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Gender Differences in Earnings and Leadership: Recent Evidence on Causes and Consequences

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Women's labour market outcomes have improved substantially in the past decades, both in absolute terms and relative to men, in the United States and Western European countries as well as in several other countries around the world. Specifically, gender gaps have narrowed considerably (and in several cases disappeared) in human capital accumulation (educational attainment), labour force participation, hours of work and occupation. Claudia Goldin referred to this phenomenon as a "grand gender convergence" (Goldin 2014). Yet, gender gaps in earnings and leadership still persist. Women earn substantially less than men and are under-represented in leadership positions in firms and organisations more broadly. The presence and persistence of gender gaps in earnings and leadership is cause for great concern for both reasons of social justice and efficiency, to the extent that the gender imbalances reflect a sub-optimal allocation of human capital in firms and in the economy.

In this article, we focus on the causes and consequences of female-male gaps in earnings and representation at the top of organisations. Gender gaps in wages and leadership are one of the most researched topics in labour economics and beyond. Rather than attempting to summarise the vast literature on these subjects, we present a selective discussion of recent empirical work in an attempt to highlight recent findings on causes and consequences of gender gaps in the labour market and to discuss the main knowledge gaps and what we believe are some of the most promising areas for future research.[1] Most of the papers we focus on refer to the United States, but the trends and patterns described are likely to apply more broadly.

GENDER DIFFERENCES IN EARNINGS

Women systematically earn less than men in most countries around the world (Jayachandran 2015; Macis 2017). The "gender wage gap", however, varies both across countries and within countries along several dimensions, including across industries and occupations, and between socio-demographic groups. Studying these variations can shed light on the causes of gender differences. In a recent paper, Goldin et al. (2017) document that the gender earnings gap in the United States increases with age, particularly for college graduates, for married women and for those with children. Specifically, the authors find that the gender earnings gap (controlling for education, weeks and hours worked) for college graduates born around 1970 increased from 10 log points to 31.4 log points from ages 25-29 to ages 40-44, and from 13.3 to 33.3 log points among those born around 1960. In an effort to investigate the reasons for this dramatic widening of the female earnings penalty, Goldin et al. linked data from the Longitudinal Employer Household Dynamics (LEHD) database to the 2000 Census. Thanks to this matched database, the authors were able to determine that 44 percent of the widening of the earnings gap for college graduates is due to men being more likely to shift to high-wage establishments than women, and 56 percent is due to women enjoying slower earnings growth than men within firms. The authors also find that the gender earnings gap widens more for women who were married than for women who were never married: the gap widens by 39 log points for the former group and by "just" 22 log points for the latter. These findings indicate that human capital does not automatically close the gender earnings gap; on the contrary, the gap is larger (and it widens more over time) for women with a college degree. Moreover, because the gap grows more for married women (and for those with children), this strongly suggests that these patterns are associated with social and cultural norms, plausibly those related to women's greater family responsibility.

THE ROLE OF GENDER IDENTITY NORMS

The fact that many gender disparities persist in spite of women having bridged gaps in education and labour force participation has prompted economists to consider the role of factors other than human capital and other "standard" determinants of labour market outcomes. One of these factors is "gender identity" and the associated norms (Akerlof and Kranton 2000, 2010). Bertrand, Kamenica and Pan (2016) uncovered compelling evidence that gender identity norms influence gender disparities in labour market outcomes. They begin by documenting that among married couples in the United States there is a sharp drop in the distribution of the share of household income earned by the wife at 50%, that is, the point where the wife starts earning more money than the husband. The authors argue that standard human capital forces cannot explain this pattern. Instead, the finding is consistent with the view that a husband should earn more than a wife, a social norm that, they report, is shared by 38% of Americans, according to data from the World Values Survey. The authors further show that, within marriage markets, marriage rates decline when the probability that a randomly chosen woman would earn more than a randomly chosen man increases. Moreover, in couples in which the woman's potential (predicted) earnings are likely to exceed the man's, the woman is less likely to

[1] For more comprehensive, recent reviews, see Blau and Kahn (2016) and Miller (forthcoming).

participate in the labour force, and when she does, she earns less money than what she could earn based on her potential. Finally, Bertrand et al. document that in couples where the wife earns more than the husband, the wife spends more time on house-related chores, marital satisfaction is lower and divorce rates are higher.

Recent field-experimental work by Bursztyn, Fujiwara and Pallais (2017) also supports the idea that women pay substantial costs in the labour market due to gender norms. The authors conducted a set of field experiments among MBA students in an elite business school, finding that single women reported a lower desired yearly compensation, being willing to work fewer hours and being less willing to travel for work when they expected that their male classmates would see their answers. No differences were detected, instead, when students believed that their answers would be seen only by the career office but not by their classmates. Also, there were no effects of observability on men or on non-single women. The authors interpret these results as indicating that single women "avoid career-enhancing actions because these actions could signal personality traits, like ambition, that are undesirable in the marriage market". They also describe results from a survey showing that nearly three quarters of single female students reported having avoided activities that would have helped them in the labour market (for example asking for a raise or a promotion, or speaking up in meetings) because they wanted to avoid appearing too ambitious.

The results by Bertrand et al. and Bursztyn et al. indicate that adherence to traditional gender-specific roles has direct and important consequences on labour market outcomes, and specifically on relative outcomes of women and men. These results are consistent with Akerlof and Kranton's (2010) notion that individuals have a strong sense of belonging to a social group or category, and behave in ways that are consistent with how society prescribes that members of those groups should behave, even when doing so is costly. Social norms can thus help to explain gender gaps in earnings as well as the under-representation of women in leadership positions. We turn to gender leadership gaps next.

GENDER DIFFERENCES IN LEADERSHIP

Top positions, by definition, directly involve only a small portion of the population, so they could be considered to be of marginal interest for the issue of gender equality as experienced by most men and women. There are many reasons, however, to consider them with special attention. First of all, leadership positions have high visibility and symbolic relevance, so they may be affecting social norms about gender roles. Having a woman, for instance, as head of state may send a strong signal across the whole society that women can indeed be at the helm, also in different contexts. Second, people in leadership positions exert a strong influence on how organisations perform. This may matter if men and women have different preferences, for instance regarding the type of public goods that should be provided by a public authority, and are able to affect outcomes once at the top. Moreover, if career patterns within organisations depend on professional networks or on subjective evaluations and these, in turn, have a gender component, then the presence of a woman at the top may have positive spillovers for other women along the whole hierarchical structure, thus affecting equality beyond the top levels. This would be the case, for instance, if performance by a woman is more likely to be evaluated positively by a female rather than a male supervisor or if women are more likely to have other women in their professional network.

Access to leadership positions is more difficult for women in both political and economic life. There is a vast literature showing the presence of gender differences in corporate hierarchies, as well as in access to political office. Miller (forthcoming) provides a useful overview, while Kauhanen (2017) discusses causes and possible remedies of different career paths for men and women in firms. There is also evidence regarding other important realms like sports, the arts or public service. For instance, regarding sport, Sandberg (forthcoming) finds evidence of bias based on nationality, but not on gender, among judges in international competitions of dressage, an equestrian sport where men and women compete together. In contrast, Goldin and Rouse (2000) find that the adoption of "blind" auditions by American symphony orchestras, where the candidate's identity is concealed from the jury, helps female contestants to be hired, thus indicating the presence of gender bias. Regarding public service, a study by Bagues and Esteve-Volart (2010) on examinations to enter the Spanish judiciary as notary, judge, prosecutor, and court secretary finds that female candidates are actually damaged by the (randomly determined) presence of female evaluators in the committee.

In what follows, we focus on recent evidence regarding access to leadership positions in scientific research. Research and innovation activities are an essential element of competitive advantage and long-term growth. Thus, a biased research system that fails to take advantage in the best possible way of the talent of half of the population, beside its unfairness, may be particularly harmful for overall well-being.

LEADERSHIP GAPS IN SCIENTIFIC RESEARCH

Despite an improving trend, scientific research is still characterised by wide gender gaps, in particular in positions of leadership. According to figures by the European Commission (2016), in the period 2013-2014, women made up 21% of the top-level researchers, 20% of heads of higher education institutions, 28% of scientific and administrative board members, and 22% of board leaders. There are multiple and complex reasons

behind these gaps, systematically reviewed, for instance in Ceci et al. (2014) and, for the case of economics, in Bayer and Rouse (2016).

Given the fact that academic researchers usually split their time between research, teaching and administration, one mechanism behind the underrepresentation of female researchers in top positions points to the differential allocation of tasks between genders, with women performing tasks that are essential for the well-functioning of an institution, but with "low promotability", for instance by serving on committees. Guarino and Borden (2017) indeed show, in the context of US universities, how female faculty members perform more service than men, mostly internal service, that is, to their own institution. Similarly, Babcock, Recalde, Vesterlund and Weingart (2017) conduct a series of experiments to show how women are more likely to volunteer, to be asked to volunteer, and to accept requests to volunteer for tasks that need to be completed, but that individuals would prefer others to do. The main issue from the point of view of access to leadership positions is that performing such tasks is not very helpful for obtaining a promotion. This lack of recognition of the contribution by female academics applies also when looking within a specific category of tasks, namely research. In a working paper, Sarsons (2017) shows how the probability of receiving tenure declines with more co-authored rather than solo-authored papers for females but not for males in the field of economics, where, due to the convention of listing co-authors in alphabetical order, there is uncertainty regarding the contribution of individual co-authors. The gender gap is smaller for women who co-author with women or in sociology, where it is easier to discern the individual contribution. This is an indication that, when the contribution is unclear, women tend to receive less recognition for their research work than men.

How to address these imbalances is not obvious. Having more women in evaluation committees, for instance, may not work if women share the same prejudices as their male colleagues. On this point, Bagues, Sylos-Labini and Zinovyeva (2017) examine the national evaluation systems for academics in Italy and Spain, where candidates are evaluated by an academic board to establish whether they qualify as associate or full professors. The study has access to 100,000 applications assessed by 8,000 evaluators and exploits the fact that committee members are randomly selected from a list of eligible evaluators. They find no empirical support for the idea that the presence of women in evaluation committees is instrumental in reducing the gender gap. Looking at Italy, where individual assessments by committee members are available, they find that male evaluators are tougher vis-à-vis female candidates in mixed-gender committees, thus making the gap actually larger in committees with a female member compared to all-male committees. Breda and Ly (2015) examine the entrance exam to the highly selective École Normale Supérieure in France and find, instead, evidence of bias in favour of females in male-dominated subjects, like math and philosophy, and in favour of males in female-dominated ones, like literature and biology.

Another example, studied by Antecol, Bedard and Stearns (2016), are tenure clock stopping policies, that is, policies that extend the probationary period, usually lasting seven years, of assistant professors for family reasons. The study looks at top economics departments in the US and at gender neutral policies, so that also men take advantage of them. What they show is that the introduction of these policies actually increases the gender gap in the probability of getting tenure in their first job, benefitting men and damaging women.

KNOWLEDGE GAPS AND DIRECTIONS FOR FUTURE RESEARCH

The findings from recent empirical work strongly suggest that understanding the root causes of the observed, persistent gender gaps in earnings and leadership positions requires looking beyond standard human capital factors.

Results from Bertrand et al. (2016) and Bursztyn et al. (2017), among others, indicate that social norms related to gender identity exert a powerful influence on behaviour by males and females, potentially explaining the presence and persistence of gender differences in labour market outcomes. However, much work remains to be done. First of all, most of the empirical evidence currently available is from the United States. Although many of the mechanisms are likely to apply more broadly, social norms do vary across countries and cultures, and thus more work is needed from other contexts. Most important, although it seems clear that gender identity and norms play a role, we still have a limited understanding of how these norms form and evolve, and of the relative role of culture and market forces in shaping those norms and their evolution over time.

A clear message from the examples presented above and, more generally from the literature, is that the presence and extent of gender bias in access to leadership positions varies across contexts and that seemingly beneficial policies aimed at addressing it, like an increased presence of female members in evaluation committees or gender-neutral parental leave policies, may actually backfire. For these reasons, rigorous studies and evaluations represent an essential tool for policy makers.

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