Fight or Flight: The Impact of Post-Tenure Evaluations on Faculty Productivity and Selection*

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Abstract

This paper examines the labor market effects of Florida's 2022 post-tenure review policy, which weakened tenure protections at public universities. Using a difference-in-differences approach, we compare faculty outcomes in Florida to nearby states. We find the policy increased faculty exits—particularly among high-performing researchers—indicating a brain drain rather than improved selection. Additionally, we detect no productivity gains among incumbents and observe a decline in the research output of new hires. Overall, the findings suggest that reducing tenure protections negatively affects the research capacity and competitiveness of public universities.

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1 Introduction

The tenure system has been an institutional feature of US higher education since the early twentieth century. However, a growing number of states are considering legislation to limit or ban tenure in universities. For example, five states had introduced a total of 13 bills between 2012 and 2022 to ban tenure in their respective jurisdictions (Taylor and Watts, 2024). Although these efforts have largely failed, policy interest in limiting employment protection for professors continue to persist (Nietzel, 2025). Opponents against the tenure system argue that it provides no incentives for effort and leads to low productivity. On the other hand, supporters of the system argue that it protects academic freedom and enables universities to be competitive with jobs in the private sector. Despite the long history of the university tenure system, there is little empirical research testing these competing hypotheses.

This paper studies the labor market impacts of a recent policy that weakened tenure protections for professors. In April 2022, Florida enacted a law requiring post-tenure evaluations every five years for professors at public universities. Faculty who fail to meet performance standards during these reviews can be terminated, effectively transforming tenure into a renewable five-year contract. Leveraging detailed data on faculty employment and publication histories, we implement a difference-in-differences design comparing academic outcomes in Florida to those in nearby states not subject to the policy change. Using this variation, we evaluate whether the policy achieved its intended goal of increasing productivity or if it instead had a negative impact on retaining talent.

We present three sets of results. First, following a panel of researchers over time, we find that the policy increased faculty exits from Florida state universities by about 1 percentage point from a base of 4 percent. The majority of this response is due to professors moving to institutions outside the state. In comparison, a smaller share left academia entirely and there was no change in the number of moves within Florida. Importantly, we find no similar effects among faculty at private universities in Florida, suggesting that the increase in exits

is driven by the new policy rather than broader state-level trends. We likewise find no change in the separation rates of non-tenure track faculty who are exempt from the policy.

Second, the increase in departures appears to reflect a brain drain effect rather than improved selection against low-performing faculty. If the policy had achieved its intended goal of punishing unproductive researchers, then we would expect an increase in exits among faculty with low research output. In contrast, separation rates increased the most among scholars with the highest baseline levels of publications and citations in their respective fields. Many of these professors moved before the date of the first post-tenure review, indicating that the moves were voluntary rather than a result of failing their evaluations. Younger faculty members were particularly responsive, contradicting a view that removing tenure would predominately filter out workers past their prime working age. We also find stronger effects among faculty with white-sounding names, suggesting that the response is unlikely to be driven by ongoing initiatives against diversity, equity, and inclusion.

Third, we find no evidence that the policy improved academic productivity. We show that there was no change in the number of publications, citations, or preprints after the policy was passed. This holds even when we focus on faculty with low baseline publication rates, who might have been most at risk under the new evaluation system. Furthermore, we examine whether the reform influenced the quality of new hires by comparing publication records of cohorts hired before and after the policy change. Contrary to the intent of the policy that less productive applicants will self-select out of the system, we instead find that new hires tend to have fewer recent publications after the policy was enacted. This decline in the quality of new hires is consistent with the theoretical prediction of Carmichael (1988), who argued that tenure helps prevent a downward spiral in hiring standards by ensuring that current faculty are not incentivized to recruit weaker colleagues to protect their own positions.

Our paper contributes to three literatures. First, we contribute to the literature on the role of tenure in academia. From a theoretical perspective, tenure has been viewed as a means

of incentivizing effort (MacLeod and Urquiola, 2021), human capital investments (Kahn and Huberman, 1988; Waldman, 1990), and positive selection of new hires (Carmichael, 1988), all of which should increase research output. To our knowledge though, there are no empirical studies that test whether the tenure system actually increases productivity or hiring at universities. Previous papers find that publications and citations fall after individuals receive tenure (Brogaard, Engelberg, and Van Wesep, 2018; Tripodi et al., 2024), but that could reflect both an increase in productivity pre-tenure and a decrease in productivity afterwards.[1] Our paper contributes to this literature by examining a case where tenure is effectively removed, thereby allowing us to capture the aggregate effects of the tenure system.

Second, we add to a broader literature on incentivizing teacher effort.[2] Specifically with respect to employment protections, studies find that teachers' performance increase in response to stricter tenure evaluations and fewer barriers to dismissals (Jacob, 2013; Dinerstein and Opper, 2022; Taylor, 2022; Ng, 2024). On the extensive margin, accountability reforms increase exits among low-rated teachers (Sartain and Steinberg, 2016) and improve the quality of new hires (Kraft et al., 2020). Thus, reducing employment protection appears to increase the productivity and selection of teachers.[3] In contrast, we show that eliminating tenure has no impact on academics' productivity, and instead reduces the ability of universities to attract and retain the most talented researchers.

Third, we contribute to the literature on brain drain. Prior research have studied instances of forced migration such as the immigration of Jewish scientist away from Nazi Germany (Becker et al., 2024), along with its effects on US innovation (Moser, Voena, and Waldinger, 2014) and the productivity of peers who stayed in Germany (Waldinger, 2012). Although in

[1]Studies on the effect of tenure on teaching are also inconclusive. While Ehrenberg and Zhang (2005) find that the growth in adjunct professorships has adversely affected graduation rates, Figlio, Schapiro, and Soter (2015) find that students taught by nontenure track professors in their first year tend to do better in subsequent classes.

[2]See Taylor (2023) for a recent review.

[3]Outside the education sector, studies of employment protection for the broader labor market similarly find that barriers to firing reduce productivity (Autor, Kerr, and Kugler, 2007; Bjuggren, 2018).

far less extreme circumstances, growing evidence finds that recent U.S. policies have caused researchers from China to pursue academic careers in other countries (Xie et al., 2023; Flynn et al., 2024). We add to this literature by showing that policies penalizing academics are also leading to relocation of researchers across state lines.

The remainder of the paper is organized as follows. Section 2 describes Florida's 2022 policy that introduced post-tenure evaluations. Section 3 describes our data. We report our results in section 4 and conclude in section 5

2 Institutional Context

Florida signed bill SB-7044 on April 19, 2022, authorizing the State University System Board of Governors the ability to require tenured faculty members to undergo a comprehensive post-tenure review every 5 years. Under the bill, these reviews must consider faculty's research, teaching, and service. The governing board announced specific instructions for the post-tenure reviews a year later on March 29, 2023. Importantly, the instructions state that "each faculty member who receives a final performance rating of 'unsatisfactory' shall receive a notice of termination" (Florida Board of Governors, 2023). As a result, tenured faculty in the state university system are only guaranteed 5 years of employment protection.

The first review for 20% of faculty was completed on September 2024. Of the 861 tenured faculty reviewed across 12 universities, 437 exceeded expectations and received $5,000-10,000 one-time bonuses; 350 met expectations; 64 did not meet expectations and would be terminated after a year if their performance did not improve; and 10 were deemed unsatisfactory, resulting in immediate termination (Atterbury, 2024). Thus, the post-tenure reviews were not merely performative, but had real consequences for university faculty.

The expected effect of the post-tenure evaluations is theoretically ambiguous. On one hand, a large literature in personnel economics finds that performance-linked incentives tend to improve worker productivity (see Hoffman and Stanton (2024) for a recent review) and lead to positive sorting (Brown and Andrabi, 2020). This reasoning motivated the intent of

the policy. Speaker of the House Chris Sprowls stated that "the option for universities to complete comprehensive post-tenure reviews every five years will inject more accountability and enhance performance" (Executive Office of the Governor, 2022). Some economists have likewise argued that eliminating tenure would increase productivity (Levitt, 2007). Consistent with this view, studies of public school teachers have repeated demonstrated that performance-pay and accountability reforms increase teacher value-added (Taylor, 2023).

However, there are multiple reasons why post-tenure reviews might have different impacts on university professors compared to public school teachers. First, the tenure evaluation process for academic faculty is potentially already more selective. For example, 64% of STEM faculty (Kaminski and Geisler, 2012) and 69% of economics faculty (Sarsons et al., 2021) receive tenure at the institution where they are initially hired. In comparison, prior to a major reform in 2010, NYC's tenure rate for public school teachers was 97% (Dinerstein and Opper, 2022). If there are decreasing returns to performance evaluations, then the effect of accountability reforms would likely be more positive for public school teachers than university faculty. Second, unlike public schools, whom to hire at colleges is primarily decided by incumbent faculty rather than a principal. Eliminating tenure could have the perverse effect of incentivizing current faculty to hire less qualified individuals so that the incumbents look better in comparison (Carmichael, 1988). Third, it may be more challenging for teachers to move states compared to university faculty due to institutional barriers like occupational licensing requirements.[4]

To identify the effects of the new policy, we compare faculty working at public universities in Florida with those at public universities in the rest of the United States. Our identifying assumption is that outcomes in Florida would have evolved the same as the rest of the country if not for the post-tenure review policy. A challenge with this identifying assumption is that there were three other policies passed around the same time that also affected public universities. First, the Stop Woke Act was passed in July 2022 and prohibits the teaching

[4]According to Evans, Francies, and McDole (2020), "thirty-one states require some or all out-of-state teacher candidates to take additional coursework or training prior to entering a classroom".

of subjects related to race and gender. Although the rule was blocked by a district judge just a month after it was passed, prior research has shown that even terminated policies can have persistent effects (Quach, 2025). Second, Florida passed SB 846 in May 2023, which banned employment of international students from China, Cuba, Iran, North Korea, Russia, Syria, and Venezuela. This made it particularly difficult for graduate students to work in labs or as teaching assistants. Lastly, Florida also passed SB 266 in May 2023, which banned spending on diversity, equity, and inclusion (DEI) initiatives. We will run a series of heterogeneity analyses to determine whether our results can be explained by any of these contemporaneous policies.

3 Data

Motivated by the competing theories of the impact of tenure, our empirical analysis focuses on two outcomes: retention and productivity. To measure these outcomes, our analysis takes advantage of two data sources. First, we leverage data collected from curriculum vitaes (CVs) posted on Open Research and Contributor ID (ORCID) to follow researchers' employment statuses over time. Second, we merge on publication records from Dimensions to measure individuals' productivity. Using these datasets, we construct a panel of faculty who started at a public university, and a repeated cross-section of new hires at each school. We explain the construction of our analysis samples in more detail below.

3.1 CV Data: ORCID

ORCID is a free online platform that helps researchers and scholars connect their work with their identities. Users verify their identity with their university email address and then self-report their employment history on the website. They are then provided a unique ID that they can provide to journals upon publication of a new paper. This creates a transparent way to accurately attribute publications to researchers, without any ambiguity that may arise if multiple people have the same names. Users are incentivized to truthfully report their CV

information as many grant institutions, such as the National Health Institute and National Science Foundation, ask for an ORCID in their funding applications.

Using the ORCID database, we are able to observe the employment history of over 15 million individuals. We query this large dataset to construct two subsamples. First, we create a balanced panel of all researchers affiliated with a public university in the U.S. in 2021, the year before the bill mandating post-tenure reviews was passed. We then follow the employment history of these individuals from 2018 to 2024. Second, we create a repeated cross-section of all new hires over the same time period for the same set of universities.

To ensure that we focus on individuals targeted by the post-tenure review, we restrict our samples to workers with "prof" in their job title. We also drop non-tenure track positions that contain the phrase "visiting", "adjunct", "clinical", "emerit", or "temporary". Similarly, we drop teaching positions whose job titles include "teach", "lecturer", "instruct", or "practice". Lastly, we use the job title to make a distinction between assistant, associate, and tenured faculty members.

To explore heterogeneity by demographic characteristics, we use individuals' names to predict their gender and race. First, we infer gender from individuals' first names using the Gender Guesser package in Python. The program classifies names into six categories: mostly female", "female", "male", "mostly male", "androgynous" and "unknown". We define a researcher as female or male using the first four classifications, resulting in a gender for 81% of the sample.[5] Second, we infer individuals' race by linking their last names to the U.S. Census database of commonly occurring surnames and assigning the most likely racial group associated with each name.

3.2 Publication Data: Dimensions

To measure individual's productivity, we merge on publication records from Dimensions, an online repository that collects metadata for the near-universe of academic works. The

[5]In other research where we manually collected the genders of researchers, we found that Gender Guesser correctly identified 94% of the women in the data (Quach and Yu, 2024).

database contains records for over 140 million peer-reviewed publications and 4.3 million working papers. The dataset includes the ORCID of researchers who make their ORCID name and profile publicly accessible on their online profile. We successfully merge on the publication history for 83% of the observations in our panel and 88% in the repeated cross-section. To maximize statistical power, we keep the full sample whenever we do not need a measure of productivity in our analysis.

There are three advantages to using the Dimensions database to measure research output relative to simply the self-reported records on ORCID. First, Dimensions tracks the number of citations for each publication, allowing us to measure both the quality and quantity of research. Second, Dimensions also scrapes information from preprints like SSRN so that we can measure immediate changes in the research process even before a paper is published. Lastly, Dimensions classifies papers into academic fields, which allows us to explore heterogeneity by disciplines. In particular, we define an author to be in a STEM field if they had at least 1 STEM paper prior to 2022.

3.3 Descriptive Statistics

To understand the representativeness of the ORCID sample, Appendix B provides descriptive statistics of the data. We document four results. First, merging the ORCID data with administrative employment records from the Florida state university system, we find that our sample only contains between 15-20% of Florida faculty. Second, survey evidence from Porter (2025) finds that adoption of ORCID is very high (e.g. 75-93%) in STEM fields since many journals require an ORCID to submit a paper, but very low in the humanities. Third, our analysis, along with that of Flynn et al. (2024), find that individuals with ORCIDs tend to be more active researchers. Fourth, the majority of ORCID profiles are up-to-date and accurately reflect researchers' career history.[6]

Together, the descriptive statistics suggest that the data comprises largely of motivated

[6]Even if some users do not update their profile, this measurement error would only attenuate our estimates towards zero, biasing against our results.

researchers in the natural sciences. Empirically, this selection into the data poses no problems for the causality of our difference-in-difference design. However, it does affect the external validity of our results. Our analysis is most informative about the behavior of active researchers in STEM. Although we conduct some heterogeneity analyses by field and productivity, our estimates may not be representative for researchers in the humanities or for unproductive researchers. Nevertheless, understanding the response of active scientists is of key policy relevance given their contributions to science and innovation.

4 Results

4.1 Empirical Strategy

We begin our analysis by studying the impact on incumbent researchers using the panel sample. To identify the effect of introducing post-tenure reviews, we estimate a difference-in-difference regression of the form

$$y_{it} = \sum_{\substack{t=2018 \\ t \neq 2021}}^{2024} \beta_t \cdot Florida_i \times D_t + \alpha_i + \gamma_{t,c(i)} + \epsilon_{it} \tag{1}$$

where y_{it} is an outcome of interest for researcher i in year t, such as a dummy variable for being employed outside the state university system. $Florida_i$ is an indicator that equals one if researcher i is was employed in Florida in 2021. D_t equals one at year t. We control for individual (α_i) and year-characteristic ($\gamma_{t,c(i)}$) fixed effects. To compare people of similar ranking and mobility, our preferred specification allows for the year fixed effects to differ by assistant vs. associate/full professors, and by the year that they were hired at their job. Our reference period is 2021, the year before the post-tenure review policy was first passed in legislation. We cluster standard errors at the state of employment in 2021.

4.2 Effect on Retention

Figure 1 examines the effect of Florida's post-tenure review policy on faculty retention. Panel A plots the difference-in-difference estimates over time, with the outcome variable being an indicator that equals 1 if the researcher is employed outside their state's public university system. We find that leading up to 2022, separation rates were trending similarly between scholars in Florida and nearby states. However, after Florida weakened employment protections, we observe a gradual increase in separation rates. The rise in separations occurs even before the first round of post-tenure reviews in 2024, suggesting that researchers were moving in anticipation of the new policy.

The increase in separations from the public university system can reflect three types of responses: movement to a private university within the state, migration outside the state, and exits from academia altogether. Panels B to D of Figure 1 decompose the change in separation into each of these components. In Panel B, we find no change in the probability that individuals move from a public university to a private one within the same state. Instead, Panel C shows that the increase in separations is largely driven by professors moving out-of-state. Panel D finds to a smaller extent that some faculty are also responding by leaving academia, which we define as an employment gap in individuals' CV on ORCID.[7]

To assess the robustness of our results, Table 1 reports estimates of the effect on separations using a series of alternative controls. Column (1) estimates a standard two-way fixed effects model, controlling for individual and year fixed effects. This baseline specification suggests that separation rates increased by 0.86 percentage points on a base of 3.9 percent, equivalent to a 22% increase in separations. We find similar results in column (2) where we flexibly allow for differential time-trends between tenured and nontenured faculty. Column (3) shows that the results are also robust to allowing the year fixed effects to differ by in-

[7]By default, ORCID assumes someone is still employed at a school unless manually updated. As a result, employment gaps occur when someone provides an end date for their job without entering a new position. This can occur if someone is unemployed, retired, or moves to industry and chooses not to list the company in their ORCID profile.

dividuals' duration at their job in 2021. Since recent hires may be less attached to their employer relative to entrenched incumbents, column (3) controls for differences in baseline mobility across workers. Lastly, column (4) reports the fully saturated model corresponding to Panel A of Figure 1. In this most conservative specification, separation rates increased by 13% from baseline. Overall, we find that our results are stable across a range of alternative specifications.

Next, we implement a series of placebo tests to show that the increase in separation rates is driven by the 2022 post-tenure review policy and not other contemporaneous shocks. First, we test whether the migration out of Florida is really a Florida-specific event or simply part of a broader migration away from the South. Appendix Figure A1 plots our event study estimates while restricting the sample to only states in the same Census division as Florida. We find that even when comparing Florida to nearby states, there is still a larger exodus from Florida, suggesting that the migration reflects a Florida-specific shock.

Second, we test whether the out-migration is unique to public universities. If the rise in separation rates reflects a general economic downturn specific to Florida, then we would expect professors in private universities to also leave their jobs. However, Panel A of Appendix Figure A2 finds that even when we use within-Florida variation, separation rates increased in public universities relative to private ones. Thus, there is something unique about public universities in Florida that is driving away faculty. We next consider the three contemporaneous policies discussed in section 2.

Stop Woke Act

Faculty may have left Florida as a result of the Stop Woke Act, which prohibits professors from teaching subjects related to race and gender. Since this policy affected all faculty, we would expect non-tenure track professors to also leave in response to the new law. Panel B of Appendix Figure A2 repeats our analysis using non-tenure track faculty and finds weak evidence of an increase in exits. Although the post-2021 estimates are statistically significant, we are skeptical that this is due to the new law. Their magnitudes are comparable to the

fluctuations before 2021 and, unlike our main results, the estimates fail the Rambachan and Roth (2023) pre-trends test. Moreover, the estimates suggest that faculty were already leaving Florida in 2022, but the Stop Woke Act was only signed into law in July 2022, leaving little time for researchers to find a new job for the next academic year.[8] Given the fragility of the estimates, we cannot rule out the possibility that the Stop Woke Act had no impact on the migration of non-tenure track professors.

SB 846

In 2023, Florida passed SB 846, which banned the employment of international students from 7 countries viewed as geopolitical opponents to the United States. Since graduate students are more likely to work with advisors from their origin country than would occur by random chance (Fry and Glennon, 2025), we expect this policy to have a stronger effect on professors from these countries. To impute researchers' country of origin, we first identify all individuals who completed a degree in one of the seven countries. We then classify all faculty with a last name from that list as affected by SB 846.[9]

Panel C of Appendix figure A2 reports the event study estimates separately by whether the faculty is from a country affected by SB 846. We note two results. First, researchers from affected countries started leaving Florida in 2022, before SB 846 was passed, indicating that the early increase in separations cannot be attributed to the policy. Second, the increase in separations was similar across both groups, suggesting that faculty more directly exposed to SB 846 did not respond differently in the long run. Together, these results imply that SB 846 does not account for the observed rise in separations.

SB 266

Another potential reason for the increase in separations is SB 266, which passed in May

[8]If someone starts a new job in 2022, we define that person's employment in the data to be associated with the new position.

[9]We manually remove common last names from the list such as "Miller" and "Smith". The five most common last names among our sample of affected professors are Wang, Chen, Li, Zhang, and Liu. Our sample consists of 6,181 faculty from banned countries out of a total of 59,631.

2023 and banned all spending on DEI initiatives.[10] Florida was not the only state in recent years to pass legislation that limits diversity efforts at public universities. Appendix Table A2 shows that in 2023-2024, fourteen states introduced some form of anti-DEI law. If researchers quit their jobs in response to SB 266, then we would expect a similar response in the other states too. However, Panel D of Appendix Figure A2 finds that separation rates in Florida increased quicker compared to other states that also banned DEI initiatives in 2023.

Overall, we find little evidence that the rise in separations was driven by other policies introduced at the same time as the post-tenure reviews. As a final placebo test, Appendix Figure A3 examines whether Florida naturally has a higher separation rate whenever we condition on a panel of incumbents. For example, if working in Florida is an undesirable outcome, then workers may leave quicker due to reversion to the mean, similar to an Ashenfelter dip phenomenon (Ashenfelter, 1978). To test for this effect, we replicate our analysis using 2018 as the reference year when we require all workers to be employed. In this case, we find no rise in separations, indicating that our results are not driven by mean reversion.

4.3 Effect on Productivity

It is unclear from the results thus far whether eliminating tenure accomplished its intended policy goal. On one hand, it is costly for employers to fill positions, so a fall in retention is generally a negative outcome. However, the goal of the policy was precisely to terminate the least productive workers, so an increase in separations is to be expected. In this section, we test whether the policy increased productivity by removing unproductive workers, incentivizing more effort, or improving selection of new hires.

Selection in Separations

To begin, Figure 2 explores heterogeneity in separation rates by baseline productivity

[10]In response to this law, the University of Florida terminated administrative positions in the Office of the Chief Diversity Officer, but announced that it would reallocate the funds previously assigned for DEI expenses into a faculty recruitment fund (Angle, Hass, and Curry, 2024). Thus, there did not appear to be actions from the university that directly affected incumbent faculty.

levels. To measure productivity, we aggregate the total number of peer-reviewed publications and citations that each professor received in the three years between 2018 and 2021. Panels A and B separately estimates the effect on separations for scholars with below and above median citations within their field, respectively. We find that it is the highly cited scholars that are most likely to leave the Florida public university system. Similarly, Panels C and D show that the increase in separations was more pronounced among researchers with above median number of recent publications. Moreover, we find that highly productive workers are leaving even before the first round reviews in 2024, which suggests that these are voluntary moves rather than a result of failing the review. In contrast, we only observe an increase in separations for low productivity professors after the reviews began. Taken together, the estimates indicate that eliminating tenure caused a brain drain effect that exceeded the direct effect of firing unproductive workers, leading to net positive selection in the productivity of leavers.

The brain drain effect is novel given that studies of public school teachers generally find that high-stakes evaluation systems tend to increase voluntary attrition of low-performing teachers (Dee and Wyckoff, 2015; Loeb, Miller, and Wyckoff, 2015; Sartain and Steinberg, 2016; Cullen, Koedel, and Parsons, 2021). From prior studies, it may seem reasonable to expect that the introduction of post-tenure reviews will similarly cause low-performing professors to leave. However, these reviews introduce two countervailing incentives - they increase the potential punishment for tenured faculty, but they also decrease the potential reward for tenure-track assistant professors. If we assume that the punishment mechanism is only binding for low-productivity tenured professors, and the reward is only binding for high-productivity untenured ones, then the brain drain effect should be driven primarily by younger faculty.[11]

To understand which types of faculty are driving the attrition response, Appendix Figure

[11]Intuitively, tenured faculty who are very productive do not have the worry about the tenure review. Meanwhile, the new policy would also be irrelevant for unproductive tenure-track faculty who do not expect to receive tenure.

A4 reports additional heterogeneity analyses by scholars' field of study and demographic characteristics. We highlight five results. First, consistent with the hypothesis that post-tenure evaluations disincentivizes high-productivity early-career researchers, we find that retention falls more significantly for younger faculty, where we infer researchers' age from their first year of employment and separate the sample into those above and below median age in the sample.[12] The results therefore go against the view that eliminating tenure would primarily push out workers past their prime productive years. Second, consistent with the effect being larger for young faculty, we find suggestive evidence that most of the separations is driven by tenure-track assistant professors.

Third, far more striking than the generational differences in response is that the entire separations effect is driven by researchers in non-STEM related disciplines. One possible explanation for this heterogeneity is that moving costs are larger for lab-based researchers, and academics in STEM may be may concerned about research funding than tenure. Fourth, separations also increased more among white workers than black workers. This suggests that the rise in separations are not driven by other Florida policies targeting diversity, equity, and inclusion in universities. Fifth, we observe no discernible differences in response between men and women. This is somewhat surprising given evidence that in general, couples are more likely to move for the man's career advancement relative the woman's (Jayachandran et al., 2024).

Productivity of Incumbents

Although highly productive researchers are more likely to leave as a result of the policy, it may nevertheless increase aggregate productivity by incentivizing more effort from stayers. To test for such responses, we estimate our difference-in-difference using the number of publications and number of citations as the outcome variables. Since these are count variables, we compute our estimates using a Poisson regressions to interpret the coefficients in

[12]The median researcher started working in 2008.

percentage terms while allowing for non-zero values:

$$E[Y_i|X_{it}] = \exp\left[\sum_{\substack{t=2018 \\ t\neq 2021}}^{2024} \beta_t \cdot Florida_i \times D_t + \alpha_i + \gamma_{t,c(i)}\right] \tag{2}$$

Figure 3 reports the effect of the post-tenure reviews on workers' productivity. Panels A shows that, on average, there is no discernible increase in research output or citation counts following the policy's implementation. While the reform did not yield overall improvements in productivity among incumbent faculty, this null result may mask heterogeneity by baseline performance. Since the least productive researchers are at the greatest risk of losing their jobs from the post-tenure reviews, we would expect productivity to increase more for this group.

Panels B and C disaggregate the productivity effects by faculty's baseline productivity, measured by their citation counts in the three years before the enactment of the policy. We find no positive productivity effects even for faculty with below-median citations. Instead, the only indication of an increase in productivity is a temporary uptick in citations among highly cited scholars. This implies that the policy did not improve research productivity, even among faculty members who would have been most incentivized to increase performance under a stricter review regime.

Appendix Table A1 shows the robustness of the null effect on productivity. Across multiple specifications — including models with year fixed effects interacted with tenure status, and job duration — none of the estimated coefficients on the interaction between the Florida indicator and post-policy period are statistically significant. For example, the 95% confidence bounds for our preferred specification in column (4) can rule out increases in the number of publications by more than 3%.

One potential explanation for the muted response in productivity is that three years is insufficient time for increased effort to translate into new publications and citations. To assess whether faculty are increasing the number of early-stage research projects, Appendix

Figure A5 explores the effect on unpublished research. We find that the number of preprints and working papers did not increase post-policy either. These null effects hold across the full sample (Panel A), and among both the low-citation (Panel B) and high-citation (Panel C) subgroups.

Since Florida's policy has no impact on individuals who move out of state, we also explore whether the average productivity of those who remained employed in the Florida public university system increased. Appendix Figure A6 presents results restricted to faculty who stayed from 2021 to 2024. Again, we find no statistically meaningful changes in the number of publications or citations over time, aside from a temporary increase in citations in 2023. Overall, our analysis finds no evidence of systematic improvements in productivity as a result of the post-tenure review system.

Selection in New Hires

An important secondary channel through which post-tenure reviews could influence academic quality is via the hiring pipeline. On the labor supply side, it might improve the quality of applicants if only the most productive researchers are confident in their ability to keep a job in a system without tenure. For example, Kraft et al. (2020) finds that teacher accountability reforms increased the quality of newly hired teachers. However, if the most influential academics value the security of tenure to engage in riskier projects, then post-tenure reviews may lead to lower quality applicants. On the labor demand side, Carmichael (1988) predicts that incumbents would be less willing to hire talented researchers if they worry that the new entrants will replace their jobs.

To study the effect of the policy on the quality of new hires, we turn to our repeated cross-section sample, where each year of the data represents a new cohort of researchers. We measure a new hire's quality by the number of publications and citations they received in the 3 years prior to hiring. To identify the impacts of the policy, we make two adjustments to our difference-in-difference design in equation 2. First, since each individual only appears once

in the sample, we no longer control for individual-level fixed effects. Second, it is similarly infeasible to control for year interacted with duration of employment fixed effects since by definition, each person is starting a new job. Instead, our preferred specification will control for state and year-tenured fixed effects.

Figure 4 reports the event study estimates over time. Panel A shows that leading up to 2022, the productivity of incoming cohorts of new hires was trending similarly between Florida and other states. However, after 2022, we observed a marked decrease in the number of prior publications among new hires in Florida. Panel B shows less of a decline in citation counts of new hires, but the estimates are fairly noisy.

Appendix Table A3 summarizes our results and tests their sensitivity to alternative specifications. Column (1) simply controls for state and year fixed effects, while column (2) allows for differential time trends for tenured and nontenured hires. Columns (3) and (4) repeats the analysis, controlling for university-specific differences. In all cases, we find a significant negative effect on the productivity of new hires ranging from a 13-18% drop in prior publications. Although the estimates for prior citations (Columns 5–8) are also negative, we can not statistically reject a zero effect. On the whole, these results suggest that the pool of new hires in Florida's public universities became less research-productive after the post-tenure review policy was enacted.

5 Conclusion

This paper provides the first empirical evaluation of a major policy reform that weakened tenure protections at public universities by introducing mandatory post-tenure reviews. Leveraging detailed data on faculty employment histories and research output, we find that the policy led to a significant increase in faculty departures from Florida's public universities, primarily driven by highly productive and younger scholars. These exits occurred even before the first review cycle was implemented, indicating anticipatory behavior rather than formal dismissals.

Contrary to the reform's stated goals, we find no evidence that the policy improved academic productivity among incumbent faculty. Measures of publications, citations, and preprints remained flat, including for those most at risk of failing post-tenure evaluations. Moreover, the quality of new hires, as measured by pre-hire research output, declined following the policy's enactment, suggesting a deterioration in the attractiveness of Florida's public universities to top talent.

Taken together, these findings challenge the assumption that weakening tenure improves university performance. Instead, the evidence points to unintended consequences: a loss of top-performing faculty, no gain in research output, and a drop in the caliber of incoming scholars. As other states consider similar reforms, our results underscore the need for caution. Efforts to increase accountability in academia should be carefully designed to preserve institutional competitiveness and long-term research capacity.

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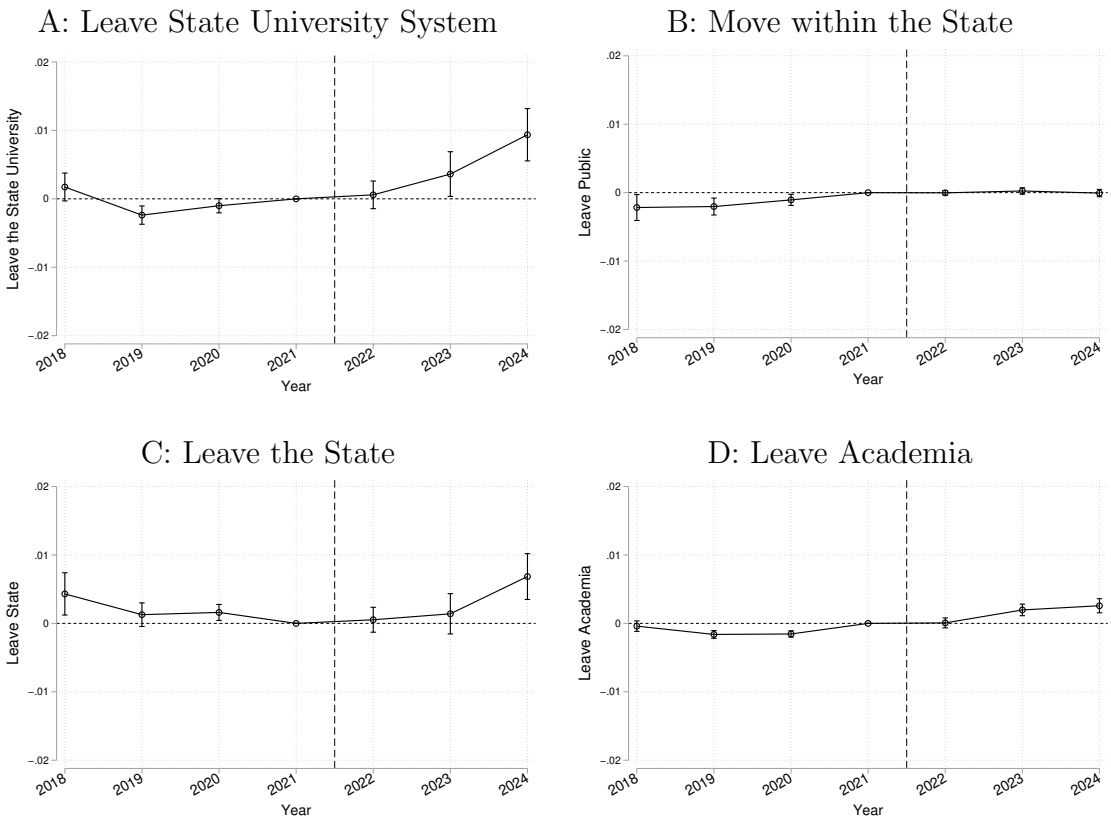
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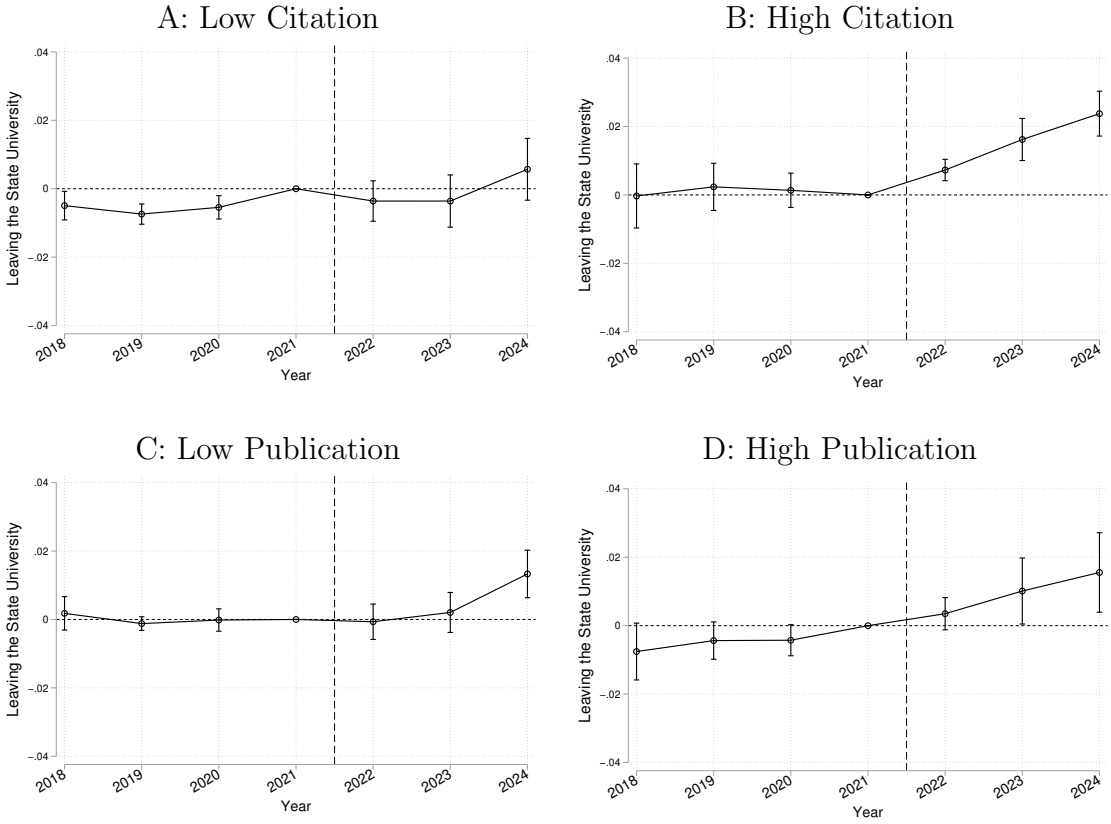
Figures and Tables

Figure 1: Effect of Post-Tenure Review Policy on Retention



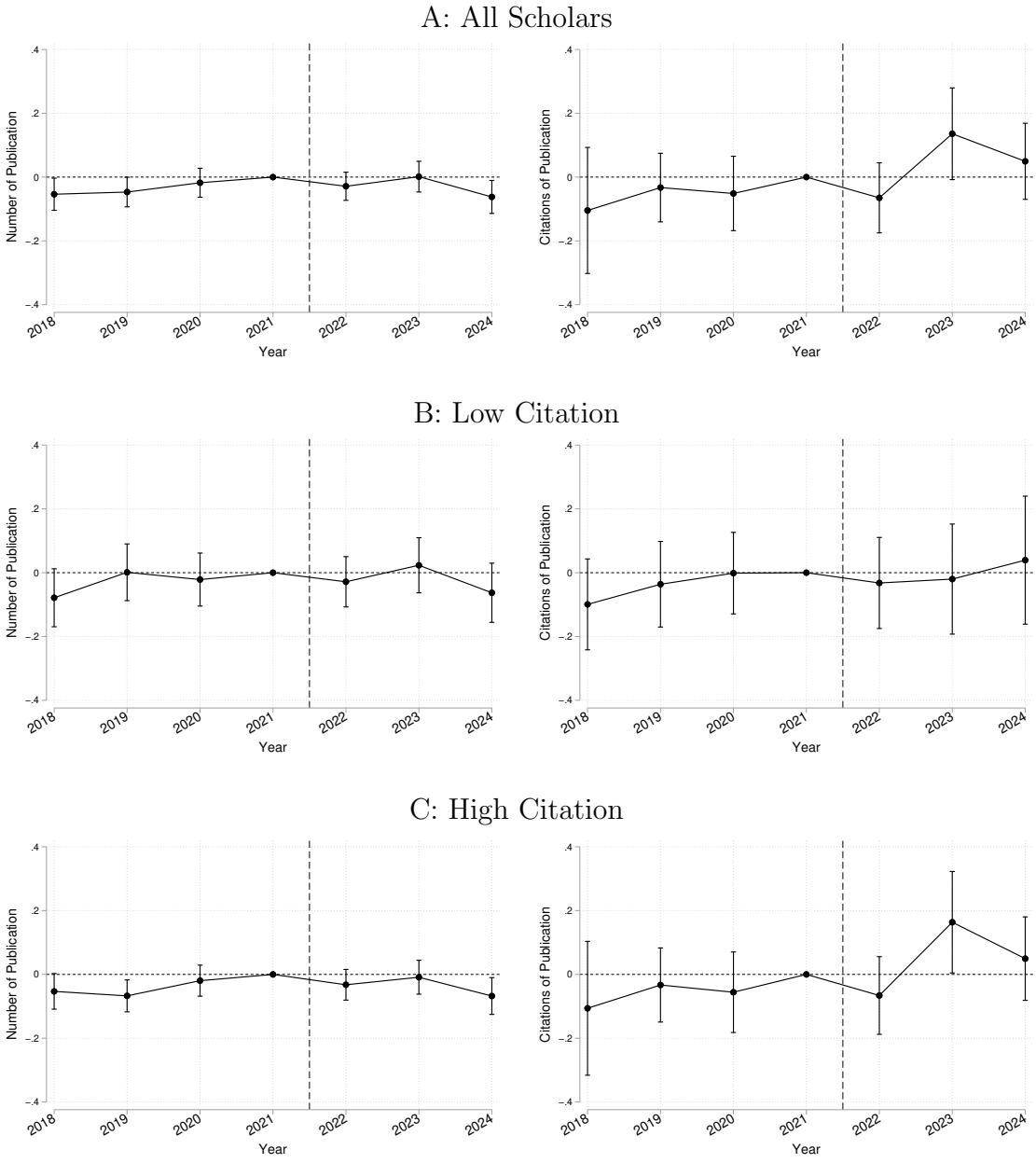
Note: These figures plot the effects of Florida's post-tenure review policy on the retention of tenured and tenure-track faculty at Florida state universities. Panel A shows the effect on leaving the state university system in which the faculty were employed in 2021. Panel B reports the effect on moving to other in-state academic institutions. Panel C shows the effect on relocating to out-of-state academic institutions. Panel B presents the effect on exiting academia. All estimates include 95% confidence intervals based on standard errors clustered at the state level.

Figure 2: Heterogeneous Effects on Retention by Baseline Research Productivity



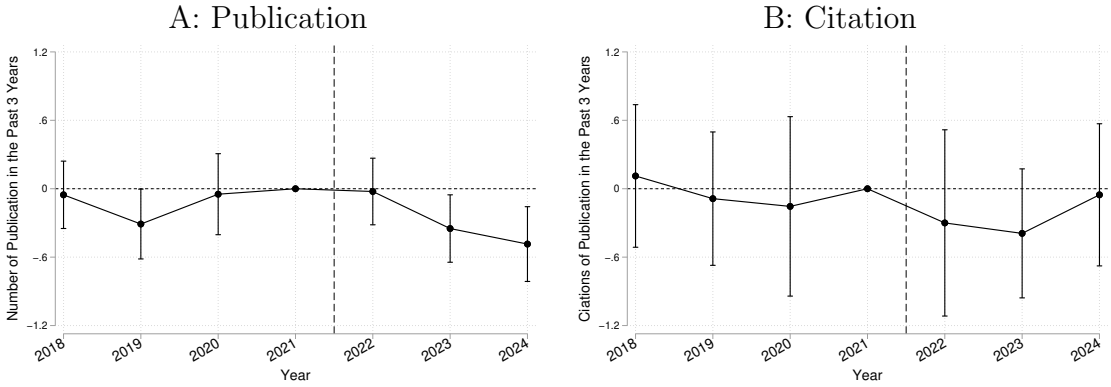
Note: These figures plot the heterogeneous effects of Florida's post-tenure review policy on the retention of tenured and tenure-track faculty at Florida state universities. Panels A and B show the effect for faculty with below-median and above-median citation counts during 2018–2021, respectively. Panels C and D report the effects for faculty with below-median and above-median publication counts during 2018–2021, respectively. All estimates include 95% confidence intervals based on standard errors clustered at the individual faculty level.

Figure 3: Effect of Post-Tenure Review Policy on Research Productivity



Note: These figures plot the effects of Florida's post-tenure review policy on the research productivity of tenured and tenure-track faculty at Florida state universities. Panel A shows the effect on the number and citation of publications for all faculty members. Panels B and C show the effects separately for faculty with below and above median citation counts, respectively. Estimates are computed using Poisson regressions. All estimates include 95% confidence intervals based on standard errors clustered at the individual faculty level.

Figure 4: Effect of Post-Tenure Review Policy on the Quality of New Hires



Note: These figures plot the effects of Florida's post-tenure review policy on the quality of incoming tenured and tenure-track faculty at Florida state universities. Panel A shows the effect on quality measured by the number of publications in the year of hire and the two preceding years. Panel B shows the effect on quality measured by citations to those publications. Estimates are computed using Poisson regressions. All estimates include 95% confidence intervals based on standard errors clustered at the individual faculty level.

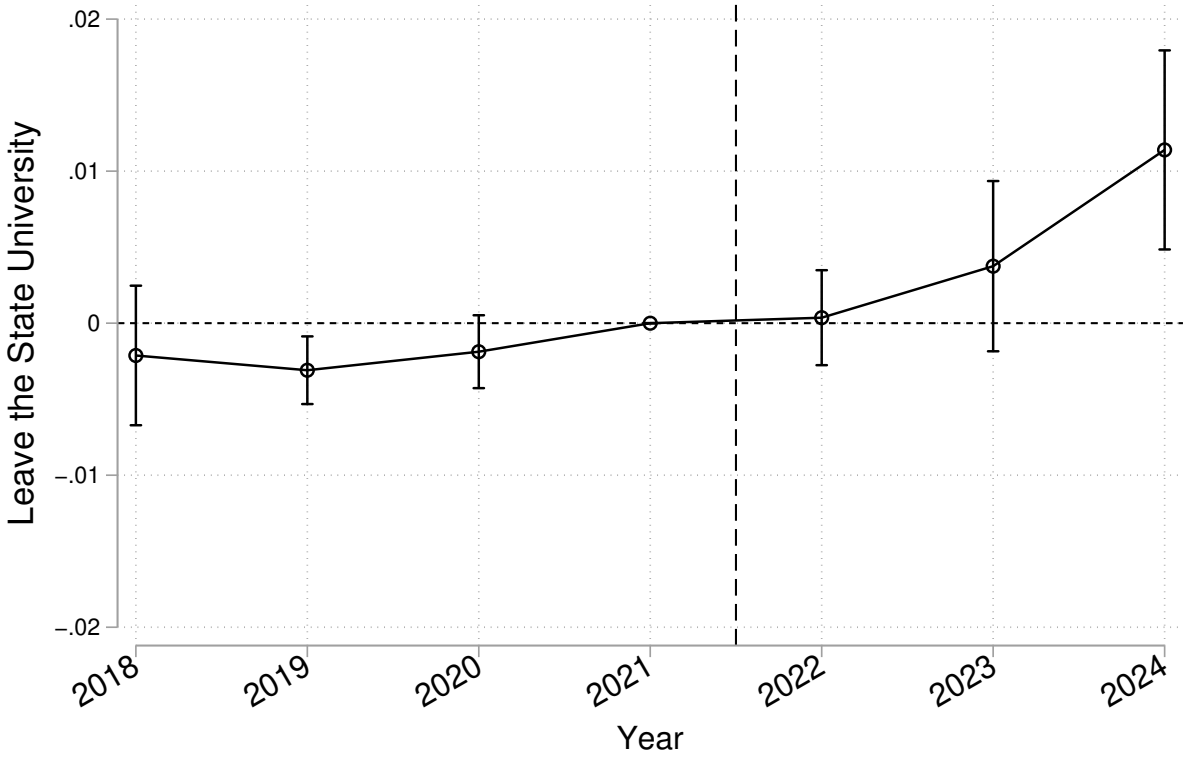
Table 1: Effect of Post-Tenure Review Policy on Retention

	Probability of Leaving the State Universtity			
	(1)	(2)	(3)	(4)
Florida × Post	0.0086***	0.0078***	0.0059***	0.0049***
	(0.0019)	(0.0019)	(0.0015)	(0.0016)
Baseline Mean	0.0392	0.0392	0.0392	0.0392
Individual FE	Yes	Yes	Yes	Yes
Year FE	Yes	No	No	No
Year × Tenured FE	No	Yes	No	Yes
Year × Duration FE	No	No	Yes	Yes
Number of Obs	417417	417417	417389	417389

Note: This table reports difference-in-differences estimates of the effect of Florida's post-tenure review policy on the probability that incumbents leave the state university system in which the they were employed in 2021. The treatment group consists of tenured or tenure-track faculty at Florida state universities, and the control group includes their counterparts at other South Atlantic state universities. Column (1) includes individual and year fixed effects. Column (2) adds controls for year interacted with tenure status. Column (3) limits the control group to states in the South Atlantic Census Division. Robust standard errors are clustered at the state level. Statistical significance: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

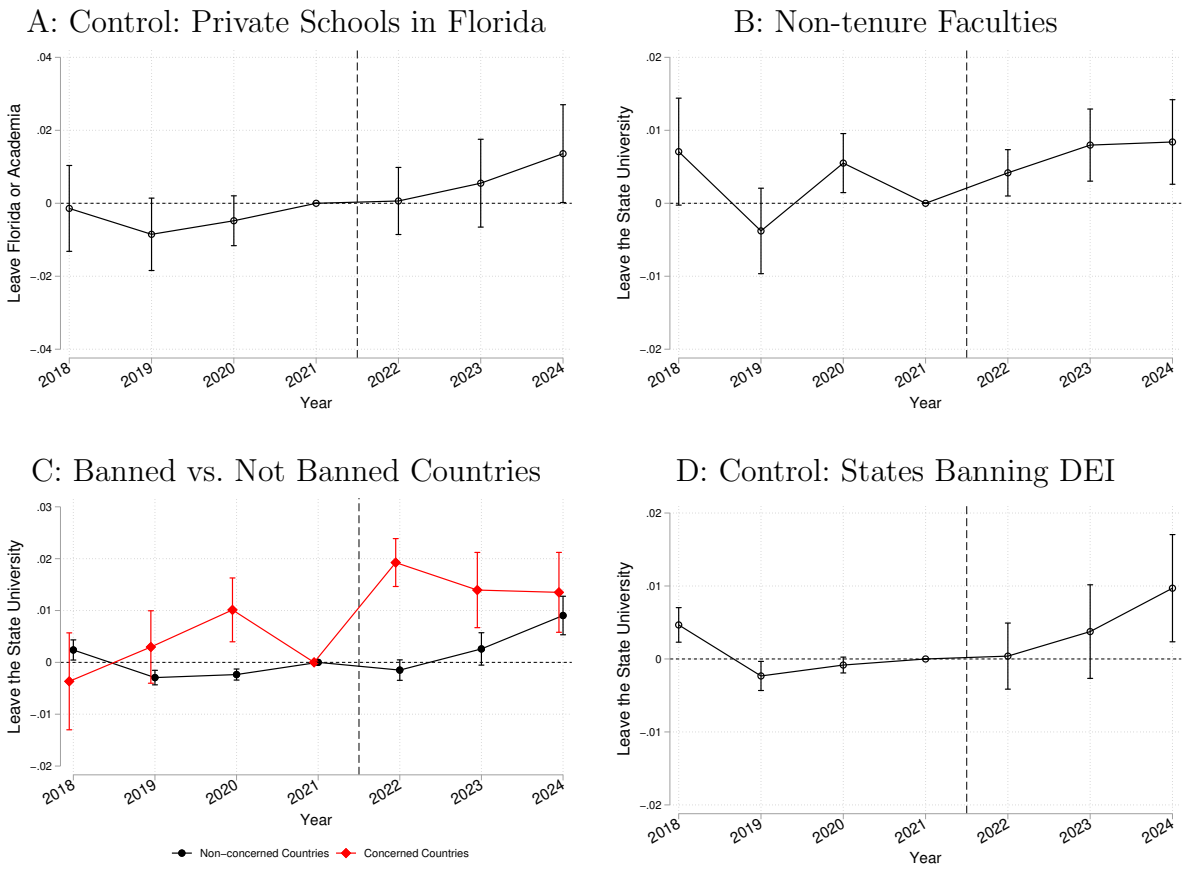
Appendix A Additional Figures and Tables

Figure A1: Effect on Retention within South Atlantic Census Division



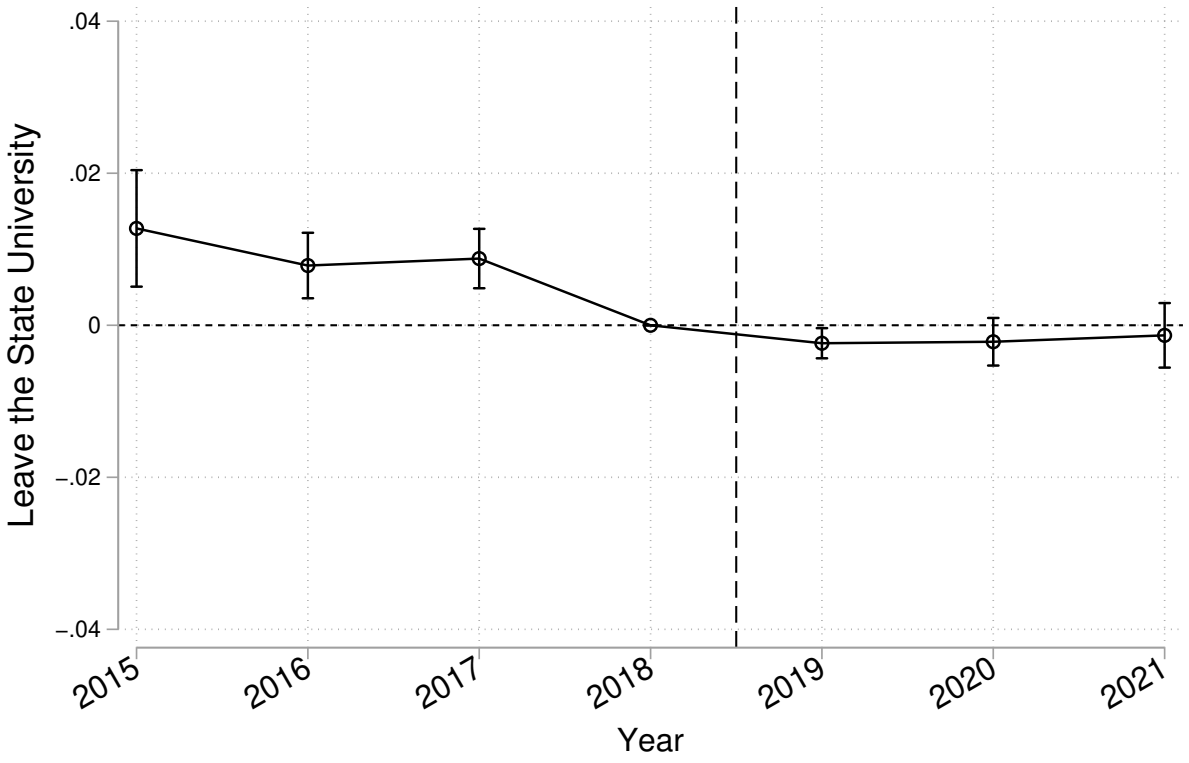
Note: These figures plot the effects of Florida's post-tenure review policy on the probability that tenure-track faculty leave the state public university system. The sample is restricted to only states in the South Atlantic Census Division. All estimates include 95% confidence intervals based on standard errors clustered at the state level.

Figure A2: Effect of Post-Tenure Review on Retention, Placebo Checks



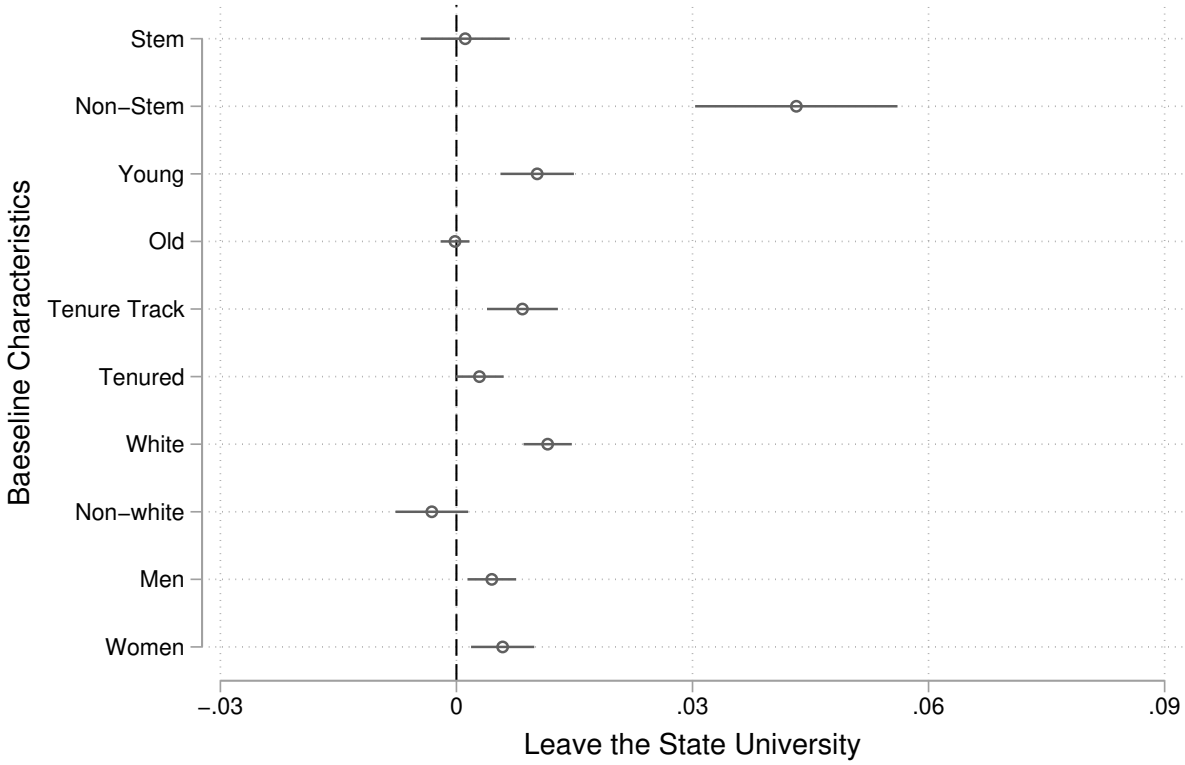
Note: These figures present robustness and placebo checks for the estimated effects of Florida's post-tenure review policy on the retention of tenured and tenure-track faculty at Florida state universities. In Panel A, the treatment group includes tenured and tenure-track faculty at Florida state universities, while the control group consists of the counterparts at private universities in Florida. Panel B reports effects for non-tenure-track faculty. Panel C reports heterogeneous treatment effects for scholars with names originating from the 7 countries affected by SB 846. Panel D compares faculty in Florida public universities to faculty in other states that also banned DEI initiatives (see table A2). Standard errors are clustered at the individual state level in Panel A and at the state level in Panels B, C, and D.

Figure A3: Placebo Test using 2018 as Baseline Year



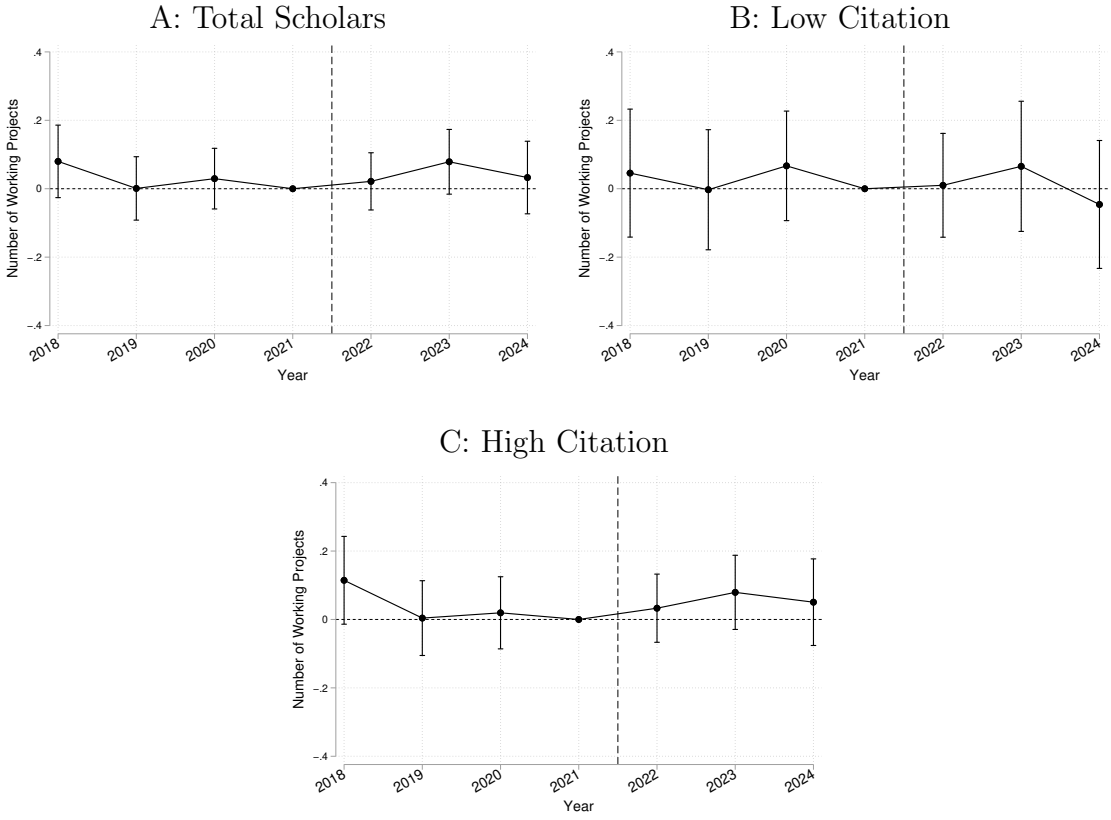
Note: This figure repeats the analysis of Figure 1 using 2018 as a placebo treatment year. All estimates include 95% confidence intervals based on standard errors clustered at the state level.

Figure A4: Heterogeneous Effects on Retention by Baseline Characteristics



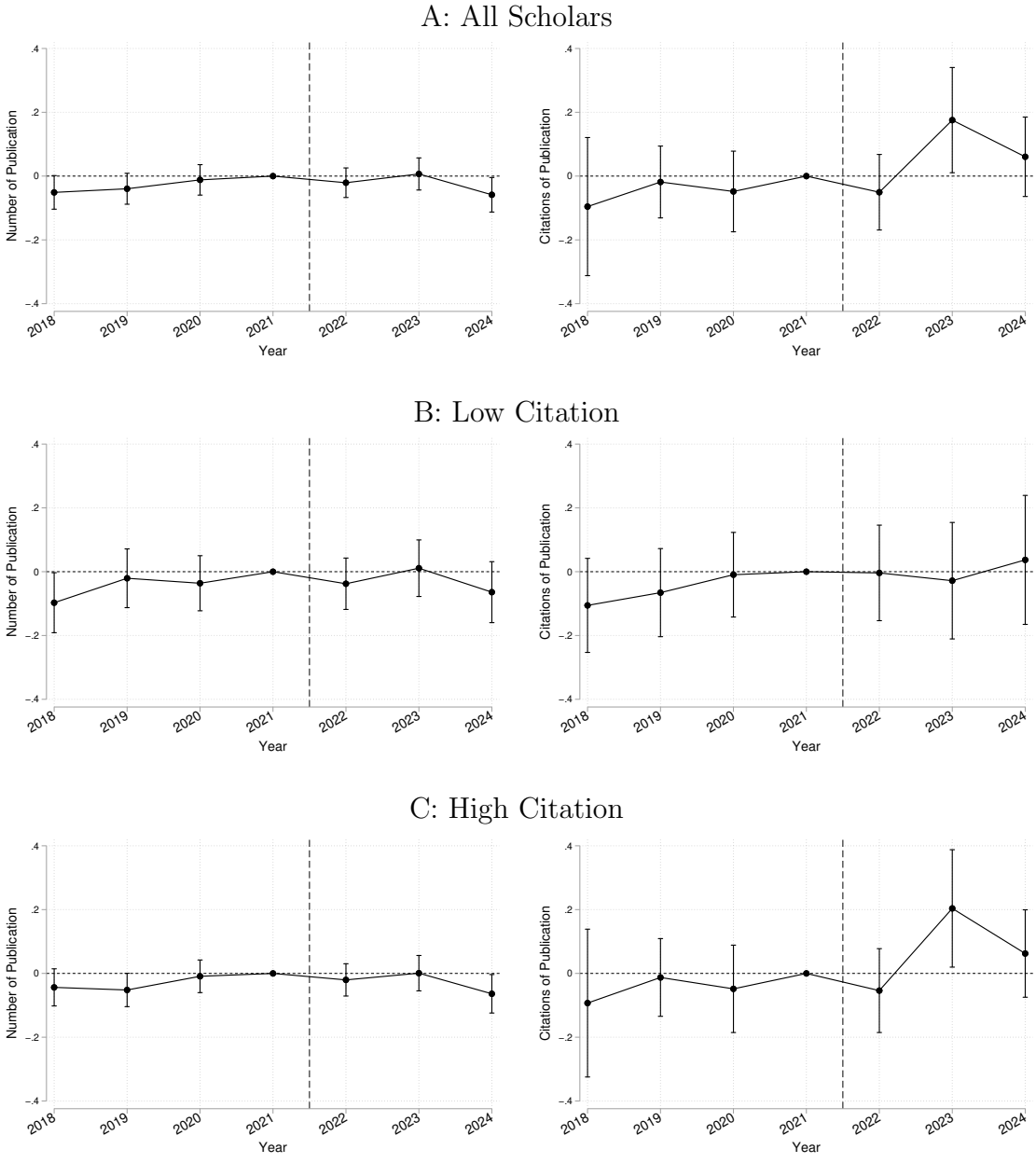
Note: This figure plots the heterogeneous effects of Florida's post-tenure review policy by baseline characteristics: STEM vs. non-STEM majors, above-median vs. below-median career starting year (i.e. younger vs. older), white vs. non-white, and men vs. women. All estimates include 95% confidence intervals based on standard errors clustered at the individual faculty level.

Figure A5: Effect of Post-Tenure Review Policy on Productivity (Unpublished Works Only)



Note: These figures plot the effects of Florida's post-tenure review policy on the research productivity of tenured and tenure-track faculty at Florida state universities. Panel A shows the effect on the number of unpublished research (i.e. preprints and proceedings) for all faculty. Panels B and C show the effect on the number of unpublished research for faculties with below-median and above-median citation counts during 2018–2021, respectively. Estimates are computed using Poisson regression. All estimates include 95% confidence intervals based on standard errors clustered at the individual faculty level.

Figure A6: Effect on Research Productivity of Stayers



Note: These figures plot the effects of Florida's post-tenure review policy on the research productivity of tenured and tenure-track faculty, who remained employed at Florida state universities from 2021 onward. Panel A shows the effect on the number and citation of published research for all faculty. Panels B and C shows the effect on faculty with below-median and above-median citation counts during 2018–2021, respectively. All estimates are computed using Poisson regressions. All estimates include 95% confidence intervals based on standard errors clustered at the individual faculty level.

Table A1: Effect of Post-Tenure Review Policy on Research Productivity

	Number of Publication				Citations of Publication			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Florida × Post	0.0118	0.0090	−0.0004	0.0002	0.0783	0.0747	0.0650	0.0644
	(0.0176)	(0.0172)	(0.0163)	(0.0162)	(0.0485)	(0.0477)	(0.0458)	(0.0452)
Individual FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	No	No	No	Yes	No	No	No
Year × Tenured FE	No	Yes	No	Yes	No	Yes	No	Yes
Year × Duration FE	No	No	Yes	Yes	No	No	Yes	Yes
Number of Obs	72072	72072	72041	72041	69601	69601	69577	69577

Note: This table reports difference-in-differences estimates of the effect of Florida's post-tenure review policy on research productivity. The treatment group consists of tenured or tenure-track faculty at Florida state universities, and the control group includes their counterparts at other South Atlantic state universities. Columns (1) to (4) report the estimates on the number of publication and columns (5) to (8) reports the results on the citations to those publications. Columns (1) and (5) includes individual and year fixed effects. Columns (2) and (6) adds controls for year interacted with tenure status. Columns (3) and (7) controls for the duration of the position held in 2021. Columns (4) and (8) includes both the year × tenured and year × duration controls. All estimates are computed using Poisson regressions. Robust standard errors are clustered at the faculty level. Statistical significance: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Table A2: States that Ban DEI Initiatives at Public Universities

State	Law or Policy	Year
Alabama	SB 129 (Act 2024-34)	2024
Idaho	SB 1274	2024
Iowa	SF 2435 (FY2024 Education Appropriations Act)	2024
Kansas	HB 2105	2024
Utah	HB 261 (Equal Opportunity Initiatives Act)	2024
Arkansas	Arkansas ACCESS Act (HB 1512, Act 341)	2023
Florida	SB 266 (Higher Education Act)	2023
Kentucky	HB 4	2023
North Carolina	SB 364	2023
North Dakota	SB 2247	2023
Tennessee	SB 102 (Public Chapter 321)	2023
Tennessee	HB 1376 (Public Chapter 250)	2023
Texas	SB 17 (88th Legislature, Regular Session)	2023
Wyoming	HB 147 (Enrolled Act 67)	2023

Table A3: Effect of Post-Tenure Review Policy on the Quality of New Hires

	Number of Publication in Recent 3 Years				Citations of Publication in Recent 3 Years			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Florida × Post	−0.1817**	−0.1370*	−0.1638**	−0.1326*	−0.3586	−0.3072	−0.3822	−0.3432
	(0.0739)	(0.0716)	(0.0716)	(0.0695)	(0.2514)	(0.2460)	(0.2702)	(0.2601)
State FE	Yes	Yes	No	No	Yes	Yes	No	No
University FE	No	No	Yes	Yes	No	No	Yes	Yes
Year FE	Yes	No	Yes	No	Yes	No	Yes	No
Year × Tenured FE	No	Yes	No	Yes	No	Yes	No	Yes
Number of Obs	6427	6427	6425	6425	6427	6427	6425	6425

Note: This table reports difference-in-differences estimates of the effect of Florida's post-tenure review policy on the quality of incoming faculty. The treatment group consists of newly hired tenured or tenure-track faculty at Florida state universities in each year, and the control group includes their counterparts at other South Atlantic state universities. Columns (1)–(4) show effects on research quality measured by the number of publications in the year of hire and the two preceding years. Columns (5)–(8) report effects based on the number of citations to those publications. Columns (1) and (5) include state and year fixed effects. Columns (2) and (6) include state fixed effects and year interacted with tenure status fixed effects. Columns (3) and (7) control for university and year fixed effects. Columns (4) and (8) include university fixed effects and year interacted with tenure status. All estimates are computed using Poisson models. Robust standard errors are clustered at the faculty level. Statistical significance: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Appendix B Characteristics of the Data

In this section, we provide descriptive statistics of the ORCID data that we use in our analysis. First, we explore baseline differences in faculty characteristics between Florida and other states within the data. Next, we examine how the ORCID data compares to the universe of public university employees.

Appendix Table A4 reports descriptive statistics of our panel dataset, averaged over the pre-treatment period from 2018 to 2021. We restrict the sample to only public sector universities, and define the treatment group to be researchers in Florida and the control group to be scholars in all other states. In general, academics in Florida have more publications and are more likely in STEM. They are also less likely to be men and white. However, the differences in baseline characteristics are fairly small. Moreover, our analysis only requires that the treatment and control groups have similar trends prior to the policy change, which we validate in the data.

Given that researchers self-select into the ORCID system, the interpretation of our analysis depends on the representativeness of the data. We summarize three analyses that compare the ORCID sample to external data sources.

First, Flynn et al. (2024) compare researchers in the Dimensions database with an ORCID to those without one. They find that only 15.4% of researchers in Dimensions have an ORCID, and that these users tend to have more publications and have been publishing longer. However, since Dimensions captures all individuals who have ever published a paper, it also includes people outside academia who seldom publish and have no use for an ORCID. As such, while Dimensions gives some sense of the characteristics of ORCID users, it is not an ideal benchmark.

Second, Porter (2025) conducted a nationally representative survey of faculty at US public research universities to understand adoption of ORCID. In their sample of 3,968 professors, they find that 72% reported having an ORCID. However, this varied widely across fields. For

example, while 93% of biologists report having an ORCID, only 24% of English and literature professors indicated the same. A key reason for this distinction is that many journals in the natural sciences require an ORCID upon submission or publication. Overall, ORCID is far more representative for researchers in STEM than other fields.

Third, we conduct our own analysis to benchmark the ORCID database with administrative data on Florida public university employees. To do this, we obtained payroll information for all employees in the Florida state university system in 2023. We then restrict the sample to assistant, associate, or full professors. Next, we merge this dataset with the ORCID sample of Florida faculty by university and employee names.[13]

Table A5 reports the overlap of the merge. We find that ORCID contains 15% of faculty in Florida. However, about 30% of observations in the ORCID data did not merge with anyone in the admin data. Manually searching a random sample of 50 of these individuals, we find that 75% of them are in fact working at a Florida public university, but their names in the two datasets did not match exactly due to initials, hyphens, or abbreviations. Nevertheless, the entire ORCID sample only contains 2,739 faculty in Florida whereas the administrative data has 12,731, so at most the data captures 21% of all tenure-track faculty.

We find that only a small share of the observations in the ORCID data failed to match the admin data because they were out of date. Of the 50 observations we manually inspected, only 6 left Florida without updating their ORCID profile and 2 had passed away. Scaling up to the full sample, we estimate about 5% of observations (i.e. $\frac{8}{50} \cdot \frac{816}{2{,}739}$) may be out of date. As a result, although the ORCID data is not representative of all Florida faculty, it is fairly accurate for the faculty that it does track.

To understand how the ORCID sample differs from the full population of Florida researchers, Table A6 reports the characteristics of individuals that do and do not have ORCID accounts. We find that professors with ORCIDs tend to have higher salaries and are more likely to be tenured. Overall, the share of matches and the positive selection into the ORCID

[13] 99.7% of payroll records are unique when defining a person by their full name and university.

database matches closely with the the analysis by Flynn et al. (2024) discussed above. Together, the descriptive evidence suggests that the results of our paper should be interpreted as capturing the behavior of active researchers, particularly in STEM.

Table A4: Descriptive Statistics

	Treatment		Control		T − C
Baseline (2018-2021)	Mean	St. Dev.	Mean	St. Dev.	Difference
Not at State University	0.0392	0.1410	0.0432	0.1496	−0.0040
Number of Pub	14.9870	19.1300	12.5673	16.8477	2.4197***
Number of Cite	399.2801	969.0978	407.3980	1656.1642	−8.1179
White	0.5513	0.4975	0.5710	0.4949	−0.0198**
Men	0.5085	0.5000	0.5033	0.5000	0.0052
Women	0.2892	0.4535	0.3057	0.4607	−0.0165*
STEM	0.8216	0.3829	0.8015	0.3989	0.0201**
First Year	2005.4779	10.5292	2005.5085	10.6096	−0.0306
Assistant Professor	0.2829	0.4505	0.2994	0.4580	−0.0164*
Number of obs	2877		56754		

Note: This table summarizes baseline characteristics for tenured and tenure-track faculty during the pre-treatment period (2018–2021). The treatment group contains researchers employed at a Florida state university in 2021, and the control group comprises of researchers at public universities in the rest of the US, excluding Florida. Row (1) reports the share of faculty not working at the state university system in which the faculty were employed in 2021. Rows (2) and (3) show the number of publications and citations, respectively. Rows (4)–(7) present the percentage of faculty who are white, men, women, and STEM majors. Row (8) shows the average year in which individuals began their first job. Row (9) reports the percentage of assistant professors. Column (5) shows the difference between the treatment and control groups. Statistical significance: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Table A5: Match Rate Between ORCID and Florida Public University Payroll Data

	Not in FL	FL	Total
Not in ORCID	0	10,808	
ORCID	816	1,923	2,739
Total		12,731	

Note: This table reports the match rate between the Florida faculty in the ORCID data and administrative payroll records. Observations are restricted to the year 2023 and merged using the name of the university and worker.

Table A6: Ranking of ORCID Users in Florida Public Universities

	Merged		Not Merge		Difference
Baseline (2018-2021)	Mean	St. Dev.	Mean	St. Dev.	Difference
Annual Compensation	102362	64456	97894	77442	4467.9058**
Assistant Professor	0.1690	0.3749	0.3782	0.4850	−0.2092***
Associate Professor	0.3708	0.4831	0.2970	0.4570	0.0738***
Full Professor	0.4602	0.4985	0.3248	0.4683	0.1355***
Number of obs	1923		10808		

Note: This table reports the characteristics of tenure-track employees in the Florida state university payroll data, separately by whether or not they have an ORCID.