

Women in the Economics Profession

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The early 1970s was a watershed for women in many academic fields, including economics. As the feminist revolution swept through the nation and government pressure to equalize employment opportunities in the workplace increased, academia began to evaluate its own performance and attitudes toward women. In 1971, an informal women's caucus got a series of resolutions passed at the AEA Annual Meeting by proposing them unexpectedly and stacking the meeting with supporters. As part of these resolutions, the AEA set up the Committee on the Status of Women in the Economics Profession (CSWEP). The committee was ad hoc at first, but later changed to a standing committee. Its mandate was to ferret out the facts on discrimination against women in economics and to make "recommendations for affirmative action." The resolution even called for CSWEP and the AEA to use these facts in *amicus curiae* briefs in discrimination complaints or suits, although CSWEP has never chosen to exercise this option.

Since that time, women have made great inroads in the economics profession. Far more women are represented at each level of the profession. Salary differentials between the sexes have fallen. Awareness has increased. Yet the percentage of women among full professors remains only 4 percent. It seems apt at this point, more than two decades later, to reassess the economics profession's record on women. Just as physicians are sometimes admonished to heal themselves, economists should presumably be able to do a better job than other academic specialties of measuring and understanding gender differences within our own labor market.

The growth in the proportion of new Ph.D.'s awarded to women during the '70s and '80s is shown in Table 1. Despite this growth, the proportion of doctorates

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Table 1
Percentage of Economics Ph.D.'s Granted to Females

1970	1975	1980	1985	1986	1990	1991	1992	1993
6.2	9.7	13.7	15.5	19.5	20.3	20.2	21.4	22.8

Source: National Science Foundation, Survey of Earned Doctorates.

awarded in economics is still lower than in other social sciences, and is even lower than in other scientific and engineering fields. In 1993, 23 percent of economics Ph.D.'s were earned by females, compared with 37 percent female among all social science Ph.D.'s and 30 percent female among all science/engineering Ph.D.'s. Female representation among Ph.D. recipients stagnated from 1986 to 1991—although signs of some new growth have appeared more recently.¹

Table 2 lays out some facts about female representation in the economics profession. It shows that the economics profession loses female representation at many junctures: choice of undergraduate majors, enrollment in graduate economics departments, completion of Ph.D.'s, hiring into academia, promotion to tenured positions, and promotion to full professorships. Only 4 percent of full professors of economics are female. In contrast, 9.5 percent of full professors in all science/engineering fields are female. Women economists also have lower salaries and fewer publications.

The figures in Table 2 require some care in interpretation, however. For example, we saw in Table 1 that the proportion of female Ph.D. recipients grew considerably over time. Even if men and women had equal chances of entering and being promoted in academia, we could not expect that the proportion of full professorships held by women (shown later in the table) would be as high as the percentage presently graduating from Ph.D. programs, simply because of the small cohort sizes of women receiving Ph.D.'s long enough ago to be a candidate for full professorship. Similarly, male economists presently within the profession earn more than do women, but that could simply be because on average they have greater experience, since women only recently entered economics in large numbers. Luckily, there is a recent body of literature that controls for cohort size so that we can actually compare men's and women's likelihoods of advancing in economics careers. This literature also enables us to analyze whether ability, past accomplishments, market characteristics or individual choices can explain lower probabilities of women passing the career milestones listed in Table 2.

¹ Data on Ph.D. recipients are from the NSF's Survey of Earned Doctorates, or SED. CSWEP also publishes data on Ph.D. recipients in economics, also based on the SED data. The data are not identical through 1992, because CSWEP excluded those U.S. doctorate recipients who went immediately to a job abroad.

Table 2
Facts on Female Representation in the Economics Profession

	<i>Percentage</i>
female, undergraduate economics degrees	29.7 ^a
female entering Ph.D. programs	28.3 ^b
female graduating Ph.D. programs	22.8 ^c
female, Ph.D. received from top six schools	22.5 ^d
female, all academic jobs	10.8 ^e
female of faculty in Ph.D.-granting economics department	9.7 ^f
female, non-tenure-track jobs	19.8 ^e
female in tenured academic positions	7.6 ^e
female in full professorships	5.6 ^e
female in full professorships in Ph.D.-granting economics department	4.0 ^f
relative publication rates, female/male	.62 ^g , .69 ^h , .82 ^{e,i}
median female salary/median male salary, academia	89.0 ^e
median female salary/median male salary, nonacademia	83.8 ³

Sources: ^a Department of Education, *Digest of Education Statistics*.

^b National Science Foundation, Survey of Graduate Students and Postdoctorates in Science and Engineering.

^c National Science Foundation, Survey of Earned Doctorates.

^d Based on listings in the *Journal of Economic Literature*. See footnote 3.

^e National Science Foundation, Survey of Doctorate Recipients (unpublished). Data analyzed in Kahn (1995).

^f 1994 CSWEP Report; data from Universal Academic Questionnaire.

^g Willis and Pieper (1993). Publications within seven years of Ph.D. for '70s Ph.D. recipients.

^h McDowell and Smith (1992). Publications within 10 years of Ph.D. for Ph.D. recipients 1968-1975.

ⁱ Publications 1989-1991 of post-1970 Ph.D. recipients.

Actually, luck had relatively little to do with the creation of this literature. Much of it was actively promoted by CSWEP, the National Science Foundation, and other official institutions concerned with improving careers of women within economics. The first few years after CSWEP was formed, several articles were written that outlined the degree of gender inequality in the economics profession (for instance, Reagan, 1975; Strober, 1975). A 15-year hiatus followed where very little was published on women in the economics profession (for an exception, see Ferber and Teiman, 1980). In the late '80s, CSWEP joined forces with the Economics Program of the National Science Foundation to encourage and financially support research in this area. As a result, the last few years has seen a spate of new research comparing the careers of female and male economists.

This paper summarizes this recent research. Before beginning, a few words of warning are appropriate. The entire population of female economists is sufficiently small that studies that limit this population in any way—by sampling, by limiting to specific cohorts, by limiting to people working in higher prestige jobs, and so on—end up with scanty numbers of observations. As a result, the usual caveats that statistical insignificance may be due to lack of power take on a special meaning in

this literature. My approach in this paper is to identify the career situations and junctures where men and women with similar abilities and backgrounds have similar outcomes in the economics profession (where the problem isn't), and then where those with similar backgrounds have divergent outcomes (where the problems might be).

Where the Problem Isn't

Undergraduate Economics Grades

The limited literature on undergraduate grades in economics does not unearth any consistent gender differences in grades in economics courses beyond the introductory level.² There are some gender differences in grades on introductory economics courses, with men clearly excelling in multiple choice questions and with contradictory evidence on which sex excels in essay questions.

Admissions to Ph.D. Programs

Attiyeh and Attiyeh (1993) find that there is no discrimination against women in the graduate admissions process. Instead, after controlling for applicant characteristics like GRE scores, grade point average, and the quality of the undergraduate institution, along with the selectivity of the Ph.D. institution, they find that women in 1990–91 had a 4 percentage point *higher* probability of being admitted to an economics Ph.D. program than did men.

This higher acceptance rate for women into Ph.D. programs suggests the possibility of affirmative action, that is, admitting less-qualified candidates because they are women. However, evidence on publications discussed below tells us that female Ph.D.'s are not destined to lower average productivity (as measured by publications) nor worse first job placements than are men from similar schools. Thus, either the higher admission rate of women is not due to affirmative action (but to some characteristics not captured in the regressions mentioned earlier), or the less-qualified women who were admitted dropped out before graduation, or affirmative action worked in the sense that those who were admitted graduated with comparable professional preparation.

Graduation From Top-Tier Ph.D. Programs

Not all Ph.D.'s are created equal. The ranking of one's Ph.D. program affects many aspects of later careers, from publications to salaries. On my count, the percentage of economics doctorates given by the top seven schools for 1991 and 1993 that went to women was 22 percent.³ Based on the figures in Table 1, this implies

² See cites and review in Hirschfield, Moore and Brown (1995). Also see relative GPA in that paper and in Misol and Ramachandran (1994).

³ The AEA lists all economics Ph.D. recipients annually in the *Journal of Economic Literature*. This number was calculated from these lists, calling schools to identify gender of names when necessary. The AEA's 1991 Commission on Graduate Economics' rankings of schools was used.

that the top-tier schools are comparable to others in terms of the percentage of their Ph.D.'s awarded to females. A similar count for 1985 and 1986 also found that the percentage female among Ph.D. recipients at the top seven schools was within one-half percentage point of the percentage female among all the 1,670 economics Ph.D.'s awarded during those years. These complete counts are obviously more accurate than data from less comprehensive samples, some of which indicated a somewhat lower percentage of females in the top seven schools than elsewhere (Barbezat, 1992; Kahn, 1995).

First Jobs for Tenure-Track Academics or Nonacademics

First jobs affect people's entire careers, as evidenced both in the general labor market and from the careers of economists (Singell and Stone, 1993). The raw averages indicate several gender differences in first jobs of Ph.D. economists. Smaller proportions of newly minted female Ph.D.'s are entering academia than are male Ph.D.'s. Fewer women are going to Ph.D. degree-granting departments than one would expect based on cohort size; fewer are in the most prestigious of these departments; and fewer are in tenure-track jobs. The average starting salaries of new female economics Ph.D.'s are lower than men's, both in academia and outside it.

However, these gender differences in the proportion of women entering academia, the proportion entering Ph.D. degree-granting departments, and the prestige of the first academic employer can be completely explained, in multivariate analysis, by predetermined characteristics such as quality of Ph.D. institution (Barbezat, 1992; CSWEP, various years; Kahn, 1993, 1995; McMillen and Singell, 1994; Singell and Stone, 1993; Willis and Pieper, 1992). The one study that found women to be placed in lower ranked departments in the '60s and '70s found this effect to have disappeared by the mid-1980s (Singell and Stone, 1993). There also seemed to be a period during the 1970s when women may have entered academic positions in Ph.D.-granting economics departments more than men did, but this was no longer true by the 1980s (CSWEP, 1994; Willis and Pieper, 1992). Once controls for employer and background characteristics are included, there do seem to have been gender differences in academic starting salaries overall in the '70s and '80s, but these differences also have largely disappeared by the end of this period (Formby, Gunther and Sakano, 1993; Kahn, 1995).

A few differences remain in first jobs, particularly with respect to non-tenure-track jobs, which I discuss below. However, in general, men and women economists with similar educational histories seem to be getting similar first jobs. Basically, first jobs differ because background characteristics differ.

Publications

In overall averages, women in economics publish less than men (controlling for experience) and publish less in top journals (Broder, 1993a; Kahn, 1995; Kolpin and Singell, 1993; McDowell and Smith, 1992; Willis and Pieper, 1993). Significant differences remain when one controls for experience, age, coauthorship and

publication quality (McDowell and Smith, 1992). However, in analyses that control for the ranking of the person's Ph.D. institution and/or the ranking of the employing institution, women either have similar rates of publication (Kahn, 1995; Broder, 1993a) or have higher rates of publication (Kolpin and Singell, 1993).⁴ In other words, the key point of gender divergence is in education and background before the start of an academic career.

Salaries Outside of Academia

In nonacademic salaries, research suggests that what had been a large gender gap in the early 1970s had fallen to zero by the late '80s (Kahn, 1995; O'Neill and Sicherman, 1990). Other than salary, there is no available method to measure status of Ph.D. economists outside of academia. However, judging from the salary figures alone, opportunities here seem equalized across sexes.

Women as Quitters

There is some evidence that women are more likely to be out of the labor force at some point in their careers, but the proportion of women who have been tenure-track academics who are observed out of the labor force is very small.

Mobility per se is not clearly good or bad in the economics profession. A job change can signal anything from the denial of tenure to a promotion at a higher salary. While the topic of mobility warrants more consideration, economics is too small a universe in which to consider it, given that so small a percentage of an already small universe of female Ph.D. economists actually moves.

Where Men and Women Differ

Undergraduate Majors

At the beginning of the '70s, very few women majored in economics. Over the next 15 years, however, women flocked into economics undergraduate programs. The proportion of economics B.A.'s awarded to women increased from 11 percent in 1970 to 34 percent in 1985. Yet even at its highest, the proportion of economics majors who are female never came close to the 46 percent of math majors who are female, let alone to the 51 percent of all majors who are female. Moreover, according to the *Digest of Education Statistics*, the proportion of economics majors who are

⁴ Other aspects of the results differ, partially because they included different controls or covered different time periods, but partially because each study includes only small numbers of women. Kahn (with 184 women) finds that women had higher publication rates in 1981, but not in 1991. Broder (with 30 women) finds that earlier cohorts of women had lower publications *ceteris paribus* but that for later cohorts, gender has no significant impact. This latter finding is consistent with an *American Economic Review* experiment (Blank, 1991), which did not find a statistically significant effect of double-blind reviewing on acceptance of work by women. However, a somewhat older study indicates an antifemale bias in the acceptance rate by single-blind compared to double-blind economics journals (Ferber and Teiman, 1980).

female began dropping in the late '80s and by 1991 had fallen below 30 percent. In contrast, the proportion of math majors rose slightly to 47 percent.

Misol and Ramachandran (1994) deserve credit for calling attention to the decline in economics majors by describing the drop at their own university. However, their study of the experience at Duke is the only one on undergraduate economics majors of which I am aware. Of course, this means that it is limited to a single institution and does not have the data to explain overall levels or trends.

We can only conjecture about why women are less likely than men to major in economics and why this tendency is now growing. For example, one suggestion is that low levels of women economics majors are due to the scarcity of women on economics faculties. However, in a study not limited to economics, Canes and Rosen (1993) found no increase in female majors as the proportion of female faculty increases. Moreover, the number of female economics professors has been growing, which makes it hard to use this variable to explain a decrease in the proportion of female undergraduate majors in economics. Perhaps the scarcity of female majors is due to the math requirements of economics? If so, why does math as a major attract a far higher proportion of women? Perhaps the explanation is that the approach and subject matter of economics does not address women's interests, as emphasized by feminist economics. Or perhaps it is subtle discrimination, a classroom even "chillier" than experienced by other female undergraduates. At this point, we have nothing but speculation.

GRE Scores

Despite similar GPAs, females consistently achieve about 50 fewer points than men on the Graduate Record Exam (GRE) Subject Test in economics. The problem is not due to differences in who among majors elects to take the GRE, since this gap is replicated in schools that require all majors to take the test. This gender difference seems to be particular to the GRE format, since it is not replicated in an alternative standardized test, the Major Field Achievement Test in economics. These facts, and some hypotheses to explain them based on the relationship between self-esteem and test formats, are made in Hirschfield, Moore and Brown (1995).

Application to Ph.D. Programs

A somewhat higher percentage of male than female economics majors continue on to begin Ph.D. programs: 12 percent of men compared with 10.9 percent of women. This difference has been narrowing: the similar numbers for 1985 were 13.8 percent for men and 9.5 percent for women.⁵ No researchers have studied

⁵ Here, I have divided the number of first-year students in economics Ph.D.-granting institutions (NSF Survey of Graduate Students and Postdoctorates in Science and Engineering) by the number of economics majors who graduated the previous year (Department of Education statistics). This is only an approximation. Not all economics graduate students majored in economics as undergraduates, and many people had gaps between their undergraduate and graduate educations. It is not obvious, however, that these inaccuracies will differ by gender.

whether this gender difference is due to differing abilities and accomplishments—particularly lower GRE scores—or to differing preferences for attending graduate school in economics. And of course, such preferences may be shaped by discriminatory influences in other forms.

Dropout Rates from Ph.D. Programs

Women are dropping out of economics Ph.D. programs more than are men. For instance, 25.8 percent of first-year economics Ph.D. graduate students in 1987 were female; yet only 21.4 percent of those graduating four to six years later were women. The magnitude of this drop-off is much greater than is the drop-off at application to graduate school. This is a critical point where economics loses women. Higher attrition rates of women from Ph.D. programs are not unique to economics, but are seen in other science and engineering fields as well.

Are dropouts people who had lower qualifications at the point of admission, so that the dropout rate undoes any affirmative action in admissions, or do women have a higher likelihood of dropping out than do otherwise similar men? At present, we do not know.

Non-Tenure-Track Jobs

Even controlling for differences in background and cohort, it remains true that women are entering non-tenure-track jobs as their first jobs more often than are men. This difference holds up even after controlling for family variables, allowing children to have a differential impact on men and women (Kahn, 1995). Barbezat (1992) also finds women more likely to find first jobs in liberal arts colleges.

Academic Salary

Several studies show a statistically significant gender gap in academic salaries for economists during the decades of the 1970s and 1980s, even after controlling for experience, race, and in some cases publications and prestige of Ph.D. institution. However, this gap was substantially lower than in other scientific and engineering fields in the 1970s. The gap fell during the '70s and '80s, but was still about 8 percent by the end of the '80s (Broder, 1993a; Kahn, 1995; O'Neill and Sicherman, 1990). Residual gender gaps in salaries are often interpreted as suggestive of employer discrimination, although they may instead capture unmeasured performance-related variables.

Larger gender differences were found in supplemental compensation to academics, like consulting money, grants, and so on. The proportionately larger gap in supplemental incomes could be the result of differences in preferences or choices (to consult) of men and women, although it may also be affected by discrimination by contractors or male-dominated old-boy networks.

Promotion

There is widespread agreement that over the past two decades, women who entered tenure-track jobs took longer to get tenure than did men and were less

likely ever to receive it.⁶ These results about gender differences in tenure rates have remained after controlling for cohort, age, rank of Ph.D., and employer and family characteristics.

However, dispute remains over whether gender differences in tenure can be traced to publication differences. Willis and Pieper (1993) find no gender differences in tenure rates after controlling for publications. Kahn (1995) and McDowell and Smith (1992) find that although publications do affect tenure rates, gender differences remain after adjusting for publications. The differences in these studies are subtle. Both the Willis and Pieper analysis and the McDowell and Smith paper analyze promotion to associate professorship rather than tenure itself, and both use samples that end in the 1970s. Kahn's paper analyzes the promotion to tenure itself, using data from both the 1970s and 1980s. The balance of the evidence is that publication differences do not explain the gender gap in tenure.⁷

The median age of an academic woman economist receiving tenure is 37 years. Since the key career formation period coincides with childbearing and -rearing years, it is important to ask to what extent family responsibilities slow down women's careers. If statistical analysis finds family variables to explain gender differences in tenure rates, than these differences are less likely to be due to discrimination and more likely due to women choosing a slower "mommy track."⁸ To date, there has been relatively little research on the effect of family on economics, primarily because much of the data were based on university or AEA records that do not include any family information. My own research, using NSF survey data from the 1980s on family, found no evidence that marriage or the presence of children led women to publish less or slowed their tenure progress,⁹ suggesting that family choices were not the cause of gender differences in tenure.

A final career step is promotion to a full professorship. Presently, females comprise only 4 percent of full professors of economics. CSWEP analysis finds new full professor appointments occur less than would be expected based on the stock of female associate professors. Other studies that adjust for time since Ph.D. or since tenure receipt do not find statistically significant differences between men and women in receipt of full professorship (Broder, 1993b; Kahn, 1995). This would seem to imply that there are fewer women full professors mainly because female

⁶ Kahn (1993) suggests that gender differences in tenure rates may have narrowed or disappeared by the 1990s. However, limiting the analysis to a few years in the early 1990s cuts down sample sizes, and insignificant results may simply reflect lack of power. We must wait for several additional years for that sample size to grow.

⁷ This conclusion is consistent with the finding reported above that gender differences in publications can be explained by background characteristics, in which case adding publications into tenure rate equations is unlikely to explain gender differences in tenure—at least beyond what was already explained by gender differences in background characteristics.

⁸ The possibility remains that the tenure differences are caused by social or institutional discrimination against women *with children*, or that the women's choice to have children was in response to a lack of promotion opportunities.

⁹ The impact of marriage and children on men is less clear. Point estimates were positive for publications and tenure rates, but *t*-statistics were 1.43 and 1.75, respectively.

associate professors tend to be more recent Ph.D.'s due to the influx of women into the profession. However, given the extremely small pool of female associate professors, it may be statistically impossible, because of small sample size, to offer a reasonable test of the hypothesis that there are gender differences in promotion to full professor.

To summarize, there do seem to be gender differences in promotion. Men and women of similar cohorts, who appear identical in terms of the school where they are educated, have different likelihoods of receiving tenure. Publication rates do not fully explain the difference, nor does the choice to have a family. As other explanations fail, it becomes more likely that gender differences are the result of discrimination, either direct or subtle, against female colleagues.

There is some evidence, albeit sketchy, of a different possible cause for gender gaps in promotion that lies in the gray area between discrimination and choice: women may operate within a smaller personal network and have limited access to the larger network of male economists. For instance, both men and women are more likely to choose same-sex than opposite-sex coauthors (McDowell and Smith, 1992). Male economists tend to cite men more than they cite women (even controlling for topic), while female economists tend to cite women more (Ferber, 1988). Since tenure decisions are at least partially based on one's "impact on the profession," as gauged by things like reputation and citations, men may have a larger impact because they are networked to the larger gender group. Male economists asked to write outside letters are more likely to be familiar with the work of male faculty and to have had professional contact with them.

It is surely legitimate to base tenure decisions on impact on the profession. However, departments should take into account that this will mean that, on average, women will fare worse. In fact, if networks are key, we can imagine a different equilibrium where more women are promoted to higher levels within the profession. This hypothetical equilibrium may be a welfare improvement to the present one, if currently qualified women are now being passed up for promotion because of insufficient networks.

Gazing into the Crystal Ball: The Future of Women Economists

The trends toward a lower proportion of female undergraduate majors in economics would seem to predict, in time, a declining proportion of female Ph.D.'s. Faced with this gloomy prediction, there are only a few reasons for muted optimism.

For example, one might hope that as more women who have recently become Ph.D. economists progress through the ranks, they will increase the success rates of future women, either because of mentoring, by taking younger women on as coauthors, by citing other women economists more frequently, or because they will judge other women seeking tenure more favorably than do men. There is some evidence that economics departments with senior women faculty are more likely to hire additional women (Kolpin and Singell, 1993); similar evidence was found

elsewhere about law schools. Studies of mentoring in workplaces find that a woman is more likely to be mentored by another woman than would be predicted by randomly assigned mentor/protégé pairs. On the other hand, however, other studies suggest that increased numbers of women on faculties may have no impact. Canes and Rosen (1993) suggest that having more women faculty does not increase the numbers of female economics majors. Moreover, there is evidence from a variety of sources that in our culture, women do not tend to evaluate other women more generously than men evaluate them. Female students are not more generous toward women faculty, nor are women faculty more generous to female students. Women are not especially more generous to other women in recruiter evaluations, employment interviews, or in employer performance appraisals. Within economics, Broder (1993c) found female NSF reviewers to rate female authors less highly than did male reviewers. I find it highly unlikely that the increased representation of women on economics faculties will snowball.

Future Research on Women in the Economics Profession

Many of the papers discussed here portray economics as a case study illustrative of the academic labor market, or even of the entire professional labor market. But the economics profession is woefully inadequate to illustrate general causal relationships behind gender differences, simply because there are not enough women within economics to provide good statistical evidence. The only reason to research gender differences in economics should be to learn about the economics profession. It is fitting that such research should be strongly supported by organizations interested in equalizing the way that the profession treats men and women. There is particular reason to continue to monitor trends on women economists because some of these trends seem poised to reverse themselves.

Some questions have not been adequately researched. Given the decline in the number of women choosing an undergraduate major in economics, the choice of major and the undergraduate experience deserve more detailed study. It seems also critical to study the decision to drop out of graduate school. Adequate data on education should be readily available from universities, many of whom monitor the progress of female students. Beyond the educational process, more research on gender differences in non-tenure-track jobs, on the publication process, on mentoring, on networking, and on the impact of family and perhaps time-use studies are needed to fill in important areas that have not been adequately researched. The literature discussed here should help to emphasize that this research must not just rely on descriptive data, but instead should involve well-structured, multivariate analysis.

However, it is important that the literature move beyond measurement of gender differences in economists' careers to look at policies that seem to have helped equalize the odds for men and women economists. This article has noted a number of points in economics careers where women and men appear different in ways that

have not yet been explained by measured ability, background, or preference differences. These points include the choice of major, dropout rates from graduate school, non-tenure-track status, academic salaries and academic promotion. We do not know whether these differences result from discrimination, from the importance of networks, from unmeasured differences in ability or preferences, or from other unidentified reasons. Yet we could learn a lot about whether these differences are immutable by looking for “best practices” universities, universities who graduate more female economics majors (and in general encourage women’s representation in historically male fields), whose female graduates go on to succeed in their professional life, who hire women to their faculty, who promote women while maintaining the integrity of the tenure review process. An understanding of universities’ policies that narrow gender differentials could serve a dual purpose: it would shed light on why these differentials exist while sharing information about how differentials can be narrowed.

Case studies of “best practice” may be harder to publish as scholarly articles. However, this research is needed if the supporting institutions hope to improve careers of female economists.

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