Equal but Inequitable: Who Benefits from Gender-Neutral Tenure Clock Stopping Policies?

Heather Antecol[†]
Kelly Bedard[§]
Jenna Stearns[‡]

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Abstract

Many skilled professional occupations are characterized by an early period of intensive skill accumulation and career establishment. Examples include law firm associates, surgical residents, and untenured faculty at research-intensive universities. High female exit rates are sometimes blamed on the inability of new mothers to survive the sustained negative productivity shock associated with childbearing and early childrearing in these environments. Gender-neutral family policies have been adopted in some professions in an attempt to "level the playing field." The gender-neutral tenure clock stopping policies adopted by the majority of research-intensive universities in the United States in recent decades are an excellent example. But to date, there is no empirical evidence showing that these policies help women. Using a unique data set on the universe of assistant professor hires at top-50 economics departments from 1980-2005, we show that the adoption of gender-neutral tenure clock stopping policies substantially reduced female tenure rates while substantially increasing male tenure rates. However, these policies do not reduce the probability that either men or women eventually earn tenure in the profession.

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[†]Claremont McKenna College
[‡]University of California, Davis
[§]University of California, Santa Barbara. Corresponding author. Email: kelly.bedard@ucsb.edu

1 Introduction

Women are underrepresented in many high-skilled professions at labor market entry, and leave these professions at higher rates than men as they age. Figure 1 documents female representation among physicians, lawyers, business professionals, and postsecondary teachers with advanced degrees. Women are underrepresented in these occupations at entry, more underrepresented as they age, and the decline with age is particularly pronounced among top-earners. The widening gender gap in the share of top-earners over the period when many professionals have children can be interpreted as a "family gap," and suggests that even professional women have trouble maintaining a successful career while raising a family.

An important feature of many high skill occupations is that human capital accumulation and promotion tracks are very steep during the first decade of one's career. Lawyers, academics, and executives often work in "up-or-out" environments, where individuals who miss a set window of opportunity for advancement are never able to do so (Rosen, 1990; Demougin and Siow, 1994; O'Flaherty and Siow, 1995). Having children may therefore reduce the probability that women are promoted because early productivity falls. Short family leave policies do not mitigate this issue because they do not adequately account for the prolonged productivity loss associated with starting a family.[1] This problem is especially acute at research-intensive universities, where tenure decisions are made at a fixed point in time. For this reason, many universities have adopted gender-neutral tenure clock stopping policies for family-related reasons (American Association of University Professors, 2001).

We study the tenure clock stopping policies adopted by many universities over recent decades. These policies are unusual in that assistant professors are not required to take time off. Instead, they are allowed to stop their tenure clock for one year after childbirth or adoption. In theory, no research is expected during this time. This type of policy better accounts for the extended period of reduced productivity associated with having a child. However, gender-neutral clock stopping policies will not level the playing field in terms of tenure outcomes if men are able to use the extra time more productively or strategically than women. In this case, these policies could actually increase the gender gaps in the profession. Yet to date, there is little empirical evidence about the effects of tenure clock stopping policies on tenure outcomes.

[1] There is also a high wage penalty associated with taking time off in high skill occupations (Goldin and Katz, 2011). A particular concern with female-specific policies is the belief that managers and colleagues will view women who use them as less committed to the job or less productive. Some have argued that gender-neutral policies may benefit women through reducing social stigma against use (Rehel and Baxter, 2015; Lazear and Rosen, 1990; Dahl et al., 2014).

We have compiled a unique dataset on the professional and publication outcomes of all assistant professors hired at the top-50 economics departments from 1980-2005 to study the impact of these policies on tenure rates. We find that men are 17 percentage points more likely to get tenure in their first job once there is an established gender-neutral clock stopping policy in place, while women are 19 percentage points less likely. These policies substantially increase the gender gap in tenure rates. The primary mechanism driving these effects is an increase in the number of top-5 journal publications by men with no such increase by women. This suggests that gender-neutral policies raise the tenure bar, and that as a result fewer women are granted tenure in their first job. However, this does not mean that more women leave academia. Among those who start their career at a top-50 department, we find no evidence that gender-neutral clock stopping policies reduce the share of women who ultimately get tenure in the profession. We also find no consistent evidence that women are either hurt or helped by clock stopping policies that only apply to women.

2 Tenure Clock Stopping Policies

Family-friendly policies are designed to allow new parents to better balance family and career, but little is known about the causal effects of access to these policies for high-skill American professionals.[2] Yet there are strong correlations between job flexibility and the gender wage gap, which suggests that women value amenities such as the ability to take leave or have flexible hours (Goldin, 2014). At the same time, Goldin and Katz (2012) show that as pharmacy became a more family-friendly occupation, the share of female workers rose and the gender wage gap disappeared. American universities have also become more family-friendly. Many have recently adopted family-friendly policies including short term family leave, allowing part-time work, and allowing assistant professors to stop their tenure clocks. However, there is little empirical evidence showing how these policies affect productivity and employment outcomes.

Assistant professors are evaluated for tenure near the end of a fixed probationary period of about seven years, giving them time to produce a portfolio of work that signals their true productivity.[3] A fixed

[2]Family leave can reduce the "family gap" in wages by improving job continuity (Waldfogel, 1998; Lundberg and Rose, 2000) and increasing female employment rates (Ruhm, 1998; Misra et al., 2011; Stearns, 2017). Paternity leave may increase childcare time among fathers even several years later (Schober, 2014). Other studies do not find any behavioral effects within the household (Ekberg et al., 2013). These policies may also have unintended consequences. Blau and Kahn (2013) find that these policies lead to higher rates of part-time work and employment in lower-level positions. The effects of U.S paid family leave benefits are concentrated among less advantaged groups (Rossin-Slater et al., 2013).

[3]The American Association of University Professors (2014) guidelines state that the probationary period should not exceed seven years. This means that assistant professors are usually evaluated for tenure during year six.

probationary period disadvantages people who experience large, temporary negative productivity shocks, such as having children. In part for this reason, women are less likely than men to have children before tenure, and the gender gap in tenure rates is larger for those with children (Mason and Goulden, 2002).

To better account for these productivity shocks when making tenure decisions, and to reduce the work-family tradeoff, tenure clock stopping policies have become common at universities over the past 30 years. These policies allow eligible assistant professors to stop their tenure clock for one year. Importantly, such policies are independent of leave-taking, meaning that assistant professors do not face a tradeoff between forgoing income while on unpaid leave and gaining the extra time on their tenure clock.[4] Tenure clock stopping policies typically cover having children in addition to serious illness or personal issues and caring for sick or elderly relatives. While clock stopping for non-birth related reasons requires dean approval, time exclusions for new parents are automatically approved at many universities.[5] If the clock is stopped, departments and outside letter-writers are supposed to fully discount the additional time spent as an assistant professor. However, it is not clear how these individuals are actually evaluated.[6]

These clock stopping policies can be classified into two main types: policies that only apply to mothers, and policies that are gender-neutral. Gender-neutral policies extend equal benefits to new mothers and fathers, whereas female-only policies are only available to women.[7] Both types of policies typically stop the tenure clock for one year for each new child, up to a maximum of two. Table 1 reports gender-neutral and female-only policy adoption dates for the universities in our sample. Early policies were more likely to be female-only as women shoulder more of the burden of bearing and caring for children, and therefore face a higher cost of having children early in their careers. However, gender-neutral tenure clock stopping policies are now more common, and many universities that originally adopted a female-only policy have since converted to a gender-neutral version.

[4]Clock stopping policies are also called tenure clock extension or rollback policies. Universities that require leave-taking to stop the clock are not considered to have a policy in this analysis. Some universities independently provide course reductions to new parents, but because it is often at the discretion of the department chair (e.g., Mason et al. (2005)) it is not considered here.

[5]However, parents can choose to go up for tenure at the original time (or earlier), or to opt out of the policy.

[6]Thornton (2008) reports that 37 percent of economics tenure case reviewers do not know the applicable rule for clock stopping adjustment. Manchester et al. (2013) find that reviewers view clock stopping as a negative signal of academic commitment. Finkel et al. (1994) find a large share of female faculty believe that using family friendly policies will hurt their career.

[7]What we call female-only policies are sometimes instead called primary caregiver policies, and cover parents of either gender who provide more than 51 percent of caregiving activities. Gender-neutral policies sometimes require parents to have "significant" childcare responsibilities, but can be used simultaneously by both parents. While in theory primary caregiver policies could be used by men, reports indicate that male take-up is rare. Female take-up is also low, and one of the common reasons women cite for not stopping their clock is that they thought it would have a negative impact on their tenure case (Mason et al., 2005).

3 Possible Effects of Tenure Clock Stopping Policies

Tenure clock stopping policies have important implications for assistant professors, given the high fertility rates of young economists. About 74 percent of assistant professors in our sample had a child within 10 years of earning their PhD, and 47 percent of men and 44 percent of women had a child within five years–before any standard tenure appraisal date. These policies may affect tenure in several ways. First, even if fertility and research behaviors do not change, parents benefit from an additional year of productivity before their tenure review. Given long publication lags, the extra year may also simply allow more time for papers to get published. If tenure decisions are made using an absolute standard and the additional time on the tenure clock is fully discounted (e.g., appraisers continue to divide by six when thinking about average productivity instead of seven), then these policies will not negatively affect anyone. But in practice, it is unclear how much tenure evaluators discount "stopped" time (Thornton, 2008). If reviewers do not fully discount stopped time, the effect of gender-neutral policies can be either negative or positive depending on the magnitudes of the discounting and productivity effects. Regardless of how stopped time is discounted, these policies will benefit fathers more than mothers if the productivity loss associated with having a child is higher for women.[8] In this case, women can even end up worse off if tenure evaluations are made using relative rather than absolute standards and the extra time helps fathers enough to raise the tenure bar. The use of relative standards similarly implies that gender-neutral policies can change the distribution of outcomes for non-parents compared to parents via changes in the tenure bar.

Second, even assuming fertility does not change, extra time on the tenure clock may directly affect observed productivity through publication submission decisions. Tenure in top-50 economics departments is heavily dependent on publications in highly ranked economics journals, but these journals have very low acceptance rates and lengthy review processes. As the time to the tenure decision increases, there is less risk associated with submitting papers to top journals because there is more time to try again (at potentially lower ranked journals with higher acceptance rates) if unsuccessful. The potential to stop the clock may therefore make assistant professors more likely to submit to top journals early in their career. This leads to more highly ranked publications if this strategy pays off at least some of the time. It is worth emphasizing that this strategy is disproportionately attractive to individuals with lower expected

[8] Rhoads and Rhoads (2012) show male assistant professors spend much less time in childcare than female assistant professors.

productivity losses surrounding birth, because they anticipate having relatively more time to work on papers before submission or to complete difficult revisions. Gender-neutral clock stopping policies may then again benefit men more than women if new mothers use the extra time less productively or less strategically than new fathers. If either the number or quality of papers published increases, then tenure clock stopping policies may in turn also increase tenure standards within departments.

Third, it is important to recognize that tenure clock stopping policies may affect tenure and publication outcomes even for individuals who ultimately do not have a child prior to tenure. For individuals who plan to have children eventually, the knowledge that they could try to do so before tenure in order to extend their clock if needed may be enough in and of itself to change publication strategies early on in their career.

Fourth, tenure clock stopping policies may also change fertility decisions. Both men and women may be more likely to have a child pre-tenure if they think an extra year on the clock will at least partially compensate for the time costs associated with having a child. The effect might be larger for women if their opportunity cost of pre-tenure childbearing is higher. Or, the effect might be larger for men if it is easier for men to adjust the timing of fertility because their costs are low and their expected benefits are large.

Finally, to the extent that tenure decisions are based on an absolute standard, female-only and gender-neutral policies should have similar effects for women. If tenure decisions are instead based on a relative standard, female-only policies may be relatively more advantageous for women. This is because the tenure bar is unlikely to rise as a result of female-only policies, as women constitute a small share of assistant professors and their costs of childbearing are high. But again, the effects depend on the extent to which stopped time is discounted by tenure appraisers, which may vary by policy type.

4 Data

We compiled two unique data sets. The first is a complete list of tenure clock stopping policy adoption dates for 49 of the top-50 economics departments, shown in Table 1.[9] The second dataset contains academic employment histories and publication records for all faculty members hired as an assistant professor

[9]These are the top 50 economics departments with graduate programs as ranked by the 2010 U.S. News and World Report. California Institute of Technology is excluded from our sample because they do not have a stand-alone economics department; rather they offer a PhD in Social Sciences. We were unable to obtain complete faculty information from Brown and the University of Pittsburgh. There was a three-way tie for the 50th ranked department, so our final sample includes 49 universities. The data were obtained directly from each institution, so the exact source of the policy details and adoption dates varies. Records were often obtained from archived copies of university bylaws or statutes, human resource departments, or faculty affairs documents.

between 1980 and 2005 at any of the top-50 economics departments in our sample. We have complete data on key outcomes for all individuals–there is no sample selection or attrition.

Assistant professors were identified from archived course catalogs obtained from each university. Information about every person's academic job history and publication record was taken from their most recent curriculum vitae (CV), or found via internet search.[10] We also collected information on the person's gender, PhD, and the year and institution at which they first received tenure. Our main sample includes 1392 individuals who started their first job as an assistant professor at a top-50 economics department within two years of receiving their PhD, and who published at least two journal articles within eight years of their PhD. This publication restriction reduces noise in the data, as those with zero or one publication would not be serious candidates for tenure in top departments–they typically leave academia quickly, and essentially never get tenure at their first job. We relax these restrictions in Section 6.

To match each assistant professor to the appropriate tenure clock stopping policy, we construct indicators for whether a female-only or gender-neutral policy was in place in the first year of the individual's first assistant professor appointment. We address lags in program take-up in Section 5. The university at which a person is tied to a clock stopping policy is hereafter referred to as the *policy university*.

The main outcome of interest is whether or not the assistant professor was granted tenure at the policy university. Additional outcomes include tenure in the profession, research productivity, time to tenure, and mobility. Research productivity is measured by the number of non-top-5 peer-reviewed journal articles published within three, five, seven, and nine years of receiving a PhD, as well as the number of articles published in top-5 economics journals within these windows. Top-5 publications include regular and short peer-reviewed articles in the *American Economic Review*, *Econometrica*, *Journal of Political Economy*, *Quarterly Journal of Economics*, and the *Review of Economic Studies*.[11]

To examine fertility effects, we surveyed everyone in our sample for whom we could find a valid email

[10] We located CVs that report academic job histories and publications for more than 93 percent of the assistant professors in our sample. For the remainder, we found the relevant job history information via professional or personal websites, university records, and other publications. We found publication information using the Web of Science. We were able to find information on our main outcomes of interest for every person in the sample. We also used the Web of Science to fill in publication data in recent years when CVs were out of date. We did not track specific job changes once the individual left academia. Non-academic jobs include working for government organizations, private sector companies, non-governmental organizations, and non-tenure track positions. However, we do track re-entry into tenured or tenure-track academic jobs.

[11] We exclude publications in the *American Economic Review Papers and Proceedings* issue, as well as comments, replies, and book reviews in all issues of these five journals. *AER Papers and Proceedings* articles are counted in the regular publications counts. Replies and comments are not counted as publications. We also collected coauthoring information for top-5 publications.

address and asked whether or not they have children and years of birth. While the response rate was relatively high (66 percent), there are large differences in response rates on observables and by cohort. These issues are discussed in detail in Section 6. We construct indicators for having any children during the first five years after PhD completion and ever having children. We also construct continuous measures for the number of children born (or adopted) during the first five years and the total number of children.

A few data limitations warrant comment. First, we do not observe actual tenure decisions, only outcomes. Some people who would have been granted tenure leave at or before the tenure decision. We observe only actual promotions to tenured positions, which usually occur when individuals are promoted from assistant to associate professor.[12] We thus identify effects from tenure promotions rather than tenure decisions. Second, we do not observe tenure clock extensions. However, as discussed in Section 3, these policies affect all assistant professors who expect to have children, regardless of whether or not they stop their clock. Finally, there are relatively few women hired at each university; the primary estimation sample includes 1,150 men and 242 women hired between 1980 and 2005.

5 Estimation and Identification

Our primary objective is to estimate the effect of tenure clock stopping policies on the probability that assistant professors at top-50 economics departments are granted tenure. We specifically want to allow for the possibility that the effect of clock stopping policies may be different for men and women. Our baseline specification is therefore as follows:

$$\begin{aligned} Y_{ugit} = {} & \beta_1 GN_{ut} + \beta_2 GN_{ut} \times F_{ugit} + \beta_3 GN_{ut} \times E_{ut} + \beta_4 GN_{ut} \times E_{ut} \times F_{ugit} \\ & + \beta_5 FO_{ut} + \beta_6 FO_{ut} \times F_{ugit} + \beta_7 FO_{ut} \times E_{ut} + \beta_8 FO_{ut} \times E_{ut} \times F_{ugit} \\ & + \zeta X_{ugit} + \eta Z_{ut} + \rho_{gt} + \psi_{ug} + \varepsilon_{ugit} \end{aligned} \tag{1}$$

where Y is the outcome of interest (e.g. tenure at the policy university), and u, g, i, and t indicate policy university, gender, individual, and the year the policy job started, respectively. The variable F is an indicator for female, and GN is an indicator equal to 1 if individual i starts their career at an institution

[12] Some departments promote to associate without tenure. We distinguish between associates with and without tenure.

with a gender-neutral tenure clock stopping policy in place and zero otherwise. The indicator FO is defined equivalently if the individual starts their career at a university with a female-only policy in place. The variable E is an indicator for jobs starting in years zero through three after policy adoption.[13] The calendar year in which a policy is adopted is defined as year zero. This allows the effects in the early years of the policies to differ from the effects in later years. This is important for at least two reasons. First, program uptake generally takes time. Second, if some of the effects come through changing tenure standards, the effects should not be immediate because standards take time to evolve, especially if program uptake evolves as well. The vector X includes indicators for being female (F), PhD program rank, and an indicator for having done a post-doc.[14] The vector Z includes time-varying university level controls collected from the Integrated Post-Secondary Education Data System (IPEDS) including the number of undergraduate students, number of graduate students, faculty size, average salary of full professors, average salary of assistant professors, annual revenue, the fraction of the faculty who are female, and the fraction of the faculty who are full professors.[15] Finally, ρ is a vector of gender-specific year fixed effects for the year the policy job started (cohort effects), ψ is a vector of gender-specific university fixed effects, and ε is an error term. The standard errors are clustered at the policy university level.

The coefficient β_1 represents the effect of gender-neutral tenure clock stopping policies for men in universities with policies in place for at least four years, and β_2 is the additional effect for women. The coefficients β_3 and β_4 give the differential effects for men and women, respectively, who start their job within three years of the institution's policy adoption compared to their counterparts who start after the policy has been in place for at least four years. Finally, β_5 through β_8 represent analogous effects of female-only policies. A plausible causal interpretation of these coefficients rests heavily on two related issues. First, we must satisfy the common trends assumption by adequately controlling for underlying gender-specific trends in the outcome. Figure 2 shows how the gender composition of assistant professors has changed during our sample, as well as the differential trends in tenure and publication rates. These differences highlight why our main specification flexibly controls for differences between men and women over time. Gender specific university fixed effects similarly allow for the possibility that male and female

[13] The results are not sensitive to small changes in the years assigned to E.

[14] We create 5 tiers of PhD programs based on job placements in the top-50 departments within our sample.

[15] These controls reduce concerns that policy adoption is correlated with other university-wide changes that affect hiring or retention. The results are robust to their omission and Section 7 shows that they are uncorrelated with policy adoption.

experiences and outcomes differ within departments. That being said, we discuss a variety of alternative trend options in Section 6, and show that our results are generally robust to such strategies. Second, conditional on the available control variables, the timing of policy adoption must be as good as random. As clock stopping policies are adopted at the university level, it is reasonable to assume that they are not driven by hiring and tenure trends in a single department. Nevertheless, we explore this issue in Section 7.

6 Results

Table 2 presents our main results for equation 1. For ease of interpretation, we present total effects for men and women hired in years zero through three after policy adoption ($\beta_1 + \beta_3$ for men and $\beta_1 + \beta_2 + \beta_3 + \beta_4$ for women) in the top panel and total effects for those hired in years four or later (β_1 for men and $\beta_1 + \beta_2$ for women) in the bottom panel. The bottom panel shows that men whose first job was at a top-50 university with a gender-neutral tenure clock stopping policy in place for more than three years have a 17.6 percentage point tenure rate advantage over men at the same university prior to the implementation of any policy (β_1). In contrast, the adoption of a gender-neutral policy negatively affects women in our sample. Column 2 shows that the gender gap in tenure attainment at the typical policy university increased by 37 percentage points after implementation of the policy ($-\beta_2$). Not only are women less likely to get tenure compared to men, but they are also 19.4 percentage points less likely to get tenure relative to women at the same university with no clock stopping policy ($\beta_1 + \beta_2$ in column 1). Both the male-female difference-in-difference and the absolute male and female differences are statistically significant at conventional levels.

Unlike gender-neutral policies, female-only clock stopping policies appear to have small positive effects for women, but the estimates are very imprecise. Further, column 3 shows that the gender-neutral effect relative to the female-only effect is positive for men and negative for women ($(\beta_1 - \beta_5)$ and $(\beta_1 + \beta_3) - (\beta_5 + \beta_6)$, respectively). But given the small number of schools that only adopt a female-only policy and the fairly short time span between the adoption of female-only and gender-neutral policies at universities that switch, the point estimates should be interpreted with caution. For this reason, most of the discussion focuses on gender-neutral policies, but the female-only effects are reported in all tables.

The top panel of Table 2 shows that gender-neutral clock stopping policies do not have significant effects on tenure rates for those hired in years zero through three after implementation. While the point

estimates are again positive for men and negative for women, they are much smaller and statistically insignificant. This suggests that take-up may be low in the early years of the policy. Or, if the gender-neutral policies cause tenure standards to rise, it might take time for this process to evolve.

While the gender-neutral policy effects are large, it is important to remember that the vast majority of assistant professors are affected by these policies, not just those induced to have a child pre-tenure. As shown later in this section, 74 percent of our sample have children within 10 years of completing their PhD. This means that many individuals may be directly impacted even if their fertility does not change. It is also important to emphasize that these policies affect individuals who do not have a child before tenure; just knowing that they could do so to get extra time on the clock might be enough to change their productivity or publication strategies. Also note that tenure rates are falling by approximately 10 percentage points for men and are rising by about 10 percentage points for women at institutions that have not yet adopted a clock stopping policy over the sample period. As we find that tenure rates for women fall by about 17 percentage points after a gender-neutral policy is adopted, this implies that much of the effect comes from a lack of increase in female tenure rates in these departments, rather than a large absolute decline in tenure rates. The increase in tenure rates for men relative to no policy is similarly partially driven by the absence of this declining trend once a gender-neutral policy is implemented.

In order to interpret the above estimates as causal impacts of clock stopping policies, there cannot be differential trends in tenure rates between universities that do and do not adopt them. To test for pre-trends, Table 3 shows the results from a modified event study specification, in which we additionally include three sets of indicators for periods prior to the adoption of any clock stopping policy.[16] For universities that switch from a female-only to gender-neutral policy, the pre-periods are defined as years until the first policy adoption, as either type of policy may theoretically affect future tenure outcomes. We find no evidence of significant pre-trends in the years leading up to first policy implementation, reducing concerns about the validity of the research design. Given that both Tables 2 and 3 show no effects of either type of policy in the pre-periods or the early years of the policy, we continue to estimate equation 1 but only report the effects for individuals hired more than three years after policy implementation in subsequent tables.

Table 4 shows that the main results are robust to alternate specifications and samples. To facilitate

[16]Given the female sample size, we cannot estimate separate effects for each cohort. Instead, we create bins of 1-6, 7-12, and 13-18 years before policy implementation. Reducing the number of years in each window produces noisier estimates for women given the small sample size in each cell, but results in no indication of robust systematic pre-trends in tenure rates.

comparisons, column 1 reports the estimates from Table 2. Column 2 removes the time-varying university characteristics, post-doc indicator, and PhD rank. Column 3 expands the sample to include individuals with less than two publications or who started their first job more than two years after earning their PhD. Column 4 adds department tier-by-gender cohort effects.[17] Column 5 removes the university and cohort gender interactions. Column 6 adds covariates that could explain the effects on tenure (number of non-top-5 and top-5 publications within seven years of receiving a PhD, average number of coauthors on top-5 publications, and children born within five years of PhD completion).[18] While the estimates are generally consistent across specifications, it is important to highlight the smaller female estimate in column 5. As men constitute more than 80 percent of the sample, in the absence of gender-specific time and university fixed effects, the trends and intercepts are essentially male. The lower female coefficient highlights the importance of these gender-specific fixed effects. It is also important to note that the somewhat smaller and noisier point estimates in column 6 are consistent with upcoming results showing that some of these variables are important pathways through which gender-neutral policies ultimately affect tenure rates.

While the adoption of gender-neutral tenure clock stopping policies help men and hurt women, these policies do not cause women to leave the profession altogether. Column 1 of Table 5 clearly shows that these policies have little impact on the probability of earning tenure in the profession (at any college or university) for either men or women.[19] The remaining columns further explore the impact of clock stopping policies on measures of time to tenure and mobility.

Although it is tempting to think that the availability of clock stopping will lengthen the average time spent as an assistant professor, the landscape is much more complicated. The introduction of clock stopping might change the probability that men and women leave prior to the tenure decision. It might also lengthen the time spent at the policy university, but then shorten the length of a new clock if they move to a new department after being denied tenure (or in anticipation of a tenure denial). Column 2 of Table 5 shows that there is no significant effect of these policies on the average number of years spent as an assistant professor at the policy university, but this masks substantial heterogeneity. Columns 3 and 4 show that men and women are both about 10 percentage points more likely to leave before the tenure decision and

[17]The top tier includes Harvard, MIT, Stanford, University of Chicago, Princeton, University of California Berkeley, Yale, Northwestern, University of California San Diego, and University of Rochester. The second tier includes all other universities.

[18]We also include a missing indicator for individuals who did not respond to our fertility survey.

[19]The sample has 19 fewer people because they are still untenured assistant professors in their second or third job as of 2017. Although they did not get tenure at the policy university, we do not yet know if they will eventually get tenure somewhere else.

10 percentage points more likely to stay longer than the length of the standard tenure clock, though only the male effect of staying longer is statistically significant.[20] Next, column 5 shows that gender-neutral clock stopping policies decrease average time to tenure in the profession by 0.9 years for men. This is not surprising since they are more likely to earn tenure at the policy university. In contrast, women take about 1.8 years longer (imprecisely measured) to get tenure. Column 6 shows that gender-neutral policies increase the gender gap in the number of jobs held before tenure. Columns 7 and 8 show that conditional on not getting tenure at the policy university, men are no more likely to move to higher or lower ranked departments, while women are 25 percentage points less likely to move down.[21] In other words, some of the women who are denied tenure because of gender-neutral policies move to similarly ranked departments. This is consistent with rising tenure standards pushing out some marginal women.

As tenure at top-50 departments is highly dependent on publications, publishing may be a key pathway through which gender-neutral clock stopping policies operate. Table 6 shows the effects of clock stopping policies on the cumulative number of top-5 and non-top-5 publications by the third, fifth, seventh, and ninth years since PhD completion. We report results at several points in time because there is no obvious single year at which to evaluate publications. By year five, men exposed to a gender-neutral policy have 0.36 more top-5 publications than men at the same university without a policy. This grows to 0.56 by year seven.[22] In contrast, there is no increase in the number of top-5 publications for women. Columns 5-8 show analogous estimates for non-top-5 publications. While the point estimates suggest that women also publish about 1 fewer non-top-5 papers after a gender-neutral policy is implemented, the estimates are imprecise. These results suggest that lower female tenure rates may emerge because male top-5 publishing rates rise, which in turn raise departmental tenure standards that more women then fail to meet.

It is also worth noting that the male publication results are consistent with the results on time to tenure and tenure rates. As discussed in Section 3, gender-neutral clock stopping policies might induce some men to choose a riskier publication strategy–aim high. Those with early publication success may not ultimately need to stop their clock. For others, success might take longer and induce clock stopping. In still other

[20] We allow for differences in the length of the clock across departments by using the modal number of years as an assistant professor in the absence of a clock stopping policy to define the length of the tenure clock. Leaving late is defined as being an assistant professor at the policy university more than this number of years. Leaving early is defined as leaving before year five.

[21] An important caveat is that department rankings are inherently noisy and may change over time. We define moves as up, down, or lateral based on tiers consisting of similarly ranked departments. Of movers, about 86 percent of our sample move down, 6 percent move up, and 8 percent stay in the same tier.

[22] The effect levels out at about 0.66 and remains constant in subsequent years.

cases, some men might leave earlier when it becomes clear that the riskier strategy will not pay off.

Fertility is another potentially important pathway through which clock stopping policies may affect tenure outcomes. As previously discussed, it is important to realize that a large fraction of the sample is potentially impacted by gender-neutral clock stopping policies when thinking about the magnitudes of the effects. In our sample, 86 (79) percent of male (female) economists eventually have children and 74 (72) percent do so within 10 years of PhD completion. Not only are a large fraction of people eligible to stop their clock without a change in fertility, but there is also considerable room for assistant professors to adjust the timing of their fertility and have a child pre-tenure.

Unfortunately, our fertility sample suffers from severe non-random reporting. The response rate is significantly higher for later cohorts, those who stay in academia, earn tenure at the policy school, and start their career in a top-ten department. For example, those who never earn tenure are 32 percentage points less likely to respond than those who earn tenure at the policy university.[23] Given the selection on observables, and the fact that it is unclear whether non-respondents are differentially likely to have children, we cannot estimate causal effects for fertility. However, Table 7 provides descriptive evidence that universities with clock stopping policies in place have higher pre-tenure fertility rates than those without. The share of men who have at least one child in the first five years after PhD completion is 11 percentage points higher when a gender-neutral policy is available, and they have 0.18 more children on average during this same period. Both of these differences in means are statistically significant. Women exposed to a gender-neutral policy are 12 percentage points more likely to have a child pre-tenure and have 0.23 more children during the first five years of their career, but only the latter difference is statistically significant. We detect no significant differences in pre-tenure fertility for women exposed to a female-only policy compared to no policy, but the magnitudes are quite similar to those of the gender-neutral policies. These results are consistent with the idea that some men and women change the timing of fertility when a clock stopping option exists. There are no significant differences in the number of children ever born, suggesting that these policies shift timing rather than increase fertility. To the extent that the cost of having a child is higher for women, these effects are consistent with the tenure and publication results.

Taken as a whole, the results in this section clearly show that gender-neutral clock stopping policies help men and hurt women. On the other hand, we find no evidence that female-only policies have signifi-

[23]These results are available upon request.

cant negative effects on female tenure rates. And while imprecisely measured, the effects of female-only and gender-neutral policies on other outcomes such as publications are similar for women. This suggests that the negative effects of gender-neutral policies on women are driven by rising tenure standards.

7 Threats to Identification

Interpreting the above results as causal requires the assumption that policy adoption was exogenous and that clock stopping policies did not change hiring decisions. Although these assumptions are not directly testable, Tables 8 and 9 provide evidence that they are reasonable. Column 1 of Table 8 shows there is no change in the gender mix of assistant professors after the adoption of gender-neutral or female-only policies. The remaining columns similarly show that these policies are not correlated with PhD rank, having done a post-doc, or publishing while in graduate school.

Table 9 comes at endogeneity from the other direction by asking whether it is possible to predict policy adoption using either levels or changes in institutional characteristics. Each cell in Table 9 is from a separate regression. Each cell in column 1 (2) reports the point estimate from a cross-sectional OLS regression with an indicator for adopting a gender-neutral (female-only) tenure clock stopping policy by 2005 on a single institutional characteristic (the average level from 1980-1989).[24] For example, the first cell in column 1 reports that a 1000 student increase in the undergraduate population is associated with a statistically insignificant 0.2 percentage point increase in the probability that an institution ever adopts a gender-neutral tenure clock stopping policy. The remaining cells in columns 1 and 2 similarly show that the remaining time-varying university controls do not predict policy adoption. Columns 3 and 4 examine whether changes (trends) in university characteristics predict future policy adoption. More specifically, we show that changes in university characteristics from the early 1980s to the late 1980s do not predict gender-neutral or female-only policy adoption.[25] Taken as a whole, Table 9 provides no evidence that levels or trends in institutional characteristics predict tenure clock stopping policy adoption.

[24]This pre-dates gender-neutral policy adoption for all but one university (Northwestern), which is excluded from the analysis. Princeton and Stanford are excluded from the female-only analysis, as they adopt policies before the beginning of our sample period. The University of California campuses are collapsed into a single average because this was a system choice.

[25]To mitigate non-reporting issues (data for some institutional measures are missing in some years), the early 1980s is defined as the average from 1980-1984 and the late 1980s is defined as the the average from 1985-1989.

8 Discussion

By combining two original datasets – one on assistant professors hired at the top-50 economics departments from 1980-2005 and the other on tenure clock stopping policies at these universities – we study the impact of gender-neutral tenure clock stopping policies on tenure rates for men and women. While the objective of these policies might be to increase family-friendliness and level the playing field for women, our results show that, at least for economics, they accomplished the opposite. Once established, gender-neutral clock stopping policies decrease female tenure rates at the policy university by 19 percentage points while increasing male tenure rates by 17 percentage points. We further show that the primary mechanism driving the tenure results appears to be that men publish more in top-5 journals after the policies are implemented, but women do not. This suggests that these policies cause within-university tenure standards to rise. Because women do not similarly increase their productivity, fewer are granted tenure in their first job. However, we find no evidence that gender-neutral clock stopping policies reduce the fraction of women who eventually earn tenure in the profession. We also find no consistent evidence that women are either hurt or helped by female-only policies.

These results imply that gender-neutral tenure clock stopping policies do not adequately account for the true gender-specific productivity losses associated with having children. As a result, gender-neutral policies actually increase the gender gap in economics at research-intensive universities. Even though women are not more likely to leave the profession, these policies appear to increase job churning and the length of time it takes women to get tenure.

Economics professors are not the only high skill professionals that face rigid and important promotion decisions early in their careers. Other academics, lawyers, financial professionals, and some types of doctors are also likely to be promoted based on early measures of success. There is evidence of family gaps in each of these professions, especially among top-earners, which suggests a need for more family-friendly policies. In theory, gender-neutral policies that attempt to level the playing field by adjusting measures of productivity to account for early childrearing sound promising. However, at least in economics, such policies have unintended consequences that actually hurt women. It therefore seems likely that these types of policies may have unintended consequences in other high skill occupations as well.

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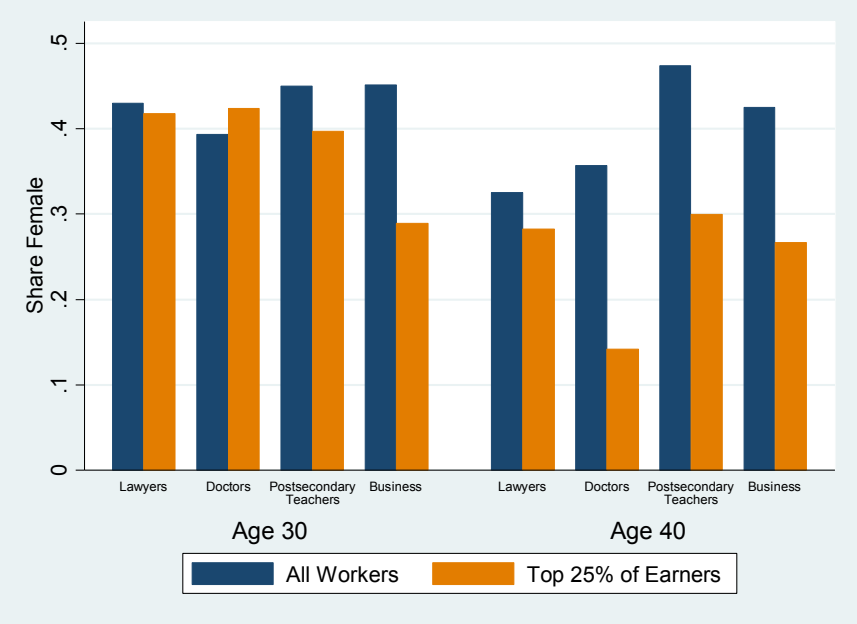
Figure 1: Share Female among Fulltime Workers with Advanced Degrees in Selected High Skill Occupations



Note: Figure shows individuals born in 1970 at age 30 and age 40. Data at age 30 come from the 2000 Census and data at age 40 come from the 2010 American Community Survey. Sample is conditional on having a Master's, professional, or doctoral degree. Sample is restricted to workers who report usually working 30 hours per week or more. Top earners are defined as those in the top quartile of the occupation-specific wage income distribution among workers with advanced degrees. Among the cohort born in 1970, women hold 54 percent of all Master's, professional, and doctoral degrees obtained by age 30.

Figure 2: Trends in Top-50 Economics Departments

Sample includes individuals whose first job was an assistant professor at a top-50 university within two years of receiving a PhD and who publish at least two papers within eight years of graduation. Figures show 7 year moving averages for smoothness. Publications are counted through the 7th year after receiving a PhD.

Table 1: Tenure Clock Stopping Policies at Top-50 Universities

	Female-Only	Gender-Neutral		Female-Only	Gender-Neutral
Arizona State	2003		University of CaliforniaBerkeley	1988	1997
Boston College		1993	University of CaliforniaDavis	1988	1997
Boston University			University of CaliforniaIrvine	1988	1997
Carnegie Mellon University	1992		University of CaliforniaLos Angeles	1988	1997
Columbia University	1995		University of CaliforniaSan Diego	1988	1997
Cornell University	2005		University of CaliforniaSanta Barbara	1988	1997
Duke University		2003	University of Chicago	1996	
Georgetown University		1999	University of Florida		2004
Harvard University		2001	University of IllinoisUrbana-Champaign		1999
Indiana UniversityBloomington			University of Iowa		1993
Johns Hopkins University		2000	University of MarylandCollege Park		1996
Massachusetts Institute of Technology		2001	University of Michigan-Ann Arbor		1990
Michigan State University			University of MinnesotaTwin Cities		1992
New York University	1999		University of North CarolinaChapel Hill		2004
North Carolina State University - Raleigh		2002	University of Pennsylvania		1997
Northwestern University		1981	University of Rochester		
Ohio State University		1996	University of Southern California		1993
Pennsylvania State University	1990		University of TexasAustin	1997	
Princeton University	1970	1991	University of Virginia	1987	2000
Purdue University		1991	University of Washington		
Rice University		1993	University of WisconsinMadison		1994
Rutgers University		1992	Vanderbilt University		2003
Stanford University	1971	2002	Washington University in St. Louis		
Texas A&M UniversityCollege Station		2003	Yale University		
University of Arizona		1990			

Source: Collected directly from universities from university bylaws, statutes, policy documents, faculty handbooks, Human Resource departments, or direct communication with staff. Table shows policies adopted by 2005. Policies adopted after 2005 or that only stop the tenure clock if parental leave is taken are not shown. The sample includes 49 of the top 50 economics departments with graduate programs as ranked by the 2010 U.S. News and World Report, as described in Section 4.

Table 2: The Effects of Clock Stopping Policies on the Probability of Tenure at the Policy University

	Total Effects (1)	Male-Female (2)	GNCS-FOCS (3)
Policy Effects Years 0-3			
Men FOCS	-0.008	-0.181	
	(0.067)	(0.140)	
Women FOCS	0.172		
	(0.140)		
Men GNCS	0.051	0.068	0.060
	(0.079)	(0.145)	(0.098)
Women GNCS	-0.017		-0.189
	(0.107)		(0.164)
Policy Effects Years 4+			
Men FOCS	0.002	-0.047	
	(0.075)	(0.128)	
Women FOCS	0.049		
	(0.101)		
Men GNCS	0.176**	0.370**	0.173**
	(0.083)	(0.146)	(0.085)
Women GNCS	-0.194*		-0.244**
	(0.106)		(0.104)
Sample size	1392		

The sample includes 49 universities. Standard errors are clustered at the policy university-level. The outcome is an indicator variable equal to one if the individual becomes a tenured associate professor at the policy university and zero otherwise. GNCS indicates a gender-neutral tenure clock stopping policy and FOCS indicates a female-only policy. The first column shows the total effect for each group, the second column shows the difference in the male and female coefficients for each policy type, and the third column shows the difference between the effect of the GNCS and FOCS policies for men and women. Additional controls: All models also include gender-specific indicators for the year the policy job started, gender-specific university indicators, a female indicator, PhD rank, an indicator for having done a post-doc, and time-varying university characteristics (number of undergraduates, number of graduate students, faculty size, average salary of full professors, average salary of assistant professors, annual revenue, fraction of faculty who are female, and fraction of faculty who are full professors). * (**) Statistically significant at the 10 (5) percent level or better.

Table 3: Clock Stopping Policies and Tenure at the Policy University: Allowing for Pre-Period Effects

	Total Effects Relative to the Period Prior to the First Policy (1)	Male-Female (2)	GNCS-FOCS (3)
Pre First Policy Year Effects			
Men 13-18 years before first policy	-0.081	0.155	
	(0.066)	(0.185)	
Women 13-18 years before first policy	0.045		
	(0.125)		
Men 7-12 years before first policy	0.017	0.274	
	(0.042)	(0.202)	
Women 7-12 years before first policy	0.023		
	(0.109)		
Men 1-6 years before first policy	–	0.281	
		(0.236)	
Women 1-6 years before first policy	–		
Policy Effects Years 0-3			
Men FOCS	0.015	-0.150	
	(0.068)	(0.137)	
Women FOCS	0.164		
	(0.142)		
Men GNCS	0.086	0.117	0.071
	(0.076)	(0.136)	(0.096)
Women GNCS	-0.031		-0.195
	(0.098)		(0.170)
Policy Effects Years 4+			
Men FOCS	0.034	0.001	
	(0.069)	(0.111)	
Women FOCS	0.033		
	(0.090)		
Men GNCS	0.231**	0.462**	0.197**
	(0.073)	(0.141)	(0.081)
Women GNCS	-0.231**		-0.264**
	(0.109)		(0.112)
Sample size	1392		

The sample includes 49 universities. Standard errors are clustered at the policy university-level. The outcome is an indicator variable equal to one if the individual becomes a tenured associate professor at the policy university and zero otherwise. GNCS indicates a gender-neutral tenure clock stopping policy and FOCS indicates a female-only policy. The first column shows the total effect for each group, the second column shows the difference in the male and female coefficients for each policy type, and the third column shows the difference between the effect of the GNCS and FOCS policies for men and women. All models also include the additional controls listed in the Table 2 notes. * (**) Statistically significant at the 10 (5) percent level or better.

Table 4: Clock Stopping Policies and Tenure at the Policy University: Alternative Samples and Specifications

	Baseline	Excludes Individual and University Controls	Removes Sample Restrictions	Adds Tier-Gender Specific Trends (Top 10)	Removes Gender Interactions	Additional Individual Controls
	(1)	(2)	(3)	(4)	(5)	(6)
Policy Effects Years 4+						
Men FOCS	0.002	-0.005	-0.024	-0.039	-0.016	-0.040
	(0.075)	(0.072)	(0.074)	(0.078)	(0.064)	(0.064)
Women FOCS	0.049	0.045	0.075	0.120	0.120	0.127*
	(0.101)	(0.098)	(0.095)	(0.117)	(0.104)	(0.075)
Men GNCS	0.176**	0.158**	0.140	0.158*	0.161**	0.128
	(0.083)	(0.075)	(0.084)	(0.086)	(0.067)	(0.082)
Women GNCS	-0.194*	-0.188*	-0.156	-0.141	-0.045	-0.161
	(0.106)	(0.104)	(0.095)	(0.138)	(0.084)	(0.103)
Male-Female Difference						
FOCS	-0.047	-0.051	-0.099	-0.159	-0.136	-0.168*
	(0.128)	(0.118)	(0.111)	(0.145)	(0.092)	(0.092)
GNCS	0.370**	0.346**	0.296**	0.300*	0.206**	0.289**
	(0.146)	(0.134)	(0.138)	(0.174)	(0.069)	(0.136)
Sample size	1392	1392	1591	1392	1392	1392

The sample includes 49 universities. Standard errors are clustered at the policy university-level. The outcome is an indicator variable equal to one if the individual becomes a tenured associate professor at the policy university and zero otherwise. GNCS indicates a gender-neutral tenure clock stopping policy and FOCS indicates a female-only policy. All models also include the additional controls listed in the Table 2 notes, except when otherwise specified. Policy effects for years 0-3 are included in all models. * (**) Statistically significant at the 10 (5) percent level or better.

Table 5: Clock Stopping Policies, Tenure Somewhere, Time to Tenure, and Job Churning

	Main Sample				Tenure Somewhere		No Tenure at Policy University	
	Tenure Somewhere	Pre-Tenure Years at Policy University	Leave Early	Leave Late	Years to Tenure	Number of Jobs to Associate	Move Down	Move Up
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Policy Effects Years 4+								
Men FOCS	0.026	-0.279	0.090	0.002	-0.308	-0.067	0.006	-0.016
	(0.059)	(0.342)	(0.080)	(0.028)	(0.411)	(0.120)	(0.075)	(0.041)
Women FOCS	0.063	-0.116	0.064	-0.011	1.104	0.270	-0.139	0.062
	(0.125)	(0.591)	(0.161)	(0.103)	(0.886)	(0.229)	(0.142)	(0.108)
Men GNCS	-0.005	-0.263	0.103	0.098**	-0.907**	-0.205	0.007	0.048
	(0.044)	(0.287)	(0.070)	(0.040)	(0.417)	(0.177)	(0.073)	(0.043)
Women GNCS	0.074	-0.222	0.095	0.097	1.805	0.518	-0.251**	0.136
	(0.202)	(0.927)	(0.201)	(0.138)	(1.120)	(0.248)	(0.114)	(0.092)
Male-Female Difference								
FOCS	-0.037	-0.163	0.026	0.012	-1.412	-0.337	0.145	-0.078
	(0.143)	(0.712)	(0.157)	(0.106)	(1.051)	(0.279)	(0.163)	(0.134)
GNCS	-0.078	-0.040	0.008	0.001	-2.713**	-0.722**	0.258*	-0.089
	(0.206)	(1.033)	(0.222)	(0.140)	(1.303)	-(0.722)	(0.142)	(0.102)
Sample size	1373	1392	1392	1351	1121	1140	983	983

The sample includes 49 universities. Standard errors are clustered at the policy university-level. GNCS indicates a gender-neutral tenure clock stopping policy and FOCS indicates a female-only policy. All models also include the additional controls listed in the Table 2 notes. Policy effects for years 0-3 are included in all models. * (**) Statistically significant at the 10 (5) percent level or better.

Table 6: Clock Stopping Policies and Publication Outcomes

	Top Publications				Non-Top Publications			
	By Year 3 (1)	By Year 5 (2)	By Year 7 (3)	By Year 9 (4)	By Year 3 (5)	By Year 5 (6)	By Year 7 (7)	By Year 9 (8)
Policy Effects Years 4+								
Men FOCS	0.089	0.278*	0.318	0.308	0.452	0.908*	0.694	0.699
	(0.071)	(0.159)	(0.218)	(0.266)	(0.284)	(0.470)	(0.697)	(0.884)
Women FOCS	-0.186	-0.297	-0.645	-0.481	0.018	-0.271	-0.875	-1.414
	(0.182)	(0.317)	(0.441)	(0.554)	(0.571)	(0.823)	(0.885)	(1.212)
Men GNCS	0.003	0.355*	0.561**	0.663**	0.075	0.464	0.057	-0.048
	(0.092)	(0.184)	(0.241)	(0.273)	(0.345)	(0.495)	(0.697)	(0.923)
Women GNCS	-0.265*	-0.069	-0.115	-0.158	-0.628	-0.955	-0.779	-1.192
	(0.148)	(0.256)	(0.403)	(0.480)	(0.467)	(0.682)	(1.054)	(1.329)
Male-Female Difference								
FOCS	0.275	0.576	0.963*	0.789	0.434	1.179	1.570	2.113
	(0.166)	(0.358)	(0.506)	(0.604)	(0.640)	(1.000)	(1.074)	(1.437)
GNCS	0.268	0.424	0.677	0.821	0.703	1.419*	0.836	1.144
	(0.166)	(0.260)	(0.427)	(0.537)	(0.531)	(0.829)	(1.162)	(1.420)

The sample includes 49 universities. Standard errors are clustered at the policy university-level. GNCS indicates a gender-neutral tenure clock stopping policy and FOCS indicates a female-only policy. All models also include the additional controls listed in the Table 2 notes. Policy effects for years 0-3 are included in all models. * (**) Statistically significant at the 10 (5) percent level or better.

Table 7: Clock Stopping Policies and Fertility

	Men		Women			
			Have Not Adopted FOCS		Have Not Adopted GNCS	
	No GNCS Mean (1)	GNCS Mean (2)	No GNCS Mean (3)	GNCS Mean (4)	No FOCS Mean (5)	FOCS Mean (6)
Any birth	0.454	0.563**	0.396	0.516	0.396	0.500
	(0.498)	(0.498)	(0.492)	(0.508)	(0.492)	(0.513)
Number of births	0.632	0.813**	0.451	0.677*	0.451	0.650
	(0.776)	(0.822)	(0.601)	(0.748)	(0.601)	(0.745)
Ever have children	0.859	0.848	0.736	0.871	0.736	0.750
	(0.348)	(0.360)	(0.443)	(0.341)	(0.443)	(0.444)
Total number of children	1.876	1.732	1.429	1.581	1.429	1.400
	(1.085)	(0.986)	(1.056)	(0.807)	(1.056)	(0.995)
Sample size	581	112	91	31	91	20

Sample includes survey respondents listed in the column heading categories. Standard deviations are in parentheses. As we have shown that it takes time for policies to take hold, observations for the relevant 0-3 year periods after adoption are excluded from sample. Columns 1, 3 and 5 are means for individuals not covered by GNCS or FOCS as listed, and columns 2, 4 and 6 are the means for those covered by GNCS or FOCS. Significant differences in the means between columns 1 and 2, 3 and 4, and 5 and 6 are denoted by stars in the latter columns. * (**) Statistically significant differences at the 10 (5) percent level or better.

Table 8: Changes in Hiring After Clock Stopping Policy Adoption

	Female	PhD Rank	Post-Doc	Number of Top Publications by Year 1	Number of Non-Top Publications by Year 1
	(1)	(2)	(3)	(4)	(5)
FOCS	0.006				
	(0.033)				
GNCS	0.004				
	(0.042)				
Men FOCS		0.182	-0.010	0.006	0.128
		(0.197)	(0.025)	(0.024)	(0.126)
Women FOCS		0.275	-0.034	-0.021	-0.106
		(0.343)	(0.044)	(0.037)	(0.277)
Men GNCS		0.221	0.005	0.038	0.000
		(0.180)	(0.026)	(0.037)	(0.169)
Women GNCS		0.603	0.041	-0.001	-0.142
		(0.363)	(0.061)	(0.018)	(0.210)
Sample size	1392	1392	1392	1392	1392

The sample includes 49 universities. Standard errors are clustered at the policy university-level. Outcomes are listed in each column heading. GNCS indicates a gender-neutral tenure clock stopping policy and FOCS indicates a female-only policy. The column 1 specification also includes indicators for the year the policy job started and the policy university. Columns 2-5 include gender-specific indicators for the year the policy job started, gender-specific university indicators, and a female indicator. * (**) Statistically significant at the 10 (5) percent level or better.

Table 9: Predicting Clock Stopping Policy Adoption

	Does level from 1980-89 Predict GNCS Adoption by 2005	Does level from 1980-89 Predict FOCS Adoption by 2005	Do Changes from 1980-84 to 1985-89 Predict FOCS Policy Adoption by 2005	Do Changes from 1980-84 to 1985-89 Predict GNCS Policy Adoption by 2005
	(1)	(2)	(3)	(4)
Number of Undergraduate Students (in 1,000s)	0.002	-0.006	-0.021	0.054
	(0.006)	(0.006)	(0.055)	(0.068)
Number of Graduate Students (in 1,000s)	-0.012	0.005	0.000	0.136
	(0.024)	(0.022)	(0.072)	(0.087)
Faculty Size (in 100s)	0.004	-0.008	0.001	0.027
	(0.016)	(0.014)	(0.076)	(0.094)
Average Salary for Professors (in 1,000s)	0.004	0.013	0.013	0.011
	(0.011)	(0.009)	(0.012)	(0.015)
Average Salary for Assistant Professors (in 1,000s)	0.011	0.016	0.019	0.020
	(0.021)	(0.019)	(0.021)	(0.026)
Annual Revenue (in 10,000,000s)	0.043	0.006	-0.007	0.046
	(0.035)	(0.032)	(0.060)	(0.074)
Fraction of Faculty Female	-1.004	-1.512	-2.823	2.470
	(1.748)	(1.576)	(3.219)	(4.017)
Fraction of Faculty Full Professors	-0.685	0.721	1.186	-1.210
	(0.759)	(0.685)	(0.962)	(1.202)
Private University	-0.156	0.081	–	–
	(0.147)	(0.132)		
Sample size	43	43	86	86

The sample includes universities that do not have a gender-neutral clock stopping policy at the beginning of the sample period, and the University of California campuses are collapsed into a single average because the policy was a system decision. The sample therefore includes 43 institutions. Each cell is a separate regression. Columns 1 and 2 are cross-sections with an indicator for ever adopting the policy listed in the column heading regressed on the average value for the specified explanatory variable as well as a constant. Columns 3 and 4 are two period panels that includes the listed variable, a period indicator to capture trends, and institution fixed effects. * (**) Statistically significant at the 10 (5) percent level or better.