

MIND THE GAP: WHAT GENDER DIFFERENCES IN PAY TELL US ABOUT UNTAPPED TALENT

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1 Purpose

Gender imbalances at work are traditionally seen through the lens of equity. The aim of this paper is to show that such imbalances cause a significant loss of efficiency; and that eliminating them would lead to greater productivity for the same wage bill. At the core of the paper is the idea that, to understand gender imbalances within the firm, we need to understand gender imbalances in who selects into the firm and into the workforce more generally. When this insight is taken into account, we find that gender differences in talent arise from who selects in; importantly, eliminating these differences would increase productivity by 32%.

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2 Method

To quantify the loss of productivity arising from gender imbalances requires data on the potential productivity of the women who are not in the labor force and that of the men they could potentially replace. By definition, both of these factors cannot be observed. For this reason, the productivity gains from gender equality have not been quantified to date. We propose a new method to back out an accurate estimate of these unobserved factors, and therefore an accurate estimate of the productivity gains that would accrue if differences in labor force participation (henceforth LFP) were eliminated. Our method relies on four core assumptions. The first is that individuals choose to enter the labor force if the payoff (both financial and non-) from doing so is higher than the payoff from staying at home. The second assumption is that the firm rewards talent in every country it operates, so more talented individuals have higher payoff at work than less talented individuals. The third is that the value of staying at home depends on individual preferences as well as societal norms that can vary across countries. The fourth is that innate talent- that is the raw potential at birth- is equal across genders.

The key implication of these assumptions is that when the cost of working outside the home is high, the payoff at work has to be higher to compensate for that. Because payoff at work is increasing in talent, the cost of working outside the home determines the level of payoff- and hence the talent- needed to enter the labor force. Thus, if the cost of working outside the home is higher for women, their payoff at work and their talent will also need to be higher to enter the labor force. This implies that in countries where the cost of entering the labor force is higher for women the average woman in the labor force will have more talent than the average man in the labor force. But this is not necessarily the case for each individual because additional factors such as financial necessity or preferences for spending time with children will also affect the decision. When estimating our model we allow each individual to have different preferences for staying home/going to work.

This method gives us a relationship that links salary in the MNE to the cost of working outside the home. Both variables have a component which is common to all people of the same gender in the same country, for instance: country-specific social norms about gender, and a component that is specific to the individual: their own talent and preferences. Because we have individual-level data on salary (from anonymised personnel data of thousands of employees of the same gender in the same country), we can separate the common component of salary from the reward to individual-specific performance. Likewise, because we have data on LFP across all countries, we can separate the common component of the cost to women working outside the home from the individual specific preferences.

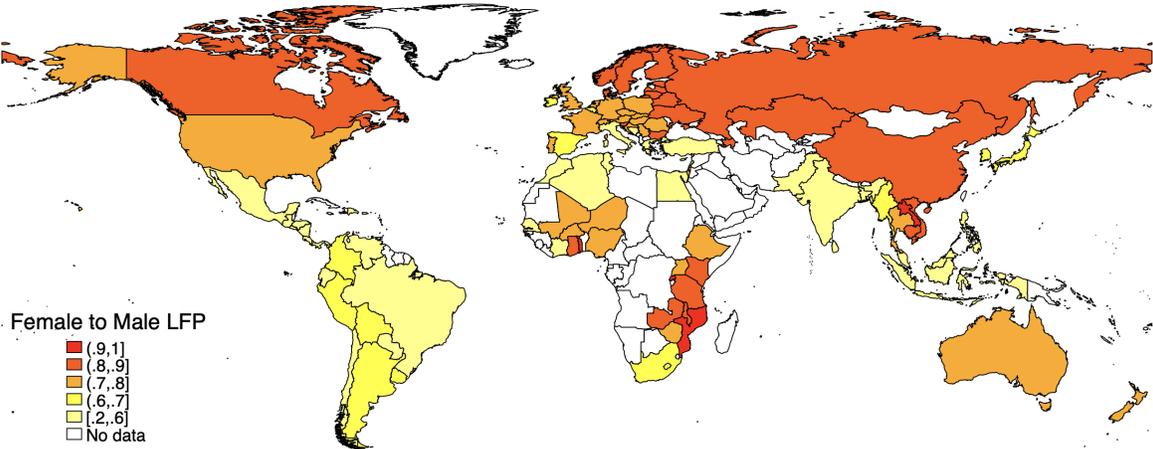
Our method yields an estimate of the productivity of the individuals that have been hired and, more crucially, of those who could have been hired. Armed with these estimates we can compute the change in productivity that would ensue should the firm eliminate gender imbalances in talent.

3 Data

We use personnel data from the MNE and construct an employee-level yearly panel covering the universe of employees between 2015 and 2019. We focus our main analysis on regular, full-time, and domestic (non-expats) workers resulting in 100,819 workers in 101 countries. The company is organized into a hierarchy of work levels (WL) that goes from work level 1 to 6. All WLS are included in our analysis, although 80% of workers are in WL1 and 16% are in WL2. Our main outcome variable is total compensation in logs (fixed plus variable pay) and we look at different 10-year age cohorts within the company, 18-29, 30-39, 40-49 and 50-59.

We combine the company administrative records with country-cohort data on labor force participation rates of males and females from the World Bank. In particular, we match the age cohorts in the firm with the average LFP rate in the country in the decade of labor market entry, separately by gender. For example, employees of age

Figure 1: Female to male labor force participation (LFP) in the countries where the MNE operates



Notes: This figure shows the ratio between female and male LFP across all the countries in which the MNE operates. Lower numbers mean that female LFP is lower than male LFP.

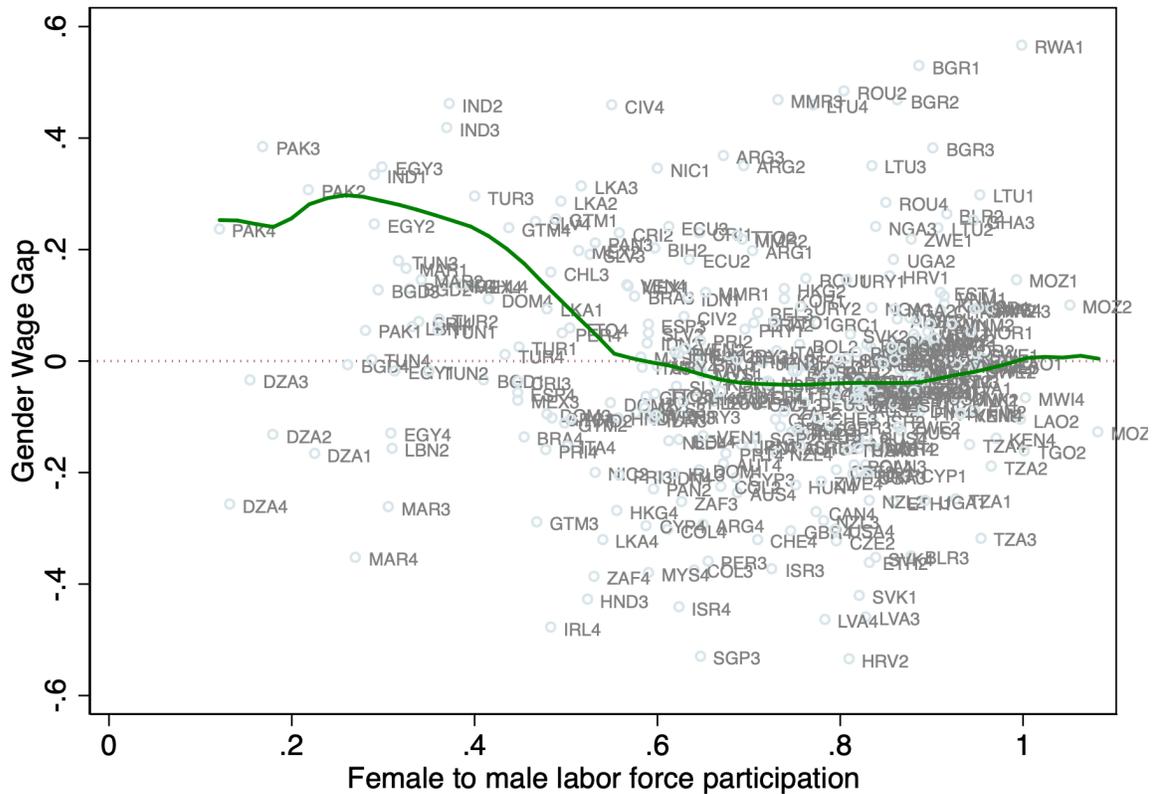
18-29 are associated to the LFP rates of the 2010-2020 decade. Figure 1 shows the variation of female to male labor force participation rates across countries.

4 Results

4.1 Selection and the inverted pay gap

Bringing together national statistics on female LFP with the personnel data on the gender pay gap across the 100+ countries where the MNE operates reveals that women are paid more men (an "inverted pay gap") in countries where women are less likely to participate in the labor force. The result is not driven by differences in tenure in the firm, experience, or function.

Figure 2: Gender wage gap and Female/Male LFP (WC)



Notes: This figure plots the gender wage gap (the difference between women and men’s salary expressed as a % of men’s salary) against the ratio of female to male LFP. It shows that there is a negative relationship between the two measures, indicating that women earn more than men in countries where women are less likely to work outside the home.

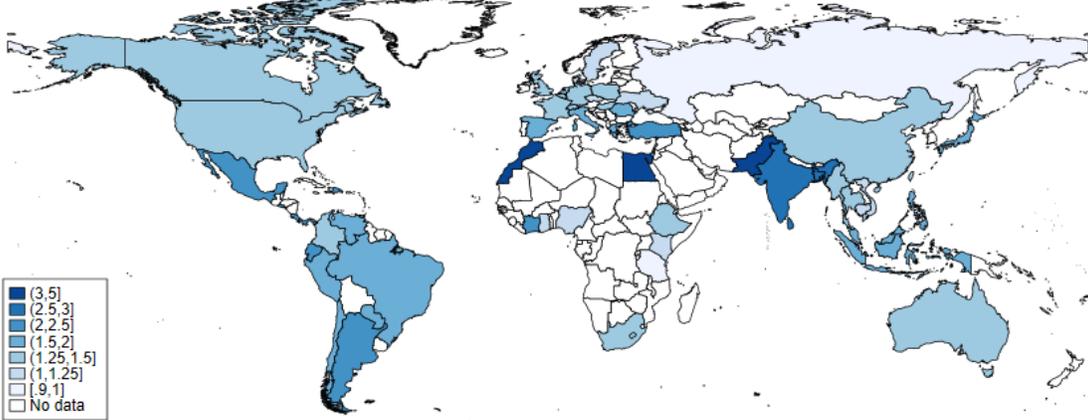
This apparently surprising finding can be understood in light of the selection model described above. Indeed, in countries where LFP is low, it must be that women face high barriers to working outside the home. Thus the few who do must receive a very large payoff from working, hence their level of talent must be very high. Below we quantify these differences in cost and talent.

4.2 The cost of working outside the home

Our method allows us to estimate the implied cost of working outside the home by gender and country. Figure 3 shows that the women face a higher cost of working

outside the home nearly everywhere. In countries like India or Pakistan the ratio is above 2, that is women face double the cost of working outside the home than men do. In contrast the ratio is close to one in Scandinavian and Eastern European countries.

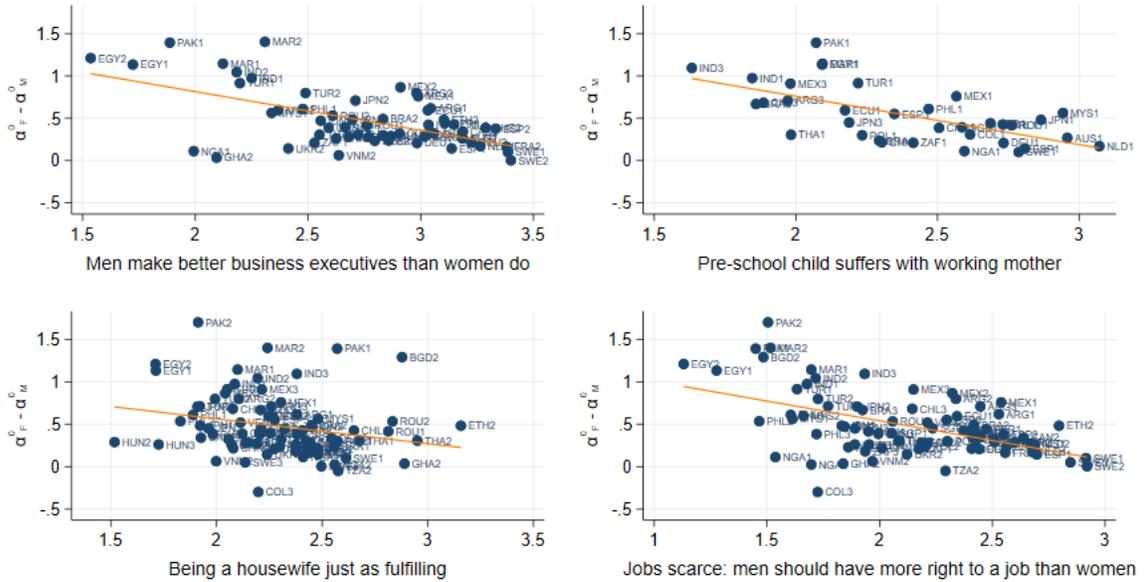
Figure 3: The cost of working outside the home
Value of Staying at Home, Female/Male Ratio



Notes: This figure shows the cost of working outside the home for women versus men. Higher ratios indicate that women have a higher cost of working outside the home.

A key candidate to explain gender differences in costs to working outside the home are social norms that bear on gender roles. We use validated survey data collected from representative samples of every country in the World Values Survey to measure these social norms. We find a strong correlation between the four main question on gender norms with our estimated differences in the cost, by gender, of working outside the home by country. Figure 4 clearly shows that the difference in cost is larger in countries that uphold more conservative norms.

Figure 4: The cost of working outside the home and social norms



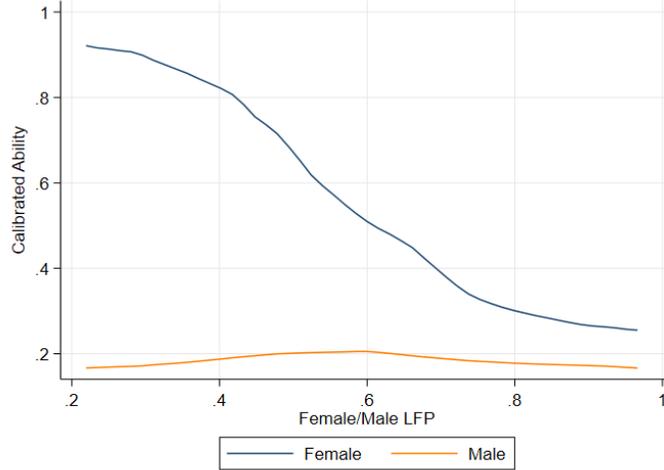
Lower values = agree

Notes: This figure shows that the gender differences (women minus men) in the the cost of working outside the home (vertical axis) are negatively correlated with more liberal gender norms (horizontal axis).

4.3 Untapped talent

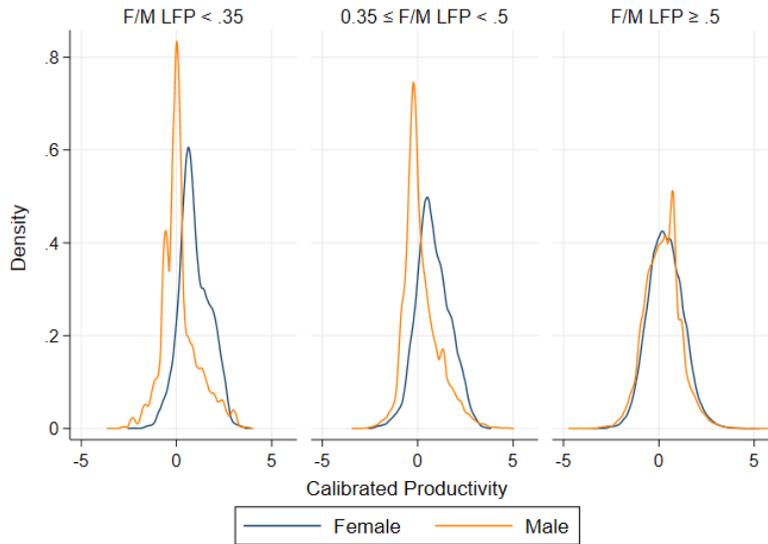
Using the method above we also back out the talent of each individual. Figure 5 illustrates that, on average, women within the labor force are more talented than men, and that the difference is larger where the female LFP is smaller. Looking at the overall distribution, Figure 6 shows that the distribution of women’s ability is shifted to the right compared to the one of men and this holds for the countries with relatively smaller female LFP.

Figure 5: Talent by gender



Notes: This figure shows that calibrated ability (vertical axis) is always higher for women compared to men and that the gender differences in ability narrow as female to male labor force participation increases (horizontal axis).

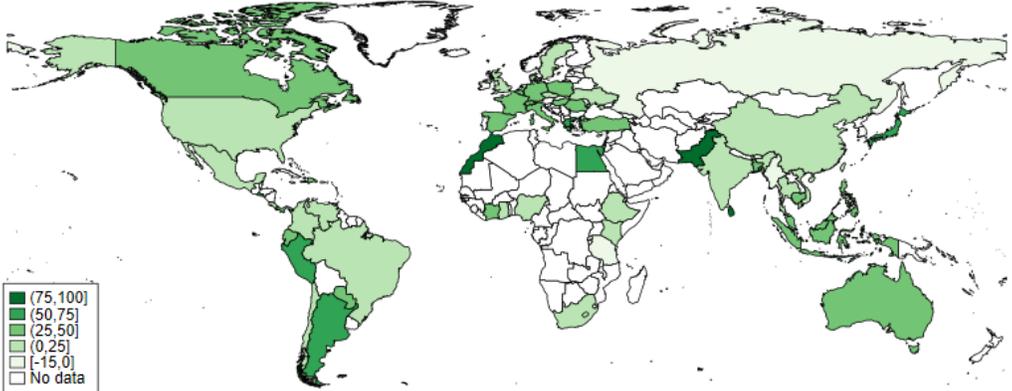
Figure 6: Talent by gender and LFP Group



Notes: This figure shows that the distribution of calibrated ability is shifted to the right for women relative to men. The first sub-figure only considers countries with female to male LFP below 35%, the second one is for countries in the middle (35% - 50%) and the third one is for countries with high female to male LFP (> 50%).

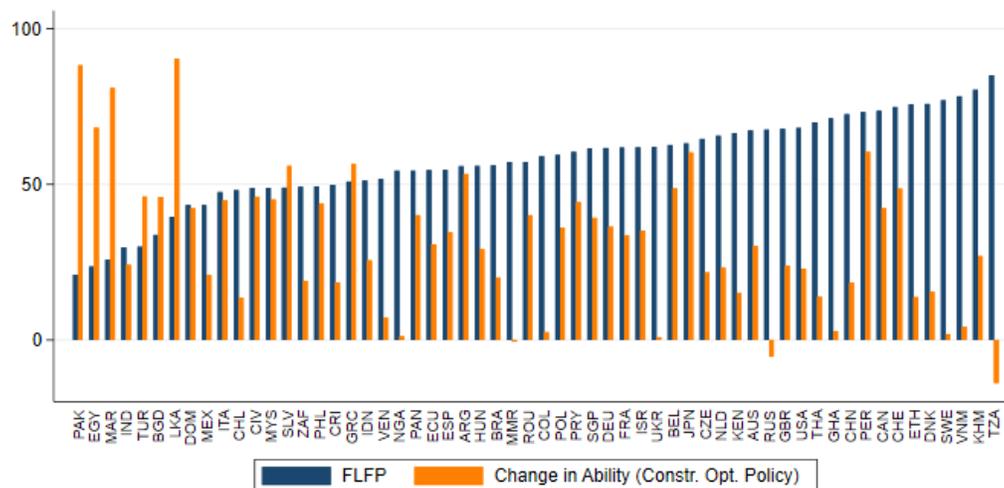
Finally, we can simulate what would happen if we could eliminate gender differences in the cost of working outside the home. Figure 7 shows that the talent of the average employee would increase in every country where the gender talent gap was positive. Importantly, this increase is driven both by highly talented women joining and the least talented men leaving as they get replaced by the more talented women. Overall, eliminating gender differences would increase productivity by 32% while keeping the wage bill fixed.

Figure 7: Percentage change in ability
% Change in Average Ability when Equating Gender Norms
Constrained Optimal Wage Policy



Notes: This figure shows the percentage change in average ability when equating gender norms between women and men.

Figure 8: Percentage change in ability and FLFP by country



Notes: This figure shows the percentage change in average ability when equating gender norms between women and men, by country, sorted by Female LFP.

5 Other considerations

To conclude we list some of the issues that bear on the question of untapped talent among women but that are not considered in the scope of this analysis. First, we focus on raw talent because this measures the true potential of what could be achieved. A woman with raw talent faces many barriers to using that talent: not having access to higher education, or becoming educated and skilled but facing too many costs to enter the labor force, or becoming skilled and entering the labor force but having to drop out due to the competing needs at home. These are all "stress points" at which a woman's potential talent is kept from its full realization. We do not disentangle these barriers, but we note that the social norms we discuss above would impinge on all three of these stress points above. Policies like child care support, for example, would be most likely to improve the latter two stress points, while affecting the first for the subsequent generation of women.

Second, in estimating the productivity loss from untapped talent of women outside the workforce, we have not addressed the (possibly large and significant) loss of productivity

that could arise for women within the work force who have competing demand on their time due to similar costs in terms of gender norms. Our results should thus be taken as the minimum improvement in productivity that would arise from relaxing these barriers to full labor force participation for women.

6 Implications

Understanding differential selection by gender, or indeed any underrepresented group, is key to inform personnel policy. The main implication is that aiming for gender equity (in pay, promotions, dismissals) is not actually equitable because selection generates a difference in the distribution of talent. Perhaps counterintuitively, gender equity policies might end up hurting women as they limit the firm's ability to reward talent. For instance, we can show that labor regulations that limit the ability to differentiate between genders are especially damaging to women.