencies within states to ask specific questions about data elements that remained unresolved after our data collection efforts.

We set our unit of analysis to match how state legislatures and higher education agencies typically set higher education funding mechanisms. In most states, mechanisms are set for higher education systems or by the institutional sector (two-year or four-year).¹¹ We considered two-year and four-year institutions separately if a system spanned sectors (such as the Minnesota State or University System of Georgia systems during much of this panel). Sixteen states have multiple systems within a sector in which different funding models were used for at least part of the panel.¹² For example, California has two four-year systems (the University of California and the California State University) and the two-year California Community Colleges. In these cases, we allowed for multiple observations from the same state. Among the 50 states, there were 59 four-year systems and 60 two-year systems. In total, there were 2,016 observations among the 119 systems across 18 years in our dataset.

We coded systems into three primary categories based on the extent to which an individual college could influence its appropriations through its own actions. We considered a system to have a *traditional* funding formula if either a base-adjusted formula or no funding formula existed. We recognized a system as having a base-adjusted formula if one of two conditions were met. The first was that a state or system clearly stated that there were across-the-board increases or decreases for all institutions. The second was that if there was no evidence of any other funding formula, we examined appropriations to all institutions within a system. If the system either increased or decreased funding across institutions in a sector within one percentage point, we counted that as being base-adjusted. We only considered a system as having no funding formula if there was no evidence of any other funding mechanism and funding data clearly showed that institutions within a system saw different changes in funding.

Systems were considered to have *incentive* models if they had enrollment and/or performance components. States were marked as enrollment when the funding formula explicitly tied funding to a combination of headcount or FTE enrollment (frequently student credit hours). We used data from the InformEd States

¹¹ We primarily relied on Carnegie classifications to identify institutions and divide them into two-year and four-year institutions. However, we identified three states (Colorado, Tennessee, and pre-2010 Texas) with state-funded certificate-granting institutions that were not in the Carnegie universe. We included those observations in our dataset and classified them as two-year institutions.

¹² Six states had multiple systems at the four-year level only, seven states had multiple systems at the two-year level, and three (New York, Pennsylvania, and Tennessee) had two systems at the four- and two-year level.

Performance-Based Funding Policies Dataset to document whether states had performance funding.¹³ This was based on whether colleges in a given sector received varying levels of funding based on student outcome metrics, such as accumulated credit hours, retention rates, or graduation rates. Finally, *hybrid* models combined both traditional (base-adjusted) and incentive (enrollment and/or performance) components. This included the presence of stop-loss or hold-harmless provisions alongside enrollment and/or performance funding models or models that explicitly tied a share of funding to previous allocations in addition to current enrollment or performance.

Table 1 shows the number of systems in each sector with each funding model in Fiscal Years 2004, 2012, and 2020. Across both the four-year and two-year sectors, there has been a shift from traditional funding models (especially base-adjusted models) to hybrid models that combine base-adjusted and incentive funding models. In the four-year sector, the number of systems using hybrid models outpaced the number of systems with traditional models in Fiscal Year 2020. Hybrid models were the most common model in the two-year sector throughout the period of study, but the number of traditional funding systems fell from 22 in 2012 to just 9 in 2020. The number of states operating incentive models held fairly flat through the period, although there was a shift away from enrollment-only incentive models.

Table 1: Frequency of funding formula models by sector and year

Funding model	Four-Year Universities			Two-year colleges		
	FY04	FY12	FY20	FY04	FY12	FY20
Traditional model	34	36	27	20	22	9
<i>No formula</i>	16	17	16	7	10	6
<i>Base adjusted only</i>	19	20	12	14	13	4
Incentive model	7	2	4	12	6	12
<i>Enrollment only</i>	6	0	0	12	6	4
<i>Performance only</i>	1	1	2	0	0	3
<i>Enrollment+performance</i>	0	1	2	0	0	5
Hybrid model	19	22	28	26	30	36
<i>Base+enrollment</i>	14	14	9	22	22	10
<i>Base+performance</i>	1	3	13	2	2	9
<i>Base+enrollment+performance</i>	4	5	6	2	6	17

Note: Some systems may have institutions in multiple categories in a given year.

¹³ Ortagus, J., Rosinger, K., & Kelchen, R. (2021). InformEd States performance-based funding policies dataset. InformEd States. Retrieved from informedstates.org

Together, these trends indicate states are increasingly coupling base-adjusted formulas with incentive models—particularly ones focused on performance metrics—to allocate funds to public colleges and universities. In a future brief and paper, our research team will examine how various mechanisms for funding public colleges and universities relate to college access and student success, particularly among historically underserved students such as racially minoritized and low-income students. This research will offer insight into how states can design funding models for higher education that reduce longstanding inequities in educational attainment by race and family income.

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