Financing Community Colleges: Current Landscape and Future Directions

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

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, Texas, Michigan, New York, Ohio, and Tennessee 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 Funds (HEERF), which represented 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.

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

I. Introduction

Community colleges play a critical and unique role in the U.S. higher education system. There are nearly 1,000 public two-year colleges that together enroll more than 5 million students (37% of U.S. college students) per academic year. 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. 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-cost. 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, 2023). With relatively low tuition revenue per student, community colleges depend heavily on funding from state and local governments and other sources, yet many states have substantially cut appropriations to public colleges over time. Baum and Johnson (2015) report a decline of approximately 25% in state appropriations in real terms on a full-time equivalent per-student (FTE) 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 typically much more constrained in their ability to set tuition levels (and do not have the option of increasing the proportion of students paying out-of-state tuition).

Accounting for all sources of funding, community colleges operate on average with less than one third of the funds available to public four-year colleges per FTE student: $12,430 versus $38,560 (2019-20 academic year).[1] While the gap may be explained in part by differences in faculty compensation and educational mission and facilities, students who attend community colleges are arguably in greater need of academic and nonacademic support than students who attend four-year institutions (Kolbe & Baker, 2019).

The onset of the COVID-19 pandemic provided an unprecedented challenge to the funding systems for community colleges because it led to a sudden economic downturn paired with sudden, steep enrollment declines. This was atypical in that usually community college enrollment increases when the employment rate decreases (i.e., the relationship between enrollment and the economy is countercyclical) (e.g., Betts &McFarland, 1995). From fall 2019 to fall 2021, community college enrollments dropped by more than 15% and revenue from tuition and fees fell sharply as enrollments dropped by more than 15 percent (National Student Clearinghouse Research Center, 2024). The Coronavirus Aid, Relief, and Economic Security (CARES) Act and subsequent legislation, Congress injected $4.6 trillion into the U.S. economy, including nearly $25 billion for community colleges through the Higher Education Emergency Relief (HEER) Fund (Jenkins & Fink, 2020; Daniels et al., 2024). This infusion more than compensated for lost revenue from tuition and fees, 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 2023 (Daniels et al., 2024).

With the worst of COVID now behind them—and HEER funding no longer available—community colleges face three major challenges to their funding models. First, they must find

[1] CCRC calculation using data from the Integrated Postsecondary Education Data System (IPEDS).

ways to continue improving the delivery of high-quality education, including some support for students' basic needs, despite the constraints of declines in state appropriations and the need to keep tuition and fees at a level that students can afford. Second, there is growing interest in performance-based funding models that link some portion of community college funding to outcomes like degree completion rates, which are influenced by many factors, including some that are outside of colleges' control (e.g., local labor markets and students' academic preparedness when they enter college). Third, like other higher education institutions, community colleges are facing a demographic cliff. The National Center for Education Statistics (NCES) projects a decade of declines in high school graduates on a yearly basis starting in 2025, which would likely reduce demand for community colleges in general (though NCES still projects a greater number of high school graduates in 2030 than in 2012-2013). Together, these challenges may create a cycle of unintended consequences in which community colleges may be forced to reduce or eliminate the very programs and services that make them attractive to prospective students, leading to further enrollment declines and perhaps even closure.

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 how these institutions are funded and what financing strategies may be better suited to promoting equitable student success. To address these issues, this paper asks four main questions: First, what has prior research shown to be the relationship between institutional funding and performance? Second, how do the funding models in selected states vary and affect colleges' ability to navigate the current conditions and improve student success? Third, what do colleges' uses of HEER funding reveal about their fiscal needs and

priorities? And fourth, what are the implications for policymakers and researchers moving forward?

The paper 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 frompast 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. 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 and other sources of revenue to weather the pandemic and how they are planning for the future. Section VI builds on these results to discuss the outlook for community college finance, as well as policy and research implications. Section VII concludes.

II. Community College Mission, Students, and Performance

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 leading universities championed the junior college model so that they could place more emphasis on research and professional training rather than general education (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 complete the shift from a wartime to a peacetime economy. The Presidential Commission on Higher Education, 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 is credited with introducing *community colleges* into the lexicon and called for federal funding to address regional and local demands for higher education and vocational training. The Commission's recommendations had little effect on federal policy at the time, but influenced thinking among 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 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)—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 tied to specific occupations or 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 like 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.

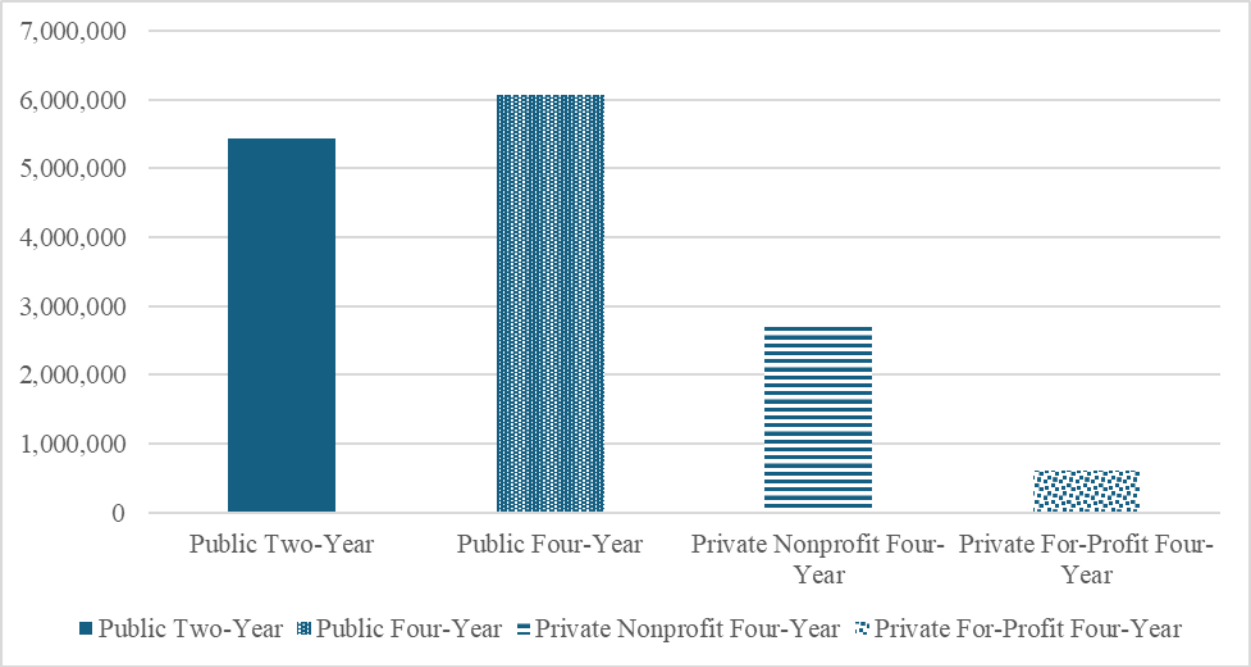
The emergence of the CCB has complicated the traditional definition of a community college as a two-year public institution. The National Center for Education Statistics classifies CCB-granting institutions as four-year public institutions, even though the CCB usually accounts for a small fraction of 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 maintain their community college identity and mostly award associate degrees (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.

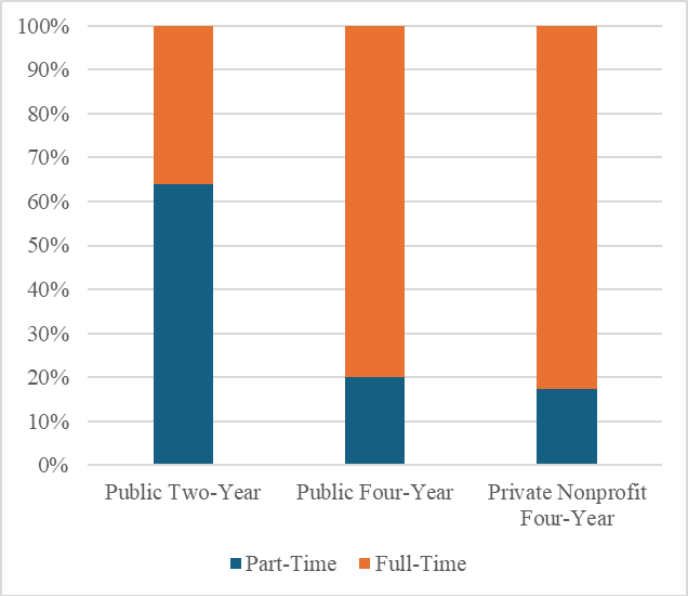
Figure 2 compares undergraduate enrollment in the three major sectors of higher education by full-time/part-time status (for simplicity, we exclude enrollments at private for-profit colleges). The difference in enrollment status across higher education sectors is striking: At public two-year institutions, 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).

Another important difference is shown in Figure 3: 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 traditional-age college students.

Figure 2.

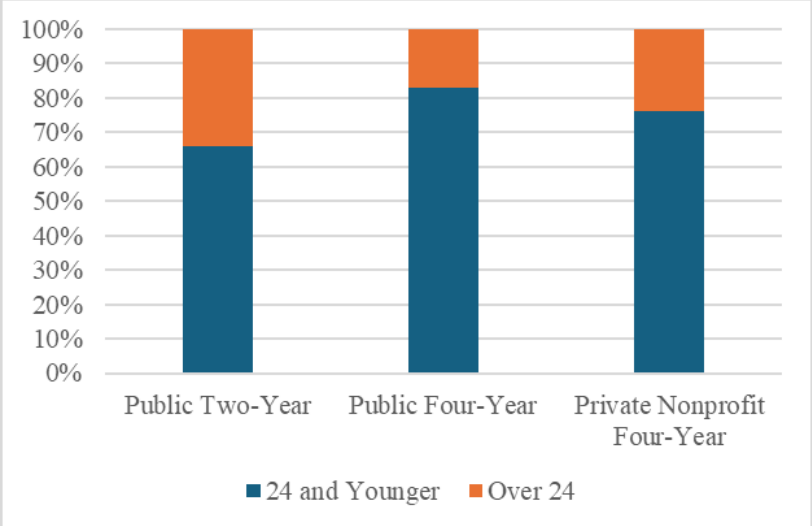
Share of Enrollment by Sector by Full- and Part-Time Status



Source: Causey et al., 2023. Public Two-Year includes CCB-granting institutions.

Figure 3.

Share of Student Enrollments by Sector and Age

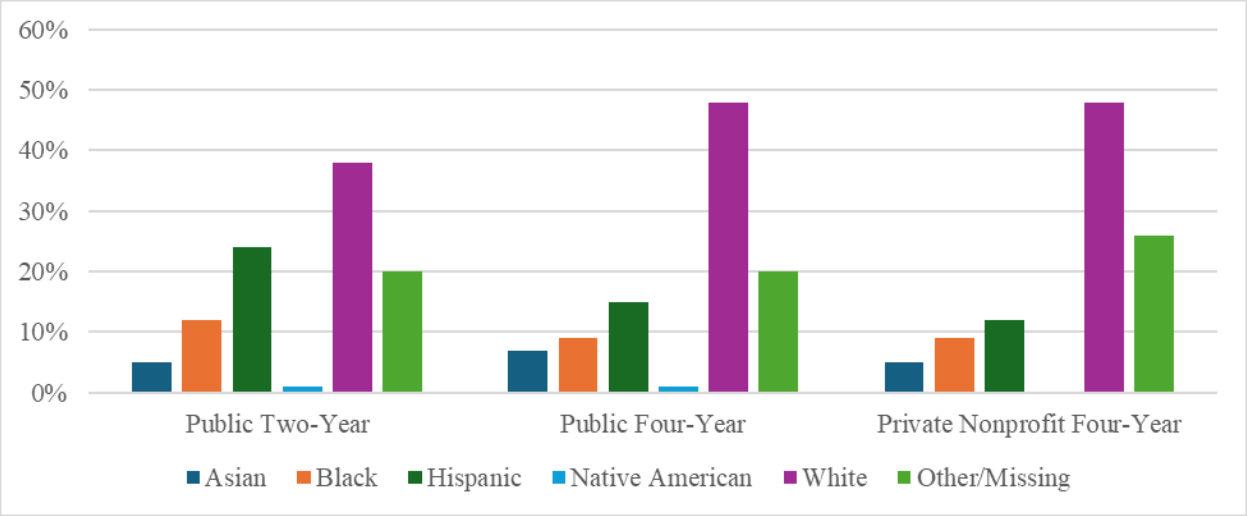


Source: Causey et al., 2023. Public Two-Year includes CCB-granting institutions.

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. Not shown on the chart, women undergraduates are in the majority across all higher education sectors (56% to 58%).

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 percent of federal poverty guidelines (or roughly $50,000 per year for a family of four), compared to 46%

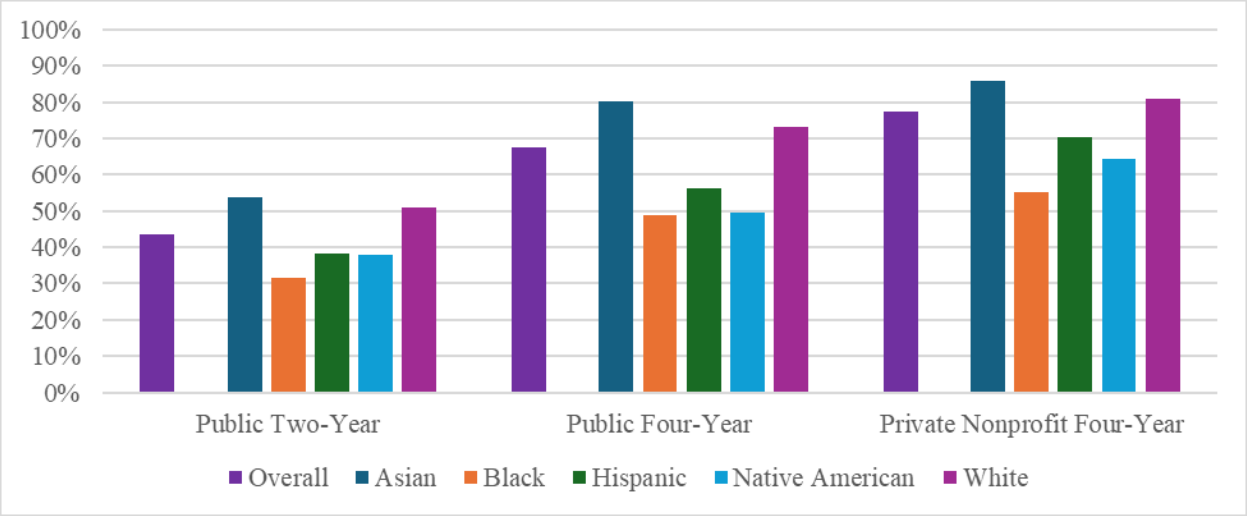
of students attending public four-year institutions and 42% of students attending private four-year institutions. The Census data also show that students from low-income families are more likely to attend open-access or minimally selective institutions than more selective institutions, public or private (Fountain, 2019).

B. Student Outcomes

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 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 (see Figure 5).

Figure 5.

Six-Year Completion Rates by Sector



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

In addition, there are 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. Finally, there are gaps by

gender and age group. Male students at community colleges are less likely to earn credentials than female students (4% 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).

Only a small fraction of community college students transfer to a four-year institution. An analysis of NSCRC data shows that one-third of degree-seeking students who begin at a community college accomplish this goal within a six-year period and that an even smaller number (16%) earns a bachelor's degree within six years. 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).

Students who attend community college to improve their employment prospects generally derive some economic benefit, though it is hard to prove a causal effect. Mountjoy (2021) proposed and implemented an instrumental variables approach that combines distance from home to (1) nearest four-year college and (2) nearest community college; using administrative data from Texas, Mountjoy's approach provides plausibly causal estimates that indicate significant wage gains for attending community colleges, but only for students on the margin between attending community college and not college at all. These results are broadly consistent with a longstanding prior literature that relied on less rigorous identification strategies (see, for example, Kane and Rouse (1995), Belfield and Bailey (2017), U.S. Bureau of Labor Statistics (2023)).

Finally, there is evidence that community colleges—or at least *high performing* community colleges—increase intergenerational income mobility. Chetty et al. (2017) examined education and income tax records for 30 million individuals between 1999 and 2013 and found

that some community colleges and mid-tier public universities 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 call for more research to identify the policies and practices that lead to these outcomes and conclude that channeling more funding to institutions like these may offer a scalable strategy to increase upward mobility for larger numbers of students.

III. Community College Revenues and Funding Models

In part reflecting the multi-dimensional and evolving mission of community colleges, funding for community colleges is a complex and varied process (Ward et al., 2020). Nationally, about half of all funding for community colleges comes from state appropriations, whereas federal investments generally represent a small source (5% to 15%) of their revenue. Community colleges also receive funding directly from students, in the form of tuition and fees; nationally, tuition and fees represent about 28% of total revenue for community colleges (calculated from IPEDS data). 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 2023-24; 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 four-year university sector (Deming & Walters, 2018; Bound et al., 2019); this has also been replicated in the context of community colleges (Chakrabarti et al., 2020). 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 (Cummings et al., 2021; Bound et al., 2019; 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, in particular to the disservice of institutions in rural communities and institutions serving larger shares of low-income students (Ortagus et al., 2022). Additionally, tuition and fees are capped in some states. For example, in California, community colleges are explicitly restricted from raising tuition above a statewide limit ($46 per credit hour).

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, and 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). Lingo et al. (2023) bucket community college funding formulas into three categories based on their funding allocation mechanisms:

(1) Traditional models, wherein institutions receive similar increases or decreases in allocations regardless of specific institutional characteristics (such as location), inputs (such as enrollments), or outputs (such as completions). These are sometimes referred to as base or incremental models.

(2) Incentive models, wherein institutions receive funding based on specific institutional inputs (usually enrollment) or outputs (such as retention or completion rates). These are oftentimes called performance- or outcomes-based models.

(3) Hybrid models, wherein institutions receive funding based on some combination of factors, including base funding as well as funding tied to enrollments and/or student outcomes.

Baum and Cohn (2023) conclude that traditional funding models are often inequitable 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 (like 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).

Lingo et al. (2023) found that between fiscal years 2004 and 2020, the number of two-year college systems with traditional models decreased from 20 to nine (a 54% decrease), while the number of systems with hybrid models increased from 26 to 36 (a 41% increase). The number of systems tying funding for two-year colleges to base allocations, student enrollments, and student outcomes rose from two to 17 (Lingo et al., 2023). During the same time period, 26 systems added an equity component to their two-year college funding formula (Kelchen et al., 2023).

Viewed through the principal-agent framework, these shifts indicate that states initially viewed their contracts with community colleges as being 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, potentially as a reaction to low completion rates in community colleges (given the social benefits of higher education tend to follow degree attainment rather than simply enrollment). Equity components represent both a desire 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 achieving economies of scale and the economic constraints in particular localities. The variability in institutional contexts and the dynamics of funding and cost intersections illustrate the complexity of community college finance and the challenge of incentivizing institutional behavior statewide via a single funding formula.

While blunt, funding formulas are the key mechanism by which states can invest in community colleges and incentivize them to improve performance. In particular, performance- (or outcomes-) based funding reflects an attempt on the part of states to prompt community colleges to improve their efficiency and production of degrees, often when faced with popular opposition to taxes and questions about the value of higher education (Dougherty et al., 2014). States implementing performance-based funding tie at least part of community college funding to student outcomes, including retention, credit accumulation, and credential completion (Dougherty et al., 2014; Kelchen et al., 2023). 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).

Persistently low community college attainment suggests the dominant funding approaches are not working. 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

get 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). States may conduct cost studies to determine what levels of funding would be adequate, taking into account factors such as teacher salaries and recommended class sizes, instructional materials, technology, facilities, and others. Some scholars have argued that a similar framework may be useful for designing community college finance (Baker & Levin, 2017; Kahlenberg, 2015; Melguizo et al., 2017; The Century Foundation, 2019; 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 outcomes be assessed as degree completion within 150 percent of expected completion, meeting some income threshold after completion, reaching a 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, state constitutional education clauses apply to a compulsory K-12 education, not higher

education, meaning there is no imperative for states to ensure community college students reach those outcomes (Melguizo et al., 2017). 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 successfully 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 complete a degree and attain an appropriate job, including basic needs insecurities (Wood & Harris, 2022), a lack of trusting relationships with teachers, 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) apply 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 estimate to equal the "expected share of jobs requiring advanced skills in that year." They proceed in two stages. First, they compute that additional funding of $11.9 billion per year would equalize funding for community college and four-year public college students on a per FTE basis. Next, they use 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 reform to provide additional structure and support for students (Bailey et al., 2015), but such reforms are costly and require considerable institutional will. 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 percent of the typical college's annual budget. There have also been several positive evaluations of the effects of the Accelerated Study in Associate Programs (ASAP), which offers community college students 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 relatively high net cost per student of $13,838 during its two-year duration plus an additional $9,162 in follow-up costs until degree completion (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 (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 based on student characteristics—for example, the estimated cost for a first generation student is almost $15,000 (Levin et al., 2022). While the specific cost of an adequate community

college education is difficult to estimate, what is clear is that community colleges struggle to achieve their multifaceted missions and serve the needs of their students with the financial resources they have (The Century Foundation, 2019).

As with "adequacy," funding "equity" is similarly challenging to translate to the community college context. Equity in K-12 finance redresses variation in the available tax base across school districts as well as directing additional funding towards students with more costly educational needs. In the K-12 context, state and federal funding often counter disparities in local funding and progressively direct funding towards 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 behave progressively by including equity components based on institutional (for example, rurality), programmatic (for example, programs aligned with high demand fields), and student characteristics (for example, 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

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). Moreover, these case studies are useful context for analyses presented later in this paper, 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 and represent an array of geographic, political, and financial contexts. They also reflect variation in size and governance structures. Three of these states were already under study in a project led by CCRC.[2] More recently, state leaders in each signaled an interest in questions of finance, agreeing to participate in a survey conducted by the Accelerating Recovery in Community Colleges (ARCC) Network that asked community colleges how they used HEER funds during the pandemic.[3]

A. Current Funding

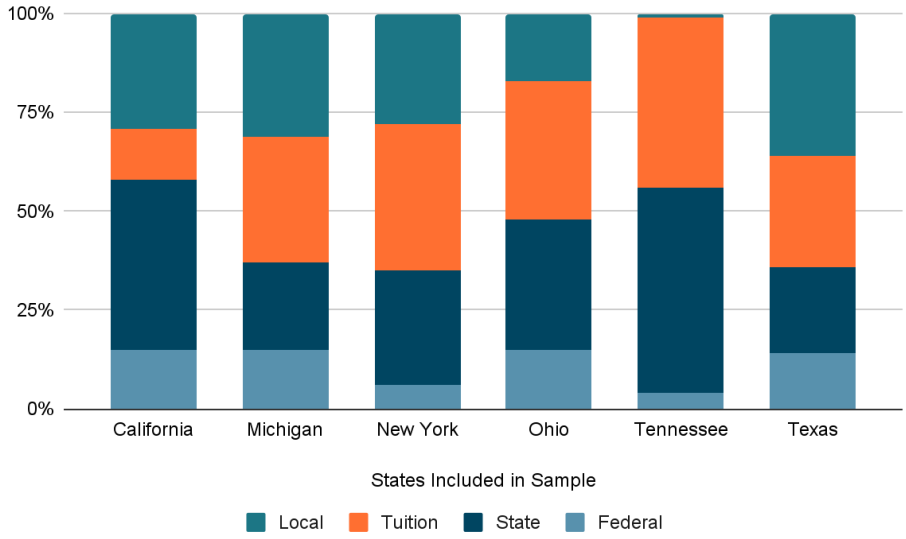
To gauge overall funding in the six states, we first present the proportion of funding per FTE student by source and state in 2019 using Integrated Postsecondary Education Data System (IPEDS) data (Figure 6). We use 2019 data for this comparison because it excludes federal pandemic relief funding and thus reflects a more typical revenue profile of each state than those of the last few years.

[2] Paving the Way to Equitable, Adequate, and Effective Community College Funding

[3] This ARCC analysis 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.

Figure 6.

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



Note. Data from IPEDS.

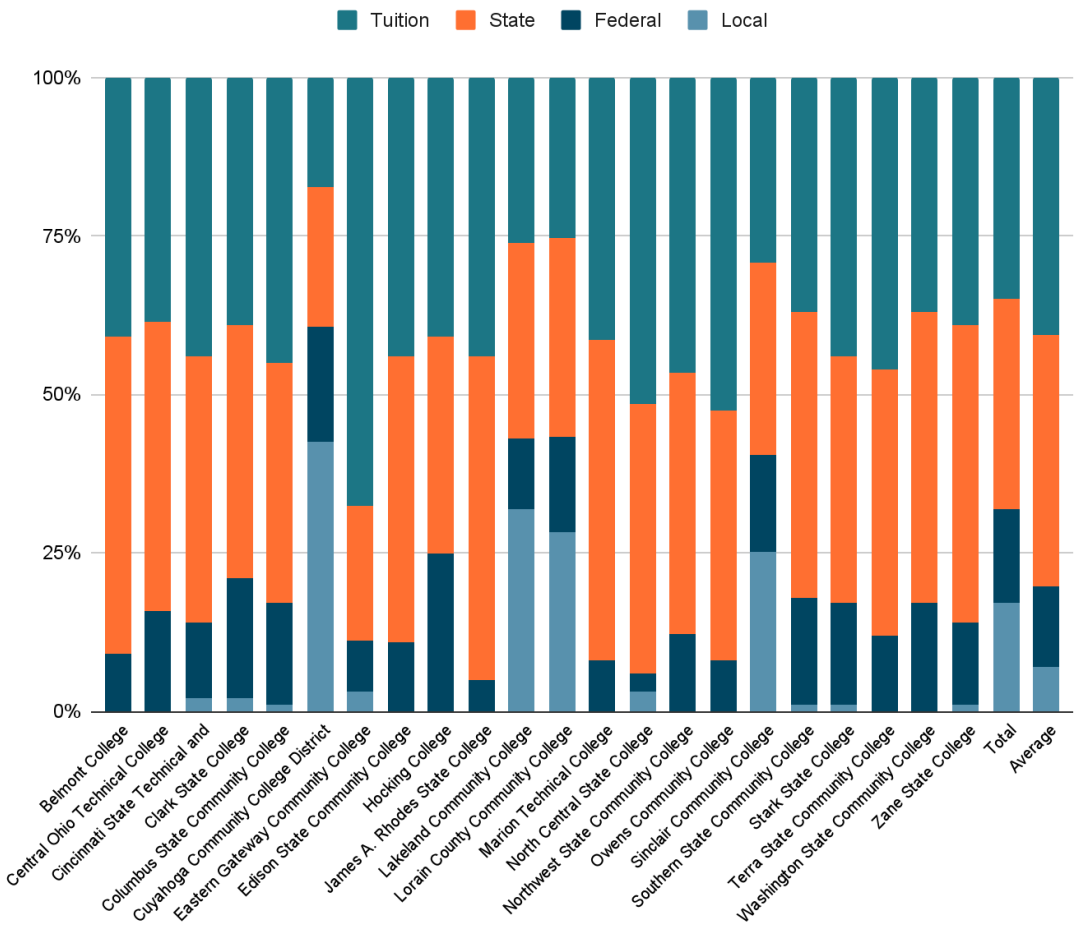
Among the states in our sample, Tennessee derives the most revenue from the state, followed by California and Ohio. Texas, under the funding model in place in 2019, has the lowest proportion of state funding. Local funding varies across states as well, with community colleges in Texas receiving the most local funding (36%) and colleges in Tennessee (1%) receiving the least. Tuition and fees, which nationally made 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%).

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. It received no local

funding. Ohio has significant intrastate variation in revenues, in part, due to variation in which colleges are able to derive local revenue.

Figure 7.

Distribution of Revenue by Source in Ohio (2019)



Note. Data from IPEDS.

B. Description of State Systems and Funding Models

We borrow from the existing literature to characterize the funding formulas within the focal states as *traditional*, *incentive*, and *hybrid*, as discussed previously, and compare their

underlying allocation mechanisms (e.g., Kelchen et al., 2023; Lingo et al., 2021; Lingo et al., 2023). By allocation mechanisms, we refer to particular features of the models, such as whether all or part of the state allocations to colleges are 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"). In Table 1, we adapt Lingo et al. (2023, 2021) to organize allocation mechanisms by funding formula type and provide definitions.

Table 1.

State Funding Formula Allocation Mechanisms

Traditional	
Base	Institutions receive a similar percentage point increase/decrease based on prior year's funding
Incentive	
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	Allocates all funding for a college based on performance metrics as outlined by the state or board
Enrollment + Performance	Combination of enrollment and performance mechanisms
Hybrid	
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).

To test the veracity of our understanding of each state's formula, we conducted member check interviews with policymakers in each state and solicited their input on preliminary

descriptions of the funding models and allocation mechanisms. The preliminary descriptions drew from primary data collected during the course of CCRC's project on community college finance and secondary sources (e.g., policy documents and existing research). The following state funding model summaries were then developed.

These summaries include descriptions of the community college sector in each state, presenting 2019 headcount and FTE enrollment and the percent change in enrollment on an FTE basis from 2019-2022. We draw on IPEDS data for the headcount and FTE data and adjust the two-year public sector to include community colleges that confer baccalaureate degrees (Belfield et. al., 2024a). Additionally, we include information about system or institutional governance.

California. California is home to 116 community colleges in 73 districts that enrolled approximately 2.2 million students (912,691 FTE students) in 2019. From 2019 to 2022, community college enrollment declined 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 chancellor's office. A *hybrid* state funding model called the Student Centered Funding Formula (SCFF) went into effect in 2018. SCFF combines components of incentive and traditional funding models. Colleges' 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%), enrollment of low-income and undocumented students (20%), and student success outcomes (10%). The SCFF includes equity weightings such that colleges that achieve specified success outcomes for low-income students receive 10% additional funding. It also includes stability funding intended to provide a cushion to college's budgets resulting from enrollment changes and other factors. Baum and Cohn (2023) observe that the resulting "state

funding levels are negatively correlated with local funding levels, reducing the variation in resources among institutions, but the range of combined funding is still large" on a per FTE student basis. Unlike other states, California has imposed an expenditure requirement for unrestricted (Proposition 98) funds. According to the state's 50 percent rule, colleges must spend at least half of this revenue on instructional expenses.

Michigan. There are 31 community colleges in Michigan that enrolled approximately 249,160 students (113,355 FTE students) in 2019 and account for about 49% of undergraduate enrollments in the state (MI School Data, n.d.). Between 2019-2022, 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 model can be categorized as *hybrid* in that it includes features of both traditional and incentive models. The formula includes 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%). 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 enrolled 266,872 students (or 165,331 FTE students) at

30 community colleges 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 enrolled approximately 126,023 students (72,106 FTE students) in seven community colleges 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.

While some of their funding sources are distinct, SUNY and CUNY have similar funding models that can be categorized as a *traditional*, primarily base (i.e., incremental) funding model. The state share of the model is calculated based on the lesser of two fifths (40%) of the net operating budget or net operating costs of the college and the the amount for funded full-time enrollments (budgeted or actual FTE students multiplied by a state determined amount) in eligible programs plus up to half of rental costs for space (State University of New York, 2021). Additionally, community colleges rely on local sponsor support to contribute funding for baseline operating costs and programmatic budget priorities. New York City is the local sponsor for CUNY. In recent years, community college funding levels have been bolstered by a funding floor (or maintenance of effort mechanism), where 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 amidst enrollment declines, particularly through the pandemic.

Ohio. In Ohio, there are 23 community colleges that enrolled approximately 229,976[4] students (or 99,011 FTE students) in 2019, comprising 25% of total undergraduate enrollments in the state (Ohio Department of Higher Education, 2024). Between 2019-2022, enrollment declined about 12%. Like 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. The funding formula for Ohio's community colleges is a performance based *incentive* model. Ohio's State Share of Instruction (SSI) model funds colleges based on three outcome measures: course completion (which constitutes 50% of funding), success points (25%), and completion milestones (25%) (Snyder et al., 2023). Course completion is determined by multiplying an average statewide cost-based calculation and 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 associates degree completions, certificate completions, and transfers with 12 or more credit hours (Snyder et al., 2023; Ohio Board of Regents, 2020). The SSI model uses a proportional distribution method for each set of outcomes, where 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. In Tennessee, there are 13 community colleges (excluding technical colleges) that 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).

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

From 2019-2022, community college enrollment declined 18%. The Tennessee Board of Regents (TBR) regulates but does not centrally govern the state's community colleges. The funding formula for Tennessee's community colleges is primarily driven by a performance based *incentive* model. The state collects performance data across 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 a given focus population) (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 then are compared to other institutions in the state. Finally, community colleges are awarded points based on student outcomes and higher-scoring institutions receive greater funding.

Roughly, 80% of performance points are assigned 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 populations of interest, including adult learners, low-income students, and academically underprepared students. When a student from one of the populations of interest achieves one of the outcomes, the state awards the college an 80% premium. The incentives grow larger as more students from these historically underserved groups achieve the outcomes. 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. Texas is home to 50 community colleges (excluding the 10-campus technical college system) that enrolled 1,088,133 students (419,817 FTE students) in 2019 or roughly 40%

of the state's undergraduate enrollment. From 2019-2022, community college enrollment declined 3%t, the smallest drop for these years in our sample. The Texas Higher Education Coordinating Board (THECB) regulates the state's community colleges. The THECB coordinates and regulates 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. House Bill 8 (HB 8) shifts the state's community colleges towards a performance based *incentive* model. 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. 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.[5] For the 2024 fiscal year, this was 23 of the 50 colleges. Baum and Cohn (2023) suggest that these targeted funds will particularly promote educational success for students "facing educational barriers" as well as those attending smaller colleges and rural institutions.

C. Comparative Analysis of State Funding Models

The states in our analysis vary by broad funding model categories—traditional (New York), incentive (Ohio, Tennessee, and Texas), and hybrid (California, Michigan)—and by allocation mechanism. Table 2 organizes our focal states first by the type of funding formula and

[5] 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.

then by funding allocation mechanism.

Table 2.

Features of State Community College Funding Formulas

	FUNDING MODEL	Traditional	Incentive			Hybrid	
		NY[1]	OH	TN	TX	CA	MI
Funding Allocation Mechanism	Base	(2)					
	Base+Performance						
	Base+Enrollment+Performance						
	Performance Only						
	Performance+Enrollment						
Equity	Equity-Focused Performance Measures						
	Equity-Focused Enrollment Measures						
	Institutional Stabilization Measures						
Other Components	Prioritization of In-Demand Fields						

Note. (1) NY includes the State University of New York and the City University of New York systems. (2) We categorize the NY funding formula as a traditional base model, as that is how it has operated in practice. It is important to note, however, that the formula includes an enrollment mechanism that becomes operational in certain circumstances.

There is also significant variation in the underlying model mechanisms by state, even within a funding model category. For example, Ohio and Tennessee share a performance based *incentive* model, but the particulars of the 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 performance based 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. Both California's and Michigan's hybrid models provide base funding and include performance components. Notably, California's incentives tied to enrollment provide additional funding to colleges that enroll low-income and undocumented students, both sizable populations in 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 in particular due to

offshoring and automation (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). In New York's *traditional* model, per FTE funding is a direct component of the model. Ohio's performance-based *incentive* 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 both sensitive to fluctuations in enrollment. This finding is consistent with those in Shaw et al. (2023), which examined the extent to which enrollment was incentivized by the components of three state models. Given enrollment declines steepened during the pandemic and the demographic outlook for future cohorts is weak, 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., 2024), the importance of stabilizing and equalization funding model mechanisms 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 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 through the Student Centered Funding Formula.

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

Compounding the sector-wide enrollment losses in the wake of the Great Recession were the wide-ranging effects of the pandemic on community colleges. 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 outcomes in particular, we can document what community colleges received and disbursed relative to pre-pandemic revenue and expenditure trends. Our analysis first quantifies and compares HEER funding for the states in our sample. We then examine the magnitude of the revenue boost by analyzing HEER funding as a percentage of total revenue pre-pandemic and during the pandemic. Next, we draw on institutional survey data and interviews to show how community colleges spent HEER funds and what lessons they have learned about allocating resources that can be carried forward even as institutions face uncertain financial conditions.

A. Higher Education Emergency Relief Funding

As described earlier, the Higher Education Emergency Relief Funding allocated approximately $25 billion to public, two-year colleges for direct student aid and institutional aid. The states in our sample received a total of $10.1 billion in HEER funding or roughly 40 percent of all HEER funding distributed. Total HEER funding correlated with enrollments in our sample; it was highest in California and lowest in Tennessee. Table 3 compares HEER funding and its component parts on a per FTE basis. When HEER funding is examined on a per FTE student basis, additional insights emerge. Total HEER funding per FTE is generally consistent across our sample, ranging from $10,115 per FTE (Tennessee) to $11,097 (Ohio). Michigan's per FTE HEER award was larger than the other states, at $14,993 per FTE, followed by Texas at $12,919.

This variation was likely due to the criteria the federal government used to determine institutional allocations. The first round of HEER funding weighted FTE Pell recipients heavily. The second and third rounds of funding emphasized headcount (as opposed to FTE) and fully

online students. These criteria benefited the community college sector as a whole and particularly colleges with larger enrollments of part-time students, Pell recipients, and online students (Daniels et al., 2024). In Michigan, for example, 70% of students were part-time and 39% of students were Pell eligible in 2020. This compares to California, where the same percentage of students were part-time, but substantially fewer were Pell eligible (25%).[6] The differences on these eligibility criteria likely contributed to the variance of nearly $4,000 per FTE in total HEER funding awarded in these states. The same variation we observe between states occurs within states, potentially exacerbating existing inequalities across community colleges in the same state.

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.

To fully understand the magnitude of HEER funding, it is helpful to see it relative to community colleges' other sources of revenue. A recent ARCC 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 (Belfield et al., 2024b). Nationally, total

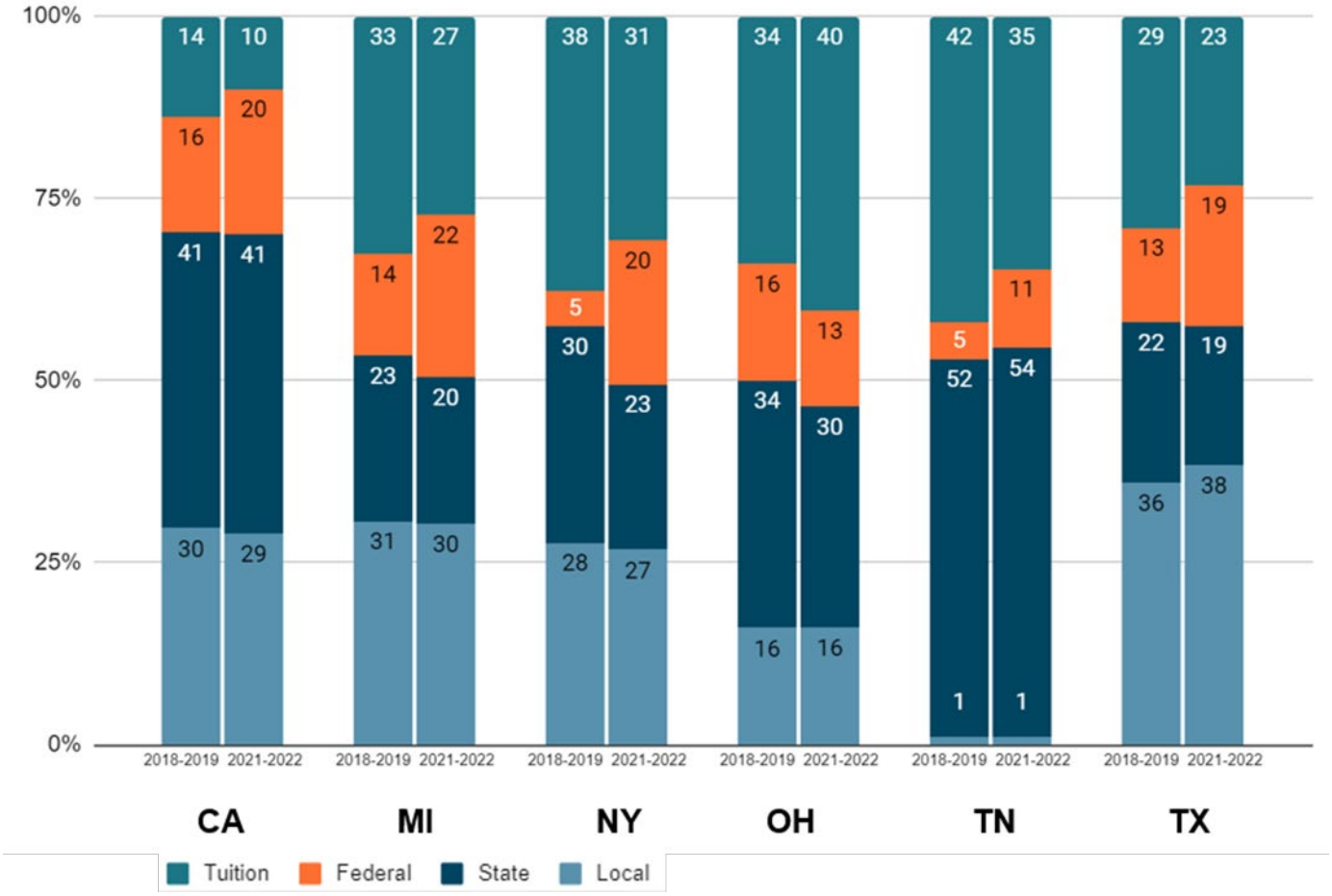
[6] Pell Grant awards consider Expected Family Contribution (EFC) and the cost of attendance. Because community college tuition in California is relatively low, many California students either do not apply or do not qualify.

revenue per FTE was up 21%. On a per student basis, net of lost tuition revenue, HEER funding increased total revenue by about $1,700 per student.

Figure 8 presents average revenue per community college by source as a share of total revenue pre-pandemic and during the pandemic for the states in our sample. All six states saw an increase in federal funding from 2018-2019 to 2021-2022 (data from 2022 is the latest year currently available in IPEDS). The percentage point increase in federal funding was highest in New York (15 percentage points) and declined slightly in Ohio (3 percentage points). With tuition revenue down over this period in five of six states in our sample (Ohio being the exception), HEER funding was a particularly important offset to lost tuition revenue. State and local funding per FTE was generally stable in our sample, consistent with national trends, due in part to declines in enrollment (Belfield et al., 2024b). New York saw a 7 percentage point drop in state funding during the pandemic, however.

Figure 8.

Revenue by Source Pre-Pandemic and During Pandemic



B. Spending During the Pandemic

Community colleges have high fixed costs that may inhibit their ability to reallocate resources and be responsive to emerging needs. While approximately 40% of HEER funds went to student aid, the remainder could be allocated toward a broadly defined set of institutional investments (Daniels et al., 2024). These funds not only enabled institutions to cover high fixed costs, but also presented community college leaders with a unique one-time opportunity to identify and implement strategies to promote student success and 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 (Kemplin et al., forthcoming; Daniels et al., 2024) to examine how institutions used federal relief funds, 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 170 community colleges across the six focal states. We also include analysis from institutional-level interviews conducted between 2021-2023 as part of CCRC's project on community college finance.

On average, the colleges in our study received $9.9 million in HEER funds for emergency cash aid to students and $13.6 million for operating expenses at the institution. The biggest use of institutional aid was to make up for lost revenue associated with enrollment declines: on average, about $4.9 million per college. However, many colleges also used institutional aid to supplement emergency aid to students ($2.5 million on average), provide tuition discounts ($1.4 million), and tuition reimbursements ($791,000). In interviews, community college leaders discussed using HEER funding to attract new students through aid programs focused on students' first semester and attempt to retain existing students (e.g. emergency funding, free/subsidized textbooks, debt forgiveness for students who had already attempted postsecondary education). In fact, institutions in our focal states surpassed the 40% requirement and invested 44% of HEER funds in student aid, combatting the barriers to initial and continued enrollment.

Community colleges' investments in students extended beyond initiatives to combat financial barriers to enrollment to address students' basic needs so they could engage with the educational activities of the college. Over a third of institutions (36%) reported spending HEER

funds on food and 17% used aid for housing. 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 COVID-related funds, colleges were able to augment their delivery of basic needs services and several reported that they centralized basic needs services within a single location. Additionally, some colleges hired additional staff to support basic needs. Prior to the pandemic, basic needs 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 could be expanded and have a clearer funding stream. However, with the end of HEER these programs may be in jeopardy– indeed, 55% of institutions reported worrying about reducing basic needs service with the end of HEER in their survey responses.

In addition to investing directly in students through financial aid and basic needs initiatives, community colleges also leveraged HEER funds to invest in innovations related to teaching and learning. Approximately nine out of ten institutions reported spending HEER funding on technology and other costs associated with a shift to online course modalities; overall, community colleges spent 15% of HEER funds on these efforts. Nearly every college leader interviewed highlighted the use of HEER funding 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 effectively teach in distance education formats, including training in learning management systems; and 3) equipping classrooms with the technology required for hybrid/HyFlex course modalities, providing students with additional flexibility for their course attendance and reducing the number of people in a classroom at a time

in line with public health guidance. These innovations not only helped maintain instruction during the height of the pandemic, but also offer a means for community colleges to offer students more flexible options for their courses, potentially bolstering enrollment and degree completion.

VI. Discussion

This analysis examined how existing community college funding policies and formulas influence colleges' ability to navigate current conditions and improve student success. Based on our examination, we can anticipate that the funding models for community colleges will face stern tests in coming years. Community college enrollments have rebounded somewhat in the last two years, but these gains have not offset the sharp declines of the first two years of the pandemic, much less the prior decade of enrollment erosion. Looking forward, the so-called demographic cliff portends future declines in both enrollment and state and tuition revenues. In addition, the continued expansion of performance-based funding models in a number of states could result in less equitable distribution of funding.

While HEER funding provided a respite from declines in per FTE state funding and tuition revenue, it is no longer available. Our findings suggest that community college leaders used the money in ways that benefited the most vulnerable students, including emergency cash aid, food and housing assistance, and mental health services. While the worst of the pandemic may be over, some of these needs will persist; further, even students who do not face severe challenges have ongoing needs for high quality academic advising and instructional support, which can be costly. Community colleges by and large are not funded at a level to address such needs.

There have been some positive developments in funding policy and practice for community colleges. Scholars and advocates have been particularly focused on scrutinizing existing funding policy and models and identifying opportunities to make them more equitable and effective. Several states have embarked on reviews of their models and, in the case of Texas, a complete redesign with these goals in mind. 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, policymakers aim to create more parity and/or equity across institutions within the state, particularly for colleges with more concentrated student needs.

To sustain and build on recent positive developments in community college funding policies, we believe that academic scholarship can play a key role by addressing three central policy questions.

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? There is a growing body of evidence on effective policy and practice 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 show promise. Some comprehensive reforms like ASAP show large positive impacts on completion in rigorous evaluations (Scrivener et al., 2015) and others like Guided Pathways show significant promise (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 advocates who aim to make community college funding more effective and equitable.

How can public higher education finance policy effectively 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 direct colleges to invest in proven approaches. Prescriptive finance policy, however, would be incredibly unpopular and runs counter to the autonomy institutional leaders need to have to deploy available financial resources in service of their strategic priorities and emerging needs. 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 for nearly a decade, might provide inspiration to state policymakers.[7] This approach provides larger grants to applicants pursuing programs with more evidence of effectiveness and smaller grants to applicants pursuing less tested innovations. It would have to be adapted to the state level and for non-competitive funding systems. 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 successfully adopt and implement evidence-based programs.

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

[7] U.S. Government Accountability Office Tiered Evidence Grants Fast Facts, https://www.gao.gov/products/gao-16-818.

community colleges to a limited degree if they do not also result in substantial increases in state funding levels for public higher education. As such, 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 accounted for 16% of total community college revenue, on average, 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).

As discussed, 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.

Federal funding could also increase community college efficiency by incentivizing the expansion and adoption of evidence-based reforms by growing programs like tiered evidence grants. Almost always, these interventions cost more than business-as-usual, particularly in the early stages of adoption, but are ultimately cost effective in terms of degree production (Azurdia & Galkin, 2020; Belfield, 2020; Miller & Weiss, 2022). It would be a natural extension for

federal agencies like the U.S. Department of Education and the National Science Foundation—which have played a lead role in funding rigorous evaluations—to create and/or expand funding opportunities for community colleges to adopt effective practices and bring them to scale.

VII. Conclusion

Community colleges provide affordable, accessible pathways to higher education for millions of students each year and are critical to federal and state level policy goals to enhance postsecondary attainment and economic growth. Yet, many institutions are routinely under resourced and can struggle to deliver on their mission. State funding represents only a portion of community college revenue. Nevertheless, it remains a powerful force in shaping institutional decision making and performance—and must be harnessed in service of improved and more equitable student outcomes.

References

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., & 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.

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

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, 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

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.

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/

Jenkins, D., & Fink, J. (2020). How will COVID-19 affect community college enrollment? Looking to the Great Recession for clues. *The Mixed Methods Blog*.

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

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

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. (forthcoming). *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

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.

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

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

McFarlin, I., McCall, B., & Martorell, P. (2018). *How much do tuition subsidies promote college access? Evidence from community college taxing districts.* Working Paper. https://drive.google.com/file/d/1n6QhU6iTQ_2Ojc3ZAOp53XRUmSgu7nzK/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

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. (2023). 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/

Office of the Chief Financial Officer, State University of New York (2021). New Community College Business Officer Manual. https://www.suny.edu/media/suny/content-assets/documents/communitycolleges/CC-Manual-2021.pdf

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

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. (2021). *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. (2021a). *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). (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

Regional Education Lab Northwest. (2021). *Addressing basic needs insecurity among college students.* REL Northwest at Education Northwest. Institute of Education Sciences. https://ies.ed.gov/ncee/edlabs/regions/northwest/pdf/addressing-basic-needs.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

Smith, J., & Stange, K. (2016). A New Measure of College Quality to Study the Effects of College Sector and Peers on Degree Attainment. *Education Finance and Policy, 11*(4), 369-403.

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 Higher Education Executive Officers Association. (2023). *State Higher Education Finance: FY 2022*. https://shef.sheeo.org/wp-content/uploads/2023/05/SHEEO_SHEF_FY22_Report.pdf

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

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/

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

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

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

Zielack, 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