



ELSEVIER

Contents lists available at ScienceDirect

Economics of Education Review

journal homepage: www.elsevier.com/locate/econedurevGender ratios at top PhD programs in economics[☆]Galina Hale^a, Tali Regev^{b,*}^a Federal Reserve Bank of San Francisco, United States^b Interdisciplinary Center (IDC) Herzliya, Israel

ARTICLE INFO

Article history:

Received 24 April 2013

Received in revised form 22 March 2014

Accepted 25 March 2014

Available online 8 April 2014

JEL classification:

J16

J71

I23

M51

Keywords:

Gender

Segregation

Economists

Gender bias

Affirmative action

Minority

ABSTRACT

Analyzing university faculty and graduate students data for ten of the top U.S. economics departments between 1987 and 2007, we find persistent differences in the gender compositions of both faculty and graduate students across departments. There is a positive correlation between the share of female faculty and the share of women in the PhD class graduating six years later. Using instrumental variable analysis, we find robust evidence that this relation is causal. These results contribute to our understanding of the persistent under-representation of women in economics, as well as for the persistent segregation of women in the labor force.

© 2014 Elsevier Ltd. All rights reserved.

1. Introduction

The growing concern for the under-representation of women in science and engineering has prompted an interest in the mechanisms driving the share of women in these fields, and in the effect that the gender diversity of the faculty has on the share of female students. Interestingly, some universities are more successful than others in recruiting and retaining women, and in particular female

graduate students. Why is this the case? This paper explores the uneven distribution of female faculty and graduate students across ten of the top U.S. PhD programs in economics. We find that the share of female faculty is correlated with the share of female graduate students and show that this correlation is causal. We instrument for the share of female faculty by using the number of male faculty leaving the department as well as the simulated number of male faculty departures. We find that a higher share of

[☆] This paper would have been impossible without instrumental help of Ishai Avraham, Emily Breza and Charles Norton. Helpful comments were received from Joshua Angrist, Manuel Bagues, Francine Blau, Ronald Ehrenberg, Jean Imbs, Óscar Jordà, Daniel Paravisini, Ady Pauzner, Giovanni Peri, Veronica Rappoport, Yona Rubinstein, Analia Schlosser, two anonymous referees, as well as seminar participants at Bar Ilan University, Cornell University, Haifa University, Hebrew University, Tel Aviv University, and participants of the international workshop "Frontiers in Economics of Education," the Royal Economic Society Meeting (2011) and RCEF 2012 conference on "Cities, Open Economies, and Public Policies." Anita Todd helped prepare the draft. All errors are ours. All views presented in this paper are those of the authors and do not represent the views of the Federal Reserve Bank of San Francisco or the Federal Reserve Board of Governors.

* Corresponding author. Tel.: +972 526172259.

E-mail addresses: Galina.b.hale@sf.frb.org (G. Hale), Tregev@idc.ac.il, talir@post.tau.ac.il (T. Regev).

female faculty has a positive effect on the share of female graduate students graduating six years later.

Women are under-represented in science and engineering. In 2010, men outnumbered women in nearly every science and engineering field in college, and in some fields, women earned only 20 percent of bachelor's degrees, with representation declining further at the graduate level (Hill, Corbett, & St Rose, 2010). In economics, women constituted 33 percent of the graduating PhD students, and only 20 percent of faculty at PhD granting institutions (Fraumeni, 2011). Women in economics have been shown to have different career paths than men and to be promoted less (Dynam & Rouse, 1997; Ginther & Kahn, 2004; Kahn, 1993; McDowell, Singell, & Ziliak, 1999). Focusing on the progression of women through the academic ladder, most research has failed to fully account for the effect that successful women in the field have had on the entrance and success of other women. More specifically, the gross effect that women faculty have on the share of female students has not been fully explored. In this study we address this gap in the literature and focus on the causal relationship between the share of female faculty in top economics departments and the share of graduating female PhD students.

Women in the faculty of top departments may contribute to the share of female students in four ways: First, the higher the share of women in the faculty, the greater their likelihood of serving on the admission committee and the larger their influence on the admission of students. Thus, if female faculty advocated for the admission of female students, a greater female faculty share would result in a higher share of women in the student body.¹ Second, a higher share of female faculty may reduce prejudice against women (Beaman, Chattopadhyay, Duflo, Pande, & Topalova, 2008; Goldin, 1990), and therefore lead to higher number of admitted female graduate students (even if the female faculty are not on the admissions committee) and to improved assistance to female students during their studies. Third, female students may expect better mentoring, less discrimination, and better outcomes when they study under female instructors or work with female mentors (Bettinger & Long, 2004; Blau, Currie, Croson, & Ginther, 2010; Carrell, Page, & West, 2010; Hilmer & Hilmer, 2007; Hoffmann & Oreopoulos, 2009; Neumark & Gardecki, 2003). Thus, female students may self-select to attend departments with a larger share of female faculty, and once admitted, they may have higher completion rates in such departments (Robst, Keil, & Russo, 1998). Fourth, departments with a high share of female faculty may be perceived by students as of lower status. If indeed female students preferred studying in departments with a lower share of female faculty and departments with perceived higher status were trying to recruit good female students (Attiyeh & Attiyeh, 1997), then departments with a higher share of

female faculty would have a lower share of female students.

These mechanisms describe the various ways in which the share of female faculty influences the share of female students throughout their graduate career, from admissions and acceptance decisions through successful completion. The joint effect of the four forces constitutes the influence of the share of female faculty in a certain year on the share of female PhD students accepted to the program that year and graduating six years later. This overall effect of the female faculty share on the share of female PhD students eventually graduating from the program is the object of interest from a policy perspective and is the subject of our analysis. Our results show that the positive causal effects of having a larger share of women on the faculty tend to outweigh the negative ones. In this study we do not disentangle the four mechanisms outlined above: our contribution is in testing for their joint effect and showing a causal relation.

We conduct our analysis using matched data on students and individual faculty members of ten of the top U.S. economics departments during the 20 years prior to 2007. We analyze trends in the gender composition of faculty and PhD students and uncover a positive correlation between the share of female faculty in a given economics department and the share of female students graduating six years later.² The panel nature of our data allows us to control both for institution and year fixed effects. To control for time-varying institution-specific tendencies to accept and retain women, we use the share of non-white students graduating from the PhD program in economics and the share of women graduating from the PhD programs in all other departments of the same university as measures of the departmental minority bias and of the university-wide gender bias, respectively. We find that, indeed, some of the positive correlation between the share of women on the faculty and the female share of the graduate student class that we uncovered in the fixed effects regressions is explained by time-varying minority attitudes of the departments.

To establish a causal effect of the gender composition of the faculty on the gender composition of the PhD class graduating six years later, we use an instrumental variables (IV) approach. To do so, we use the exogenous portion of the variation in the faculty female share in a given department that is due to the number of male faculty leaving the department in the previous two years. This is a good instrument because it has a mechanical effect on the share of female faculty, but no direct effect on the share of women in the cohort of graduate students admitted in the following year and graduating 6 years later. Using this approach we find evidence of a causal relationship between the faculty gender composition and the share of female graduate students. This finding is

¹ There is no conclusive evidence regarding the effect of women in positions of power on the hiring and promotions of other women (Bagues & Esteve-Volart, 2010; Ehrenberg, Jakubson, Martin, Main, & Eisenberg, 2012; Zinovyeva & Bagues, 2010).

² The ideal data would have information also on admissions, on acceptance, and on attrition, so we could assess the importance of the gender composition of faculty at each of these stages. Unfortunately, we only observe students at the time they graduate, so we estimate the cumulative effect of female faculty share at the onset of the students' PhD studies.

Download English Version:

<https://daneshyari.com/en/article/6840905>

Download Persian Version:

<https://daneshyari.com/article/6840905>

[Daneshyari.com](https://daneshyari.com)