

Coming Apart at the Seams: Exogenous Shocks to the Already Fraying Campaign for Gender Equality in the US Workforce

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While much of the policies that bolster this do not address the root issues at play and instead, create a precarious situation where this equality is fraught with uncertainty. Furthermore, this precarious nature is worsened when exogenous shocks occur, causing major setbacks in gender equality in practice.

Whether it is attributed to personal choice or societal pressure, women take on roles in society that conflict with their roles in the workforce (Goldin 2021 p. 152). While policies exist to assist in the hiring, retention, and career success of women in the workplace, these policies often address the short-term effect of these roles without addressing the ultimate conflicts that are hindering progress (see Goldin 2021 p. 155). In some cases, such as parental leave in academia, the policies appear to help but do not actually benefit women and sometimes worsen the gender divide (Antecol, Bedard, and Stearns 2018 pp. 2309).

Additionally, in situations where all else is equal, there are still gaps between the genders in the labor market. For example, women who have graduated from MBA programs earn less money than men who have graduated from MBA programs (Goldin 2021 p. 161). This is still true in

cases where the women do not have children and the men do (With these cracks already showing in gender equality, an exogenous shock, such as COVID-19, would expose the weakness of these policies and show how fragile this equality really is. Early research already suggests that government shutdowns during COVID-19 negatively affected the employment and career advancement of women disproportionately (Albanes and Kim, 2021;)

Research has measured the overall impact of the COVID-19 pandemic on different industries; however, not as much work has been done on the structural issues and governmental policies behind this impact (Clapp, 2023). Furthermore, some of the efforts to mitigate this impact ignore the previous literature about the effectiveness of gender equality policies.

Due to traditional gender roles, the unequal burden of caregiving placed on women, and unmeasured emotional labor, the pandemic disproportionately affected women in the workplace

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the supply decisions of those involved in the labor market. For any potential worker, the decision to seek paid labor depends on many factors. Similarly, the decision by any employer to hire that worker depends on the wage and benefits required to attract that worker. Factors that impact an employee's valuation decision could include her personal characteristics, education levels, reliability, flexibility, as well as relevant job skills. These characteristics will be balanced off against the cost of employing her in terms of wages and benefits.

We might ask whether employers value women employees similarly to their male counterparts. Assuming that a woman can perform the job as well as her male counterpart, the employer would choose to employ her unless the wage/benefits costs are higher. Employers who choose to avoid more talented or productive female employees for non-job-related reasons such as discrimination may well find themselves at a competitive disadvantage to non-discriminating competitors. The question is, are there real perceived differences in valuation associated with gender. Some of the possible differences that might raise costs of women employees relative to men include $\Delta u v$ greater desire for flextime or part-time hours and leave for maternity childcare, or elder care (M. Thomas, 2008; Post, 2015) and possibly higher healthcare costs (Bertakis, et. al, 2010)

There are also several positives associated with women employees that may influence hiring and promotion decisions. These include $\{ u o u \% o \} \text{€} \bullet [Z]$ Supporting older employees through mentorship and teamwork, obtaining higher education levels, having strong interpersonal skills, as well as the social and creative benefits of a more diverse workforce (McKinsey & Company and LeanIn.org 2012)

In a completely free market $W^* = P = G = 4$

minorities are disproportionately vulnerable to layoffs despite years of efforts to recruit these workers (Revello Labs, Inc. 2023). Women faced almost 50% of the layoffs despite being less than 30% of the workforce (Khan, 2022; US Chamber of Commerce, 2022). One possible explanation is the greater proportion of women in part-time roles, particularly voluntary part-time workers. When the pandemic hit, part-time workers were more vulnerable to layoffs than full-time employees (BLS, 2023).

Supplyside Considerations.

In deciding to seek employment in the paid sector, women may also differ somewhat from their male counterparts. Past employment patterns suggest this is true. Women frequently move in and out of the labor force relative to family events such as childbirth and children in early childhood, summer school breaks and elder care of parents (Goldin and Mitchell, 2017; Goldin, 2021; BLS, 2022). Likewise, women frequently support work demands of their partners by moving for their partners seeking paid work to be available for various family needs. Thus, in considering whether to offer up their labor in the paid market, women may have to consider relative to a competing value of unpaid work in the family. A 2014 OECD study suggests the value of unpaid work is not an insignificant value

Even before COVID women faced challenges in gaining equity in promotion opportunities. As suggested, women are more inclined than men to trade success at work for additional time with family or to play a supportive role for an advancing partner, especially when there is an asymmetry in their earning level (Goldin and Katz, 2017; Karpner, et al, 2020). The question we examine here is to what extent this pattern changed in response to COVID policies and what effect these changes may have. In the next section, we turn to this question to evaluate how government and employer responses

Gender differences during COVID job loss

Women faced disproportionate job losses during the pandemic compared with men and their recovery back into the workforce has been slower (Clapp, 2023; BLS, 2022). There are several reasons for this. Women dominate several sectors that faced immediate layoffs at lockdown and some of the greatest losses over the course of the pandemic, travel industry, restaurant work, and retail all suffered large layoffs and closures in initial state actions. These occupations could not go remote easily and, as a result, the layoffs included virtually entire sectors impacting women disproportionately. In other sectors of the economy such as service and clerical positions, women fared better as they were initially able to work remotely. But, of course, remote work came with its own set of problems disproportionately felt by women. Compared to only 14 percent of men, 44 percent of women reported being the only one in the household providing childcare and educational assistance at a time when schools and childcare centers were closed. This was especially true for mothers of young children as Febrizio, Gomes, and Tavares, 2021 demonstrate. They coin the term *Stression* to suggest the disproportional impact on women, especially mothers, associated with the COVID-19 recession. As they explain using the U.S. monthly Current Population Survey data:

Less educated women with young children were the most adversely affected during the first nine months of the crisis. The loss of employment of women with young children due to the burden of additional childcare is estimated to account for 45 % of the increase in the employment gender gap, and to reduce total output by 0.36% between April and November 2020 (Fabrizio, et al, 2021)

They found the impacts of Covid disruptions were greatest for lower income women and minorities in industries facing lockdowns. Of course, there also were positive incentives in government policies for these women to stay home. Economic policies such as those that provided bonus unemployment payments operated as a greater positive incentive for lower income workers than their higher income counterparts and perhaps encouraged female workers, especially mothers, to opt for staying home.

The long lockdowns and school closures had a cumulative effect on the gender employment gap even beyond the early group's job losses. Over time, the challenge of online schooling impacted more highly educated and professional mothers who might have been able to work remotely but chose to cut back as they became aware that their children were not making

government stepped in with increased unemployment benefits. These enhanced payments meant that the lowest income workers faced an economic bonus for staying home. Since women are often the second income in households with partners and children, the decision to

Stearns 2018). We aim to use this study as a benchmark for the eventual tenure outcomes that happen in those departments post-pandemic.

We were able to confirm the official tenure clock policies for 45 out of the 49 universities used in the study. The policies fell into two categories, opt-out and opt-in. In opt-out policies, every professor was granted an extended tenure clock, but individual professors could request to opt out of the extension. In opt-in policies, professors were required to request the tenure clock extension for COVID-19 related disruptions and would receive the extension upon request rather than go through the usual tenure clock stoppage process.

An example of an opt-out policy is drawn from Michigan State University's Tenure Clock Extension Frequently Asked Questions Related to COVID-19.

Who is eligible for the COVID-19 automatic extension of the reappointment and tenure review timeline?

- x Any probationary faculty member who: a) was in the tenure system at MSU as of Spring 2020 scheduled for a reappointment or tenure review, or b) has an employment start date in the tenure system through August 15, 2023. The automatic extension is applied to your record by Human Resources.

An example of an opt

tenure results to be similar to those seen in the Antecol, Bedard, and Stearns papers, where the policies caused further disparity for female academics in the departments to the extent that women faced greater challenges from COVID disruptions. Conversely, we expect to see less disparity in tenure outcomes in the opt-out situations, where academics can request a tenure clock stoppage if they have experienced disruptions from the pandemic but do not receive it automatically.

Since female academics were found to have taken on more of the childcare during the pandemic, we compared these policies to the school closure rate in each state (Shalaby 2021 p. 663). We used the school closure data from the U.S. Department of Education, COVID-19 School Closure Data, by state, based on the percentage of time students spent in the classroom during the 2020 academic year.

We found that in states where 12 schools were open less than 50% of the time, 60.9% of schools (14) had opt-out policies, and 39.1% of schools (9) had opt-in policies. We expect that the universities that are located in states where the schools were open less than 50% of the time and have opt-out policies will experience the most gender disparity in terms of tenure.

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The dataset only includes traditional tenure-track positions within academia to make the career milestone comparisons meaningful. We are using the university department website along with the course catalogs of the universities to determine active professors.

For the initial findings in this paper, we only looked at current professors as of Fall 2023 semester for each school year. We assembled a dataset of 608 assistant and associate professors at 49 of the top 50 schools. It is too early to determine how tenure and career advancement were impacted by COVID. The intention of the findings in this paper is to create a general snapshot of academia right now, but we cannot suggest any long-term impact of the policies of interest based on the short time frame currently available.

To pull this snapshot, we matched up professors with their researcher ID on Dimensions.ai and pulled their publication and citation history. We relied on the professors' CV to match them to their IDs. In some cases, we blended duplicates together, and in other cases, we relied on the CVs and Semantic Scholar when the data was missing from Dimensions. There are other data discrepancies, but nothing indicates it would affect one group more than another.

The Dimensions data includes journal publications such as cited SSRN preprints. We chose to include these because our snapshot is intended to suggest whether each professor is moving towards success, so we would rather over include than under include. For the purposes of the final data set, we will be looking at their career success overall and include a complete picture of all publications, including rankings and impact. This inclusion may make differences between productive and unproductive schools starker but should not change the appearance of productivity overall.

We also included PhD graduation years, the year each professor joined this university, and a best guess at gender using CVs, faculty websites, other forms of self-identification, and common usages of names. We used the graduation years to distinguish associate professors who may not have progressed in their careers overtime from associate professors who achieved their titles more recently.

We grouped professors based on the tracked state and university policy, as well as W* n BT /FQT Q

Initial Findings

As noted, it is much too soon to measure the overall impact of the pandemic milestone career. The data below is meant to be illustrative of the current state of these top 50 departments and possible trends that may emerge coming out of the pandemic. When broken down by PhD year and gender, some samples are much too small to draw overall conclusions from and the inclusion of SSRN preprints may make gaps between productive and unproductive scholars look even bigger. However, when the different groups are compared to each other, the results suggest a potential emerging trend.

When looking at the entire pool of assistant professors, the male professors are trending slightly higher than female professors in number of publications. Of course at this stage we do not know the impact of these publications and how that might mitigate the gap in numbers.

Table 2: Gender Breakdown of Publication for Assistant Professors

Cohort	Number	Average Pubs
All Assistant Professors	351	8.11
All Male Assistant Professors	235	9.02
All Female Assistant Professors	116	6.26

When broken down into whether their states had K-12 schools open more than 50% of the time or less than 50% of the time (one measure of the severity of state lockdowns), no major differences emerged.

Table 3: Gender Breakdown of Faculty Publication by K-12 schools open or closed

Cohort	Number	Average Pubs
Assistant Professors Schools Open >50%	175	7.59
Male Assistant Professors Schools Open >50%	116	8.75
Female Assistant Professor Schools Open >50%	59	5.31

Cohort	Number	Average Pubs
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closed for most of the time, but also compare it with the regulatory uncertainty of schools being open the majority of time but suddenly closing at points.

When broken down by university tenure clock policies, differences between gender become clearer

The cohort analysis suggests that the COVID pandemic policies may have impacted female professors who graduated their PhD programs a few years before the pandemic started most. Given the challenges associated with transitioning to a new department and developing new courses, the disruption may have come at a time that was especially problematic for women in this cohort. If this trend continues, we may see the career trajectory of that cohort and possibly others significantly impacted.

Overall this brief data outline suggests that these tenure clockstopping policies may have the same impact that parental leave had in the Antecol, Bedard, and Stearns study. We will continue monitoring this to see if this trend continues and to measure what long impact these policies may have on the careers of men and women in academia. This snapshot, along with the Antecol, Bedard, and Stearns paper, suggest that careful consideration should go into future mitigation efforts to ensure the efforts do not make the problem worse instead of better. Instead of rushing into simple policies, time should be taken to identify and address the root of the problem causing this trend publication differences between women and men

Other concerns for women in Academia

While publication is a critical part of career advancement in academe, it is not the only factor that matters. Teaching, service, and building a reputation in the profession and within the university are all critical parts of the tenure and promotion process. Unfortunately, the policies directed around COVID 19 damaged these areas as well.

documented student outcomes in combination with peer reviews, administrative observations, and in-classroom observations. If we continue to teach disproportionately in online and/or asynchronous formats, there are concerns that this could negatively impact the tenure prospects for them further (Lón, Sara, 2022).

Additionally, close networked connections are important for advancing in role and finding

While extending the tenure clock could help with the long-term goal of seeing more women hit essential career milestones, the shorter-term consequence is vulnerability to expected termination.

Future layoffs could be a problem in academia, but, we do know that certain factors are most important when making layoff decisions: higher education trustees, parent evaluations (high classroom rankings), and tenured status. These items will likely work against women as they predominantly represent untenured faculty and may be the only option for cutbacks in many Universities.

Concluding Thoughts

Gains made slowly in gender equality can be eroded quickly when policies and circumstances change. COVID 19 and the resulting policy responses that locked down society and institutions of higher education have changed the employment and promotion market, potentially with a greater impact on women. In this paper we outline how higher education institutions are addressing these issues and suggest a number of critical measures for future analysis. We will continue to track the COVID class and the short-term effects on women in the academy to consider how this cohort fares as they progress through the milestones of their academic careers. We intend to show that the measures taken to decrease disparity actually increase it, and that industries need to determine how they should approach the reality of gender employment differences if they truly want employment equity of the sexes.

The challenges outlined in this paper leave us with several questions for future research with implications for gender and employment beyond COVID:

Can hard won gender gains be maintained or at least less limited during times of crisis? Which policies proved most effective in limiting losses during COVID 19?

What are the changed gender employment patterns emerging from COVID 19? Are any of these changes preference driven or are they a result of the policies adopted during the pandemic?

Most of the suggested responses for addressing the disruptions women faced during COVID are increased government assistance such as additional childcare services and leave policies or special considerations such as stopping the tenure clock granted to all. Are such policies the answer?

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