Half Empty and Half Full? Women in Economics and the Rise in Gender-Related Research

By FRANCISCA M. ANTMAN, KIRK B. DORAN, XUECHAO QIAN, AND BRUCE A. WEINBERG*

Although women have made great strides in the economics profession since the 1970s, progress toward increasing their representation has recently stalled at multiple levels (Lundberg and Stearns, 2019). This includes among doctoral degree holders, where women's share of all Ph.D.s in economics appears to have plateaued at close to one-third since 2005 (Chari, 2023). The persistent underrepresentation of women raises the question of what ideas are lost when women are absent. On a broader level, this is closely linked with the larger question of how researcher identity shapes research ideas and innovation[1]. In a related paper (Antman et al., 2023), we find evidence of differences across field by racial/ethnic background of researchers, but no statistically significant evidence that doctoral recipients from underrepresented minority groups are any more likely to pursue race-related research than non-Hispanic White Ph.D.s. While other research has documented important differences in field of study for men and women economics Ph.D.s (Fortin, Lemieux and Rehavi, 2021; Lundberg and Stearns, 2019), little is known about the specific research topics pursued by women, and thus, how the representation of women might change the scope of research in economics as a whole or the topics that are studied within sub-fields of economics.

If researcher background meaningfully shapes research pursuits, one might expect women to be more likely to pursue gender-related research topics. On the other hand, women might be less likely to pursue gender-related research topics if they expect greater repercussions from deviating from traditional economics research areas. We use almost 3 decades (1990-2017) of the EconLit dissertation database to investigate the link between the gender of economic dissertation authors and topics of economic research. These comprehensive data allow us to conclusively link gender and economic research, in part because dissertations are solo-authored, and represent arguably the broadest possible population of entering economists. As a result, we are able to paint a picture of the profession using a population that is both surely a measure of what topics are salient in society and the discipline at a given time, and also a leading indicator for its future – new doctorates.

Using these data, we find a remarkable rise in gender-related research in economics over time and by sub-field. We show that women economists are significantly more likely to pursue gender-related dissertation topics. Moreover, we find evidence that women bring gender-related topics into a wider range of fields within economics, thus expanding the scope of economic research more broadly. At the same time, we find suggestive evidence that the rise in gender-related research in economics cannot be fully explained by the representation of women in the profession, and show that men in economics have substantially increased their interest in gender-related topics as well.

I. Data and Methods

Our primary data source is the EconLit dissertation database which is available through institutional license and includes information on publication year, author, title, key words, and subject code, as per the Journal of Economic Literature (JEL). Our sample comprises 21,932

* Antman: Department of Economics at the University of Colorado Boulder, francisca.antman@colorado.edu. Doran: Department of Economics, University of Notre Dame, kdoran@nd.edu. Qian: Graduate School of Business, Stanford University, xcqian@stanford.edu. Weinberg: Department of Economics, The Ohio State University; IZA Institute for the Study of Labor; National Bureau of Economic Research, weinberg.27@osu.edu This project was supported by the National Science Foundation, under NSF Award Number SES: 2121120.

[1]Research on all fields of study, not just economics, suggests a link between diversity of researchers and innovation (Hofstra et al., 2020; Yang et al., 2022), but does not tie specific areas of research to researcher identity

doctoral recipients in Economics from 1990 to 2017. We use these data to construct our measure of gender-related research. Our primary measure of gender-related research is an indicator variable equal to one if any of the JEL codes associated with a dissertation is J16, which lists the "Economics of Gender" as a topic.[2] To probe robustness, we also define an alternative broader outcome variable, an indicator equal to one if a dissertation's keywords include any of the following terms: Women, Gender, Female, Fertility, Sex, Mother, and Maternal, in addition to the JEL code J16, to identify research that is gender-related.[3] We focus on the gender of recent doctoral recipients, which we impute from their names algorithmically.[4] Note that imputing gender based on names is a commonly used method for overcoming data limitations in the literature on diversity in science (Yang et al., 2022) and economics (Lundberg and Stearns, 2019). [5].

II. Results

A. *Trends*

(Figure 1 here)

We begin our analysis by examining trends in research on gender-related topics and the share of women entering the economics profession. As shown in Figure 1, the share of economics dissertations related to gender increased from roughly 2% between 2000-2010 to almost 8% by 2017 for both measures. By contrast, the figure shows that the share of women among economics dissertators held relatively steady over this period, which is consistent with the relative stagnation of women's representation observed elsewhere (Lundberg and Stearns, 2019; Chari, 2023). Thus, there is a striking divergence between trends in the share of women entering the profession and the share of research on gender-related topics among new Ph.D. economists.

(Figure 2 here)

Figure 2 shows that women are, perhaps unsurprisingly, considerably more likely to write dissertations on gender-related topics. At the same time, research on gender flat-lined between the late 1990s and 2010 among women and increased only very gradually among men. It then increased substantially for both women and men after 2010. Thus, the recent increase in research on gender occurred because men and women were both increasingly likely to focus on gender in their dissertations. Indeed, because there are more than twice as many men as women writing dissertations in economics, the increase in dissertations on gender among men was an important driver of the overall increase.

B. *Field Differences*

(Figure 3 here)

Of course, gender-related dissertations are not evenly distributed across fields of research. Rather, as shown in Figure 3, they are concentrated in applied micro fields, with gender-related dissertations accounting for roughly 15% of dissertations in labor/demography and 10% in health/education. By contrast, far fewer than 5% of dissertations are on gender in most other fields. These differences are, no doubt, at least partially due to variation in the salience of gender as a topic in some fields versus others (e.g., health economics versus monetary policy). However, these relationships do not appear to be entirely fixed over time. Furthermore, Figure 3 shows that the share of gender-related dissertations increased in the applied micro fields of Public, Labor/Demography, and Health/Education by roughly 10 percentage points (pp) from 1990-2009 to 2010-2017 while most of the other fields increased from near zero to a few percentage points.

(Figure 4 here)

[2] J16: Economics of Gender; Non-labor Discrimination.

[3] Our definitions of gender-related research include all JEL codes or keywords associated with the dissertation, and are not limited to the primary JEL research area.

[4] We use Python packages: gender-guesser and ethnicolr to impute gender and race/ethnicity based on author names, in keeping with other work, e.g., (Hofstra et al., 2020). Our imputed race variables allow us to construct a mutually exclusive and exhaustive set of dummy variables indicating whether the author is non-Hispanic white, non-Hispanic Black, non-Hispanic Asian (who we refer to as "Asian"), and Hispanic, where non-Hispanic whites are the reference category in regression analyses below.

[5] See (Ross et al., 2022) for a validation of our approach. While gender imputations can have good performance, they are far from perfect, especially for Asian names. Fortunately, our trends echo those from official reports, suggesting any measurement error associated with imputation does not bias our results. Moreover, our algorithmic gender measure is both binary (or ternary with an uncertain category) and static, limiting our ability to address non-binary and fluid gender identities.

As shown in Figure 4, the share of dissertators in each field who are women echoes the importance of gender-related topics in each field, with women making up over 40% of dissertators in labor/demography and in health/education, but between 20-25% in math/quantitative and money/macro. Moreover, the share of dissertators in each field who are women has been remarkably stable over time. The main exceptions are Development and Public, where the share of women is near 40% in the 2010-2017 period – 10pp higher than in the 1990-2009 period. The relative stability of the gender mix of fields, however, is consistent with the constancy of the gender share of dissertators as a whole and contrasts with the share of research that is related to gender, which increased quite substantially in the latter period.

It is also noteworthy that the variation across fields in the share of dissertators who are women is small compared to the differences across fields in the share of dissertations on gender topics. The fact that the share of research on gender varies so much more across fields than the gender mix of researchers suggests that the cross-field differences in research are not driven by mechanical differences in gender composition alone. Rather, the share of women and men conducting research on gender varies across fields. We hypothesize that the rise in gender-related research in economics reflects an overall increase more than a rise in the representation of women in any particular field. For instance, it is possible that a higher share of women may generate an exogenous spillover effect on the research topics among women and men in the field, and that this spillover effect may have accelerated over time.

C. Individual-Level Analysis

(Table 1 here)

To further explore these questions, Table 1 reports results from a linear probability regression of the probability that a dissertation is on a gender-related topic on a gender indicator, other demographic characteristics, as well as Ph.D. institution and graduation year fixed effects. Column (1) shows that women are 4pp more likely to do gender-related research than men using our narrow definition of gender-related research or 4.6pp using the broader definition (Column (7)). This is a sizable increase given the average share of gender-related dissertations in the sample (about 3%). Moreover, Column (1) shows that Asians, many of whom are international students, are 0.5-0.6pp less likely to do gender-related research, but we find no other differences across racial or ethnic groups. Column (3) shows that there are no differences in the probability of doing research on gender for women (relative to men) among non-Hispanic Blacks or Hispanics compared to non-Hispanic Whites and Asians.

Column (2) adds primary field fixed effects to our institution and Ph.D. cohort fixed effects. There are, as we have seen, large differences in the fields in which women and men conduct research, and these account for roughly a quarter of the gender differences in the probability of doing gender-related research. Still, women are about 3.1pp more likely to write a dissertation on a gender-related topic relative to men, even after controlling for primary research field. As shown in Online Appendix Table A1, we also note that women's greater likelihood of focusing on gender-related research persists in fields with high and low shares of women, even after controlling for field fixed effects, suggesting women bring gender-related research into a wide range of fields within economics.

At the same time, Table 1 shows differences in field of study between non-Hispanic whites and Asians appear to be an important factor in explaining why Asians are less likely to do gender-related research - controlling for primary research field eliminates the gap between Asians and non-Hispanic whites in gender-related research. Columns (3) and (4) report estimates that combine Blacks and Hispanics as one group and include Asians with non-Hispanic Whites. Columns (5) and (6) allow for interactions between gender and our indicator for Black or Hispanic. Neither specification materially alters the results, suggesting that results for minority groups are not purely due to small sample sizes. Columns (7) through (12) repeat these specifications for the broader definition of gender-related research. This definition generates somewhat larger estimates for the difference between men and women conducting gender-related research (coefficients ranging from 3.5pp to 4.6pp), but overall the results are very similar to those using the JEL-only based

definition.

III. Conclusions

We see recent trends in gender-related research and the gender composition of new economics Ph.D.s as both promising and discouraging. Given the relative importance of economists as policy advisors and the continued salience of gender in determining economic outcomes in society, the fact that the share of dissertations that are gender-related has doubled to nearly 10% by the end of our sample period is promising. On the other hand, the fact that women's share of Ph.D.s in economics appears to have plateaued at one-third of all economics doctoral degrees is discouraging since it suggests significant barriers remain to achieving equitable representation of women in the profession.

Moreover, our analysis shows that women economists have contributed significantly to expanding the scope of research in the economics profession in a multitude of ways. Women are not only significantly more likely to pursue gender-related dissertation topics; they also bring gender-related topics into a wider range of fields within economics. At the same time, our descriptive evidence suggests that men in economics have substantially increased their interest in gender-related topics. While this may be due to an increased societal focus on gender, another possible explanation, which we leave for future research, is that women's presence in the economics profession has had spillover effects through Ph.D. advisors and cohorts that has developed over time.

We also note that our study is not without limitations, the most obvious of which are the limits to imputing gender and racial background of dissertation authors. Another limitation is that we are not able to distinguish between international and domestic graduate students, as country of origin is likely to be an important explanatory variable determining research focus. While gender imputations can perform well (Ross et al., 2022), and our descriptive trends are reassuringly consistent with official reports (Chari, 2023), self-reported demographic data on researchers could substantially improve our analysis. Future data collection efforts should aim to combine self-reported demographic and socioeconomic background information with research output for the broad population of researchers to better understand the link between demographic diversity and knowledge creation.

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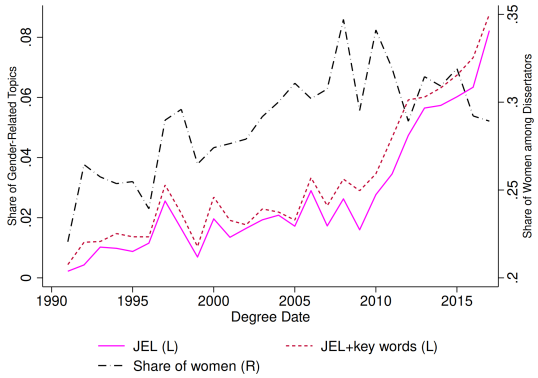

FIGURE 1: SHARE OF GENDER-RELATED TOPICS AND WOMEN DISSERTATORS OVER TIME

Note: This figure plots the yearly share of dissertations with gender-related topics (left axis) and the share of women among dissertators (right axis).

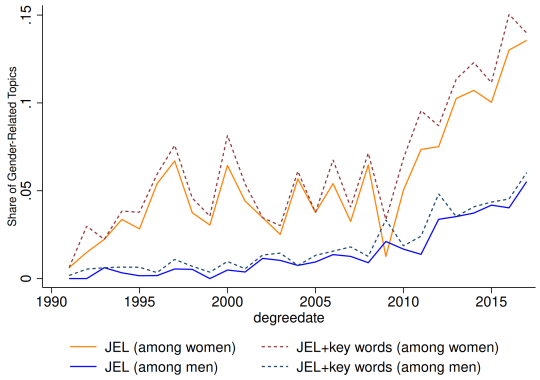

FIGURE 2: SHARE OF GENDER-RELATED TOPICS AMONG WOMEN AND MEN

Note: This figure shows yearly share of dissertations with gender-related topics among women and men.

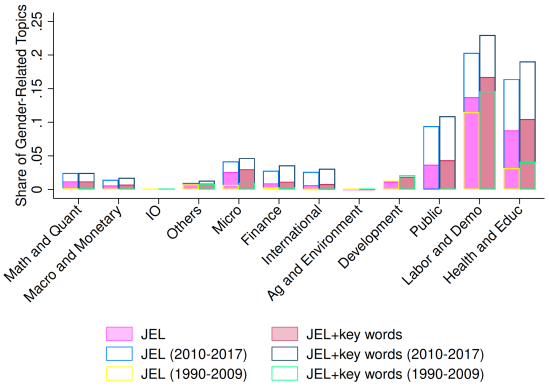

FIGURE 3: SHARE OF DISSERTATIONS ON GENDER-RELATED TOPICS, BY FIELD

Note: This figure shows the share of dissertations related to gender within each field, and in two periods: 1990-2009 and 2010-2017.

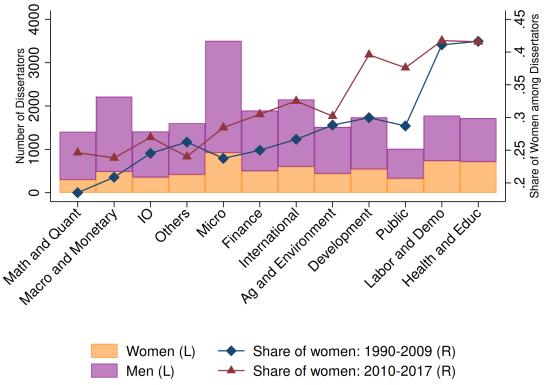

FIGURE 4: NUMBER OF MEN AND WOMEN AND SHARE OF WOMEN AMONG DISSERTATORS, BY FIELD

Note: This figure shows the number of women and men (left axis) and the share of women among dissertators (right axis), by field, in two periods: 1990-2009 and 2010-2017.

Table 1—: AUTHOR DEMOGRAPHICS AND RESEARCH ON GENDER

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Gender-Related: JEL						Gender-Related: JEL+key words					
Women	0.040***	0.031***	0.040***	0.031***	0.039***	0.031***	0.046***	0.035***	0.046***	0.035***	0.046***	0.035***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)
Non-His Asian	-0.005*	0.001					-0.006*	0.001				
	(0.003)	(0.003)					(0.003)	(0.003)				
Hispanic	0.001	0.004					-0.002	0.002				
	(0.003)	(0.003)					(0.003)	(0.003)				
Non-His Black	-0.000	0.002					-0.001	0.002				
	(0.006)	(0.006)					(0.007)	(0.006)				
Black/Hispanic			0.001	0.004	0.000	0.003			-0.000	0.002	0.000	0.003
			(0.003)	(0.003)	(0.003)	(0.003)			(0.003)	(0.003)	(0.003)	(0.003)
Woman* Black/Hispanic					0.004	0.003					-0.002	-0.003
					(0.009)	(0.009)					(0.009)	(0.009)
Primary field F.E.		Y		Y		Y		Y		Y		Y
R-squared	0.047	0.092	0.047	0.092	0.047	0.092	0.049	0.103	0.048	0.103	0.048	0.103

Note: Size is 21,932 in all regressions. Ph.D. cohort / year and institution fixed effects are controlled. Standard errors are clustered at institution-cohort level. Significant level at ***p<0.01, **p<0.05, *p<0.1.