FINANCIAL EQUITY AMONG CALIFORNIA **COMMUNITY COLLEGES**

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Student Success Through Applied Research

This report examines expenditure and state/local appropriation patterns among California community colleges to evaluate the degree to which funding has become more (or less) equalized over time. It is accompanied by an interactive dashboard found on the SSTAR Lab's website.[1] Nationwide, colleges and universities have very unequal financial resources available to deliver high-quality educational services to students – and this financial inequality is growing.[2] While some degree of financial inequality is expected due to varying educational missions and academic program offerings, there is emerging consensus that funding inequality contributes to inequalities in educational outcomes.[3]

Accordingly, this report answers three key research questions designed to document the magnitude and implications of funding inequality among California's community colleges:

RQ1: To what extent are financial resources equally distributed across California community colleges?

RQ2: To what extent are minoritized students over-represented among California's least resourced community colleges?

RQ3: To what extent do student outcomes differ across California's best- and least-resourced community colleges?

Measuring Financial Resources

Higher education finance researchers have recently begun using the Gini index to measure the extent of financial inequality among colleges and universities. This index provides a standardized metric that ranges from 0 (perfect equality) to 1 (perfect inequality) that policymakers may find useful for monitoring and evaluating financial inequality over time. Using total expenditures per full-time equivalent student Davies and Zarifa (2012) found the Gini index grew from 0.43 to 0.51 between 1971 and 1996. Between the years 2002 and 2010, Yan and Rosen (2016) found the Gini index for *per-student* revenues and expenditures grew over time. In the public sector, the Gini index grew from 0.26 to 0.28 (for per-student expenditures) and from 0.27 to 0.35 (for per-student revenues). Cheslock & Shamekhi (2020) examine the trends in Gini index for more recent years, finding that inequality in total expenditures increased for public and private non-profit sectors in the 2010s but decreased for per-student expenditures.[4]

Financial Resources

To apply the Gini index to California community colleges, we conducted three key steps. First, we downloaded publicly accessible enrollment, financial, and institutional characteristic data from the U.S. Department of Education's Integrated Postsecondary Education Data System (IPEDS) to identify each California community college for the years 2005 through 2019 (see Appendix A). Second, we calculated *education and related* ("E&R") expenditures and *state and local appropriations* based on IPEDS finance records and as outlined below. Third, we calculated the annual Gini index for E&R expenditures and state and local appropriations per student (12-month unduplicated headcount), using Stata's *pshare estimate* command.

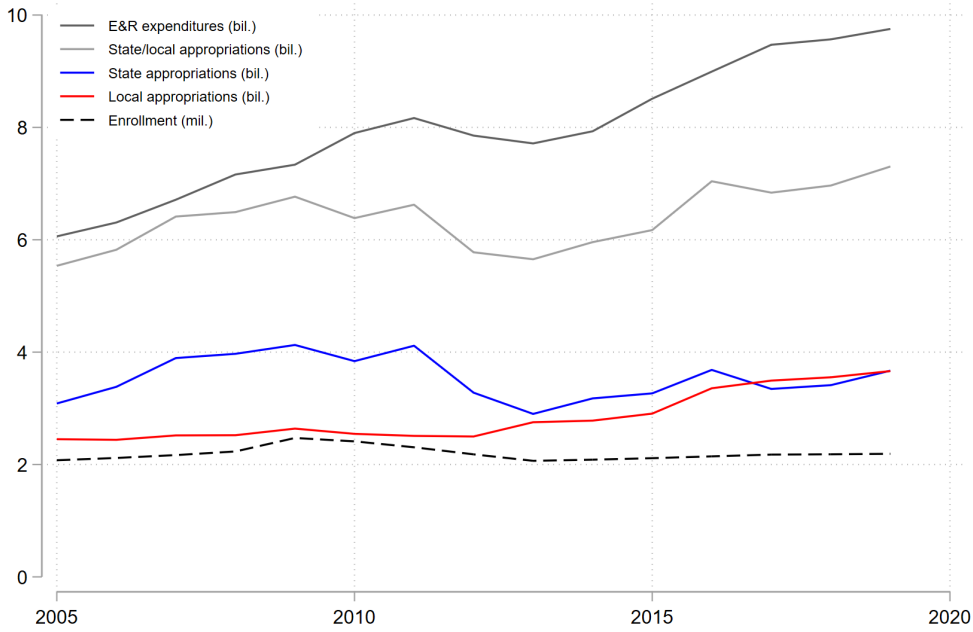
- **Education & Related Expenditures:** The sum of *instructional* expenses devoted to teaching credit and non-credit bearing courses and student services expenses for supporting students outside the classroom (e.g., financial aid office, health services, etc.).[5] This sum is then multiplied by the share of expenditures devoted to administration and operations including *academic support* (e.g., libraries, academic information technology) and *institution support* (e.g., general administration, executive management). It also excludes expenditures on auxiliary services, sponsored research, public service, and other operations, resulting in relatively lower expenditures than other finance metrics such as "Education and General" or "Total Operating" expenses.

- **State Appropriations:** The sum of revenue colleges receive "through acts of a state legislative body" excluding grants, contracts, and capital appropriations. This includes funding for operating expenses, not for specific projects or programs.

- **Local Appropriations:** The sum of revenue colleges receive from property and other taxes "assessed directly by or for an institution below the state level." This includes education district taxes and other general support from governments below the state level.

Figure 1 shows trends in total E&R expenditures, state and local appropriations among California's community colleges. Inflation-adjusted expenditures have increased from approximately $6 billion in 2005 to nearly $10 billion in 2019. There are many reasons why expenditures rise over time, most notably due to "Baumol's Cost Disease" where costs tend to rise in service industries (e.g., higher education) that employ large numbers of highly-trained and skilled labor – most of these costs are tied directly to the salaries, health care, and benefits of service professions.[6] While total E&R expenditures have risen over time, enrollments have generally remained steady. The 12-month unduplicated headcount rose to 2.5 million in the years leading up to the Great Recession and have subsequently declined to approximately 2.2 million in 2019.

Figure 1: California community colleges' financial resources and enrollment (12-month headcount)



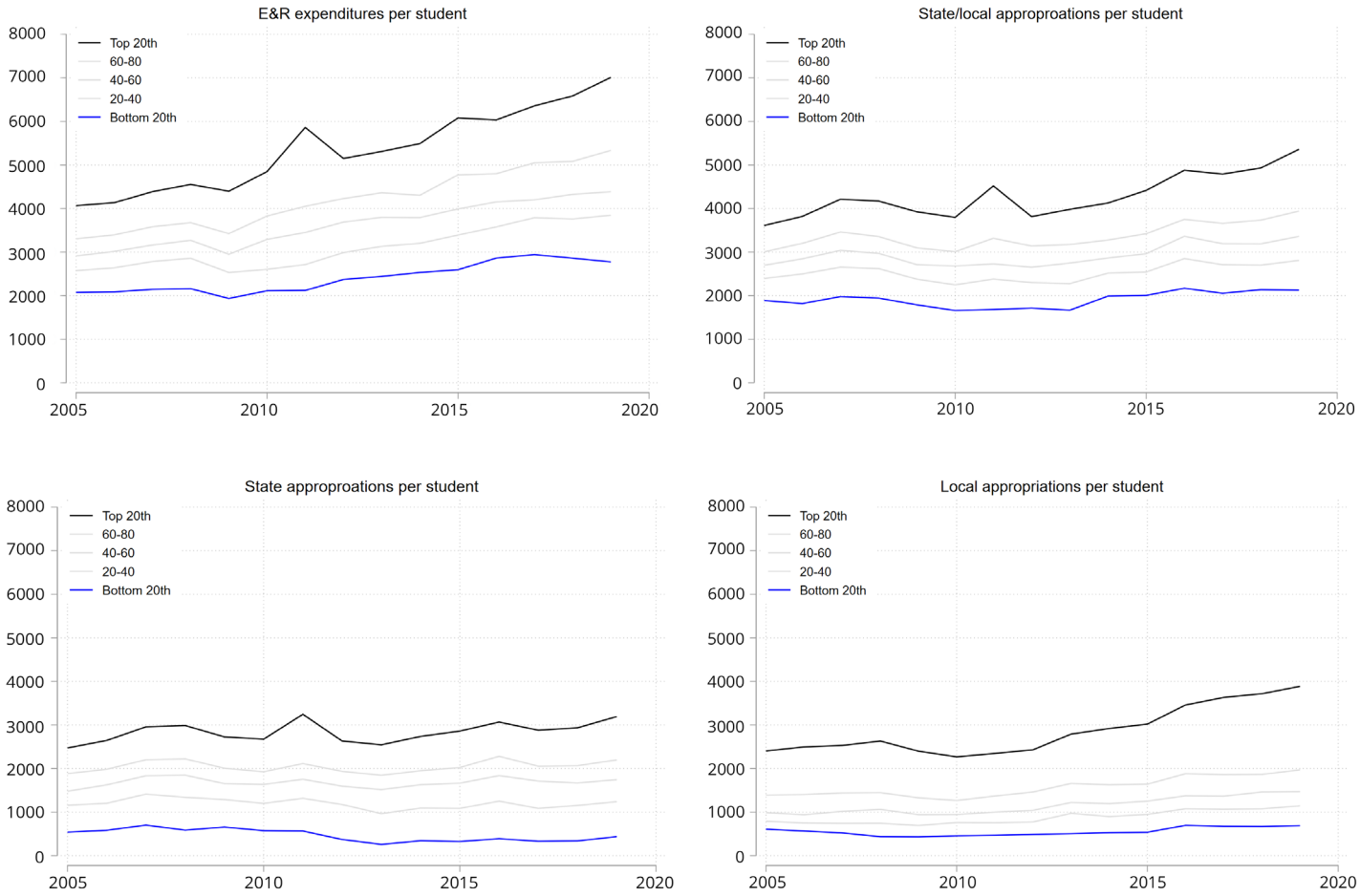
Data source: Author's calculations using IPEDS, various years.

State appropriations have increased from approximately $3.1 billion in 2005 to nearly $3.7 billion in 2019. The dip in state appropriations in the early-2010s, which has slowly rebounded near pre-recession levels, reflects similar patterns taking place nationwide.[7] Local appropriations remained flat in the 2000s and started growing after the Great Recession, rising from $2.5 billion in the early-2010s to $3.7 billion in the late-2010s. As the light grey line shows, state and local appropriations together have increased from approximately $5.5 billion in 2005 to $7.3 billion in 2019.

Gini Index

To answer RQ1, we apply the Gini index to these finance measures in Figures 2 and 3 below. Figure 2 shows California community colleges' average E&R expenditures, state and local appropriations per student over time, adjusted for inflation and disaggregated by quintiles. As outlined above, E&R expenditures per student are expected to grow because total enrollments have lagged while expenditures have risen. But these trends have not played out evenly across all institutions, as shown below. Each quintile in Figure 2 (top left) accounts for approximately 23 colleges, where the "Top 20th" quintile are those spending the most per student and the "Bottom 20th" spend the least. In the mid-2000s, the difference between the top and bottom was approximately $2,000, where the highest-spending colleges spent approximately $4,000 per student while the lowest-spending was approximately $2,000 per student. But by the late 2010's, a gap has emerged where the top quintile now spends approximately $7,000 per student while the bottom spends approximately $2,800. This divergence suggests funding inequality has risen over time where the highest-spending colleges are increasing their E&R expenditures per student at a more rapid pace than the lowest-spending colleges.

Figure 2: Trends in E&R expenditures and appropriations per student, by quintile (2019 dollars)



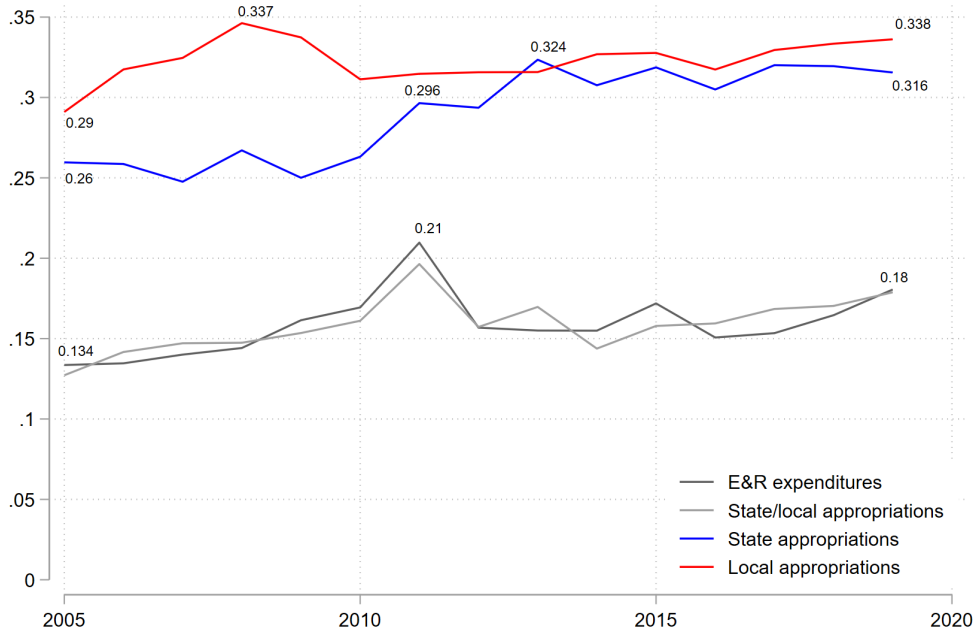
Data source: Author's calculations using IPEDS, various years.

Figure 2 (bottom left) also shows state appropriations per student have remained stagnant across all institutions. The "Top 20th" are the colleges receiving the largest amount of state appropriations per student and the "Bottom 20th" receive the least. In the mid-2000s, colleges in the "Top 20th" quintile received approximately $2,500 per student while those in the "Bottom 20th" quintile received approximately $540. By the late 2010s, the top quintile receives approximately $3,200 per student while the bottom receives approximately $440. Similar to the trends in E&R expenditures per student, albeit to a lesser extent, this divergence implies funding inequality has risen over time.

This increasing funding inequality is more evident in the trends in local appropriations, where the gap between colleges in the top and bottom quintiles grew from approximately $1,800 in 2005 to $3,200 in 2019. Combining state and local appropriations, the amount that the most-funded colleges received increased from approximately $3,600 in 2005 to $5,400 in 2019 whereas that amount for the least-funded colleges grew from $1,900 to $2,100 during the same period.

To measure whether funding inequality has actually increased, Figure 3 plots the annual Gini index for the finance measures of interest. The trend in Gini index for E&R expenditures and state/local appropriations align very closely, showing two phases of rising inequality. The first was in the early 2000s when the Gini index rose from approximately 0.13 to 0.21. After 2011, the Gini index briefly declined and has since been rising. Figure 3 also shows the Gini index for state appropriations and local appropriations is nearly two-times higher than that for E&R expenditures and state/local appropriations, suggesting higher level of inequality. Gini index for state appropriations increased from approximately 0.26 in 2005 to 0.30 and to 0.32 in the early 2010s while the index for local appropriations increased from approximately 0.29 to 0.34 in 2009. Gini index for both state and local appropriations has since remained at the similar level.

Figure 3: Gini Index for E&R expenditures and state/local appropriations per student



Data source: Author's calculations using IPEDS, various years

Enrollment Trends by Financial Resources

RQ2 asks "who" attends the colleges with the least/most resources. This question allows policymakers to explore issues of vertical equity, where one could argue that colleges need to spend more when enrolling large shares of students from academically/socially disadvantaged backgrounds. To explore this issue, we first ranked colleges into their respective percentile according to their annual per-student E&R expenditures, state and local appropriations. Those spending/receiving the most were ranked into the "Top 20th" quintile (e.g., spent $7,052 per student) while those spending/receiving the least fall into the "Bottom 20th" (e.g., spent $2,775 per student) as shown in Tables 1 - 4 below. The gap between spending the most and the least is approximately $4,200 per student while the gap between receiving the most and the least is approximately $3,100 per student. The gap in state appropriations ($437 for bottom quintile and $3,196 for top quintile) is nearly $450 smaller per student than the gap in local appropriations ($688 for bottom quintile and $3,887 for top quintile). Across all financial measures, colleges in the top 20th quintile serve the smallest number of students. Note only 109 colleges that report both expenditures and appropriations in 2019 are included in these tables.[8]

Table 1: Enrollment and E&R expenditures per student (by quintile)

	Number of colleges	Total enrollment	Average E&R Expenditures per student
Bottom 20th	23	490,815	$2,775
20-40	21	472,268	$3,867
40-60	22	452,181	$4,386
60-80	22	401,205	$5,331
Top 20th	21	332,080	$7,052
Total	**109**	**2,148,549**	**$4,651**

Data source: Author's calculations using IPEDS, 2018-19.

Table 2: Enrollment and state appropriations per student (by quintile)

	Number of colleges	Total enrollment	Average appropriations per student
Bottom 20th	23	402,267	$437
20-40	22	427,919	$1,239
40-60	21	502,039	$1,740
60-80	22	493,354	$2,197
Top 20th	21	332,080	$3,196
Total	**109**	**2,148,549**	**$1,736**

Data source: Author's calculations using IPEDS, 2018-19.

Table 3: Enrollment and local appropriations per student (by quintile)

	Number of colleges	Total enrollment	Average appropriations per student
Bottom 20th	22	453,821	$688
20-40	22	514,863	$1,142
40-60	22	352,634	$1,470
60-80	22	467,919	$1,970
Top 20th	21	359,312	$3,887
Total	**109**	**2,148,549**	**$1,813**

Data source: Author's calculations using IPEDS, 2018-19.

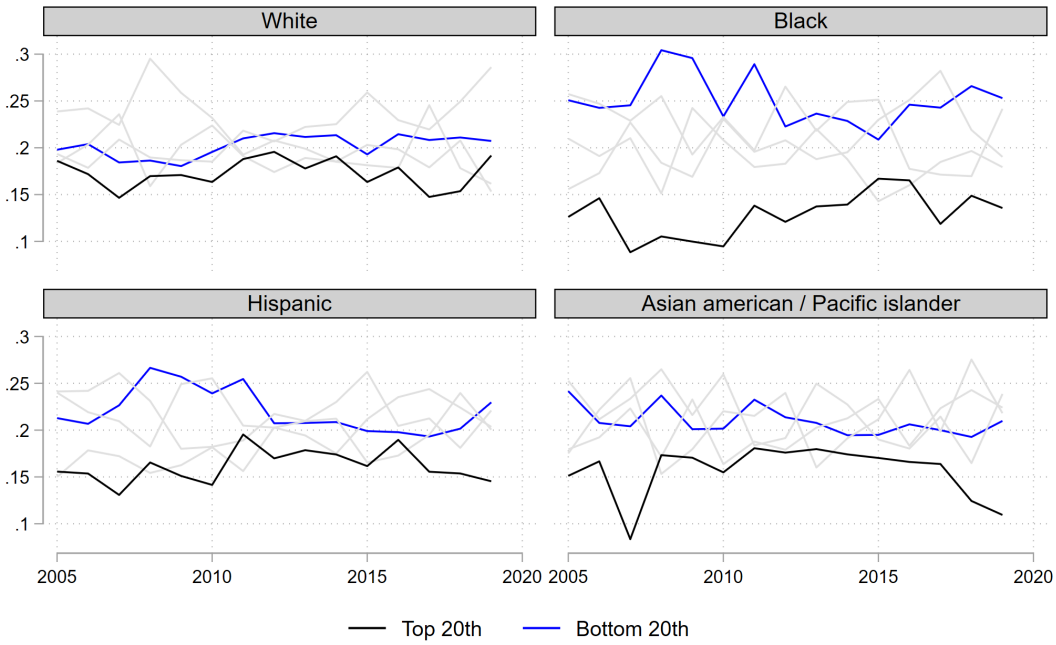
Table 4: Enrollment and state/local appropriations per student (by quintile)

	Number of colleges	Total enrollment	Average appropriations per student
Bottom 20th	22	512,068	$2,253
20-40	22	442,884	$2,810
40-60	21	404,655	$3,373
60-80	22	424,115	$3,941
Top 20th	22	364,827	$5,360
Total	**109**	**2,148,549**	**$3,549**

Data source: Author's calculations using IPEDS, 2018-19.

Using these expenditure quintiles for each year, Figure 4 shows the proportion of students within each racial/ethnic group enrolled in the highest and lowest spending colleges between 2005 and 2019. This helps us answer RQ2 by exploring the share of each major racial/ethnic group's total enrollments attend differently-funded colleges. We find relatively larger shares of Black students attending colleges that spend the *least* per student. Approximately one in four Black students in California attend colleges in the bottom E&R expenditure quintile in 2019 while one in five White students do so. On the contrary, fewer than 15% of Black, Hispanic, and Asian American/Pacific Islander (AAPI) students attend colleges spending the most per student whereas 20% of White students do so. The proportion of White students attending colleges spending the *least* per student has been consistent over the past decade whereas the proportion of Black and Hispanic students attending such colleges increased to 25% - 30% during the Great Recession and started growing again in the recent few years.

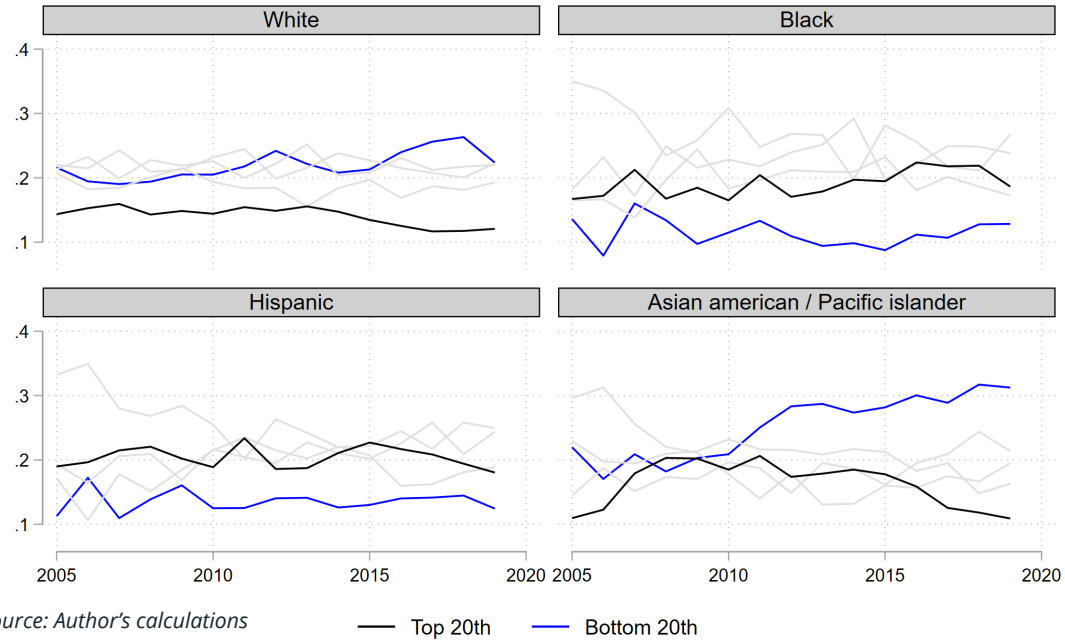
Figure 4: Enrollment trends (within racial/ethnic groups) by E&R expenditure quintile



Data source: Author's calculations using IPEDS, various years.[9]

Figure 5 shows the proportion of various student groups enrolled in colleges receiving the highest and lowest level of state appropriations between 2005 and 2019. We find that larger shares of Black and Hispanic students attend colleges that receive the most state appropriations. Approximately one in five Black and Hispanic students attend colleges in the top quintile in 2019 while only one in ten White and AAPI students do so. On the contrary, approximately one in ten Black and Hispanic students attend colleges in the bottom quintile while White or AAPI students are twice or three times more likely to attend those colleges. The proportion of White, Black, and Hispanic students attending colleges receiving the *most/least* state appropriations has remained relatively consistent over the past decade compared to AAPI students. The proportion of AAPI students attending colleges in the bottom/top quintile decreased/increased by 10 percentage points respectively since 2010.

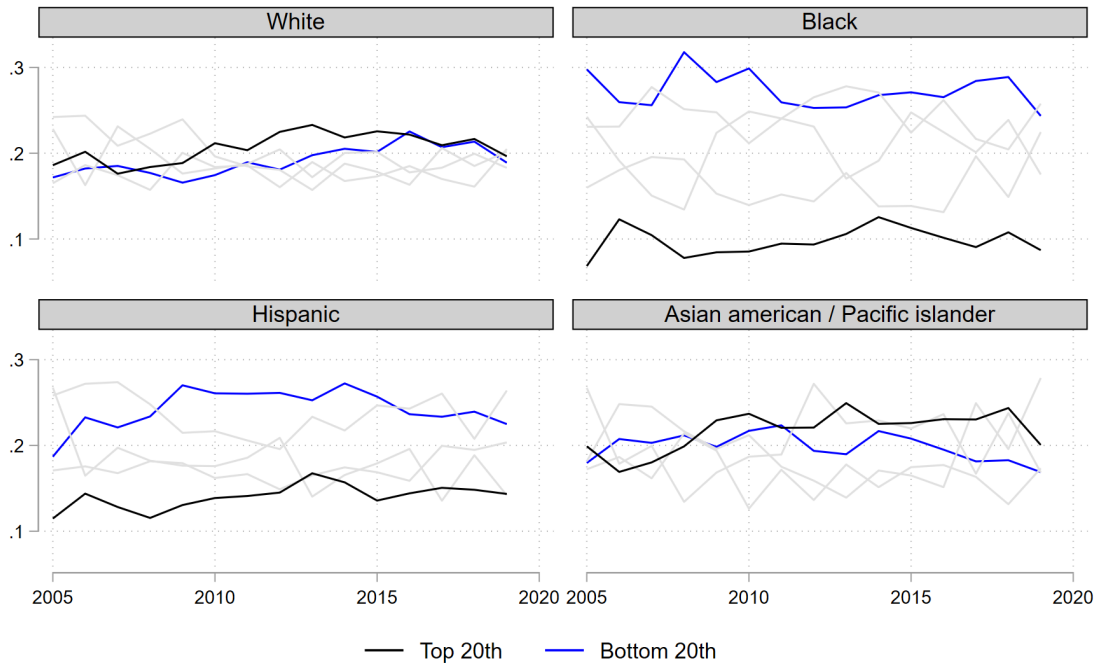
Figure 5: Enrollment trends (within racial/ethnic groups) by state appropriations quintile



Data source: Author's calculations using IPEDS, various years.[12]

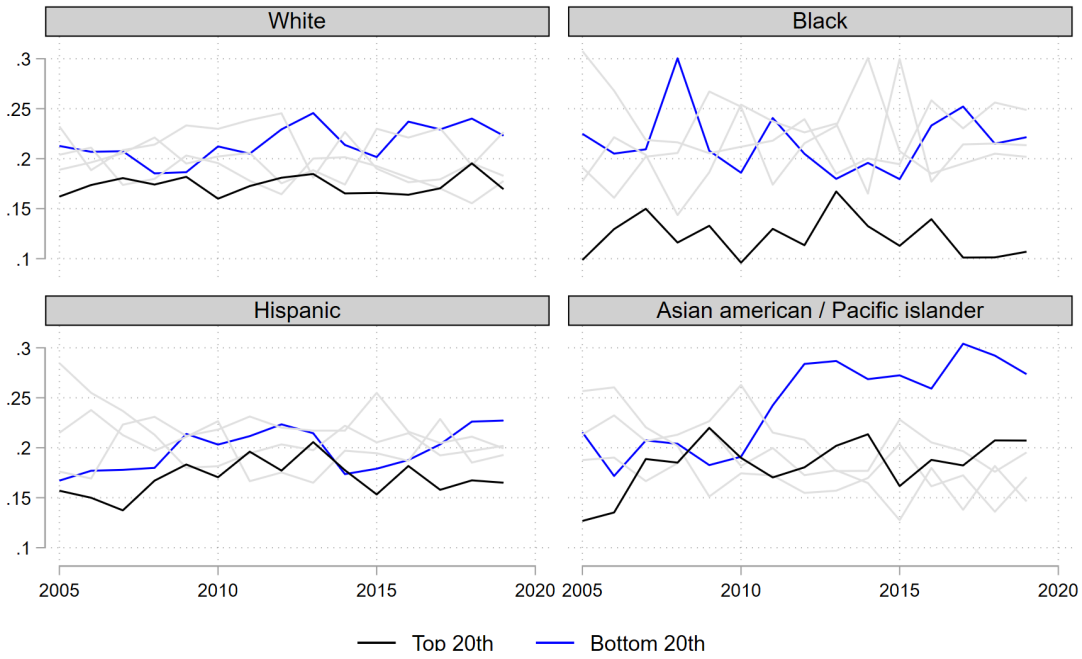
Figure 6 plots the proportion of various student groups enrolled in colleges receiving the highest and lowest level of local appropriations between 2005 and 2019. We find that larger shares of Black and Hispanic students attend colleges that receive the least local appropriations. Approximately one in four Black and Hispanic students attend colleges in the bottom quintile in 2019 while only one in ten of these students attend colleges in the top quintile. On the contrary, White and AAPI students are distributed more evenly across colleges in the bottom and top quintiles with approximately one in five students attending colleges in the bottom/top quintiles. The proportion of White and AAPI students attending colleges in the bottom quintile is twice higher than the proportion of Black students attending these colleges. Enrollment trend by local appropriations quintile is relatively flat compared to the trend by other financial measure quintile.

Figure 6: Enrollment trends (within racial/ethnic groups) by local appropriations quintile



Data source: Author's calculations using IPEDS, various years.[10]

Figure 7: *Enrollment trends (within racial/ethnic groups) by state & local appropriations quintile*



Data source: Author's calculations using IPEDS, various year[11]

Figure 7 plots the proportion of various student groups enrolled in colleges receiving the highest and lowest level of state & local appropriations between 2005 and 2019. We find that the proportions of White and Hispanic students attending colleges that receive the most and least appropriations are comparable in 2019 – approximately one in four of those students attend colleges receiving the least appropriations while one in five attend colleges receiving the most – whereas AAPI students are more likely to attend colleges both in the bottom and top quintile. The proportion of Black students attending colleges in the bottom quintile is similar to that of White and Hispanic students but is much lower for those attending colleges in the top quintile. Similar to the trend in Figure 5, the proportion of AAPI students attending colleges in the bottom quintile increased by 10 percentage points since 2010. The enrollment trend of Black students has been more volatile over the past decade than that of other racial/ethnic groups.

Outcomes by Financial Resources

To answer RQ3, we merged IPEDS data to the California Community Colleges Student Success Metrics data files, allowing us to document whether various outcomes differ by per-student E&R expenditure, state and local appropriation quintiles. We focused on three outcome measures in the analysis:

- Earned any Associates degree
- Attained the Vision Goal definition of completion[13]
- Transferred to a four-year postsecondary institution

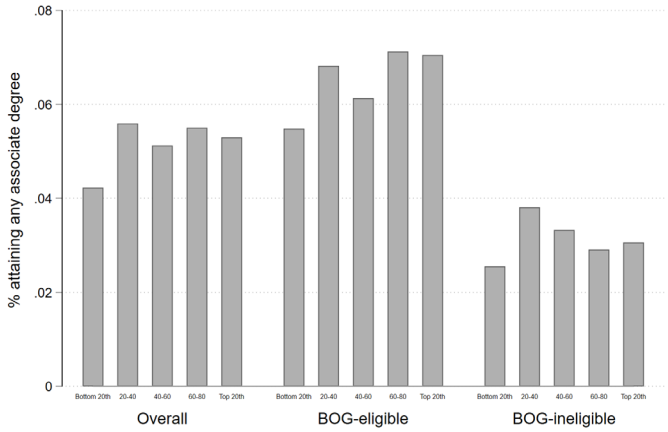
Within each outcome, we first report completion and transfer rates using "all students" enrolled in 2019. Doing so allows us to disaggregate data by the Board of Governors (BOG) fee waiver eligibility[14]. We then report these same outcomes for two "cohorts" of students – those who enrolled in community colleges for the first time in 2016 and 2015, providing three-year and four-year completion rates, respectively.

Note that there are caveats to using "all students" or "cohorts" data. Although "all students" data provides disaggregation by the BOG fee waiver eligibility, it uses all students enrolled in community colleges in at least one term of the relevant academic year as denominator, underestimating completion/transfer rates. On contrary, "cohorts" data tracks the same group of students over time (e.g., students who enrolled in community college for the first time in 2019 to be tracked after three, four, and five years), allowing us to calculate more accurate completion/transfer rates, but does not disaggregate information by the BOG fee waiver eligibility.

Earned any associate degree

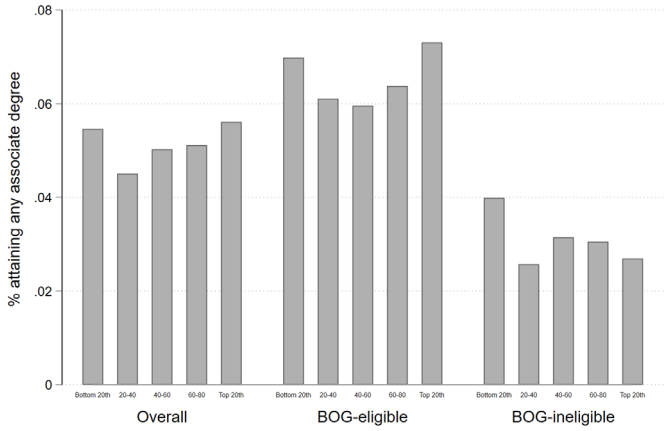
Figures 8a through 8d plot the proportion of students who earned any associate degree in 2019 out of all students enrolled in community colleges in at least one term of 2019 (this may result in a lower-than-expected completion rate) disaggregated by E&R expenditure, state, local, and state/local appropriation quintiles. Figure 8a shows students attending colleges spending more per student are more likely to earn associate degree. Figures 8b, 8c, and 8d show degree attainment rates are in general higher for colleges receiving more state or local appropriations. Interestingly, degree attainment rate among the colleges receiving the least state appropriations is comparable to that of colleges receiving the most (Figure 8b). Across each figure, students eligible for Board of Governor's (BOG) fee waivers tend to have the highest completion rates. It is beyond the scope of this analysis to hypothesize why this is the case.

Figure 8a: Proportion "Earned Any Associate Degree" by E&R expenditure quintile



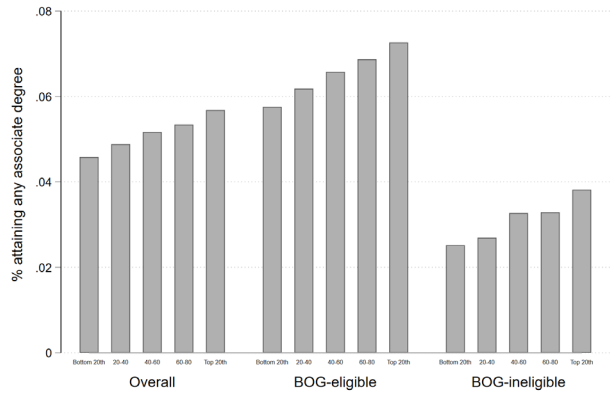
Data source: Author's calculations using IPEDS and SSM data, 2018-19

Figure 8b: Proportion "Earned Any Associate Degree" by state appropriation quintile



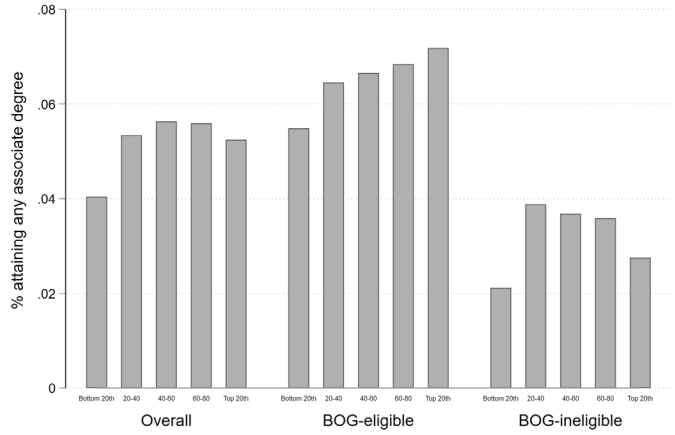
Data source: Author's calculations using IPEDS and SSM data, 2018-19

Figure 8c: Proportion "Earned Any Associate Degree" by local appropriation quintile



Data source: Author's calculations using IPEDS and SSM data, 2018-19

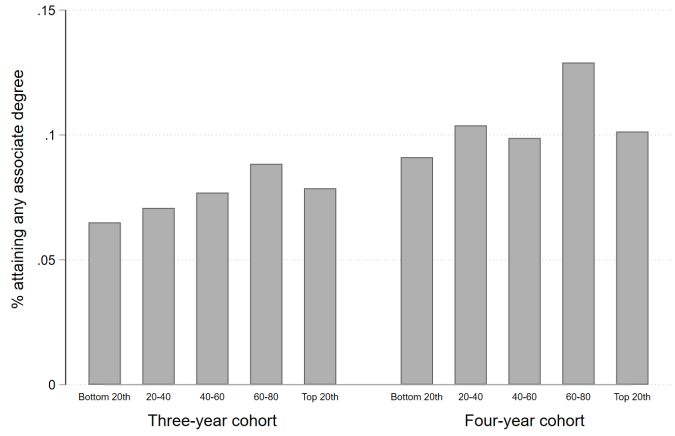
Figure 8d: Proportion "Earned Any Associate Degree" by state/local appropriation quintile



Data source: Author's calculations using IPEDS and SSM data, 2018-19

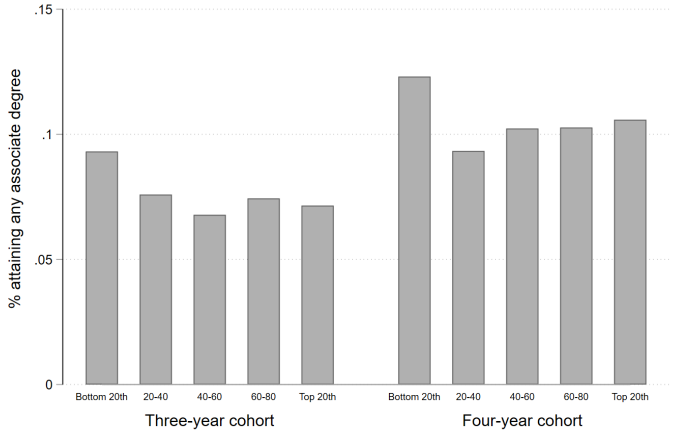
Figures 9a through 9d shift the focus toward certain cohorts of students – those followed three and four years after entry.[15] Similar to the trends in Figures 8a through 8d, degree attainment rates are higher for the colleges spending *more* per student (Figure 9a), receiving *more* local appropriations per student (Figure 9c), and receiving the *lowest* level of state funding (Figure 9b). Degree attainment rates are also higher for students in the four-year cohort since they had more time to finish their degrees.

Figure 9a: Proportion "Earned Any Associate Degree" by E&R expenditure quintile and cohort



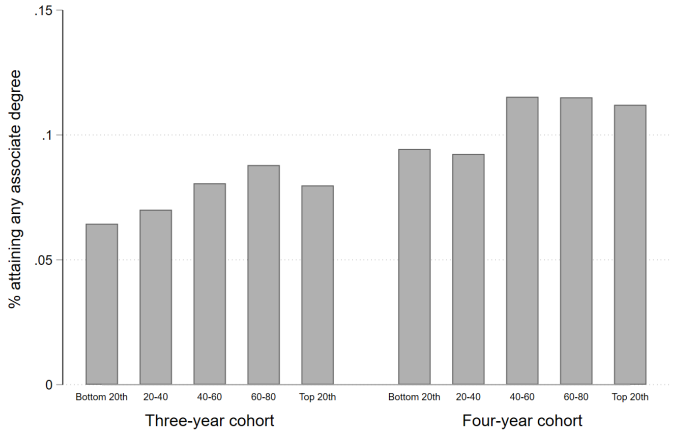
Data source: Author's calculations using IPEDS and SSM data, 2018-19

Figure 9b: Proportion "Earned Any Associate Degree" by state appropriation quintile and cohort



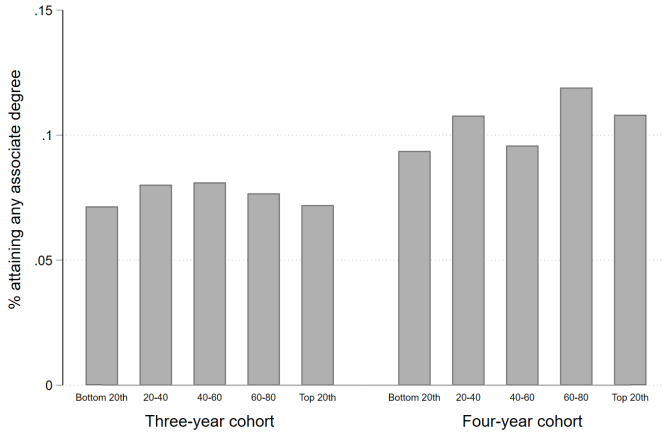
Data source: Author's calculations using IPEDS and SSM data, 2018-19

Figure 9c: Proportion "Earned Any Associate Degree" by local appropriation quintile and cohort



Data source: Author's calculations using IPEDS and SSM data, 2018-19

Figure 9d: Proportion "Earned Any Associate Degree" by state/local appropriation quintile and cohort

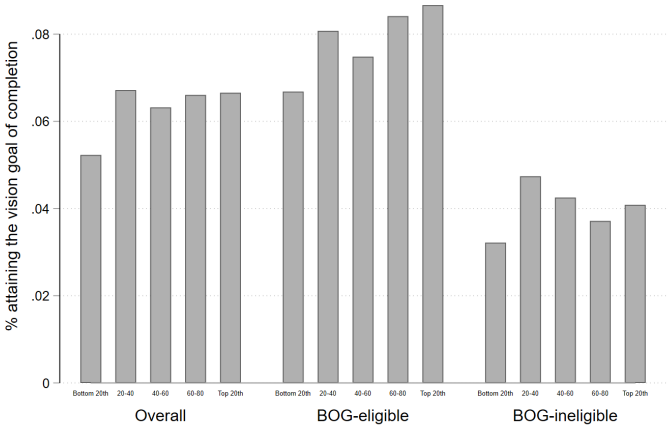


Data source: Author's calculations using IPEDS and SSM data, 2018-19

Attained the Vision Goal Definition of Completion

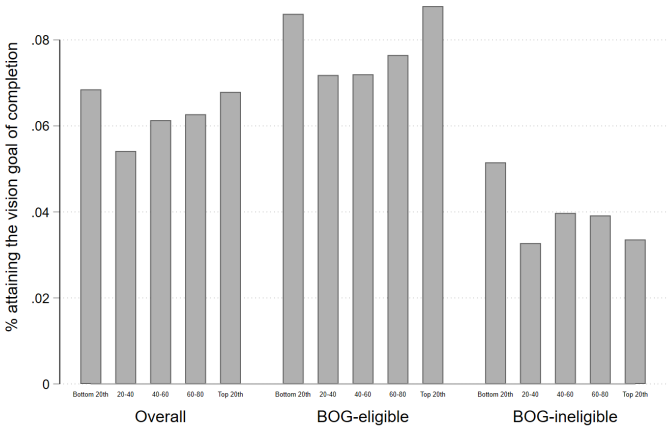
Figures 10a through 10d plot the proportion of students who attained the vision goal definition of completion in 2019 out of all students enrolled in community colleges in at least one semester of 2019 (this may result in a lower-than-expected completion rate), disaggregated by E&R expenditure, state, local, and state/local appropriation quintiles. Figure 10a shows students attending colleges that spend more per student have higher attainment rates. Figures 10b through 10d show completion rates are in general higher for colleges receiving more state or local appropriations. Interestingly, the completion rate among the colleges receiving the least state appropriations is comparable to that of colleges receiving the *most* (Figure 10b). Students eligible for BOG fee waiver tend to have higher completion rates than ineligible students when using the vision goal definition of completion.

Figure 10a: Proportion "Attained the Vision Goal Definition of Completion" by E&R expenditure quintile



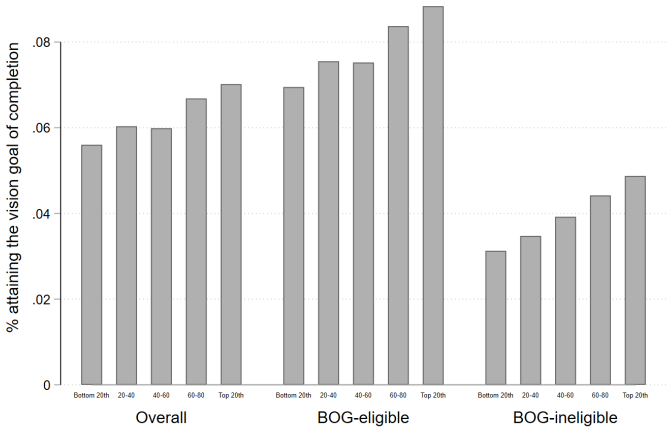
Data source: Author's calculations using IPEDS and SSM data, 2018-19

Figure 10b: Proportion "Attained the Vision Goal Definition of Completion" by state appropriation quintile



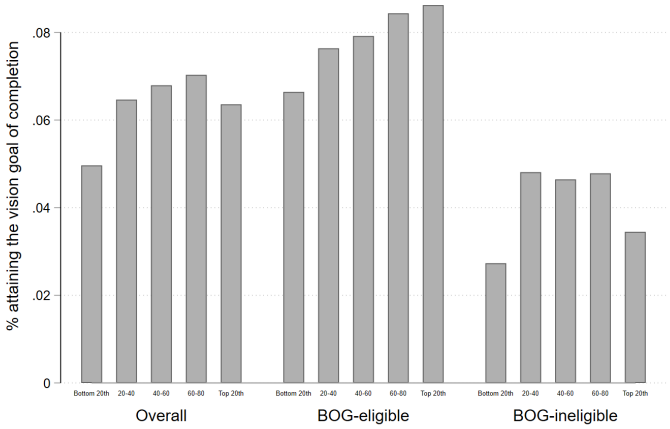
Data source: Author's calculations using IPEDS and SSM data, 2018-19

Figure 10c: Proportion "Attained the Vision Goal Definition of Completion" by local appropriation quintile



Data source: Author's calculations using IPEDS and SSM data, 2018-19

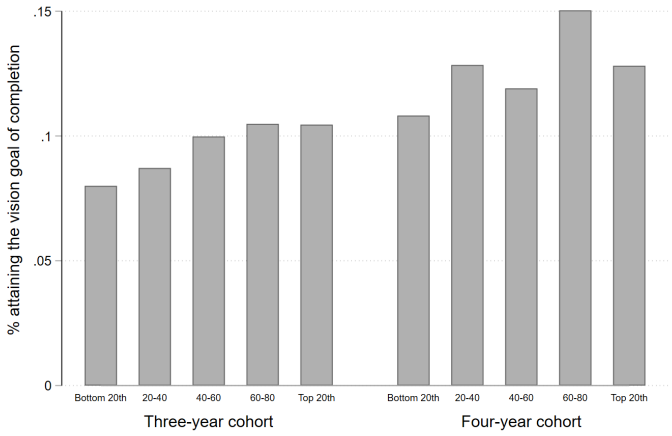
Figure 10d: Proportion "Attained the Vision Goal Definition of Completion" by state/local appropriation quintile



Data source: Author's calculations using IPEDS and SSM data, 2018-19

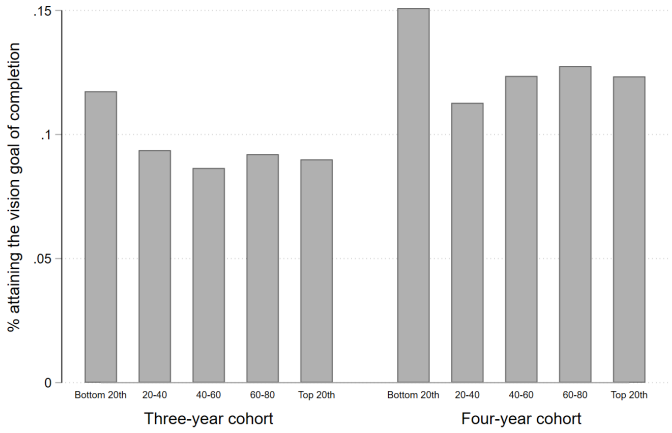
Figures 11a through 11d focus on the cohort-based outcomes, where the proportion of students who attained the vision goal definition of completion within three or four years after entry are shown below. Similar to the patterns in Figures 10a through 10d,, cohort-based completion rates[16] are higher for the colleges spending more per student, receiving more local appropriations per student, and receiving the lowest level of state funding. Completion rates are also higher for students in the four-year cohort since they had one more year to attain the vision goal definition of completion.

Figure 11a: Proportion "Attained the Vision Goal Definition of Completion" by E&R expenditure quintile and cohort



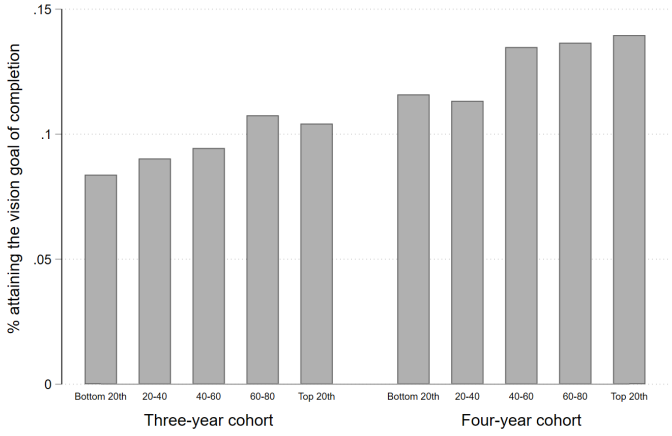
Data source: Author's calculations using IPEDS and SSM data, 2018-19

Figure 11b: Proportion "Attained the Vision Goal Definition of Completion" by state appropriation quintile and cohort



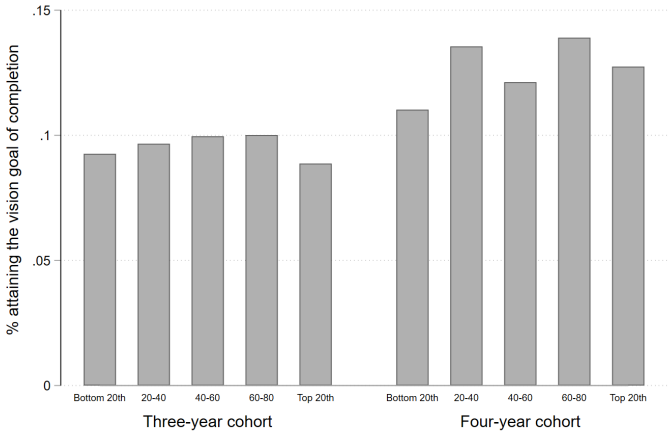
Data source: Author's calculations using IPEDS and SSM data, 2018-19

Figure 11c: Proportion "Attained the Vision Goal Definition of Completion" by local appropriation quintile and cohort



Data source: Author's calculations using IPEDS and SSM data, 2018-19

Figure 11d: Proportion "Attained the Vision Goal Definition of Completion" by state/local appropriation quintile and cohort

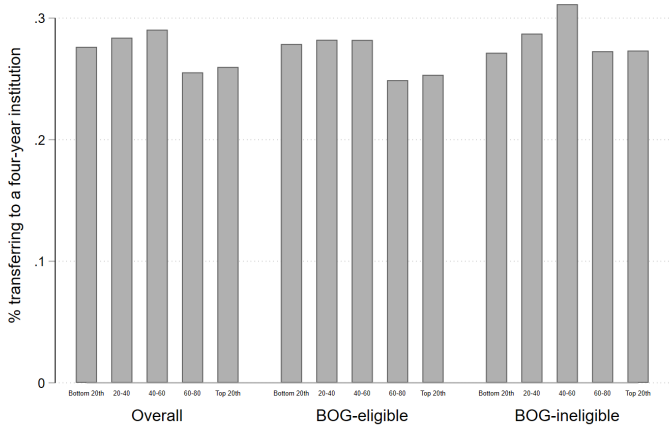


Data source: Author's calculations using IPEDS and SSM data, 2018-19

Transferred to a Four-Year Postsecondary Institution

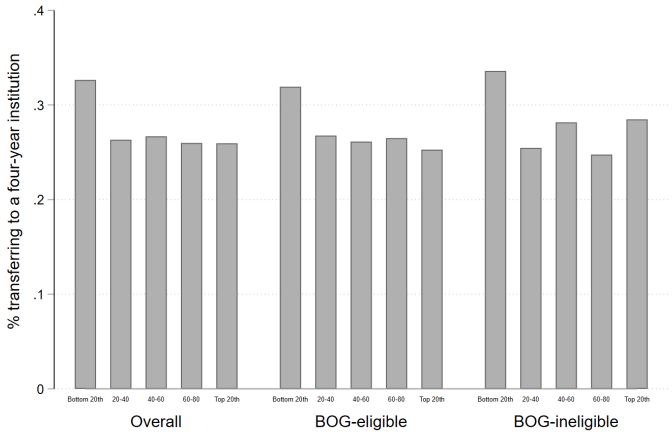
Figures 12a through 12d plot the proportion of students who transferred to a four-year postsecondary institution in 2019 out of all students enrolled in community colleges in at least one semester of 2019 (this may result in a lower-than-expected transfer rate), disaggregated by E&R expenditure, state, local, and state/local appropriation quintiles. Figure 12a shows students attending colleges spending more per student tend to have lower transfer rates. Figures 12b and 12c show transfer rates are higher for colleges receiving the least state funding and those receiving more local funding. We do not observe a noticeable difference between those eligible and ineligible for BOG fee waiver.

Figure 12a: Proportion "Transferred to a Four-Year Postsecondary Institution" by E&R expenditure quintile



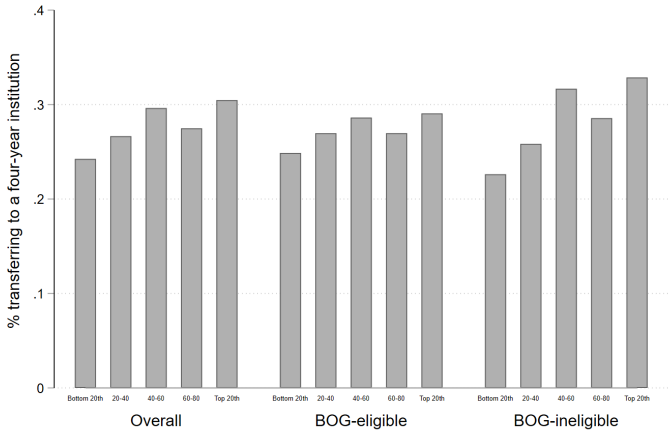
Data source: Author's calculations using IPEDS and SSM data, 2018-19

Figure 12b: Proportion "Transferred to a Four-Year Postsecondary Institution" by state appropriation quintile



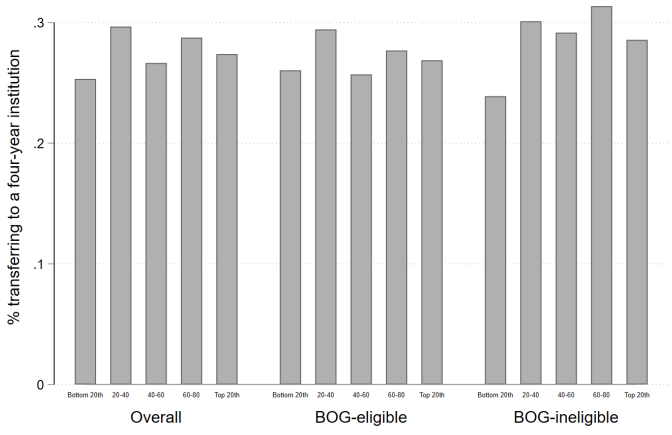
Data source: Author's calculations using IPEDS and SSM data, 2018-19

Figure 12c: Proportion "Transferred to a Four-Year Postsecondary Institution" by local appropriation quintile



Data source: Author's calculations using IPEDS and SSM data, 2018-19

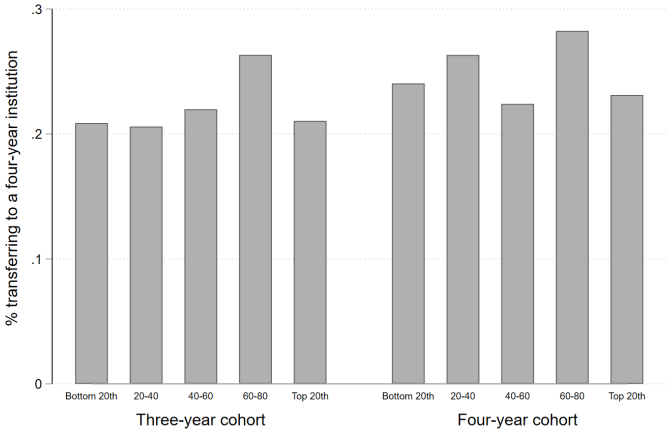
Figure 12d: Proportion "Transferred to a Four-Year Postsecondary Institution" by state/local appropriation quintile



Data source: Author's calculations using IPEDS and SSM data, 2018-19

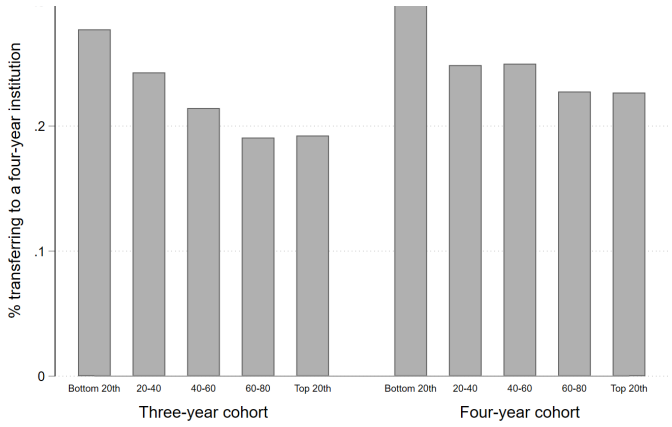
Figures 13a through 13d show the share of students transferring to a four-year postsecondary institution by cohorts[17]. Similar to the patterns in Figures 12a through 12d, transfer rates are higher for the colleges receiving less state appropriations and those receiving more local funding. Again, we do not see a noticeable difference between those eligible and ineligible for BOG fee waiver.

Figure 13a: Proportion "Transferred to a Four-Year Postsecondary Institution" by E&R expenditure quintile and cohort



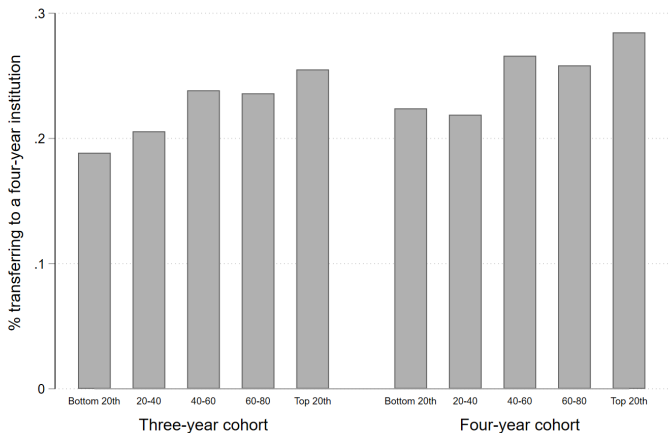
Data source: Author's calculations using IPEDS and SSM data, 2018-19

Figure 13b: Proportion "Transferred to a Four-Year Postsecondary Institution" by state appropriation quintile and cohort



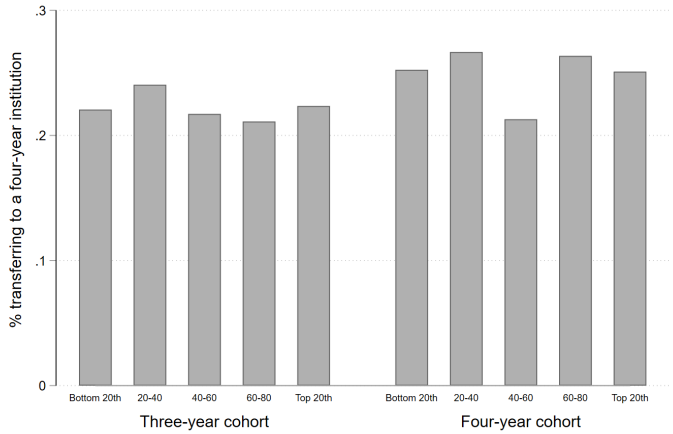
Data source: Author's calculations using IPEDS and SSM data, 2018-19

Figure 13c: Proportion "Transferred to a Four-Year Postsecondary Institution"by local appropriation quintile and cohort



Data source: Author's calculations using IPEDS and SSM data, 2018-19

Figure 13d: Proportion "Transferred to a Four-Year Postsecondary Institution" by state/local appropriation quintile and cohort



Data source: Author's calculations using IPEDS and SSM data, 2018-19

Conclusion

Using data from the U.S. Department of Education IPEDS and California Community Colleges' Student Success Metrics, this report and the complementary dashboard examine the distribution of financial resources among California's community colleges.

First, we found community colleges do not have equal financial resources and these inequalities have remained relatively stable and in some cases risen over the past decade. Specifically, state and local appropriations are the most unequal across institutions and this inequality has slowly grown since the early 2010s. Interestingly, E&R expenditures are more equal where colleges have relatively similar per-student expenditures, though they appear to be growing increasingly unequal.

Second, we found the highest-spending colleges serve smaller shares of Black students whereas the lowest-spending colleges serve the largest. Additionally, we found colleges receiving the most state appropriations and colleges receiving the least local appropriations serve larger shares of Black and Hispanic students. When combining state and local appropriations, we found colleges with the greatest subsidies served smaller shares of Black students whereas the least-funded colleges serve larger shares of Asian American/Pacific Islander students.

Third, we found degree attainment is associated with financial resources, where those spending more E&R per student tended to have stronger outcomes. And those receiving more local support – and less state support – tended to have stronger outcomes. Interestingly, and beyond the scope of our analysis, BOG-eligible students tended to have higher degree completion rates than non-eligible students. We also found transfer rates were relatively similar by E&R expenditures, and even comparing BOG-eligible to non-eligible students. However, we found higher transfer rates among colleges receiving less state support and those receiving more local support.

In conclusion, these results suggest per-student E&R spending and per-student state and local funding do not differ randomly across California's community colleges; rather, there appear to be patterns where the lowest-spending and least-funded colleges are generally those serving larger shares of students from traditionally minoritized groups. Further research and policy consideration could help diagnose the causes and consequences of these differences. For example, the corresponding data tool allows users to identify specific colleges that spend the least/most, and those that receive the most/least public support. This information could aid in state or local efforts to equalize financial resources and monitor whether those with the least are falling further behind on key finance metrics.

Acknowledgements

We would like to thank Sunčana Pavlić for designing this report. We are also immensely grateful to our thought partners at the Student Success Center at the Foundation for California Community Colleges (FCCC) for their guidance throughout this process. The FCCC provided generous financial support for this work. Views expressed in this report are ours and do not necessarily represent those of the FCCC.

Appendix A

Number of community colleges included in analysis

Year	n
2005	104
2006	107
2007	107
2008	107
2009	107
2010	107
2011	111
2012	112
2013	112
2014	112
2015	112
2016	112
2017	113
2018	113
2019	113

Note: Calbright and Madera Colleges are not in IPEDS. West Valley College is excluded from the entire analysis while De Anza College is excluded from analysis between 2005 and 2011 because they did not report any of the key financial measures (i.e., E&R expenditures, state appropriations, state appropriations, and local appropriations) in IPEDS during those years. Four out of 113 colleges in 2019 (Columbia College, Modesto Junior College, West Hills-Coalinga College, and West Hills-Lemoore College) did not report sufficient data to be included in Tables 1-4 (see End Note 7).

End Notes

1 https://sstar.wisc.edu/services-research/measuring-college-funding-inequality/

2 Clotfelter, C. (2017). Unequal Colleges in the Age of Disparity. Harvard University Press; Cambridge, MA. Taylor, B. & Cantwell, B. (2019). Unequal Higher Education: Wealth, Status, and Student Opportunity. Rutgers University Press.

3 Bound, J.; Lovenheim, M. F.; & Turner, S. (2010). Why Have College Completion Rates Declined? An Analysis of Changing Student Preparation and Collegiate Resources. American Economic Journal: Applied Economics, 2(3), 129-157. See also: Bound, J.; Lovenheim, M. F.; & Turner, S. (2012). Increasing Time to Baccalaureate Degree in the United States. Education Finance and Policy, 7(4), 375-424, www.mitpressjournals.org/doi/10.1162/EDFP_a_00074; Bound, J. & Turner, S. (2007). Cohort Crowding: How Resources Affect College Attainment. Journal of Public Economics, 91(5-6), 877-899. Deming, D. J. & Walters, C. R. (2017). The Impact of Price Caps and Spending Cuts on U.S. Postsecondary Attainment. National Bureau of Economic Research Working Paper No. 23736, https://scholar.harvard.edu/files/ddeming/files/DW_Aug2017.pdf. Webber, D. A. & Ehren-berg, R. G. (2010). Do Expenditures Other Than Instructional Expenditures Affect Graduation and Persistence Rates in American Higher Education?Economics of Education Review, 29(6), 947-958, www.sciencedirect.com/science/article/abs/pii/S0272775710000488

4 Davies, S., & Zarifa, D. (2012). The stratification of universities: Structural inequality in Canada and the United States. Research in Social Stratification and Mobility, 30(2), 143-158.; Lau, Y., & Rosen, H. S. (2015). Are universities becoming more unequal? (No. w21432). National Bureau of Economic Research.; Cheslock, J. J., & Shamekhi, Y. (2020). Decomposing financial inequality across US higher education institutions. Economics of education review, 78, 102035.

5 Cheslock, J. J. (2019). Examining Instructional Spending for Accountability and Consumer Information Purposes. The Century Foundation, https://tcf.org/content/report/examining-instructional-spending-accountability-consumer-information-purposes/. See also: Delta Cost Project (2016). Trends in College Spending: 2003-2013. https://www.air.org/sites/default/files/2021-08/Delta-Cost-Trends-in-College-Spending-January-2016.pdf. We follow Cheslock's E&R formula: [(instruction student services)] * [education share * (academic support institution support)] where "education share" is calculated as [(instruction student services) / (instruction student services research public service)].

6 Archibald & Feldman (2012). The Anatomy of College Tuition. American Council on Education: https://www.acenet.edu/Documents/Anatomy-of-College-Tuition.pdf

7 State Higher Education Executive Officers (2021). State Higher Education Finance. https://shef.sheeo.org/wp-content/uploads/2021/05/SHEEO_SHEF_FY20_Report.pdf

8 We omit Columbia college and Modesto Junior college, which do not report state and local appropriations, along with West Hills – Coalinga college and West Hills – Lemoore college, which do not report local appropriations in 2019. We also impute the missing state appropriations with zero for Mission college (assuming this is a basic aid district) and we replace missing local appropriations for Merritt college and Monterey Peninsula college with their 2018 values since their 2019 values are missing in IPEDS. We also replace missing state appropriations with $0 for Mission College (2014-2019) and Sierra College (2005).

9 Unlike the 2019 tables from above, these figures include colleges reporting expenditures or appropriations in any given year (see Appendix A).

10 Unlike the 2019 tables from above, these figures include colleges reporting expenditures or appropriations in any given year (see Appendix A).

11 Unlike the 2019 tables from above, these figures include colleges reporting expenditures or appropriations in any given year (see Appendix A).

12 Unlike the 2019 tables from above, these figures include colleges reporting expenditures or appropriations in any given year (see Appendix A).

13 Attaining the Vision Goal Completion includes earning one or more of the following: Chancellor's Office approved certificate, associate degree, and/or CCC baccalaureate degree

14 Board of Governance Fee Waiver was renamed to the California College Promise Grant in 2017

15 Cohorts are based on the proportion of students who earned any associate degree by 2019 out of those who enrolled in community colleges for the first time in 2016 (three-year cohort) and in 2015 (four-year cohort).

16 Cohorts are based on the proportion of students who earned any associate degree by 2019 out of those who enrolled in community colleges for the first time in 2016 (three-year cohort) and in 2015 (four-year cohort).

17 Cohorts are based on the proportion of students who earned any associate degree by 2019 out of those who enrolled in community colleges for the first time in 2016 (three-year cohort) and in 2015 (four-year cohort).