

When Sarah Meets Lawrence: The Effect of Coeducation on Women's College Major Choices

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August 2022

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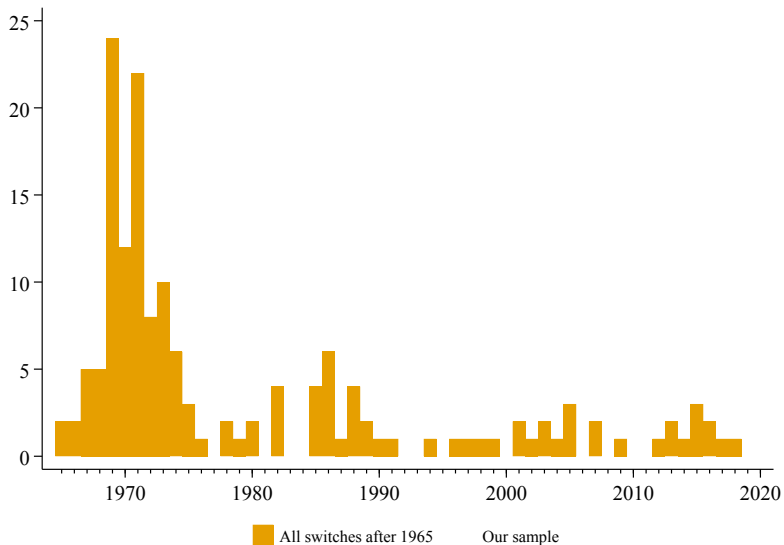
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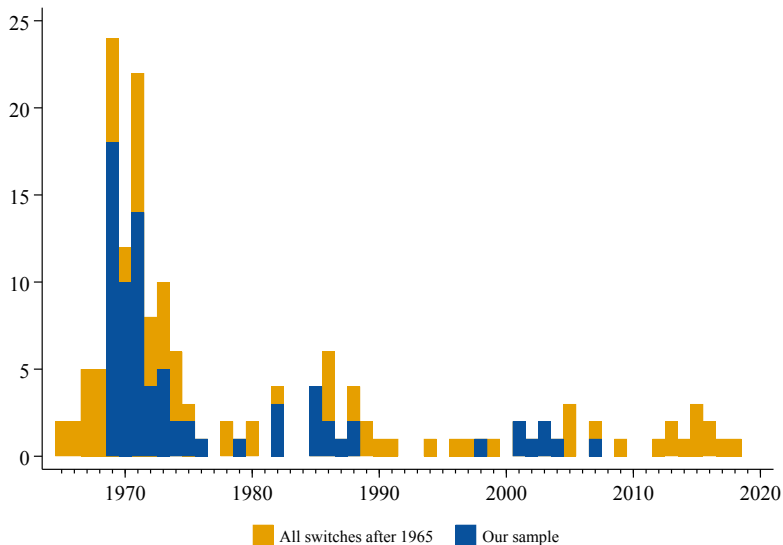
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- Our setting: The decline of women's colleges in the United States

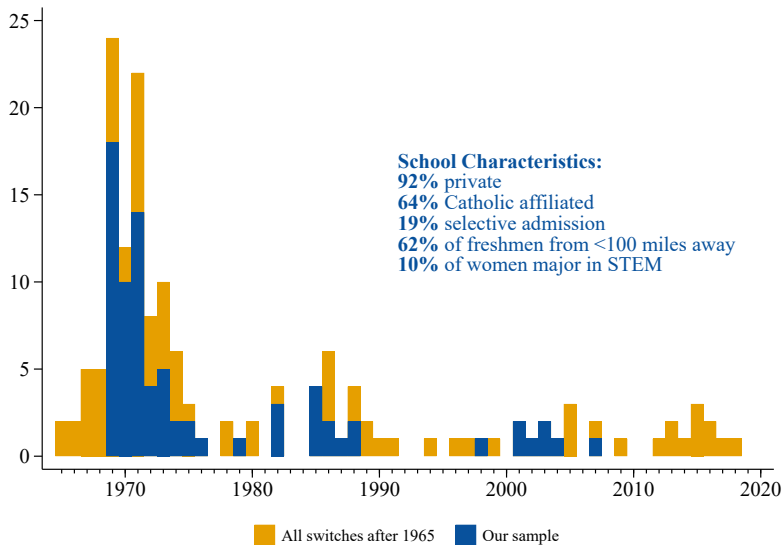
The decline of women's colleges



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Data and empirical strategy

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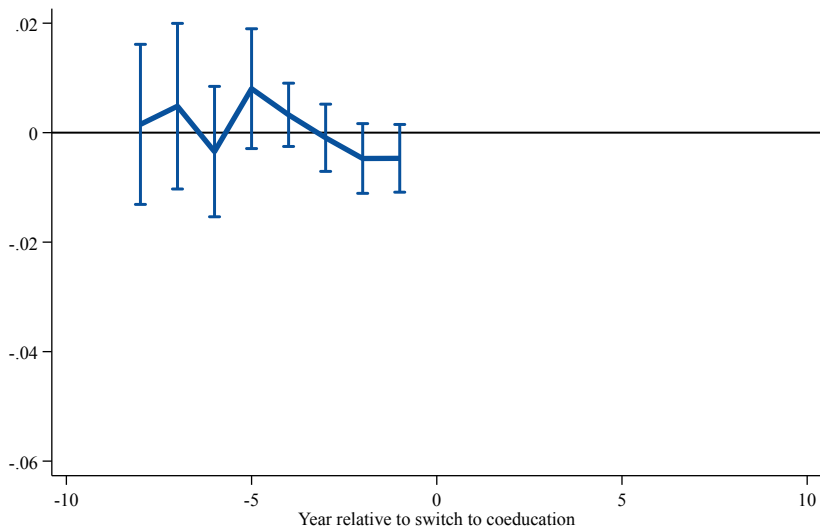
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- Empirical strategy: Diff-in-diff design using modified version of estimator proposed by Callaway and Sant'Anna (2021):

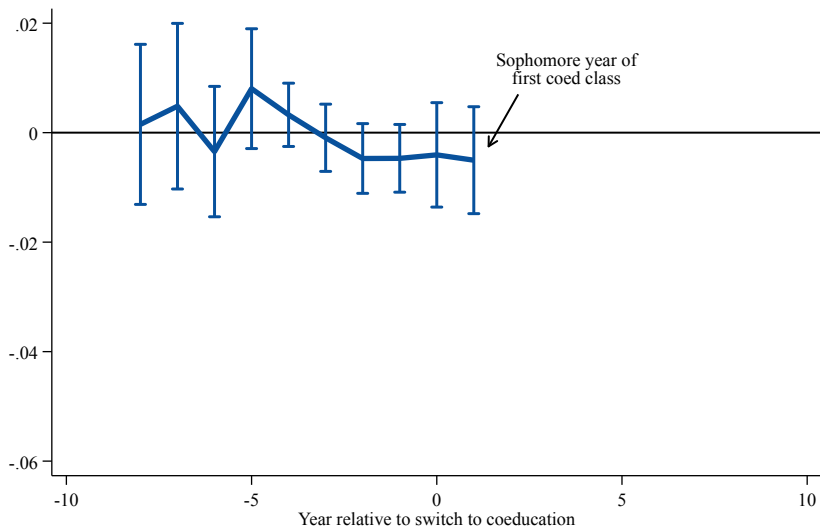
$$\hat{\alpha}_{jt} = \underbrace{(y_{jt} - y_{jb})}_{\text{Trend at treated school}} - \underbrace{\sum_{k \in C_j} \tilde{\omega}_k \cdot (y_{kt} - y_{kb})}_{\text{Counterfactual trend}}$$

Effect on share of women majoring in STEM



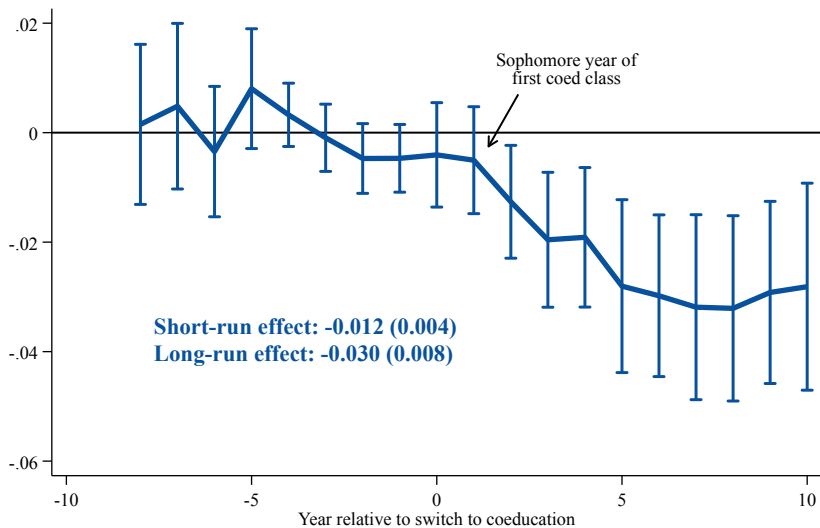
— Untreated women's colleges All untreated
Never-treated women's colleges Liberal arts colleges

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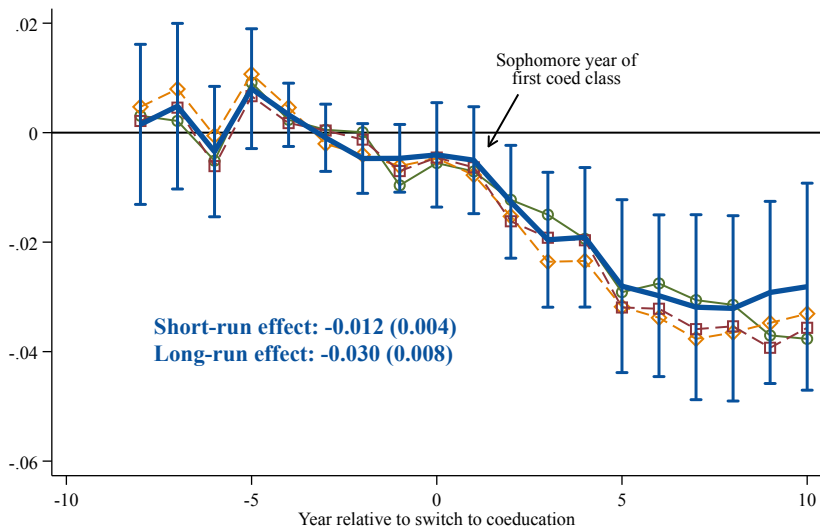
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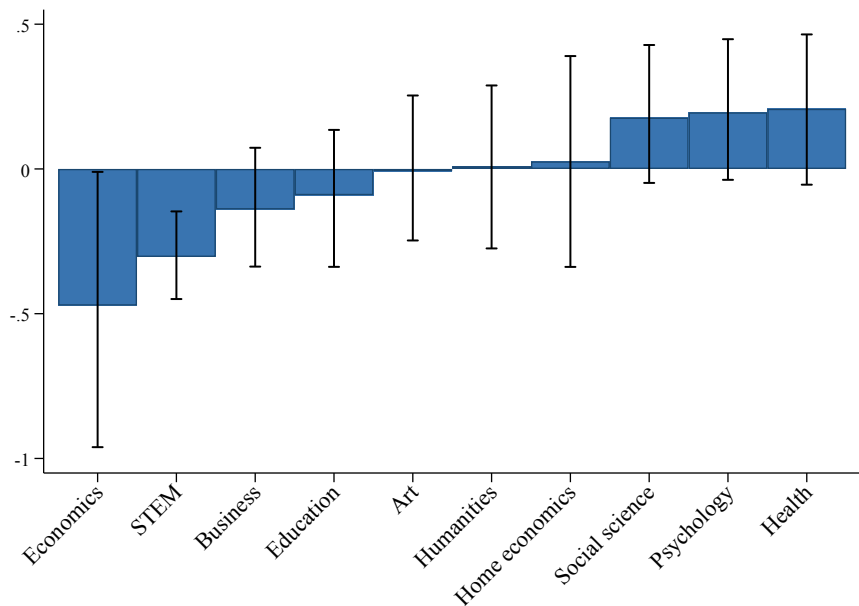
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What did women choose instead of STEM?



Mechanisms

- Shift in distribution of women's majors could stem from responses along several margins

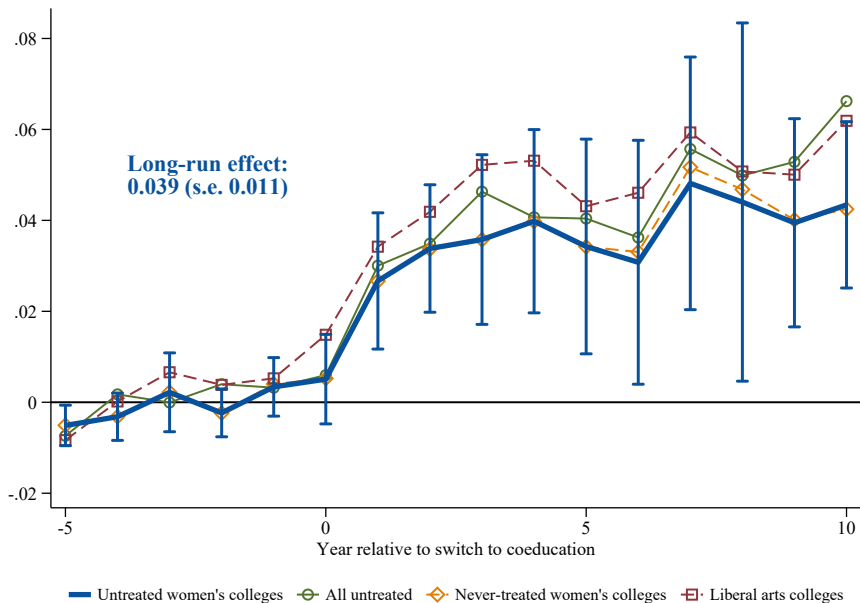
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- Shift in distribution of women's majors could stem from responses along several margins
- **Composition effect:** Women interested in STEM may choose different schools

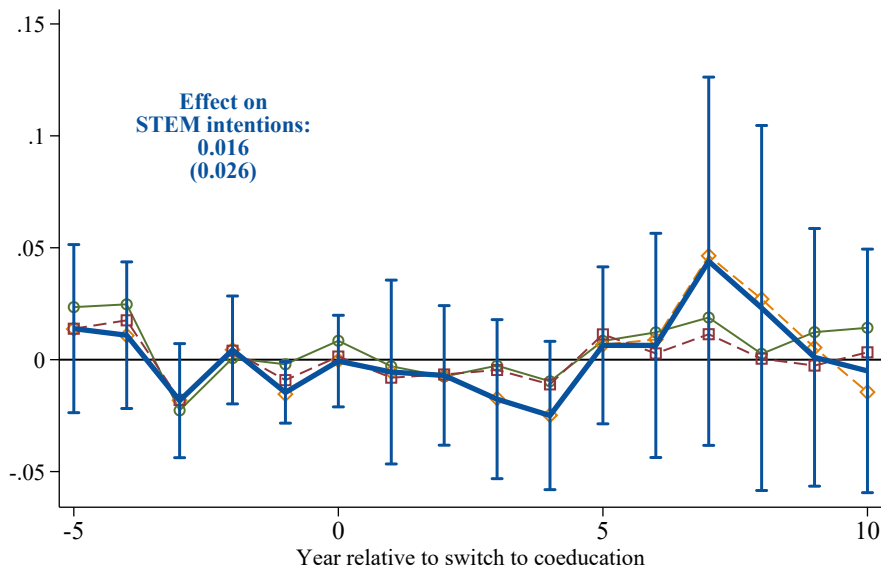
Mechanisms

- Shift in distribution of women's majors could stem from responses along several margins
- **Composition effect:** Women interested in STEM may choose different schools
- **Environmental effect:** The changing social and educational environment may affect choices – *holding enrollment decisions fixed*
 - ▶ Gender-neutral factors: class sizes, “ability” of classmates
 - ▶ Gender-biased neoclassical factors, e.g., marriage market concerns (Bursztyn, Fujiwara, and Pallais 2017)
 - ▶ Gendered “non-cognitive” channels, e.g., reluctance to compete (Bertrand 2011)

Effects on women's rank in GPA distribution

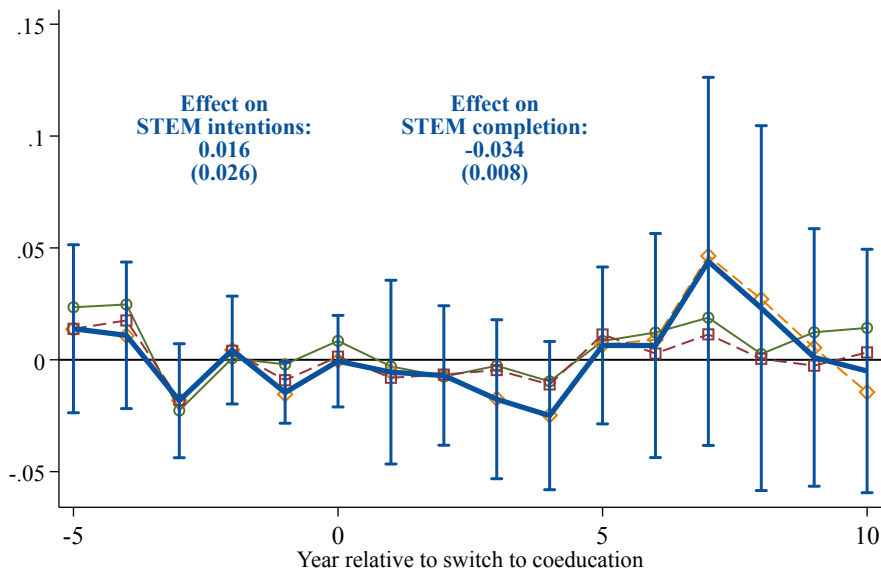


Share of freshman women intending to major in STEM



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Do freshman characteristics predict STEM degrees?

	(1)	(2)	(3)	(4)
<i>Panel A: Effect of freshman characteristics on women's likelihood of earning STEM degree</i>				
Effect of intent to major in STEM	0.336*** (0.040)	0.333*** (0.040)	0.332*** (0.040)	0.317*** (0.041)
<i>Covariates:</i>				
Career, family aspirations		X	X	X
Parental education, occupation			X	X
High school grades, coursework				X
R-squared	0.191	0.199	0.205	0.215
Observations	1,235	1,235	1,235	1,235
<i>Panel B: Effect of coeducation on predicted share of female freshmen who will major in STEM, preferred comparison group</i>				
Estimated composition effect	0.005 (0.008)	0.009 (0.010)	0.009 (0.010)	0.012 (0.011)
Composition effect / Total effect of coeducation on STEM major choice	-16%	-28%	-27%	-37%
Composition effect upper bound	32%	32%	31%	29%

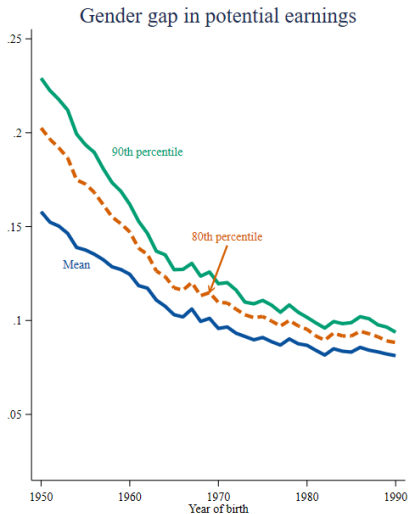
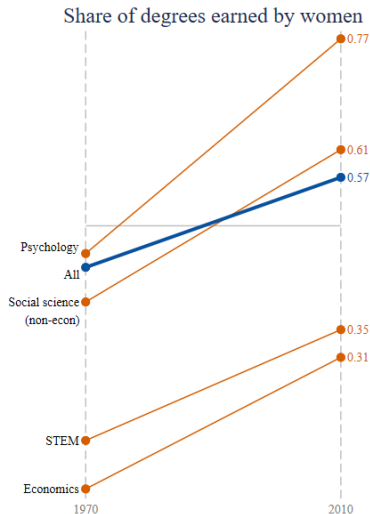
Conclusion

- We develop a new setting to examine the impact of the gender mix of the college environment on women's choice of major
- We find that the introduction of male classmates leads to a 3pp (30%) decrease in the share of women earning a degree in STEM
- Analysis of mechanisms finds no evidence of changes in composition of female students, but is most consistent with effects of gendered peer and role model effects
- Back-of-the-envelope calculation: Exposure to male classmates can explain 36 percent of the 16.5pp gender gap in STEM.
- These results suggest that consequential decisions about women's careers can be impacted in a significant way by the gender composition of the classroom and social environment

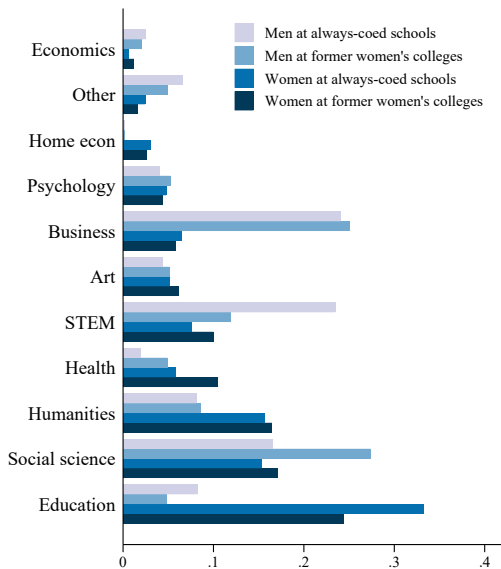
Thank you!

Appendix

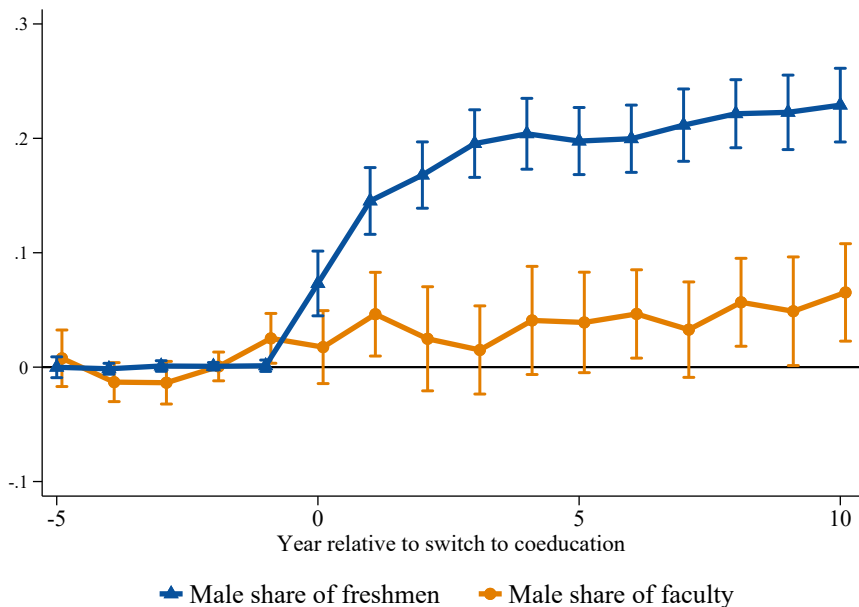
Trends in gender differences



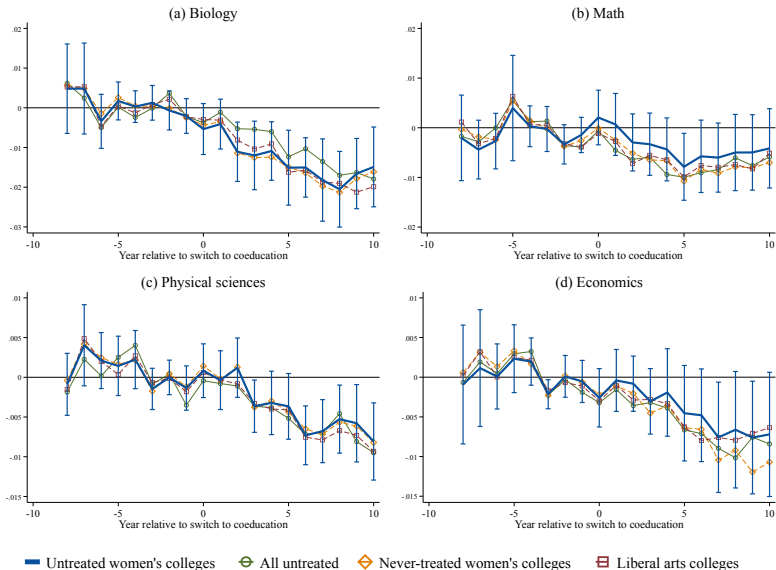
Student characteristics



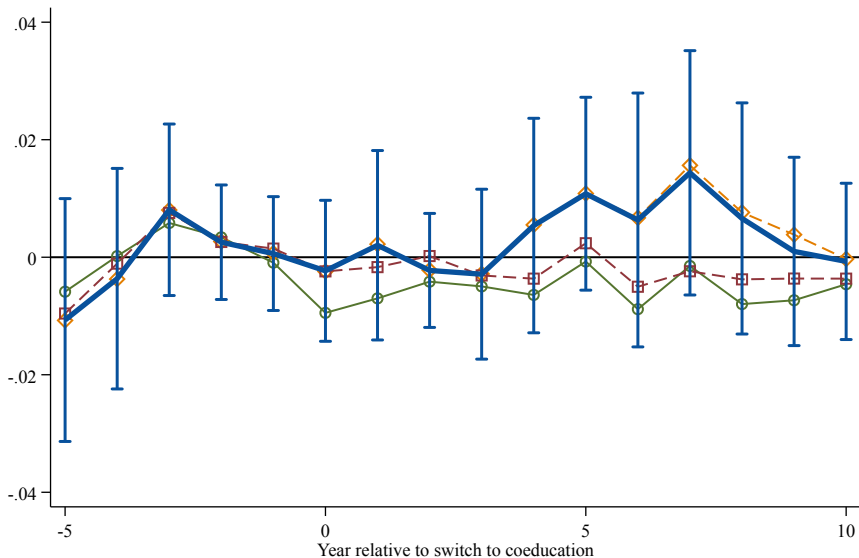
Changes in the gender mix of students, faculty



Effects similar in all major quantitative fields



Intended career: Science



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