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Anticipatory impacts of the repeal of *Roe v. Wade* on female college applicants

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ABSTRACT

We examined the relative impact of the anticipated repeal of *Roe v. Wade* on the share of female applicants to universities in states where abortion was banned compared with universities in states where abortion remained legal. Using the Common Data Sets from 71 of the top 100 institutions in the United States spanning 27 states from academic years 2018–2022, we found that there was a nearly one percentage point relative decrease in the share of female undergraduate applicants to institutions in ban states compared with states in which abortion remained legal. This suggests that undergraduate applicants are sensitive to state reproductive health policies and that this may impact the demographic composition of colleges and the future labor pool of the affected states.

1. Introduction

Each year, millions of American high school students and their families carefully weigh several factors in their decisions about where to apply to college (Cabrera and La Nasa, 2000, Hurtado et al., 1997, Kim, 2004, U.S. Department of Education, 2019). State politics are increasingly a factor in college choice with one survey finding that one in four undergraduate applicants avoids entire states for political reasons (Goebel et al., 2023).

By Fall 2021, some applicants for freshman admissions for the following academic year may have anticipated the U.S. Supreme Court's June 2022 ruling (*Dobbs*, 597 U.S.) that the Constitution does not confer a right to abortion (Kolbert and Kay, 2021). This ruling effectively overturned *Roe v. Wade* (Wade, 1973), returning the power to regulate abortion to individual states (*Planned Parenthood*, 112 U.S.; *Roe*, 113 U.S.). In the years before the ruling, the ideological shift of the Supreme Court drove thirteen states to enact anticipatory trigger laws that would automatically ban abortion if *Roe v. Wade* were overturned (Mason, 2021, Romanis, 2023). A number of other states already had pre-*Roe* abortion bans on the books. As a result, complete abortion bans took effect in much of the South, as well as parts of the Midwest and Southwest United States (Table 1). A number of partial bans restricted by weeks of gestational age also took effect, resulting in a total of eighteen states where abortion was fully or partially banned (The New York Times 2023).

With access to legal and safe abortion now restricted in much of the U.S., reproductive freedom may play a significant role in college choice in the coming application cycles. Recent Gallup polling found that 73% of unenrolled college-age adults state that reproductive laws are at least somewhat important when deciding whether to enroll in college (Marken and Hrynowski, 2023). This paper explores whether the share of female undergraduate applicants changed following the anticipated repeal of *Roe v. Wade* in states where abortion would be banned in comparison to states where abortion would remain legal. We find that states in which bans were reasonably anticipated to go into effect were associated with a nearly one percentage point relative decrease in the share of female undergraduate applicants in the fall 2022 freshman cohort.

2. Methods

2.1. Data

We utilized the Common Data Set (CDS), a higher education survey meant to aid students' transition to higher education (College Board, Peterson's, and U.S. News and World Report 2023) that is published every academic year. Our research focused on applicant statistics for the most recent available five years (2018–2022). Under "First Time, First

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Table 1
Abortion Status Post-Repeal.

Abortion Legal Status	States Overall (In Sample is **Underlined**)
Banned	**Alabama**, Arkansas, Idaho, Kentucky, **Louisiana**, Mississippi, Missouri, Oklahoma, South Dakota, **Tennessee**,**Texas**, West Virginia, **Wisconsin**,**Georgia** (6 Week), Arizona (15 Week), **Florida** (15/6 Week), Utah (8 Week), **North Carolina** (20 Week)
Ban Blocked Legal / Legal Limited	**Indiana**,**Iowa**, North Dakota, Montana, **Ohio**, Wyoming Alaska, Kansas, Nebraska, New Hampshire, **South Carolina**, **Virginia**,**District of Columbia**,**California**,**Colorado**, **Connecticut**, Delaware, Hawaii, **Illinois**, Maine, **Maryland**, **Massachusetts**,**Michigan**,**Minnesota**, Nevada, **New Jersey**, New Mexico, **New York**, Oregon, **Pennsylvania**,**Rhode Island**, Vermont, **Washington**

Note: Blocked bans and legal/legal limited comprised the control states.

Table 2
Summary Statistics.

	Ban States	Control States
Pre-2022 Share of Freshman Female Applicants	0.56 (0.07)	0.52 (0.08)
Number of States in Sample	8	19
Number of Schools in Sample	19	52

Notes: Means (Standard Deviations).

Year Admissions", CDS statistics for each academic year include the numbers of male and female applicants. Using these data, we calculated the share of female freshman applicants for each institution for each year.

We found the CDSs on the Department of Education's Integrated Postsecondary Education Data System (IPEDS, 2023), where available, on university websites, or by asking universities directly for these data. We referenced the 2022–2023 US News Best National University Rankings and included the universities listed in their top 100 ranking (Report, U.S. News and World 2023). This gave us a sample of 104 universities due to ties in the ranking from which we assembled a complete five year dataset for 71 universities across 21 states.

We categorized the universities into three groups based on state laws regarding abortion from the New York Times abortion tracker as of June 2023 (The New York Times 2023). There were 18 states where abortion was banned and six more where the ban was blocked with the remainder retaining legal abortion access. We compared the outcomes for universities in states where abortion became illegal (treatment group), pre-, and post-Roe-v-Wade repeal, against outcomes for those in states where abortion access continued after Roe-v-Wade's repeal (control group). We included the ban-blocked group as control states, although results are similar if they are excluded from the sample. For schools within the top 100 US News Best National University Rankings, this yielded eight treated states and 19 control states, including D.C. (Table 1).

2.2. Empirical approach

Our estimation regression included fixed effect controls for school, school year, and school state. Our base specification is as follows:

$$\mathrm{Yijt} = \sum_{t=-3}^{+1} (\alpha_{ijt} * \mathrm{Repeal_j} * \mathrm{Year(t)}) + \tau_t + \delta_i + \varphi_j + \varepsilon_{ijt} \quad (1)$$

where i is school, j is state, and t is school year, α_{ijt} is a vector of estimates for the relative impact of being in a ban state compared to a control state for a given year relative to 2021 (i.e., immediately prior to repeal becoming widely anticipated). As for the controls, τ_t captures school year fixed effects, δ_i captures school fixed effects which control for time-invariant differences, φ_j accounts for state fixed effects, and ε_{ijt} is an error term clustered on school.

Table 3
Estimated Annual Differences.

	Share of Freshman Female Applicants
Ban x 2018	<0.001 (0.006) [−0.011, 0.012] $p = 0.96$
Ban x 2019	0.004 (0.005) [−0.005, 0.013] $p = 0.39$
Ban x 2020	0.002 (0.004) [−0.007, 0.010] $p = 0.70$
Ban x 2022	−0.009** (0.003) [−0.015, −0.002] $p = 0.012$
Pre-2022 Control Mean	0.56 (0.07)

Notes: $N = 355$ yearly school-level observations; 2021 is reference year. Standard errors are in parentheses. 95% confidence intervals are in brackets.

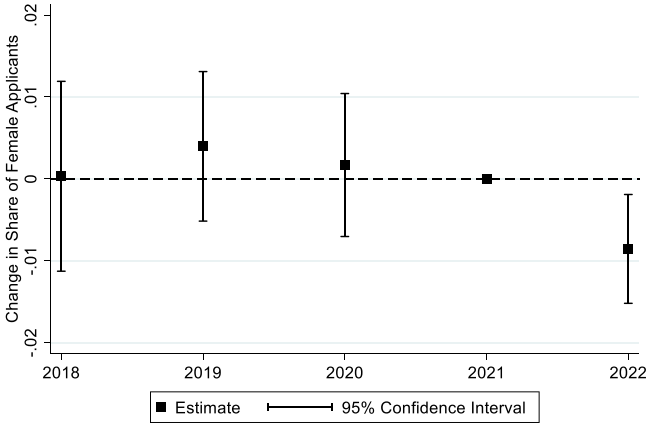

Fig. 1. Change in Share of Female Applications, Any Ban vs. Control States. Note: Joint F-Test for pre-2022 variables = 0.20.

3. Results

The pre-2022 share of freshman female applicants was 56% in ban states and 52% in control states (Table 2).

The pre-2022 estimates relative to the omitted year are all not statistically significant at the 90% confidence level, suggesting parallel trends between the cohorts. In 2022, there was a nearly one percentage point relative decrease in the share of female undergraduate applicants (estimate = −0.009, SE = 0.003, 95% CI = −0.015 to −0.002, $p = 0.012$) (Table 3 and Fig. 1).

This roughly 1 percentage point drop in the share of female applicants necessarily means that there is a coincident 1 percentage point increase in the share of male applicants. So, effectively, this represents a roughly two percentage-point swing in the mix of applicants by binary gender.

These results are driven by schools ranked 1–50 (Appendix Fig. A1) and with 50% or more out-of-state applicants (Appendix Fig. A2) as they do not hold for schools ranked 51–100 (Appendix Fig. A3) or with less than 50% out-of-state applicants (Appendix Fig. A4). These findings also do not appear to be driven by unrelated contemporaneous changes in the desirability of schools (Appendix Fig. A5 for an evaluation of total applicants and Appendix Fig. A6 for university rankings).

4. Discussion and conclusions

Our findings are consistent with emerging survey research that undergraduate applicants are sensitive to state-level politics, including policies that affect reproductive health access. These results most directly impact top-ranked universities and those with high shares of out-of-state applicants located in states where abortion became newly illegal, and may have broader economic implications for states. For instance, a recent study on college-specific labor markets found that 50 percent of recent college graduates are living and working in the metro area near the institution they attended (Conzelmann et al., 2022). Interstate college migration presents an opportunity for communities to recruit and retain an educated workforce (sometimes called "brain gain") (Hendrickson, 2023, Kelchen and Webber, 2018, Winchester, 2018).

Our analysis has several limitations. We were unable to secure all school data from among the top 100 ranked universities. Since the case was argued in December 2021 (i.e., when many fall 2022 applications were due) and not decided until June 2022 (i.e., after most applications were due), it is unclear how these anticipated effects relate to the next cycle of applications when the fate of state-level abortion access was better understood. For subsequent applicant cohorts, similar effects may spread more widely. Our results are driven by the top 50 ranked universities whose applicants often have multiple educational options and it is unlikely that these results extended beyond these institutions for the fall 2022 freshman cohort. Furthermore, based on admission statistics, universities not in our sample (i.e., ranked outside of the top 100, with admission rates typically above 80%) are likely on average more similar to those ranked 50–100 (with admission rates typically in the 40–80% range) than to those ranked in the top 50 (with admissions rates typically below 20%) ((Report, U.S. News and World 2023) & CDS Data). Finally, our data does not permit assessment of how female applicants who decided to not apply differed from those who did.

While the extent to which the repeal of Roe v. Wade undercuts brain gain in affected states remains to be seen, we do find that female applicants were sensitive to state reproductive policy in making undergraduate application choices (Fig. A7).

Data availability

Data will be made available on request.

Acknowledgements

Abigail Wilhelm helped with data collection and manuscript preparation. This research was funded by the Newcomb Institute at Tulane University.

Appendix

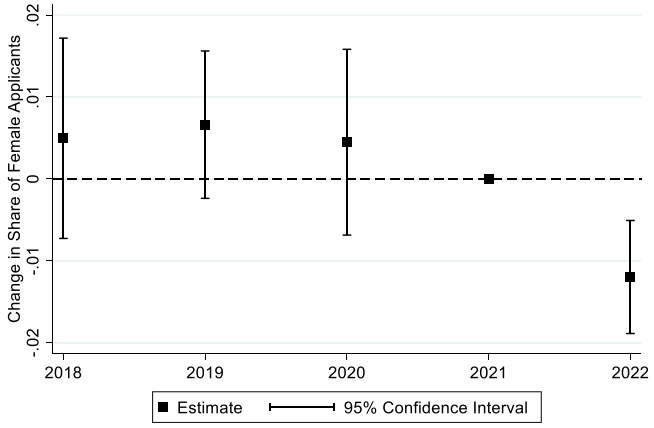

Fig. A1. Change in Share of Female Applications, Any Ban vs. Control States, Among Universities Ranked 1–50.

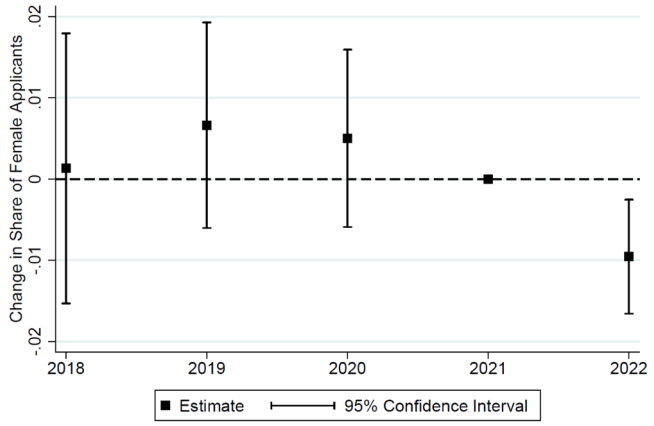

Fig. A2. Change in Share of Female Applications, Any Ban vs. Control States, Schools with 50%+ Out-of-State Applicants.
Note: Share of out-of-state residence applicants was sourced from the 2021 CDS using the variable "Percent who are from out of state". Data were unavailable for five colleges for that year so were utilized from other years. Results are unchanged with their omission.

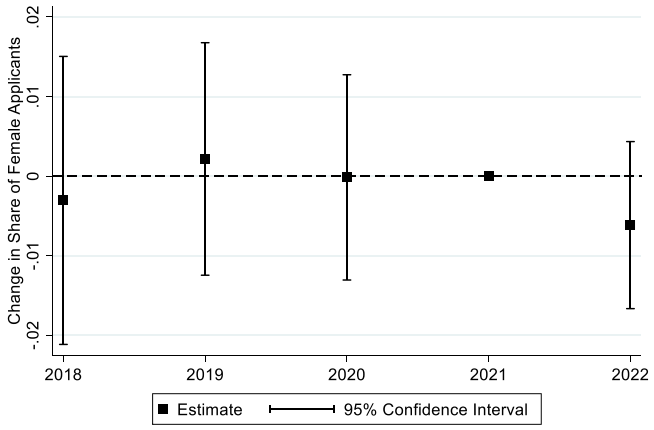

Fig. A3. Change in Share of Female Applications, Any Ban vs. Control States, Among Universities Ranked 51–100.

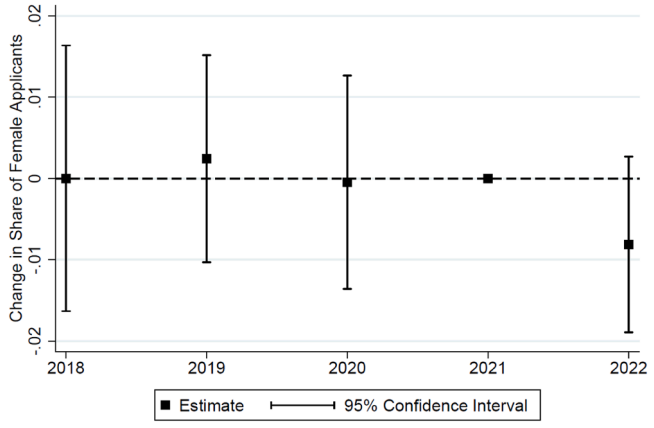

Fig. A4. Change in Share of Female Applications, Any Ban vs. Control States, Schools with <50% Out-of-State Applicants.
Note: Share of out-of-state residence applicants was sourced from the 2021 CDS using the variable "Percent who are from out of state". Data were unavailable for five colleges for that year so were utilized from other years. Results are unchanged with their omission.

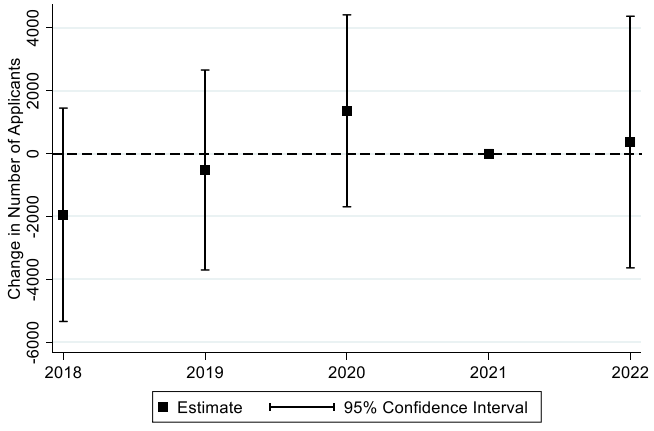

Fig. A5. Change in Number of Total Applications, Any Ban vs. Control States.

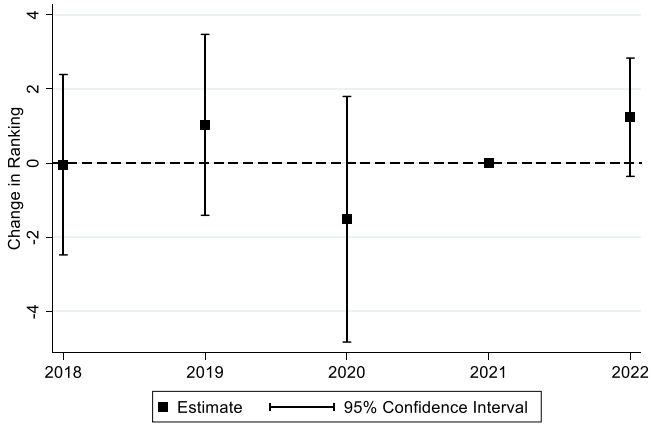

Fig. A6. Change in US News & World Report University Ranking, Among Universities Ranked 1–50, Any Ban vs. Control States.
Note: due to data unavailability and shifts in rankings through the panel years, this data only include 21 of the 29 schools ranked in the top 50. Data was sourced from College Kickstart, which indexed past US News & World Report top 50 College Rankings from 2018 to 2021.

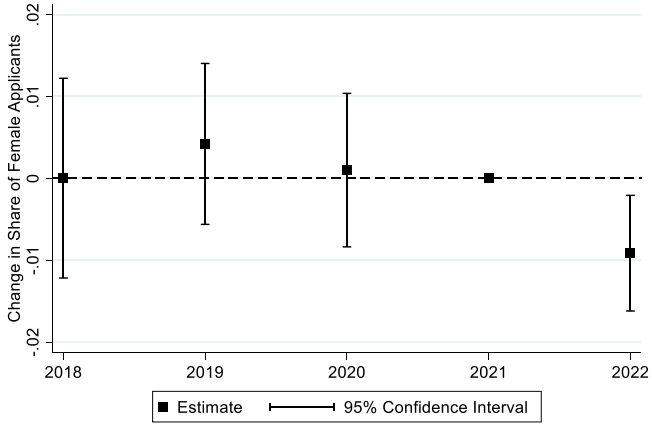

Fig. A7. Change in Share of Female Applications, Any Ban vs. Control States, Removing States That Blocked Bans.

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