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The Effect of a Dual Enrollment Tuition Subsidy for Students Eligible for Free/Reduced Price Meals: Evidence from CCR-CCA in Maryland

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MLDS Center Research Series
October 7, 2021

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Acknowledgements

Witzen, B.H. & Henneberger, A.K. (2021). The Effect of a Dual Enrollment Tuition Subsidy for Students Eligible for Free/Reduced Price Meals: Evidence from CCR-CCA in Maryland. Baltimore, MD: Maryland Longitudinal Data System Center.

https://mldscenter.maryland.gov/ResearchReports.html

Intro (1)

- College and Career Readiness and College Completion Act (CCR-CCA) of 2013 aims to improve college and career outcomes in Maryland.
- Included a tuition reduction for select high school students who dually enroll in college courses.
- Dual enrollment rates have increased over this period.
- However, low-income students are underrepresented in the dually enrolled population.
- What is the effect of the cost reduction in tuition on dual enrollment uptake for low-income students?

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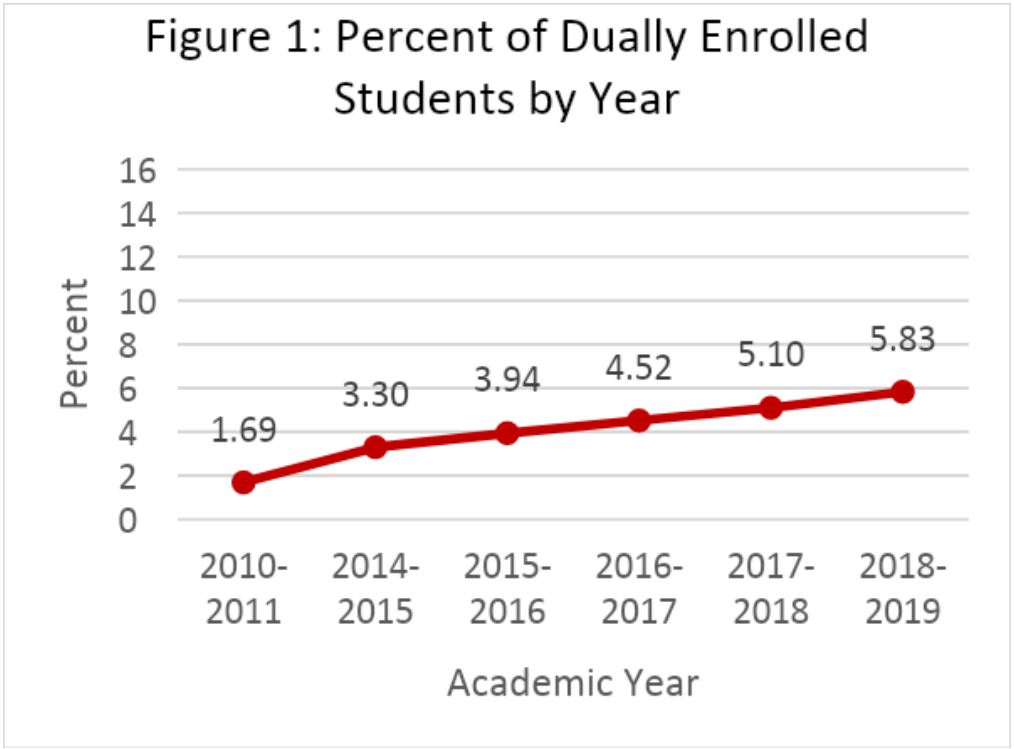
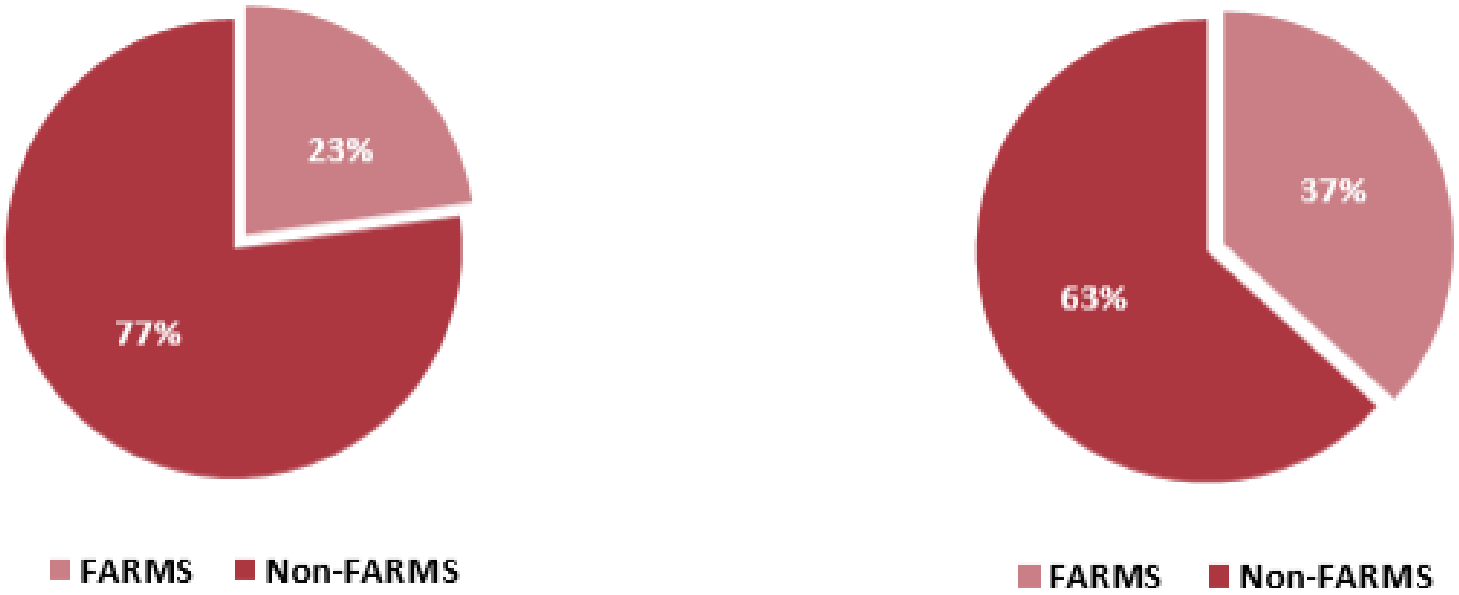
Intro (2)



For example, between the 2010-2011 and 2018-2019 academic years, the rate of dual enrollment among Maryland public high school students increased from 1.7% to 5.8% (MLDS Center, 2020).

Intro (3)

Figure 2: Percent of Dual Enrollment for FARMS and Non-FARMS Students



For example, in the 2017-2018 academic year, 37% of the population of Maryland public high school students were eligible for free/reduced price meals (FARMS), but only 23% of dually enrolled students were eligible for FARMS (MLDS Center, 2019).

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Background (1)

- Public agencies often invest funds in policies and programs that aim to increase college enrollment and degree attainment, particularly for low-income students
- Recent experimental evidence from Tennessee shows that dual-credit math coursework alters subsequent high school course taking and college selection (see Hemelt et al., 2020)
- Prior MLDS research shows positive college and workforce outcomes in Maryland, with strong relationships for lower-income students (see Henneberger et al., 2018; 2020)

Background (2)

- Much of the research examining the cost of college enrollment focuses on college enrollment after high school graduation (see Dynarski & Scott-Clayton, 2013).
- Positive impacts of Promise Programs in Michigan, Oregon, and New York (see Gandara & Li, 2020 and Swanson et al., 2016 for recent reviews of this research).
- Comparatively little research on the cost structure and price responsiveness of college enrollment during high school.
- Cost varies across states, local school systems, and institutions (NCES, 2020; Miller et al., 2018).

The Current Study (1)

- Leverages a policy from the 2013 College and Career Readiness and College Completion Act (CCR-CCA).
- Local schools systems (LSS) were required to form agreements with public colleges to cover the tuition and fees for up to four dual enrollment courses.
- Tuition was reduced, but the LSS could charge 90% of the tuition back to the high school student.
- This fee was waived for students eligible for free/reduced price meals (FARMS). Effectively set the tuition for FARMS-eligible students to zero.

The Current Study (2)

- Research question: What is the effect of a tuition subsidy on dual enrollment rates for students who were eligible for FARMS when compared to students who were not eligible for FARMS?
  - We use a difference-in-differences strategy that uses non-FARMS students as a comparison group for FARMS students, who received the largest subsidy.
  - Allows for students to differ in unobservable ways, as long as they are time-invariant.
  - Produces quasi-experimental evidence of the effect of the tuition subsidy on dual enrollment uptake in Maryland.

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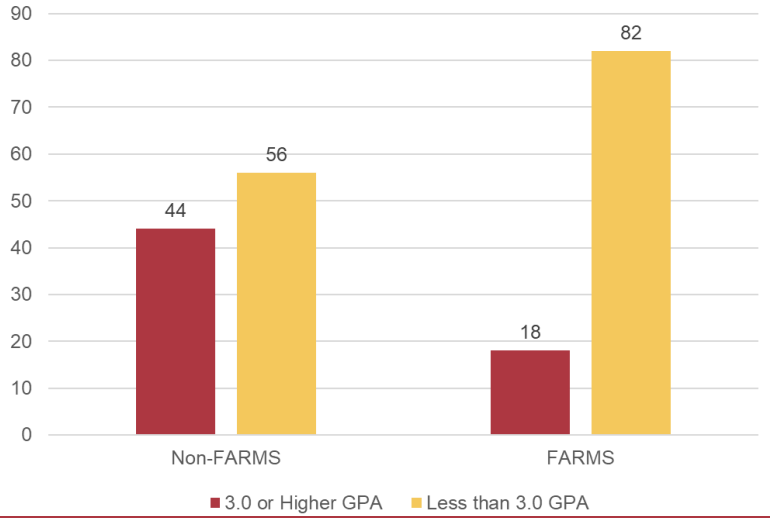
Methods: Sample Selection

- Data are from 534,702 12th grade students attending Maryland public high schools in academic years 2007-08 through 2016-17.
- Descriptive analyses showed that the average FARMS-eligible student was less likely to be academically eligible for dual enrollment than the average non-FARMS student.
- Limited to students who were likely eligible for dual enrollment by excluding students with less than a 3.0 GPA at graduation (*N* ~ 200,000).



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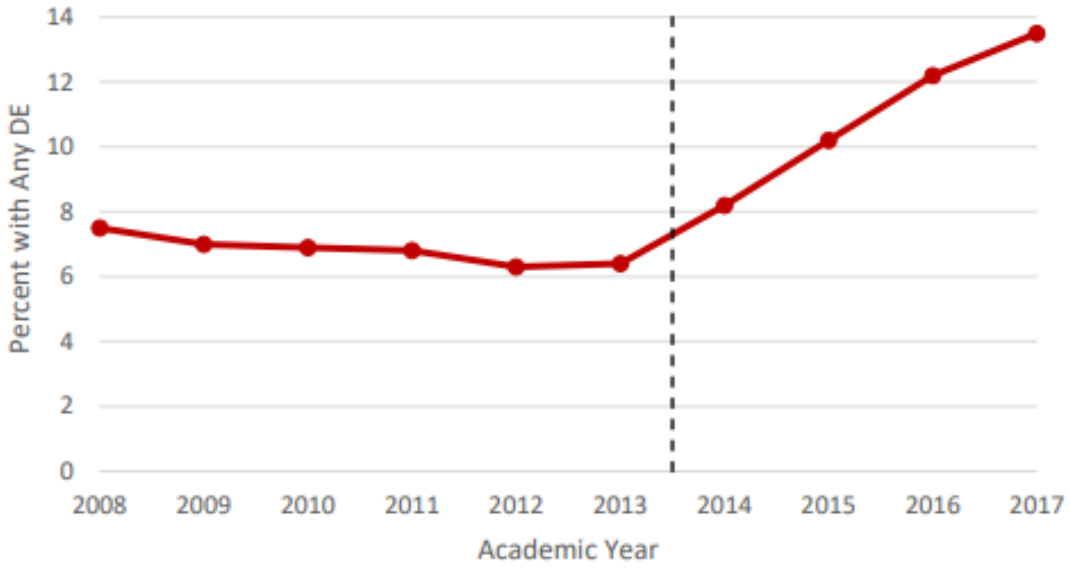
Methods: Measuring Dual Enrollment (11th or 12th)

Figure 3a: Percentage of 12th Grade High School Students Who Ever Dual Enrolled Over Time



Note. This chart shows the percentage of students who dual enrolled at any point in their 11th or 12th grade years of high school.

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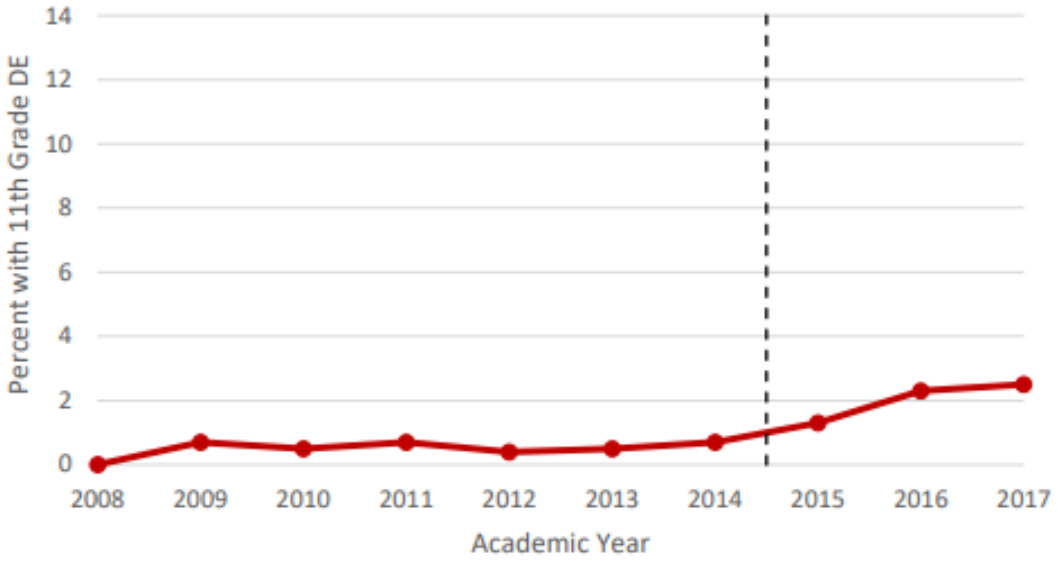
Methods: Measuring Dual Enrollment (11th Only)

Figure 3b: Percentage of Students Who Dual Enrolled in the 11th Grade Year Over Time



Note: Since the 2014 high school cohort would have only been affected by the CCR-CCA in their 12th grade year, this graph treats the 2015 cohort as the first cohort that could have been affected by the legislation in their 11th grade year.

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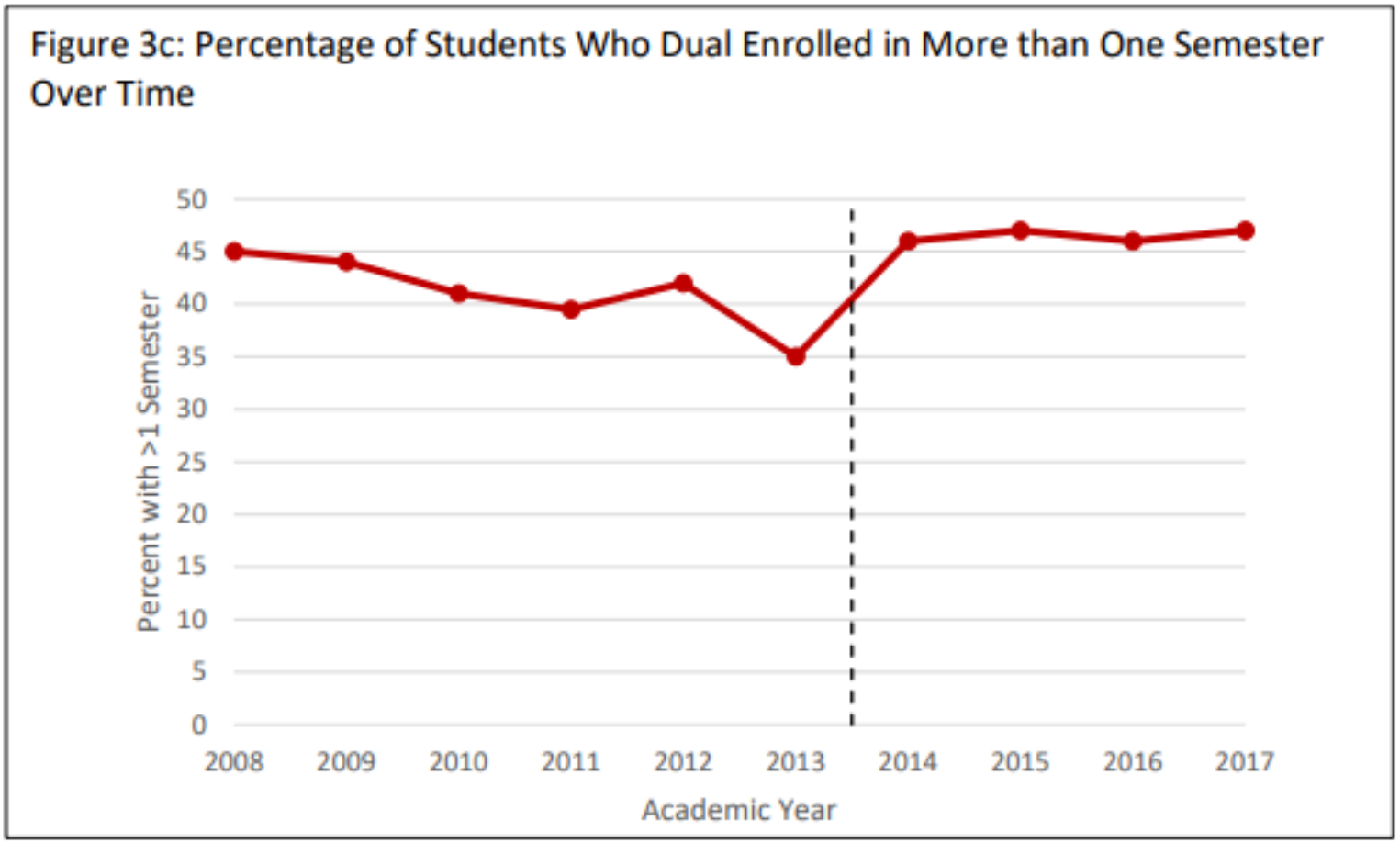
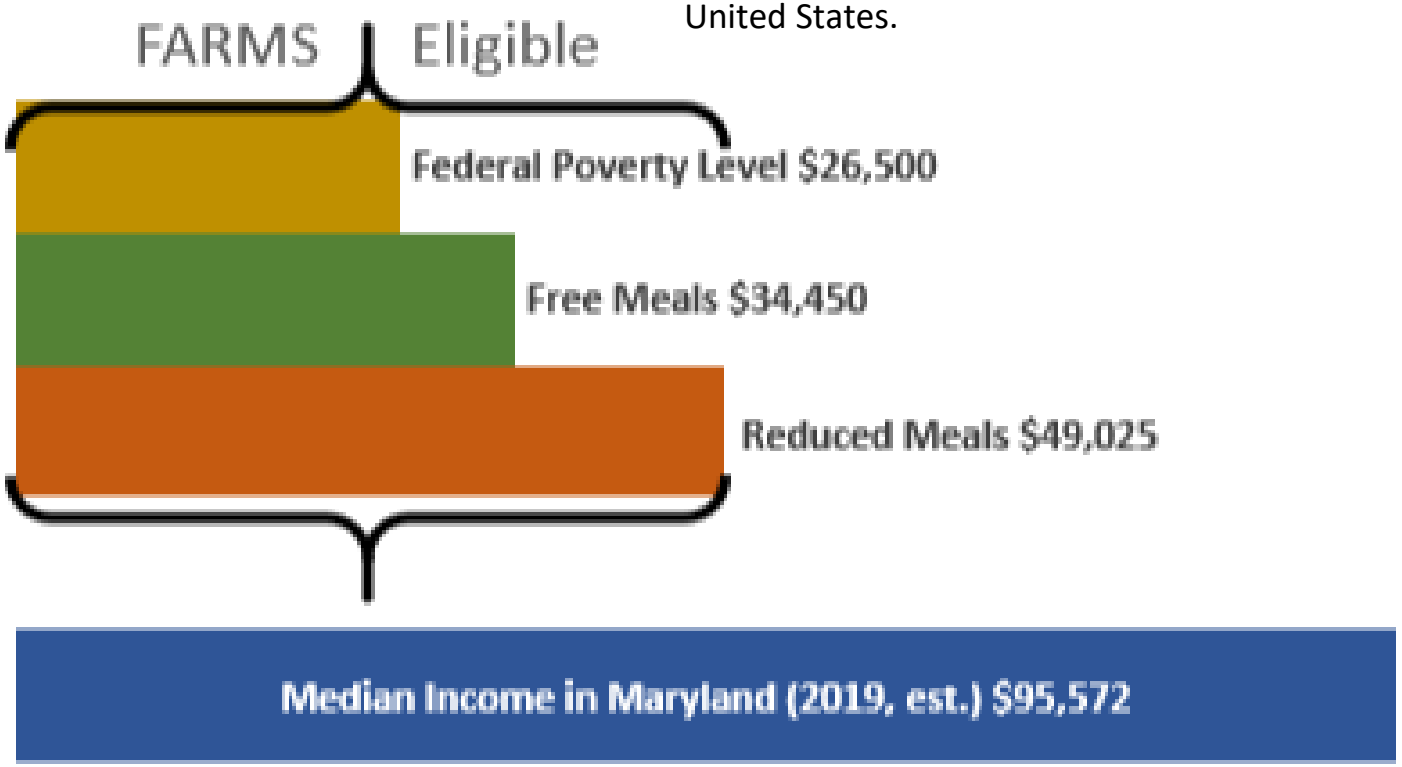
Methods: Measuring Dual Enrollment (More than One Semester)

Figure 3c: Percentage of Students Who Dual Enrolled in More than One Semester Over Time

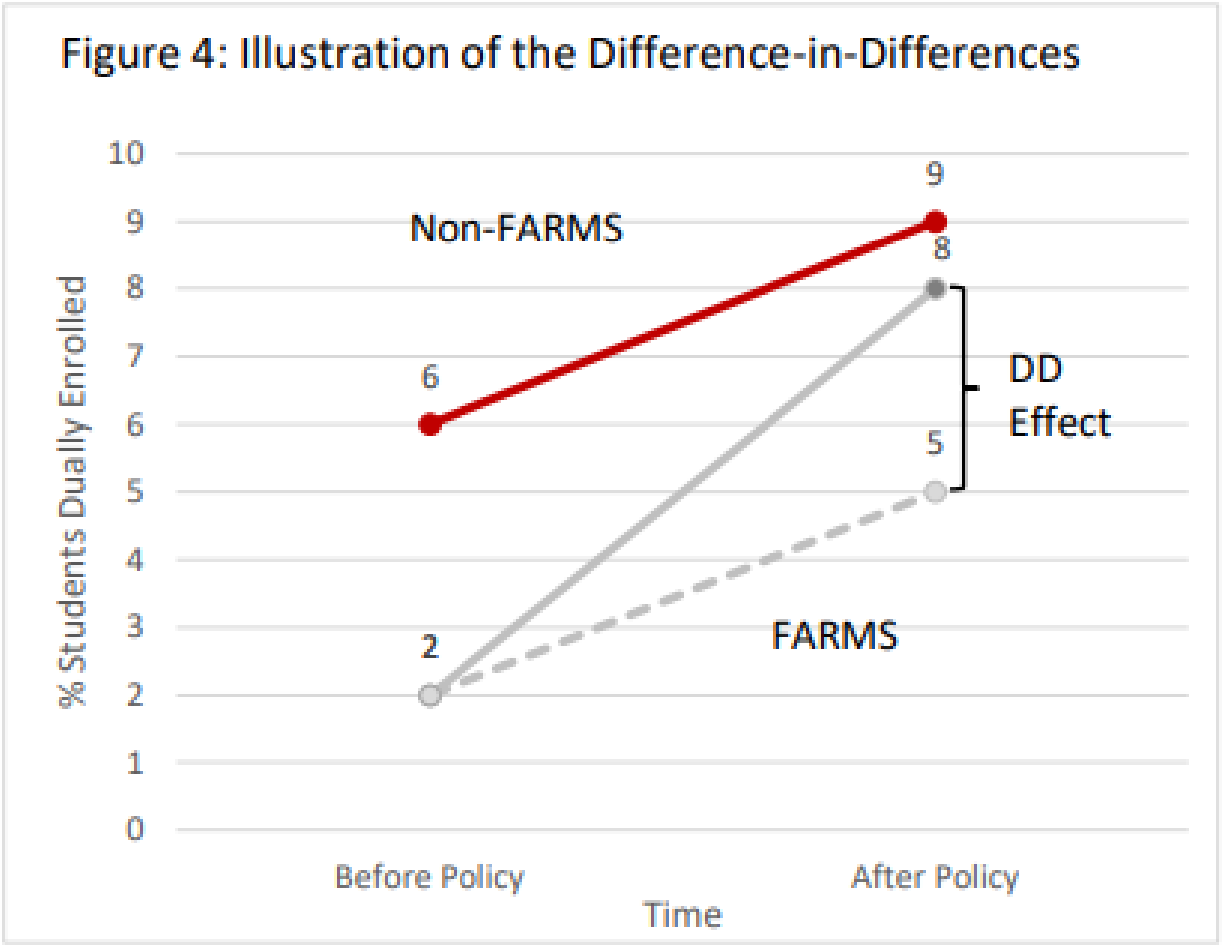


Methods: Measuring FARMS

This chart shows the 2021-2022 annual household income thresholds for a family of 4 in the contiguous United States.



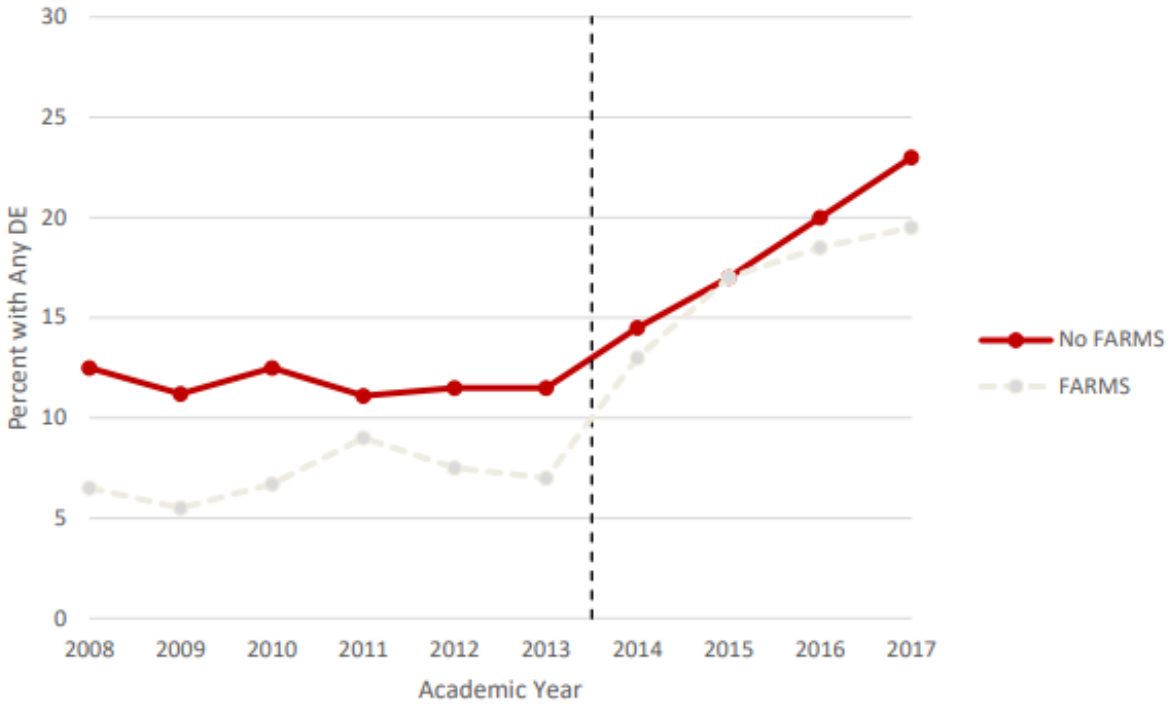
Methods: Analyses



Ashenfelter & Card, 1985; Card & Krueger, 1994

Findings: Descriptive Trends

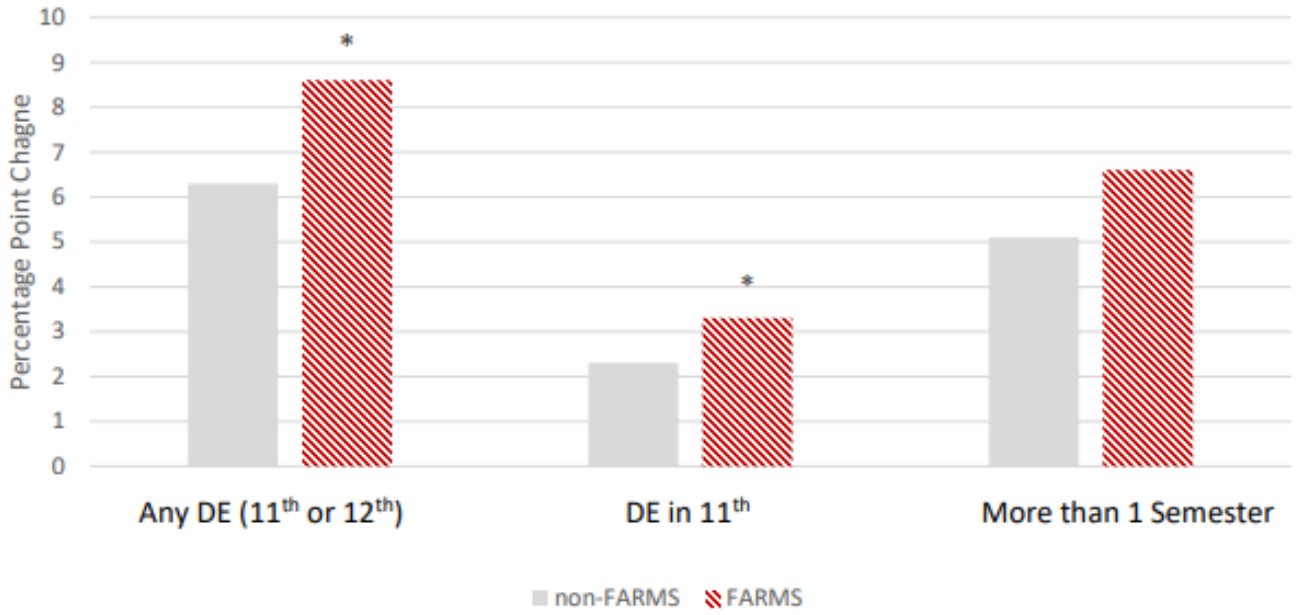
Figure 5: Percent of Students with Any Dual Enrollment Over Time, FARMS Compared to Non-FARMS



Note. Any DE = Dual enrollment in 11th or 12th grades, focusing on the population of students who were likely eligible for dual enrollment (i.e., had a high school GPA of 3.0 or higher).

Findings: Difference in Differences

Figure 6: Estimated Total Changes in Dual Enrollment FARMS-Eligible Students Compared to Non-FARMS-Eligible Students, 3.0 GPA or Higher



Note. * indicates a significant difference at the $p < 0.01$ level. FARMS = eligibility for free/reduced price meals; DE = Dual enrollment.

Summary of Findings

- Limiting to students who were likely eligible for dual enrollment (i.e., students who graduated with a 3.0 or higher GPA):
  - both FARMS-eligible and non-FARMS students saw descriptive increases in the rate of dual enrollment, but the changes in dual enrollment were larger for FARMS-eligible students.
  - FARMS-eligible students saw a significantly larger increase in dual enrollment after CCR-CCA.

Discussion

- Findings are consistent with prior research on college enrollment (Dynarski & Scott-Clayton, 2013).
- Findings are consistent with research showing positive effects of tuition subsidies from Promise Programs (Gandara & Li, 2020; Swanson et al., 2016).
  - Larger impacts for lower-income students (Carruthers & Fox, 2016).
- Cost may be an impediment to dual enrollment participation (Miller et al., 2018), and we show that a subsidy helps to increase uptake, especially for low-income students.

Limitations

- Assumption that there are no concurrent changes that differentially impact FARMS-eligible and non-FARMS students.
- Known limitations of the FARMS measure (see Domina et al., 2018).
- No indicator for which students are taking dual enrollment courses pursuant to CCR-CCA.
- Differences in dual enrollment eligibility, course offering, timing of policy implementation, and cost of living across local school systems in Maryland.

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Policy Implications and Future Research

- Prior to CCR-CCA, cost may have been a barrier for dual enrollment, especially for lower-income students.
- Our results suggest a positive benefit of tuition subsidies for dual enrollment = positive return on the State's initial investment.
- Non-tuition related costs may still be an issue.
- Determine whether dual enrollment uptake translates into positive college and career outcomes.
- Possible negative consequences?

Conclusion

- We applied a difference in differences strategy to MLDS data and showed that the tuition subsidy provided by CCR-CCA had a larger effect on dual enrollment uptake for FARMS students when compared to non-FARMS students.
- Isolated the effect of the change in cost of dual enrollment.
- Provides positive support for State's investments in tuition subsidies.

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Questions and Contact Information

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https://mldscenter.maryland.gov/welcome-index.html