



February 2019

## The Effectiveness of Washington's College Bound Scholarship Program: *Supplemental Report*

The 2015 Washington State Legislature directed the Washington State Institute for Public Policy (WSIPP) to conduct a comprehensive evaluation of the effect of Washington's College Bound Scholarship (CBS) program on secondary and postsecondary educational attainment.

On December 1, 2018, WSIPP published a report presenting an evaluation of the effect of the CBS program on student outcomes at public institutions of higher education in Washington State (referred to as the "main report" throughout). This February 2019 report supplements that publication by evaluating the effect of CBS on attainment at private and out-of-state institutions of higher education.

We provide a brief description of the CBS program and what is new in the supplemental report in [Section I](#). [Section II](#) describes our evaluation data and outcomes of interest. [Section III](#) presents greater detail on the college attainment of students who sign the College Bound pledge, are eligible for CBS, and receive CBS dollars. [Sections IV](#) and [V](#) present our analysis of the effects of the College Bound pledge and scholarship awards. We conclude with a discussion of limitations and a summary in [Section VI](#).

### Summary

Washington's College Bound Scholarship (CBS) program, started in 2007-08, provides financial assistance to low-income undergraduate students. At public institutions, CBS covers full tuition and fees, plus a book stipend. Eligible students at corresponding private institutions receive the equivalent dollar value. To receive the scholarship, students must sign a pledge in middle school promising to graduate high school with at least a 2.0 GPA and no felony convictions and file a FAFSA or WASFA. Students who complete the pledge requirements and have family incomes at or below 65% of the state median family income during college can receive their full CBS award.

The main report, published in December 2018, presented findings of the effect of CBS on attainment at public institutions in Washington. This supplemental report extends that analysis to include effects of CBS on attainment at different types of institutions (private and out-of-state). We find that pledge signing increases enrollment at public 4-year institutions while having little effect on attainment at private or out-of-state institutions. For those students who are eligible to receive CBS at the time of high school completion, we find positive effects on college enrollment and degree receipt. These effects are primarily due to increases in attainment at public institutions in Washington with smaller effects on attainment at private or out-of-state institutions.

Suggested citation: Fumia, D., Bitney, K., & Hirsch, M. (2019). *The effectiveness of Washington's College Bound Scholarship program: Supplemental report* (Document Number 19-02-2301). Olympia: Washington State Institute for Public Policy.

## I. Background

We provide a brief summary of the College Bound Scholarship (CBS) program in this section. For greater program detail, see WSIPP's December 2018 report.<sup>1</sup>

Washington's College Bound Scholarship (CBS) program started in the 2007-08 academic year and provides financial assistance to low-income students who sign a pledge in 7<sup>th</sup> or 8<sup>th</sup> grade promising to graduate from a Washington high school with at least a 2.0 grade point average (GPA), avoid felony convictions, and file a Free Application for Federal Student Aid (FAFSA) or a Washington Application for State Financial Aid (WASFA). Students who fulfill these requirements and have incomes below 65% of the state median family income (MFI) at the time of college attendance receive CBS funding. CBS covers full tuition and fees, plus a book stipend, at public institutions in Washington and the equivalent amount at corresponding private institutions.

### College Bound Scholarship Evaluation— Legislative Direction

*The Washington state institute for public policy shall complete an evaluation of the college bound scholarship program and submit a report to the appropriate committees of the legislature by December 1, 2018. The report shall complement studies on the college bound scholarship program conducted at the University of Washington or elsewhere. To the extent it is not duplicative of other studies, the report shall evaluate educational outcomes emphasizing degree completion rates at both secondary and postsecondary levels. The report shall study certain aspects of the college bound scholarship program, including but not limited to:*

- (a) *College bound scholarship recipient grade point average and its relationship to positive outcomes;*
- (b) *Variance in remediation needed between college bound scholarship recipient and their peers;*
- (c) *Differentials in persistence between college bound scholarship recipients and their peers; and*
- (d) *The impact of ineligibility for the college bound scholarship program, for reasons such as moving into the state after middle school or change in family income.*

Second Substitute Senate Bill 5851, Chapter 244, Laws of 2015.

#### Notes:

As specified by the legislative assignment, our evaluation complements a study of the College Bound Scholarship program occurring at the University of Washington. Goldhaber, D., Long, M., Gratz, T., & Rooklyn, J. (2017). *The effects of Washington's College Bound Scholarship program on high school grades, high school completion, and incarceration*. CEDR Working Paper No. 05302017-2-1. Seattle, WA: University of Washington.

<sup>1</sup> Fumia, D., Bitney, K., & Hirsch, M. (2018). *The effectiveness of Washington's College Bound Scholarship Program* (Document Number 18-12-2301). Olympia: Washington State Institute for Public Policy.

Students must satisfy numerous eligibility criteria to receive CBS funding. First, students must be “pledge eligible,” meaning they meet requirements allowing them to sign the pledge. Students are pledge eligible if they are in 7<sup>th</sup> or 8<sup>th</sup> grade (8<sup>th</sup> or 9<sup>th</sup> grade for one cohort of students with expected high school graduation in 2012) and satisfy any of the following:

- Participate in a free- or reduced-price lunch (FRL) program,
- Have a family income that would qualify them for FRL participation (referred to as income eligible),
- Live with a family that receives Temporary Assistance for Needy Families (TANF) or basic food (Supplemental Nutrition Assistance Program (SNAP)) benefits,<sup>2</sup> or
- Are in foster care.

Second, students must be “pledge signers.” Pledge signers are pledge eligible and sign a pledge in eligible grades promising to graduate from a Washington high school with at least a 2.0 GPA, avoid felony convictions, and file for financial aid using a FAFSA or WASFA.<sup>3</sup>

Third, students who sign and fulfill the requirements of the pledge must meet the following requirements to be eligible to receive CBS in college:

- Have a family income at or below 65% of the state MFI,
- Enroll in an eligible undergraduate program in Washington State by fall term within one academic year of high school graduation (e.g., a student graduating in spring of the 2011-12 academic year must enroll by fall of the 2013-14 academic year),<sup>4</sup>
- Use no more than four academic years of funding, and
- Use all funding within five academic years of August of their high school graduation year.<sup>5</sup>

Receipt does not need to be continuous. Students must satisfy the income requirement each year they receive CBS, but they can receive funding in any year they are eligible regardless of whether they were eligible in the prior year. Students who fulfill all requirements and receive CBS dollars are “CBS recipients.” A summary of these requirements is included in [Exhibit 1](#).

### [Additional Information in the Supplemental Report](#)

WSIPP’s main report presented the effects of both the College Bound pledge and the scholarship award on secondary and postsecondary outcomes. In the main report, postsecondary outcomes included enrollment and completion at public institutions in Washington only.

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<sup>2</sup> The Washington Administrative Code (WAC) governing the College Bound Scholarship program does not identify basic food benefits as an avenue to pledge eligibility. The Washington Student Achievement Council (WSAC), which oversees state financial aid programs, includes basic food benefits because requirements for these benefits are similar to those for TANF and free- or reduced-price lunch (S. Weiss, WSAC, personal communication, 7/17/2018).

<sup>3</sup> [WAC 250-84-030](#). During our analysis period, students could only file a FAFSA.

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<sup>4</sup> Eligible undergraduate programs lead to a Baccalaureate, Associate’s, undergraduate professional degree, or qualifying vocational degree and must be at a college or university participating in the State Need Grant program.

[WAC 250-84-060](#).  
<sup>5</sup> [WAC 250-84-060](#).

This supplemental report extends the main report in three ways. First, we obtained additional data on postsecondary outcomes at private and out-of-state institutions. We use this data to provide detail on the enrollment and completion patterns for high school graduates who signed the College Bound pledge and received the scholarship across institution types ([Section III](#)). [Section III](#) also examines financial aid sources for CBS recipients at public and private 4-year institutions.

Second, using this additional data, we describe the effects of the pledge and scholarship on attainment at private and out-of-state institutions as well as at public institutions in Washington ([Sections IV and V](#)). Finally, we extend our analysis in the main report to include the effects of the College Bound pledge on certificate completion ([Appendix I](#)).

### Exhibit 1

#### CBS Eligibility Requirements and Definitions as Used in This Report

Term	Definition
Pledge-eligible student	A student in 7 <sup>th</sup> or 8 <sup>th</sup> grade (8 <sup>th</sup> or 9 <sup>th</sup> for those with an expected high school graduation in 2012) who satisfies at least one of the following: <ul style="list-style-type: none"> <li>• Receives free- or reduced-price lunch (FRL) services,</li> <li>• Has an income at or below the threshold for FRL eligibility,</li> <li>• Receives Temporary Assistance for Needy Families (TANF) or Supplemental Nutrition Assistance Program (SNAP) benefits, or</li> <li>• Is in foster care.</li> </ul>
Pledge signer	A student who is pledge eligible and signed the pledge.
CBS-eligible student*	A student who signed the pledge and satisfies the following requirements: <ul style="list-style-type: none"> <li>• Graduates from a Washington high school,</li> <li>• Has at least a 2.0 cumulative GPA,</li> <li>• No felony convictions, and</li> <li>• Has a family income at or below 65% of the state median family income (MFI).</li> </ul>
CBS recipient**	A student who is CBS eligible and satisfies all of the following: <ul style="list-style-type: none"> <li>• Filed a FAFSA,</li> <li>• Has a family income at or below 65% of the state MFI,</li> <li>• Enrolled in an eligible program in Washington State by fall term of the academic year following high school graduation,</li> <li>• Uses all four years of CBS within five academic years of high school graduation, and</li> <li>• Receives CBS dollars.</li> </ul>

#### Notes:

\* The Washington Student Achievement Council (WSAC) refers to students who satisfy the pledge requirements, which includes filing a FAFSA, as College Bound Scholars. Our definitions separate the FAFSA requirement from other pledge requirements.

\*\* Some students may be CBS-eligible in college and not receive CBS dollars because they receive their full CBS award from other state aid sources. These students are excluded from our analyses of CBS recipients.

## II. Data and Outcomes

In this section, we provide a summary of the data and outcomes analyzed in this supplemental report. For more detail on our data and methodology, see WSIPP’s main report.<sup>6</sup>

### Data Sample

In the main report, we included six cohorts of students in the analysis of the effects of the pledge: two cohorts of students who were unable to sign the College Bound

pledge because they were in the required middle school grades prior to the program’s implementation and four cohorts in middle school after CBS implementation. When evaluating the effects of the scholarship, we included four cohorts in the main report analysis—two cohorts from before CBS was implemented and two cohorts following implementation. [Exhibit 2](#) defines these student cohorts. As in the main report, we identify a student’s cohort based on their last time observed in a grade. Retained students are included in the cohort corresponding to the last time they are observed in a given grade.

### Exhibit 2

School Grades and Postsecondary Years by Cohort, Assuming On-Time Progression

	Expected high school graduation year	Pre-period cohorts		Post-period cohorts (“CBS cohorts”)			
		Cohort 1	Cohort 2	Cohort 3	Cohort 4	Cohort 5	Cohort 6
		2010	2011	2012	2013	2014	2015
School year	2004-05	7	6				
	2005-06	8	7	6			
	2006-07	9	8	7	6		
	2007-08	10	9	8	7	6	
	2008-09	11	10	9	8	7	6
	2009-10	12	11	10	9	8	7
	2010-11	PS1	12	11	10	9	8
	2011-12	PS2	PS1	12	11	10	9
	2012-13	PS3	PS2	PS1	12	11	10
	2013-14	PS4	PS3	PS2	PS1	12	11
	2014-15	PS5	PS4	PS3	PS2	PS1	12
	2015-16	PS6	PS5	PS4	PS3	PS2	PS1

#### Notes:

PS refers to postsecondary or college years.

Pre-period cohorts are those students who are 7<sup>th</sup> or 8<sup>th</sup> grade prior to CBS implementation.

Post-period cohorts are those students who entered 7<sup>th</sup> or 8<sup>th</sup> grade (or 9<sup>th</sup> for Cohort Three) after CBS was implemented.

Shading highlights the grades and years where students could be pledge eligible (dark gray) or pseudo eligible (light gray).

<sup>6</sup> Fumia et al. (2018).

For most of this supplemental report, we include four cohorts in both the pledge and scholarship analyses—two cohorts before and two cohorts immediately after CBS implementation.<sup>7</sup> From these four cohorts, we selected a random subset of students who had no relevant missing student characteristic data.<sup>8</sup>

We used this random subset of students for most of this supplemental analysis instead of the full sample.<sup>9</sup> Obtaining data on college enrollment and completion from all private and out-of-state institutions requires purchasing data from the National Student Clearinghouse (NSC). The cost of the data is determined based on the number of records submitted to NSC. To control the costs of data acquisition, we chose to obtain data on a random subset of students rather than the full sample. This random subset constitutes the primary data for our analysis in this report and contains approximately 50% of students from the first four cohorts.

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<sup>7</sup> The reported effects of the College Bound pledge on certificate completion in Appendix I utilize data from all six cohorts as does the descriptive analysis of college-going decisions of pledge signers and CBS recipients (Section III).

<sup>8</sup> Random sampling should produce a subset of students with characteristics distributed identically to those of the full sample. In aggregate, the randomly selected subset is effectively “the same” as the full sample, differing only by variation inherent to the sampling process. In other words, the full sample and random subset should produce approximately the same results when used in the same analysis, differing only due to sampling variation. Results produced using a random subset are as valid as results produced using the full sample. For detail on the sample of students included in the supplemental report, see Appendix IV.

<sup>9</sup> Analyses in Section III use data from all students who signed the pledge and graduated high school rather than a random subset. For more on data obtained from NSC, see Appendix IV.

## Administrative Education Data from Washington

We obtained education data from numerous sources for both the main and supplemental reports. The data were collected and matched across data sources by the Education Research and Data Center (ERDC).<sup>10</sup> Sources of data include the following:

- The Office of Superintendent for Public Instruction (OSPI), which provides information on students in Washington K–12 public schools;
- The Public Centralized Higher Education Enrollment System (PCHEES), which provides college-related records for students at public 4-year institutions in Washington;
- The State Board of Community and Technical Colleges (SBCTCs), which provides college-related data for students at public 2-year institutions in Washington;
- The Washington Student Achievement Council (WSAC), which provides financial aid records for students who enroll in public and private Washington higher education institutions and receive state need-based aid; and

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<sup>10</sup> For additional information on the ERDC, please see ERDC’s website. ERDC states,

*The research presented here utilizes confidential data from the Education Research and Data Center (ERDC), located within the Washington Office of Financial Management (OFM). Committed to accuracy, ERDC’s objective, high-quality data helps shape Washington’s education system. ERDC works collaboratively with educators, policymakers and other partners to provide trustworthy information and analysis. ERDC’s data system is a statewide longitudinal data system that includes de-identified data about people’s preschool, educational, and workforce experiences. The views expressed here are those of the author(s) and do not necessarily represent those of the OFM or other data contributors. Any errors are attributable to the author(s).*



- The National Student Clearinghouse’s (NSC) StudentTracker service, which provides additional college-related records for students attending public and private institutions in and outside of Washington.<sup>11</sup> We use the NSC data to identify enrollments and completions from private institutions in Washington and from public and private institutions outside Washington.

For most analyses, we use Washington administrative data and NSC data through the 2015-16 school year.<sup>12</sup>

## Outcomes

In this supplemental report, we focus on the effects of the College Bound pledge and scholarship on on-time college enrollment, persistence, and completion (e.g., we measure whether a student attends college “on time” or within one school year of graduating high school on time). Given available data and the design of the CBS program, the evaluation is well-suited to address this progression (see [Exhibit 2](#) for an illustration of a student’s expected on-time progression). Because most students in our data who progress do so on time—more than 90% of students who graduate

high school and more than 75% of students who enroll in college do so on time—this focus provides valuable information about the effects of CBS on progression for most students.

Only students enrolling in at least one college-level course are considered enrolled or persisting at public institutions.<sup>13</sup> We do not consider students who enroll exclusively in basic skills, English as a Second Language, or “life-long learning” courses at public 2-year institutions.<sup>14</sup> Students who enroll in only non-college-level courses will be included as not enrolled or not persisting.

*College Enrollment.* We define on-time enrollment as enrolling in a 2-year or 4-year program within one school year after completing high school on time. We consider students as enrolled even if they later withdraw for that year. For students who we do not observe completing high school on time, we measure on-time college enrollment relative to their expected, on-time high school graduation date. For this analysis, we only consider college enrollment occurring after high school. We do not consider students enrolled in concurrent programs as college enrollees unless they also enroll in college after high school. We still include concurrent students as college graduates even if they complete a college degree while in high school.

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<sup>11</sup> The National Student Clearinghouse is a non-profit, non-governmental organization that provides data administration services to education institutions and researchers. The [NSC’s StudentTracker](#) service tracks students’ academic careers across more than 3,600 institutions. The institutions covered by StudentTracker enroll more than 99% of all postsecondary students in the United States.

<sup>12</sup> Research currently underway at the University of Washington will include data through 2016-17 and may include educational attainment from additional students at private 4-year colleges in Washington State. Analyses in Section III of this report use NSC data through the 2016-17 school year.

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<sup>13</sup> Data from NSC do not allow us to identify students taking only non-college-level courses. However, generally students in this category attend public 2-year institutions, while some attend public 4-year institutions.

<sup>14</sup> Data from NSC do not allow us to exclude students in this category. However, generally students in this category attend public 2-year institutions.

*College Persistence.* We measure college persistence as whether a student enrolls in two, three, or four consecutive years of college on time.<sup>15</sup> Students must enroll in each year on time to be considered persisting for this analysis. We consider students who enroll at any point in the second, third, or fourth on-time year of college as enrolled for that respective year. We do not differentiate re-enrollment status by institution type. Students who first enroll in a 2-year institution and re-enroll for an additional year at a 4-year institution (or vice versa) are considered to persist in college unless otherwise noted. Similarly, we define a student who starts at one institution type and transfers to another type (e.g., a student who starts at a Washington public institution and transfers to an out-of-state institution) as persisting. Students who never enroll are defined as not persisting.

*College Graduation.* We measure on-time 4-year graduation as degree receipt within four school years of on-time high school graduation.<sup>16</sup> For example, if a student graduates high school on-time at the end of the 2011-12 school year, we would consider a Bachelor's degree received by the 2015-16 school year to be on-time degree receipt. For 2-year degrees, we measure completion within two and three years of on-time high school completion. Students who do not attend college are included in these analyses as non-graduates.

As discussed above, we report the effects on enrollment and completion at various types of institutions. We, therefore, measure four types of outcomes at 2-year and 4-year institutions. Specifically, we measure enrollment and completion at (1) any private or public institution in the country, (2) public Washington institutions, (3) private Washington institutions, and (4) any institution outside of Washington.

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<sup>15</sup> For all outcomes measured in the fourth year, we primarily consider students from Cohorts One through Three. Students who enter college earlier in Cohorts Four through Six may be included.

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<sup>16</sup> We received Washington administrative data through the 2015-16 school year. Using this administrative data, we can only measure on-time Bachelor's degree receipt within four years of high school completion for Cohorts One through Three.



### III. Descriptive Analysis of Pledge Signers, CBS-Eligible Students, and CBS Recipients

Instead of reporting the effectiveness of CBS, this section provides an in-depth look at the college-going behavior of students who both sign the College Bound pledge and graduate from a public Washington high school. Of these students who sign the pledge, about 47% of them are eligible for CBS (i.e., those who graduate high school with no felonies and a high school GPA of at least 2.0 and who receive FRL services in 12<sup>th</sup> grade—a proxy for income).

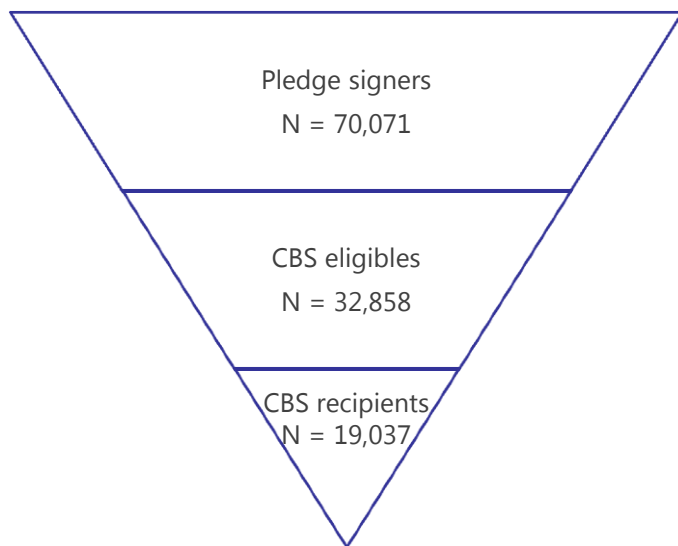
Of those students who sign the pledge, 27% receive the College Bound Scholarship ([Exhibit 3](#)).<sup>17</sup>

We also provide information on these subsets of students who are CBS eligible and/or receive CBS.

This section on college attainment uses college enrollment and completion data for an expanded set including all pledge signers who graduated high school from all four cohorts after CBS implementation (i.e., students with expected high school graduation dates between 2012 and 2015). We present information on the distribution of students of different status (pledge signers, observed as CBS eligible, and CBS recipients) across institution type and location (Washington public institution, Washington private institutions, and out-of-state institutions). In this section, we follow students through the 2016-17 school year. The data for these exhibits are provided in [Appendix II](#).

Overall, the examination of college-going behavior of pledge signers, students who are CBS eligible, and CBS recipients reveals

**Exhibit 3**  
Student Status



**Note:**

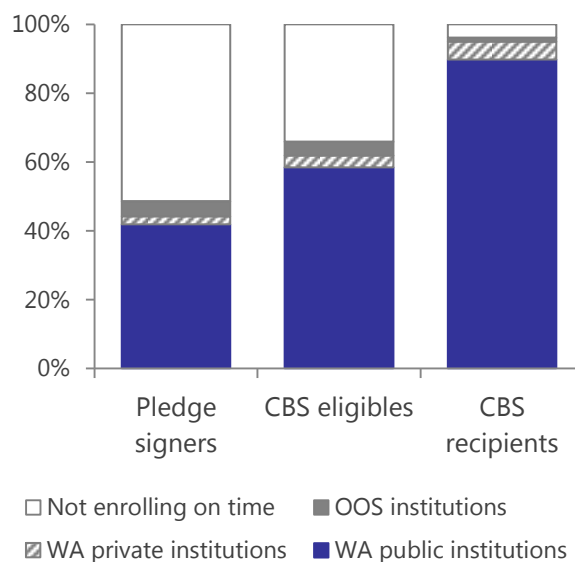
We define CBS eligible as those students we observe as CBS eligible at the time of high school graduation.

<sup>17</sup> We cannot observe CBS eligibility for all students. CBS eligibility depends on family income, which we cannot observe directly using available data. Because most students receiving FRL services have a family income at or below 65% of the state MFI, we use FRL services as a proxy for family income to identify most CBS-eligible students. However, some students with a family income at or below 65% of the state MFI will not receive FRL services. These students will not be observable in our data as CBS eligible. Thus, students who we observe as CBS recipients are not necessarily observed as CBS eligible in our data.

that students who attend and complete college overwhelmingly do so at public institutions in Washington. We also find that students who are eligible to receive CBS—meaning they have signed and fulfilled the pledge and are still low income at the time of high school completion—are more likely than students who only sign the pledge to enroll in and complete college. Finally, CBS recipients are more likely to enroll in and graduate from a Washington institution, rather than an out-of-state institution, than pledge signers or CBS-eligible students. As displayed in [Exhibit 4](#), 48% of pledge-signing students enroll in a higher education institution on time. Of those students enrolling, 88% of them enroll in a Washington public institution. Those who we observe as CBS eligible enroll on time 65% of the time. Of these enrollees, 90% of them enroll in a Washington public institution. Of these enrollees, 90% of them enroll in a Washington public institution.

#### Exhibit 4

Percentage of Students Enrolling at a 2-Year or 4-Year Institution, by Student Status



#### Notes:

Pledge signer N = 70,071; CBS-eligible student N = 32,858; and CBS recipient N = 19,037.

OOS refers to out-of-state institutions.

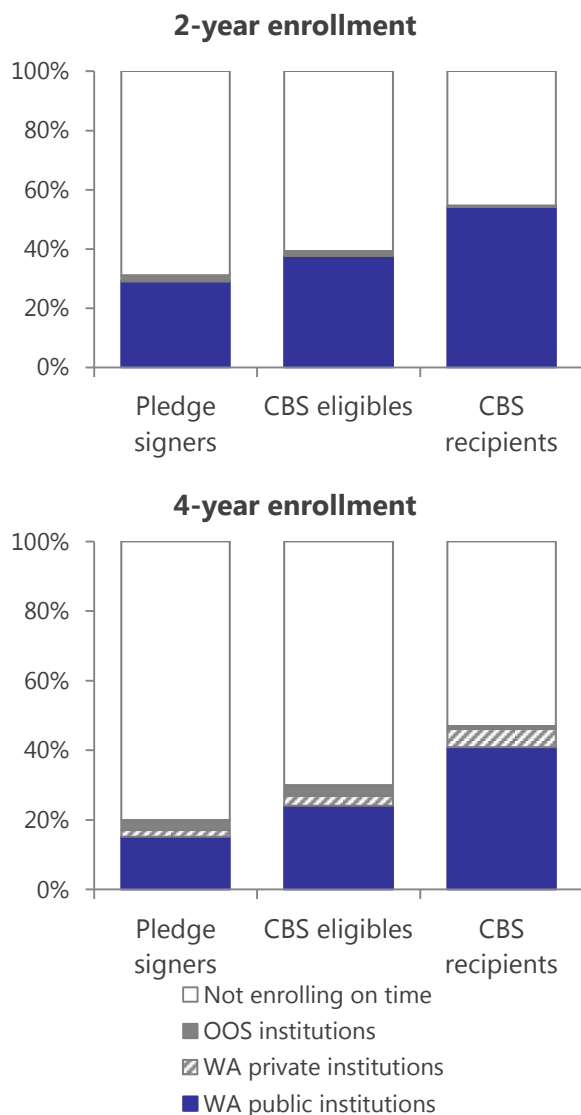
There is some overlap in student enrollments because students can enroll on time in both a 2-year and 4-year institution and at public, private, and out-of-state institutions. Therefore, the percentage of students not enrolling on time may be slightly higher than reported in the exhibit.

Among students who receive CBS dollars, 95% enroll on time. Of these students, 95% enroll in a Washington public institution. While students must enroll in a school in Washington to receive CBS dollars, approximately 1% of CBS recipients also enroll on time at an out-of-state institution. A student could, for example, enroll in an out-of-state institution for fall semester after high school. That student could then transfer back to a Washington institution in the second semester, thereby enrolling in both an out-of-state and an in-state institution during the first year after high school completion.

**Exhibit 5** displays enrollment rates by institution type and student status broken out by 2-year and 4-year enrollment. Of the 31% of pledge signers who enroll in a 2-year institution on time, 94% do so at a

### Exhibit 5

Percentage of Students Enrolling at 2-Year and 4-Year Institutions, by Student Status



#### Notes:

Pledge signer N = 70,071; CBS-eligible student N = 32,858; and CBS recipient N = 19,037.

OOS refers to out-of-state institutions.

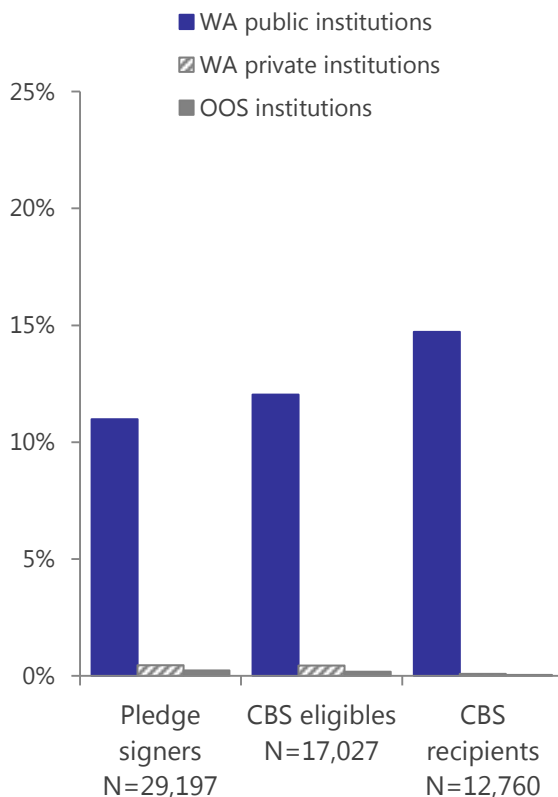
There is some overlap in student enrollments because students can enroll on time in both a 2-year and 4-year institution and at public, private, and out-of-state institutions. Therefore, the percentage of students not enrolling on time may be slightly higher than reported in the exhibit.

Washington public institution. About 20% of pledge signers enroll in a 4-year institution on time. Of those 4-year enrollees, 76% do so at a Washington public institution.

**Exhibits 6 and 7** show the distribution of degree receipt by institution type and student status. In **Exhibit 6**, we show the percentage of 2-year college enrollees who receive a 2-year degree on time from each type of institution. For example, about 10% of pledge signers who enroll in any 2-year institution on time receive a degree from a public institution, while about 1% of enrollees receive a 2-year degree from a Washington private or out-of-state institution. The remaining enrollees do not receive a 2-year degree on time.

### Exhibit 6

Percentage of 2-Year College Enrollees  
Receiving 2-Year Degree within Two Years  
of High School Completion

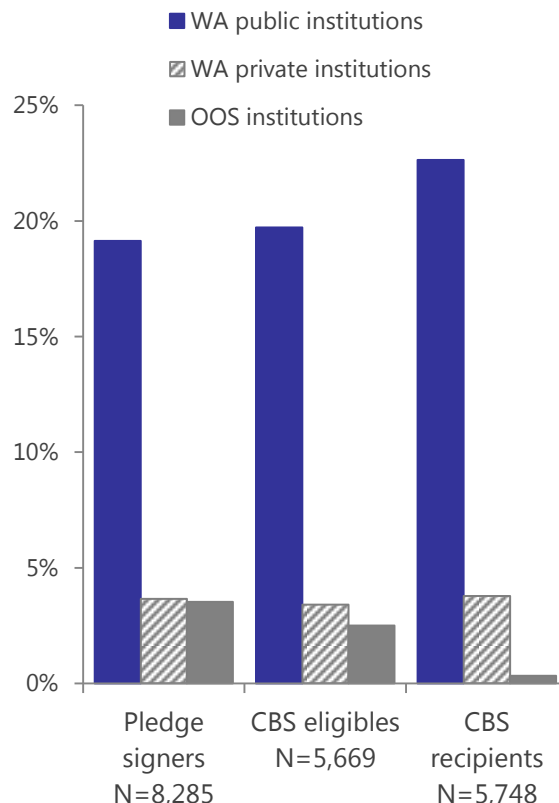


Notes:

OOS refers to out-of-state institutions.  
Graduation rates are calculated for the subset of enrollees  
observed at least two years after high school completion.

### Exhibit 7

Percentage of 4-Year College Enrollees  
Receiving 4-Year Degree within Four Years  
of High School Completion



Notes:

OOS refers to out-of-state institutions.  
Graduation rates are calculated for the subset of enrollees  
observed at least four years after high school completion  
(i.e., Cohorts Three and Four).

We similarly display the distribution of students who earn a 4-year degree among students who enroll in a 4-year institution on time ([Exhibit 7](#)). As with 2-year college enrollees, most students who receive a 4-year degree do so from public institutions in Washington. Compared to students enrolled in 2-year institutions, a larger portion of 4-year degrees are awarded to students from private or out-of-state institutions though less than 1% of CBS recipients receive a degree from an out-of-state institution.

## Financial Aid Sources by Institution Type

We also obtained financial aid data from WSAC for all CBS recipients attending public institutions in Washington and for all recipients attending one of the ten private, not-for-profit 4-year institutions that comprise the Independent Colleges of Washington (ICW). We use that data to examine the sources of aid for CBS recipients attending public and private 4-year institutions in Washington.<sup>18</sup>

For this discussion, we include students who received need-based aid in their first on-time year of college and attended an ICW institution or a public 4-year institution in Washington State.

In their first on-time year of college, CBS recipients at public institutions received, on average, a little over \$20,000 in aid from state, federal, institutional, and private sources. The total aid amount includes aid from grants and work study, which do not have to be repaid, and loans, which do have to be repaid.<sup>19</sup> Tuition rates at private institutions are higher than tuition rates at public institutions. CBS recipients attending an ICW institution generally receive more in total aid than students attending public 4-year institutions. CBS recipients attending ICW institutions received, on average, about \$36,000 in aid in their first year.

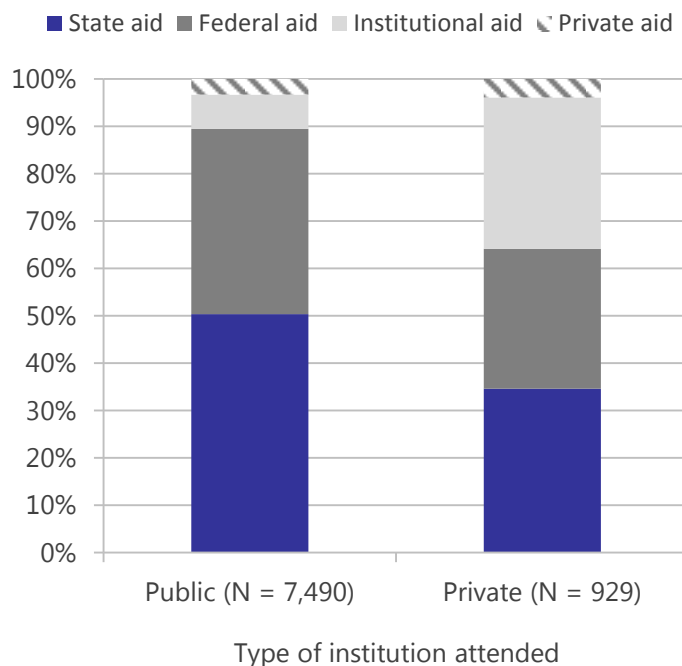
<sup>18</sup> ICW member institutions include Gonzaga University, Heritage University, Pacific Lutheran University, Saint Martin's University, Seattle Pacific University, Seattle University, University of Puget Sound, Walla Walla University, Whitman College, and Whitworth University.

<sup>19</sup> Private sources consist of private grants and loans. State aid includes grants and work study but not loans. Federal and institutional sources include grants, work study, and loans.

CBS recipients at either institution type receive most of their aid in the form of grants (85% at both public and private institutions) and about the same amount in loan aid (13% at private institutions and 14% at public institutions). As illustrated in [Exhibit 8](#), the source of aid differs across institution type. CBS recipients attending private institutions get a larger portion of their aid packages from institutional sources, while students attending public institutions receive more aid from state and federal sources. CBS recipients at both types of institutions receive about the same proportion of their aid from private sources.

### Exhibit 8

Source of Aid in First Year of College for CBS Recipients at Each Type of Institution



## IV. Effects of Pledge Eligibility and Pledge Signing

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We next report the effectiveness of pledge eligibility and pledge signing on enrollment, persistence, and completion outcomes at institutions of higher education by institution type and outside Washington. In other words, we assess whether pledge eligibility or pledge signing increases or decreases the likelihood of enrolling in each type of institution. We describe the effects of both pledge eligibility and pledge signing on student outcomes. Our findings here are generally substantively similar to those presented in the main report.

As a brief reminder of our methodology (discussed in detail in the main report), we use a method called “difference-in-differences” to compare the change in outcomes before and after CBS implementation for the treatment group—students who were or would have been eligible to sign the pledge in middle school—to changes in outcomes for a comparison group of students who were not eligible to sign the pledge.

Using this approach, we estimate the effects of pledge eligibility—i.e., the effect of making the College Bound pledge available to students—and effects of pledge signing—i.e., the effect of actually signing the pledge. [Exhibit 9](#) displays estimates of the effect of pledge eligibility on attainment at each type of institution. [Exhibit 10](#) presents estimates of the effect of pledge signing across institution types.

As discussed in [Section I](#), the analyses in these sections were completed using a random subset of students in Cohorts One through Four (see [Exhibit 2](#) for cohort definitions). Results from the main report that focus on attainment at public institutions in Washington for Cohorts One through Six are presented in the exhibits for comparison purposes.

Detailed information about enrollment and completion rates for pledge-eligible students (or students who would have been eligible if the pledge existed) across institution types is provided in [Appendix III](#).<sup>20</sup>

*College Enrollment.* We find evidence that pledge eligibility increases the likelihood of enrolling in a public 4-year institution in Washington by 0.9 percentage points and pledge signing increases the likelihood of enrolling in a Washington public 4-year institution by 3.1 percentage points.<sup>21</sup> We find no evidence that the pledge eligibility or pledge signing affects enrollment at private or out-of-state institutions.

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<sup>20</sup> Information about pledge-eligible students, pledge sign-up rates, and the characteristics of students in the full sample can be found in the main report. Further information on characteristics of students included in this analysis available upon request

<sup>21</sup> We provide enrollment and graduation rates for students prior to CBS implementation as a baseline in [Appendix III](#).

In the main report, we find marginal evidence of a positive effect of pledge eligibility and signing on enrollment at 4-year public institutions in Washington, but the effects in the main report are smaller than those reported here. However, we find no evidence that the effects from the random subset of students differ statistically from the effects presented in the main report.<sup>22</sup> Thus, our findings suggest that pledge eligibility and pledge signing have a small to moderate positive effect on increasing enrollment at public 4-year institutions in Washington, but has no effect of enrollment at other types of institutions.

*College Persistence.* Similar to our main results, we do not find evidence of an effect of pledge eligibility or pledge signing on persistence through college.

*College Completion.* We observed no effect of pledge eligibility or pledge signing on completion of 2- or 4-year degrees at institutions of higher education in any sector. These results are the same as those in the main report.

---

<sup>22</sup> We conducted a statistical test of whether effects from the random subset differ from estimated effects for students who are not included in the random subset. If these effects differ, then it would indicate that the random subset does not reflect effects if the full sample of students. According to our test, these effects do not differ meaning the effects from the random subset are not statistically different from effects using the full sample. Results of this test are available upon request.



## Exhibit 9

### Effects of Pledge Eligibility on College Enrollment, Persistence, and Graduation, by Type of Institution

Outcome	Main report	All institutions	WA public institutions	WA private institutions	Out-of-state institutions
Enrollment					
Proportion enrolling in any college on time	-0.003 (0.005)	0.011 (0.010)	0.009 (0.009)	0.001 <sup>^</sup> (0.002)	-0.002 (0.004)
Proportion enrolling in 2-year college on time	-0.008 (0.006)	-0.000 (0.009)	0.000 (0.009)	-0.001 (0.001)	<sup>^^</sup> <sup>^^</sup>
Proportion enrolling in 4-year college on time	0.005 (0.003)	0.011 (0.006)	0.009* (0.004)	0.002 <sup>^</sup> (0.002)	-0.001 (0.004)
Persistence					
Proportion enrolling in two consecutive years of college	-0.003 (0.005)	0.004 (0.009)			
Proportion enrolling in three consecutive years of college	-0.005 (0.005)	-0.004 (0.008)			
Proportion enrolling in four consecutive years of college	-0.002 (0.005)	-0.007 (0.008)			
Graduation					
Proportion who graduated with 2-year degree within two years of on-time HS completion	<sup>^^</sup> -0.004 <sup>^</sup> <sup>^^</sup> (0.004)	-0.004 <sup>^</sup> (0.004)	-0.004 <sup>^</sup> (0.004)	-0.001 (0.001)	0.000 (0.000)
Proportion who graduated with 2-year degree within three years of on-time HS completion	-0.006 (0.004)	-0.007 (0.006)	-0.010 (0.005)	0.001 (0.002)	0.001 (0.001)
Proportion who graduated with 4-year degree within four years of on-time HS completion	-0.001 (0.004)	0.000 (0.007)	-0.004 (0.006)	0.002 <sup>^</sup> (0.001)	0.000 (0.002)

#### Notes:

Results reported here use propensity score weighting. Standard errors clustered at the middle school level in parentheses.

We do not report persistence by institution type because we consider persistence to be re-enrollment at any type of institution.

N = 136,937 for most outcomes. For outcomes measured in the fourth year, N = 101,366.

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001. The number of asterisks next to each effect estimate indicates the level of confidence we ascribe to the effect. We can be reasonably confident that effect estimates with at least one asterisk are real effects. If an effect estimate has no asterisks, it means we cannot statistically distinguish the “true” effect from zero; i.e., the effect may, in fact, be zero.

<sup>^</sup> For these outcomes, our preferred models failed an important statistical test (see Fumia et al. (2018) for a discussion of this test). The unreported results from alternative models that do not fail this test are substantively the same as results from our preferred model reported here. Results of this test and alternative models are available upon request.

<sup>^^</sup> We exclude results for this outcome because all models (preferred and alternative) failed an important statistical test. Results of this test are available upon request. See Fumia et al. (2018) for a discussion of this test.

## Exhibit 10

### Effects of Pledge Signing on College Enrollment, Persistence, and Graduation, by Type of Institution

Outcome	Main report	All institutions	WA public institutions	WA private institutions	Out-of-state institutions
Enrollment					
Proportion enrolling in any college on time	-0.007 (0.015)	0.039 (0.034)	0.030 (0.031)	0.004 <sup>^</sup> (0.008)	-0.006 (0.014)
Proportion enrolling in 2-year college on time	-0.021 (0.015)	-0.002 (0.032)	0.001 (0.031)	-0.004 (0.005)	<sup>^^</sup> <sup>^^</sup>
Proportion enrolling in 4-year college on time	0.014 (0.008)	0.038 (0.020)	0.031* (0.014)	0.008 <sup>^</sup> (0.006)	-0.004 (0.013)
Persistence					
Proportion enrolling in two consecutive years of college	-0.010 (0.016)	0.013 (0.032)			
Proportion enrolling in three consecutive years of college	-0.015 (0.017)	-0.015 (0.027)			
Proportion enrolling in four consecutive years of college	-0.009 (0.018)	-0.026 (0.031)			
Graduation					
Proportion who graduated with 2-year degree within two years of on-time HS completion	<sup>^^</sup> <sup>^^</sup>	-0.011 <sup>^</sup> (0.012)	-0.012 <sup>^</sup> (0.011)	-0.003 (0.005)	0.001 (0.001)
Proportion who graduated with 2-year degree within three years of on-time HS completion	-0.018 (0.011)	-0.021 (0.017)	-0.029 (0.016)	0.005 (0.006)	0.003 (0.003)
Proportion who graduated with 4-year degree within four years of on-time HS completion	-0.004 (0.013)	0.000 (0.021)	-0.011 (0.019)	0.009 (0.005)	0.000 (0.007)

#### Notes:

Results reported here use propensity score weighting. Standard errors clustered at the middle school level in parentheses.

We do not report persistence by institution type because we consider persistence to be re-enrollment at any type of institution.

N = 136,937 for most outcomes. For outcomes measured in the fourth year, N = 101,366.

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001. The number of asterisks next to each effect estimate indicates the level of confidence we ascribe to the effect. We can be reasonably confident that effect estimates with at least one asterisk are real effects. If an effect estimate has no asterisks, it means we cannot statistically distinguish the “true” effect from zero; i.e., the effect may, in fact, be zero.

<sup>^</sup> For these outcomes, our preferred models failed an important statistical test (see Fumia et al. (2018) for a discussion of this test). The unreported results that do not fail this test are somewhat larger than, but substantively the same as, results from our preferred model reported here. Results of this test are available upon request.

<sup>^^</sup> We exclude results for this outcome because all models (preferred and alternative) failed an important statistical test. Results of this test are available upon request. See Fumia et al. (2018) for a discussion of this test.

## V. Effects of CBS Eligibility

This section reports the effects of being CBS eligible at the time of high school completion prior to college enrollment on college outcomes. We report these effects for our random subset by type of institution. The results from our main report are included in [Exhibit 16](#).

As discussed in detail in the main report, we compare the treatment group—CBS-eligible students (those who signed the pledge in middle school and met all requirements of the pledge at the end of high school)—to a comparison group of similar students who were not eligible to receive CBS because CBS was not yet implemented. Because we cannot observe income at the time of high school completion, we use FRL status as a proxy for family income and limit our analysis to FRL recipients in 12<sup>th</sup> grade.

To evaluate the effects of CBS eligibility—i.e., the effect of completing high school having met the requirements that make a student eligible to receive the scholarship—we use an approach called “propensity score matching” to ensure that students in the treatment and comparison groups have similar demographic, academic, and school characteristics.<sup>23</sup> After our propensity score matching process, both the scholarship eligible and comparison group contained 5,642 students with similar background and school characteristics.<sup>24</sup>

<sup>23</sup> For more information on our methodological approach, see Fumia et al. (2018).

<sup>24</sup> Descriptive data for the matched sample included in the analysis and results of our test of comparability between the treatment and comparison groups before and after matching are available upon request.

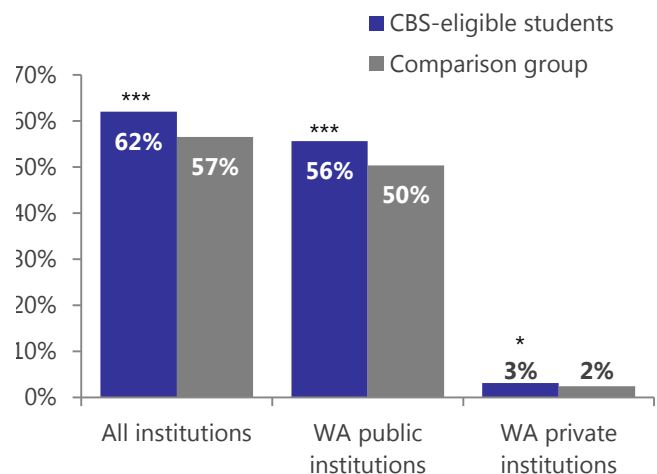
We present our results of the effects of CBS eligibility on college attainment at any institution and at public and private institutions in Washington in [Exhibits 11 through 16](#).

**College Enrollment.** Eligibility for CBS increases the overall probability of on-time college enrollment at any institution by 5 percentage points. CBS eligibility increased the enrollment rate from 57% in the comparison group to 62% among CBS-eligible students in our sample ([Exhibit 11](#)).

We also find that CBS eligibility increases enrollment at public institutions by about 6 percentage points (56% in the treatment group compared to 50% in the comparison group). The main report found a similar

**Exhibit 11**

Percentage of Students Enrolling in Either 2- or 4-Year College, by Type of Institution



**Notes:**

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

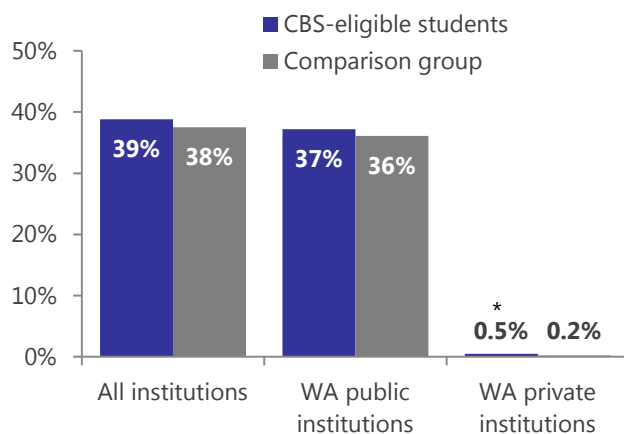
The number of asterisks indicates the level of confidence we ascribe to the effect. We can be reasonably confident that effect estimates with at least one asterisk are real effects. If an effect estimate has no asterisks, it means we cannot statistically distinguish the “true” effect from zero. The sum of 2-year and 4-year enrollment is greater than any enrollment because students who enroll in both 2-year and 4-year institutions on time are included in both groups.

increase of 6.1 percentage points ([Exhibit 16](#)). CBS eligibility also increases enrollment in private institutions in Washington by about 1 percentage point.

[Exhibits 12 and 13](#) show effects of CBS eligibility on enrollment at 2-year and 4-year institutions separately. Similar to the main report, the effect on overall enrollment appears to be driven by the effect of CBS eligibility on enrollment in 4-year colleges, particularly public 4-year institutions in Washington. We find that CBS eligibility increases enrollment at any 2-year institution by about 1 percentage point and by 0.3 percentage points at private 2-year institutions in Washington ([Exhibit 12](#)).

**Exhibit 12**

2-Year Enrollment, by Type of Institution



Note:

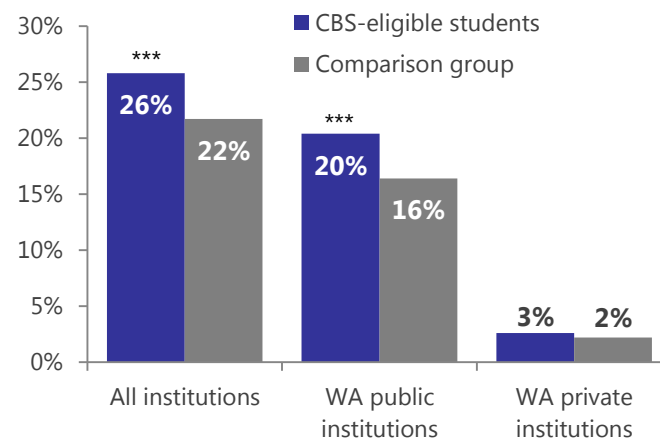
\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

The larger effect of CBS eligibility occurs at 4-year institutions where we find that CBS eligibility increases enrollment at any 4-year institution by 4 percentage points (26% among CBS-eligible students compared to 22% among comparison group students). This overall effect is explained by the 4 percentage point increase in enrollment at

public institutions in Washington ([Exhibit 13](#)). Thus, as with pledge signing, CBS eligibility increases enrollment at public 4-year institutions in Washington more than at other types of institutions.

**Exhibit 13**

4-Year Enrollment, by Type of Institution



Note:

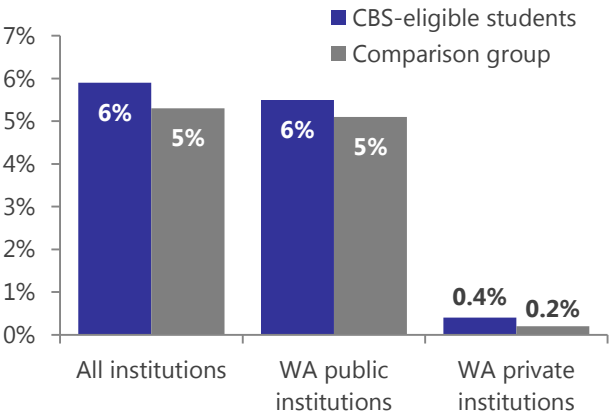
\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

We do not find evidence suggesting CBS eligibility causes changes in enrollment at out-of-state institutions ([Exhibit 16](#)). Thus, we do not expect the increase in enrollment at public institutions to be explained by CBS-eligible students choosing to attend public institutions in Washington instead of private or out-of-state institutions. If students were choosing to attend public institutions instead of private or out-of-state institutions, we might expect a decrease in enrollment at private or out-of-state institutions of comparable size to the increase we observe at public institutions—we do not find such a decline. Thus, these findings suggest that the increase in enrollment at public institutions may be driven by students who would not have enrolled in a 4-year institution otherwise.

*College Persistence.* Our analysis finds evidence similar to that of our main report (Exhibit 16). We find that CBS eligibility increases the likelihood that a student enrolls continuously in two years of college by 4.7 percentage points (compared to 4.5 percentage points in the main report), in three years of college by 3.0 percentage points (compared to 3.3), and 3.4 percentage points in four years of college (compared to 3.1) (Exhibit 16).

**Exhibit 14**

Graduation from 2-Year School within Two Years, by Type of Institution



Note:  
\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

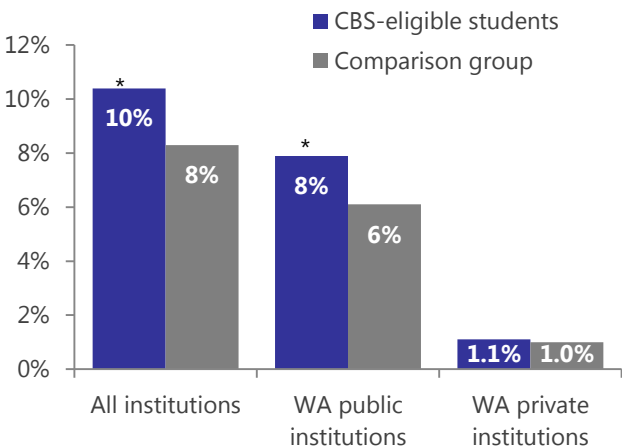
*College Completion.* We find positive effects of CBS eligibility on overall college graduation (Exhibit 16). Dissimilar to our main report results, we do not find evidence of an increase in graduation at 2-year institutions within two years of on-time high school graduation, although the difference could partially be due to a reduction in the sample size (Exhibit 14). We find a 1.3 percentage point increase in graduation

from a 2-year school in three years, similar to the 1.1 percentage point increase found in the main report (Exhibit 16).

Similar to findings in the main report, we find evidence of a 2 percentage point increase in 4-year degree receipt within four years of on-time high school graduation at public schools in Washington (Exhibit 15).

**Exhibit 15**

Graduation from 4-Year School within Four Years, by Type of Institution



Note:  
\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

We do not find evidence of an effect at private or out-of-state institutions. As with the effect of CBS eligibility on enrollment, the positive effects of CBS eligibility on degree receipt are explained by increases in graduation from Washington’s public institutions of higher education where we find a 2 percentage point increase in enrollment.

## Exhibit 16

### Effects of CBS Eligibility on College Enrollment, Persistence, and Graduation, by Type of Institution

Outcome	Main report	All institutions	WA public institutions	WA private institutions	Out-of-state institutions
Enrollment					
Proportion enrolling in any college on time	0.061*** (0.008)	0.055*** (0.010)	0.053*** (0.011)	0.007* (0.003)	-0.005 (0.005)
Proportion enrolling in 2-year college on time	0.013 (0.007)	0.013 (0.011)	0.011 (0.011)	0.003* (0.001)	-0.001 (0.002)
Proportion enrolling in 4-year college on time	0.051*** (0.006)	0.041*** (0.009)	0.040*** (0.008)	0.004 (0.003)	-0.004 (0.004)
Persistence					
Proportion enrolling in two consecutive years of college	0.045*** (0.007)	0.039*** (0.010)			
Proportion enrolling in three consecutive years of college	0.033*** (0.006)	0.023* (0.010)			
Proportion enrolling in four consecutive years of college	0.031*** (0.007)	0.035** (0.013)			
Graduation					
Proportion who graduated with 2-year degree within two years of on-time HS completion	0.008** (0.003)	0.006 (0.004)	0.004 (0.004)	0.002 (0.001)	0.001 (0.001)
Proportion who graduated with 2-year degree within three years of on-time HS completion	0.011** (0.004)	0.014* (0.005)	0.009 (0.005)	0.003* (0.001)	0.001 (0.001)
Proportion who graduated with 4-year degree within four years of on-time HS completion	0.024*** (0.005)	0.021* (0.009)	0.018* (0.007)	0.001 (0.003)	0.002 (0.003)

#### Notes:

We do not report persistence by institution type because we consider persistence to be re-enrollment at any type of institution.

N = 11,284 for most outcomes. For outcomes measured in the fourth year, N = 5,518 - 5,982.

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001. The number of asterisks indicates the level of confidence we ascribe to the effect. We can be reasonably confident that effect estimates with at least one asterisk are real effects. If an effect estimate has no asterisks, it means we cannot statistically distinguish the "true" effect from zero.

## VI. Limitations and Summary

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This analysis illustrates the varying effects that the College Bound pledge and scholarship have on college attainment outcomes across institution types and within and outside Washington. In addition to the limitations outlined in our main report, there are important considerations specific to this report that warrant further discussion.

First, we used a random subset of students in the analysis of the effectiveness of CBS. Differences between this random subset and the full sample used in the main report may explain some differences in findings between the supplemental and main report. However, the random subset generally reflects the full samples of middle school students and CBS-eligible students from the main report.

Second, NSC data covers approximately 92% to 97% of enrolled students during our analysis period nationally and between 97% and 98% of enrollments in Washington. As discussed in Dynarski (2013), students who are not captured by NSC can potentially cause bias in results. While we acknowledge the potential for bias, the overall coverage rates show that NSC captures most students, particularly those attending college in Washington where we find most of the effects of CBS occur.<sup>25</sup>

This report supplements our findings of the effectiveness of the College Bound Scholarship program on postsecondary outcomes for students in Washington public institutions by examining effects across institution types and outside Washington.

We analyzed the effects of being eligible to sign and actually signing the College Bound pledge in middle school and CBS eligibility at the end of high school on college enrollment and completion across public and private institutions in and outside of Washington.

We find that signing the pledge increases enrollment in 4-year institutions, largely because of an increase in enrollment at public 4-year institutions in Washington. These findings are similar to findings in WSIPP's main report. We find no effect of the pledge on college attainment at private institutions in Washington or on enrollment in institutions outside Washington.

Similar to the main report, we find positive effects on college enrollment and degree receipt for students who are eligible to receive the scholarship at the time of high school completion. Again, these effects are primarily explained by students attending public 4-year institutions in Washington.

In summary, our findings suggest the College Bound Scholarship program has positive effects on attainment at public institutions, particularly 4-year institutions, but it has small or no effects on attainment at private and out-of-state institutions. If students who enrolled in 4-year public institutions because of CBS would have otherwise enrolled in other sectors, we would expect to find a decrease in attainment at private and out-of-state institutions. Since we do not see this decrease, these findings suggest that students who enroll in public institutions because of CBS may be students who would not have otherwise enrolled in a 4-year institution.

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<sup>25</sup> Dynarski, S.M., Hemelt, S.W., & Hyman, J.M. (2013). *The missing manual: Using National Student Clearinghouse data to track postsecondary outcomes* (No. w19552). National Bureau of Economic Research.





# Appendices

The Effectiveness of Washington’s College Bound Scholarship Program: Supplemental Report

I.	Effect of College Bound Pledge and Scholarship on Certificate Receipt .....	23
II.	Data on Pledge Signers, CBS-Eligible Students, and CBS Recipients .....	25
III.	Enrollment and Graduation Rates by Pledge Eligibility.....	27
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## I. Effect of College Bound Pledge and Scholarship on Certificate Receipt

In this section, we evaluate whether the College Bound pledge or scholarship has an effect on whether students receive certificates rather than 2-year or 4-year degrees. Certificate programs tend to be narrowly targeted programs that prepare students for work in particular careers or fields immediately after completion. Certificate programs typically take one to two years to complete and do not generally transfer to 4-year programs. Students can apply the College Bound Scholarship toward approved certificate programs, and we, therefore, extend the original analysis to evaluate the effects of the CBS program on certificate receipt.

This analysis used the same data and study groups included in the main report. Specifically, our analysis of the effects of pledge eligibility and pledge signing on certificate receipt employs data on students observed in 7<sup>th</sup> grade between the 2004-05 and 2009-10 school years followed through the 2015-16 school year. We evaluate the effects of CBS eligibility using students observed in 12<sup>th</sup> grade between 2009-10 and 2012-13 school years who met the eligibility requirements for the scholarship—i.e., signed the pledge (or were pledge eligible), graduated high school with at least a 2.0 GPA, and had no felony convictions between pledge signing (or 7<sup>th</sup> grade) and high school completion. We also restrict this sample to those students receiving FRL services in 12<sup>th</sup> grade. Finally, we evaluate the effects of CBS receipt using students observed in their first on-time year of college at 2-year institutions between 2010-11 and 2013-14 school years who received need-based aid with a family income at or below 65% of the state MFI.<sup>26</sup>

We evaluate whether the College Bound pledge and scholarship award had any effect on certificate receipt one and two years after on-time high school completion. We find no effect of either the pledge or scholarship on certificate receipt one or two years after high school ([Exhibit A1](#)).

<sup>26</sup> For more detail on study groups and data used in this analysis, please see [Fumia et al. \(2018\)](#).

### Exhibit A1

Effects of the College Bound Pledge and Scholarship Award on Certificate Degree Completion

Outcome	Effect	SE	N
<b>Pledge eligibility</b>			
Received certificate within two years of completing high school	0.000	0.002	286,338
Received certificate within one year of completing high school	0.001	0.002	343,695
<b>Pledge signing</b>			
Received certificate within two years of completing high school	0.001	0.006	286,338
Received certificate within one year of completing high school	0.002	0.005	343,695
<b>CBS eligibility</b>			
Received certificate within two years of completing high school	-0.004	0.003	23,877
Received certificate within one year of completing high school	-0.004	0.002	23,960
<b>CBS receipt<sup>^</sup></b>			
Received certificate within two years of completing high school	-0.003	0.006	7,039
Received certificate within one year of completing high school	-0.003	0.004	7,039

Note:

<sup>^</sup> Restricted to students enrolling in 2-year institutions only.

## II. Data on Pledge Signers, CBS-Eligible Students, and CBS Recipients

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Section III provides an in-depth examination of college attainment for 70,071 students who signed the pledge, were observed in 7<sup>th</sup> and 8<sup>th</sup> grades in the first four years after CBS implementation (i.e., those with expected high school graduation in spring of 2012 through spring of 2015), and graduated from high school. Exhibit A2 below provides the detailed data on enrollment and completion for these students described in Section III. We consider 32,858 of these pledge-signing students CBS eligible because we had information that the student did not commit a felony, graduated high school with at least a 2.0 GPA, and was eligible for free or reduced price lunch in 12<sup>th</sup> grade. Of all pledge signers, 36,175 enrolled in a college in Washington at some time, while 23,005 enrolled on time, and 19,037 received CBS.

## Exhibit A2

### Pledge Signer, CBS Eligible, and CBS Recipient Outcomes\*

Outcome	All institutions		WA public institutions		WA private institutions		Out-of-state institutions	
	Percent	N	Percent	N	Percent	N	Percent	N
<b>Pledge signers (N = 70,071)</b>								
Enrolling in 2- or 4-year college on time	47.7%	33,418	41.9%	29,341	2.3%	1,620	4.4%	3,071
Enrolling in 2-year college on time	30.8%	21,587	28.9%	20,280	0.4%	258	1.7%	1,160
Enrolling in 4-year college on time	19.8%	13,845	15.1%	10,590	1.9%	1,362	2.9%	2,021
Graduated with 2-year degree within two years ^	4.9%	3,409	4.6%	3,207	0.2%	134	0.1%	71
Graduated with 2-year degree within three years ^	9.9%	4,909	9.3%	4,580	0.4%	195	0.3%	139
Graduated with 4-year degree within four years ^	8.2%	2,430	5.9%	1,758	1.1%	337	1.1%	335
Graduated with 4-year degree within five years ^	13.4%	1,931	10.5%	1,519	1.4%	208	1.4%	204
<b>CBS-eligible students (N = 32,858)</b>								
Enrolling in 2- or 4-year college on time	64.7%	21,273	58.4%	19,192	3.4%	1,110	4.1%	1,334
Enrolling in 2-year college on time	39.0%	12,828	37.6%	12,363	0.5%	155	1.1%	373
Enrolling in 4-year college on time	29.6%	9,741	24.0%	7,894	2.9%	955	3.0%	980
Graduated with 2-year degree within two years ^	6.6%	2,155	6.2%	2,050	0.2%	75	0.1%	31
Graduated with 2-year degree within three years ^	13.7%	3,233	13.0%	3,054	0.5%	118	0.3%	64
Graduated with 4-year degree within four years ^	11.1%	1,597	8.5%	1,220	1.5%	216	1.1%	161
Graduated with 4-year degree within five years ^	19.0%	1,372	15.4%	1,109	2.1%	154	1.5%	108
<b>CBS recipients (N = 19,037)</b>								
Enrolling in 2- or 4-year college on time	94.6%	18,003	89.7%	17,075	5.3%	1,004	1.1%	216
Enrolling in 2-year college on time	54.3%	10,342	54.1%	10,306	0.1%	14	0.3%	65
Enrolling in 4-year college on time	46.5%	8,847	40.9%	7,787	5.2%	990	0.8%	155
Graduated with 2-year degree within two years ^	9.9%	1,894	9.9%	1,878	0.1%	11	s	s
Graduated with 2-year degree within three years ^	19.4%	2,931	19.2%	2,893	0.2%	27	0.1%	11
Graduate with 4 year degree within five years ^	17.1%	1,675	14.5%	1,417	2.4%	235	0.2%	23
Graduated with 4-year degree within five years ^	28.9%	1,459	25.2%	1,271	3.2%	164	0.5%	24

**Notes:**

\* Students can enroll in more than one type of institution.

^ These graduation rates were only calculated for the subset of students that had been in school for enough years.

Cells with an "s" are suppressed in accordance with reporting standards for cells with small samples.

### III. Enrollment and Graduation Rates by Pledge Eligibility

This appendix displays enrollment and graduation rates for students who were pledge eligible or pseudo eligible (i.e., students in the period before CBS implementation who would have been eligible to sign the pledge if it existed). [Exhibit A3](#) also presents the college attainment rates for students who we do not observe as eligible to sign the pledge (i.e., ineligible students). The last column of [Exhibit A3](#) reports the raw difference-in-differences estimate, not controlling for covariates. These raw effects are generally larger than the modeled effects reported in [Exhibit 9](#).

**Exhibit A3**

Enrollment and Graduation Rates, by Pledge Eligibility and Period

Outcome	Pre-College Bound Scholarship program				Post-College Bound Scholarship program				Raw effect estimate
	Pseudo Eligible		Ineligible		Eligible		Ineligible		
	Mean	N	Mean	N	Mean	N	Mean	N	
All universities									
Proportion enrolling in 2-year college on time	27%	26,789	35%	36,204	25%	33,615	33%	40,332	-0.1%
Proportion enrolling in 4-year college on time	11%	26,789	35%	36,204	12%	33,615	37%	40,332	-1.1%
Proportion enrolling in any college on time	36%	26,789	64%	36,204	36%	33,615	64%	40,332	-1.1%
Proportion enrolling in two consecutive years of college	26%	26,717	52%	36,092	26%	33,544	53%	40,196	-1.1%
Proportion enrolling in three consecutive years of college	19%	26,704	41%	36,081	18%	33,506	43%	40,159	-1.6%
Proportion enrolling in four consecutive years of college	13%	26,699	32%	36,069	13%	17,990	36%	21,368	-3.1%
Proportion who graduated with 2-year degree within two years of on-time high school completion	4%	20,292	7%	32,174	5%	23,132	8%	35,192	-0.1%
Proportion who graduated with 2-year degree within three years of on-time high school completion	7%	20,233	12%	32,174	9%	22,257	13%	34,782	0.2%
Proportion who graduated with 4-year degree within four years of on-time high school completion	5%	19,883	20%	32,131	7%	11,374	24%	18,042	-1.9%
WA public universities									
Proportion enrolling in 2-year college on time	27%	26,789	35%	36,204	25%	33,615	33%	40,332	0.3%
Proportion enrolling in 4-year college on time	7%	26,789	21%	36,204	9%	33,615	22%	40,332	0.1%
Proportion enrolling in any college on time	33%	26,789	51%	36,204	32%	33,615	51%	40,332	0.4%

Outcome	Pre-College Bound Scholarship program				Post-College Bound Scholarship program				Raw effect estimate
	Pseudo Eligible		Ineligible		Eligible		Ineligible		
	Mean	N	Mean	N	Mean	N	Mean	N	
Proportion who graduated with 2-year degree within two years of on-time high school completion	3%	26,789	6%	36,204	3%	33,615	7%	40,332	-0.5%
Proportion who graduated with 2-year degree within three years of on-time high school completion	5%	26,789	10%	36,204	5%	33,615	11%	40,332	-0.6%
Proportion who graduated with 4-year degree within four years of on-time high school completion	3%	26,788	10%	36,204	3%	17,931	12%	20,987	-1.6%
WA private universities									
Proportion enrolling in 2-year college on time	0.2%	26,789	0.1%	36,204	0.3%	33,615	0.2%	40,332	0.0%
Proportion enrolling in 4-year college on time	1%	26,789	4%	36,204	1%	33,615	4%	40,332	0.0%
Proportion enrolling in any college on time	1%	26,789	4%	36,204	1%	33,615	4%	40,332	0.0%
Proportion who graduated with 2-year degree within two years of on-time high school completion	0.1%	26,789	0.1%	36,204	0.2%	33,615	0.1%	40,332	0.0%
Proportion who graduated with 2-year degree within three years of on-time high school completion	0.3%	26,789	0.2%	36,204	0.4%	33,615	0.2%	40,332	0.1%
Proportion who graduated with 4-year degree within four years of on-time high school completion	0.5%	26,788	3%	36,204	1%	17,848	3%	20,711	0.0%
Out-of-state universities									
Proportion enrolling in 2-year college on time	2%	26,789	2%	36,204	2%	33,615	2%	40,332	-0.2%
Proportion enrolling in 4-year college on time	3%	26,789	11%	36,204	3%	33,615	12%	40,332	-1.4%
Proportion enrolling in any college on time	5%	26,789	13%	36,204	5%	33,615	14%	40,332	-1.5%
Proportion who graduated with 2-year degree within two years of on-time high school completion	0.1%	26,789	0.2%	36,204	0.1%	33,615	0.2%	40,332	0.0%
Proportion who graduated with 2-year degree within three years of on-time high school completion	0.2%	26,789	0.4%	36,204	0.2%	33,615	0.3%	40,332	0.0%
Proportion who graduated with 4-year degree within four years of on-time high school completion	1%	26,788	5%	36,204	1%	17,851	6%	20,754	-0.8%

## IV. Random Subset Used in Supplemental Analysis

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To evaluate the effects of CBS on attainment across institution types, we obtained StudentTracker data from the National Student Clearinghouse (NSC). NSC maintains data on enrollments and completions for students enrolled in college across the country. To obtain this data, NSC charges researchers per student record requested. To limit data acquisition costs, rather than submit the full sample of students, we submitted a random subset of students used in our main analyses to NSC. To identify the random subset of students for submission to NSC, we identified a potential pool of students who we observed in 7<sup>th</sup> grade in the first four cohorts (i.e., in 7<sup>th</sup> grade between 2004-05 and 2007-08) with non-missing values on 7<sup>th</sup> grade characteristics included in our main analyses: sex, race and ethnicity, age, whether a student was an English language learner, whether a student's primary and home languages were English, whether a student was a migrant, had a disability, received academic assistance, received services for gifted students, or had any misdemeanor or felony charges prior to 7<sup>th</sup> grade. We also required students in the potential pool to have reported 8<sup>th</sup>-grade math and English test scores. This pool included 278,743 students.

From this pool, we randomly selected 138,000 students. We then identified students who we observed entering and graduating from public 4-year institutions in Washington State and excluded these students from the sample of students to submit to NSC for matching because we observe both their enrollment and completion using Washington administrative data (N = 23,737). It is possible that these students transfer to private or out-of-state schools and then transfer back to public institutions prior to completing their degrees or were enrolled in more than institution. We do not capture such movement using this approach.

Finally, to provide a full account of the enrollment and completion behavior of students who sign the pledge in [Section III](#), our submission included all students who signed the pledge and graduated from a public Washington high school from all six cohorts—an additional 40,449 students. Thus, our final submission to NSC included 178,449 students. Of these, NSC matched approximately 60% of these students. Matched students who elect to block the release of their information are excluded from our data as are students who attend schools who block the release of all student data. Of the 178,449 submitted to NSC, we received enrollment and graduation information on 104,514 students.<sup>27</sup>

We next report how well the random subset of students reflects the full sample used in the main analysis. [Exhibit A4](#) compares characteristics of students included in the full sample used in the main pledge analysis to the random subset. Column (1) includes the full sample for Cohorts One through Six who were included in the main report. Column (2) includes the full sample of students in Cohorts One through Four who are the relevant comparison for the random subset that we selected from students in Cohorts One through Four. Column (3) shows the mean characteristics for students in the random sample and Column (4) includes the mean characteristics for students that were not selected for the random sample. Columns (5) through (7) compare the random sample and those excluded from the random sample. Bolded values in Column (7) demonstrate where the random sample differs significantly from the full sample.

Ideally, under random sampling, students chosen for the random sample would not differ from those who were not included in the random sample. However, we find that students in the random sample do differ

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<sup>27</sup> Data obtained from NSC followed students through the 2016-17 school year, while we received Washington administrative through the 2015-16 school year only. For analyses using the random subset of students (Sections IV and V), we consider data through the 2015-16 school year to mirror the data analyzed in the main report. For analyses in Section III, we consider attainment through the 2016-17 school year.



statistically from students excluded from the random sample, on average, across various characteristics including racial demographics, academic characteristics, and attainment outcomes. Differences in student characteristics and outcomes between these samples indicate where the random sample will fail to reflect the full sample. After submitting data to NSC, we made additional data processing decisions for our main analysis that slightly altered the data included in our analysis. Thus, the random subset does not exactly reflect the analytic sample used in the main report. Although we do find statistical differences between the groups, the student characteristics and outcomes are generally not substantively different—e.g., differences in the racial distribution across samples are no more than 1 to 2 percentage points—indicating that our random subset largely represents the first four cohorts included in our main report.

We conducted a similar analysis of the random sample used in the CBS eligibility analysis. We similarly found that the random sample differs from the full sample in some ways, primarily in the racial and ethnic characteristics of the sample as well as some school characteristics. There were fewer differences in the CBS eligibility sample than the pledge analysis sample, however, and thus we focus on the sample of students included in the pledge analysis here. Results for the CBS-eligible students are available upon request.

### Exhibit A4

#### Means of Student Characteristics and Outcomes Across Samples for Pledge Analysis

Variable	Full sample (Cohorts 1-6)  (N = 423,943) (1)	Full sample (Cohorts 1-4)  (N = 278,743) (2)	Random sample  (N = 137,874 <sup>^</sup> ) (3)	Excluded from random sample  (N = 140,869) (4)	Difference in means between random sample and those excluded from random sample (Column (3) minus Column (4)) (5)	SE of difference (6)	p- value (7)
<b>Covariates</b>							
Proportion eligible for pledge based on FRL status in 7 <sup>th</sup> , 8 <sup>th</sup> , or 9 <sup>th</sup> grade	0.46	0.44	0.44	0.44	0.00	0.00	0.83
Proportion who signed the pledge	0.16	0.10	0.10	0.10	0.00	0.00	<b>0.01</b>
Proportion female	0.49	0.49	0.49	0.49	0.00	0.00	0.95
Proportion Black	0.04	0.05	0.04	0.05	-0.01	0.00	<b>0.00</b>
Proportion Hispanic	0.14	0.13	0.13	0.12	0.01	0.00	<b>0.00</b>
Proportion Asian	0.07	0.07	0.07	0.08	-0.01	0.00	<b>0.00</b>
Proportion American Indian/Alaska Native	0.02	0.02	0.02	0.02	0.00	0.00	<b>0.00</b>
Proportion other race	0.08	0.07	0.07	0.07	-0.01	0.00	<b>0.00</b>
Age in 7 <sup>th</sup> grade	12.87	12.87	12.87	12.87	0.00	0.00	0.06
Proportion English language learner	0.05	0.05	0.06	0.05	0.00	0.00	<b>0.01</b>
Proportion with primary language non-English	0.14	0.13	0.12	0.13	-0.02	0.00	<b>0.00</b>
Proportion with home language non-English	0.15	0.14	0.13	0.15	-0.02	0.00	<b>0.00</b>
Proportion migrant	0.02	0.02	0.02	0.02	0.00	0.00	<b>0.00</b>
Proportion with disability	0.12	0.11	0.11	0.11	0.00	0.00	0.33
Proportion who received academic assistance in 7 <sup>th</sup> grade	0.16	0.16	0.16	0.16	0.00	0.00	<b>0.01</b>
Proportion in gifted program in 7 <sup>th</sup> grade	0.05	0.04	0.05	0.04	0.00	0.00	<b>0.01</b>
Proportion with felony charge prior to 7 <sup>th</sup> grade	0.01	0.01	0.01	0.01	0.00	0.00	0.74
Proportion with misdemeanor charge prior to 7 <sup>th</sup> grade	0.02	0.02	0.02	0.02	0.00	0.00	0.14
Proportion with felony conviction prior to 7 <sup>th</sup> grade	0.00	0.00	0.00	0.00	0.00	0.00	0.71
Proportion with misdemeanor conviction prior to 7 <sup>th</sup> grade	0.01	0.01	0.01	0.01	0.00	0.00	<b>0.03</b>
Proportion taking modified math test in 8 <sup>th</sup> grade	0.03	0.03	0.03	0.03	0.00	0.00	0.16

Variable	Full sample (Cohorts 1-6)  (N = 423,943) (1)	Full sample (Cohorts 1-4)  (N = 278,743) (2)	Random sample  (N = 137,874 ^) (3)	Excluded from random sample  (N = 140,869) (4)	Difference in means between random sample and those excluded from random sample (Column (3) minus Column (4))  (5)	SE of difference  (6)	p- value  (7)
Proportion taking modified reading test in 8 <sup>th</sup> grade	0.03	0.03	0.03	0.03	0.00	0.00	0.05
Standardized math score in 8 <sup>th</sup> grade	0.01	0.02	0.01	0.03	-0.02	0.00	<b>0.00</b>
Standardized reading score in 8 <sup>th</sup> grade	0.01	0.01	0.01	0.02	-0.01	0.00	0.18
<b>Outcomes</b>							
GPA in 12 <sup>th</sup> grade	2.72	2.72	2.72	2.72	0.00	0.00	0.93
Proportion receiving HS diploma on time	0.76	0.76	0.76	0.76	0.00	0.00	0.82
Proportion enrolling in 2-year college on time	0.28	0.28	0.28	0.28	0.00	0.00	0.89
Proportion enrolling in 4-year college on time	0.16	0.15	0.15	0.16	-0.01	0.00	<b>0.00</b>
Proportion enrolling in any college on time	0.41	0.41	0.41	0.41	-0.01	0.00	<b>0.00</b>
Proportion enrolling in two consecutive years of college	0.33	0.32	0.32	0.32	-0.01	0.00	<b>0.00</b>
Proportion enrolling in three consecutive years of college	0.24	0.24	0.24	0.24	-0.01	0.00	<b>0.00</b>
Proportion enrolling in four consecutive years of college	0.17	0.17	0.17	0.18	-0.01	0.00	<b>0.00</b>
Proportion who graduated with 2-year degree within two years of on-time HS completion	0.07	0.06	0.06	0.06	0.00	0.00	<b>0.00</b>
Proportion who graduated with 2-year degree within three years of on-time HS completion	0.12	0.10	0.10	0.09	0.01	0.00	<b>0.00</b>
Proportion who graduated with 4-year degree within four years of on-time HS completion	0.09	0.09	0.09	0.09	0.00	0.00	<b>0.00</b>

**Notes:**

This does not equal 138,000 due to some students in the random subset with missing data on observed characteristics.

Column (1) includes the full sample for Cohorts One through Six who were included in the main report.

Column (2) includes the full sample of students in Cohorts One through Four who are the relevant comparison for the random subset that we selected from students in Cohorts One through Four.

Column (3) shows the mean characteristics for students in the random sample.

Column (4) includes the mean characteristics for students that were not selected for the random sample.

Columns (5) through (7) compare the random sample and those excluded from the random sample.

Bolded values in Column (7) demonstrate where the random sample differs significantly from the full sample.

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