

**Remarks for the Session:
“Increasing Diversity in Economics: From Students to Professors”**



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Introduction

I thank Stacy Dickert-Conlin for the opportunity to discuss two papers in this session: “Promoting Female Interest in Economics: Limits to Nudges,” by Todd Pugatch and Elizabeth Schroeder (2020), and “Can Positive Feedback Increase Female and Minority Undergraduates into Economics?” by Kelly Bedard, Jacquie Dodd, and Shelly Lundberg (2020). My remarks today reflect my own views and not necessarily those of the Federal Reserve System or of my colleagues on the Federal Open Market Committee.

Let me start with a story about myself. One could say that I earned my Ph.D. in economics as the result of a nudge. I was a double major in math and economics at Barnard College. I applied to graduate school in math, but I ended up pursuing a Ph.D. in economics at Princeton because two professors there – male professors, I might add – wrote to me explaining that Princeton’s economics program was very mathematical and encouraged me to come to Princeton to study economics. I would not have done that had it not been for their nudge.

That is just one anecdote. The papers I am discussing today are both systematic investigations of whether particular types of nudges can interest more women and minorities to go into the field of economics.

Why Diversity in Economics Matters

The Federal Reserve System is one of the largest employers of economists. We have about 700 Ph.D. economists and many other staff members with bachelor’s and master’s degrees in economics. I believe we have a vested interest in helping to attract more women and minorities to the field. There are three major reasons. First, economics is a field that influences public policy, policy that affects the lives of all types of people. At the Fed, we work on behalf of the public. So we need to consider the effects of our monetary, regulatory, and payments policies on all of our constituents. That is easier to do when your own staff reflects the public. Second, there is evidence that you end up making better decisions when diverse views inform those decisions. Diverse teams tend to be more objective and to focus on the facts

when making decisions; they may process information more carefully because they are forced to confront a different way of thinking and to convince those with alternative views; and firms with more diversity tend to be more innovative.¹ Research also shows that firms with diverse management tend to have above-average earnings.² And third, it is important that the field of economics does not get stymied by group-think. Economics needs to continue to be a vibrant field, tackling new research questions and developing innovative techniques and ways of analysis to arrive at answers to these questions. Broader representation in economics means that a broader set of issues will be tackled and a broader set of research results disseminated. The field will continue to evolve, resulting in better policy outcomes that will improve the economic well-being of a greater share of the population.

Some Data on Diversity in Economics

Unfortunately, economics is not a diverse field. Economics is a popular major in U.S. colleges and universities, but the field has had less success in attracting women or historically under-represented racial and ethnic minorities. While there has been some improvement compared to the 1970s, under-representation of women and minorities in the field of economics has been going on for many years. Women earn between 30 and 35 percent of the bachelor's degrees in economics, and this share has been relatively stable over the past two decades.³ It is higher than the female share of bachelor's degrees in

¹ See Rock and Grant (2016).

² Rock and Grant (2016) cite a Credit Suisse analysis of 2,400 companies worldwide that found that organizations with at least one female board member had higher return on equity and higher net income growth than firms with no female board members. In addition, Hunt, Layton, and Prince (2015) report on a McKinsey & Company analysis of 366 companies that found that those in the top quartile in terms of management's ethnic and racial diversity were 35 percent more likely to have financial returns above their industry mean, while those in the top quartile in terms of management's gender diversity were 15 percent more likely to have financial returns above their industry mean.

³ Chevalier (2019) discusses the results from the American Economic Association's Committee on the Status of Women in the Economics Profession (CSWEP) 2019 survey of economics departments. At the 126 schools CSWEP polled that have doctoral programs in economics, the female share of undergraduate seniors majoring in economics was about 34 percent in 2019, and it has varied between 30 and 35 percent since 1994; of these schools, those with higher ranked economics programs have a higher share of female undergraduate majors. Among the 112 schools without Ph.D. programs that responded to the CSWEP poll, the share was 35 percent in 2019, and has been relatively stable at that level for the past 10 years. Using U.S. Department of Education data on four-year, nonprofit colleges and universities over 2011-2015, Bayer and Wilcox (2017) find that women earned less than a third of the bachelor's degrees in economics.

some of the STEM fields, including computer sciences, and engineering and engineering technology, but lower than the female share of bachelor's degrees conferred in the physical sciences and in mathematics and statistics.⁴ Across all fields, women earn more than half of all bachelor's degrees awarded.⁵ This means women are choosing to major in economics at only a third of the rate of men.⁶ But women are attracted to other social sciences and to the natural sciences as well. The humanities, including English, foreign languages, and visual arts, and nursing continue to attract women, as they have traditionally done. But psychology is a relatively large major, accounting for almost 6 percent of all bachelor's degrees conferred in the 2017-2018 academic year, with almost 80 percent earned by women.⁷ Business is a large major: almost 20 percent of bachelor's degrees conferred were in business, with 47 percent of those earned by women. Biology accounts for about 6 percent of degrees conferred, with over 60 percent earned by women.⁸

The numbers in economics are even lower for under-represented minorities, who earn slightly more than 20 percent of bachelor's degrees and slightly less than 12 percent of economics degrees awarded,

⁴ According to data from the U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), in the academic year 2017-2018, women earned 20.0 percent of the bachelor's degrees conferred in computer and information sciences, 21.0 percent of the bachelor's degrees conferred in engineering and engineering technology, 40.0 percent of the bachelor's degrees conferred in the physical sciences, and 42.4 percent of the bachelor's degrees conferred in mathematics and statistics. For trends by field, see Tables 325.35, 325.45, 325.70, and 325.65 in the IPEDS.

⁵ Women earned 57.3 percent of bachelor's degrees conferred in the academic year 2017-2018. Author's calculations based on Tables 322.10 and 322.20 in U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS).

⁶ Among schools in the top 100 that offer both business and economics degrees, regardless of gender, students prefer the business degree over economics, but women do so to a greater extent. See Goldin (2013, 2015).

⁷ Author's calculations based on Tables 322.10 and 322.50 in U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS).

⁸ At the Ph.D. level, the female shares in psychology, business, and biology are also relatively high. Author's calculations based on Tables 324.10 and 324.35 in U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS).

meaning that minorities are choosing economics over other majors at only about half the rate of white students.⁹

In terms of upper-level degrees, about one-third of the Ph.D.s awarded in economics go to women. The shares of women professors in economics across the various ranks have risen over time, but women still make up about 30 percent of assistant professors, about 26 percent of tenured associates, and about 15 percent of full professors in economics.¹⁰

Restricting attention to U.S. citizens and permanent residents, of the 464 economics doctorates awarded in 2018, only 46, that is, about 10 percent, were awarded to under-represented minorities.¹¹ In the academic professorial ranks, in the academic year 2018-2019, under-represented minorities made up about 10 percent of assistant professors and a little over 5 percent of full professors.¹²

We can certainly applaud the progress that has been made in increasing the representation of women and under-represented minorities in the field of economics since the 1970s, but more work needs to be done. While you do not need to have majored in economics to enter a Ph.D. program in economics, it is a natural path. So the under-representation of women and minorities in economics at the undergraduate level factors into the under-representation of these groups at the graduate level and throughout the ranks of academia. Unless the entry of women and minorities into graduate school picks up, it is hard to see how the numbers of Ph.D.s in the ranks of academia and in nonacademic positions that require a Ph.D. in

⁹ Bayer and Wilcox (2017), Table 1. Data are for four-year, not-for-profit colleges and universities in the U.S. for the period 2011-2015.

¹⁰ Chevalier (2019).

¹¹ These statistics are from the U.S. Department of Education IPEDS data as reported in Table 1 of the Committee on the Status of Minority Groups in the Economics Profession (CSMGEP) (2019).

¹² These statistics are from the U.S. Department of Education IPEDS data as reported in Table 5 of the Committee on the Status of Minority Groups in the Economics Profession (CSMGEP) (2019).

economics can increase. The fact that women are attracted to other social sciences and to business suggests that it may not just be that women prefer other fields to economics. And even if it were, we should try to shape those preferences because economics is an important and broad field that affects many people's lives. We need to make more progress in attracting those who are currently under-represented to the field of economics.

Increasing Diversity in Economics with Nudges

The two papers I've been asked to discuss look at particular nudges aimed at increasing students' awareness of the field of economics and assess whether these nudges influence their choice of major, in particular, for female and minority students.¹³ The literature indicates that information can affect a college student's choice of major and the American Economic Association recommends sharing information about the economics major as a way of trying to address gender and racial disparities in knowledge about the field.

The paper by Pugatch and Schroeder looks at whether informing undergraduate females about the value of a degree in economics in terms of future salaries or the positive impact one might have on society will lead more women to choose economics as a field. The researchers used a sample of 2,277 students enrolled in Economics Principles courses at Oregon State University, randomly assigning them into one of five groups, four of which involved getting an email with some type of information about the economics major and one group not getting an email. The four treatments were: basic information about the economics major; basic information plus information on earnings of economics majors; basic

¹³ Behavioral economists use the term "nudge" for something that isn't mandated but points people in the right direction and can change behavior. See Thaler (2017, 2018) and Sunstein (2014).

information plus a link to an AEA career video; and basic information plus a link to video testimonials by OSU economics students and alumni.

They then looked at whether the student was an economics major in the winter of 2020, two to four terms after the emails were sent. They found that receiving a message was associated with an increased probability of the student majoring in economics. The likelihood was a statistically significant 2 percentage points higher for those receiving basic information compared to those not receiving information. But this result was driven by male students. In fact, none of the four treatments had a significant effect on majoring in economics for female students, and this was not due to the smaller sample size of female students. The authors do a number of robustness tests and these results survive. When they simulate what would happen to the ratio of male to female majors in economics, they find that if the basic information treatment was applied, the ratio would rise from 1.4 to 2.7; that is, it would almost double the gender disparity. The video information does not seem to have an effect over and above the basic email, but that is not surprising because few students actually clicked on the videos to view them.

Perhaps it is ironic that one of the basic concepts taught in economics – the law of unintended consequences – is rearing its head here. One conclusion from the study is that simple nudges could actually increase gender disparity in the field.

But before we give up on nudges altogether, we may want to consider whether honing the message could be more effective. The fact that 60-80 percent of students opened the email message and that a simple email message had a significant effect on the selection of a major is striking and gives us something to work with. Further work might investigate whether messages could be better tailored to under-represented groups. Following-up with this group of 2,000+ students after they have chosen a major to see what influenced their choice and whether the email resonated or not might provide useful insights. Given the popularity of the psychology major among women, emphasizing the behavioral aspects of

economics and its wide application might help to attract women to the field. Perhaps giving the parents of college students information on the economics major would result in more students selecting economics as a major. Of course, it might result in the exact opposite – another unintended consequence.

Bedard, Dodd, and Lundberg also look at the potential for nudges to affect the choice of economics as a major for females and under-represented ethnic and racial groups. Their experiment involved 2,338 students who received a grade of C or better in the introductory principles of microeconomics course at the University of California, Santa Barbara. These students received information about the school's two economics majors (Economics and Economics and Accounting, which prepares the students for certification as a professional accountant), career information, and an invitation to an informational meeting about the majors. Other results in the literature suggest that compared to male students, female students are more sensitive to grades and less likely to go on to major in economics if they feel they did not do well enough in the introductory course. So a random sample of the students who received a B or better in the intro course were given additional positive feedback, including positive information on how they performed in the course, how they were on track to do well in the major, and encouragement to consider majoring in economics. The authors then assessed whether receiving positive feedback was associated with a greater probability of attending the informational meeting and/or selecting the economics major and whether there were differences by race/ethnicity and gender.

The authors find that the performance information is associated with a statistically significant higher probability of attending the informational meeting, of about 6 percentage points, for both males and females. There is also a statistically significant increase in selection of one of the two economics majors for males and females. The greatest effects are among Hispanic students: the probability of majoring in Economics and Accounting after receiving the positive treatment is almost 17 percentage points higher for Hispanic males and 48 percentage points higher for Hispanic females. The paper does not report the baseline probabilities of attending the introductory meeting and choosing to be an economics major for

the control groups so one cannot determine the economic significance of these effects. But they are suggestive that informational nudges can work.

Further Steps

I applaud the researchers of both papers. Economics is a data-intensive, results-driven field, so research like this is welcome as a way to distinguish what we know from what we think we know. Both papers add to a growing body of literature on what types of interventions could yield a more diverse pool of students going into economics. The basic conclusion I came away with is that the lack of diversity in economics is a complex problem to solve. The approach is likely going to have to be of the “let a thousand flowers bloom” variety: trying many things on several fronts, and then evaluating their effects, as these papers do.

Those of us in the profession should do what we can to ensure that we make the field inclusive. This could mean providing information, changing course content, increasing mentoring throughout all university levels, and ensuring that our workplaces have a culture that champions diversity and inclusion, not merely in words but also in deeds.

I think we also need to recognize that we are likely too late if we focus on undergraduates. To drive significant change in broadening the field, we need to start in kindergarten and elementary school, and then continue throughout high school to explain basic economic thinking, what types of problems economics can help solve, and what types of career paths economics opens up.

I serve on the board of the Council for Economic Education (CEE), a nonprofit organization whose mission is to educate students in kindergarten through high school about economics and personal finance. According to the CEE’s 2020 Survey of the States, only 25 states require high school students to take an economics course to graduate. Expanding this requirement to more states would also give students a

better view of what economics is and, depending on how it is taught, might be effective in drawing more people to the field. Another recent survey found that students who participate in the CEE's National Economics Challenge, a high school quiz bowl competition, do better than the national average on advanced placement exams, with especially strong gains shown by female and minority students, and that participants are more likely than nonparticipants to choose to major in economics.¹⁴ This suggests that exposure to economics at a younger age can help spur knowledge of and interest in the field. This year the Cleveland Fed will be hosting the CEE's virtual National Personal Finance Challenge and we are looking for ways to expand and strengthen our internship programs so that more students can learn about careers in economics and that we can develop longer-lasting relationships with the interns over their educational years and as they enter the job market.

¹⁴ Fricke, Grogger, and Steinmayr (2018), as referenced in Buckles (2019).

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