

Any Press is Good Press? The Unanticipated Effects of Title IX Investigations on University Outcomes

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Since 2011, when the landmark “Dear Colleague” letter declared that the Department of Education (DoE) would use equal-access requirements of federal law to remediate sexual assault on college campuses, 458 investigations have been opened. This letter was withdrawn in 2017 and it remains uncertain how the DoE will handle the issue in the future. We examine the effects of the investigations arising from the 2011 policy change on university outcomes. We find that applications and enrollment increase in response to Title IX investigations, for both males and females. We find little evidence of effects on degree completion or donations.

In September 2017, Secretary Betsy DeVos formally withdrew an influential but controversial policy providing guidance on the responsibilities of the U.S. Department of Education (DoE) to monitor how U.S. colleges and universities investigate and resolve sexual assault cases involving students.¹ This rescission of a policy, which was put in place during the administration of President Obama by a “Dear Colleague” letter (DCL) from the Office of Civil Rights (OCR), was momentous because it ended what had been steady, if halting, advances in federal action to prevent and respond to sexual assault and protect victims. In particular, “Dear Colleague” policy guidance marked the advent of the use of equal access requirements of federal law to bring attention and remediation to sexual assault on college campuses. When the DCL was released in 2011, there were only a handful of schools under investigation by OCR. By June 2017, that number had grown to more than 400 (Brown, 2017). Since the September 2017 withdrawal of the OCR guidance, the rate of federal investigations of how universities respond to Title IX cases has slowed considerably—13 new investigations were initiated in the 6 months following that action, compared to 44 investigations over the same period the previous year (Chronicle of Higher Education, 2018).

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¹ www2.ed.gov/about/offices/list/ocr/letters/colleague-title-ix-201709.pdf

There remains uncertainty about what the policy will look like in the future. In November 2018, Secretary DeVos announced a proposed change to rule and procedures for universities handling sexual assault allegations under Title IX.² If implemented, the new procedures place more emphasis on due process rights of the accused, raise evidence standards, and allow for cross-examination of the accuser. This has been met with opposition from those worried about impacts of the proposed rule changes on the likelihood of victims bringing their cases forward. On January 24, 2019, the Department of Education announced an extension to the public comment period for the new regulations.³ New guidelines are anticipated sometime in late 2019.

While current policy is in limbo, in this paper we evaluate the impacts of Title IX investigations for sexual assault as implemented following the 2011 DCL. That period ushered in an era of unprecedented attention to matters of sexual assault on college campuses in the United States. We examine the effects of this attention on college applications, enrollment, degree completion and alumni giving. This is important both to evaluate the impacts of a major policy decision in higher education and to potentially inform the evolving oversight responsibilities of the U.S. Department of Education.⁴

There are three types of mechanisms through which Title IX investigations can affect prospective and current students, and alumni: information, salience, and change. First, these investigations may reveal characteristics about colleges and universities that are typically hard to measure. Because these investigations are based on complaints that instances of sexual violence were not properly investigated or adjudicated, they may signal that a college or university is not safe or does not take sexual assault seriously. Perversely, investigations may highlight information about the college atmosphere that is desirable to some small number individuals, e.g., party culture.⁵ A salience mechanism could be relevant if a Title IX investigation increases the likelihood that time- and attention-limited individuals consider the institution when making decisions about where to apply, or where to make donations. Finally, Title IX investigations may change universities in ways that matter to students and other interested parties. Perhaps most

² <https://www2.ed.gov/about/offices/list/ocr/docs/title-ix-nprm.pdf>

³ <https://www2.ed.gov/about/offices/list/ocr/newsroom.html>

⁴ Other researchers have recently examined the impacts of females' participation in sports resulting from Title IX. Baker and Cornelson (2016) find little evidence of effects on the spatial skills associated with women's occupations. Schulkind (2017) finds that babies born to women with greater athletic opportunities as teenagers are healthier at birth.

⁵ See Lindo, Siminski, and Swensen (2018) on the link between college party culture and sexual assault.

immediately, one might expect federal investigations to improve the way sexual violence cases are investigated and adjudicated. Secretary DeVos and others offer a more pessimistic view, however, in highlighting that Title IX investigations may suppress the rights of the accused and may lead to an atmosphere of sexual “paranoia” on campus (Kipnis, 2017). It is certainly important to consider how federal investigations may act as an agent for broader changes to institutions. Federal attention could intensify student- and/or university-led sexual violence prevention and response efforts, perhaps with negative unintended consequences along the lines that DeVos suggested. Federal investigations may also put pressure on administrators to improve the university in other ways, such as attempting to offset the negative publicity associated with the investigation with changes in an institution’s marketing and outreach efforts.

In this paper, we bring together data from several sources in order to study the overall effects of Title IX investigations by OCR. We do so using event-study methods that quantify how these outcomes deviate from expected levels leading up to and following the opening of a federal investigation. Information on OCR’s Title IX investigations is based on the *Chronicle of Higher Education’s* Title IX Tracker database. We confirm that openings of investigations are salient using data on Google searches for college names combined with rape. We then use panel data from the Integrated Postsecondary Education Data System (IPEDS) and from the Council for Aid to Education’s Voluntary Support of Education Survey (VSES) to evaluate the impacts on applications, enrollment, degree completion, and alumni giving.

We find no evidence federal Title IX investigations reduce students’ interest in applying to or staying at a university. Instead, we find evidence that these investigations *increase* freshman applications and enrollment, for both female and male students. We find little evidence of effects on rates of degree completion. Our analysis of VSES data suggests that federal Title IX investigations have no detectable effects on donations. Interestingly, these same data indicate that institutions respond to these investigations by soliciting donations from more alumni. The negative attention associated with an investigation may influence changes to internal mechanisms at the university, but does not seem to impact external engagement with the institution.

Though we are unable to determine the exact mechanisms underlying these results, the pattern of the estimates is informative. The evidence that OCR’s Title IX investigations generate immediate *increases* in applications of both males and females in the short run suggests that investigations do not deter students from applying for admission, or that the number of deterred

students is dwarfed by the number of additional students who become interested because of increased salience, changes at the institution, or intensified marketing efforts by the institution. The fact that we find similar effects for female and male students suggests that the primary mechanism is not gender-specific, so changes in safety, or perceptions about safety, are also unlikely to play a central role. It seems that colleges and universities intensify their outreach efforts as a result of being under investigation, which is evident from our estimated effects on solicitations to alumni. This may explain why we do not find evidence of significant reductions in giving to universities resulting from investigations. Moreover, given that colleges and universities appear to intensify their outreach efforts directed at alumni, there is reason to believe that they may do similarly for prospective students. However, our interviews with admissions officers indicated that they did not. For this reason, we believe that direct effects of Title IX investigations on salience is the most plausible explanation for their surprising effects on student applications and enrollment.

Our use of the word “salience” here is in the same spirit as Tversky and Kahneman’s (1974) description of “availability” or “retrievability.” They point out that the ease with which something comes to mind may lead to behavioral biases. In our context, the publicity generated by a federal Title IX case could increase the likelihood that a school comes to mind when students form their consideration set. And this effect could dominate any negative effects associated with the investigation.

The idea that the salience of a college has real effects is consistent with prior research. Indeed, Anderson (2017) documents that donations and applications increase as a result of as-good-as-random college football game outcomes. Moreover, this sort of behavior is consistent with evidence that many individuals do not make optimal decisions regarding college applications and college attendance. For example, a majority of very high-achieving low-income students do not apply to selective colleges despite the fact that they would often cost them less after financial aid (Hoxby and Avery 2013), though this can in part be overcome by providing assistance with the application process and information on financial aid (Bettinger et al. 2012; Hoxby and Turner 2013; Barr and Turner 2017).

I. Background

A. Sexual Assault Incidence

Campus sexual assault has long been a subject of study. In the first major study on sexual assault victimization among college women, Koss, Gidycz and Wisniewski (1987) estimated that more than one in four college women had experienced attempted or completed rape. While Koss et al. (1987) measured victimization since the age of 14, not just since date of college matriculation, their estimates were quite similar to later estimates focusing only on victimization during college. For example, the National College Women Sexual Victimization study estimated that 20 – 25% of women would experience attempted or completed rape while attending college (Fisher, Cullen & Turner, 2000); Krebs et al. (2007) found that approximately 20% of college seniors at two large public universities experienced sexual assault; and Kilpatrick et al. (2007) found that 5.2% of a national sample of 2,000 college women experienced completed rape using force or incapacitation in the past academic year, which over four years would be comparable to earlier estimates. More recently, the Washington Post-Kaiser Family Foundation Survey, a nationally representative phone survey of over 1,000 current and recent undergraduates conducted in 2015, documented similar victimization rates to Krebs, et al. (2007) while the AAU Campus Survey on Sexual Assault and Sexual Misconduct, a web-based survey of over 150,000 students administered at 27 universities in 2015, estimated a rate of 23.1 percent female undergraduate students reporting experiencing sexual assault or sexual misconduct (Cantor, et al., 2015). Although these rates have been generally consistent, estimates of sexual victimization can sometimes be difficult to compare because studies vary in their reporting periods, survey response rates, and their measures of sexual victimization (Fedina, Holmes & Backes, 2016).

B. Policy Context Prior to the “Dear Colleague” Letter

The history of federal legislation to protect college students from criminal victimization begins with the Clery Act of 1990. The main provision of Clery requires colleges and universities to make crime statistics publicly available and to issue timely warnings of any ongoing threats to the campus population (US Department of Education, 2016). Yet, institutions have a disincentive to encourage students to report, since publicly available crime statistics may affect public perceptions of the institution and future enrollment. Critics have described the Clery Act as symbolic rather than substantial (Fisher, Hartman, Cullen & Turner, 2002). The statistics that colleges and universities report for Clery are not inclusive of all crimes involving students, because they are only required to report crimes that occurred on or near campus or campus property, even

if those crimes were committed or perpetrated against individuals unaffiliated with the university. This means that reported data does not distinguish between dangerous campuses and dangerous cities in which colleges are situated. A further complication arises because of the general reluctance of students to report sexual assault to authorities (Fisher et al., 2000). As a result, higher sexual assault statistics may be indicators of a campus climate conducive to increasing student willingness to report assaults, rather than underlying victimization rates (Cantalupo, 2011; Palmer & Alda, 2016).

The Violence Against Women Act (VAWA), first authorized in 1994 as part of the Violent Crime Control and Law Enforcement Act (H.R. 3355), supplemented federal law to protect students (and others) on college and university campuses (Dunn, 2013; Schroeder, 2013). In addition to granting funds to on-campus programs to prevent and respond to victimization, the law also requires colleges and universities to offer sexual assault prevention programs for all incoming students and new employees. In addition, the 2013 reauthorization of VAWA amended the Clery Act to outline several procedural requirements related to adjudication processes in cases of student victimization to assure transparency; a prompt, fair and impartial proceeding; and also confidentiality for the victim.⁶

C. The “Dear Colleague Letter” and The Use of Title IX to Address Sexual Assault

In 2011, the U.S. Department of Education’s OCR released the DCL⁷ that clarified the requirements of Title IX in the context of sexual violence at all public and private schools, colleges and universities that receive federal financial assistance. Title IX is a civil rights law passed as part of the Higher Education Amendments of 1972 to assure equal access to education. The initial implementation of this law focused on female students’ access to sports and equitable athletic facilities. Over time, the law was interpreted to include other forms of sex-specific discrimination that affect female students’ equal access to education. The OCR is responsible for investigating any complaint that an educational institution violated Title IX.

The DCL clarified that Title IX required a prompt and equitable investigation if the school is aware of an allegation of sexual harassment or sexual violence. If a school “knows or reasonably should know” of an instance of sexual harassment or sexual violence, it was required to

⁶ See <https://www.federalregister.gov/documents/2014/10/20/2014-24284/violence-against-women-act>.

⁷ See <http://www2.ed.gov/about/offices/list/ocr/letters/colleague-201104.html>.

immediately complete a “prompt, thorough, and impartial” investigation. Any adjudication process was to use a preponderance of evidence standard, which is a lower burden of proof than the beyond a reasonable doubt standard used for sexual assault cases in the criminal justice system. If the adjudication process resulted in a finding that sexual violence occurred, the institution was required to “take immediate action to eliminate the hostile environment, prevent its reoccurrence, and address its effects” (DCL, 2011, p.15). If a victim or the accused believed any of these steps were not followed adequately, she or he could elect to file a complaint with OCR within 180 days. If OCR determined the college or university did not respond promptly and equitably, that served as a potential indication that the institution violated Title IX. Schools found to be non-compliant could face fines, lose federal funding and be required to take steps to remedy or correct their response to sexual violence.

D. Title IX and Public Awareness

The OCR’s action was largely in response to growing public attention to the issue of campus sexual assault and how it was being handled. In 2010, National Public Radio and the Center for Public Integrity released a series on failure by colleges to protect women from campus rape. Their investigations found that colleges rarely expelled those accused of sexual assault and prevention programs put the responsibility on women to prevent rape. They presented their findings directly to the Assistant Secretary for OCR, who committed to more aggressively address sexual violence on college campuses (NPR, 2010). More recent examples of public attention include the 2015 documentary film *The Hunting Ground*, which offered several survivors’ perspectives of how their universities did not properly respond to their allegations of sexual assault, and follows two activists who began to teach their peers how to file a complaint with the OCR. The same year a widely read book on the handling of sexual violence cases by the University of Montana and the local police helped to further raise the public’s awareness of the institutional protectionism and inadequate response that many students face when they report sexual violence to university administrators (Krakauer, 2015).

The OCR’s increase in Title IX investigations has focused substantial attention on issues of climate and safety for female students. In the years after the DCL, each new investigation was widely covered in national news, especially at elite institutions, and the *Chronicle of Higher Education* has devoted special attention to each case. In May of 2014, for the first time ever, OCR

made public the list of 55 higher educational institutions with open Title IX investigations related to sexual violence. As of May, 2018, 458 sexual assault investigations had been opened at American colleges and universities under Title IX. Of these, only 121 cases have been resolved.⁸

Unlike Clery, which provides general information about crime statistics, this increase in OCR Title IX investigations focused attention on sexual assault at specific institutions, how these schools handled victims' complaints and how they treated the accused. Consequently, OCR Title IX investigations may have caused real concern about school climate. These cases may have been seen as warning signs about the extent of sexual victimization on a given campus and the degree to which students' complaints are taken seriously and judiciously processed.

Of course, the actions of a federal department in Washington DC to announce investigations may be of little notice by prospective and current college students or their parents. We know of no reliable data on the awareness of these issues for representative students at colleges under investigation or elsewhere. For this reason, before examining the impacts on various university outcomes, we begin our analysis by evaluating the salience of these investigations using data on Google searches for college names combined with key words associated with sexual assault.

II. Data

Our data on Title IX investigations are based on the Title IX Tracker database, compiled by the Chronicle of Higher Education from Freedom of Information Act requests of the U.S. Department of Education. These data include the date on which the OCR determined that a complaint against an institution had merit and opened an investigation into its handling of a case of sexual violence. The first investigation in the Title IX Tracker database was opened in August of 2008. Our analysis uses data on all investigations that were opened between January of 2010 and July of 2014 to correspond to our sample of schools and outcome data described below.⁹ New investigations are most likely to be launched at the end of the academic year. With about 12 percent of all investigations launched in May. However, for 11 of the 12 months of the year, the proportion of investigations was indistinguishable from what would be expected if investigation timing were

⁸ See <http://projects.chronicle.com/titleix/>.

⁹ See the appendix for the list of schools with new investigations by year.

random.¹⁰ September, when only about 4 percent of investigations were begun, is the only month for which the proportion of investigations launched is significantly different from expectations, at the 5% level. So, the timing of Title IX investigations is not related to the typical university application and admissions calendar.

As a means to assess the extent of public awareness of Title IX investigations, we compile data on topical search queries from Google Trends. Necessarily, if Title IX investigations have any effect on prospective or current students, knowledge about the investigations must extend beyond those directly involved. Google Trends provides a ready means to assess volume of search activity over time. We compiled these data by searching for the term “rape” and variations of the school’s name for the schools that had a Title IX investigation opened between January of 2010 and July of 2017.¹¹ For example, we searched for “Frostburg State University,” as well as “Frostburg” and “Frostburg State,” and “Pennsylvania State University” as well as “Penn State.” For each university for which the OCR announced a Title IX investigation, we generated a time series of monthly search volume, from January 2004 to June 2017.

To consider the effects of Title IX investigations on students, we use data from the U.S. Department of Education’s Integrated Postsecondary Education Data System (IPEDS). IPEDS includes institutional characteristics and outcome data gathered from annual surveys of colleges and universities that participate in federal student financial aid programs. We restrict our attention to 4 year and beyond non-profit universities with non-specialized Carnegie Classifications.¹² We also drop schools that are predominantly male or female, military schools and schools that experience more than a 25 percent change in enrollment from one year to the next. Finally, we limit our focus to universities that report female enrollment—a primary outcome of interest—in each year of our sample. The resulting sample includes 1,170 institutions reporting undergraduate female enrollment from 2002-2016 and slightly fewer schools reporting outcomes by age, new enrollees, and returning students. Of the 1,170 institutions, 80 experienced a Title IX investigation by OCR.

¹⁰ If timing was random, investigations would be distributed uniformly over the calendar, with about 8.3 percent of all investigations per month.

¹¹ Of the 94 schools under Title IX investigation for which we searched Google Trends, we found no search activity on the topic for eight small colleges: Cedarville College, Glenville State College, Hobart William Smith College, Kentucky Wesleyan, Northern New Mexico College, St. Mary’s College of Maryland, St. Thomas Aquinas College, and Samuel Merritt College.

¹² Consequently, we omit specialized schools, such as seminaries, yeshivas, schools of medicine or health professions, and art schools.

IPEDS data allow us to consider effects of Title IX investigations on undergraduate applications, admissions, and completions. We consider enrollment outcomes separately by gender, age, and status as a new or returning student. We initially focus on female enrollment outcomes, based on priors that their decisions may be more responsive to the issues surrounding these investigations.

We also use data from the Council for Aid to Education's (CAE) annual Voluntary Support of Education Survey (VSE) to consider effects of OCR Title IX investigations on alumni giving. These data are the primary source of data on philanthropic giving to U.S. colleges and universities and include voluntary giving from all colleges and universities willing to participate in the survey. As before, our sample includes investigations that were opened between January of 2010 and July of 2014, and VSE data from 2002-2016. We use the same sample restrictions as our IPEDS sample, though there are far fewer institutions represented in the VSE sample. In total, our VSE sample includes 790 institutions, 65 of which experienced a Title IX investigation.

In Table 1 we present mean outcomes for the colleges and universities in our sample, overall and by whether a school had an OCR Title IX investigation during our sample period. Schools that come under federal investigation are, on average, much larger, more selective and have higher graduation rates. The average female undergraduate full-time enrollment was 5,080 at schools with federal investigations, compared to 2,448 for schools without investigations. Schools with investigations admit less than half of applicants, compared to 61 percent for other schools.¹³ Note, too, that BA completion rates are markedly higher for both men and women at schools that had OCR Title IX investigations. Finally, schools that were investigated had higher alumni giving rates than other schools (17 percent versus 13 percent) despite similar solicitation rates (85 percent versus 83 percent). All of these comparisons highlight the importance of controlling for systematic differences across schools in our analysis of the effects of Title IX investigations, which we discuss in the next section.

III. Empirical Models

We estimate the impact of Title IX investigations on a variety of outcomes important to universities in an event-study framework. For each college or university in our sample we generate

¹³ Relative SAT scores are another measure of selectivity. The 75th percentile of students' SAT scores at Title IX schools is a full standard deviation higher than other schools.

a vector of indicators of whether the school had an investigation open in an academic year. We assign an investigation to an academic year if OCR notified the institution by July of that year. As such, we would classify a notice issued in June 2011 as occurring in the 2011-12 academic year. For schools with multiple investigations, we define the year in which they are treated based on the first investigation. As such, it is possible that effects after the initial year could be reflect the effects of more than one investigation.

We estimate the impact of Title IX investigations on applications, enrollment, degree completion and alumni giving using models of the following type:

$$(1) \quad y_{s,t} = \alpha_s + \theta_s t + \gamma_t + \sum_{\substack{b=-12 \\ b \neq -9, -1}}^7 \delta_b TitleIX_{s,t+b} + \epsilon_{s,t}$$

where $y_{s,t}$ is an outcome variable associated with schools in year t ; α_s and $\theta_s t$ are school-specific fixed effects and linear trends, respectively; γ_t are year fixed effects; and $TitleIX_{s,t+b}$ is an indicator variable that takes a one if $b+1$ years following an opening of an investigation. As such, the coefficient δ_0 captures the effect in the first year following the opening of an investigation; δ_1 captures the effect a year later; and so on. All standard errors are clustered at the school level.

By including institution fixed effects and trends, the event study design estimates the impact of a Title IX investigation off of deviations in the outcome of interest relative to school specific means and average rates of change over the period. The vector of coefficients of interest, δ_b , measure how schools' outcomes change in the years before and after the opening of an investigation relative what is expected based on their pre-existing trend and relative to the changes from trend observed nationwide over the same time period. We note that this type of model requires at least *two* periods leading or lagging treatment to be omitted from the set of estimated effects so that institution-specific linear trends are identified. As illustrated in Brusyak and Xavier (2017), these periods must be prior treatment to ensure that the linear trend is identified based on pre-treatment data for treated institutions, and the omitted time periods should be far apart to maximize efficiency. For this reason, we use one year before an investigation and nine years before an investigation as the omitted categories in event-study analyses based on Equation (1).¹⁴ This event study design provides a transparent check of identifying assumptions by directly estimating

¹⁴ All institutions are observed at least 9 years prior to their first investigation.

any pre-investigation deviations from trends that may signal changes in underlying attributes of a university that pre-date the timing of sexual assault investigations. After presenting these estimates, we report the results from a model that does not include any lead terms; we do so in an effort to improve efficiency since this specification involves fewer parameters and estimates institution specific linear trends based on all of the pre-investigation data for schools with investigations.

An advantage of our estimation approach is that it is fully non-parametric in estimating how the effects vary over time following an investigation. This allows us to avoid the sort of bias described that can arise from "estimating a single-coefficient DD model when treatment effects vary over time" (Goodman-Bacon 2018). To be clear, all of our estimated models include terms for all possible years following an investigation. That said, we only report estimates for the year of the investigation and the four following years because few schools contribute to the estimated effects beyond that point in time and thus the estimates are extremely imprecise.

IV. Results

A. Examining the Salience of Title IX Investigations

Before presenting our main results, in this section we attempt to gain insight into the question of whether the Title IX investigations generate attention from individuals interested in a college. To do so we use monthly panel data from Google Trends on searches for “rape” or “sexual assault” and the name of a college or university that came under Title IX investigation during the period we study. Google Trends provides data on search interest for a term on scale of 0 to 100. The scale is normalized to the time period considered, so that 100 represents peak search activity for a given term compared to other searches at that time. We evaluate indices for both web searches and news searches.

The results of this analysis are shown in an event-study graph in Figure 1, which plots such search activity as a function of the number of months before and after the opening of a Title IX investigation, adjusted for school-specific fixed effects and linear trends in addition to year-by-month fixed effects. Month 0 refers to the month when OCR opened an investigation of a given college or university. If the estimates were consistently at zero, it would indicate that there were no systematic deviations from school-specific trends in searches for “rape” combined with the school name around the time an investigation was opened. Both the estimates for web searches

(Panel A) and for news searches (Panel B) provide some evidence that search activity starts to deviate (upwards) from trend in advance of the opening of an investigation—the estimated effects for the month prior to an investigation being officially opened are on the margin of statistical significance at conventional levels. Both panels show clear evidence that search activity is significantly elevated above trend in the month an investigation is open. Search activity then quickly returns to trend after the opening of the investigation.

B. *Main Results*

We present event-study estimates of impacts of Title IX investigations on applications for undergraduate admissions by gender of applicant in Figure 2. The figure plots the coefficients measuring changes in the log of applications over and above expected levels—based on institution-specific fixed effects and linear trends as well as year fixed effects—in the years leading up to and after a Title IX investigation.¹⁵ As is clear in Panel A of Figure 2, in all years prior to an investigation, applications from prospective female students are indistinguishable from their expected levels. But, beginning in the year a Title IX investigation is initiated, the number of applications for admission from prospective female students increases above trend. Moreover, our estimates indicate that the increase in applications to persist for at least an additional four years. In fact, the estimated effect on applications increases in magnitude over time, though our precision declines, so we cannot rule out the effects in later years are any different than effects in the initial year of the Title IX investigation. We believe this is consistent with the salience mechanism. Once an investigation opens, a university’s profile is raised in the news and in public consciousness. This name recognition effect need not be transitory, but could in fact perpetuate itself. Column 1 of Table 2, which reports estimates from a more parsimonious model (omitting indicators for years prior to an investigation), leads to the same general conclusions. Our point estimates indicate that investigations initially increase applications from female students by 6 percent and the effects grow larger in subsequent years.

¹⁵ Estimates evaluating this outcome—and others—using models omitting institution-specific linear trends are reported in Appendix B. These estimates demonstrate clear evidence of differences in pre-existing trends for schools that are eventually investigated, which motivates our focus on estimates that adjust for such trends

In Panel B of Figure 2 and Column 2 of Table 2, we present the results of our event study estimation of impacts on applications from prospective male students. These estimated effects are very similar in magnitude to the estimated effects for prospective female students.

In Figure 3 and Table 3 we present estimates for enrollment outcomes, by gender. In the first year following announcement of an investigation, we estimate enrollment of first-year full-time (FYFT) women is increased by approximately 2 percent, though we cannot rule out null effects at the 5 percent level. In the years following, we estimate statistically significant effects, indicating that investigations increase FYFT enrollment by 3 to 8 percent. We see a similar pattern for FYFT men, though the effects are a bit smaller in magnitude.

The bottom panels of Figure 3 present similar analysis for models in which the outcome variable is enrollment of full-time students other than first-year freshmen. This group includes continuing and transfer students. One might expect the enrollment response for current/transfer students to be weaker than for FYFT students, since the latter group is comprised entirely of students at the enrollment margin. Our estimates are consistent with this notion. We see no evidence of systematic deviations from expected levels in the years before a Title IX investigation, no evidence of effects in the immediate aftermath, and then stronger evidence of effects in subsequent years (particularly for women). Thus, though we do see evidence of effects on non-FTFY enrollment, it is more muted and appears later than the effects observed on FTFY enrollment. As such, they may simply reflect that investigations lead to increases in FTFY enrollment which in turn leads to increases in non-FTFY in subsequent years.

We now turn to degree completion, which we view as a rough measure of student persistence. One might expect the circumstances surrounding a high-profile OCR Title IX investigation to disrupt students' academic progress. This might occur if it raises students' fear for their safety or if it affects student trust of the administration. Or a student may focus less on academic work and more on campus climate issues, or redress for victims of sexual assault. Necessarily, though, completion and graduation rates are lagging indicators of student progress. With this limitation in mind, in Figure 4 and Table 4, we present estimates of the effects of Title IX investigations on degree completion. As a whole, these estimates indicate that investigations have little impact on degree completion rates. Based on these results and our earlier findings, it appears that the impacts of an investigation appear to be in affecting the flow of new students (applicants and matriculants) more than the stock of existing students.

Finally, in Appendix A we report estimated effects on alumni giving using data from the Council for Aid to Education’s Voluntary Support of Education Survey (VSES), which is the most comprehensive data set available on such giving. Specifically, we report estimated effects on a variety of measures of giving: percent of alumni giving, the percent solicited, the average dollar amount given, the average amount given to athletics, total giving to capital purposes, total giving to current operations, and total giving to current athletics operations. For the most part, we find little evidence of statistically significant effects on giving. This may provide some comfort for universities, that alumni do not withdraw financial support following a Title IX investigation. However, it is possible that the stability of the percent of alumni donating is due to increased outreach and effort on the part of investigated institutions—we do find some evidence that universities solicit more of their alumni for donations in the immediate aftermath of investigations. Interestingly, we also find some evidence that giving to current athletics operations are reduced below their expected levels in the immediate aftermath of investigations, which may be due to a perceived link between college athletics and sexual assault that has resulted from extensive media coverage of incidents involving college athletes.

V. Discussion and Investigation of Mechanisms

The results of our analyses naturally raise questions about why OCR Title IX investigations lead to increased interest from prospective students. Although we cannot answer this question definitively, in this section we highlight what can be gleaned from the pattern of estimates we presented previously and from interviews we conducted.

A. Insights from the Pattern of Estimates

Because the impacts on applications are immediate, it is unlikely that they are driven by major positive changes at the schools under investigation—it would likely take time to implement such changes and for prospective students to learn about them. And because these immediate effects on applications are present for both males and females, it is unlikely that they are driven by impacts on perceptions about school safety, which we would expect to be more important for female prospective students than male prospective students. It seems more likely that the effects are driven by salience. In particular, the attention generated by an OCR Title IX investigation—

though negative—may cause the school to enter the consideration sets of more students when they are choosing where to apply. This is consistent with the idea of a recall heuristic, or “availability” heuristic (Tversky and Kahneman, 1974).

An alternative explanation for the observed pattern of increases in applications and enrollments subsequent to Title IX investigation is that rather than picking up outcome changes specific to the school under investigation, we are picking up something about the location or area. That is, schools in an area may be “hot” with increased interest from prospective students that is coincident with changes in campus climate. To assess this possibility, we re-estimated our models of applications, enrollments and completion but dropping all schools that underwent a Title IX investigation. Instead, we included schools that were in the same county as the now omitted Title IX schools as the “treated” schools. This sets up a test of whether schools that are proximate to Title IX schools are also seeing unusual changes in outcomes. We summarize the results for applications from prospective students (by gender) in Figure 5. In both panels, we see no evidence that applications to nearby schools increase when a Title IX investigation is launched. This provides some assurance that our results for Title IX schools themselves are not being driven by location-specific factors. If anything, investigations appear to reduce applications to nearby schools, which is more consistent with localized substitution toward schools where Title IX investigations are made public.

B. Insights from Interviews

We also conducted interviews with admissions officers (e.g., Director of Admissions, Dean of Admissions, VP for Enrollment Management, etc.) in order to gain further insight into the mechanisms underlying our main results. Specifically, we sent emails to such officers at all 37 of the schools who had a Title IX investigation opened prior to 2013, which are the schools that contribute to the estimated effects for all leads and lags.¹⁶ This email requesting an interview explained that we were “researching what, if any, impact a Title IX investigation may have on applications or enrollment” and that the conversation would be confidential. If our initial contact suggested we contact another individual at the school, we did so. In addition, we sent a second

¹⁶ Schools with investigations opened later contribute to the estimated effects as well, but only schools with investigations opened prior to 2013 contribute to the estimated effects “t+2” or the third year following the opening of an investigation.

email to individuals who did not respond to the initial email. In total, we were able to conduct five interviews as a result of these efforts. All five of these admissions officers reported that Title IX investigations raised no concerns about negative impacts on applications to their school. One stated that this was because he thought it was clear that the university had not done anything wrong. Another explained that his school was getting more and more applications each year. A third reported that students perceive sexual assault to be common on college campuses, so she did not believe the attention to her school signaled any unique risk to prospective students. Given these views, it is thus not surprising that the same admissions officers reported that little extra was done to try to increase admissions after the Title IX investigations were opened. One admissions officer noted that their school made a public response to being under investigation through typical media channels. Another mentioned reminding everyone of resources available on campus about security and safety education initiatives. As a whole, this limited set of interviews supports the idea that a salience mechanism explains why Title IX investigations increase interest from prospective students, rather than schools ramping up their efforts to recruitment efforts.

VI. Conclusion

At a time of heightened attention to issues of sexual assault and harassment, there is real debate about the role of federal policy in overseeing how U.S. colleges and universities protect their students. The expansion (and recent contraction) of the investigatory role of the OCR has been the most important recent change in federal policy in this domain. We study the impacts of the OCR's Title IX investigations on a variety of measures important to college administrators and education researchers.

We find no evidence that federal Title IX investigations negatively affect students' interest in a school. Indeed, we find that they *increase* applications for admission from both males and females. Moreover, they increase freshman enrollment for both males and females. Our findings differ from those of Rooney and Smith (2019), who find that high profile scandals have negative effects on university applications. Their study differs from ours in two important ways. First, they study the impacts of scandals that are broader than sexual assaults, include cheating, hazing and murder. Second, they limit their sample to schools ranked in the top 100 of the U.S. News and World Report rankings. These schools are relatively well-known to prospective students, and attention to this broader class of scandals may provide no beneficial exposure. For the larger set

of universities we study, our results are consistent with the idea that salience effects generated by Title IX investigations dominate the effects of the negative publicity associated with the investigations.

An important implication of our results is that federal investigations and campus reviews of how sexual assault allegations are handled do not affect university applications and enrollments. We can neither offer assessment of the procedural improvements these reviews might elicit, nor any recourse they provide to petitioners. However, our findings should reassure college administrators that efforts to improve processes for reviewing accusations of sexual assault and providing remedy to victims does not come at the expense of broader university goals. Indeed, colleges could do better to inform students about their rights under federal law, the remedies available to them and to make their processes more transparent (Richards, 2016). A recent study of students at 27 universities found that 63% of students thought it was likely that a sexual assault report would be taken seriously by campus officials; only 49% of students thought that campus officials would conduct a fair investigation if sexual assault were reported; and only 44% of students thought that an investigation would result in any action against the offender (Cantor, et al., 2015).

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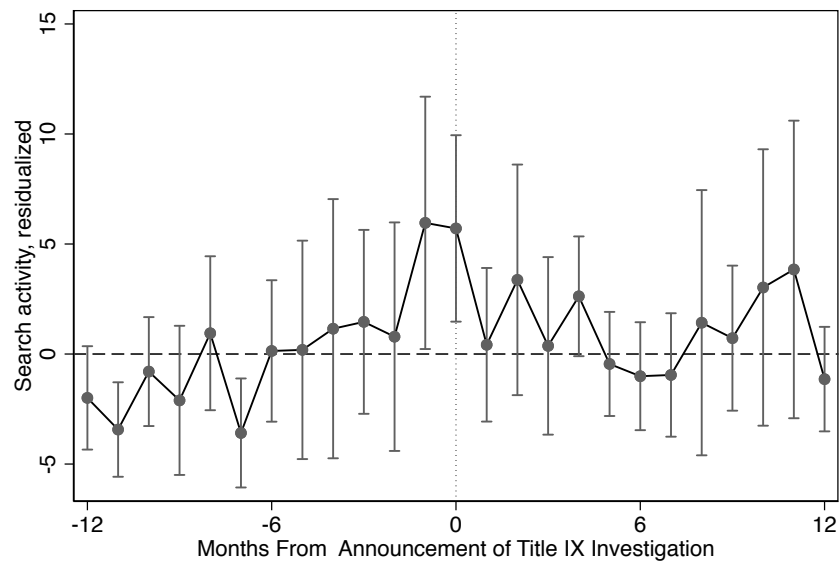
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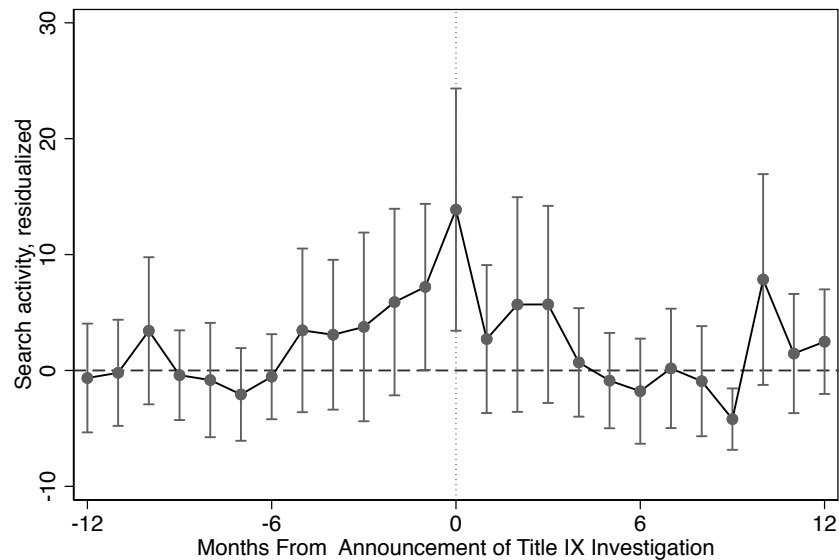
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Figure 1
Google Trends Search Index for Rape and “College Name” For Schools With Investigations

Panel A: Web Searches



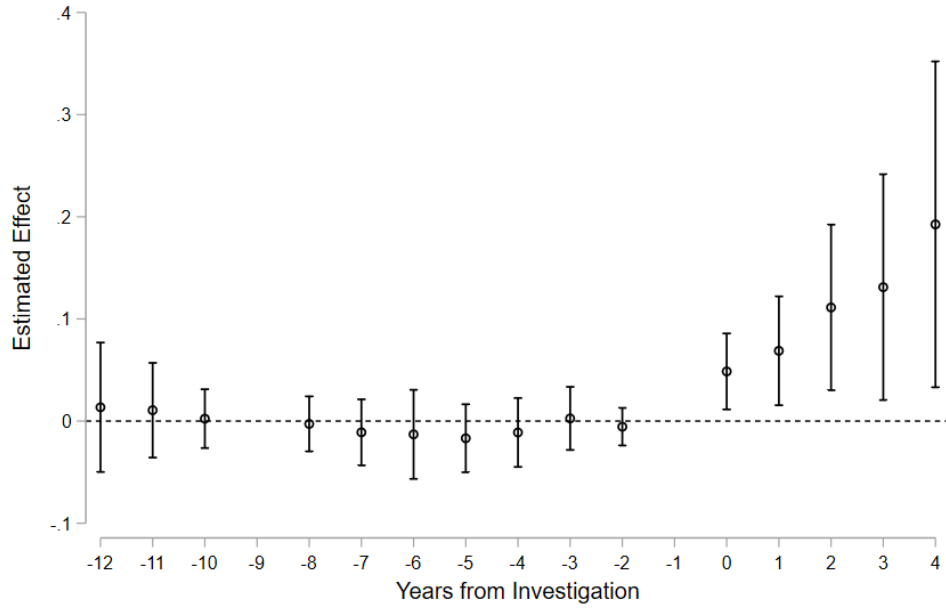
Panel B: News Searches



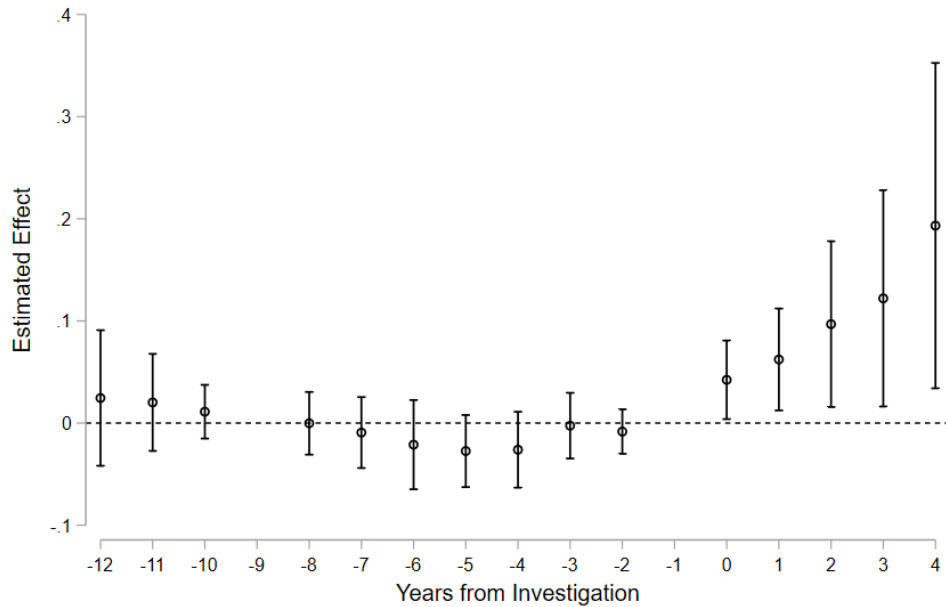
Notes: Estimates and their 95% confidence intervals are based on google trends data from January 2004 – June 2017. Estimates are based on a regression model including the indicator variables for the shown leads and lags of the opening of a Title IX investigation, school-specific fixed effects and linear trends and month-by-year fixed effects.

Figure 2
The Effect of Title IX Investigations on Applications

Panel A: Female Applications

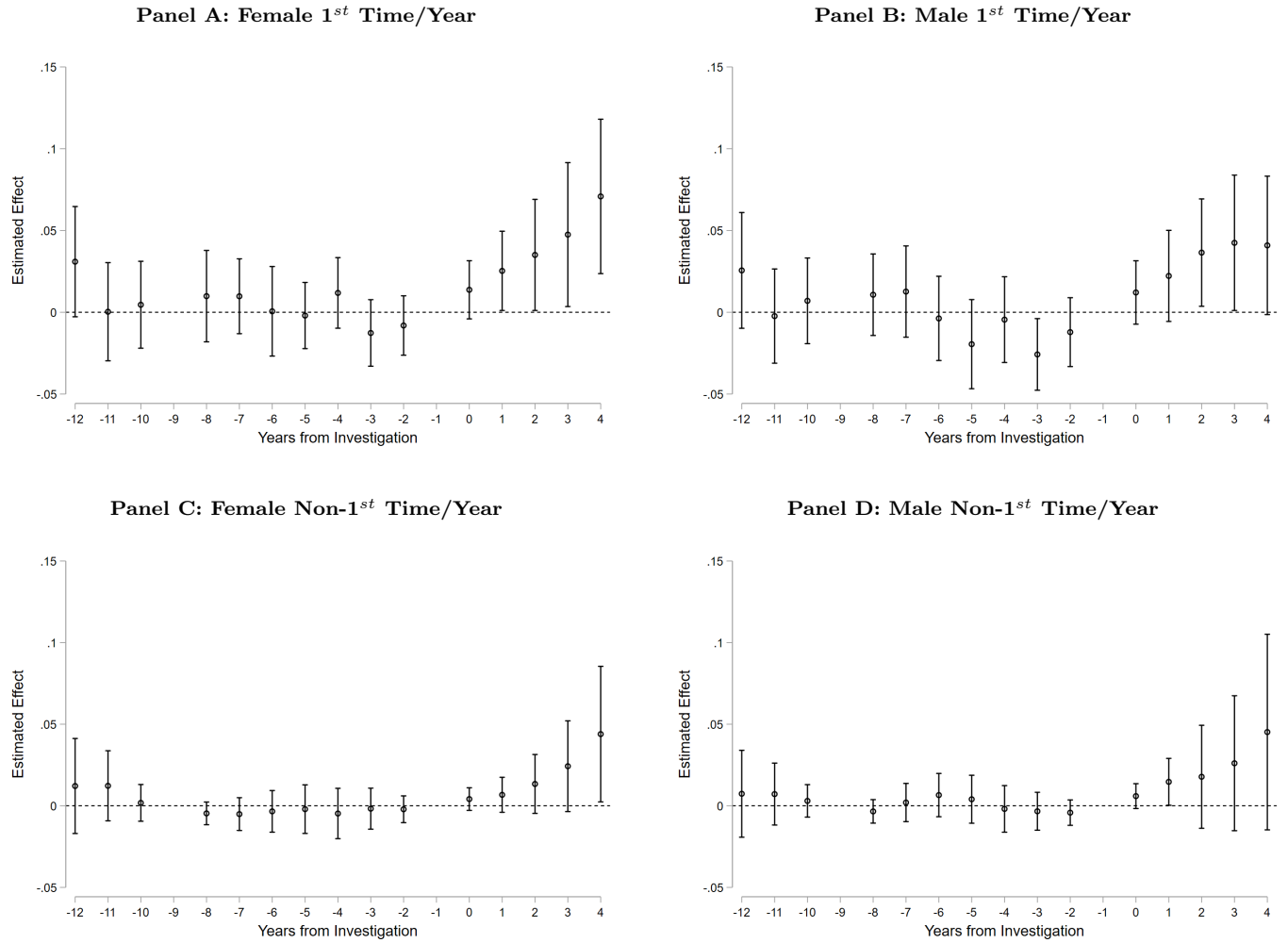


Panel B: Male Applications



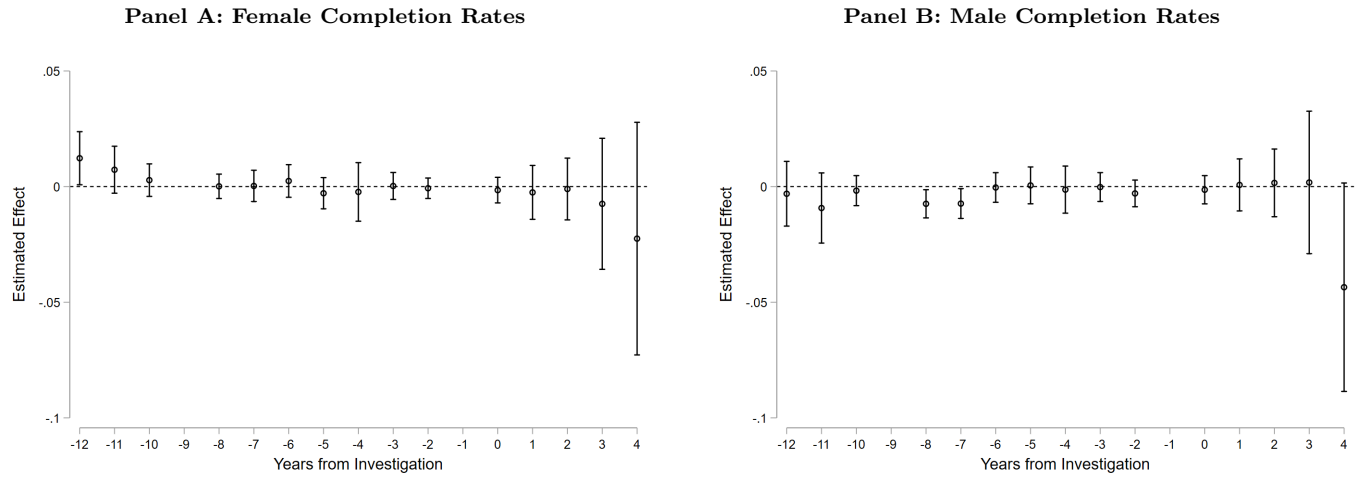
Notes: The figure plots coefficients and 95 percent confidence intervals of indicators leading up to and following the opening of a Title IX investigation. Regression models evaluate the natural log of the outcome variables, which are based on U.S. Department of Education's Integrated Postsecondary Education Data System data 2002–2016. The models include school fixed effects, year fixed effects, and school-specific linear trends. They also include indicators for up to seven years following a “Title IX” year, though we only report estimates for four years following a “Title IX” year because few schools contribute estimated effects beyond that point in time making them extremely imprecise. Standard errors are clustered at the school level.

Figure 3
The Effect of Title IX Investigations on Enrollment



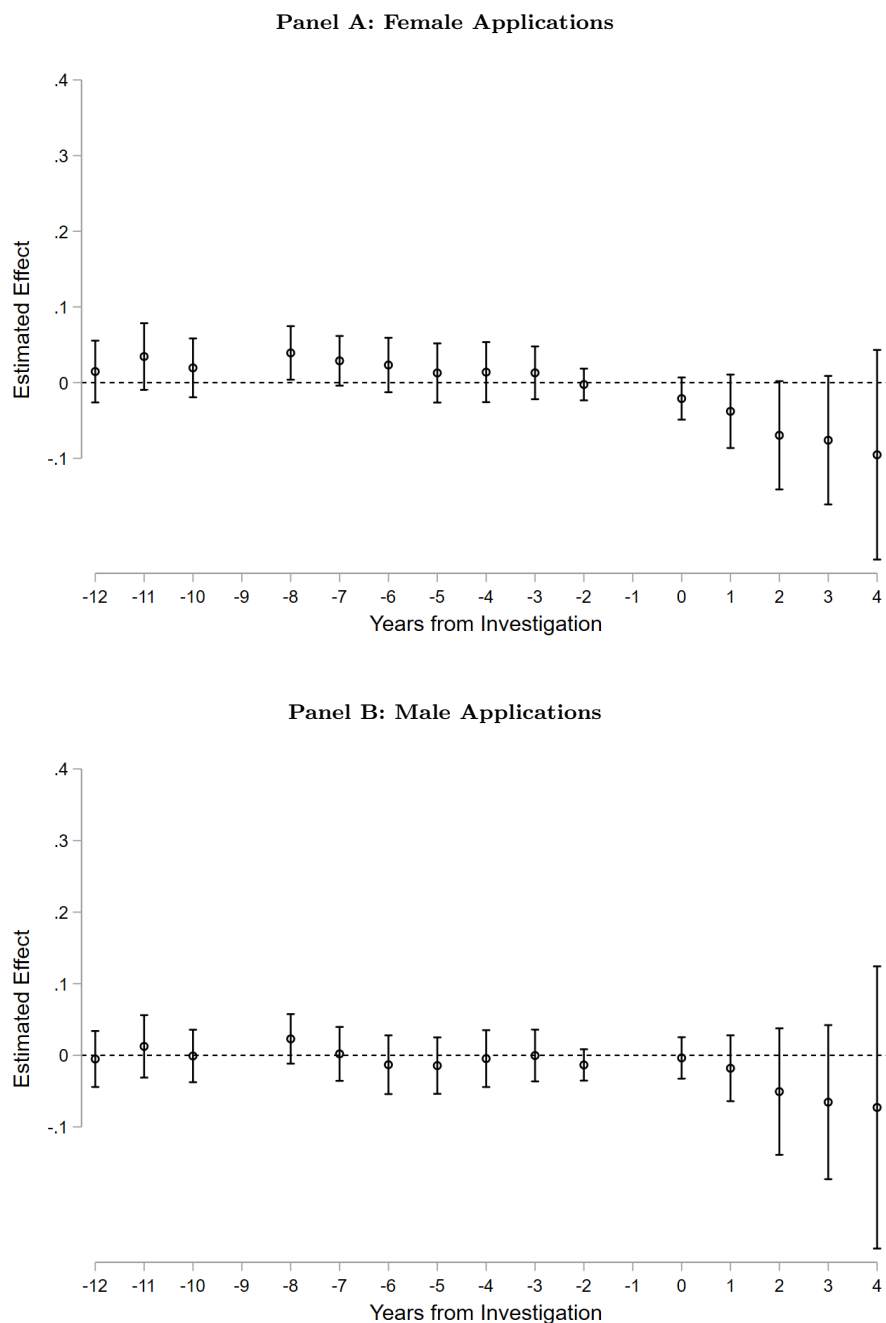
Notes: The figure plots coefficients and 95 percent confidence intervals of indicators leading up to and following the opening of a Title IX investigation. Regression models evaluate the natural log of the outcome variables, which are based on U.S. Department of Education's Integrated Postsecondary Education Data System data 2002–2016. The models include school fixed effects, year fixed effects, and school-specific linear trends. Standard errors are clustered at the school level.

Figure 4
The Effect of Title IX Investigations on Degree Completion



Notes: The figure plots coefficients and 95 percent confidence intervals of indicators leading up to and following the opening of a Title IX investigation. Regression models evaluate the natural log of the outcome variables, which are based on U.S. Department of Education's Integrated Postsecondary Education Data System data 2002–2016. The models include school fixed effects, year fixed effects, and school-specific linear trends. Standard errors are clustered at the school level.

Figure 5
The Effect of Title IX Investigations on Applications for Nearby Schools



Notes: The analysis considers the effects of an investigation on outcomes in schools that are in the same county as a school with a Title IX investigation. Schools with Title IX investigations are excluded from the analysis. The figure plots coefficients and 95 percent confidence intervals of indicators leading up to and following the opening of a Title IX investigation. Regression models evaluate the natural log of the outcome variables, which are based on U.S. Department of Education's Integrated Postsecondary Education Data System data 2002–2016. The models include school fixed effects, year fixed effects, and school-specific linear trends. They also include indicators for up to seven years following a “Title IX” year, though we only report estimates for four years following a “Title IX” year because few schools contribute estimated effects beyond that point in time making them extremely imprecise. Standard errors are clustered at the school level.

Table 1
Outcomes for Analysis Sample

	Mean			Observations	
	All	Investigated	Not investigated	Schools	School-years
Undergraduate Full-time Enrollment					
Female Total	2638	5080	2448	1099	16295
Male Total	2207	4675	2015	1099	16295
Female, First-Time	570	1129	526	1096	16228
Male, First-Time	473	1005	432	1096	16228
Applications					
Female	3087	7101	2760	1063	15313
Male	2436	6054	2140	1063	15309
Degrees Awarded					
Female	1386	2774	1275	1092	15215
Male	1028	2334	924	1092	15215
5-Year Completion Rate					
Female	0.54	0.71	0.53	1087	14919
Male	0.46	0.65	0.45	1087	14919
Voluntary Giving Outcomes					
Percent of Alumni that Gave	14	17	13	872	9804
Percent of Alumni Solicited	83	85	83	872	9804

Notes: Data on enrollment, applications, admissions, degrees awarded, and 5-year completion rates are based on U.S. Department of Education's Integrated Postsecondary Education Data System, 2002–2016. Data on voluntary giving are from the Council for Aid to Education's annual Voluntary Support of Education Survey, 2002–2016. Information on schools investigated for Title IX violations are based on the Chronicle of Higher Education's Title IX Tracker database.

Table 2
Estimated Effects of Title IX Investigations on Undergraduate Applications

	(1)	(2)
	Female Applications	Male Applications
Title IX year	0.060*** (0.021)	0.065*** (0.025)
Title IX year + 1	0.082*** (0.028)	0.088*** (0.031)
Title IX year + 2	0.122*** (0.044)	0.121** (0.048)
Title IX year + 3	0.142** (0.057)	0.147** (0.059)
Title IX year + 4	0.204** (0.082)	0.219** (0.085)
Observations	15351	15341
Clusters	1063	1063

Notes: “Title IX year” refers to the first year outcomes are measured following the opening of a Title IX investigation. Regression models evaluate the natural log of the outcome variables, which are based on U.S. Department of Education’s Integrated Postsecondary Education Data System data 2002–2016. The models include school fixed effects, year fixed effects, and school-specific linear trends. They also include indicators for up to seven years following a “Title IX” year, though we only report estimates for four years following a “Title IX” year because few schools contribute estimated effects beyond that point in time making them extremely imprecise. Information on the timing of the Title IX investigations are based on the Chronicle of Higher Education’s Title IX Tracker database. Standard errors, clustered on schools, are shown in parentheses.

*, **, and *** indicate statistical significance at the ten, five, and one percent levels, respectively.

Table 3
Estimated Effects of Title IX Investigations on Undergraduate Enrollment

	(1)	(2)	(3)	(4)
	Female 1st time	Female Non-1st time	Male 1st time	Male Non-1st time
Title IX year	0.021* (0.011)	0.011 (0.008)	0.030*** (0.011)	0.010 (0.007)
Title IX year + 1	0.034** (0.014)	0.014 (0.010)	0.042*** (0.015)	0.019* (0.010)
Title IX year + 2	0.044** (0.018)	0.020* (0.011)	0.058*** (0.018)	0.022 (0.017)
Title IX year + 3	0.058** (0.023)	0.031** (0.015)	0.066*** (0.023)	0.031 (0.022)
Title IX year + 4	0.083*** (0.023)	0.050** (0.022)	0.067*** (0.024)	0.050 (0.031)
Observations	16266	16266	16260	16263
Clusters	1096	1096	1096	1096

Notes: See Table 2.

*, **, and *** indicate statistical significance at the ten, five, and one percent levels, respectively.

Table 4
Estimated Effects of Title IX Investigations on Undergraduate Completion

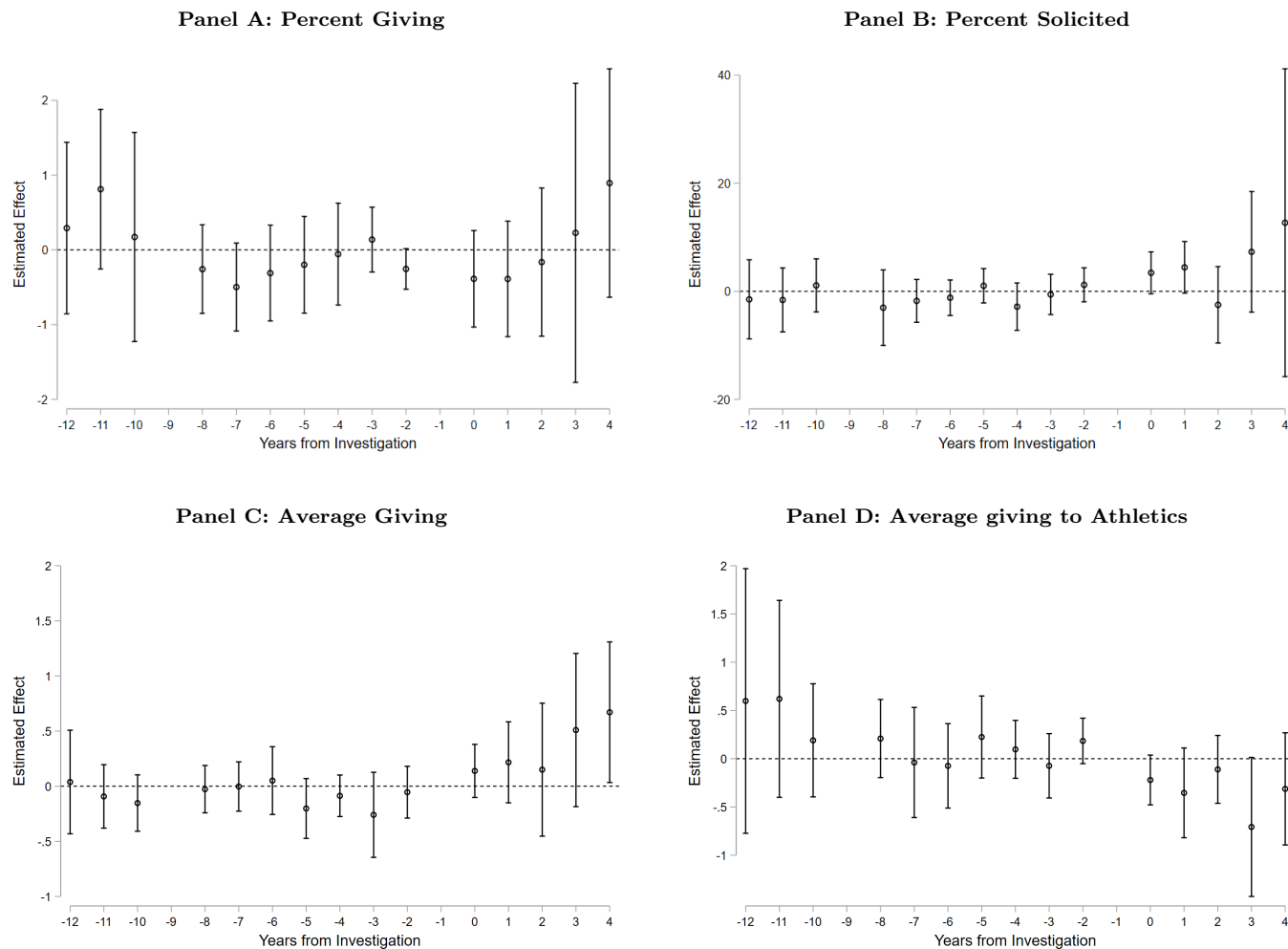
	(1)	(2)
	Female Completion Rates	Male Completion Rates
Title IX year	0.004 (0.007)	0.004 (0.007)
Title IX year + 1	0.001 (0.011)	0.006 (0.013)
Title IX year + 2	-0.002 (0.013)	0.005 (0.015)
Title IX year + 3	-0.010 (0.025)	0.006 (0.029)
Title IX year + 4	-0.032 (0.050)	-0.065 (0.046)
Observations	14930	14900
Clusters	1087	1087
University FE	yes	yes
Year FE	yes	yes
University-specific linear trends	yes	yes

Notes: We do not take the natural log of completion rates for this analysis, as we do for the outcomes considered in prior tables. For additional notes, see Table 2.

*, **, and *** indicate statistical significance at the ten, five, and one percent levels, respectively.

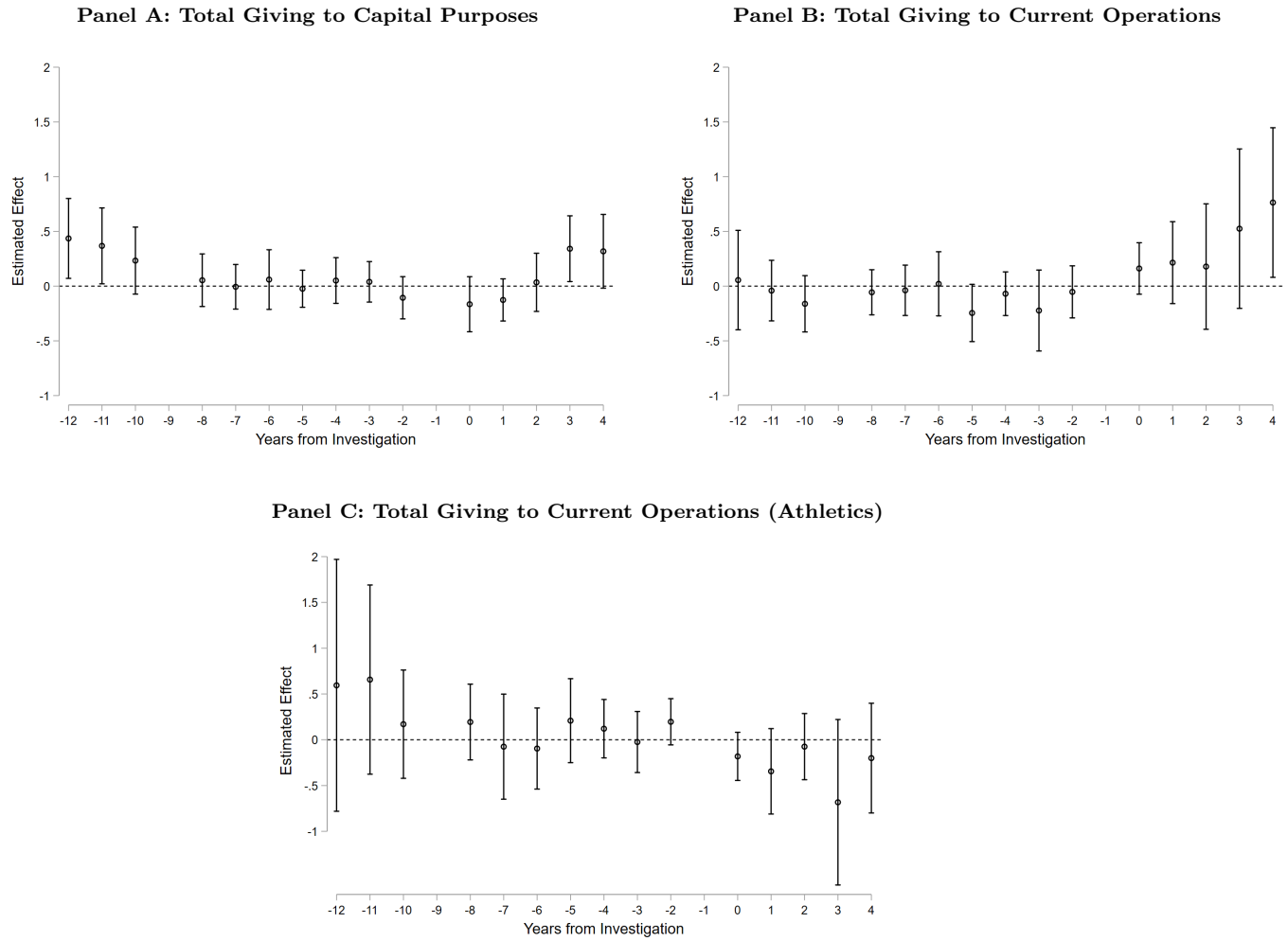
Appendix A

Figure A1
The Effect of Title IX Investigations on Alumni Giving



Notes: The figure plots coefficients and 95 percent confidence intervals of indicators leading up to and following the opening of a Title IX investigation. Regression models evaluate the natural log of the outcome variables, which are based on Council for Aid to Education's annual Voluntary Support of Education Survey, 2002–2016. The models include school fixed effects, year fixed effects, and school-specific linear trends. Standard errors are clustered at the school level.

Figure A2
The Effect of Title IX Investigations on Alumni Giving



Notes: The figure plots coefficients and 95 percent confidence intervals of indicators leading up to and following the opening of a title IX investigation. Regression models evaluate the natural log of the outcome variables, which are based on Council for Aid to Education's annual Voluntary Support of Education Survey, 2002–2016. The models include school fixed effects, year fixed effects, and school-specific linear trends. Standard errors are clustered at the school level.

Table A1
Estimated Effects of Title IX Investigations on Alumni Giving

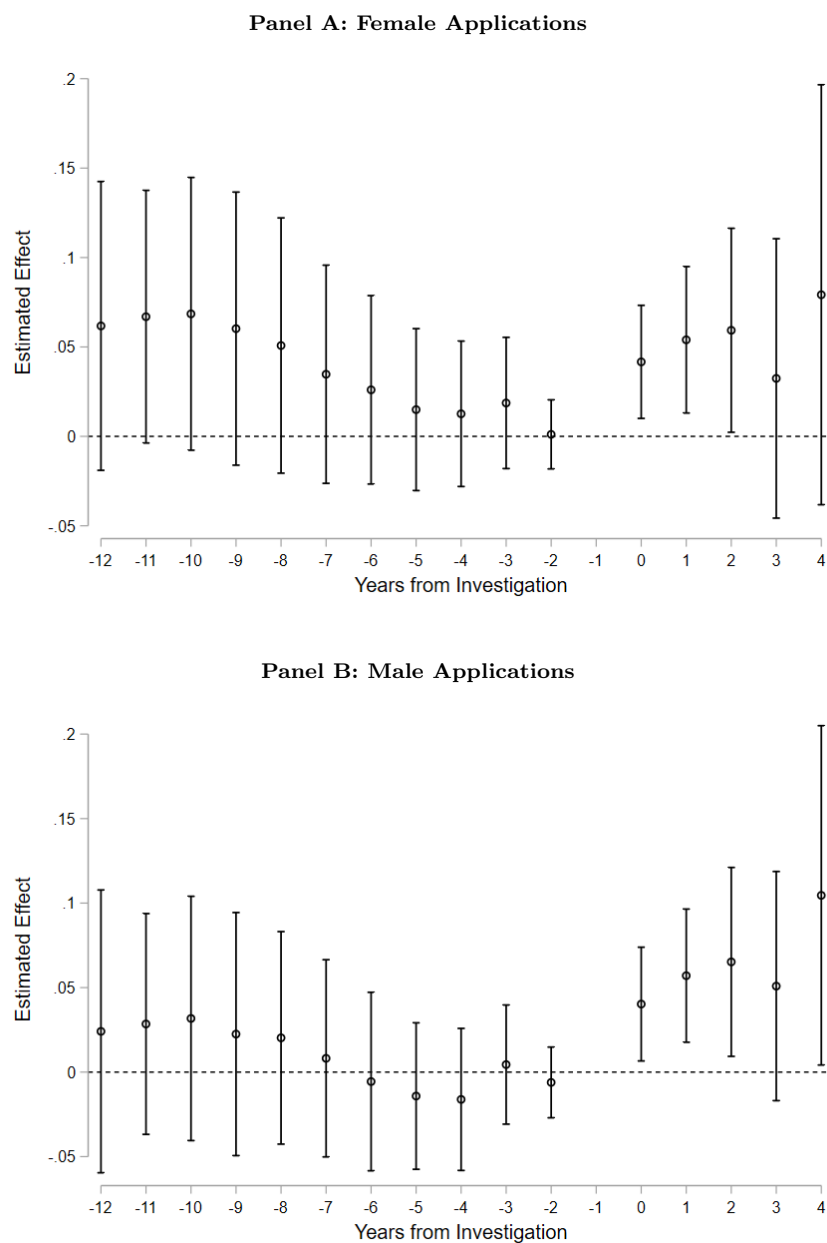
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Percent Giving	Percent Solicited	Total Giving Capital Purposes	Total Giving Current Operations	Restricted to Athletics Current Operations	Average Giving	Average to Athletics
Title IX year	-0.179 (0.354)	3.388* (1.806)	-0.073 (0.108)	0.260 (0.163)	-0.168 (0.103)	0.240 (0.166)	-0.189** (0.094)
Title IX year + 1	-0.160 (0.427)	4.243* (2.445)	-0.010 (0.104)	0.316 (0.208)	-0.312* (0.159)	0.322 (0.203)	-0.300** (0.148)
Title IX year + 2	0.018 (0.561)	-2.923 (3.480)	0.149 (0.154)	0.277 (0.275)	-0.078 (0.142)	0.261 (0.278)	-0.086 (0.129)
Title IX year + 3	0.346 (1.039)	6.627 (5.146)	0.458*** (0.150)	0.629* (0.379)	-0.693 (0.463)	0.632* (0.340)	-0.683* (0.364)
Title IX year + 4	0.982 (0.804)	11.646 (13.823)	0.444** (0.181)	0.878** (0.382)	-0.210 (0.282)	0.809** (0.350)	-0.282 (0.263)
Observations	9116	9116	7523	7454	5313	7454	5313
Clusters	790	790	654	658	458	658	458

Notes: “Title IX year” refers to the first year outcomes are measured following the opening of a Title IX investigation. Data on voluntary giving are from the Council for Aid to Education’s annual Voluntary Support of Education Survey, 2002–2016. Information on the timing of the Title IX investigations are based on the Chronicle of Higher Education’s Title IX Tracker database. The models include school fixed effects, year fixed effects, and school-specific linear trends. They also include indicators for up to seven years following a “Title IX” year, though we only report estimates for four years following a “Title IX” year because few schools contribute estimated effects beyond that point in time making them extremely imprecise. Standard errors, clustered on schools, are shown in parentheses.

*, **, and *** indicate statistical significance at the ten, five, and one percent levels, respectively.

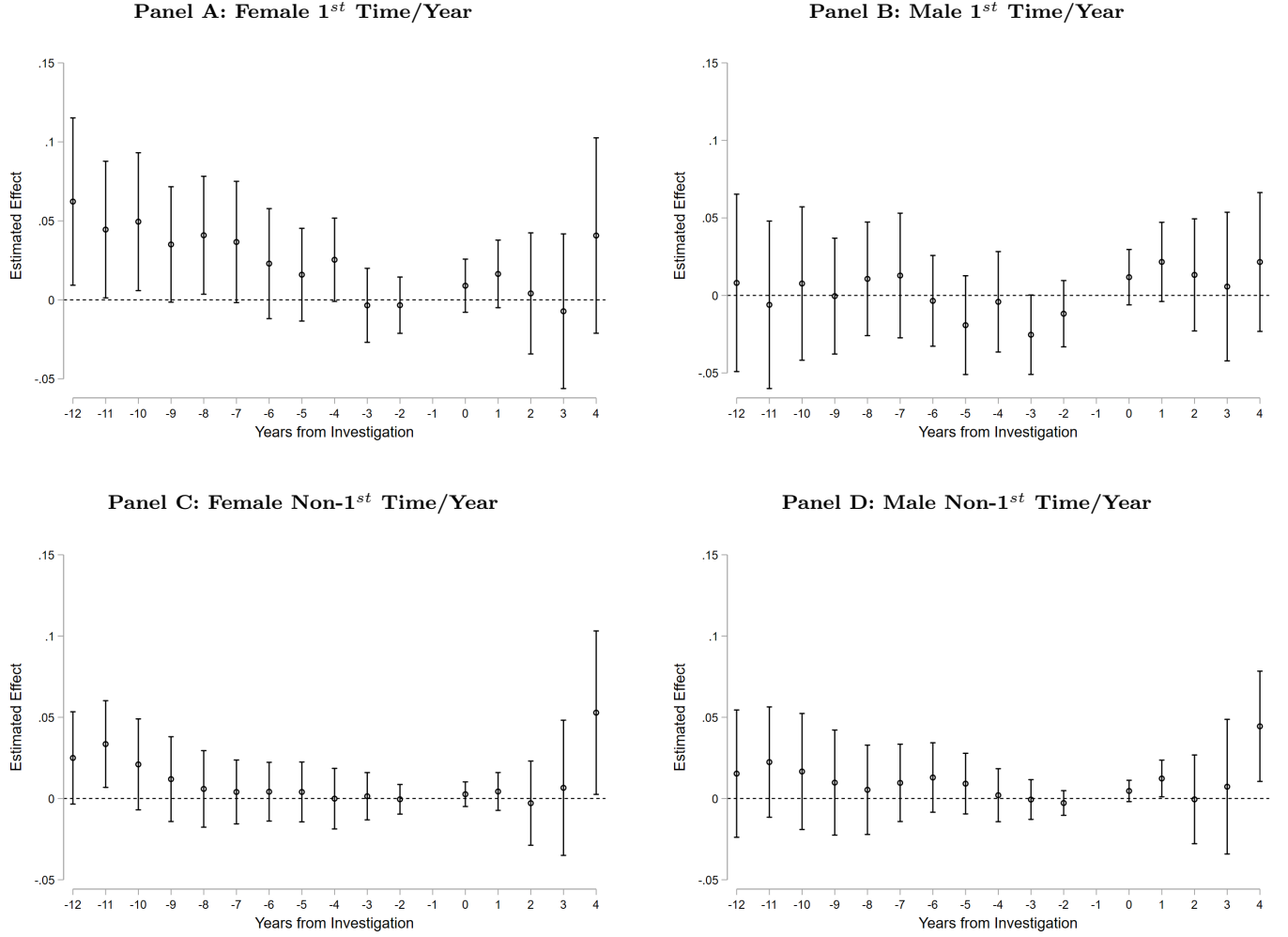
Appendix B: Dynamic Estimates without School-Specific Trends

Figure B1
The Effect of Title IX Investigations on Applications (without trends)



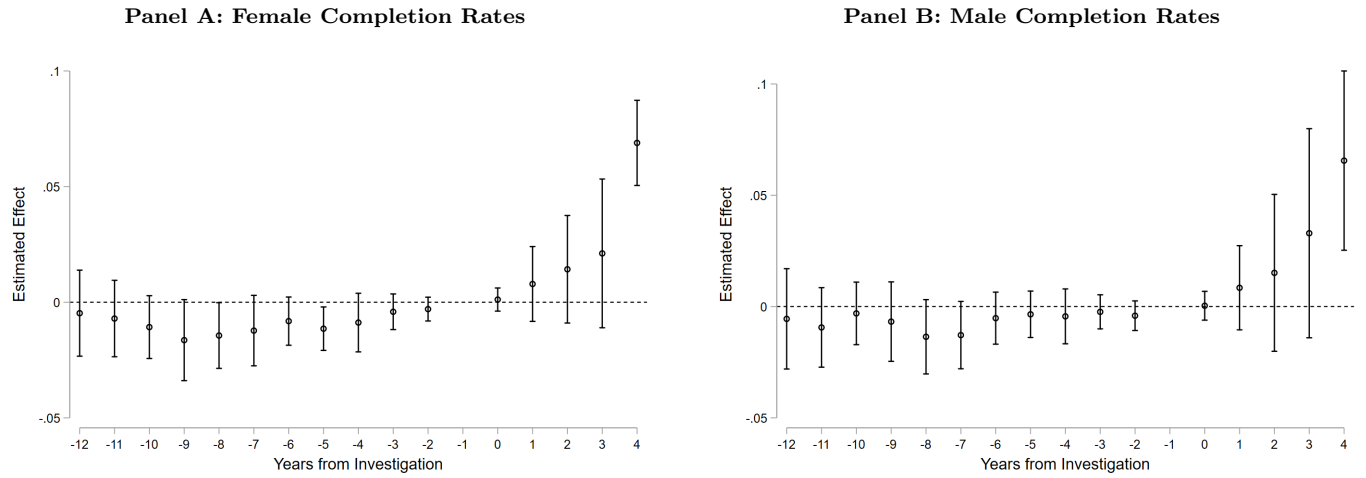
Notes: The figure plots coefficients and 95 percent confidence intervals of indicators leading up to and following the opening of a Title IX investigation. Regression models evaluate the natural log of the outcome variables, which are based on U.S. Department of Education's Integrated Postsecondary Education Data System data 2002–2016. The models include school fixed effects and year fixed effects. Standard errors are clustered at the school level.

Figure B2
The Effect of Title IX Investigations on Enrollment (without trends)



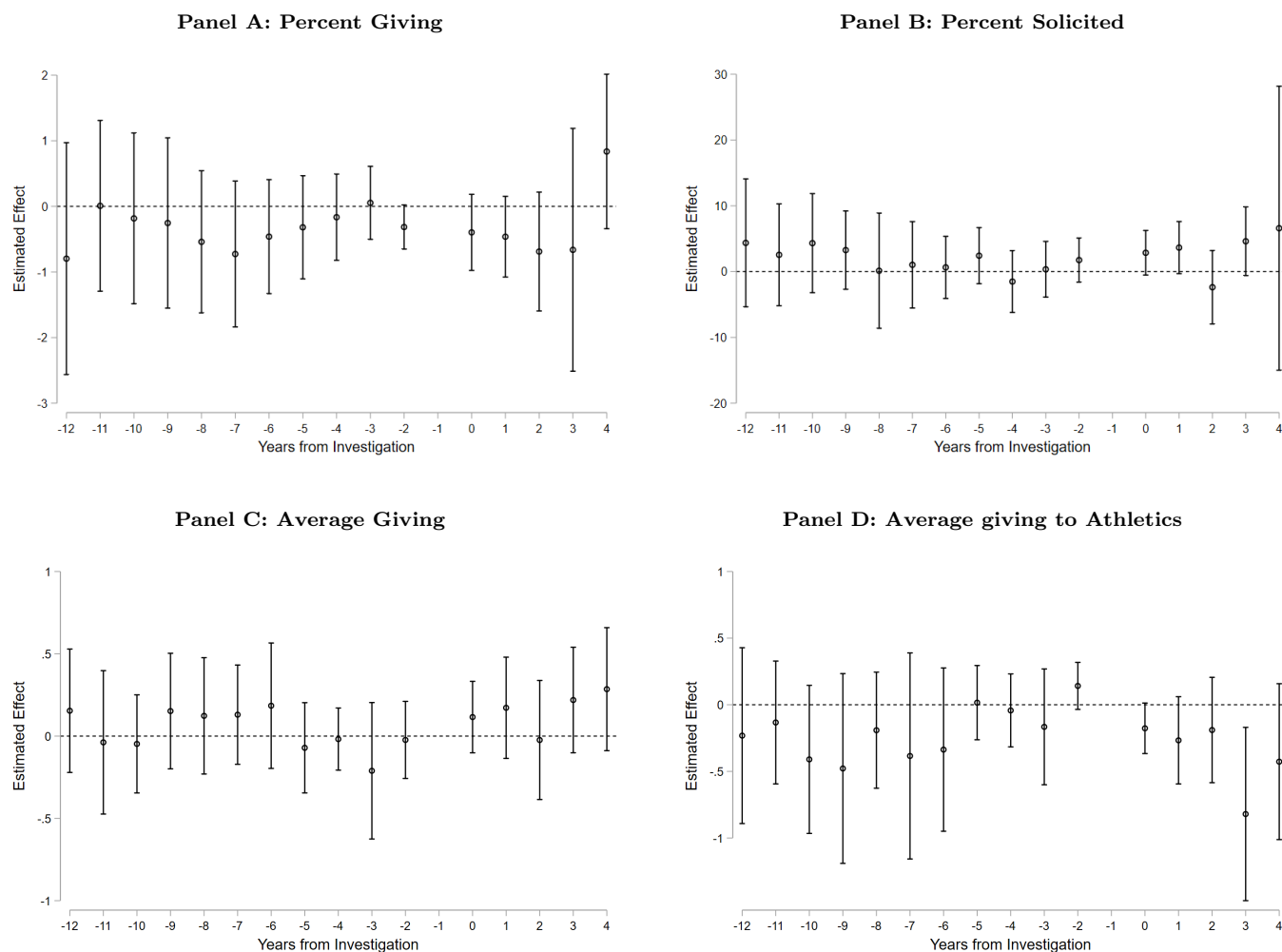
Notes: The figure plots coefficients and 95 percent confidence intervals of indicators leading up to and following the opening of a title IX investigation. Regression models evaluate the natural log of the outcome variables, which are based on U.S. Department of Education's Integrated Postsecondary Education Data System data 2002–2016. The models include school fixed effects and year fixed effects. Standard errors are clustered at the school level.

Figure B3
The Effect of Title IX Investigations on Degree Completion (without trends)



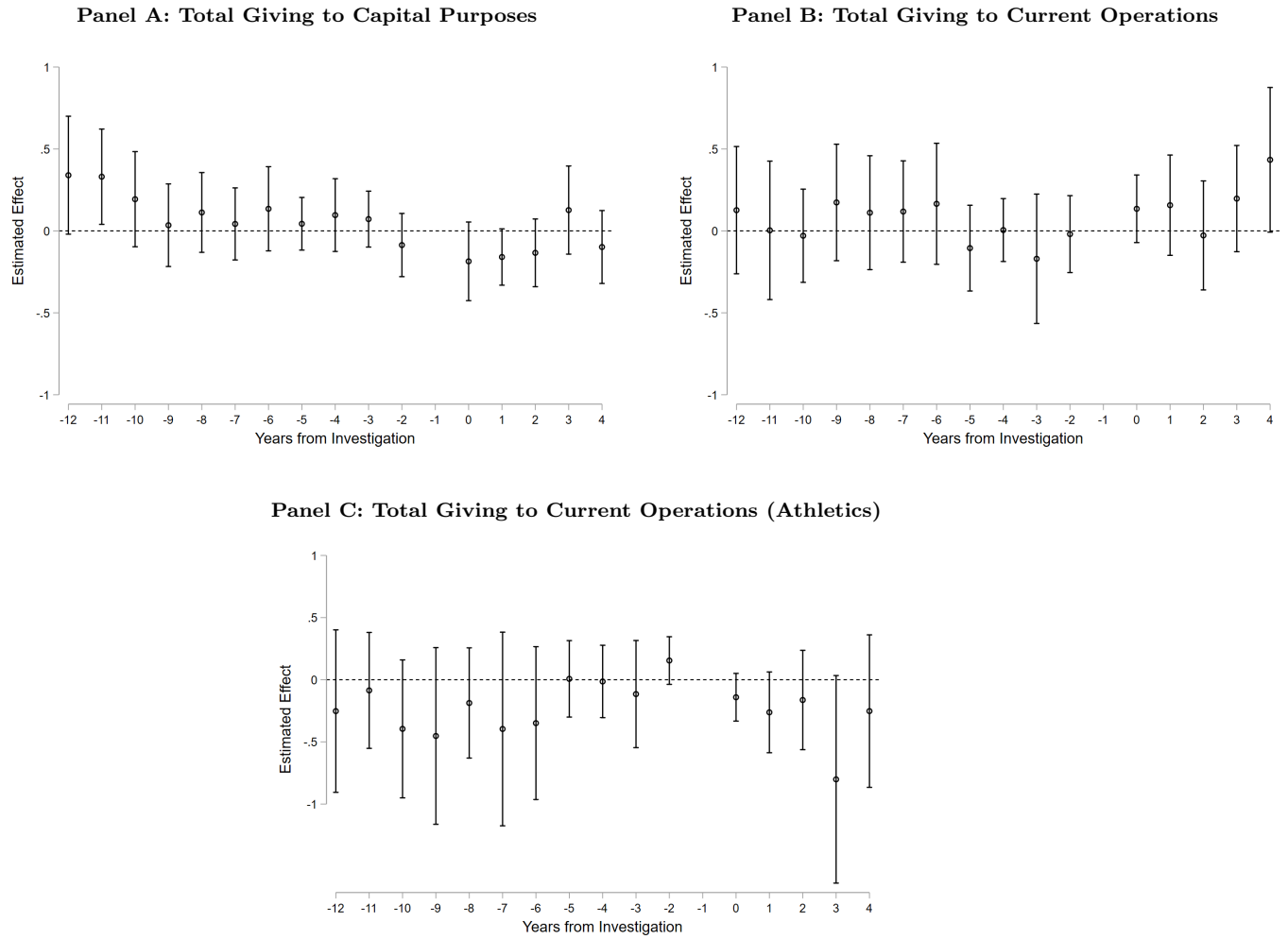
Notes: The figure plots coefficients and 95 percent confidence intervals of indicators leading up to and following the opening of a title IX investigation. Regression models evaluate the natural log of the outcome variables, which are based on U.S. Department of Education's Integrated Postsecondary Education Data System data 2002–2016. The models include school fixed effects and year fixed effects. Standard errors are clustered at the school level.

Figure B4
The Effect of Title IX Investigations on Alumni Giving (without trends)



Notes: The figure plots coefficients and 95 percent confidence intervals of indicators leading up to and following the opening of a Title IX investigation. Regression models evaluate the natural log of the outcome variables, which are based on Council for Aid to Education's annual Voluntary Support of Education Survey, 2002–2016. The models include school fixed effects and year fixed effects. Standard errors are clustered at the school level.

Figure B5
The Effect of Title IX Investigations on Alumni Giving (without trends)



Notes: The figure plots coefficients and 95 percent confidence intervals of indicators leading up to and following the opening of a title IX investigation. Regression models evaluate the natural log of the outcome variables, which are based on Council for Aid to Education's annual Voluntary Support of Education Survey, 2002–2016. The models include school fixed effects and year fixed effects. Standard errors are clustered at the school level.