



Funding Incentives for California Community Colleges

Impacts of the Student-Centered Funding Formula on Financial Aid Receipt

Robert Linden

IN JUNE 2018, CALIFORNIA ADOPTED the Student-Centered Funding Formula (SCFF), which overhauled the way funds are apportioned to the 73 districts and 116 colleges that make up the California Community College (CCC) system.¹ In the prior decade, the state had apportioned revenue almost exclusively according to a district's enrollment levels. By contrast, the SCFF uses a multi-faceted and equity-focused approach to apportion revenue according to a district's levels of enrollment, student socioeconomic status, and student success. The socioeconomic status component is based on a district's counts of Pell Grant recipients, Promise Grant² recipients, and undocumented students. The success component is based on a district's counts of students who achieve any of nine outcomes including attainment of a certificate, associate degree, or Associate Degree for Transfer (ADT).

TOPLINES

- > The new community college funding formula, SCFF implemented in 2018-19, was designed to provide financial incentives for colleges to increase support for lower-income students and improve student success outcomes.
- > In the second year of SCFF implementation, a student's likelihood of receiving a Pell Grant increased by 6.5%, meaning about 23,000 additional CCC students received critical cash aid to support living and educational expenses.
 - > Colleges awarded more Pell Grants by increasing student FAFSA submission and increasing take-up among students who filed a FAFSA with a Pell-eligible Expected Family Contribution.
 - > Colleges with the lowest Pell take-up rates prior to SCFF implementation drove systemwide awarding gains for this grant by increasing take-up among eligible students.
- > In the same period, receipt of the state-based Promise Grant increased by 2.2%, meaning about 22,000 additional CCC students had their enrollment fees waived.
- > The SCFF's financial incentives to colleges do not appear to have been a direct catalyst for increased financial aid awarding. Districts that were financially unaffected by SCFF implementation made gains in awarding aid that were comparable to districts that were financially affected.
- > Very early analysis finds that awarding of certificates and associate degrees increased following passage of the SCFF, which may have been driven by the formula's financial incentives or anticipation thereof.



These early years of SCFF implementation offer a compelling opportunity to examine the efficacy of financial incentives as a motivator for institutional reform.

The state designed the SCFF to reduce financial barriers, reduce achievement gaps, and increase certificate and degree completion among CCC students.³ It intended to use funding incentives and funding cuts as policy levers to achieve these goals. A district that demonstrated high levels of financial aid receipt and/or student success could experience an increase in per-student revenue under the SCFF relative to the prior formula. Conversely, a district that did not perform well in these areas could experience a revenue loss. This introduced substantial financial incentives for CCC districts and colleges to implement reforms that were aligned with state goals. For instance, an institution could try to increase Pell Grant awarding by reducing application barriers (e.g., by implementing software to enable students to submit tax records electronically). As another example, an institution could work to expand certificate and degree awarding (e.g., through stackable credentials, or pathways in which students can earn shorter-term certificates on the path to longer-term certificates or degrees). For more detail on the components of the SCFF, see [*Understanding the Student-Centered Funding Formula: A Primer on California Community College Finance*](#).

As of September 2022, however, the state has not fully implemented SCFF financial incentives. The original legislation included a three-year “hold harmless” period that guaranteed districts a funding floor based on their revenue computed by the prior formula in 2018–19 through 2020–21. Functionally, this meant that districts could gain but not lose per-student revenue under early SCFF implementation. However, the state extended the hold harmless period several times to protect districts from funding cuts through 2024–25.⁴

While the hold harmless has delayed the SCFF’s incentive structure, institutions nonetheless faced substantial pressure in the policy’s early operational years. Following its passage, districts and colleges operated under the assumption that if they did not perform well on the student aid and success funding components, they risked revenue losses following the initial scheduled expiration of the hold harmless provision in 2021–22. As a result, these early years of SCFF implementation offer a compelling opportunity to examine the efficacy of financial incentives as a motivator for institutional reform.

This brief focuses primarily on the early effects of SCFF implementation on student financial aid receipt. By fall 2019, a year and a half after implementation, a student’s likelihood of receiving a Pell Grant and Promise Grant increased by 5.1% and 2.2%, respectively, relative to expected rates in the absence of the formula change. Gains in Pell Grant awarding were driven by increased submission of the Free Application for Federal Student Aid (FAFSA) and increased grant receipt among Pell-eligible students.⁵ However, the formula’s aid awarding incentives were likely not the primary catalyst for these systemwide gains in receipt. This is because districts that were not financially affected by the SCFF’s awarding incentives exhibit comparable increases in aid awarding to districts that were affected. Rather, analysis reveals that it was colleges with lower Pell take-up⁶ prior to SCFF implementation that drove awarding gains by increasing grant receipt among Pell-eligible students.

While the SCFF yielded increases in financial aid receipt as policymakers intended, the policy did not primarily achieve these ends through its incentive structure. Instead, the state’s messaging surrounding the policy, particularly its emphasis on support for low-income students through administrative-focused reforms, appears to be a more likely catalyst for these systemwide improvements.

DATA AND METHODS

This analysis uses administrative data from the California Community College Chancellor's Office (CCCCO) to evaluate the impacts of the SCFF.⁷ These data contain rich information on student demographics, course enrollment, financial aid records, and certificate and degree outcomes for each student who attends a CCC.

The analysis employs two distinct models to assess student-level changes in Pell Grant and Promise Grant receipt across terms and college-level changes in certificate and degree awarding across academic years. In each model, changes in a given outcome are estimated relative to their predicted levels in the absence of SCFF implementation. This prediction accounts for changes in a given outcome across time, student demographics, and colleges. Time-based variables capture changes in an outcome across academic years as well as fall and spring terms.⁸ These measure an outcome's time trend prior to SCFF implementation to account for the expected change following SCFF implementation. Student-based variables include a student's number of units attempted, age, gender, and race. These account for changes in student composition in the CCC system over the analytical period which may affect a given outcome. College-based variables include indicators for each sampled college.⁹ These account for other unobserved differences across colleges.

By taking the difference between an observed and predicted outcome, I attempt to estimate a policy effect that "holds all else equal." That is, because the prediction accounts for prior time trends and trends related to student and college characteristics, this difference estimates the change in an outcome that is attributable to SCFF implementation but not other factors (e.g., other policies or trends that may affect an outcome). This estimate is unbiased if all other factors are properly accounted for in the prediction.

In the student-level financial aid model, I leverage a sample of students who meet non-financial criteria for a Pell Grant or Promise Grant in a given term, respectively.¹⁰ That is, while students need not demonstrate financial need to be sampled, they must meet other eligibility requirements such as maintaining good academic standing. I use an analytical period of spring 2015 through fall 2019. Sampled terms include each spring and fall term in the analytical period. I do not sample terms following fall 2019 because the onset of the COVID-19 pandemic in spring 2020 affected award receipt and would confound estimated SCFF effects. For more information on these sampling procedures, see [*Impact of Financial Aid Incentives on Student Receipt in the California Community Colleges \(pp. 15–17\)*](#).

In the college-level certificate and degree awarding model, I sample all colleges that award certificates, degrees, or ADTs, respectively, in a given year. I only count certificates that require 16 or more units because the SCFF pays a district for its counts of awarded certificates that meet this unit threshold. For more information on this sampling procedure, see [*Impact of Degree Incentives on Degree Production in the California Community Colleges \(pp. 18–19\)*](#).

SCFF Effects on Student Financial Aid Outcomes

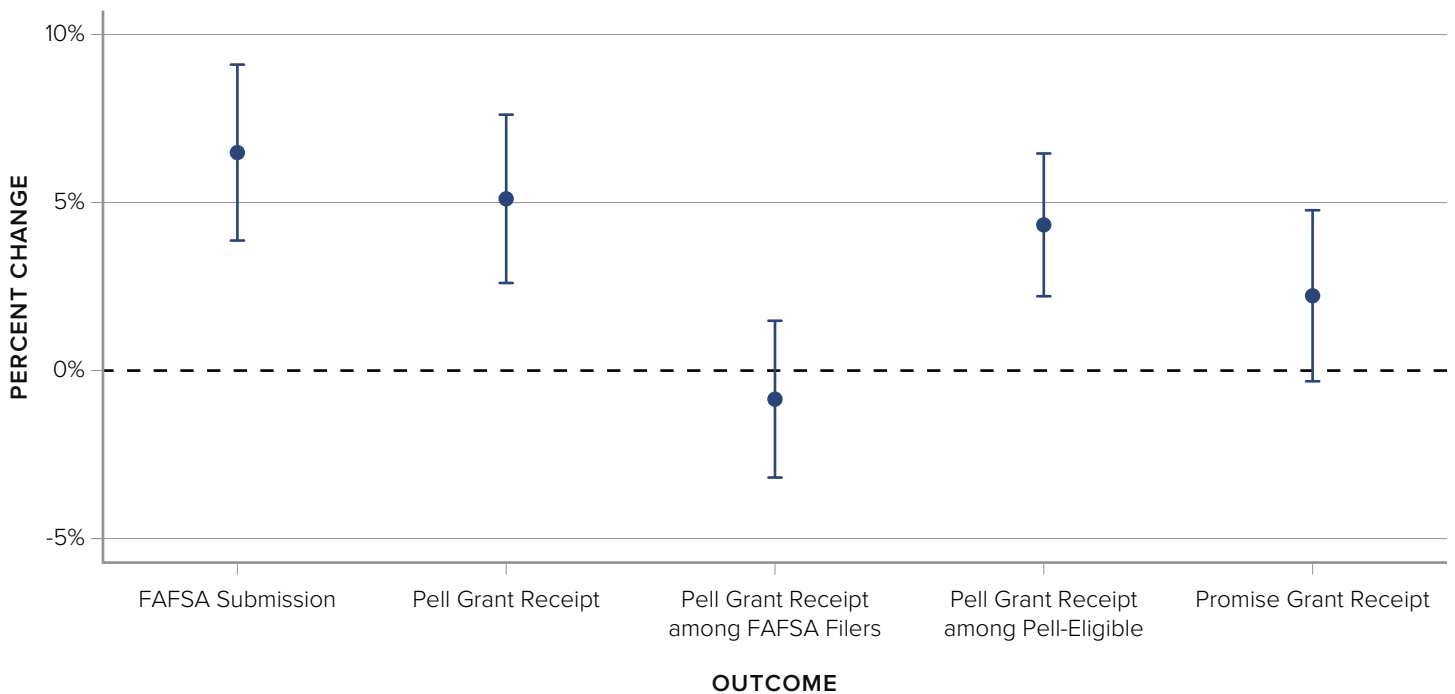
The SCFF's effects on student financial aid outcomes are presented here in percent terms by fall 2019, the policy's third operational term.¹¹ Outcomes include a student's likelihood of filing a FAFSA, receiving a Pell Grant, and receiving a Promise Grant. Changes in Pell Grant receipt are reported among all sampled students, FAFSA filers, and Pell-eligible students. By comparing SCFF effects across these outcomes, along with a student's likelihood of filing a FAFSA, it is possible to infer what types of policies were used to reform Pell Grant awarding. For instance, large, positive effects on FAFSA submission indicate that colleges implemented application-focused reforms. Conversely, large, positive effects on Pell Grant receipt among FAFSA filers or Pell-eligible students indicate that colleges implemented administrative-focused reforms.

Interpreting Figure Results

In the figures that follow, each displayed dot represents a point estimate, or the size of an effect. Each vertical band represents the 95% confidence intervals for the corresponding point estimate. A confidence interval measures the error of a corresponding estimate. A wider (narrower) band denotes an estimate with more (less) error. A point estimate is statistically significant at the 5% level if its corresponding confidence interval does not cross the dotted, horizontal line at zero. Where the confidence interval does cross the horizontal line at zero, effects should be interpreted with caution because they are estimated with less precision.

Figure 1 shows systemwide SCFF effects on student financial aid outcomes. These represent average effects across each sampled student. By fall 2019, there were substantial gains in FAFSA submission and Pell Grant receipt. A student’s likelihood of FAFSA submission increased by 6.5% while their likelihood of Pell Grant receipt increased by 5.1%. The likelihood of Pell Grant receipt among FAFSA filers decreased by a margin that is close to zero. This is unsurprising as this effect can be seen as the change in Pell Grant recipients divided by the change in FAFSA filers. Since the prior two effects show that the filing rate increased by a greater margin than the receipt rate, the receipt rate among filers decreased slightly after the policy was implemented. Pell Grant receipt among Pell-eligible students increased by 4.3%. Finally, Promise Grant receipt increased by 2.2%. Since the confidence interval of this effect narrowly crosses the dotted line at zero, it should be interpreted with more caution.

Figure 1. Systemwide Financial Aid Effects by Fall 2019



Colleges appear to have increased Pell Grant awarding through application- and administrative-focused reforms. This can be seen as both FAFSA submission and Pell Grant receipt among eligible students increased after the SCFF was implemented. The increased likelihood in receipt of each grant type resulted in an estimated additional 23,000 Pell Grant recipients and 22,000 Promise Grant recipients in 2019–20.¹²

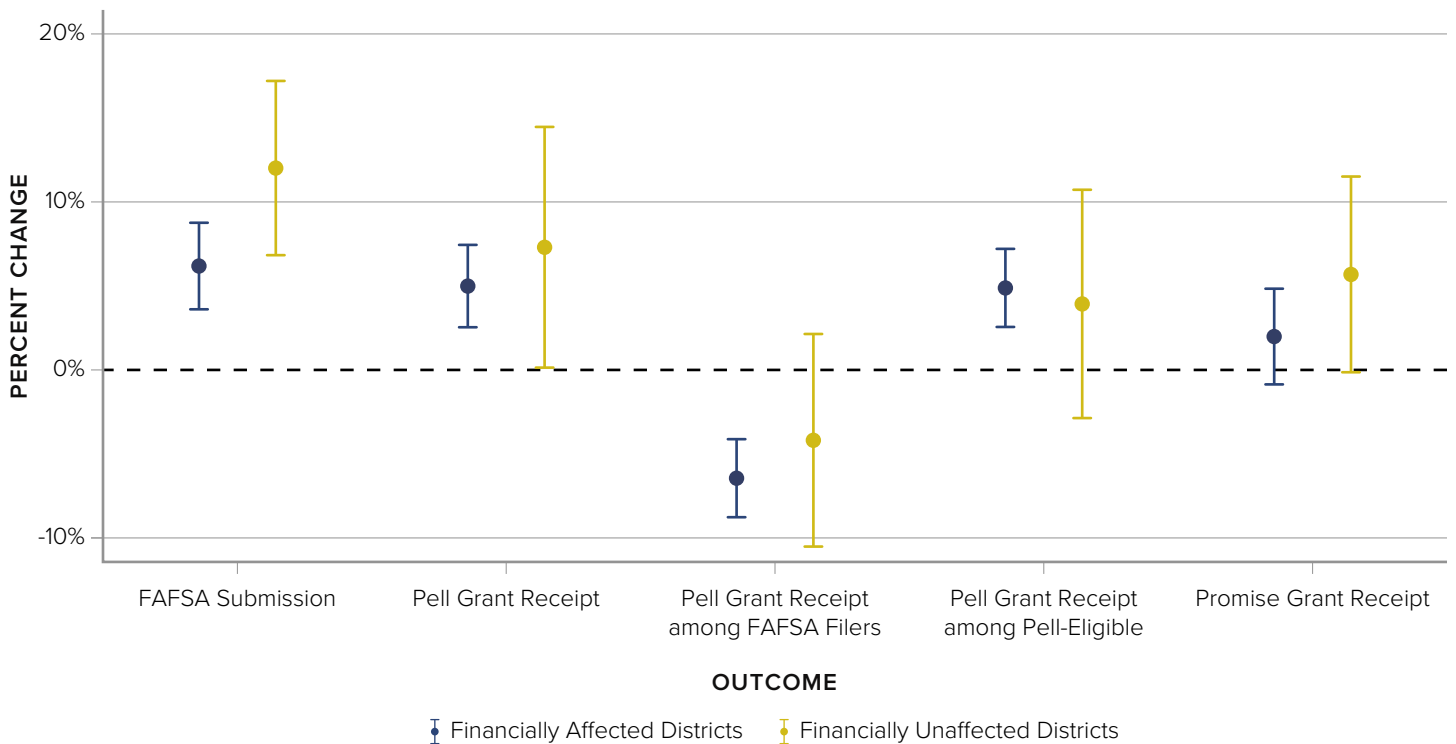
Comparing Effects across Financially Affected and Financially Unaffected Districts

SCFF financial incentives did not affect all CCC districts equally. This allows further analysis comparing student effects across districts that were financially affected or unaffected by the new formula. This comparison helps determine whether the financial incentives were the catalyst for systemwide gains in aid awarding, or whether other factors were at play.

Most of the state’s 73 CCC districts rely on revenue received from the funding formula. For these districts, new elements in the SCFF added financial pressure to increase student financial aid receipt, certificate awarding, and degree awarding. A district that demonstrated high rates of these measures could increase its per-student revenue level relative to the prior formula. Otherwise, it risked a revenue decline once the SCFF’s hold harmless provision ended.¹³ However, a handful of districts do not rely on formula revenue because their local tax revenue exceeds the level that the state would provide through the formula. These districts are referred to as “Community Supported” (CS).¹⁴ For more information on CS status and their use in this analysis, see [Impact of Financial Aid Incentives on Student Receipt in the California Community Colleges \(pp. 26–28\)](#).

Figure 2 compares policy effects across students who attend districts that were financially affected (non-CS) or financially unaffected (CS) by SCFF implementation. If financial incentives were indeed the primary catalyst for increased aid awarding, one would expect students in financially affected districts to exhibit larger gains in awarding outcomes than students in financially unaffected districts. However, each group exhibits fairly comparable changes across each outcome.¹⁵ In fact, students in financially unaffected districts tend to exhibit somewhat higher gains in most financial aid outcomes. These results strongly suggest that SCFF financial incentives were not the main catalyst for systemwide gains in student aid receipt. Instead, it appears that the formula served as a signal of the state’s increased emphasis on financial aid awarding, which districts seem to have responded to regardless of whether they faced financial incentives from the policy.

Figure 2. Financial Aid Affects Across Financially Affected and Financially Unaffected Districts by Fall 2019

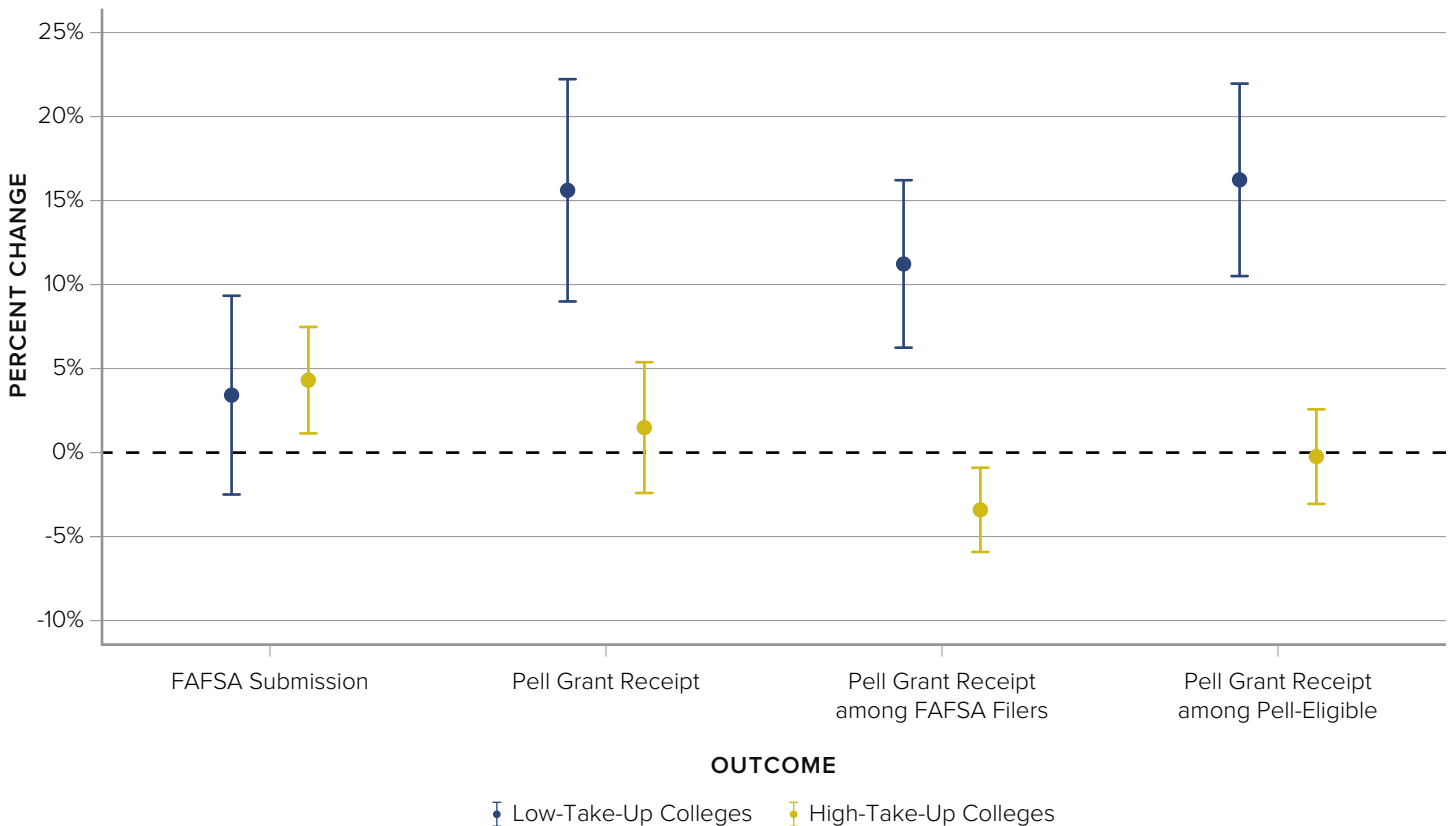


Comparing Effects across Low- and High-Take-Up Colleges

A second layer of examination allows for identification of individual colleges that drove systemwide gains in aid awarding.¹⁶ Prior to SCFF implementation, approximately 20% of Pell-eligible CCC students did not receive a Pell Grant, with substantial differences in Pell take-up across CCCs.¹⁷ It is reasonable to expect that colleges with lower Pell take-up prior to SCFF implementation had greater potential to increase take-up post policy than those with higher Pell take-up. Because they enroll a larger proportion of Pell-eligible nonrecipients, these low-take-up colleges could have implemented simple administrative-focused reforms as an effective means of increasing Pell Grant receipt. For instance, a college could have used text or email reminders to increase student awareness of eligibility. On the other hand, a high-take-up college has less potential to employ this reform since it was already relatively proficient in administering Pell Grants before the policy was in place.

Figure 3 compares SCFF effects across students who attended low- or high-take-up colleges.¹⁸ Low-take-up colleges increased Pell Grant receipt by a sizeable 15.6%, whereas high-take-up colleges made only 1.5% gains, confirming that low-take-up colleges disproportionately drove systemwide gains in Pell Grant awarding.¹⁹ Low-take-up colleges did not primarily make these gains through application-focused reforms since the rate of FAFSA submission rose by a very comparable margin across the two groups. This increase in likelihood of FAFSA submission among low-take-up colleges was only 3.4%, less than the systemwide average 6.5% seen in Figure 2. Rather, it appears that low-take-up colleges largely achieved these gains through administrative-focused reforms. Their students exhibit an increase in Pell Grant receipt among FAFSA filers and among Pell-Eligible students by 11.2% and 16.2%, respectively. Conversely, students in high-take-up colleges exhibit small, negative changes in these outcomes. Thus, low-take-up colleges were able to disproportionately expand Pell Grant awarding, likely by improving administrative practices so that eligible students were more likely to receive critical financial aid.

Figure 3. Financial Aid Affects Across Low- and High-Take-Up Colleges by Fall 2019



These statistics indicate improved college affordability among lower-income students and increased educational attainment.

Early Analysis of Certificate and Degree Results

The certificate and degree data used in this analysis contain only one complete SCFF operational year prior to the pandemic.²⁰ From a research perspective, this time period may be insufficient to understand the formula's full effects on certificate and degree awarding. This is especially true for credentials requiring longer time periods to complete. Given that the average CCC student takes over five years to complete an associate degree²¹, colleges would be hard-pressed to reform student pathways to degree attainment in only one year. Moreover, the availability of just one year of post-SCFF data implies that certificate and degree awarding effects can only be estimated with a relatively high degree of error and should be interpreted with caution.

That said, early analysis suggests that SCFF implementation increased certificate awarding statewide by 12.7% and associate degree awarding by 10.2% in 2018-19, relative to expected levels in the absence of a funding formula change. This implies that an additional 9,200 certificates and 11,900 degrees were awarded in a single year.²² However, the impact on ADT awarding was close to zero and not statistically significant.²³ For more information on this early analysis and its limitations, as well as a discussion of some evidence that financial incentives drove gains in certificate and degree awarding, see [*Impact of Degree Incentives on Degree Production in the California Community Colleges*](#).

Conclusion and Discussion

The results reported here encompass changes in student financial aid receipt and credential outcomes in only the first two years of SCFF operation and reveal the policy's power to motivate institutional financial aid reform in a short timeframe. The analysis shows that, by and large, SCFF implementation functioned as policymakers intended. Post-implementation, a student's likelihood of receiving a Pell Grant and Promise Grant increased. An early analysis using the limited data that are available before the COVID-19 pandemic suggests that colleges also awarded more certificates and associate degrees in the first year of implementation.

Overall, these changes represent sizeable gains for CCC students and the institutions that serve them. Over the course of one-to-two academic years, the policy resulted in an estimated additional 22,000 Pell Grant recipients and 23,000 Promise Grant recipients and the awarding of an additional 9,200 certificates and 11,900 associate degrees. These statistics indicate improved college affordability among lower-income students and increased educational attainment.

Comparing financial aid effects across CCC institutions that were differentially affected by SCFF financial incentives helps explain how the policy was able to achieve these ends. Institutions that were financially affected by the new formula did not make increased gains relative to institutions that were financially unaffected. However, striking differences emerge with respect to changes in Pell Grant awarding across institutions that had lower or higher Pell take-up prior to SCFF implementation. Low-take-up institutions appear to have made substantial administrative improvements that resulted in increased grant receipt among eligible students. Through this policy lever, these colleges with the most room for improvement made disproportionate gains in Pell awarding.

These results suggest that SCFF financial incentives were not the primary driver for systemwide reforms. Rather, the state's active messaging around support for lower-income students may have been a more likely catalyst. Prior to the development of the SCFF, research highlighted low Pell Grant take-up rates in the CCC system and substantial variation in take-up across colleges.²⁴ During development, the CCCCO identified Pell Grant administration as an area in which colleges could make improvements to increase resources available for students in need. The state subsequently included a district's Pell Grant counts as a funding measure in the formula to raise the stakes. The CCCCO communicated this priority systemwide, but targeted this messaging to low-take-up colleges in particular since these colleges had the greatest potential to reform financial aid practices. By the second SCFF operational year, it was these colleges that expanded Pell awarding by the greatest margin. It appears that this messaging from the state, which was not yet accompanied by financial incentives, was the primary motivator for financial aid reform across the community colleges.

Author Biography and Acknowledgements

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Endnotes

- ¹ One college and district, CalBright, is an online college that receives revenue from state categorical funding but not formula funding. Steenhausen, P. (2022). *The 2022–23 Budget: Analysis of Major CCC Proposals*. lao.ca.gov/Publications/Report/4531
- ² The Promise Grant is a state fee waiver, formerly known as the Board of Governors Fee Waiver.
- ³ CCCCC. (2020). *Student Centered Formula Responses to Frequently Asked Questions*. cccco.edu/-/media/CCCCO-Website/College-Finance-and-Facilities/SCFF/Jan-2021/NonTechFAQ-Aug-2020-Update.pdf?la=en&hash=390C1F2A96BF7DA39AC8C9C1F8D647EDC6161BFF
- ⁴ Steenhausen (2022)
- ⁵ I flag a student as Pell-eligible if they submitted a FAFSA with a Pell-eligible Expected Family Contribution (EFC) and attempted six or more units in a given term.
- ⁶ I calculate a college's Pell take-up as its count of Pell Grant recipients divided by its count of Pell-eligible students.
- ⁷ I use two variables in this analysis that are not available in CCCCC administrative files. The first is a college's Community-Supported (CS) status which I use to compare student outcomes across districts that were differentially affected by the SCFF's financial incentives. I use CCCCC apportionment data to flag a district as CS in a given year if its local tax revenues exceed the revenue that the state would have otherwise provided through the funding formula. The second is the maximum EFC that is eligible for a Pell Grant in a given year. I use this variable in my second institutional grouping method that compares awarding effects across colleges with high and low baseline Pell take-up. By restricting my sample to students with eligible EFCs, I estimate take-up among students who appear eligible for a Pell Grant. I code this variable using publicly available Pell Grant schedules.
- ⁸ Only the financial aid model uses this seasonal variable since it uses student-term-level data.
- ⁹ Technically, these are modeled using fixed effects. For more detail, see *Impact of Financial Aid Incentives on Student Receipt in the California Community Colleges* (pp. 20–26).
- ¹⁰ Since I estimate changes in student FAFSA submission, I do not restrict on a student's financial eligibility. Otherwise, my sample would consist entirely of FAFSA filers which would preclude this estimation.
- ¹¹ I compute the percent change for each financial aid outcome by dividing the percentage point effect of a given outcome by the corresponding baseline (i.e., pre-SCFF) mean. For instance, I estimate the 5.1% increase in systemwide Pell Grant receipt in Figure 1 by dividing a 1.6 percentage point effect by the average rate of Pell Grant receipt in 2017-18 among sampled students, 31.3%. In Figures 2 and 3, I compute percent effects using group-specific point estimates and baseline means. Estimates in percentage point terms can be found in Tables 5, 6, and 7 in *Impact of Financial Aid Incentives on Student Receipt in the California Community Colleges* (pp. 20–26).
- ¹² I generate these estimates by multiplying the percent increase in a student's likelihood of receiving a given grant, described in Footnote 11, by the total number of grants awarded in the 2017-18 baseline year, obtained from CCCCC Management Information System Data Mart. For instance, I estimate the increase in Pell Grants recipients by multiplying the 5.1% effect by the 442,000 systemwide Pell Grants recipients in 2017-18. The estimated increase in students who receive each grant is very comparable because there are about twice as many Promise Grant recipients as Pell Grant recipients in the CCC system but the increased likelihood of receiving a Promise Grant was about half that of the Pell Grant. Since nearly every Pell Grant recipient is also a Promise Grant recipient, there is a high degree of overlap between these student groups.
- ¹³ As noted above, the state ultimately extended the hold harmless period, meaning districts have yet to experience revenue declines under the SCFF. However, in early SCFF implementation, districts operated under the risk of revenue declines after the scheduled three-year hold harmless period.
- ¹⁴ CS districts may also be referred to as "Basic Aid" districts. In 2017-18, seven out of the CCC's 72 districts that may receive formula funding in any given year had CS status.
- ¹⁵ While point estimates are comparable across groups, the confidence intervals for the financially unaffected group are noticeably wider. This is because this group has fewer districts and students, meaning these effects are estimated with more error.
- ¹⁶ Because this analysis groups institutions based on Pell take-up rates, I do not model changes in Promise Grant receipt. Further, I cannot conduct a similar analysis for Pell Grant receipt because I cannot identify Promise-eligible students with the data used in this study.
- ¹⁷ Martorell, P., & Friedmann, E. (2018). *Money Left on the Table* (Research Brief Volume 3, Number 3). Wheelhouse: The Center for Community College Leadership and Research. https://education.ucdavis.edu/sites/main/files/ucdavis_wheelhouse_research_brief_vol3no3_online_1.pdf.
- ¹⁸ Cochrane, D. F. (2010). After the FAFSA: How Red Tape Can Prevent Eligible Students from Receiving Financial Aid. *ERIC*. eric.ed.gov/?id=ED515393
- ¹⁹ I assign colleges that fell in the bottom quartile of Pell take-up in 2017-18 to the low-take-up group. I assign colleges that fell in the top quartile of Pell take-up in this year to the high-take-up group. Each group is composed of 28 colleges. Average Pell take-up among low- and high-take-up colleges is 62% and 84%, respectively.
- ²⁰ This large difference in percent terms is attributable to differences in the percentage point effect and the 2017-18 baseline Pell Grant receipt rate across these groups. Low- and high-take-up groups exhibit an increase in a student's likelihood of receiving a Pell Grant of 4.0 percentage points and 0.2 percentage points, respectively, and had baseline Pell take-up rates of 61.6% and 83.6%, respectively.
- ²¹ Certificates and degree data are available at the year-level whereas financial aid data are available at the term-level. Thus, the present analysis offers a shorter analytical period since the second year of SCFF implementation was interrupted by COVID-19.
- ²² Foundation for California Community Colleges. (2017). *Vision for Success*. cccco.edu/-/media/CCCCO-Website/About-Us/Reports/Files/vision-for-success.pdf
- ²³ I generate these estimates by multiplying the percent increase in awarding for a given credential type by the number of credentials awarded for that credential type in the 2017-18 baseline year, obtained from CCCCC Management Information System Data Mart. For instance, I estimate the 9,200 increase in awarded certificates by multiplying the 12.7% effect by the 72,600 certificates awarded in 2017-18 that required 16 or more units. These gains are very sizeable in only the first year of SCFF implementation. Some of these gains may be attributable to increased use of automatic awarding, where students gain a degree when they complete requisite units with no application burden. Also, there were other CCC policies implemented prior to the SCFF that emphasized degree awarding which may help explain these effects.
- ²⁴ ADTs exhibit consistent growth following the inception of the program and through SCFF implementation. However, this rate of growth did not increase after the SCFF was implemented.
- ²⁵ Martorell and Friedmann (2018), Cochrane (2010).