

2018 U.S. CARDUS EDUCATION SURVEY

From the Classroom to the Workplace



CARDUS

The 2018 Cardus Education Survey (CES) marks nearly a decade's worth of research into the effects of various school sectors on the academic, social, religious, and civic development of graduates in the United States. The Survey is now considered one of the most significant measures of nongovernment school outcomes. CES reports capture the views from a representative sample of 1,500 randomly selected American high school graduates ages twenty-four to thirty-nine who were asked to complete a thirty-five to forty-five-minute survey. The assessment comes at an important time—far enough away for these graduates to have had experiences in other educational institutions, in family and relationships, and in the workplace, and yet close enough to allow for some maturity, reflection, and recollection. The CES instrument includes a large number of controls for many factors in graduate development, such as parental education, religion, and income, in order to isolate a school sector's particular impact (“the schooling effect”).¹

1 The 2018 CES respondents include 904 graduates who primarily attended public high school, 83 respondents who primarily attended non-religious private school, 303 graduates of a Catholic high school, 136 graduates of an evangelical Protestant school, and 124 who were homeschooled. In order to isolate the school effect for each of these sectors, the analysis includes a large number of control variables for basic demographics (gender, race and ethnicity, age, and region of residence), family structure (not living with each biological parent for at least sixteen years, parents divorced or separated, not growing up with two biological parents), parent variables (educational level of mother and father figure, whether parents pushed the respondent academically, the extent to which the respondent felt close to each parent figure), and the religious tradition of parents when the respondent was growing up (mother or father was Catholic, conservative Protestant, conservative or traditional Catholic). A control

Five smaller reports summarize the results of the 2018 survey. They focus on particular outcomes and themes of interest, including the following: (1) education and career pathways; (2) faith and spirituality; (3) civic, political, and community involvement and engagement; (4) social ties and relationships; and (5) perceptions of high school. In this report, we consider the educational and life pathways of students, beginning with course selection in high school and moving from there to educational choices after high school as well as employment and income outcomes and the occupational goals and life orientations of graduates. It is important to note that while this report focuses on academic and career outcomes, these varying pathways also demonstrate, to some extent, a variation of values and life orientations, and should not necessarily reflect a hierarchy of success. Indeed, increasingly there is evidence in society and in research literature alike of the negative effects of pursuing individual aims and goals when these are not balanced with communal values and responsibilities. The different life-pathways may reflect how different groups choose to balance these often-competing priorities, especially as they become older and weigh the needs of family life. Therefore, while reporting on these school-sector outcomes is helpful in uncovering patterns and trends, these outcomes should not necessarily be linked to normative ideas of success or happiness. Nevertheless, there is little denying that education and employment are important to providing stability, flexibility, and opportunity—and that these, in turn, are important to human flourishing within society.

COURSES TAKEN IN HIGH SCHOOL

The 2018 CES asks graduates a series of questions about the types of courses taken in high school, and whether these included advanced courses. Respondents were asked whether they took a math or science course, and whether they took Advanced Placement (AP) or International Baccalaureate (IB), as well as “dual credit” courses, which serve as both a college and high school credit. Of course, there are a number of factors, including school mission, curricular tracking, and resource constraints, as well as student interest, that may ultimately influence the likelihood that students take advanced courses. Averages for each school sector on course-taking therefore reflect the available offerings in schools as well as school encouragement, student guidance, and the percentage of students in a particular school that are able and willing to take these courses.

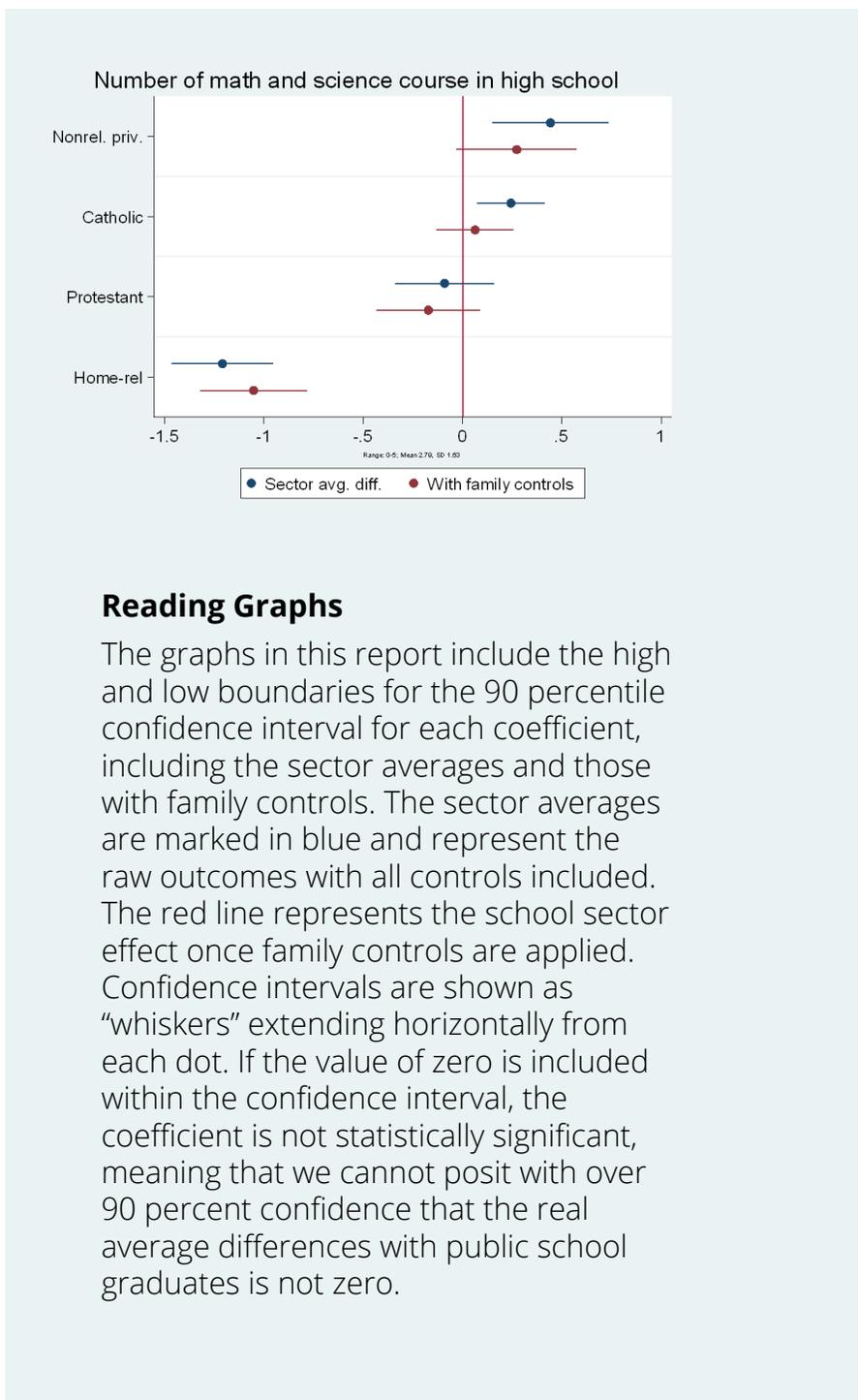
Beginning with an analysis of the likelihood of taking an advanced math course, non-religious private school graduates are significantly more likely than public school graduates to take pre-calculus and physics. Indeed, they are over twice as likely to take a physics class than are public school graduates, while the other private school sectors are not significantly different from the public school on this measure. Religious homeschool graduates, however, are much less likely than public school graduates to take either a pre-calculus or a calculus class.

was also included for the number of years a private school graduate spent in public school. Despite our efforts to construct a plausible control group, because families who send their children to religious schools or non-religious independent schools make a choice, they may differ from those who do not exercise school choice in unobservable ways that are therefore not accounted for in our study. Despite this, the CES use of an extensive survey instrument, together with its comprehensive application of control variables and resulting patterns of outcomes, assures us with some confidence of the accuracy of our school sectoral outcomes.

With regards to science classes, graduates from all sectors except religious homeschool graduates are equally likely to have taken a biology class. Greater sectoral differences emerged, however, when graduates were asked whether they had taken a chemistry class. Here, non-religious private school graduates are more likely than public school graduates to have taken a chemistry course, but this is only marginally significant. Catholic school graduates are significantly more likely to have taken a chemistry course—about 1.6 times more likely in fact—than a public school graduate. Religious homeschool graduates are much less likely to have taken a chemistry course. Interesting differences also emerge when graduates were asked whether they took a physics class. Non-religious private school graduates were much more likely to have taken a physics course than the public school graduate, and Protestant and Catholic school graduates were equally likely to have taken a physics course as the public school graduate. Again, religious homeschool graduates were less likely to have taken a physics course, though the size of the effect is somewhat muted compared to the other science and math classes.

Protestant school graduates are less likely to have taken a calculus class, and less likely to have taken a physics class, though this is only nearly significant. They are not taking fewer civics classes than are public school graduates, though we would expect more civics classes among this population given their family background. Protestant school graduates along with other private school graduates report fewer business or economics classes than public school graduates. The total number of math and science courses reported by Protestant school graduates is also somewhat less than public school graduates.

It is difficult to accurately measure the homeschool curriculum, but the findings seem plausible, if not definitive. Religious homeschool graduates are less likely to report taking any of the classes offered on the survey, including physics, calculus, and chemistry. The total number of math and science courses is over one less among homeschool graduates relative to public school graduates.



Reading Graphs

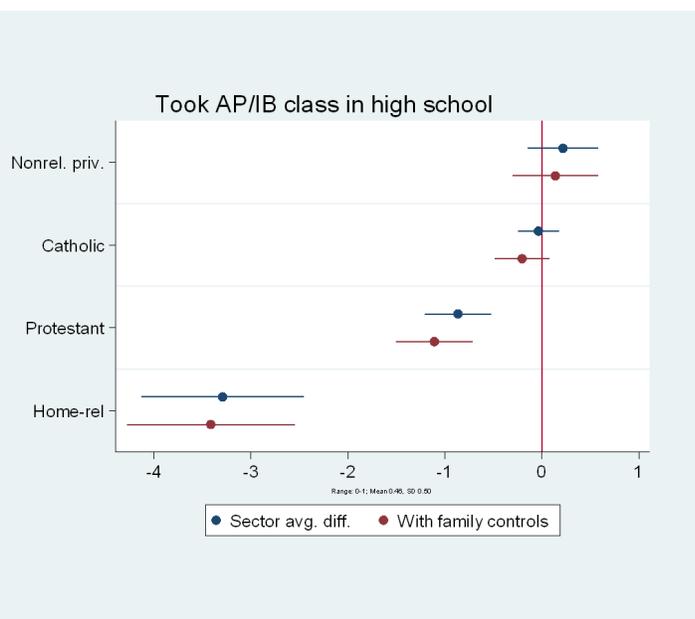
The graphs in this report include the high and low boundaries for the 90 percentile confidence interval for each coefficient, including the sector averages and those with family controls. The sector averages are marked in blue and represent the raw outcomes with all controls included. The red line represents the school sector effect once family controls are applied. Confidence intervals are shown as “whiskers” extending horizontally from each dot. If the value of zero is included within the confidence interval, the coefficient is not statistically significant, meaning that we cannot posit with over 90 percent confidence that the real average differences with public school graduates is not zero.

When we add together graduate responses in terms of math and science classes taken during high school, we find that non-religious private school graduates are significantly higher than public school graduates on this measure. Catholic school graduates are not quite as distinctive compared to public school graduates, but still significantly higher in the number of courses in math and science.

The 2018 CES also asks respondents whether they took a foreign-language class in high school. Here we find that non-religious private school graduates were, perhaps surprisingly, less likely than public school graduates to have taken a foreign language class in high school. Catholic school graduates are no different from public school graduates on this measure. The absolute percentage of students who took a foreign-language course is also nearly identical for Protestant school graduates. Religious homeschool graduates are much less likely to have taken a foreign-language course.

There is one course that is consistently more likely to have been taken by public school graduates: a civics course. Perhaps this reflects the long-standing civic mission of public schools. Respondents in every private school sector are less likely than a public school graduate to have reported taking a civics course in high school. The non-religious private school graduates, for example, are about 40 percent less likely to have taken a civics course. However, we should point out that if we ignore controls, the percentage of Protestant school graduates who have taken a civics course is nearly identical to that of public school graduates. It is possible that civics-type instruction is not clearly labelled as such in the various school sectors and that this may influence how respondents understood and responded to this question. It is important also to distinguish between civic courses and civic behaviour. A more nuanced discussion of public orientations, volunteering, and civic engagement outcomes is included in the 2018 CES thematic report titled “Involved and Engaged.”

Advanced Placement (AP) and International Baccalaureate (IB) classes are becoming more popular in all school sectors, especially within public schools. Yet we don't find strong sector difference between non-religious private, Catholic, and public school sectors. Protestant schools are less likely than public schools to have students who report taking an AP/IB course. Indeed, a Protestant school graduate is 60 percent less likely to have taken an AP/IB course than a public school graduates. Not surprisingly, AP and IB courses are not widely available for homeschool graduates.



The survey also asks respondents to cite the number of AP and IB courses taken. Here the findings show that non-religious private school graduates took the same number of these courses as public school graduates, Catholic school graduates were a bit lower and Protestant school graduates are much lower on this measure. The Protestant school graduates report taking about one AP course less on average than the public school graduates. The number of IB courses taken is roughly the same among students in non-religious private, Catholic, and public schools. Protestant school graduates are somewhat lower on average on this measure as well.

Similarly, dual-credit courses are increasingly popular among public schools and Catholic schools. In comparison, the non-religious private school and Protestant school graduates were much less likely to have taken dual-credit classes. Indeed, many Protestant schools may not offer dual-credit classes. Interestingly, while religious homeschool graduates have been consistently lower on CES measures of course selection, they are not significantly lower than public school graduates when it comes to dual credit courses—in fact, religious homeschool graduates have taken the same number of dual-credit courses on average during high school than the public school graduate.

EDUCATIONAL ATTAINMENT

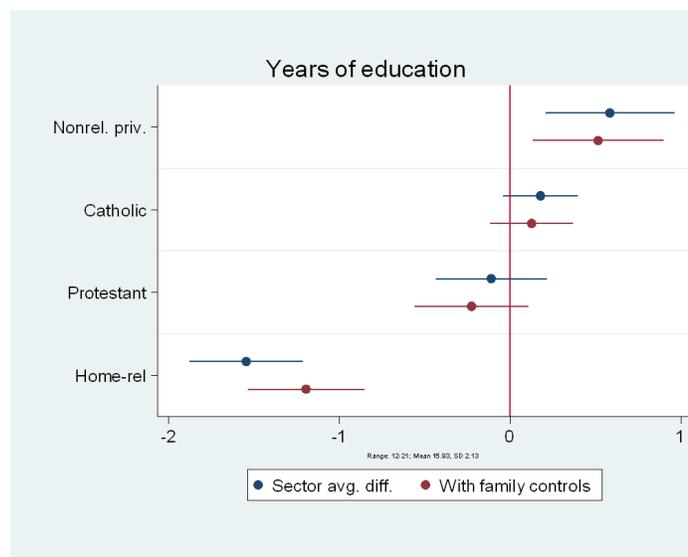
Similar to 2014 CES outcomes, the 2018 CES data reveal a relatively clear school sector hierarchy in terms of educational attainment with non-religious private schooling at the top, followed by the Catholic school sector, and then the public, Protestant, and religious home education sectors, though there are a number of important nuances to consider.

Non-religious private school graduates have a significant advantage in terms of educational attainment. These graduates have just over a half-year advantage in years of education when compared to public school graduates, they are significantly more likely to attain a BA or higher degree, and significantly more likely to attain a post-baccalaureate degree. The average non-religious private school graduate is, in fact, about 1.8 times more likely than the average public school graduate to attain an advanced degree.

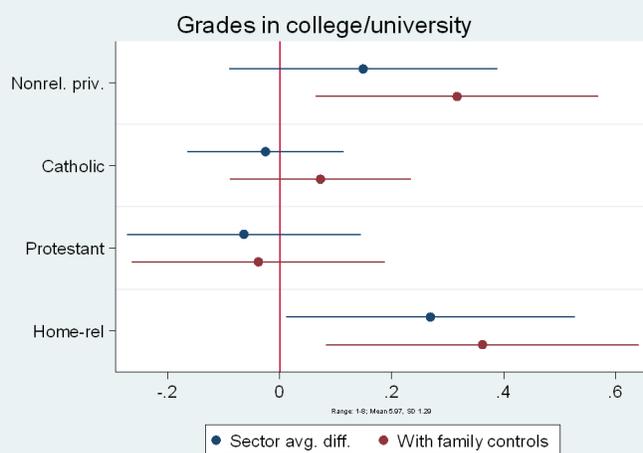
Catholic school graduates on average have also attained more education than public school graduates by about .3 years, though this difference is only marginally significant. Catholic school graduates were also not as likely to stop their education at the associate or “some college” level as were public school graduates.

Protestant school graduates on average received about .3 years less of education than a public school graduate, though this effect is not statistically significant once family controls are added. Protestant school graduates were significantly less

likely to attain a degree beyond the baccalaureate degree—indeed, they were about half as likely to have a master’s, professional, PhD, or similar degree than a public school graduate. Interestingly, however, these graduates are also less likely than public school graduates to obtain an associate’s degree. Instead, these graduates were more likely than public school graduates to obtain a bachelor of arts or bachelor of science. In other words, those Protestant school graduates who did attend post-secondary school were more likely to complete a bachelor’s degree than the public school graduate, but also not as likely to proceed from this to graduate school or enter into a professional program.



Religious homeschool graduates completed significantly fewer years of education than public school graduates; indeed on average just over one year less of schooling than public school graduates. Religious homeschool graduates were also about four times more likely to leave schooling directly after graduating from high school. In the US context, the associate’s degree is generally used to prepare for a specific occupation and there is evidence that religious homeschool graduates favour this type of degree as they were about one and a half times more likely to pursue this path than they were to complete a bachelor’s degree. Religious homeschool graduates were also significantly less likely to continue with schooling beyond the bachelor’s degree. In fact, the odds that a religious homeschool graduate would obtain an advanced degree is about 60 percent less than an average public school graduate. This fact does not minimize that there are many high-performing homeschool graduates.



UNIVERSITY CAREER

1. GRADES

As the various school sectors provide pathways to a common university experience, a comparison of choices and grades during these university years provides further evidence of the effectiveness of these different school sectors in preparing for the post-high-school years. The 2018 CES survey asks graduates a number of questions about their choices and grades during these years, beginning with the grades received

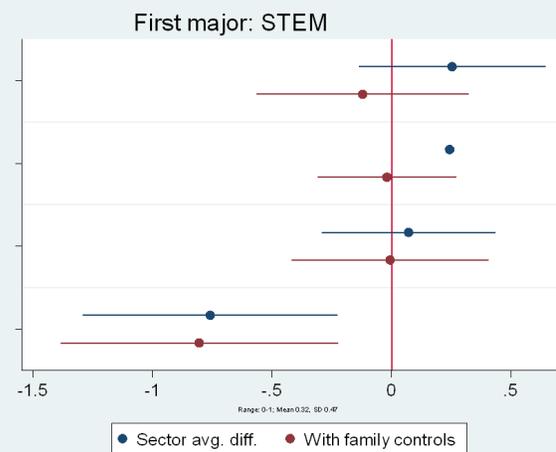
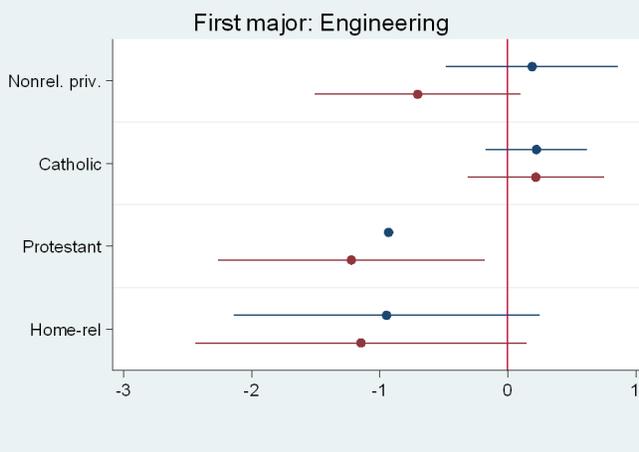
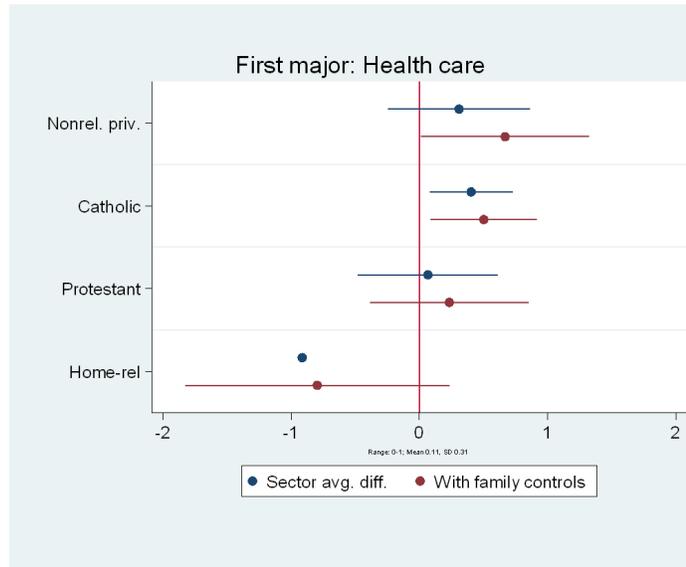
in university. Interestingly, while the findings do not show differences among the sectors in terms of high school grades, non-religious private school graduates and religious homeschool graduates report significantly higher grades in university than do public school graduates. It is possible that religious homeschool graduates are simply more conscientious about their studies and non-religious private school graduates are simply more prepared.

2. CHOICE OF FIRST UNIVERSITY “MAJOR”

The 2018 CES asks respondents to report on their initial selection of a university major. The first major taken up in university may reflect the directions and goals that were fostered in high school, though the evidence for this relationship is mixed. Nevertheless, our survey findings hint at different orientations to occupation and career depending on school sector. For example, we do not find significant sectoral differences in the likelihood of choosing a business major, but education first majors are much less likely to have been chosen by Catholic school students and religious homeschool students, while Catholic and non-religious private school graduates are more likely to begin university studies in health care. In fact, non-religious private school graduates are about twice

as likely as public school graduates to major in a health-care field when first starting out in university, and Catholic school graduates are not far behind.

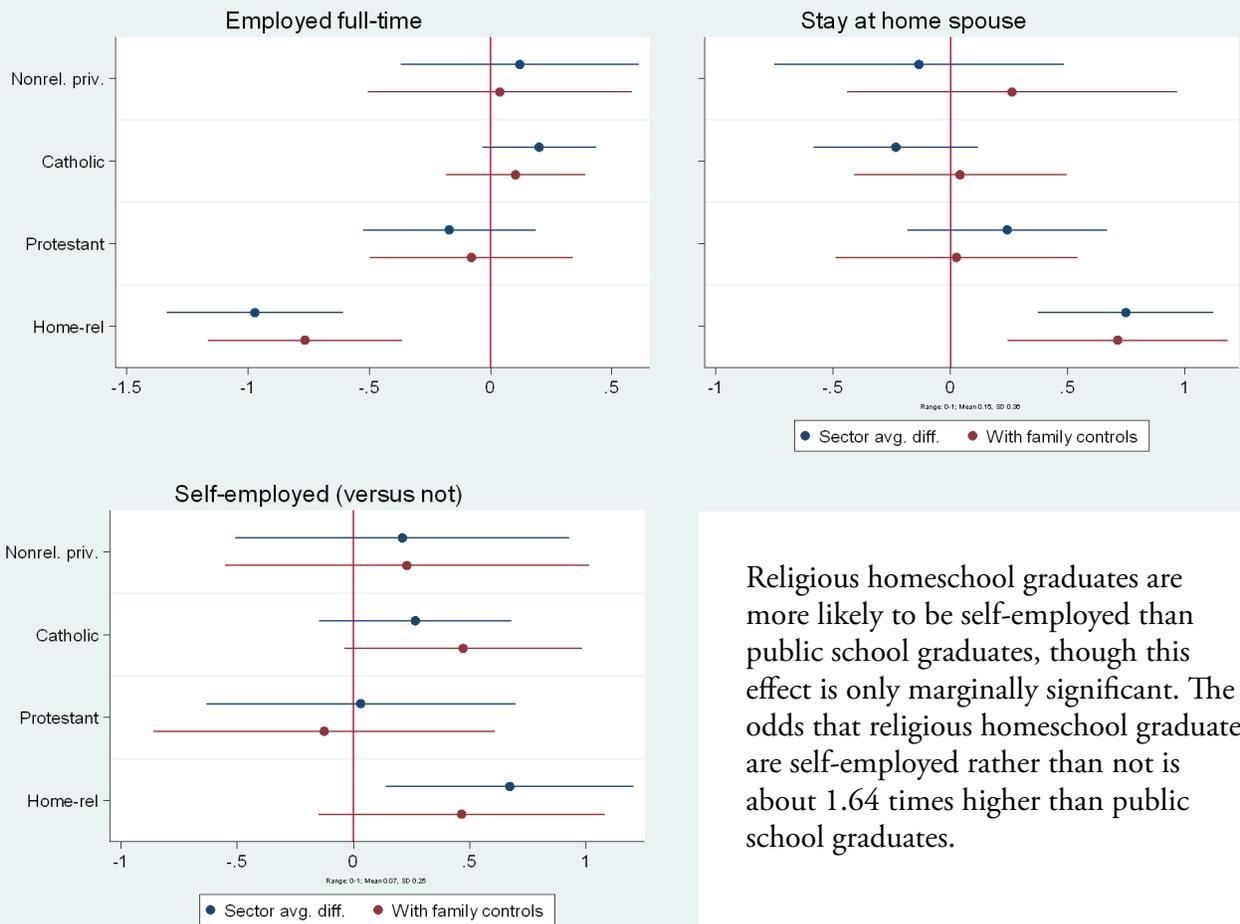
We also find some school-sectoral differences in the likelihood of choosing engineering as a first major. Protestant school graduates and religious homeschool graduates were less likely to start with this major than public school graduates. Catholic and non-religious private school graduates were also more likely to start in a STEM major, though this is largely accounted for by family background. Religious homeschool graduates are not likely to take up a STEM major relative to public school graduates, though again this effect is not statistically significant.



Overall, the findings for first major hint at the relation between school sector and occupational status and income. Protestant school graduates are not as likely to start in higher-status or higher-paying occupations relative to public school graduates. In contrast, Catholic school graduates and particularly non-religious private school graduates are choosing pathways and university majors that likely offer greater prestige and income over the course of life. The findings for religious homeschool graduates are not conclusive on this matter, likely due to wide variation in terms of preparation for STEM and some health-care disciplines, but the trends do not appear to favour the higher-prestige occupations.

WORK STATUS

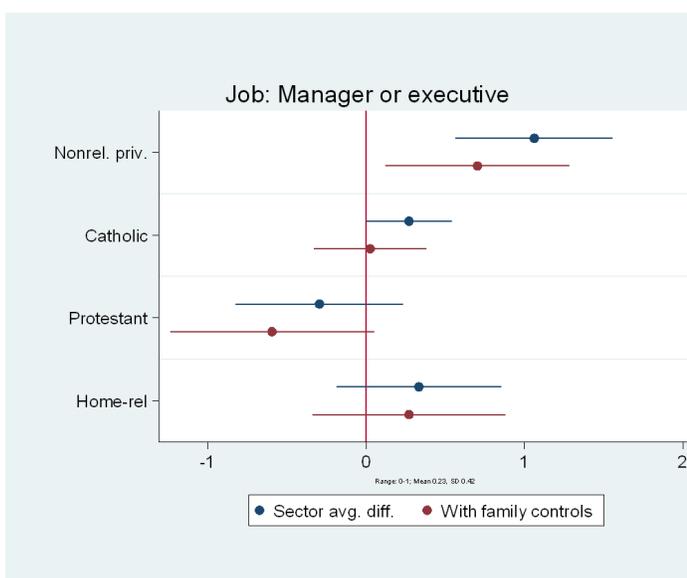
The 2018 CES asks graduates a number of questions related to their employment status and household income. The findings show that Catholic school graduates on average are more likely to be employed than public school graduates and about 33 percent less likely to be unemployed. Religious homeschool graduates are more likely to be unemployed than public school graduates—in fact, the estimate reveals that these graduates are over twice as likely to be unemployed. Interestingly, there are few school-sector differences in terms of whether graduates were likely to be working full-time, though religious homeschool graduates are the exception here as they are about half as likely to be employed full-time than are public school graduates and are much more likely to have a stay-at-home spouse who is not working. They also tend to report having a higher number of jobs than do public school graduates. Interestingly, Catholic school graduates also report having a higher number of jobs.



Religious homeschool graduates are more likely to be self-employed than public school graduates, though this effect is only marginally significant. The odds that religious homeschool graduates are self-employed rather than not is about 1.64 times higher than public school graduates.

OCCUPATION

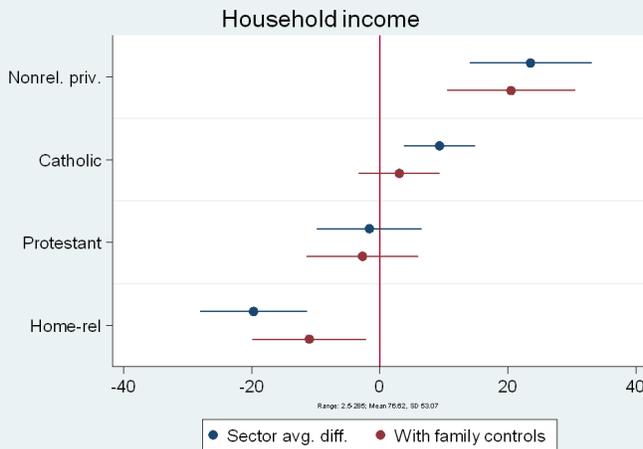
The 2018 CES next investigates the association between school sector and some of the major occupational classifications including business, education, health care, engineering, professional or scientific, and STEM fields. Non-religious private school graduates do not tend to cluster in any particular industry, but clear differences emerge between this school sector and others in terms of level of employment. Non-religious private school graduates are much more likely to hold a position as a manager, supervisor of staff, director, or executive. In fact, they are twice as likely as public school graduates to report this type of employment than they are to report being an “experienced/non-manager employee.” Surprisingly, they are also more likely to report occupying an “entry-level” position rather than an experienced non-manager position. This may reflect the kind of jobs taken up by non-religious private school graduates, which could include entry-level positions in companies and occupations with steep internal career ladders (e.g., a corporate law firm or an investment banking company). Still, the important finding is that private non-religious school graduates are likely in executive and managerial positions rather than any of the alternatives, which is not the case for any of the other school sectors.



Catholic school graduates are more likely to be in the health-care industry, though this effect is only marginally significant. Catholic school graduates are also more likely to be in professional or scientific occupations, but this is not a school effect according to CES findings. Still, overall, Catholic school graduates are about one and a half times more likely to be in a professional or scientific occupation than are public school graduates. Interestingly, the Catholic school sector does not seem to influence how graduates are involved in the employment sector in any unique way, whether this involvement be with government, for-profit, or nonprofit; a finding that is somewhat unexpected given the importance of the non-profit sector in Catholicism and the ties between non-profit organizations and Catholic schools. Catholic school graduates are much less likely to report having an entry-level position rather than having an experienced non-managerial position. In fact, they are about 40 percent less likely to be in entry-level positions than public school graduates.

Evangelical Protestant school graduates are much more likely to be employed in the health-care industry—in fact, about 1.8 times more likely than public school graduates. And in terms of level of employment, findings show that Protestant school graduates are less likely to have a managerial or executive position than they are to have an experienced non-managerial position. Although this effect is only marginally significant, the size of the effect, which shows that Protestant school graduates are nearly 50 percent less likely to occupy these positions, leads us to expect that this difference is not likely due to chance.

The homeschooling sector is marked by a lot of variation. Religious homeschool graduates are likely to be found in entry-level as well as managerial or executive positions. These effects are not statistically significant after controls, but are highly suggestive of homeschooling effects. Though we do not have detailed information on various types of entry-level positions, it is reasonable to assume that homeschool graduates are nearly bifurcated in their relation to the job market—some holding relatively low-paying jobs with fewer opportunities for advancement while many others are in managerial roles.



INCOME

The 2018 CES asks graduates a series of questions about their household income. As we would expect, household income is significantly higher for non-religious private school graduates relative to public school graduates. Specifically, the private non-religious school graduates report an average of about \$20,000 more in-household income than do public school graduates. Catholic school graduates report about \$10,000 more in-household income, but this is accounted for by family-background variables.

Protestant school graduates are no different from public school graduates in terms of the household income being reported. Finally, religious homeschool graduates report significantly lower household income, in fact, about \$10,000 lower on average when compared to the public school graduates.

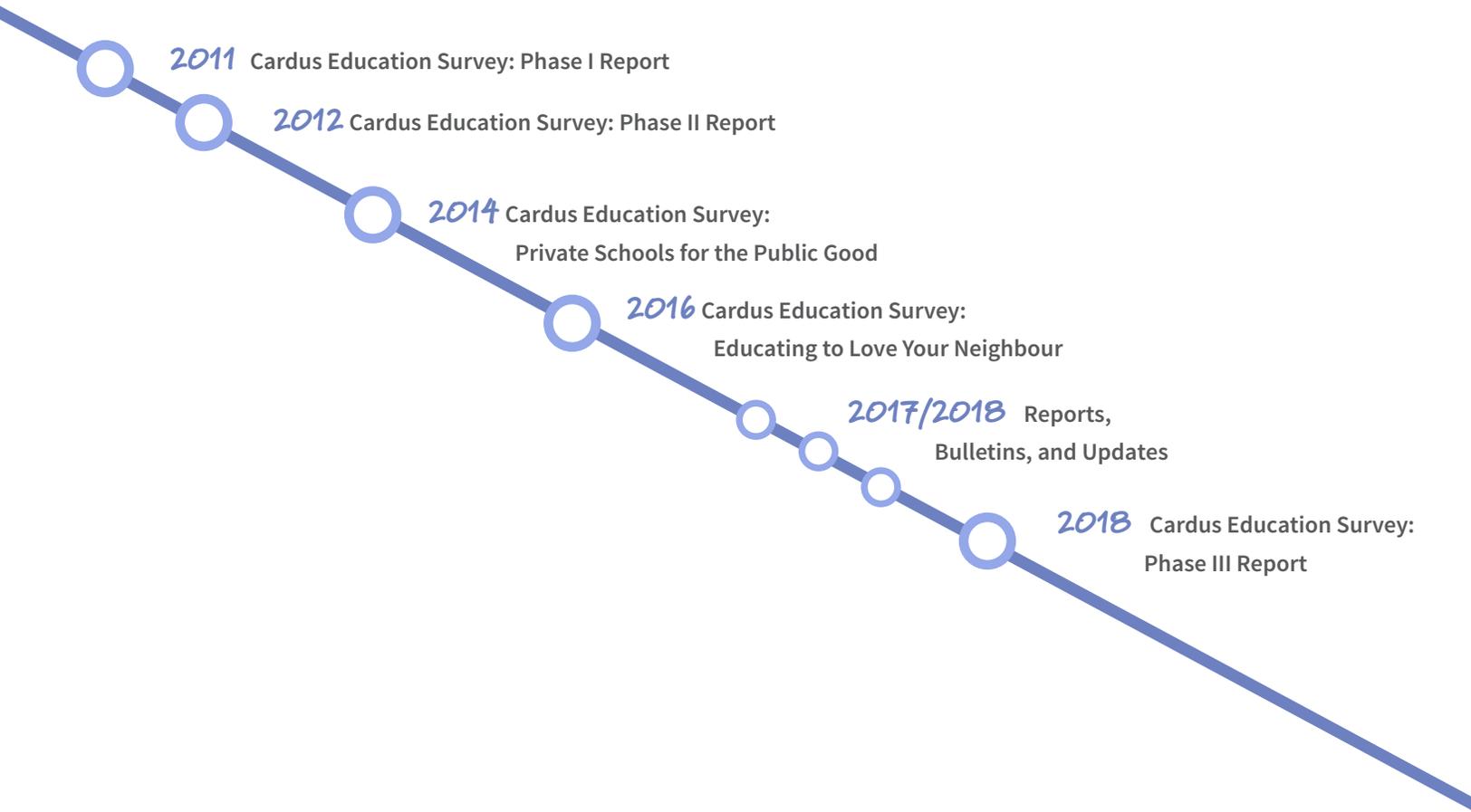
CONCLUSION

The 2018 CES data demonstrates that school sector has an important relationship to life pathways and the choices being made by graduates. In terms of educational attainment, occupation, and income, our analysis of the data reveals substantial school-sector effects. The association between non-religious private schooling and social stratification is evident in the CES findings; this school sector is associated with greater educational attainment, managerial or executive positions, and much higher income. Though this sector represents a relatively small portion of the private school population, they continue to carry the torch on these measures. Catholic school graduates also attain higher educational and occupational outcomes than do public school graduates. Protestant school graduates are not as likely to pursue advanced degrees relative to public school graduates and are more likely to pursue occupations in health care. Religious homeschool graduates have substantially lower levels of education and appear to have a more tenuous relationship to the job market, though there seems to be wide variation here. This likely reflects a life orientation that focuses on practical outcomes, such as preparing for a job while keeping costs reasonable and attending a local post-secondary institution.

In our analysis of occupation, it is important to highlight that religious schools tend to foster a vision of the future that perhaps strikes a different balance between career and other aspects of life. A religious education can strongly influence the calculation of what is meaningful in life. Indeed, the CES asks a series of questions designed to probe these different mindsets and priorities. Graduate responses show that non-religious private school graduates are more likely to favor a job in which they can be creative and receive a high salary, whereas Catholic school graduates are less likely to value a job with a high salary and more likely to favour a job that fulfills their religious calling. Protestant graduates express a strong desire for a job that fulfills their religious calling. In fact, they are half a point higher on this five-point scale than are public school graduates. Religious homeschool graduates are also much less likely to value a job that pays well, and are equal to Protestant school graduates in terms of desiring a job that fulfills their religious calling.

While the 2018 CES data shows some strong connections between school sector and educational and occupational outcomes, it is also important to note that the school sectors themselves are not bounded and stuck in time, but rather understood as part of a community, and are constantly in flux as they seek improvement and adjust to the changing conditions that surround them. For example, declining enrollment in Catholic schooling may tilt this sector more strongly toward the college prep model of the private non-religious schools. The homeschooling sector continues to grow, which could change the average orientation of the homeschooling sector toward education and work. The evangelical Protestant sector has witnessed recent efforts to improve academic outcomes. With the possible exception of the Christian Reformed schools, evangelical Protestant schools have been more strongly oriented to religious community and spiritual formation, but in the recession of 2008, many smaller and likely more conservative evangelical Protestant schools closed down. This shift in the composition of the Protestant sector may have longer-term consequences on the educational outcomes of its graduates. While meaningfulness, happiness, and success should not be measured by educational, occupational, and income outcomes alone, the CES nevertheless provides important insight into the life pathways commonly pursued by graduates of the various school sectors.





2011 Cardus Education Survey: Phase I Report

2012 Cardus Education Survey: Phase II Report

2014 Cardus Education Survey:
Private Schools for the Public Good

2016 Cardus Education Survey:
Educating to Love Your Neighbour

2017/2018 Reports,
Bulletins, and Updates

2018 Cardus Education Survey:
Phase III Report

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