Financing Community Colleges: Current Landscape and Future Directions

Nikki Edgecombe[1]
Elise Swanson[2]
Thomas Brock[1]
Maria Cormier[1]
Christopher Avery[3]
Carmen Huynh[1]

Abstract. We describe the community college landscape, with a focus on how state funding formulas, enrollment declines, and federal recovery investments during the COVID-19 pandemic intersect to shape prospects for revenue and spending patterns for community colleges looking forward. We explore variation in state funding models and mechanisms by focusing on six states—California, Michigan, New York, Ohio, Tennessee, and Texas—that together represent close to half of community college students in the nation and a variety of governance and funding structures. We then examine community college spending of federal Higher Education Emergency Relief (HEER) funds, an unprecedented federal investment (over $25 billion) in community colleges over a three-year period, and offer suggestive evidence about what community colleges would prioritize if given more flexible resources. We close with a discussion of the outlook for community college financing and key questions facing system leaders to support this critical higher education sector.

We would like to thank Isaac McFarlin Jr. for comments on an earlier draft of this chapter and Paul Bisagni and Doug Slater from the Community College Research Center for editorial support. This research is supported by funding from the Gates Foundation, Ascendium Education Group, the Institute of Education Sciences at the U.S. Department of Education (Grant R305X220022 and Grant R305X220018), and Lumina Foundation.

The views expressed herein are those of the authors and do not necessarily reflect the views of the funders or the National Bureau of Economic Research

[1]Community College Research Center, Teachers College, Columbia University
[2]Center for Education Policy Research, Harvard Graduate School of Education
[3]Harvard Kennedy School of Government

I. Introduction

Public two-year colleges—better known as community colleges—play a critical and unique role in the U.S. higher education system. There are nearly 1,000 community colleges that together enroll more than 5 million students per academic year (37% of U.S. undergraduate college students) (Causey et al., 2023). As open-access institutions, most community colleges embrace a dual mission of preparing students to transfer to four-year colleges or universities and helping students acquire skills needed for employment. Consistent with this mission, community colleges serve more part-time and older students as well as more low-income, racially minoritized, and first-generation college students than do four-year institutions. Research linking education to earnings finds positive returns to earning a community college credential (Belfield & Bailey, 2017). Yet for all their virtues, community colleges struggle with low completion rates and troubling achievement gaps between demographic groups.

Community colleges are attractive to many students because they are close to home and relatively low in cost.[1] In 2021-22, they charged an average of $4,000 for tuition and fees, compared to an average of $9,700 for public four-year institutions and $38,800 for private nonprofit four-year institutions (National Center for Education Statistics, 2023b). With relatively low tuition revenue per student, community colleges depend heavily on funds from state and local governments to deliver instruction, provide student services, and carry out other core functions. Accounting for all sources of funding, community colleges spent approximately $21,000 per full-time equivalent (FTE) student in 2020-21. By comparison, public four-year colleges spent approximately $39,000 per FTE student, and private nonprofit four-year

[1] In their chapter of this volume, Acton et al. (2024) show how young people's sensitivity to distance varies across populations such that institutional closures would likely have larger negative impacts on Black, Hispanic, and economically disadvantaged populations.

institutions spent about $51,000 per FTE student (National Center for Education Statistics, 2023a). The differences in FTE spending across sectors may be explained in part by differences in institutional missions, including a much heavier emphasis on research (and the infrastructure to support it) at four-year institutions. Nonetheless, students who attend community colleges arguably have greater need for academic and nonacademic support (Kolbe & Baker, 2019).

Government funding for higher education has eroded over time, making it harder for community colleges and public four-year institutions to fund their operations. Baum and Johnson (2015) report a decline of approximately 25% in state appropriations in real terms on an FTE student basis from 2000-2001 to 2014-2015, and funding declines have continued since then (Mitchell et al., 2019). While some public four-year colleges have been able to compensate for state funding reductions by increasing tuition revenue (Bound et al., 2019), community colleges are more constrained in their ability to set tuition levels and cannot rely on increasing the proportion of students paying out-of-state tuition. Community colleges also cannot depend on maintaining steady enrollments, particularly as local employment rates go up or down, as the relationship between enrollment and the economy tends to be countercyclical (Betts & McFarland, 1995). Unfortunately, this means that community colleges experience the greatest demand for instruction and services precisely when tax revenues are falling and when state and local government budgets are under the most strain.

The onset of the COVID-19 pandemic precipitated a sudden economic downturn paired with steep enrollment declines in community colleges—the reverse of the usual countercyclical pattern. From fall 2019 to fall 2021, community college enrollments dropped by more than 15%, and revenue from tuition and fees fell sharply as well (National Student Clearinghouse Research Center, 2024). The fiscal consequences for community colleges would have been devastating if

not for swift federal intervention through the Coronavirus Aid, Relief, and Economic Security (CARES) Act and subsequent legislation, through which Congress appropriated nearly $25 billion for community colleges as part of the Higher Education Emergency Relief (HEER) Fund (Daniels Sarica et al., 2024). This infusion more than compensated for lost revenue from tuition and fees at community colleges, amounting to an increase of $1,700 per FTE student in 2021-22 compared to 2018-19 (Belfield et al., 2024b). HEER funding lasted approximately three years before the program ended in June 2023.

With the worst of the pandemic now behind them—and HEER funding no longer available—community colleges face three major challenges to their funding. First, they must continue to operate in an environment in which their ability to raise revenue is constrained by how much students can afford to pay and what state and local governments are willing to spend. Second, they must adapt to factors that are outside their control, including labor market conditions and the projected decline in high school graduates after 2025 (Irwin et al., 2024). Third, they must respond to pressure to improve student outcomes. This is especially true in states that have adopted performance-based funding models in which some institutional funding is tied to the outcomes they produce, such as the number of students graduating within a given time frame or finding employment post-graduation. Given the importance of community colleges in ensuring access to higher education—particularly for groups that are underrepresented in higher education as a whole—it is critical for researchers and policymakers to understand current funding models and what financing strategies may be better suited to promoting equitable student success.

This chapter addresses these issues and proceeds as follows. Section II lays a foundation with a more detailed review of the mission of community colleges, the students they serve, and

the outcomes they produce. Section III summarizes key results from past literature on higher education finance and the relationship between financing and institutional performance. Section IV presents a comparative analysis of the funding models in six states—California, Michigan, New York, Ohio, Tennessee, and Texas—to illustrate different approaches to generating revenue and incentivizing outcomes. Section V examines HEER funding for community colleges in the focal states and analyzes results from an institutional survey and interviews to understand how college leaders used federal funds to weather the pandemic and what their choices reveal about their fiscal needs and priorities. Section VI, the conclusion, builds on these results to discuss the outlook for community college finance as well as policy and research implications.

II. Community College Mission, Students, and Performance[2]

Community colleges were introduced in the early 20th century in fast-growing states in the Midwest and on the West Coast that did not have the concentration of private colleges and universities found on the East Coast. Junior colleges, as they were then known, were designed to make it easier for students to complete the first two years of college at low cost to students and taxpayers. They were publicly financed and often operated as extensions of high school. The University of Chicago and other four-year institutions championed the junior college model so that they could place more emphasis on research and professional training rather than on providing general education to entering students (Thelin, 2004; Wood, 1987).

In the second half of the 20th century, the role of community colleges expanded to encompass vocational or workforce training. Initially, this came in response to the country's need to find productive work for soldiers returning from World War II and to complete the shift from a wartime to a peacetime economy. The Presidential Commission on Higher Education,

[2] Portions of this section are adapted from Brock, Mateo, and Ray (in press).

created by Harry S. Truman in 1946, identified the need for postsecondary institutions that would offer adult education, apprentice-style vocational preparation, and terminal programs that did not require advanced study. The Commission, credited with introducing the term "community college" into the lexicon, called for federal funding to help address regional and local demands for higher education and vocational training. Neither the Truman administration nor Congress was inclined to act on the Commission's recommendations, but history suggests that the report influenced higher education leaders and the development of state higher education systems (Gilbert & Heller, 2010; Reuben & Perkins, 2007; Thelin, 2004).

Today, most community colleges offer programs aimed at students with a wide variety of interests and personal goals. With two years of full-time study, students may earn an Associate of Arts (AA) or Associate of Science (AS) degree that prepares them to enter a four-year institution as college juniors. Students may also earn an Associate of Applied Science (AAS) degree—generally considered a terminal two-year degree—in fields such as business, nursing, information technology, and mechanical engineering. For students interested in shorter term programs and certificates, community colleges offer an array of credit and noncredit programs that can help them learn English or occupational and life skills.

The community college mission continues to evolve. In many parts of the country, community colleges now partner with local school districts to offer dual enrollment programs, in which high school students earn high school and college credits simultaneously. Dual enrollment has grown markedly over the past 10 years and accounts for one out of every five community college students in the nation (Fink & Jenkins, 2023). In roughly half the states, community colleges have also started to offer bachelor's degrees. These credentials, known as the community college baccalaureate (CCB), are usually limited to a few high-demand fields such as

nursing and are offered in rural areas that are underserved by four-year institutions (Soler, 2019). Some states, such as Florida and Washington, now offer the CCB at urban and rural community colleges.

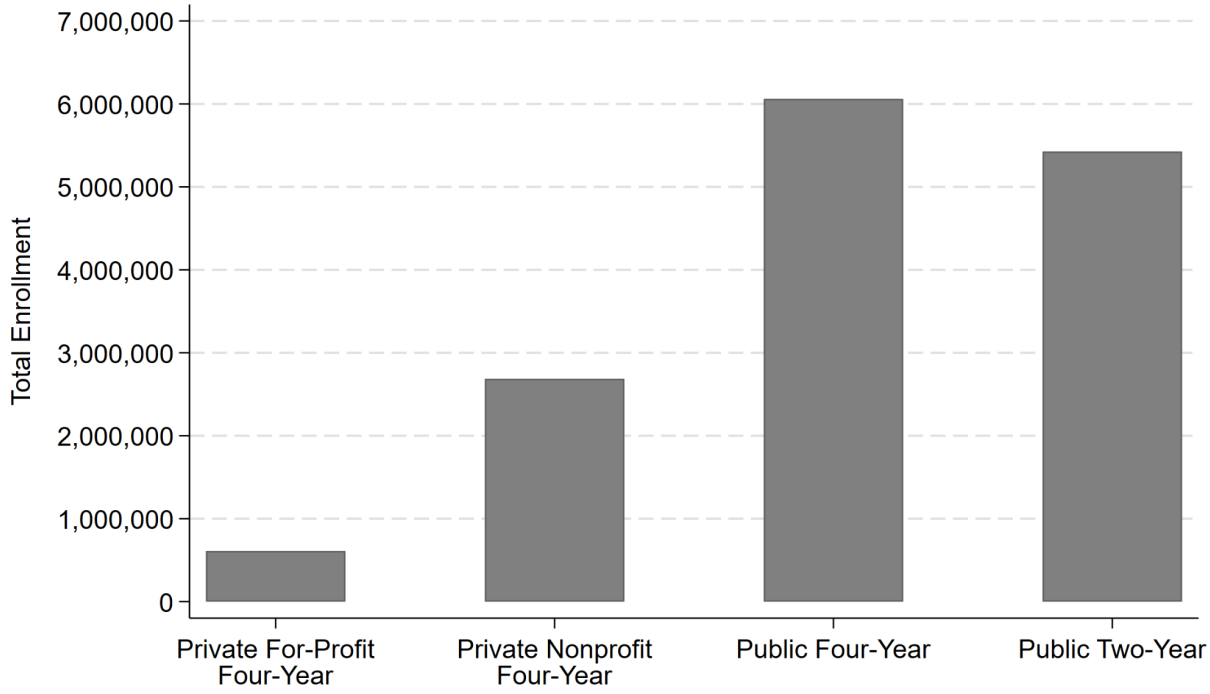
The emergence of the CCB has complicated the traditional definition of a community college as a public two-year institution. The National Center for Education Statistics classifies CCB-granting institutions as four-year public institutions, even though the CCB usually accounts for a small fraction of the degrees awarded by the colleges. The American Association of Community Colleges (AACC) and the Community College Research Center (CCRC) argue that CCB-granting institutions should remain classified as public two-year institutions so long as they are primarily associate-degree-granting institutions (Fink & Jenkins, 2020), and we follow that convention here.

A. Student Characteristics

Figure 1 shows the total enrollment in public two-year, public four-year, and private nonprofit four-year institutions in fall 2022, using data from the National Student Clearinghouse Research Center (Causey et al., 2023). In fall 2022, public two-year colleges enrolled approximately 5.4 million students at 983 institutions, or 37% of all undergraduate students in the U.S. Public four-year institutions enrolled just over 6 million undergraduates (41%), and private nonprofit four-year institutions enrolled close to 2.7 million (18%). Private for-profit four-year institutions, many of which deliver instruction online, accounted for a little more than 600,000 undergraduates (4%).

Figure 1.

Total Enrollment by Sector (Fall 2022)



Source. Causey et al. (2023). "Public Two-Year" includes CCB-granting institutions.

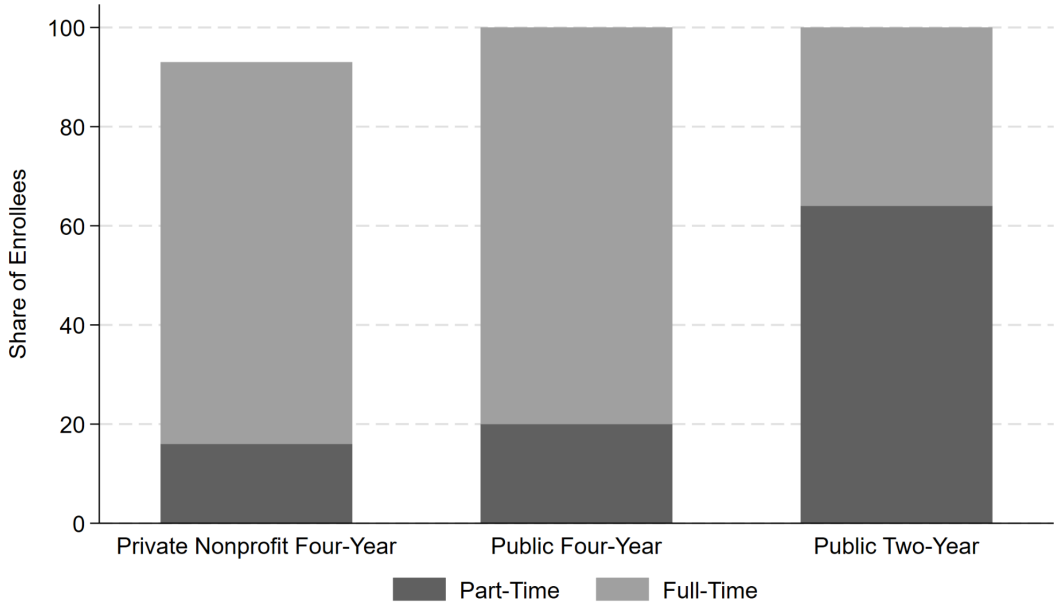
Figure 2 compares undergraduate enrollment in the three major sectors of higher education by full-time/part-time status (for simplicity, we exclude enrollments at private for-profit colleges). The difference in enrollment status across higher education sectors is striking: At public two-year institutions, most students attend part-time (64%), whereas at public and private non-profit four-year institutions, most students attend full-time (80% and 77%, respectively).

Figure 3 compares the age distribution of students across the three major sectors of higher education. One difference that stands out is that students attending public two-year institutions are often older than students attending four-year institutions. Slightly more than one third of students attending community college are over 24 years old, compared to 17% of undergraduates

at public four-year institutions and 24% of undergraduates at private nonprofit colleges and universities. This means that community college students are often working or raising families while they go to college and likely have different needs for support than do traditional-age college students.

Figure 2.

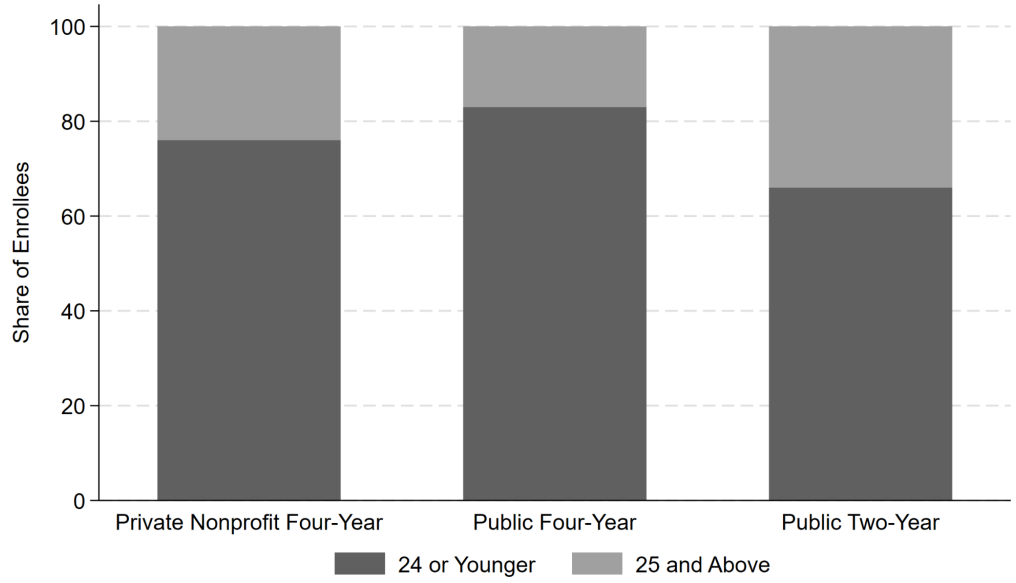
Share of Enrollment by Sector by Full- and Part-Time Status



Source. Causey et al. (2023). "Public Two-Year" includes CCB-granting institutions.

Figure 3.

Share of Student Enrollments by Sector and Age

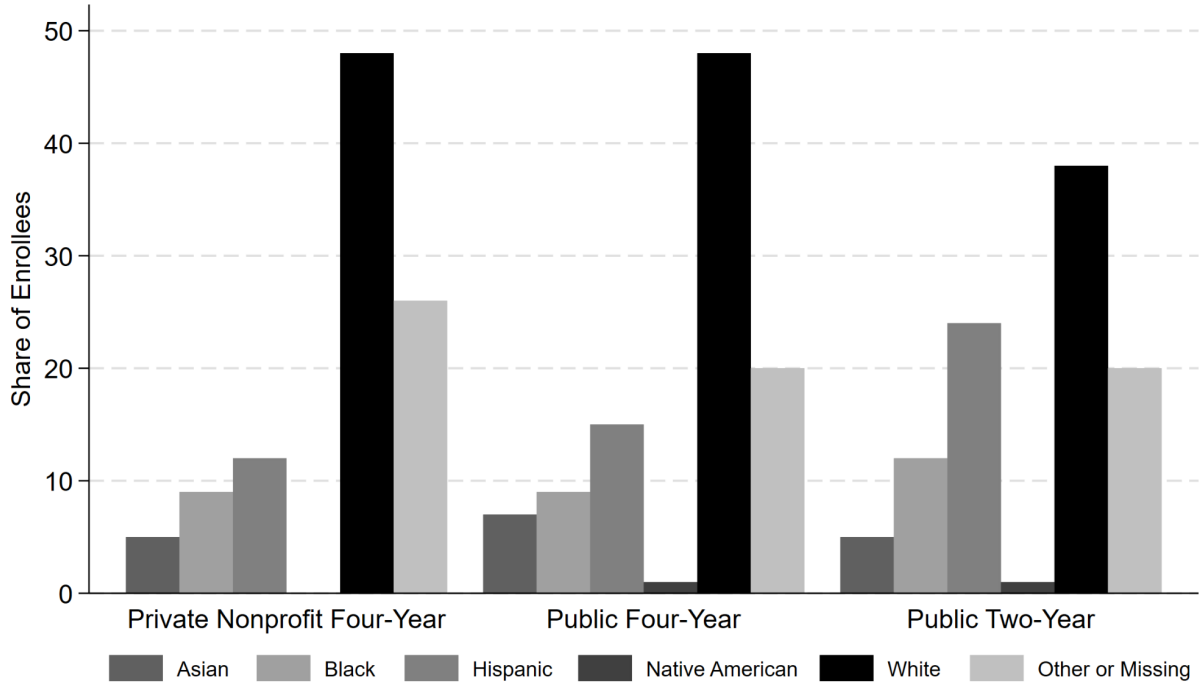


Source. Causey et al. (2023). "Public Two-Year" includes CCB-granting institutions.

Figure 4 presents undergraduate enrollments by race/ethnicity. Compared to four-year institutions—public or private—community colleges enroll a higher percentage of Hispanic students (24% versus 16% or 12% at public four-year or private four-year institutions, respectively) and fewer White students (38% versus 48%). Public two-year institutions also serve proportionally more Black and Native American students and fewer Asian students than their four-year counterparts.

Figure 4.

Student Race/Ethnicity by Sector



Source. Causey et al. (2023). "Public Two-Year" includes CCB-granting institutions.

There is no systematic reporting by colleges and universities on the household incomes of their students, but an analysis of data from the U.S. Census Bureau affirms the important role community colleges play in serving low-income students. Fifty-seven percent of undergraduates attending public two-year institutions are from households with income below 200% of federal poverty guidelines (roughly $60,000 per year for a family of four), compared to 46% of students attending public four-year institutions and 42% of students attending private four-year institutions. The Census data also show that students from low-income families are more likely to attend open-access or minimally selective institutions than more selective public or private institutions (Fountain, 2019).

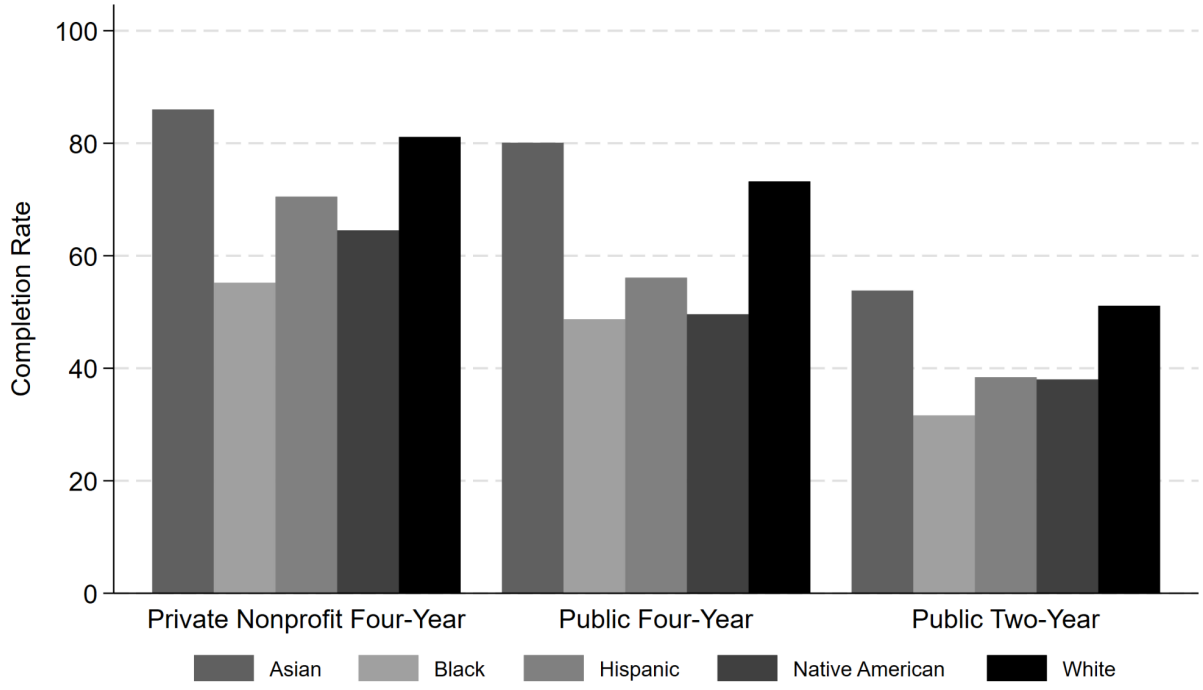
B. Student Outcomes

Figure 5 presents six-year completion rates by higher education sector and highlights the fact that many students who attend community colleges do not complete a program of study. According to the National Student Clearinghouse Research Center (Lee & Shapiro, 2023), only 43% of degree-seeking students who started at a community college in fall 2017 earned a credential from *any* institution within six years, compared to 67% of students who began at a public four-year institution and 78% of students who began at private four-year institutions. Only a small fraction of community college students transfer to a four-year institution and just 16% earn a bachelor's degree within six years of entering college. Analysis of student transfer in the Ohio public higher education system found evidence of a "community college penalty," meaning that bachelor's-degree-seeking students who initially enrolled at a community college were less likely to achieve this goal than similar students who began at a four-year institution after controlling for student demographics, parental income, and standardized test scores upon entering college (Long & Kurlaender, 2009).

There are also troubling disparities by race and ethnicity across all higher education sectors. In community colleges, 32% of Black students earned credentials within six years, compared to 54% of Asian students and 51% of White students. Lower income, Black, and older students transfer and complete a bachelor's degree at lower rates than students overall (11%, 9%, and 9%, respectively) (Velasco et al., 2024). Finally, there are gaps by gender and age group. Male students at community colleges are less likely to earn credentials than female students (41% versus 47%), and students who begin college when they are older (over age 24) are less likely to earn credentials than those who begin college when they are age 20 or younger (35% versus 46%) (Lee & Shapiro, 2023).

Figure 5.

Six-Year Completion Rates by Sector



Source. Lee & Shapiro (2023). "Public Two-Year" includes CCB-granting institutions.

There is clear evidence of the positive association between educational attainment and earnings (U.S. Bureau of Labor Statistics, 2023), and a few studies have tried to ascertain the causal effect of community college attendance on economic outcomes. Using data from the National Longitudinal Survey of Youth and controlling for students' prior academic performance and family background, Kane and Rouse (1995) found that the average two-year college student earned about 5% more than a high school graduate for every year of college attended. Belfield and Bailey (2017) drew on large-scale administrative data from eight states and used an individual fixed-effects model to assess the value added of a community college education. They found that completing an associate degree yielded on average $4,640 to $7,160 per annum (2014

dollars) compared to entering college but not earning an award; for community college certificates, they found modest returns that generally faded within a few years post-college. Using administrative data from Texas, Mountjoy (2022) employed an instrumental variables approach that combined distance from home to (1) nearest four-year college and (2) nearest community college. He found significant value added for two-year entrants who otherwise would not have attended college but negative impacts on students diverted from immediate four-year entry.

Finally, there is some evidence that community colleges may increase intergenerational income mobility. Chetty et al. (2017) examined education and income tax records for 30 million individuals between 1999 and 2013 and found examples of community colleges and mid-tier public universities that were more successful in moving students from the bottom income quintile to the top income quintile than the nation's most selective colleges and universities. Two institutions that outperformed all others were the City University of New York (CUNY)—which includes two- and four-year colleges—and Glendale Community College, near Los Angeles. The authors called for more research to identify the policies and practices that lead to these outcomes and concluded that channeling more funding to institutions like these may offer a scalable strategy to increase upward mobility for larger numbers of students.

Given these positive impacts community colleges can have on individual and social welfare, it is important to understand how they are supported through public investments as well as the institutional incentives created by these funding structures.

III. Community College Revenues and Funding Models

The multidimensional and evolving mission of community colleges can make funding the sector a complex and varied process. Nationally, about half of all funding for community

colleges comes from state appropriations, whereas federal investments generally represent a small source (about 5% to 15%) of their revenue (Ward et al., 2020). Community colleges also receive funding directly from students in the form of tuition and fees; nationally, tuition and fees represented about 21% of total revenue for community colleges in 2022 (Belfield et al., 2024a). This is down from a high of 31% in 2013 and 28% in 2019 before the pandemic (Belfield et al., 2024a). In 2018, community colleges in 29 states were at least partially funded through local appropriations, but in 21 states no community colleges received local revenue, up from 12 states in 2007 (Ortagus et al., 2022; Tollefson, 2009).

The revenue profiles that result from these sources of funding vary across states. For example, in 2019, community colleges in Hawaii, Wyoming, and Wisconsin received the largest share of their revenue—65%, 47%, and 36%, respectively—from state appropriations. By contrast, community colleges in Arizona and Vermont received 5% and 20%, respectively, from state appropriations (Belfield et al., 2024a). Tuition also varies substantially across states, with students in Vermont community colleges paying roughly six times as much in tuition as students in California community colleges ($8,660 versus $1,440, respectively, in 2023-2024) (Ma & Pender, 2023).

Prior research suggests that state appropriations for higher education affect student outcomes. Using quasi-experimental designs, researchers have demonstrated that increases in state investments in higher education lead to greater enrollments and completions in the two- and four-year sectors (Bound et al., 2019; Chakrabarti et al., 2020; Deming & Walters, 2018). Despite this evidence, some states have been shifting away from investments in higher education, particularly in terms of general operating funding, and often reduce higher education

funding first in tight budget years (Bound et al., 2019; Cummings et al., 2021; Delaney & Doyle, 2011).

In certain contexts, these reductions in appropriations can be offset by increased local revenues or student tuition and fees, but institutions' ability to raise these funds varies widely (Bound et al., 2019; McFarlin et al., 2017; Webber, 2017). Local revenues are generally derived from property taxes, but community colleges in a small number of states generate local funding from sales taxes and utility fees (Education Commission of the States, 2021). Research has documented how reliance on local revenue can increase inequities in funding across institutions within a state, to the disservice in particular of institutions in rural communities and institutions serving larger shares of low-income students (Ortagus et al., 2022). Similarly, tuition increases have larger negative impacts on enrollments in community colleges than in four-year institutions and among students from lower income families than among students from more economically advantaged families (Kane, 1995), depressing an important channel for equitable access to postsecondary education and economic mobility. Pragmatically, tuition and fees are also capped in some states, cutting off this avenue for institutions to supplement state funding. For example, in California, community colleges are explicitly restricted from raising tuition above a statewide limit ($46 per credit hour).

The sources of institutional funds are a critical feature of community college finance, as are the restrictions on how those funds may be expended. Categorical funds are restricted to specific programs or budget line items, such as special programs for specific student populations or technological infrastructure costs. In contrast, flexible revenue in institutional general funds can be used for a variety of institutional functions, allowing colleges to respond more nimbly to changing student needs and priorities. General funding establishes consistent institutional

incentives through the allocation mechanisms of state funding formulas and is where we focus our attention below.

A. State Funding Formulas

State support for community colleges reflects the public benefits generated by college attainment, including economic growth, reduced reliance on social assistance programs, improved health outcomes, and civic participation (Bloom et al., 2007; Ma et al., 2016; Ma et al., 2019; Oreopoulos & Salvanes, 2011). As noted earlier, community colleges first emerged as extensions of the secondary educational system; these origins have influenced funding policies as well, with certain aspects of community college funding formulas more closely resembling K-12 district funding formulas than appropriations to four-year universities (Mullin & Honeyman, 2008). The ways that states determine how appropriated funds are distributed to community colleges and the extent to which policymakers attempt to shape institutional actions reflect the principal–agent dynamic between state governments and community colleges (Lane & Kivisto, 2008).

A number of typologies have been proposed to describe funding models. Recently, Lingo et al. (2023) bucketed community college funding formulas into three categories: (1) traditional (also referred to as base or incremental) models, wherein institutions experience similar changes in allocations regardless of institutional characteristics (i.e., location), inputs (i.e., enrollments), or outputs (i.e., completions); (2) incentive (also referred to as performance- or outcomes-based) models, wherein funding is tied to institutional inputs or outputs; and (3) hybrid models, wherein funding is jointly determined by some base amount as well as institutional inputs or outputs. Across these categories, states can introduce additional features into their funding models, including stabilization or hold harmless provisions that maintain institutional funding for a

period of time in the face of declining enrollments to smooth out atypical fluctuations in enrollment or that allow institutions to adapt in the face of costs that are fixed in the short run but variable over the long run.

Baum and Cohn (2023) conclude that traditional funding models often lead to inequities in funding across community colleges within a state because they do not adequately account for differences in enrollment and local funding. To this end, incentive and hybrid models may include equity components, which weight the funded factors (such as enrollment or student outcomes) by student characteristics (such as low-income status), institutional characteristics (such as rurality), and program characteristics (for instance, programs aligned with high-wage or high-growth fields) (Kelchen et al., 2023). Nationally, there is variation in funding models across the two- and four-year college sectors. Incentive and particularly hybrid models are more common in the community college sector, while traditional models are more common for four-year colleges and universities (Kelchen et al., 2023). Equity components are slightly more common in the two-year sector but have been increasing in prevalence in both sectors since about 2020 (Kelchen et al., 2023). The number of systems tying funding for two-year colleges to base allocations, student enrollments, and student outcomes rose from two to 17 between 2004 and 2020 (Lingo et al., 2023). Between 2004 and 2020, 26 systems added an equity component (Kelchen et al., 2023). Over the same time period, the prevalence of traditional models decreased as hybrid models increased (Lingo et al., 2023).

While blunt, funding formulas are the key mechanism by which states invest in community colleges and incentivize them to improve performance. Viewed through the principal–agent framework, these shifts indicate that states initially considered their contracts with community colleges as means to expand opportunity and access to higher education for

students, first by providing general funding for community colleges and then by explicitly incentivizing greater student enrollments. Over time, that focus has shifted to include a stronger emphasis on student outcomes, often in response to popular opposition to taxes and questions about the value of higher education (Dougherty et al., 2014). However, the evidence to date suggests that performance-based funding has at best a tenuous relationship with improved student outcomes and likely has unintended consequences on equitable student access and institutional funding (Kelchen et al., 2024; Ortagus et al., 2020; Ortagus et al., 2021a; Ortagus et al., 2021b; Tandberg & Hillman, 2014).

Equity components represent a desire both to mitigate disparities in educational opportunities and outcomes across student populations and to tighten the connection between community colleges and the labor market. Some equity components based on institutional characteristics, such as rurality, seek to address community colleges' high fixed costs in the budget model. Often referred to as stabilization funds, this mechanism helps address the challenges some colleges have in achieving economies of scale, as well as the economic constraints in particular localities. The variability in institutional contexts and the dynamics of funding and costs illustrate the complexity of community college finance and the challenge of incentivizing institutional behavior statewide via a single funding formula.

While the typologies of funding models are useful for understanding broad themes in community college finance, they can also obscure important nuances of specific allocation mechanisms within funding formulas that shape institutional resources and behavior. For example, enrollment-based and outcomes-based models are grouped together as incentive models (Lingo et al., 2023), but the ways in which institutions respond to increase enrollment—and the extent to which they can increase enrollment given the often constrained geography of

community college service areas—are quite different from the strategies typically deployed to improve student degree completion. Similarly, when thinking about outcomes-based models, institutions may invest resources differently depending on whether the measured outcomes are connected more tightly to enrollment (e.g., early momentum metrics such as the number of students completing an initial transfer-level English or math course) or to outcomes of institutional and student actions (i.e., credential completion) and the relative weight placed on those outcomes. For these reasons, we focus on specific allocation mechanisms of funding formulas rather than a broad-level categorization of models in this chapter.

Persistently low community college attainment suggests that the dominant funding approaches are not working well. Is there *enough* public money going to community colleges? Do existing funding formulas *distribute* money within states in ways that help all community colleges strengthen their performance? How should community colleges *deploy* the funding they receive so that they generate improved and more equitable outcomes? Researchers have turned to other potential frameworks to answer these questions and better understand the ways public investment in community colleges can promote student success.

B. Adequacy and Equity in Community College Funding

Shaped by a series of state and federal judicial rulings, K-12 funding is often discussed in terms of adequacy and equity (Hanushek & Lindseth, 2009; Odden, 2000; Romano & Palmer, 2023). In this framing, funding adequacy is defined as providing educational organizations with the financial resources needed to ensure students are equipped with basic literacy and numeracy skills, as enumerated in certain state constitutional provisions or as interpreted by the courts (for example, the Rose standards in Kentucky enumerating specific skills and knowledge students should acquire via a public education). A national adequacy study for K-12 education found that

the average cost of an adequate education in 2004-05 was just over $9,600 (over $14,000 in 2022 dollars), with state estimates ranging from about $11,000 to about $20,000 when converted to 2022 dollars (Odden et al., 2010). These estimates represent the average K-12 student, not accounting for additional services that may be needed for certain populations or the cost of workforce training programs that require specialized equipment and facilities.

Some scholars have argued that an approach based on funding adequacy may be useful for designing community college finance (Baker & Levin, 2017; The Century Foundation, 2019; Kahlenberg, 2015; Kolbe & Baker, 2019; Melguizo et al., 2017; Romano & Palmer, 2023). The translation of such a framework is complicated by at least three challenges. First, there is no set of agreed-upon common measures of a "successful" community college education. Should measures be based on students completing a degree within 150% of expected completion, prior students meeting some income threshold after completion, students earning a particular score on a yet-to-be-developed common assessment, or something else? Without a defined outcome, the costs of producing that outcome cannot be estimated (Carnevale et al., 2018; Romano & Palmer, 2023). Second, even if there were an agreed-upon set of outcomes to be measured, state constitutional education clauses apply to a compulsory K-12 education, not to higher education, meaning there is no imperative for states to ensure community college students reach those outcomes (Melguizo et al., 2017). In theory, students who make the voluntary choice to enroll in community college are highly motivated, but they may have higher concentrations of disadvantage than the average K-12 student and that could make the provision of an adequate community college education for them especially costly. Third, determining whether adequate funding is provided requires an estimated cost function for community colleges to produce the

desired outcome, including cost estimates of the inputs that lead to student success (The Century Foundation, 2019).

One approach to determining adequate funding levels for community colleges is to estimate total costs for a combination of inputs deemed sufficient to support the progression of students to complete a degree and (perhaps) navigate a subsequent transition into the workforce. An obvious challenge for this approach is determining the constellation of inputs to consider, as community college students bring many strengths but may confront an array of barriers to completing a degree and attaining an appropriate job, including basic needs insecurities (Wood & Harris, 2022); a lack of trusting relationships with instructors, advisors, and administrators (Stanton-Salazar, 1997); unmet financial need (Dynarski & Scott-Clayton, 2006; Dynarski et al., 2013); and labor market frictions (Wood & Harris, 2022).

Goolsbee et al. (2019) applied this general approach to estimate the cost of increasing the share of working-age Americans with a college degree or equivalent credential to 65% by 2030, which they estimated to equal the "expected share of jobs requiring advanced skills in that year" (p. 19). They proceeded in two stages. First, they computed that additional funding of $11.9 billion per year would equalize funding for community college and public four-year college students on a per-FTE basis. Next, they used funding elasticity estimates from Deming and Walters (2018) to conclude that an additional $10.1 billion per year would be required to enable substantially more students to meet the desired goal in terms of degree completion.

To assess adequate funding levels for community colleges, we can also look at the costs associated with interventions that successfully improve community college student degree completion. The guided pathways model utilizes system-level reforms to provide additional structure and support for students (Bailey et al., 2015), but such reforms require considerable

institutional will to implement at scale and require additional resources. Belfield (2020) found that guided pathways implementation costs approximately $7.1 million a year, or $450 per student, for a typical institution enrolling 4,000 FTE students. This represents 12% of the typical college's annual budget. The City University of New York (CUNY) developed a comprehensive model called the Accelerated Study in Associate Programs (ASAP) for students who agree to attend community college full-time. It offers financial support (in the form of a last-dollar scholarship as well as subsidizing or covering transportation costs) in addition to intensive advising, block scheduling, and a multi-semester success seminar. An initial experimental evaluation of ASAP found that it nearly doubled degree completion rates, but with a relatively high net cost per student of $16,284 over three years (Scrivener et al., 2015). More recent experimental studies of ASAP have found that a scaled-down version of the program still produces significant positive results (Azurdia & Galkin, 2020; Miller & Weiss, 2022).

Another approach to determining adequate funding for a community college education is to estimate a cost function based on past budget data. In the context of the early 2000s California system, researchers estimated a cost of $9,200 per FTE student—about 84% higher than the $5,000 typically spent on a per-FTE basis at the time[3] (The Century Foundation, 2019). A more recent cost analysis from the Texas community college system suggests $10,385–$11,998 per student would represent adequate funding, with funding needs increasing from that range based on student characteristics—for example, the estimated cost for a first-generation student is almost $15,000 (Levin et al., 2022).

As with funding adequacy, funding equity is challenging to translate to the community college context. Equity in K-12 finance redresses variation in the available tax base across school

[3] In current dollars, the cost estimated at $9,200 in 2003 is about $15,700.

districts and directs additional funding toward students with more costly educational needs. In the K-12 context, state and federal funding often counter disparities in local funding and direct more funding toward learners based on need (Chingos & Blagg, 2017; Education Commission of the States, n.d.). In the community college context, certain features of state funding formulas can perpetuate resource inequities across institutions by, for example, providing similar funding to institutions regardless of differences in their local funding and in the characteristics of their students (Kelchen et al., 2024; Shaw et al., 2023). State funding formulas can also function progressively by including equity components based on institutional (e.g., rurality), programmatic (e.g., programs aligned with high demand fields), and student characteristics (e.g., adult students). Scholars (e.g., Melguizo et al., 2017) have proposed methods by which states can assess their funding formulas to determine the extent to which they promote both equitable funding and efficient operations among community colleges.

IV. Comparative State Case Studies of Finance Policy and Funding Models

This analysis delves deeper into the variation in state finance policy and funding formulas for community colleges in six states: California, Michigan, New York, Ohio, Tennessee, and Texas. It contributes to the scholarship first by expanding the number of states for which we have case studies of funding models. We build on recent multi-state analyses (Baum & Cohn, 2023; Shaw et al., 2023), adding three states (Michigan, New York, and Tennessee). These case studies are also useful context for analyses presented later in this chapter, where we compare absolute levels of HEER funding received and HEER funding as a percentage of total revenue.

The states included in our comparative analysis collectively enroll about half of all community college students nationally. Each has a unique historical and political context that has shaped higher education policy in the state, its funding model and allocation mechanisms, and

state and institutional priorities. In California, for example, voter-enacted referenda, such as Proposition 13 and Proposition 98, constrain state revenue generation and budget allocations in ways that affect community college funding.[4] California also caps tuition that community college students can be charged, meaning institutions cannot turn to tuition increases in times of budget shortfalls. In Texas, state appropriations comprise a smaller share of community college revenues than in California, with more coming from local taxes and tuition on average. Property values, decisions about whether to levy taxes, and tax rates differ across Texas community college service areas, leading to wide variability in the share of revenue from local sources. Tuition is set locally and therefore can also vary. Texas has a strong focus on the workforce development function of community colleges and has categorical funding streams dedicated to occupational training in high-demand fields.

Community colleges in these states also vary in size and governance structures. Some states, such as Michigan and Ohio, do not have a statewide community college system, while others, such as California and Tennessee, operate with broadly decentralized statewide systems. Three of these states were already under study in a project led by the Community College Research Center (CCRC, n.d.). More recently, state leaders in each signaled an interest in questions of finance, agreeing to participate in a survey conducted by the Accelerating Recovery

[4] Proposition 13 placed limits on property tax increases, meaning local education agencies are more reliant on state allocations from revenue generated via income, capital gains, sales, corporate, and other taxes that have more variable year-to-year revenues (Baker et al., 2023). Proposition 98 guarantees a minimum annual funding level for K-14 education, including community colleges, but the proportion of Proposition 98 spending allocated to community colleges versus K-12 schooling is not guaranteed (Kaplan & Saucedo, 2024), and in times of budget contractions, the state may be more likely to shrink spending on community colleges to preserve funding for the K-12 sector (Delaney & Doyle, 2011).

in Community Colleges (ARCC) Network that asked community colleges how they used HEER funds during the pandemic.[5]

A. Community College Revenue

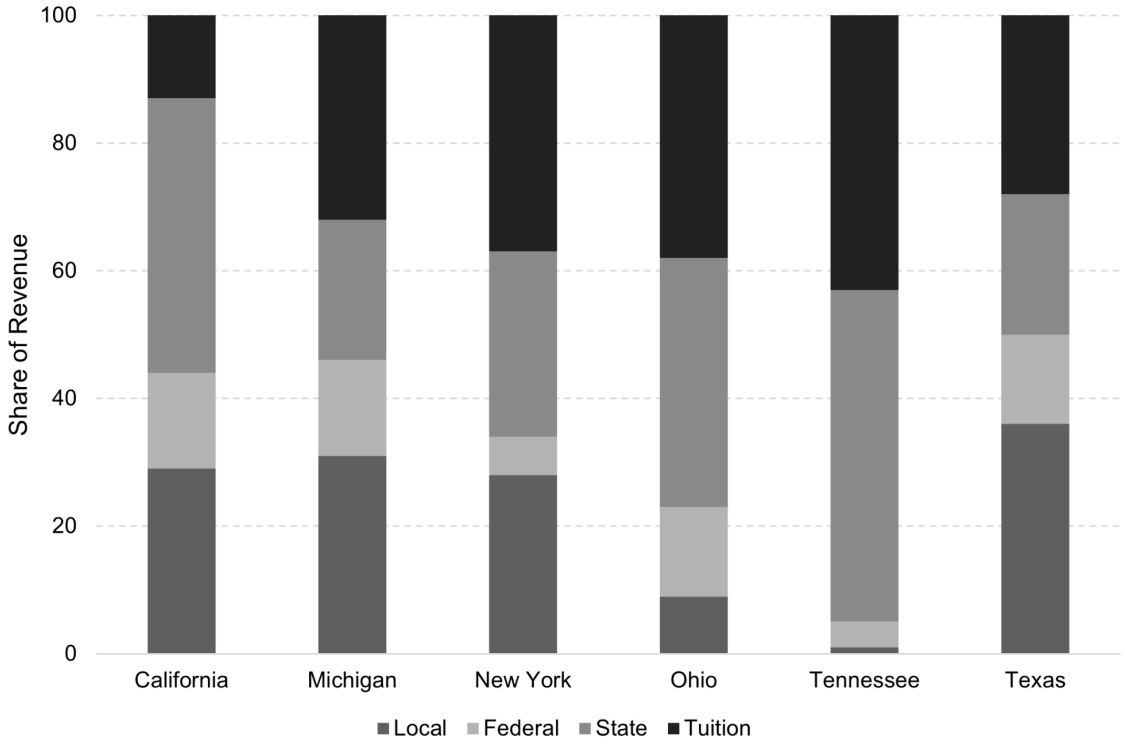
Total revenue per FTE student in 2019-20 varies across our six focal states, from a low of $15,704 in Tennessee to a high of $22,986 in Michigan (in 2024 dollars). This compares to total revenue per FTE student nationally of $19,497.[6] The sources of funding also vary by state, as shown in Figure 6. We use 2019 data for these comparisons because it excludes federal pandemic relief funding and thus reflects a more typical revenue profile of each state than that of the last few years.

[5] The resulting study (ARCC Network, n.d.) includes federal data analysis paired with the results of a survey of college relief spending and will inform pandemic recovery efforts and help policymakers plan for future public health or other emergencies.

[6] These figures are from a 2024 analysis conducted by CCRC using IPEDS data. A public Tableau dashboard includes national and state-level data and reports revenues in 2024 dollars.

Figure 6.

Proportion of Funding per FTE Student by Source and State (2019)



Source. IPEDS. In Ohio, Eastern Gateway Community College is excluded from this analysis.

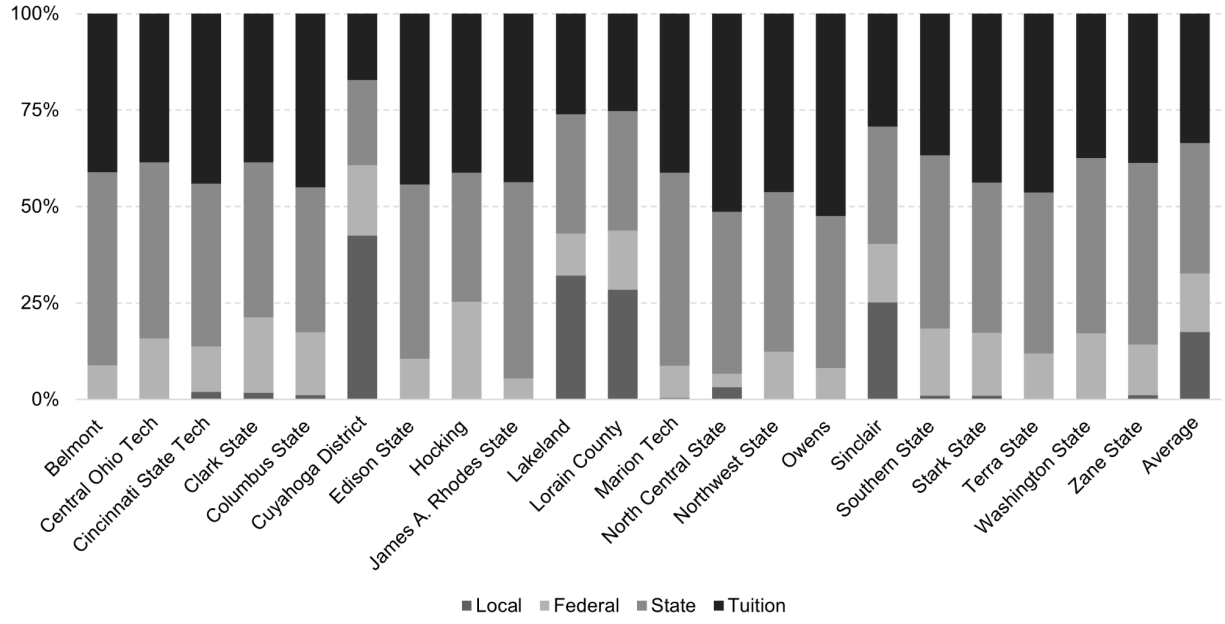
Among the states in our sample, Tennessee (52%) derives the most revenue from the state, followed by California (43%) and Ohio (39%).[7] Texas (22%), under the funding model in place in 2019, and Michigan (22%) have the lowest proportion of state funding. Local funding varies across states as well, with community colleges in Texas receiving the most local funding (36%) and colleges in Tennessee receiving the least (1%). Tuition and fees, which nationally make up 28% of community college revenue in 2019, comprise the highest proportion of total revenues for colleges in Tennessee (43%) and the lowest in California (13%).

[7] Data from Ohio for this analysis excludes Eastern Gateway Community College (EGCC). EGCC, which will close in October 2024, has been the subject of investigation and monitoring by the U.S. Department of Education related to a free college program that significantly increased the college's online enrollment and use of federal financial aid.

The aggregate state-level revenue distribution can obscure significant variation within states, driven primarily by variation in local funding. Figure 7 shows this variation in Ohio as an example. In 2019, Cuyahoga Community College derived 22% of revenue from the state, 42% from local sources, and 17% from tuition and fees. Marion Technical College, by contrast, received 50% of revenue from the state and 41% from tuition and fees and received no local funding. Ohio has significant intrastate variation in revenues, in part due to variation in which colleges are allowed to raise revenue from local taxes.

Figure 7.

Distribution of Revenue by Source in Ohio (2019)



Source. IPEDS. This analysis excludes Eastern Gateway Community College, including from the statewide average.

B. Description of State Systems and Funding Models

We compare the underlying allocation mechanisms of the funding formulas in our six focal states. Our typology of allocation mechanisms is based on particular features of the models,

such as whether all or part of the state allocations to colleges is determined by multiplying a fixed dollar amount (e.g., $2,000) by FTE enrollment (categorized as "enrollment") or by achieving a particular benchmark or outcome like a specific persistence or graduation rate (categorized as "performance"). Table 1 presents more information about funding formula allocation mechanisms.

Table 1.

State Funding Formula Allocation Mechanisms

Allocation Mechanism	Description
Base	Institutions receive a similar percentage-point increase/decrease based on prior year's funding
Enrollment	Funding at each college is tied to student enrollment levels as measured by headcount or FTE student and does not protect base funding levels; funding can vary by degree program
Performance	All funding for a college is allocated based on performance metrics as outlined by the state or board
Enrollment + Performance	Combination of enrollment and performance mechanisms
Base + Enrollment	Combination of base and enrollment mechanisms; typically includes a protected base or stop-loss provision
Base + Performance	Combination of base and performance mechanisms; typically a performance-based model that includes stop-loss provisions that protect the majority of current funding
Base + Enrollment + Performance	Combination of base, enrollment, and performance mechanisms; typically includes performance metrics and a protected base or a stop-loss provision

Source. Adapted from Lingo et al. (2021, 2023).

We used a two-step process to classify the funding models for each of these six states. First, we used primary data collected during the course of CCRC's project on community college finance as well as IPEDS data and information from secondary sources (e.g., policy documents and existing research) to produce preliminary descriptions of funding and allocation mechanisms in each state. Second, we refined these descriptions based on interviews with policymakers in

each state. Our resulting state-level summaries include general information about the community college sector, enrollment data (including changes that occurred during the pandemic), a description of system and institutional governance, and a description of the funding model.

California. There are 116 community colleges in 73 districts in California. These colleges enrolled approximately 2.2 million students (912,691 FTE students) in 2019, with community colleges receiving on average $18,878 in total revenue per FTE student. From 2019 to 2022, community college enrollment declined by 19%. Community college students comprised roughly 45% of undergraduates in California in 2021. California uses a participatory governance structure whereby a state board of governors sets policy that is administered through the California Community Colleges Chancellor's Office. California's Student-Centered Funding Formula (SCFF) went into effect in 2018 and combines enrollment and supplemental performance mechanisms (Linden, 2022). Districts' share of state funding collected through Proposition 98 (funds from state and local taxes that go to K-12 and community colleges) is distributed based on overall enrollment (70%, on average, of a district's apportionment), count of enrollees receiving financial aid and undocumented students (i.e., students deemed to have socioeconomic need) (20%), and count of students achieving nine specified success outcomes (10%), including completion of a certificate or associate degree and transfer to a four-year institution. The inclusion of supplemental funding for enrolling financial aid recipients was designed to increase college access and the take-up of federal and state aid (Linden, 2022). The supplemental funding associated with student outcomes is higher when those outcomes are achieved by financial aid recipients. The original SCFF legislation included a three year hold harmless provision that was extended through the pandemic. It instituted a funding floor to

smooth the transition between the old formula and SCFF and to protect colleges from revenue losses. The hold harmless provision is now slated to expire in 2025.

Michigan. There are 31 community colleges in Michigan. These colleges enrolled approximately 249,160 students (113,355 FTE students) in 2019, accounting for about 49% of undergraduate enrollments in the state (MI School Data, n.d.). On average, Michigan community colleges received $22,986 in total revenue per FTE student in 2019. Between 2019 and 2022, community college enrollment declined 13%. There is no centralized governance structure for Michigan's community colleges. A newly created state agency, the Michigan Department of Lifelong Education, Advancement, and Potential (MiLEAP), works with the Department of Education to set and provide policy guidance. The Michigan Community College Association serves a coordinating and advocacy function for the sector, including on matters of finance. Each community college is governed by elected trustees. The community college funding formula comprises a mix of allocation mechanisms, including a base funding component (30%), funding for contact hours weighted for health and technology/industrial fields (30%), performance metrics (30%), funding for administrative costs (5%), and local strategic value (5%) (Zielak, 2022). Base funding allocations were set several decades ago and have remained consistent since. There are three evenly weighted performance metrics: number of degree and certificate completions, six-year completion rates, and completion improvement measured over six years.

New York. There are two community college systems in New York. The State University of New York (SUNY) system has 30 community colleges and enrolled 266,872 students (or 165,331 FTE students) in 2019. Community college students comprised 50% of total SUNY undergraduate enrollments in fall 2023 (State University of New York, 2024). SUNY's community colleges are decentralized, and each college is governed by a board of trustees

appointed by the governor or local sponsors. The City University of New York (CUNY) system has seven community colleges and enrolled approximately 126,023 students (72,106 FTE students) in 2019. Community college students were roughly 34% of all CUNY undergraduates in fall 2022. The CUNY colleges report to a single board of trustees, with some members appointed by the governor and others by the mayor. From 2019 to 2022, statewide community college enrollment (including both SUNY and CUNY) declined 24%, the largest enrollment drop in our sample. Total revenue per FTE student in New York (SUNY and CUNY) was $21,716 in 2019.

While some of their funding sources are distinct, SUNY and CUNY have similar funding models. The state share of the model is calculated based on the lesser of (1) two fifths (40%) of the net operating budget or net operating costs of the college or (2) the amount for funded full-time enrollments (estimated or actual FTE students multiplied by a state-determined amount) in eligible programs plus up to half of rental costs for space. Additionally, community colleges rely on local sponsors (e.g., New York City for CUNY) to contribute funding for baseline operating costs and programmatic budget priorities. In recent years, community college funding levels have been bolstered by a funding floor (or maintenance-of-effort mechanism), whereby the state approves FTE student funding amounts as a percentage of funding from the previous year. This maintenance-of-effort mechanism has stabilized community college funding amounts amid enrollment declines that accelerated during the pandemic.

Ohio. There are 23 community colleges in Ohio. These community colleges enrolled approximately 229,976[8] students (or 99,011 FTE students) in 2019, comprising 25% of total undergraduate enrollments in the state (Ohio Department of Higher Education, 2024). Statewide,

[8] Enrollment figures for Ohio exclude Eastern Gateway Community College.

total revenue per FTE student was $15,839 in 2019. Between 2019 and 2022, enrollment declined about 12%. As in Michigan, there is no formal community college system in Ohio. Instead, the colleges are overseen by the Ohio Department of Higher Education and rely on the Ohio Association of Community Colleges for statewide organization and advocacy efforts. Ohio's State Share of Instruction (SSI) model is performance based and funds community colleges through three outcome measures: course completion (which constitutes 50% of funding), success points (25%), and completion milestones (25%). Course completion is determined by multiplying an average statewide cost-based calculation by the number of FTE students who pass a course. Success points include credit-hour benchmarks earned in 12-credit increments and completion of college-level English and math courses within 30 credit hours. Completion milestones include the number of associate degree and certificate completions and transfers with 12 or more credit hours (Ohio Board of Regents, 2020). The SSI model uses a proportional distribution method for each set of outcomes, whereby institutions receive a proportional share of funding for the total earned across each outcome plus an additional amount for outcomes achieved by students who qualify for equity and access categories. Notably, the largest performance measure, course completion, is correlated with enrollment.

Tennessee. There are 13 community colleges in Tennessee. These colleges enrolled approximately 114,690 students (56,894 FTE students) in 2019, or roughly 22% of undergraduate enrollment in the state (Tennessee Higher Education Commission [THEC], 2021). The total revenue per FTE student in Tennessee in 2019 was $15,704. From 2019 to 2022, community college enrollment declined 18%. The Tennessee Board of Regents (TBR) is the governing board for community colleges and approves new programs, budgets, and tuition, among other items. Tennessee's funding formula is performance based: The state collects

performance data from its community colleges, counts each outcome at each institution, and attaches premiums and weights to the counted outcomes (including rewards for achieving certain outcomes overall and among specific populations of students) (Quittmeyer & Veach, 2023). The outcomes are first compared to the institution's average outcomes from the previous three years to determine the degree of improvement or decline and are then compared to other institutions in the state. Finally, community colleges are awarded points based on student outcomes (i.e., performance points), and higher scoring institutions receive greater funding.

Tennessee assigns roughly 80% of performance points to institutions for achieving specific student outcomes (Quittmeyer & Veach, 2023). Outcomes in the formula include student progression (i.e., accumulating 12, 24, or 36 credit hours), credential completion, and efficiency measures. Outcome data, which is collected by the THEC, is weighted for specific student characteristics, including being an adult learner, low income, and academically underprepared. When a student with one of the characteristics achieves one of the outcomes, the state awards the college an 80% premium. This premium is applied to the underlying outcome count. For example, if 100 students graduate, all of whom are low income, the model acts as though 180 students graduated. The premium rises to 100% if the student has two of the specified characteristics (e.g., a low income adult learner) and to 120% if the student has all three characteristics. Additional points are awarded for fixed costs (e.g., facility upkeep) and quality assurance (i.e., additional funding to institutions that meet certain quality standards such as student assessment scores). These categories account for the remaining 20% of the state's allocation formula.

Texas. There are 50 community colleges (and an additional 10-campus technical college system) in Texas. The community colleges enrolled 1,088,133 students (419,817 FTE students)

in 2019, or roughly 40% of the state's undergraduate enrollment. From 2019 to 2022, community college enrollment declined 3%, the smallest drop for these years in our sample. The Texas Higher Education Coordinating Board (THECB) regulates the state's community colleges and coordinates the locally elected boards of trustees that govern each community college district. Texas has a new funding model that was approved by the state legislature in 2023. Under House Bill 8 (HB 8), the new model allocates what is called performance tier funding (PTF) based on the attainment of specified outcomes, including the number of credentials earned (with an emphasis on high-demand occupations), four-year transfer outcomes, and dual credit outcomes (Texas Higher Education Coordinating Board, 2024). The funding received for the PTF is weighted for student populations of interest, including Pell-eligible students (25%), academically disadvantaged students (25%), and adult learners age 25 and older (50%). Additionally, select community college districts are eligible for base tier funding, which ensures institutions with relatively low local revenue (as a result of lower taxable property values) can cover the costs of core operations.[9] For the 2024 fiscal year, 23 of the 50 community colleges are eligible for base tier funding. Baum and Cohn (2023) suggest that these targeted funds are intended to promote educational success for students "facing educational barriers" (p. 28) as well as those attending smaller colleges and rural institutions. In 2019, prior to the introduction of the new performance-based funding model, total revenue per FTE student in Texas was $16,800.

C. Comparative Analysis of State Funding Models

The states in our analysis vary by funding model and allocation mechanisms. While Ohio, Tennessee, and Texas all have performance-based models, the performance metrics and

[9] Additional funding is determined as the difference between instruction and operations (I&O) and local property tax amounts. If local property taxes exceed I&O amounts, the college does not receive base aid.

how much funding is allocated to each are different. California rewards community colleges with additional money for enrolling financial aid recipients and undocumented students and provides modest incentives for improved student outcomes. New York's model has two funding allocation mechanisms: One is based on colleges' costs, while the other is based on enrollment. Colleges receive funding based on which mechanism generates a lower state share (or, in other words, which calculation costs the state less money). Michigan's funding model has a multitude of components, including base funding and enrollment and performance mechanisms. Table 2 organizes our focal states by funding allocation mechanism.

Table 2.

Features of State Community College Funding Formulas

		CA	MI	NY	OH	TN	TX
Funding Allocation Mechanism	Base			■			
	Base + Performance						
	Base + Enrollment + Performance		■				
	Enrollment			■			
	Performance				■	■	■
	Performance + Enrollment	■					
Equity Components	Equity-Focused Performance Measures	■			■	■	■
	Equity-Focused Enrollment Measures	■					
	Institutional Stabilization Measures	■					■
Other Components	Prioritization of In-Demand Fields		■		■	■	■

As noted, there is significant variation in the underlying allocation mechanisms by state, even among similar models. For example, Ohio and Tennessee both use a performance-based model, but the particulars of each model are quite different. In Ohio, 100% of funding is performance based, and the largest portion of funding comes from performance on the outcome of course completion. By contrast, in Tennessee, 80% of funding is based on student outcomes,

with all outcomes weighted for the student populations of interest. Some of this variation appears to be driven by characteristics of and priorities of the state. In Michigan, the contact hours outcome measure is weighted toward programs that can prepare students for jobs in growing industries and potentially offset long-term job losses in manufacturing (Zielak, 2022).

Enrollment-related metrics directly or indirectly account for a considerable portion of state revenue for five of six states (Texas is the exception). The funding models in California, Michigan, and New York include per-FTE-student or per-contact-hour components. Ohio's model rewards enrollment indirectly by allocating the majority of performance funding to course completion, an outcome strongly correlated with enrollment. Though these models are quite different, they are all sensitive to fluctuations in enrollment. This finding is consistent with those of Shaw et al. (2023), who examined the importance of enrollment in the funding models of California, Ohio, and Texas community colleges. Given accelerated enrollment declines during the pandemic and the weak demographic outlook for future cohorts, community colleges in states with models that rely on enrollment may encounter financial challenges.

With the financial outlook for the sector deteriorating (Belfield et al., 2024a), the importance of stabilization and equalization funding features will grow. These model features aim to create more parity and/or equity across institutions within a state and may be more generous to smaller colleges or colleges with more concentrated student needs. The new model in Texas, for example, provides supplemental funding to colleges whose ability to fund core operations is impaired by a lack of local funding or other factors. California's model also has an equalization feature that pools state and local funding and then redistributes it primarily based on enrollment.

V. Effects of the Pandemic on Community Colleges' Financial Condition

The wide-ranging effects of the pandemic compounded the sector-wide enrollment losses experienced by community colleges in the wake of the Great Recession. As local institutions, community colleges were on the front lines assisting the individuals and communities disproportionately impacted by the devastating health and economic consequences of COVID-19 (Brock & Diwa, 2021). They did this work with unprecedented financial support from the federal government. While researchers have only begun to examine the effects of these investments on student experiences and outcomes, we can document what community colleges received and disbursed relative to pre-pandemic revenue and expenditure trends. We also draw on institutional survey data and interviews with institutional leaders to identify lessons they will carry forward even as institutions face uncertain financial conditions.

A. Higher Education Emergency Relief Funding

The Higher Education Emergency Relief Fund allocated approximately $25 billion to public two-year colleges for direct student aid and institutional aid. The first round of HEER funding weighted FTE Pell recipients heavily; the second and third rounds of funding also weighted Pell recipient headcount (as opposed to FTE students) and included fully online students. Student aid was disbursed directly to students by the colleges to cover expenses related to food, housing, course materials, technology, healthcare, and childcare. Colleges could use institutional aid to defray costs associated with the pandemic, such as lost revenue, technology enhancements, and staff training. Colleges could also use institutional aid to supplement the direct student aid.

The states in our sample received a total of $10.1 billion in HEER funding, or roughly 40% of all HEER funding distributed. On average, the colleges in our sample received $9.9

million in HEER funds for emergency cash aid to students and $13.6 million for operating expenses at the institution. On a per-FTE-student basis, this translated to an average of $11,793 for our sample, with per-FTE-student funding ranging from $10,115 in New York to $14,993 in Michigan. This cross-state variation in total per-FTE funding was likely due to the criteria the federal government used to determine institutional allocations. In Michigan, for example, 70% of students were part-time and 39% of students were Pell eligible in 2020. This is comparable to California, where the same percentage of students were part-time, but substantially fewer were Pell eligible (25%).[10] The differences between these eligibility criteria likely contributed to the difference of nearly $4,000 per FTE student in total HEER funding awarded in these two states and may also have contributed to differences in the amount of federal relief funding received by community colleges within states.

Table 3.

Comparison of HEER Funding

	CA	MI	NY	OH	TN	TX	Total
Total HEER Funding Awarded	$4.402B	$695.7M	$1.433B	$542.2M	$458.1M	$2.584B	$10.115B
HEER Funding Awarded per FTE	$11,060	$14,993	$10,762	$11,097	$10,115	$12,919	$11,603
Student Aid per FTE	$6,120	$8,280	$5,654	$6,085	$5,490	$6,838	$6,294
Institutional Aid per FTE	$4,396	$6,004	$4,147	$4,568	$4,060	$4,955	$4,564
Other Aid per FTE	$544	$709	$960	$444	$564	$1,126	$745

Note. FTE student enrollment data is from IPEDS and from fall 2020. Other aid (bottom row), awarded in addition to the HEER student and institutional aid funding allocations, was provided to colleges deemed to have substantial needs because they met certain criteria for enrolling underserved student populations by income or racial/ethnic categories, such as Historically Black Colleges and Universities (HBCUs), Minority Serving Institutions (MSIs), or Tribally Controlled Colleges and Universities (TCCUs).

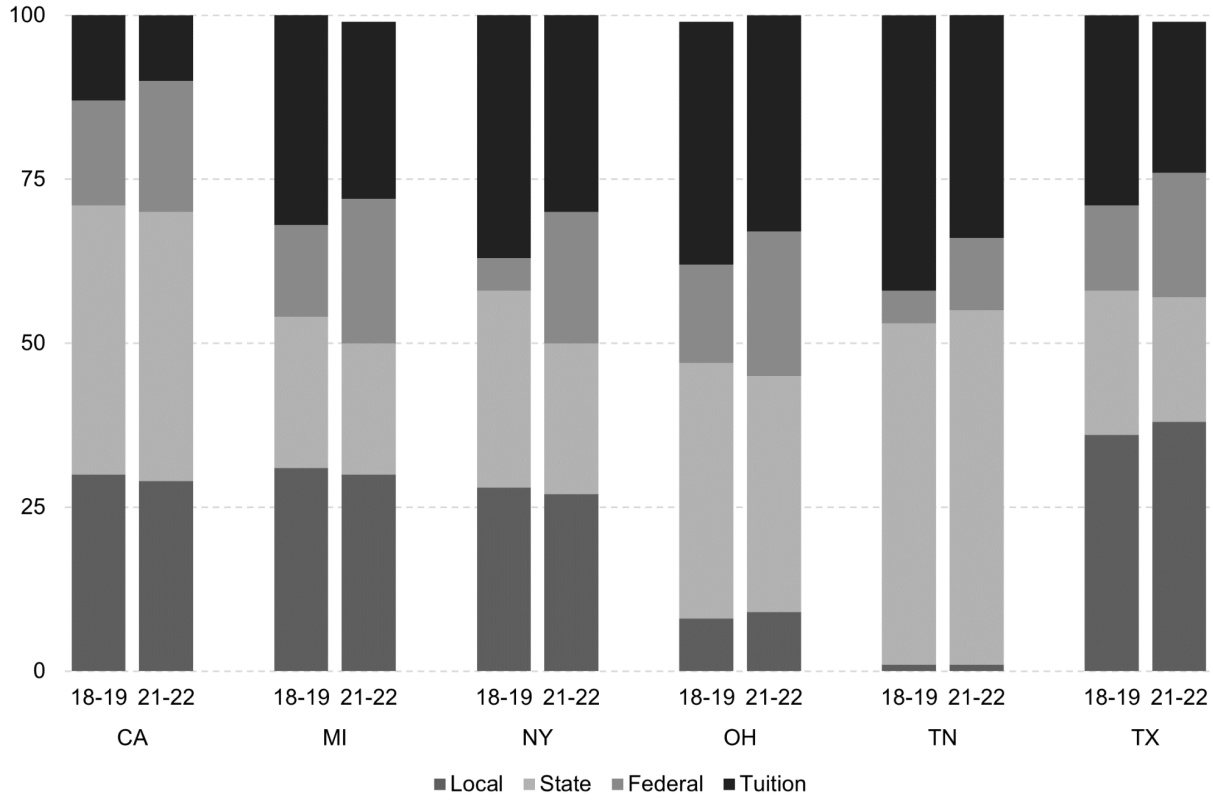
[10] Pell Grant awards consider expected family contribution (EFC) and the cost of attendance. Because community college tuition in California is relatively low, many California students either do not apply or do not qualify.

Figure 8 presents average revenue per FTE student by source as a share of total revenue pre-pandemic and during the pandemic for the states in our sample. All of the states saw both a decline in tuition revenue and an increase in federal funding from 2018-2019 to 2021-2022. (Data from 2022 is the most recent currently available in IPEDS.) The percentage-point increase in federal funding was highest in New York (15 ppt). State and local funding per FTE student was generally stable in our sample, consistent with national trends, due in part to declines in enrollment (Belfield et al., 2024b).

A recent ARCC Network analysis found that HEER funding was substantial and more than made up for the drop in tuition revenue community colleges experienced at the start of the pandemic due to lower enrollment. With the addition of HEER funding, total revenue per FTE student was up 21% nationally. That represents an additional $1,700 (on a per-student basis) net of lost tuition revenue (Belfield et al., 2024b).

Figure 8.

Change in Proportion of Funding per FTE Student by Source Pre- and During Pandemic



Source. IPEDS. Eastern Gateway Community College in Ohio is excluded from this analysis.

B. Spending During the Pandemic

Community colleges have high fixed costs that may limit their ability to reallocate money quickly and respond to emerging challenges—such as those of a global pandemic. HEER funding provided institutions more spending flexibility by allowing them to allocate funds toward a broadly defined set of institutional investments (Daniels Sarica et al., 2024). These funds not only enabled institutions to cover high fixed costs but also presented community college leaders with a one-time opportunity to identify and implement strategies to reduce barriers to enrollment and persistence and promote equitable outcomes.

We draw on institutional survey and college stakeholder interview data collected in summer 2023 as part of the ARCC Network analysis of federal relief efforts (Daniels Sarica et al., 2024; Klempin et al., 2024) to examine how colleges used institutional aid, what groups of students they targeted for assistance, and what types of assistance they felt were most important to retaining and helping students advance. Survey data includes responses from administrators and/or staff at 170 community colleges across the six focal states (or 64% of all community colleges in these states). We also include analysis from interviews with college administrators, staff, and faculty conducted between 2021 and 2023 as part of CCRC's project on community college finance.

When asked to indicate their priorities if future federal funding were made available, colleges' top three survey responses were additional student aid (71%), mental health services (49%), and technology hardware (35%). Consistent with these survey responses, our interview data suggested three priority areas for the use of HEER funds as we describe below.

1. *Offsetting Lost Tuition.* According to survey data, the biggest use of institutional aid was to make up for lost revenue associated with enrollment declines: Institutions reported allocating about $4.9 million per college for these purposes. However, many colleges also used institutional aid to supplement the emergency aid to students ($2.5 million on average per college), provide tuition discounts ($1.4 million), and give tuition reimbursements ($791,000). Community college leaders discussed using HEER funding for retention initiatives intended to help students persist (e.g., emergency funding, free/subsidized textbooks, and debt forgiveness for students with prior postsecondary experiences).
2. *Providing Support for Basic Needs of Students.* Community colleges also applied

institutional aid toward expanding basic needs support so that students could engage with the educational activities of the college. Over a third of institutions (36%) reported spending HEER funds on food assistance, and 17% used aid for housing assistance. Close to half (46%) used HEER funds for mental health services. A recurring theme of the interviews with college administrators was the importance of creating a "culture of caring" by providing comprehensive services on community college campuses, especially as the pandemic exposed existing student vulnerabilities. Through pandemic-related funds, colleges were able to augment their delivery of basic needs services. Several reported that they centralized basic needs services within a single location, and some colleges hired additional staff to support basic needs initiatives. Prior to the pandemic, basic needs services were generally funded through a mixture of local and philanthropic dollars with some support from federal funding (e.g., Perkins). With HEER funding, these programs were expanded. However, HEER funding had to be spent by June 2023, and now these programs may be in jeopardy. Indeed, in the survey, 55% of institutions reported worrying about reducing basic needs services because of the end of HEER funding.

3. *Investing in Technology Infrastructure.* The sudden shift to fully online courses and student services at the start of the pandemic was costly for community colleges. HEER funds made it possible for community colleges to invest in the technology and training required to make this transition. Approximately 88% of the institutions in our sample of six states reported using HEER funding to buy and upgrade technology. Additionally, 78% of colleges used aid for distance learning supplies, and 71% used aid for high-speed internet. When combined with technology hardware and distance learning supplies,

colleges in our sample states allocated roughly 15% of their total institutional aid toward technology-related expenses. Nearly every college leader interviewed described using HEER dollars to accelerate technology adoption. These investments took three forms: (1) providing equipment, such as WiFi hotspots and loaner laptops, to students; (2) investing in training for faculty to teach online, including training in learning management systems; and (3) equipping classrooms with the technology required for hybrid and HyFlex course modalities.[11] The adjustments to teaching and learning made possible by HEER funding not only helped maintain instruction during the height of the pandemic but also built community colleges' capacity to continue to offer students a mix of course modality options that make coursetaking more feasible.

VI. Discussion and Conclusion

The community college sector faces headwinds, including longer term trends of declining enrollments and public disinvestment, wherein less revenue may come from state and local governments and more from students and families (in the form of tuition and fees). Graduation rates remain low, and disparities in those rates by race/ethnicity and income persist. Research has generated rigorous evidence on policies, practices, and programs that improve student outcomes. However, these interventions can be costly and necessitate more funding to implement at scale. The analysis in this chapter sought to understand the extent to which existing community college funding policies and formulas could enable the types of changes required to improve institutional performance and student outcomes. It also aimed to learn from the federal government's unprecedented investment in community colleges during the pandemic. We delved into these

[11] HyFlex courses allow students to attend in person or online and require video and audio capabilities in the classroom.

topics in six states whose community colleges collectively enroll about half of all students in the sector.

Although state appropriations make up the largest share of community college revenue nationally, there is significant variation across states. The state is thus a more influential funding entity in some places compared to others. Variation is also evident in the funding models states use. The states in this analysis generally allocated their share of funding in multiple ways, based on a fixed amount per student enrolled, achievement of specified outcomes, increase or decrease to previous year's funding, and other approaches. Though the funding models frequently combine different allocation mechanisms, most of them are tied directly or indirectly to enrollment. While community college enrollments have rebounded somewhat in the last two years, these gains have not offset the sharp declines of the first two years of the pandemic, much less the prior decade of enrollment erosion. As discussed elsewhere in this volume, the so-called demographic cliff portends future higher education declines in both enrollment and state and tuition revenues, particularly for community colleges (Vigdor, 2024).

In addition to the enrollment challenges facing community colleges, institutions are facing a reality of heightened student need across multiple dimensions. Given trends in K-12 achievement (Fahle et al., 2024), students whose K-12 schooling was interrupted by the pandemic may enter college less academically prepared than past cohorts. Both traditional-age and older students may experience food and housing insecurity, transportation disruptions, high childcare costs, and a range of other basic needs. Additionally, the need for mental health support also increased in the wake of the pandemic (Elharake et al., 2023), straining institutional resources. HEER funding provided temporary respite, plugging budget holes caused by declining enrollment and allowing community colleges to invest in academic supports and basic needs and

mental health services. But these needs will persist. Even students who do not face severe challenges require high-quality academic advising and instructional support, which can be costly. Both funding models and community college business models will need to adapt to address these changing realities and enable community colleges to serve their students more effectively.

A broader audience has begun to acknowledge these challenging conditions and take action to better understand and address them. Scholars and advocates have focused on scrutinizing existing funding policies and models and identifying opportunities to make them more equitable and effective. Several states have embarked on reviews of their community college funding models, and Texas has completely redesigned its funding model. Notably, Texas policymakers recognized the importance of stabilizing funding mechanisms by providing supplemental funding to colleges whose ability to fund core operations is impaired by a lack of local funding or other factors. In doing so, they aimed to create more parity and/or equity across institutions within the state, particularly for colleges with more concentrated student needs. The increasing prevalence of equity components in state funding formulas is another encouraging policy trend, but more work is needed to understand how states can best design their funding formulas to promote greater access to and success in higher education for low-income and racially minoritized students.

Academic scholarship can play a key role in helping the community college sector adapt to its current circumstances by addressing three central policy questions.

1. What strategies and practices effectively serve diverse community college students with a range of academic and nonacademic needs, and what are the costs of scaling these approaches?

A key goal of community colleges is to support students through credential completion so they accrue benefits in the labor market. While this goal has been elusive for large shares of community college students, there is a growing body of evidence on effective policies and practices that can improve student outcomes in community colleges. A number of discrete interventions in areas such as developmental education (Bickerstaff et al., 2022) and advising (Karp et al., 2021) have been rigorously evaluated and demonstrated effectiveness. Some comprehensive reforms, such as ASAP, show large positive impacts on completion in rigorous evaluations (Miller & Weiss, 2022), and others, such as guided pathways, show promise in states and colleges that fully implement the model (Jenkins et al., 2024). Importantly, many of these evaluations include cost studies, which provide important information on the resource requirements and costs of these reforms for institutions. This type of scholarship must continue to grow, as it has the potential to inform the work of policymakers responsible for state finance policy and of advocates who aim to make community college funding more effective and equitable.

2. How can public higher education finance policy incentivize and support community colleges to innovate and implement evidence-based practices without undermining local autonomy?

Policymakers face a conundrum. As the body of evidence on effective policies and practices in community colleges grows, there is an opportunity to make state finance policy more prescriptive and to direct colleges to invest in proven and promising approaches. Prescriptive finance policies, however, would be incredibly unpopular and run counter to the autonomy institutional leaders need to have to deploy available financial resources in service of their strategic priorities and the needs of their communities. This suggests that redesigns to funding

models will need to incorporate strong upfront financial incentives for colleges to take up evidence-based approaches; the models will also need to subsidize robust implementation support. The tenets underlying tiered-evidence grantmaking, which has been used by federal agencies like the U.S. Department of Education and the National Science Foundation for nearly a decade, might provide inspiration to state policymakers (U.S. GAO, 2016). This approach provides larger sums of money to applicants pursuing programs with more evidence of effectiveness and smaller amounts to applicants pursuing less tested innovations. Critically, any tiered funding approach would have to protect the core operations of less resourced community colleges while investing in the institutional capacities required to effectively adopt and implement evidence-based programs.

3. How can local, state, and federal policymakers work collaboratively to invest in community college students and their success?

Reforms of state finance systems can help community colleges only to a limited degree if they do not also result in substantial increases in overall funding levels for public higher education. An expanded role of the federal government in community college funding may be necessary. The federal government is likely the only source of the level of investment called for by Goolsbee et al. (2019) to yield dramatic increases in the proportion of adults with college degrees or certificates. Prior to the pandemic, federal funding generally accounted for less than one sixth of total community college revenue, with much of it designated for student financial aid. Federal funding increased to 20% during the pandemic due to HEER funding, but state and local funding has always accounted for most community college revenue (Belfield et al., 2024b).

The HEER funding program opened a window to how federal funding could be used to improve equitable financing. The HEER funding formula ensured that institutions enrolling large

numbers of low-income students received substantially more funding than institutions serving fewer low-income students by weighting enrollments by Pell Grant receipt. Congress further appropriated HEER funding for institutions that enrolled underserved student populations, such as Historically Black Colleges and Universities and Tribally Controlled Colleges and Universities. Together, these provisions reflect the ability of the federal government to provide equitable funding based on student characteristics across institutions and states.

Community colleges provide affordable, accessible pathways to higher education for millions of students each year and are critical to state and national goals to enhance postsecondary attainment and economic growth. Yet, many institutions are routinely under-resourced and struggle to deliver on their mission. State funding remains a powerful force in shaping institutional decision making and performance and must be harnessed in service of improved and more equitable student outcomes. Federal funding can augment state funding in ways that give institutions flexibility to address student needs and adopt evidence-based practices. We do not believe significant improvements can be achieved without significant new investment, but we are heartened that some states are moving in this direction—and that some community colleges are implementing reforms designed to increase graduation rates and improve labor market outcomes, and eliminate disparities in these outcomes by income, race, and ethnicity.

1. References

Accelerating Recovery in Community Colleges Network. (n.d.). *Community colleges' spending of federal recovery funds.* https://ccrc.tc.columbia.edu/arccnetwork/projects/spending-of-federal-recovery-funds/

Acton, R., Cortes, K., & Morales, C. (2024). *Distance to opportunity: Higher education deserts and college enrollment choices.* Presented at the 2024 NBER Financing Higher Education conference. https://conference.nber.org/conf_papers/f191190.pdf

Azurdia, G., & Galkin, K. (2020). An eight-year cost analysis from a randomized controlled trial of CUNY's Accelerated Study in Associate Programs. MDRC. https://www.mdrc.org/sites/default/files/ASAP_Cost_Working_Paper_final.pdf

Bailey, T., Jaggars, S., & Jenkins, D. (2015). *Redesigning America's community colleges: A clearer path to student success*. Harvard University Press https://doi.org/10.4159/9780674425934

Baker, B., Di Carlo, M., & Oberfield, Z. (2023). *The source code: Revenue composition and the adequacy, equity, and stability of K-12 school spending.* The Albert Shanker Institute. https://files.eric.ed.gov/fulltext/ED629096.pdf

Baker, B., & Levin, J. (2017). *Estimating the real cost of community college*. The Century Foundation. https://production-tcf.imgix.net/app/uploads/2017/10/02113912/estimating-the-real-cost-of-community-college.pdf

Baum, S., & Johnson, M. (2015). *Student debt: Who borrows most? What lies ahead?* Urban Institute. https://www.urban.org/research/publication/student-debt-who-borrows-most-what-lies-ahead

Baum, S., & Cohn, J. (2023). *Variation in community college funding levels: A focus on equity*. Urban Institute. https://www.urban.org/research/publication/variation-community-college-funding-levels#:~:text=We%20find%20the%20following%3A,funding%20levels%20across%20demographic%20groups.

Belfield, C., & Bailey, T. (2017). *The labor market returns to sub-baccalaureate college: A review.* Center for Analysis of Postsecondary Education and Employment. https://capseecenter.org/labor-market-returns-sub-baccalaureate-college-review

Belfield, C. (2020). *The economics of Guided Pathways: Cost, funding, and value.* CCRC Working Paper 123. https://www.ibhe.org/assets/files/Technical/2023/Jan/5/CCRC_economics-guided-pathways-cost-funding-value.pdf

Belfield, C., Brock, T., Fink, J., & Jenkins, D. (2024a). *Aftershocks: How the pandemic affected community college finances.* The Mixed Methods Blog. Community College Research Center. https://ccrc.tc.columbia.edu/easyblog/aftershocks-how-pandemic-affected-community-college-finances.html

Belfield, C., Brock, T., Fink, J., & Jenkins, D. (2024b). *How HEER funding rescued community colleges from the pandemic.* Accelerating Recovery in Community Colleges Network Brief. Community College Research Center. https://ccrc.tc.columbia.edu/media/k2/attachments/how-heer-funding-rescued-community-colleges-pandemic.pdf

Betts, J. R., & McFarland, L. L. (1995). Safe port in a storm: The impact of labor market conditions on community college enrollments. *Journal of Human resources*, 741-765.

Bickerstaff, S., Beal, K., Raufman, J., Lewy, E. B., & Slaughter, A. (2022). *Five principles for reforming developmental education: A review of the evidence.* Center for the Analysis of Postsecondary Readiness.

Bloom, D. E., Hartley, M., & Rosovsky, H. (2007). Beyond private gain: The public benefits of higher education. In: Forest, J.J.F., Altbach, P.G. (Eds.), *International Handbook of Higher Education* (pp. 293–308). Springer International Handbooks of Education. https://doi.org/10.1007/978-1-4020-4012-2_15

Bound, J., Braga, B., Khanna, G., & Turner, S. (2019). *Public universities: The supply side of building a skilled workforce.* NBER Working Paper 25945. https://www.nber.org/papers/w25945

Brock, T., & Diwa, C. (2021). Catastrophe or catalyst? Reflections on COVID's impact on community colleges. *Journal of Postsecondary Student Success*, *1*(2), 2–17. https://doi.org/10.33009/fsop_jpss129901

Brock, T., Mateo, A., & Ray, A. (in press). Community colleges: History, performance, and paths to improvement. *Handbook of Education.* American Educational Research Association.

Carnevale, A., Gulish, A., & Strohl, J. (2018). *Educational adequacy in the twenty-first century*. The Century Foundation. https://production-tcf.imgix.net/app/uploads/2018/04/01160741/TCF_EducationalAdequacyReport.pdf

Causey, J., Cohen, J., Lee, S., Ryu, M., & Shapiro, D. (2023). *Current Term Enrollment Estimates Expanded Edition: Fall 2022*. National Student Clearinghouse Research Center.

The Century Foundation. (2019). *Recommendations for providing community colleges with the resources they need.* The Century Foundation. https://tcf.org/content/report/recommendations-providing-community-colleges-resources-need/

Chakrabarti, R., Gorton, N., & Lovenheim, M. (2020). *State investment in higher education: Effects on human capital formation, student debt, and long-term financial outcomes of students.* NBER Working Paper 27885. https://www.nber.org/papers/w27885

Chetty, R., Friedman, J. N., Saez, E., Turner, N., & Yagan, D. (2017). *Mobility report cards: The role of colleges in intergenerational mobility* (NBER Working Paper No. 23618). National Bureau of Economic Research. https://www.nber.org/papers/w23618

Chingos, M., & Blagg, K. (2017). *Do poor kids get their fair share of school funding?* Urban Institute. https://www.urban.org/sites/default/files/publication/90586/school_funding_brief_1.pdf

Community College Research Center. (n.d.). *Paving the way to equitable, adequate, and effective community college funding.* https://ccrc.tc.columbia.edu/research-project/equitable-community-college-funding.html

Cummings, K., Laderman, S., Lee, J., Tandberg, D., & Weeden, D. (2021). *Investigating the impacts of state higher education appropriations and financial aid.* State Higher Education Executive Officers Association. https://sheeo.org/wp-content/uploads/2021/05/SHEEO_ImpactAppropationsFinancialAid.pdf

Daniels Sarica, H., Monahan, T., & Anderson, M. (2024). *An analysis of federal pandemic relief funding at community colleges.* Accelerating Recovery in Community Colleges Network. Community College Research Center.

https://ccrc.tc.columbia.edu/media/k2/attachments/analysis-federal-pandemic-relief-funding-community-colleges.pdf

Delaney, J., & Doyle, W. (2011). State spending on higher education: Testing the balance wheel over time. *Journal of Education Finance, 36*(4), 343-368. https://www.jstor.org/stable/23018116

Deming, D., & Walters, C. (2018). *The impact of state budget cuts on U.S. postsecondary attainment.* https://scholar.harvard.edu/files/ddeming/files/dw_feb2018.pdf

Dougherty, K., Jones, S., Lahr, H., Natow, R., Pheatt, L., & Reddy, V. (2014). Performance funding for higher education: Forms, origins, impacts, and futures. *Annals of the American Academy, 655*(Sept 2014), 163-184.

Dynarski, S. M., & Scott-Clayton, J. E. (2006). The cost of complexity in federal student aid: Lessons from optimal tax theory and behavioral economics. *National Tax Journal*, *59*(2), 319-356.

Dynarski, S., Scott-Clayton, J., & Wiederspan, M. (2013). Simplifying tax incentives and aid for college: Progress and prospects. *Tax policy and the economy*, *27*(1), 161-202.

Education Commission of the States. (n.d.). *State information request - School finance equalization.* Education Commission of the States. https://www.ecs.org/wp-content/uploads/State-Information-Request_-School-Finance-Equalization.pdf

Education Commission of the States. (2021). *State information request - Local funding for community colleges.* Education Commission of the States. https://www.ecs.org/wp-content/uploads/State-Information-Request_Local-Funding-for-Community-Colleges.pdf

Elharake, J. A., Akbar, F., Malik, A. A., Gilliam, W., & Omer. S. (2023). Mental health impact of COVID-19 among children and college students: A systematic review. *Child*

Psychiatry & Human Development, 54, 913-925. https://doi.org/10.1007/s10578-021-01297-1

Fahle, E., Kane, T. J., Reardon, S. F., & Staiger, D. O. (2024). *The first year of pandemic recovery: A district-level analysis.* Education Recovery Scorecard. https://educationrecoveryscorecard.org/wp-content/uploads/2024/01/ERS-Report-Final-1.31.pdf

Fink, J., & Jenkins, D. (2020, April 30). Shifting sectors: How a commonly used federal datapoint undercounts over a million community college students. *Community College Research Center, Mixed Methods Blog.* https://ccrc.tc.columbia.edu/easyblog/shifting-sectors-community-colleges-undercounting.html

Fink, J., & Jenkins, D. (2023). *Rethinking dual enrollment as an equitable on-ramp to a career-path college degree program after high school.* Community College Research Center. https://ccrc.tc.columbia.edu/media/k2/attachments/revamping-dual-enrollment-equitable-college-degree-paths_1.pdf

Fountain, J. H. (2019). *The postsecondary undergraduate population: Student income and demographics* (CRS Report R45686). Congressional Research Service. https://sgp.fas.org/crs/misc/R45686.pdf

Gilbert, C., & Heller, D. E. (2010, November 17–20). *The Truman Commission and its impact on federal higher education policy from 1947 to 2010* [Conference session]. Association for the Study of Higher Education Annual Conference, Indianapolis, IN, United States. https://edwp.educ.msu.edu/te/wp-content/uploads/sites/3/2012/03/ASHE_2010_Gilbert_Heller.pdf

Goolsbee, A., Hubbard, G., & Ganz, A. (2019). *A policy agenda to develop human capital for the modern economy.* Aspen Institute Working Paper. https://www.aspeninstitute.org/longform/expanding-economic-opportunity-for-more-americans/a-policy-agenda-to-develop-human-capital-for-the-modern-economy/

Hanushek, E., & Lindseth, A. (2009). *Schoolhouses, courthouses, and statehouses*. Princeton University Press.

Irwin, V., Bailey, T. M., Panditharatna, R., and Sadeghi, A. (2024). Projections of Education Statistics to 2030 (NCES 2024-034). U.S. Department of Education, Washington, DC: National Center for Education Statistics. Retrieved June 13, 2024 from https://nces.ed.gov/programs/pes/.

Jenkins, D., Lahr, H., & Brock, T. (2024). *Lessons from two major evaluations of guided pathways.* CCRC Research Brief. Community College Research Center. https://ccrc.tc.columbia.edu/publications/lessons-two-major-evaluations-guided-pathways.html

Kahlenberg, R. (2015). *How higher education funding shortchanges community colleges.* The Century Foundation. https://tcf.org/content/report/how-higher-education-funding-shortchanges-community-colleges/

Kane, T. J. (1995). *Rising public college tuition and college entry: How well do public subsidies promote access to college?* NBER Working Paper No. 5164. https://www.nber.org/system/files/working_papers/w5164/w5164.pdf

Kane, T. J., & Rouse, C. E. (1995). Labor market returns to two- and four-year colleges: Is a credit a credit and do degrees matter? *American Economic Review, 85*(3), 600–614. https://www.jstor.org/stable/2118190

Kaplan, J., & Saucedo, E. (2024, February). *What is Proposition 98 and how does the state budget shortfall affect it?* California Budget & Policy Center. https://calbudgetcenter.org/resources/what-is-proposition-98-and-how-does-the-state-budget-shortfall-affect-it/#:~:text=98%20is%20a%20constitutional%20amendment,revenue%20and%20local%20property%20taxes.

Karp, M., Ackerson, S., Cheng, I., Cocatre-Zilgien, E., Costelloe, S., Freeman, B., Lemire, S., Linderman, D., McFarlane, B., Moulton, S., O'Shea, J., Porowski, A., & Richburg-Hayes, L. (2021). *Effective Advising for Postsecondary Students: A Practice Guide for Educators.* National Center for Education Evaluation and Regional Assistance (NCEE), Institute of Education Sciences, U.S. Department of Education. https://ies.ed.gov/ncee/wwc/Docs/PracticeGuide/WWC-practice-guide-advising-full-text-revised2.pdf

Kelchen, R., Lingo, M., Baker, D., Rosinger, K., Ortagus, J., & Wu, J. (2023). *A typology and landscape of state funding formulas for public colleges and universities from 2004 to 2020.* InformEd States Higher Education Policy Initiative. https://static1.squarespace.com/static/5d9f9fae6a122515ee074363/t/65806fa9bb51333f6f90475b/1702916010095/ISPaper_TypologyandLandscapeofStateFundingFormulas_PublicCollegesandUniversities_2004-2020.pdf

Kelchen, R., Ortagus, J., Rosinger, K., Baker, D., & Lingo, M. (2024). The Relationships Between State Higher Education Funding Strategies and College Access and Success. *Educational Researcher*, *53*(2), 100-110. https://doi.org/10.3102/0013189X231208964

Klempin, S. C., Griffin, S., Monahan, T. J., Anderson, M. N., & Brock, T. (2024). *Pandemic relief spending and recovery strategies: Findings From a survey of community colleges in six states.* Accelerating Recovery in Community Colleges Network and Community College Research Center.

Kolbe, T., & Baker, B. D. (2019). Fiscal equity and America's community colleges. *The Journal of Higher Education*, *90*(1), 111-149.

Lane, J. E., & Kivisto, J. A. (2008). Interests, information, and incentives in higher education: Principal-agent theory and its potential applications to the study of higher education governance. In Smart, J.C. (Eds.), *Higher education: Handbook of theory and research* (pp 141 179). https://doi.org/10.1007/978-1-4020-6959-8_5

Lee, S., & Shapiro, D. (2023). Completing college: National and state report with longitudinal data dashboard on six- and eight-year completion rates. National Student Clearinghouse Research Center. https://nscresearchcenter.org/wp-content/uploads/Completions_Report_2023.pdf

Legislative Analyst's Office. (2023). *The 2023-24 budget: California Community Colleges.* Legislative Analyst's Office. California State Legislature. https://lao.ca.gov/reports/2023/4695/CCC-Budget-022223.pdf

Levin, J., Baker, B., Lee, J., Atchison, D., & Kelchen, R. (2022). *An examination of the costs of Texas community colleges.* https://ies.ed.gov/ncee/rel/regions/southwest/pdf/REL_2023142.pdf

Linden, R. (2022). Understanding the student-centered funding formula: A primer on California community college finance. UC Davis Wheelhouse. https://education.ucdavis.edu/community-college-finance

Lingo, M., Kelchen, R., Rosinger, K., Baker, D., Ortagus, J., & Wu, J. (2023). *The landscape of state funding formulas for public colleges and universities (Revised).* InformEd States Higher Education Policy Initiative. https://static1.squarespace.com/static/5d9f9fae6a122515ee074363/t/6446df7a981da30ef202a70c/1682366330568/ISBrief_TheLandscapeofStateFundingFormulas_PublicCollegesUniversities_April2023.pdf

Lingo, M., Kelchen, R., Rosinger, K., Baker, D., Ortagus, J., & Wu, J. (2021). *The landscape of state funding formulas for public colleges and universities.* Policy Brief. InformEd States Higher Education Policy Initiative.

Long, B. T., & Kurlaender, M. (2009). Do community colleges provide a viable pathway to a baccalaureate degree? *Educational Evaluation and Policy Analysis, 31*(1), 30–53. https://doi.org/10.3102/0162373708327756

Ma, J., & Pender, M. (2023). *Trends in college pricing and student aid 2023.* College Board. https://research.collegeboard.org/media/pdf/Trends%20Report%202023%20Updated.pdf

Ma, J., Pender, M., & Welch, M. (2016). *Education pays 2016: The benefits of higher education for individuals and society.* College Board. https://files.eric.ed.gov/fulltext/ED572548.pdf

Ma, J., Pender, M., & Welch, M. (2019). *Education pays 2019: The benefits of higher education for individuals and society.* College Board. https://research.collegeboard.org/media/pdf/education-pays-2019-full-report.pdf

McFarlin, I., Martorell, P., & McCall, B. (2017). *Do public subsidies improve college attainment and labor market outcomes? Evidence from community college taxing district expansions.* Working Paper. https://drive.google.com/file/d/1kRioM16sZe5fuGUdGCcb9REqZZdCrRCq/view

Melguizo, T., Witham, K., Fong, K., & Chi, E. (2017). Understanding the relationship between equity and efficiency: Towards a concept of funding adequacy for community colleges. *Journal of Education Finance, 43*(2), 195–216. http://www.jstor.org/stable/45093659

MI School Data. (n.d.) *Community college data.* Center for Educational Performance and Information. Michigan Department of Education. Michigan Data Hub. Michigan .gov. https://www.mischooldata.org/community-college-data/

Miller, C., & Weiss, M. J. (2022). Increasing Community College Graduation Rates: A Synthesis of Findings on the ASAP Model From Six Colleges Across Two States. *Educational Evaluation and Policy Analysis*, *44*(2), 210-233. https://doi.org/10.3102/01623737211036726

Mitchell, M., Leachman, M., & Saenz, M. (2019). *State higher education funding cuts have pushed costs to students, worsened inequality*. Center on Budget and Policy Priorities. https://www.cbpp.org/sites/default/files/atoms/files/10-24-19sfp.pdf

Mountjoy, Jack. (2022). "Community Colleges and Upward Mobility." *American Economic Review*, 112 (8): 2580-2630. http://doi.org/10.1257/aer.20181756

Mullin, C. M., & Honeyman, D. S. (2008). The funding of community colleges: Formulas & governance. *Community College Journal of Research and Practice, 32*(7), 512-524, https://doi.org/10.1080/10668920701382518

National Center for Education Statistics. (2023a). Postsecondary Institution Expenses. *Condition of Education*. U.S. Department of Education, Institute of Education Sciences. Retrieved June 13, 2024, from https://nces.ed.gov/programs/coe/indicator/cue.

National Center for Education Statistics. (2023b). Price of attending an undergraduate institution. *Condition of Education.* U.S. Department of Education, Institute of Education Sciences. Retrieved August 4, 2023 from https://nces.ed.gov/programs/coe/indicator/cua

National Student Clearinghouse Research Center. (2024). *Current term enrollment estimates: Fall 2023 (Expanded Edition).* National Student Clearinghouse Research Center. https://nscresearchcenter.org/current-term-enrollment-estimates/

Odden, A. (2000). The new school finance: Providing adequacy and improving equity. *Journal of Education Finance, 25*(4), 467–487. http://www.jstor.org/stable/40691077

Odden, A., Picus, L., & Goetz, M. (2010). A 50-state strategy to achieve school finance adequacy. *Educational Policy, 24*(4), 628-654. DOI: 10.1177/0895904809335107.

Ohio Board of Regents. (2020). Ohio Higher Education SSI Funding Formula. https://highered.ohio.gov/data-reports/hei-system/hei-data-submission/hei-ssi-info

Ohio Department of Higher Education. (2024). *Enrollment.* Ohio Department of Higher Education. https://highered.ohio.gov/data-reports/key-topic-areas/dr-enrollment

Oreopoulos, P., & Salvanes, K. (2011). Priceless: The nonpecuniary benefits of schooling. *Journal of economic perspectives, 25*(1), 159-184. https://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.25.1.159

Ortagus, J. C., 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. https://doi.org/10.3102/0162373720953128

Ortagus, J., Baker, D., Rosinger, K., Kelchen, R., Morales, O., & Lingo, M. (2022). *The revenue implications of community colleges' reliance on local funding.* InformEd States Higher

Education Policy Initiative. https://static1.squarespace.com/static/5d9f9fae6a122515ee074363/t/639a4d24d478053d45f601f9/1671056677780/ISPaper_RevImplicationsofCCCollegesRelianceLocalFunding.pdf

Ortagus, J., Kelchen, R., Rosinger, K., Chu, G., & Lingo, M. (2021a). *The unequal impacts of performance-based funding on institutional resources in higher education.* InformEd States Higher Education Policy Initiative. https://static1.squarespace.com/static/5d9f9fae6a122515ee074363/t/619e68d8ce6b7b31807b116a/1637771480975/InformEdStates_Brief_PBFandInstitutionalResources.pdf

Ortagus, J., Rosinger, K., Kelchen, R., Voorhees, N., & Chu, G. (2021b). *A national analysis of the impact of performance-based funding on completion outcomes among underserved students.* InformEd States Higher Education Policy Initiative.

Quittmeyer, R., & Veach, M. (2023). Outcomes based funding formula update. Legislative Brief. Tennessee Comptroller of the Treasury. https://comptroller.tn.gov/content/dam/cot/orea/advanced-search/2023/OBF2023Update.pdf

Reuben, J. A., & Perkins, L. (2007). Introduction: Commemorating the sixtieth anniversary of the President's Commission report, Higher Education for Democracy. *History of Education Quarterly, 47*(3), 265–276. https://doi.org/10.1111/j.1748-5959.2007.00100.x

Romano, R., & Palmer, J. (2023). Funding adequacy and the community college. *New Directions for Community Colleges, 2023*(203), 165-172. https://doi-org.ezp-prod1.hul.harvard.edu/10.1002/cc.20595

Scrivener, S., Weiss, M., Ratledge, A., Rudd, T., Sommo, C., & Fresques, H. (2015). *Doubling graduation rates: Three-year effects of CUNY's Accelerated Study in Associate Programs (ASAP) for developmental education students.* MDRC. https://www.mdrc.org/sites/default/files/doubling_graduation_rates_fr.pdf

Shaw, K., Asher, L., & Murphy, S. (2023). *Mapping community college finance systems to develop equitable and effective finance policy.* HCM Strategists. https://ccrc.tc.columbia.edu/media/k2/attachments/mapping-community-college-finance-systems-develop-equitable-effective-policy.pdf

Soler, M. C. (2019). *Updating the national landscape: State adoption of community college baccalaureate degrees* (New Baccalaureate Series, Data Note 3). University of Washington, Community College Research Initiatives. https://www.washington.edu/ccri/2019/11/18/datanote3-ccb/

Stanton-Salazar, R. (1997). A social capital framework for understanding the socialization of racial minority children and youths. Harvard Educational Review, 67(1), 1-41. https://doi.org/10.17763/haer.67.1.140676g74018u73k

State University of New York. (2024). *SUNY fast facts.* State University of New York. https://www.suny.edu/about/fast-facts/

Tandberg, D., & Hillman, N. (2014). State higher education performance funding: Data, outcomes, and policy implications. *Journal of Education Finance, 39*(3), 222-243.

Tennessee Higher Education Commission. (2021). *Tennessee Higher Education Fact Book 2020-2021*. Tennessee Higher Education. Tennessee Student Assistance Corporation. https://www.tn.gov/content/dam/tn/thec/bureau/research/other-research/factbook/Fact%20Book%202020-2021_Full%20Draft_Suppressed.pdf

Texas Higher Education Coordinating Board. (2024). *Community college formula funding model - fiscal year 2025*. Texas Higher Education Coordinating Board. https://reportcenter.highered.texas.gov/reports/fiscal/community-college-formula-funding-model-fiscal-year-2025/

Thelin, J. R. (2004). *A history of American higher education.* Johns Hopkins University Press.

Tollefson, T. A. (2009). Community college governance, funding, and accountability: A century of issues and trends. *Community College Journal of Research and Practice, 33*(3-4), 386-402, https://doi.org/10.1080/10668920802580481

U.S. Bureau of Labor Statistics. (2023). *Earnings and unemployment rates by educational attainment, 2022*. https://www.bls.gov/emp/chart-unemployment-earnings-education.htm

U.S. Government Accountability Office. (2016). *Tiered evidence grants.* https://www.gao.gov/products/gao-16-818

Velasco, T., Fink, J., Jenkins, D., & Bedoya, M. (2024). *Tracking transfer: Community college effectiveness in broadening bachelor's degree attainment.* Community College Research Center. https://ccrc.tc.columbia.edu/media/k2/attachments/tracking-transfer-community-college-effectiveness.pdf

Vigdor, J. (2024). *The ebbing tide: How will higher education adapt to demographic change?* Presented at the 2024 NBER Financing Higher Education conference. https://conference.nber.org/conf_papers/f191185.pdf

Ward, J. D., Pisacreta, E. D., Weintraut, B., & Kurzweil, M. (2020). An overview of state higher education funding approaches: Lessons and recommendations. Ithaka S+R. https://doi.org/10.18665/sr.314511

Webber, D. A. (2017). State divestment and tuition at public institutions. *Economics of Education Review*, *60*, 1-4, https://doi.org/10.1016/j.econedurev.2017.07.007

Wood, S. H. (1987). *The people's legacy: A history of Joliet Junior College 1901–1984.* Joliet Junior College Foundation. https://archive.org/stream/peopleslegacyhis00susa/peopleslegacyhis00susa_djvu.txt

Wood, J. L., & Harris, F. (2022). Differences in self-reported GPA for students experiencing insecurities. *Community College Journal of Research and Practice, 46*(4), 288-291. https://doi.org/10.1080/10668926.2020.1835746

Workgroup on CTE Cost Analysis. (2023). *Incremental costs in career and technical education*. American Institutes for Research, Career and Technical Education Research Network.

Zielak, P. (2022). State of Michigan House Fiscal Agency. https://www.house.mi.gov/hfa/PDF/Alpha/Fiscal_Brief_CC_Performance%20Funding_Formula_FY23_Nov15.pdf