Managers and the Cultural Transmission of Gender Norms*

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Abstract

This paper examines the influence of managers' gender norms on gender disparities in labor market outcomes. Using data from a multinational operating in over 100 countries, we exploit cross-country manager rotations that are orthogonal to workers to estimate the impact of male managers' gender attitudes on the work outcomes of male and female workers within the same team. We find that managers from countries with 1s.d. more progressive gender attitudes close the gender pay gap by 3.8 percentage points, primarily by promoting women at higher rates. The effects last beyond the manager's rotation and are three times larger when the manager is assigned to countries with conservative gender attitudes. Moreover, workers in the destination office change their own attitudes, as evidenced by those workers in turn being more gender-equal with their subordinates. Our evidence points to individual managers as critical in shaping corporate culture.

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1 Introduction

Firm culture is increasingly recognized as a key determinant of firm performance, particularly when it comes to employee recruitment, motivation, and retention (Graham, Harvey, and Puri, 2013; Adams, Akyol, and Grosjean, 2021). However, identifying the role that culture plays in shaping a firm is challenging as measures of firm culture are often unobserved and correlated with employee characteristics. For example, firm culture may directly impact worker productivity, but more productive workers may also be drawn to firms with specific cultures.

This paper uses an observable measure of firm culture, gender attitudes, to test for the impact that culture has on worker outcomes. Specifically, we test whether the gender norms that a manager brings to a firm can shift workplace culture and impact employee outcomes. Using data from a large multinational operating in over 100 countries, we exploit quasi-exogenous manager rotations to estimate the impact of a manager's gender attitudes on the work outcomes and behavior of male and female employees. Building on the economics of inherited cultural norms, we measure a manager's inherited gender norms as the average gender attitudes among respondents of the World Values Survey of the same nationality and age. This measure of gender attitudes is based on the role of cultural origin in shaping an individual's cultural traits, as emphasized in the economic literature on transmitted and inherited cultural values (Bisin and Verdier, 2001; Giuliano, 2007; Fernández and Fogli, 2009).[1]

Focusing on male managers, we find that managers from countries with progressive gender attitudes have a sizeable impact on the gender wage gap, as a 1 standard deviation increase in the manager's gender norms closes this gap by roughly 7 percentage points. This impact is concentrated among managers who are sent to countries with conservative gender attitudes. We further find that not only do the effects last beyond the manager's rotation but that other workers in the destination office change their attitudes, as evidenced by those workers being more gender-equal with their own subordinates.

Studying manager rotations within a multinational provides four advantages in

[1]There is a large body of literature establishing the role of cultural origin in influencing economic outcomes, such as the theoretical foundation by Bisin and Verdier (2000, 2001); Tabellini (2008); Guiso, Monte, Sapienza, and Zingales (2008), and the empirical evidence in Giuliano (2007); Fernández and Fogli (2009); Algan and Cahuc (2010); Guiso, Sapienza, and Zingales (2016), among others.

answering whether workplace culture can close gender gaps within firms. First, the multinational operates in over 100 countries that range in their degree of gender attitudes, providing sufficient variation in gender norms. For example, the firm has offices in India and Pakistan, countries with more conservative attitudes, and in the Netherlands and Canada, countries with more progressive attitudes. Second, the multinational emphasizes foreign rotations as necessary for promotions into senior leadership positions, and the locations of rotations are determined by factors orthogonal to managers' gender views. This allows us to estimate the impact of a manager on worker outcomes in the destination offices. Third, because we have a panel of employees, we can include worker fixed effects to control for the fact that worker composition may change with manager rotations. Finally, the structure of the company allows us to test for cultural "spillovers" to other managers and workers in the local subsidiaries within the firm, even once the expat manager has left.

To study the impact that managers have on workplace culture, especially as it pertains to gender, we use a triple differences strategy to compare men's and women's pay before and after they are exposed to managers from more or less progressive countries. We find women exposed to a manager with one standard deviation more progressive gender norms see a 3.8 percent smaller gender pay gap relative to those exposed to a manager with more conservative norms, corresponding to a 7 percentage point closing of the gender pay gap. The effect is largest in offices located in countries with conservative gender norms, where the pay gap is larger to begin with. We also find that women's pay remains high even after the expat manager leaves the destination office.

The gender pay gap may close in these offices for a variety of reasons. For example, women in conservative offices may be positively selected (Ashraf, Bandiera, Minni, and Quintas-Martınez, 2024) but underpaid, and expat managers may actively adjust pay to reflect productivity. Alternatively, there may be no productivity differences, but expat managers mentor women or assign them to tasks better suited to their skills. In addition, expat managers may fire unproductive women, leaving the firm with the best female workers. We find that a substantial portion of the closing pay gap comes from women being promoted to higher salary grades and work levels. We rule out that changes in the composition of workers are driving the results. Although we do

not find that expat managers move women to different tasks, we find that the results are concentrated among women in the same sub-function as their manager, suggesting some role for personal interactions.

Turning to whether managers can have a lasting influence on workplace culture, we test whether the employees directly exposed to the expat manager change their behavior toward their subordinates. We find that employees exposed to the manager who eventually become managers themselves improve the pay of their female subordinates.

We contribute to the literature that studies how corporate executives, especially CEOs, matter for firm decisions and performance (Bertrand and Schoar, 2003; Bennedsen, Perez-Gonzalez, and Wolfenzon, 2010; Bertrand, 2009, e.g.,) and corporate culture (the impact of CEO trust on firm innovation in Nguyen (2023) and correlational evidence between survey answers on corporate culture and performance in Guiso, Sapienza, and Zingales (2015); Graham, Grennan, Harvey, and Rajgopal (2022)). This paper examines corporate culture in the context of gender norms and focuses on the rank of senior managers instead of the CEO. It highlights a key mechanism for influencing corporate culture: a cultural transmission channel from the top managers.

Within the literature on the impact of managers on firm and worker outcomes, a set of papers focus specifically on the impact managers have on gender gaps within the firm (Fortin, Markevych, and Rehavi, 2022; Cullen and Perez-Truglia, 2023). Closely related to this paper, Ronchi and Smith (2021) uses variation in managers' gender attitudes, induced by the manager having a daughter rather than a son, to show that managers with more progressive attitudes hire more women and pay them more. We complement this paper with evidence that managers can affect gender pay gaps when there is cultural mismatch between the manager and workers, through mechanisms beyond hiring and pay adjustments. Further, because we use manager rotations and consider workers' career trajectories we are able to look at what happens after the expat manager leaves; we also test for the manager's impact on other local managers through horizontal and vertical spillovers.

Second, we contribute to a growing body of evidence that documents multinationals' role in transposing wages and practices across national borders (Hjort, Li, and Sarsons, 2020; Alfaro-Urena, Manelici, and Vasquez, 2022; Ashraf et al., 2024; Minni,

2024; Boudreau, 2024). This paper highlights managers' rotations as a transmission channel for norms across establishments. We note that this channel will become increasingly more important as the rapid growth of the globalization of labor markets in the last two decades has made it necessary for people from different cultural backgrounds to work together and multinational enterprises have been among the major contributors to the international nature of labor markets.[2]

Third, we contribute to the research on the evolution of (gender) norms and economic disparities (Giuliano, 2021). Several studies show that inherited gender norms are a key determinant of women's labor market outcomes (Fernández, Fogli, and Olivetti, 2004; Bertrand, 2011; Olivetti, Patacchini, and Zenou, 2020) and more broadly, gender disparities (Tur-Prats, 2019; Ashraf, Bau, Nunn, and Voena, 2020). Such norms are often deeply engrained and slow to change (Alesina, Giuliano, and Nunn, 2013), raising the question of how they are transmitted across space and over time and how they can be altered. Our paper documents the consequences of gender norms in gender gaps within firms, documenting also the importance of horizontal and vertical transmission channels.

2 Institutional Context and Data

2.1 Institutional Context

The multinational. Our empirical analysis uses administrative data from a European multinational firm. The multinational is headquartered in Europe but it is a global consumer goods company operating in over 100 countries worldwide. It has a workforce of about 155,000 people, of which approximately 60,000 are white collars, and its turnover in 2019 was well over €50 billion. The context is ideal for studying the impact of culture within firms since its geographic reach has an unparalleled global presence and its business activities span a rich variety of jobs, thus allowing us to also investigate whether the nature of the job mediates the effects of manager gender norms on gender gaps.

International assignments. The company follows a policy of international assign-

[2]Globally, there are 50,000 multinational enterprises, with 450,000 subsidiaries, employing 200 million people worldwide (ILO, 2017).

ments (IAs) among its top managers (director and vice-president level). The main rationale of the IA is for the manager to build leadership capability and become a global manager. To progress into a managerial career, managers must do at least one IA, where they work in a foreign country for a limited period of time, between one and three years on average. Moreover, the match between a manager and foreign country employees is determined by the availability of places within his function (quotas) and costs.[3] This institutional setting provides variation that enables us to study the impact of managers' gender norms on the performance of local employees who experience managerial turnover.

Since being on an IA is part of the career progression of managers, these individuals are considered the "most promising" managers. Our identification strategy looks at the effects that expat managers have on women compared to men, hence netting out the level effect that expat managers might have on worker performance, being on average better managers. Moreover, given that they have already reached some seniority within the company, their subordinates consist of middle managers, who, in turn, manage other employees. A key advantage of the data is to be able to observe the entire organizational hierarchy and reconstruct precisely the entire managerial chain and the structure of teams. We leverage this aspect to examine horizontal and vertical spillovers of the expat managers' cultural transmission.

Appendix Figures A.2 and A.3 illustrate the countries of origin of the managers and their destination countries.

2.2 Multinational Data

We combine data from the multinational with information on country gender norms to examine how a manager's home country norms influence the workplace. Our primary dataset comes from the personnel records of the firm, which contain monthly snapshots of employees all around the globe. Minni (2023) provides a detailed overview of the data.

Employees of the firm are organized into six work levels (WL1-WL6), with WL6 being C-suite executives. In addition to the work levels, there are also twelve salary

[3] As we focus on male expat managers in our analyses, we will refer to a manager as he/him/his through this paper.

grades that further differentiate employees within work levels. We analyze both work level and salary grade promotions in our analysis.

Jobs are also organized into functions and sub-functions. Functions include typical divisions within a firm, such as Marketing, Human Resources, Sales, and Supply Chain. Sub-functions are finer job distinctions within each function. For example, within the Human Resources function, you can be working in Data Analytics, in Reward, or in Occupational Health, among others. While workers typically are not transferred across functions, we will analyze how expat managers allocate male and female workers across sub-functions.

The managers that we study in this paper are relatively senior and are identified as those workers in WL3 or above (directors or vice presidents). Employees in the third through sixth work levels have substantial responsibility and oversight within the company. They guide the company's strategy, establishing the long-term goals, but also work to translate the company's strategic goals into actionable plans and ensure their execution within their departments.

2.3 Gender Norms

We link the multinational data to information on country gender norms from the World Values Survey (WVS), following Kleven (2022). For each manager in our dataset, we create a measure of his or her gender attitudes that is the gender norm in the manager's home country during his or her birth year.

Our main gender norms measure is constructed using responses to the statement regarding women's roles in the workplace versus at home: *"When other works for pay, the children suffer,"* with which respondents state whether they strongly agree, agree, disagree, or strongly disagree.[4] Averaging the responses to these questions provides us with a measure of gender norms, on a scale of 1-4, for each birth cohort in each country.[5] For example, we would have a measure of gender norms for Italians aged

[4]Among the WVS questions that directly ask respondents about their views toward women working, this question has the highest correlation with countries' female labor force participation, and was asked in both early and recent WVS waves. The paper's main results are unchanged when using alternative gender norms measures, including other WVS questions or countries' female labor force participation.

[5]We find that improvements in gender norms across countries in recent decades are driven mostly by composition effects, while respondents from the same birth cohorts hold fairly consistent gender views over time. This then motivates our gender norms measure that varies by country and birth cohort.

25-30, 31-35, and so on. We link managers to their home country's gender norm among respondents in their age group.

For much of our analysis, we create a binary measure of norms by dividing countries into those above and below the median norm across all countries. A country's gender norms is computed as the average individual norms of all local managers from that country, hence a norm score above the median reflects more progressive culture within the firm's offices when it comes to women's roles in society in general and in the workplace in particular. We will interchangeably refer to more progressive countries as "high norms" countries and more conservative countries as "low norms" countries. Figure II shows the manager flows to the foreign offices, grouping countries by quartiles of their gender norms.

3 Empirical Strategy

In this section, we describe our empirical strategy which involves using the rotation of managers across country offices and describe our analysis sample.

3.1 Manager Rotations

We leverage manager rotations across offices to identify the impact of an expat manager's gender norms on the outcomes of male and female employees. As mentioned, rotations are important if employees want to move to upper-level positions within the company. Typically, at least one international rotation is required for employees to enter into WL5 positions as such rotations are seen as crucial for understanding the firm and developing the skills necessary to lead diverse teams.

Although managers can submit country preferences for their rotation, the placement of managers to offices is somewhat arbitrary as it depends on availability and the costs associated with relocating a manager. Moreover, managers do not have any say over which team they lead in the destination country.

Our main identification assumption is that managers from countries with more progressive gender norms are not systematically sent to teams with improving gender norms. Otherwise, our estimates will be the result of manager selection as opposed to the impact of the manager himself. We test for this by looking at the gender pay

and promotion gaps in the teams before the expat manager arrives in Figure III. All coefficients are plotted relative to the year before the manager enters the office. We do not find evidence of expat managers with more progressive gender norms being systematically assigned to teams with improving or worsening gender gaps.

We identify an international rotation as a manager showing up as the manager of a team in an office located in a country that is not the manager's home country. In Figure II, we divide the gender norm measure into quartiles and show the flow of expat managers from countries with more or less progressive norms to other countries.

3.2 Sample Selection

To look at the impact of expat managers on workers, we focus on all employees who are ever exposed to an expat manager. In this sense, we do not have a set of "untreated" workers who are never exposed to an expat manager. This is because employees who do not have expat managers are different than those who work under an expat manager, even within the same office. Comparing characteristics of workers who are and are not exposed to an expat worker within a given office the year prior to the expat entering the office, we find that workers who work for the expat manager are younger, have been at the firm for a shorter period of time, but receive higher pay.

Foreign rotations are identified as cases in which managers are no longer located in their home country and spend at least three months in the foreign office location. For each expat manager, we similarly compare his characteristics in the year before he goes on his rotation with the characteristics of other managers in his office who do not go on rotation the next year. Managers who go on rotation within a year are younger, less likely to be female, and have higher pay.

From the set of managers that go on rotation, we make three further restrictions to construct our main analysis sample. We first restrict to employees who have had "sufficiently long" exposure to an expat manager, which we define as spending at least three months working together in the same office. This ensures that we are considering cases in which the expat manager spends enough time in the local office to interact with employees and potentially change workplace culture. Of these worker-manager pairs, we then restrict to a worker's first exposure to an expat manager as this gives us

the cleanest identification of an expat manager's impact on local workers.[6] Finally, we restrict to the sample of male expat managers. A growing literature has found a positive impact of female managers, and a negative impact of male managers, on women's outcomes (Fortin et al., 2022; Cullen and Perez-Truglia, 2023; Biasi and Sarsons, 2022). Given that most managers are men, focusing on male managers allows us to directly estimate the impact of gender norms on the managerial decisions of men, net of any "same gender" effect.

These restrictions give us a final sample of 917 male managers (0.4% of the firm's workforce) who complete an international rotation. The vast majority (95%) of managers are in WL3 or WL4 when they do their first rotation. Just under 90% of these managers do more than one rotation, allowing us to look at whether an expat manager's behavior changes as they move to different countries. The median time that an expat spends on an international rotation is 32 months (see Appendix Figure A.1).

The restrictions give us a corresponding 4,755 employees working across 74 countries who are exposed to expat managers. This gives us a sample of roughly 250,000 employee-month observations.

Figure I shows where managers from different geographic areas go on their first, second, third, and fourth rotations. Managers tend to go to other countries in the same region, but there are a number of rotations across regions, with managers from Europe going to South Asia and Sub-Saharan Africa, for example.

3.3 Estimating the Impact of Manager Norms

We use a difference-in-differences strategy to estimate the impact of an expat manager on worker outcomes in the destination country. Specifically, we look at before and after expat manager arrivals and compare the outcomes of employees who receive an expat manager from a country with progressive norms to the outcomes of those who receive an expat manager with conservative norms. Our main estimation equation is:

$$Y_{imjkt} = \sum_{k=0,1,2} \gamma_k \mathbf{1}[K_{it} = k](Norms_m \times Fem_i) + \theta_i + \theta_{mk} + \theta_{j,Year(t),Fem(i)} + \mathbf{X}_{it}\beta + \varepsilon_{imjkt} \quad (1)$$

[6] We later look at exposure to subsequent managers.

where i indexes the worker, m the expat manager, j the local manager, t the calendar month, and k the time period relative to expat exposure. In our main specifications, we consider three time periods: before, during, and after exposure.

To test for the differential impact of expat managers on men and women, we include a female employee indicator, Fem_i, and interact it with our measure of gender norms in the expat manager's home country, $Norms_m$.[7] Our main coefficients of interest, $\hat{\gamma}_k$'s, therefore, tell us how the outcomes of women change relative to men before ($k = 0$), during ($k = 1$), and after ($k = 2$) their exposure to an expat manager with one standard deviation more progressive gender norms (relative to exposure to an expat manager with less progressive gender norms). For brevity, from now on, we will refer to these coefficients as the impact of a more progressive manager when discussing their magnitudes.

We include worker and local manager fixed effects (θ_i and $\theta_{j,Year(t),Fem(i)}$) to account for changes in the composition of workers or local managers when the expat manager arrives. The local manager fixed effects are interacted with the worker's gender and calendar year when $k \neq 1$ to allow for the fact that local managers may have a different impact on male and female workers before and after exposure. We include expat manager $\times$ exposure period fixed effects (θ_{mk}) to account for the expat manager's overall impact on exposed workers. In an augmented specification we further include country $\times$ exposure period $\times$ worker's gender fixed effects to ensure that we are comparing workers within the same country during and surrounding exposure; this does not materially change our results. We also control for worker age, age squared, tenure, and tenure squared (X_{it}). Standard errors are double clustered by worker and expat manager's home country times worker's gender, following Abadie, Athey, Imbens, and Wooldridge's (2023) advice to cluster at the level of treatment variation.

The primary outcomes we consider are pay, which we define as the combination of base and bonus pay; promotions; and task assignment. The manager has considerable influence over these metrics. Performance assessments, which encompass the determination of pay and bonus, are set by the manager taking into account the views of all the colleagues that have interacted with the employee, and are conducted in a standardized way across functions so that comparisons can be made between employees

[7] The uninteracted Fem_i and $Norms_m$ are absorbed by worker and manager fixed effects.

with different types of jobs. Similarly, promotions and lateral moves depend on the manager's recommendations.

4 Results

In this section, we estimate the impact that a manager from a country with more or less progressive gender norms has on the gender pay gap in the employees he supervises in the receiving office. We find that managers from more progressive countries with respect to gender norms narrow the gender pay gap in the teams they supervise in the receiving country. We then explore the impact on other worker outcomes that shed light on why the pay gap closes. We test whether women are promoted more frequently under progressive managers, whether they are reassigned to more suitable tasks, and whether managers affect the retention of female workers. We then test whether expat managers affect the behavior of other managers within the destination country.

4.1 Expat Manager's Gender Norms and Worker Outcomes

4.1.1 Pay

Panel A of Table I shows the results from estimating equation 1. The first row presents the estimates for γ_1 in equation 1; that is, the impact of an expat manager from a country with progressive gender norms on the pay of local female workers during the period of exposure. The second row presents the estimates for γ_2, the impact of an expat manager *after* that manager leaves. The baseline is the period prior to exposure.

Expat managers from countries with progressive norms have a significant impact on the gender pay gap. Controlling for worker and manager fixed effects (column 1), exposed female workers' pay increases by 3.8% relative to exposed male workers during the time expat manager is present. This effect persists once the manager leaves: women's pay is 3.7% higher once the manager leaves relative to before the manager arrives. These results are robust to including receiving country $\times$ exposure period $\times$ worker's gender and sub-function fixed effects. In column 4, we include work level fixed effects and see that the coefficient falls by more than 50%. This indicates that the

pay increase is driven by women being promoted to a higher work level rather than women being paid more relative to men within a given work level.

We next explore whether gender norms in the receiving country matter. In principle, it could be easier to affect gender pay gaps in countries that are already somewhat progressive as there might be less resistance to promoting women. On the other hand, if there is only a small gender pay gap to begin with, expat managers will have no impact. Managers may therefore have a larger impact in countries with conservative gender norms.

Panel B of Table I shows the results from estimating equation 1, splitting by receiving countries with progressive or conservative gender norms.[8] Indeed, expat managers have a larger impact in countries with conservative gender norms (columns 1 and 3).

Figure IV shows the impact of an expat manager on the gender pay gap during and after his tenure in the destination office. The baseline gender gap in countries with progressive norms ("high norms") is 0.24, meaning that women earn 24% less than what men earn. In countries with conservative norms, the baseline gap is 0.3. An expat manager from a country with progressive norms closes the gap in both countries, but the magnitude is larger in conservative countries, where the gap closes by 10 percentage points. Interestingly, the gender pay gap closes to be similar in magnitude (around 0.2) in countries with progressive and conservative norms once a progressive expat manager visits. If anything, the wage gap closes more in more conservative countries. This could be because, in conservative countries, women face more discrimination at the hiring stage (Ashraf et al., 2024). As such, the female employees in conservative countries may be better than those in progressive countries. If expat managers improve pay to reflect employees' actual productivity, we might expect a smaller pay gap in conservative country offices.

4.1.2 Promotions

We next explore whether the pay increases are driven in part by women being promoted within the multinational. Table II shows the results from re-estimating equation

[8]Countries with progressive (conservative) gender norms are those with above (below)-median average local managers' gender norms.

1 but using three measures of promotions as the outcomes in columns 1-3. The first column shows the impact of an expat manager on the cumulative number of times a worker is promoted to a new salary grade. During a "high norms" expat manager's tenure in the office, women see an average of 0.8 more salary grade promotions relative to cases when a "low norms" manager is in charge. This represents a 50% increase over the mean. As in the case of pay, women continue to be promoted even after the manager leaves the office.

Column 2 shows the impact of an expat manager on the cumulative number of work-level promotions a worker receives. Women receive 0.05 more work level promotions during a "high norms" manager's tenure in the office, and continue to accumulate more promotions even after the manager has left. The independent variable in column 3 is a worker's work level number. Women on average move up 0.06 levels within the firm.

The fact that women continue to be promoted even after a manager rotates out of the office suggests that there is a longer-term change in the receiving office. Since the expat manager is no longer in charge of promotions, other managers must promote women more. We explore this possibility in Section 4.3.

4.1.3 Lateral Moves

We test whether expat managers partially improve women's earnings by changing the task allocation of their team, e.g. by better identifying and allocating female talent to tasks (Minni, 2023). This could occur because expat managers from progressive countries more readily acknowledge a range of tasks that women can do, or are better at recognizing female talent.

Column 4 of Table II examines whether the horizontal allocation of workers to jobs changes after the arrival of an expat manager. We estimate equation 1 but use the cumulative number of sub-function changes. Expat managers do not appear to move women to different sub-functions during their tenure at the office.

Table III tests whether the impact of an expat manager depends on whether the worker and manager have worked in the same sub-function. Although speculative, this sheds light on whether expat managers have the largest impact on women they interact with more, or with whose job details they are perhaps most familiar. Indeed,

we find that the impact on pay and promotions is largely driven by managers and workers who have shared the same sub-function within the firm. Again, while we can't distinguish between increased interactions versus greater knowledge of work as a driver of this effect, it does suggest that expat managers are not adopting a general policy of raising the wages of all women within the office.

4.1.4 Retention

We would expect that managers from countries with progressive norms would positively impact the retention of female workers if the managers are improving workplace culture, women's pay, or other positive aspects of the job. Table IV shows the impact of an expat manager on worker retention. The analysis is conducted at the worker level. The outcome variable in columns 1 and 2 takes the value one only if we see the employee in the sample at least one or five years from the worker's first month of expat exposure. The outcome in columns 3 and 4 takes the value one if we observe the worker at least one or five years after exposure, or if the worker leaves before one/five years. In column 5, the outcome variable is an indicator of whether the worker leaves at any point during the study period. For this analysis, we consider all workers and similarly control for year fixed effects to account for differential length of observation since exposure.

In countries with less progressive gender norms, expat managers with progressive gender norms have a significant impact on the retention of female employees. After one year, women are 6.1 percentage points less likely to leave the firm, relative to a baseline of 10%. We are unable to distinguish between mechanisms that could be driving this result; for example, whether the improved retention is due to changes in workplace culture or other job amenities.

Appendix Table B.3 shows that the pay and promotion effects are concentrated among workers who stay at the firm, suggesting that managers are not applying a blanket policy of raising the pay of all women at the firm. Rather, they seem to be recognizing and rewarding talented women.

4.1.5 Quantification: promotions, lateral moves, retention

In Table V we summarize the main findings regarding the contribution of each channel to the change in the gender pay gap: promotions, lateral moves, and worker retention. Column 1 reports the baseline results, Column 2 estimates a two-step Heckman selection estimator to control for selective worker retention, Column 3 adds work level fixed effects to quantify the impact of promotions, Column 4 adds sub-function fixed effects to net out the effect of lateral moves, and Column 5 includes all three channels. For the Heckman two-step selection model we use the number of worker exits in the same office-function-year as the excluded variable for the exit equation (Benson, Li, and Shue, 2019).

Overall, around half of the contemporaneous effect on the pay gap and the entire subsequent effect are due to promotions, while lateral moves and worker retention do not meaningfully contribute to its shrinking. Thus, the primary driver behind the smaller gender pay gap induced by the high-norms managers is a more equal representation of women in managerial positions, which likely also explains its persist effect.

4.2 Reverse Transmission on Managers

If managers impact the destination office environment, could the norms in the destination office influence the manager? We test whether managers pick up the norms of the destination office by identifying managers from the same home country who do a rotation in different countries. We then look at whether and how the gender pay gap under those managers differs in the immediate next country they work in; that is, the office after their rotation. This immediate next country could be their home country, or it could be another rotation. For example, we would like to compare two British managers, one of whom does a rotation in India (conservative gender norms) and one of whom does a rotation in Denmark (progressive gender norms). If the manager who completes a rotation in India picks up conservative norms, the gender pay gap under that manager in his next office location should be larger than the corresponding gender pay gap under the manager who spent time in Denmark.

Formally, we test this by estimating:

$$Y_{imjkt} = \sum_{k=0,1,2} \gamma_k \mathbf{1}[K_{it} = k](LowPriorNorms_{mt} \times Fem_i) + \theta_i + \theta_{mk} + \theta_{j,Year(t),Fem(i)} + \mathbf{X}_{imt}\beta + \varepsilon_{imjkt} \quad (2)$$

where the variable $LowPriorNorms_{mt}$ is an indicator that takes the value one if the manager was previously in a country with conservative gender norms. This specification includes the same suite of fixed effects and controls as equation 1. In addition, we further control for expat manager's norms and low norms expat manager's home country x low norms next country, both interacted with exposure period $\times$ worker's gender. The outcomes are measured at the expat manager's next country rotation (which could be the expat's home country). Equation 2 is thus estimating the impact of the manager's exposure to one destination country on the gender gap in the teams in their next office. Standard errors are double clustered by worker and expat manager's home country times worker's gender.

The estimates in column 1 of Table B.4 show that managers who previously visited countries with less progressive norms do not increase the gender pay gap in their next rotation country, if not the opposite, suggesting that the norms do not rub off on the expat manager. Columns 2 and 3 present the results from estimating 2 but interact $(LowPriorNorms_{mt} \times Fem_i)$ with an indicator for the manager being from a country with progressive gender norms. The positive and statistically significant coefficients in column 3 imply that among expat managers from high norm countries, those who spent time in low norms countries *close* the gender pay gap in their next country rotations more than those who spent time in high norms countries, i.e., a "reversal" effect.[9] The results are qualitatively similar when looking at work-level promotions (columns 4-6). Albeit counterintuitive at first glance, these results are consistent with Ashraf et al.'s (2024) finding from the same firm that women workers are more positively selected in low norms countries, which potentially induces exposed expat managers to update positively on the overall quality of the female workforce.[10]

[9]Note that the coefficients on the expat manager's own norms remain positive throughout the columns as in Table I, i.e., managers from progressive countries continue to have a positive impact on the gender pay gap in their next country rotation.

[10]Although speculative, we do find evidence that this "reversal" effect exists only when the next country rotation is new to the expat manager, consistent with this story of belief updating.

4.3 Spillovers

Expat managers from gender-progressive countries have a lasting impact on the gender pay gap of their direct subordinates. If the manager truly influenced the office culture, though, we should see those subordinates, and others exposed to the expat manager, change their behavior. In this section, we test whether the expat manager's subordinates, who are managers themselves,[11] act differently when they manage their own workers.

To do so, we identify workers who transition to manager roles and look at how the gender pay gap of their workers changes. Specifically, we estimate equation 1, but now the time periods pertain to workers' exposure to the local manager who previously worked under the expat manager. The coefficients $\hat{\gamma}_k$ thus tell us the impact of a local manager exposed to a progressive expat manager, relative to one exposed to a conservative expat manager, on pay.

The results are presented in Table VI. As with our previous results, workers who worked under a progressive expat manager in the past have a large and significant impact on women's pay. This is true of both female (column 2) and male (column 3) workers.

5 Conclusion

This paper provides empirical evidence that managers' cultural gender norms differentially influence the career trajectories of women compared to men. Managers from countries with more progressive gender norms persistently narrow the gender pay gap. This is primarily achieved through increased promotion rates of women into senior management roles.

Despite ongoing efforts, women are still vastly underrepresented in leadership positions, and progress in identifying effective policy remedies has been limited (Bohnet, 2016; Bertrand, 2018). Our findings indicate that the views of the managers just below the top echelons of the firm, who are tasked with guiding the company's strategy and ensuring effective implementation, can significantly impact gender disparities in career trajectories. These managers can initiate a positive feedback loop by fostering the

[11] They are middle managers in work level 2.

careers of their direct reports – who are middle managers – which in turn influences those reporting to them.

Building on the literature on the role of multinationals in inducing productivity catch-up throughout the economy (Alfaro, 2017), our results suggest that their practice of rotating managers across space is not only a tool for knowledge transfer but also a catalyst for social development. By exposing workers to managers from different cultural contexts, multinational corporations facilitate the spread of progressive gender norms and equitable management practices.

While the results pertain to a single multinational company, we are exploring next whether our core findings extend to other multinationals using administrative employer-employee data from Brazil (RAIS). We plan to focus on the set of multinationals that have establishments in Brazil and investigate how the gender norms of the countries of their headquarters correlate with the gender pay gap in their Brazilian subsidiaries.

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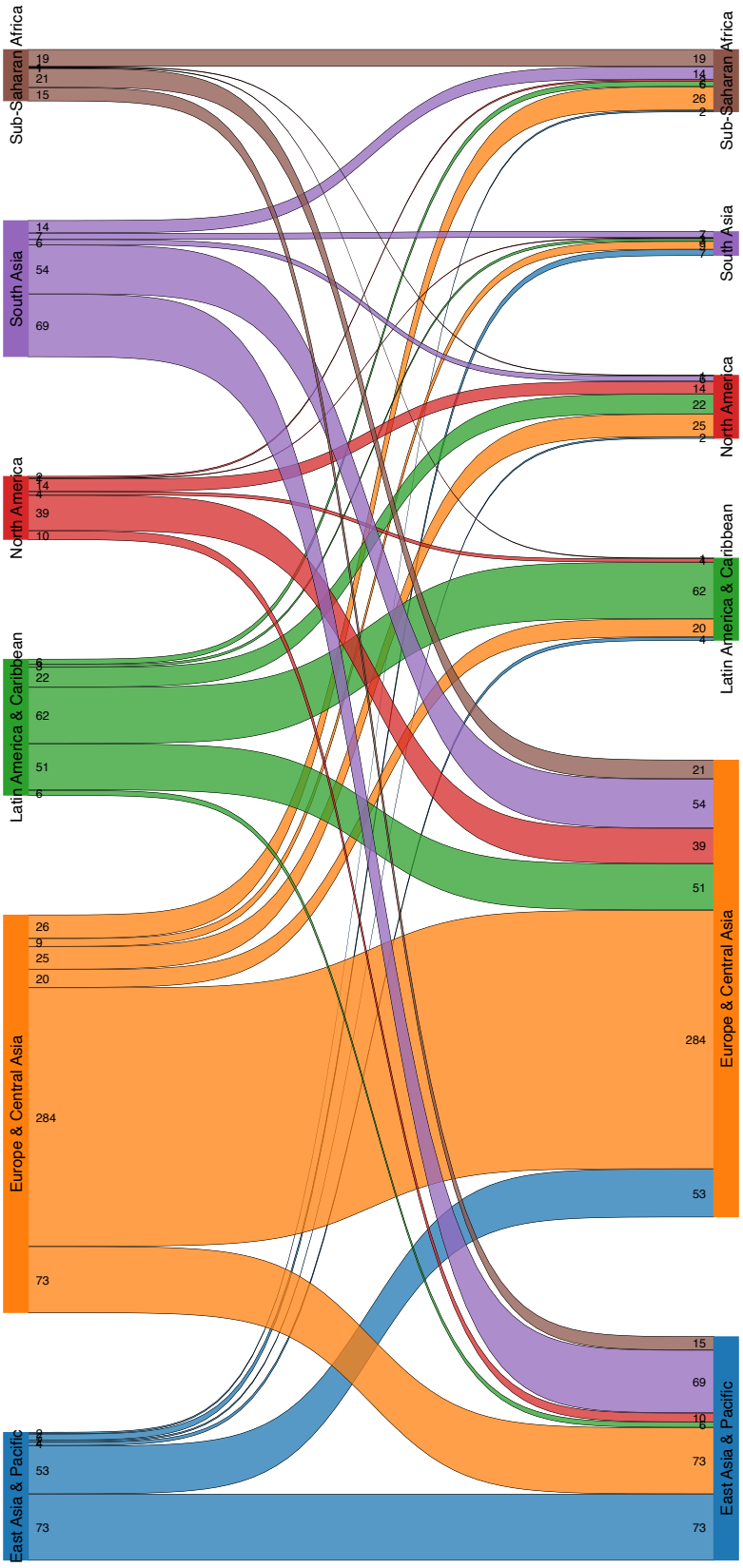
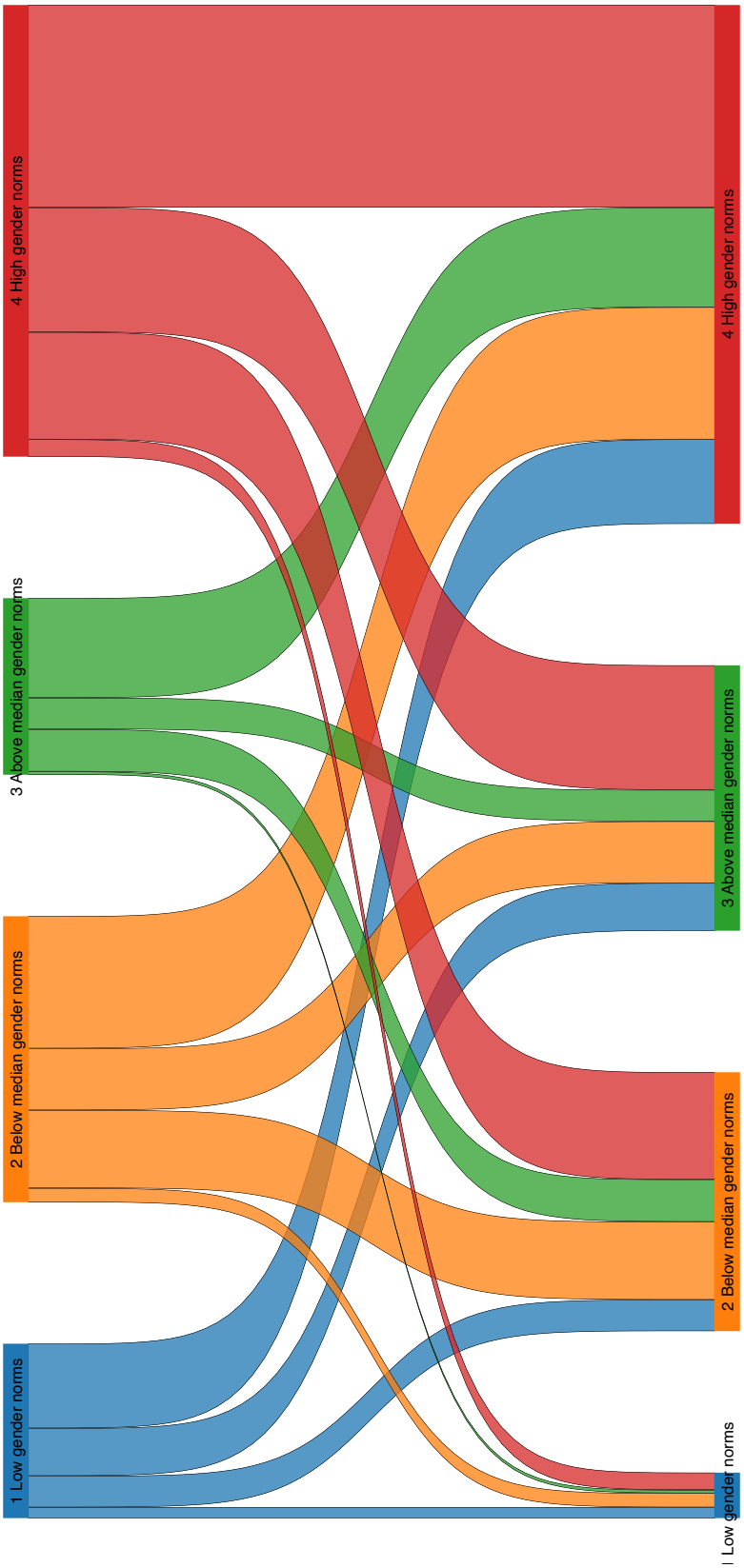
Figures

Figure I: Expat Managers' Rotation Locations by Geographical Region



Notes: This figure shows manager flows based on their geographic region.

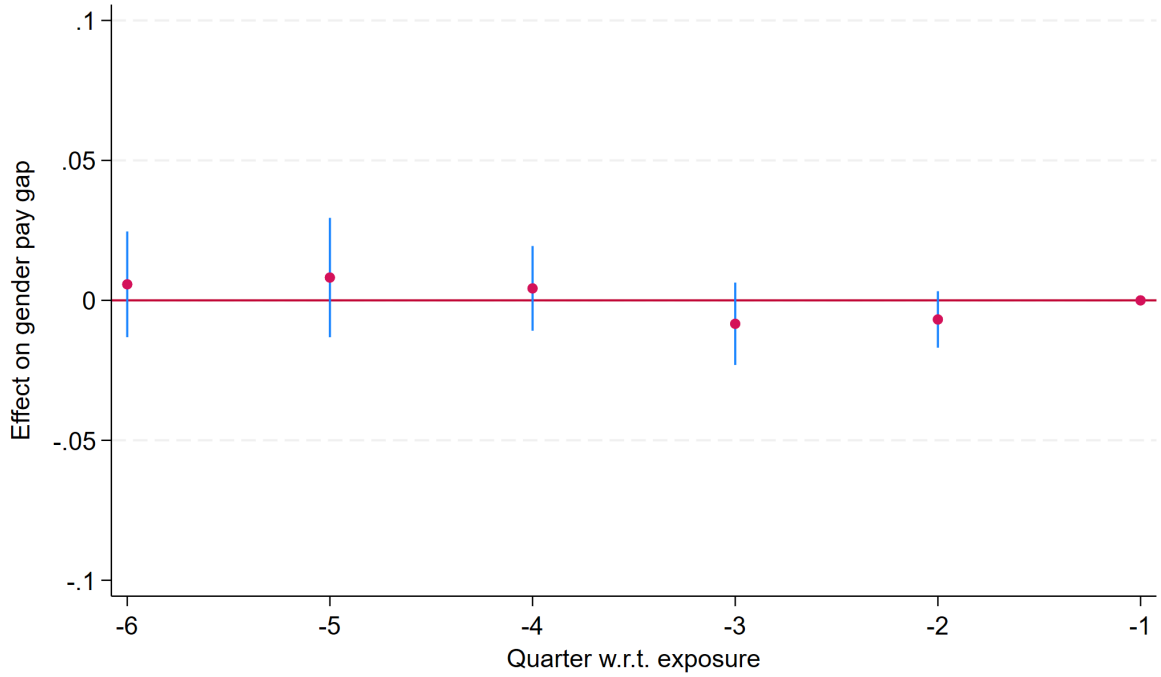
Figure II: Expat Managers' Rotation Locations by Gender Norms



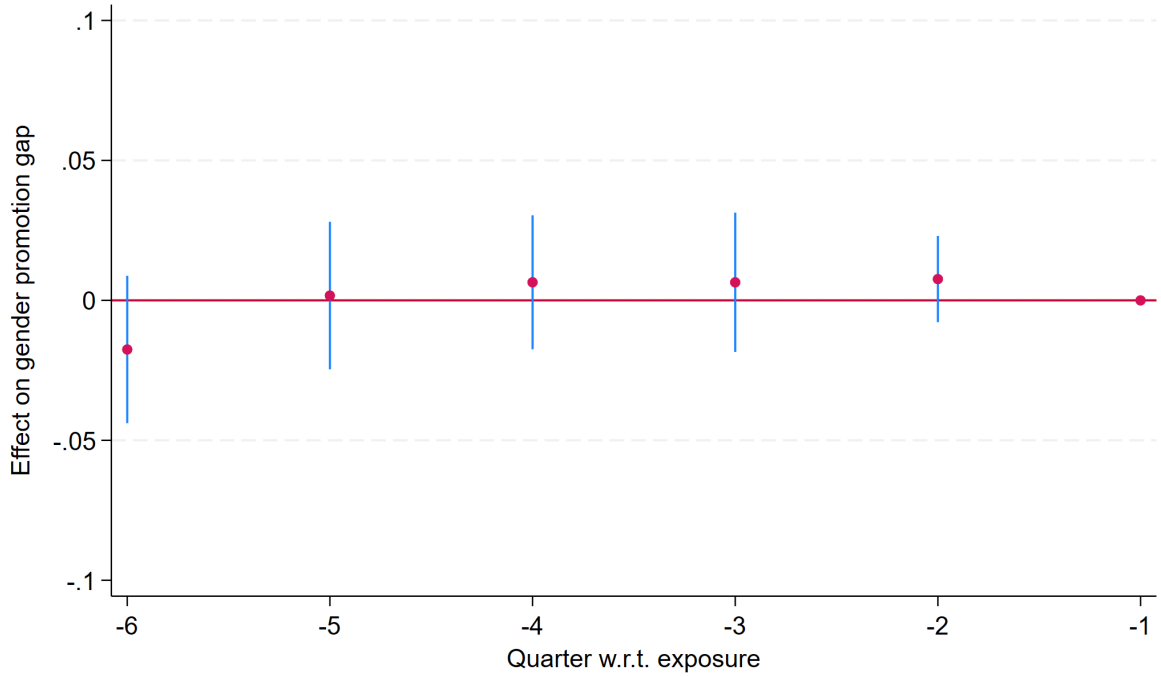
Notes: This figure shows manager flows based on gender norms. Our gender norms measure is divided into quartiles, with the first quartile being countries with the most progressive gender norms. The graph shows flows for five rotations.

Figure III: Impacts of Expat Manager on Gender Gaps Prior to Exposure

A. Gender Pay Gap

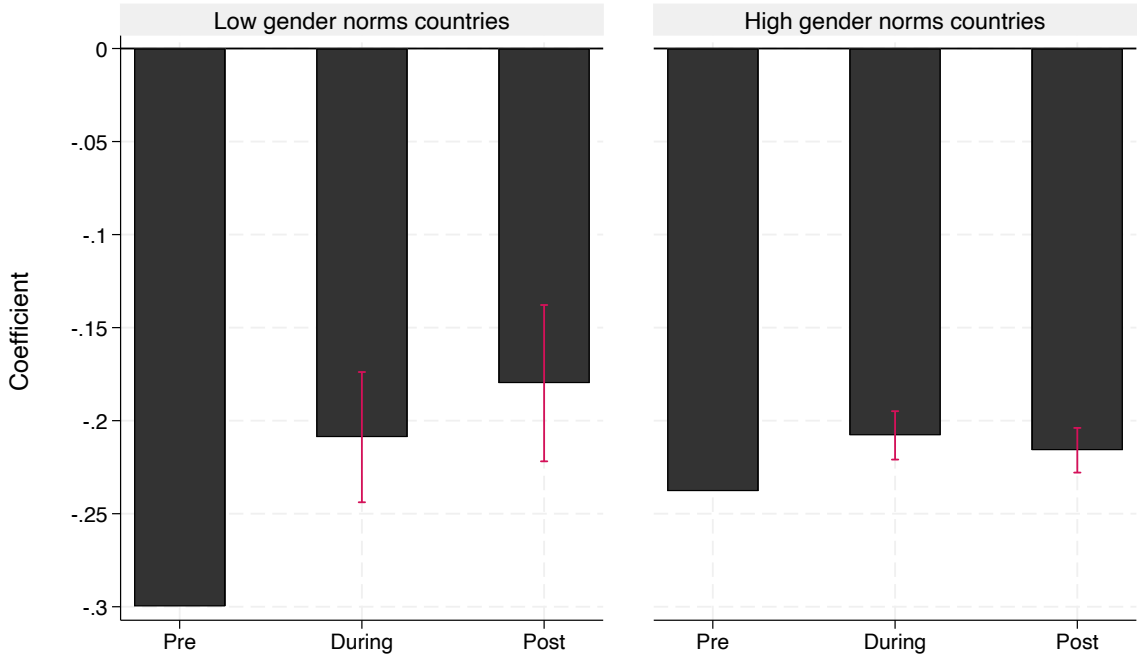


B. Gender Promotion Gap



Notes: This figure show the gender pay gap (panel A) and gender promotion gap (panel B) in the years leading up to when an expat manager rotates into the office. All coefficients are plotted relative to the pay or promotion gap in the year before the expat manager enters ($t-1$).

Figure IV: Impact of Expat Manager on the Gender Pay Gap



Notes: These figures summarize the impact of an expat manager from a country with progressive norms on the gender pay gap in receiving countries with progressive norms (left panel) and conservative norms (right panel). The baseline gender pay gap is plotted on the left of each figure.

Tables

Table I: Impact of Expat Manager's Gender Norms on the Gender Pay Gap

Panel A: All Dest. Countries				
Dependent variable:	**Log(Pay + bonuses)**			
	(1)	(2)	(3)	(4)
Expat mgr norms × Female × During	0.038***	0.038**	0.030***	0.017**
	(0.011)	(0.018)	(0.010)	(0.008)
Expat mgr norms × Female × Post	0.037***	0.053**	0.030***	0.009
	(0.013)	(0.020)	(0.011)	(0.010)
Worker FEs	✓	✓	✓	✓
Expat manager × Period FEs	✓	✓	✓	✓
Manager × Year × Fem. FEs	✓	✓	✓	✓
Dest. country × Period × Fem. FEs		✓		
Subfunction FEs			✓	
Work level FEs				✓
N	252,467	252,467	252,467	252,467
Panel B: Split by Dest. Country Norms				
Dependent variable:	**Log(Pay + bonuses)**			
	(1)	(2)	(3)	(4)
Receiving country sample:	Low norms	High norms	Low norms	High norms
Expat mgr norms × Female × During	0.091**	0.034***	0.122***	0.031*
	(0.035)	(0.013)	(0.038)	(0.016)
Expat mgr norms × Female × Post	0.129***	0.022*	0.111**	0.025*
	(0.042)	(0.012)	(0.048)	(0.013)
Worker FEs	✓	✓	✓	✓
Expat manager × Period FEs	✓	✓	✓	✓
Manager × Year × Fem. FEs	✓	✓	✓	✓
N	252,467		81,603	170,562

Notes: Panel A shows the coefficients from estimating equation 1. Panel B splits the sample into countries with conservative gender norms (columns 1 and 3) and progressive gender norms (columns 2 and 4). Columns 1 and 2 report coefficients from one single regression, as do columns 3 and 4. In both panels, we include controls for worker's age, age^2, tenure, and tenure^2. Standard errors are double clustered by worker and expat manager's home country × worker's gender.

Table II: Impacts of Expat Manager's Gender Norms on Worker's Promotions and Lateral Moves

Dependent variable:	(1) **Salary Promotion**	(2) **Work level Promotion**	(3) **Work level**	(4) **Subfunction Transfer**
Expat mgr norms × Fem × During	0.079*	0.047***	0.063***	0.019
	(0.044)	(0.013)	(0.018)	(0.061)
Expat mgr norms × Fem × Post	0.091**	0.053***	0.081***	0.080
	(0.039)	(0.015)	(0.020)	(0.071)
Dep. variable mean	1.546	0.344	1.968	1.415
Dep. variable std. dev.	1.361	0.508	0.842	1.444
Worker FEs	✓	✓	✓	✓
Expat mgr × Period FEs	✓	✓	✓	✓
Manager × Yr × Female FEs	✓	✓	✓	✓
N	252,467	252,467	252,467	252,467

Notes: Salary promotions, work level promotions and sub-function transfers are cumulative counts. Controls include worker's age, age^2, tenure, tenure^2. Standard errors are double clustered by worker and expat manager's home country × worker's gender.

Table III: Heterogeneous Impacts by Task Assignment

Dependent variable:	(1)	(2)	(3)	(4)
	Log(Pay + bonuses)		**Work level**	
Sample: Subfunc. vs. expat mgr.'s	Same	Different	Same	Different
Expat mgr.'s norms × Female × During	0.061***	0.012	0.064***	0.063**
	(0.015)	(0.014)	(0.022)	(0.025)
Expat mgr.'s norms × Female × Post	0.046***	0.029	0.084***	0.080**
	(0.014)	(0.021)	(0.019)	(0.031)
Worker FEs	✓	✓	✓	✓
Expat manager × Period FEs	✓	✓	✓	✓
Manager × Year × Female FEs	✓	✓	✓	✓
N	252,467		252,467	

Notes: Columns (1) and (2) report coefficients from one single regression, the same holds for columns (3) and (4). Controls include worker's age, age^2, tenure, tenure^2. Standard errors are double clustered by worker and expat manager's home country × worker's gender.

Table IV: Impact of Expat Manager's Gender Norms on Worker Retention

Sample:	(1)	(2)	(3)	(4)	(5)
	Restricted		Unrestricted		
Dependent variable:	**Leave 1 yr**	**Leave 5 yrs**	**Leave 1 yr**	**Leave 5 yrs**	**Would leave**
Expat mgr.'s norms × Female × Low norms	-0.061*	-0.266***	-0.061*	-0.174***	-0.020
	(0.033)	(0.090)	(0.033)	(0.042)	(0.030)
Expat mgr.'s norms × Female × High norms	-0.012	-0.000	-0.012	-0.054**	-0.023
	(0.011)	(0.043)	(0.011)	(0.025)	(0.021)
Dependent variable mean	0.102	0.509	0.103	0.714	0.342
Dependent variable std. dev.	0.303	0.500	0.305	0.452	0.475
Work level × Female FEs	✓	✓	✓	✓	✓
Function × Female FEs	✓	✓	✓	✓	✓
Expat manager FEs	✓	✓	✓	✓	✓
Receiving country × Female FEs	✓	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓	✓
N	2,085	485	2,088	943	2,238

Notes: Observation unit is worker. Controls include worker's age, age^2, tenure, tenure^2, and log(pay + bonuses), measured at first month of expat exposure, interacted with worker's gender. Standard errors are clustered by expat manager's home country × worker's gender.

Table V: Contributions of Retention, Promotions, and Lateral Moves

Dependent variable:	(1)	(2)	(3)	(4)	(5)
	Log(Pay + Bonus)				
Channel:	Baseline	Retention	Work level	Subfunction	All three
Expat mgr.'s norms × Female × During	0.038***	0.039***	0.017*	0.030**	0.011
	(0.011)	(0.011)	(0.008)	(0.010)	(0.008)
Expat mgr.'s norms × Female × Post	0.037**	0.039**	0.009	0.030**	0.005
	(0.013)	(0.013)	(0.010)	(0.010)	(0.009)
Worker FEs	✓	✓	✓	✓	✓
Expat mgr × Period FEs	✓	✓	✓	✓	✓
Manager × Yr × Female FEs	✓	✓	✓	✓	✓
Heckman correction for selection		✓			✓
Work level FEs			✓		✓
Sub-function FEs				✓	✓
N	252,467	252,467	252,467	252,467	252,467

Notes: Controls include worker's age, age^2, tenure, tenure^2. Standard errors are double clustered by worker and expat manager's home country × worker's gender. Columns 2 and 5 show the results of the Heckman two-step selection model using the number of worker exits in the same office-function-year as the excluded variable for the exit equation (Benson et al., 2019).

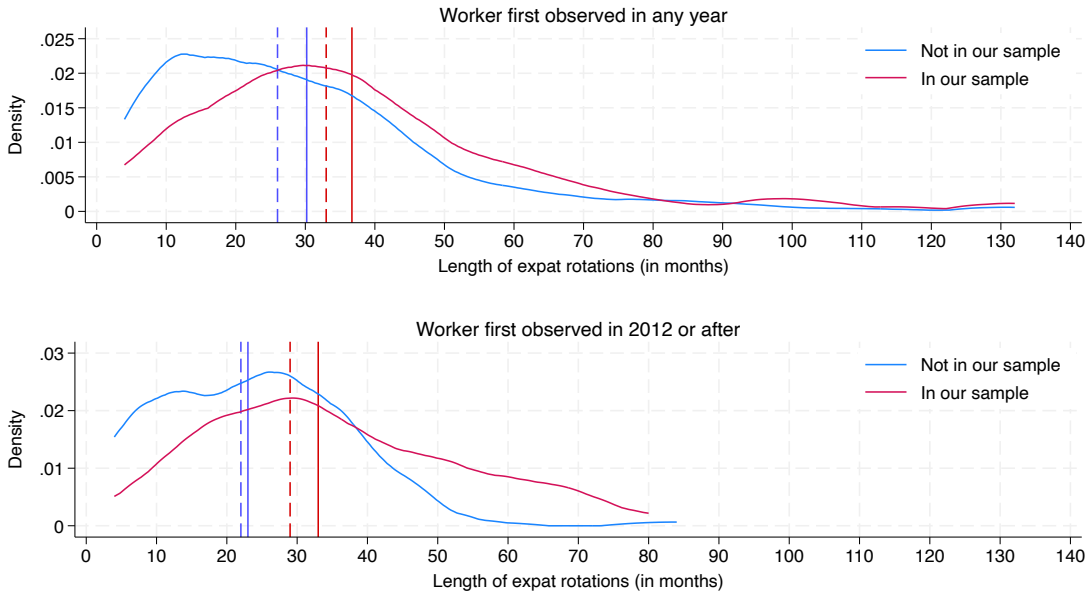
A Appendix Figures

Table VI: Vertical Spillovers on Exposed Workers

Dependent variable:	(1)	(2)	(3)	(4)
	Log(Pay + bonuses)			
Exposure to local manager:	Within 1 year of local mgr.'s expat exp.			After 1 year
Local manager's gender:	Either gender	Female mgr.	Male mgr.	Either gender
Expat mgr.'s norms × Female × During	0.085***	0.113***	0.068**	-0.001
	(0.028)	(0.034)	(0.029)	(0.020)
Expat mgr.'s norms × Female × Post	0.175***	0.242***	0.134***	-0.047
	(0.035)	(0.044)	(0.037)	(0.037)
Worker FEs	✓	✓	✓	✓
Local manager × Period FEs	✓	✓	✓	✓
Manager × Year × Female FEs	✓	✓	✓	✓
N	170,754	170,754		152,597

Notes: Exposure periods are defined based on exposure to local manager. Columns (2) and (3) report coefficients from one single regression. Controls include worker's age, age^2, tenure, tenure^2, and local manager norms × female × period. Standard errors are double clustered by worker and expat manager's home country × worker's gender.

Figure A.1: Length of Expat Rotations



Note: Solid vertical lines are the means, and dashed vertical lines are the medians.

Figure A.2: Source Countries of Expat Managers

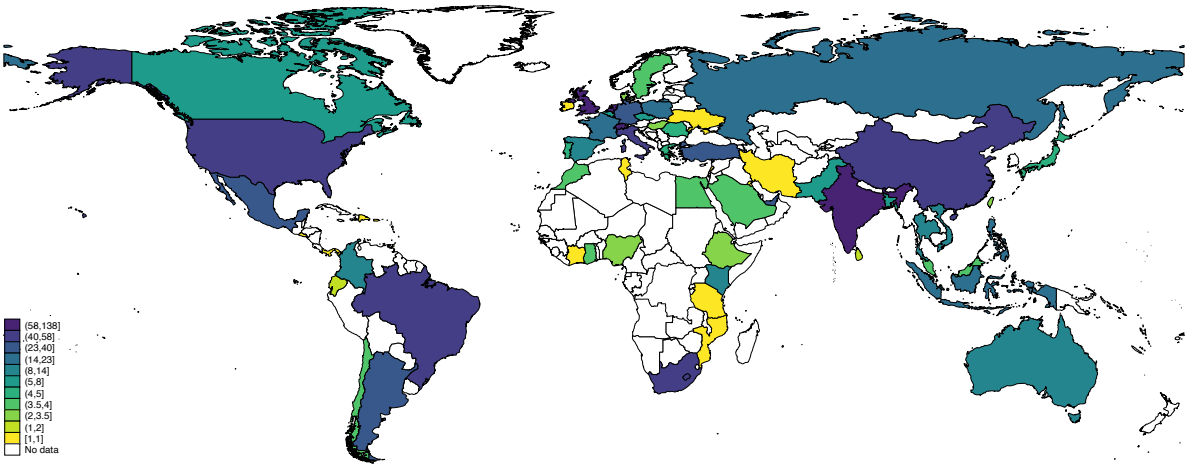
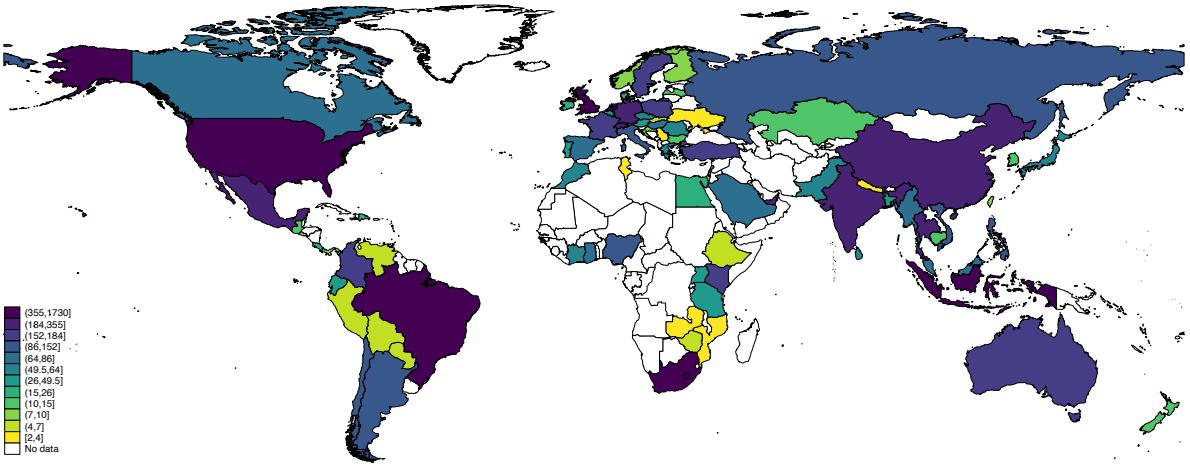


Figure A.3: Receiving Countries of Expat Managers



B Appendix Tables

Table B.1: Impact of Expat Manager's Gender Norms, Restricting to First Rotation

Panel A: All Dest. Countries				
Dependent variable:	**Log(Pay + bonuses)**			
	(1)	(2)	(3)	(4)
Expat mgr norms × Female × During	0.042	-0.027	0.032	0.046*
	(0.028)	(0.043)	(0.029)	(0.026)
Expat mgr norms × Female × Post	0.059**	-0.026	0.045	0.075***
	(0.028)	(0.047)	(0.028)	(0.025)
Worker FEs	✓	✓	✓	✓
Expat manager × Period FEs	✓	✓	✓	✓
Manager × Year × Female FEs	✓	✓	✓	✓
Dest. country × Period × Female FEs		✓		
Subfunction FEs			✓	
Work level FEs				✓
N	148,350	148,348	148,349	148,350
Panel B: Split by Dest. Country Norms				
Dependent variable:	**Log(Pay + bonuses)**			
	(1)	(2)	(3)	(4)
Dest. country sample:	Low norms	High norms	Low norms	High norms
Expat mgr norms × Female × During	0.148**	0.013	0.697***	0.011
	(0.073)	(0.034)	(0.129)	(0.038)
Expat mgr norms × Female × Post	0.227***	0.020	0.674***	0.004
	(0.074)	(0.032)	(0.110)	(0.036)
Worker FEs	✓	✓	✓	✓
Expat manager × Period FEs	✓	✓	✓	✓
Manager × Year × Female FEs	✓	✓	✓	✓
N	148,350		47,262	100,942

Notes: Controls include worker's age, age^2, tenure, tenure^2. Standard errors are double clustered by worker and expat manager's home country × worker's gender.

Table B.2: Heterogeneous Impacts of Expat Manager's Gender Norms, Restricting to First Rotation

Dependent variable:	(1)	(2)	(3)	(4)
	Log(Pay + bonuses)			
Receiving country sample:	Low norms	High norms	Low norms	High norms
Expat mgr.'s norms × Female × During	0.148**	0.013	0.697***	0.011
	(0.073)	(0.034)	(0.129)	(0.038)
Expat mgr.'s norms × Female × Post	0.227***	0.020	0.674***	0.004
	(0.074)	(0.032)	(0.110)	(0.036)
Worker FEs	✓	✓	✓	✓
Expat manager × Period FEs	✓	✓	✓	✓
Manager × Year × Female FEs	✓	✓	✓	✓
N	148,350		47,262	100,942

Notes: Columns (1) and (2) report coefficients from one single regression. Controls include worker's age, age^2, tenure, tenure^2. Standard errors are double clustered by worker and expat manager's home country × worker's gender.

Table B.3: Heterogeneous Impacts by Worker Retention

Dependent variable:	(1) **Log(Pay + bonuses)**	(2)	(3) **Work level**	(4)
Sample:	Leave 3 yrs	Stay 3 yrs	Leave 3 yrs	Stay 3 yrs
Expat mgr.'s norms × Female × During	0.018	0.065***	0.016	0.029
	(0.020)	(0.014)	(0.032)	(0.020)
Expat mgr.'s norms × Female × Post	0.026	0.042***	0.025	0.036**
	(0.025)	(0.014)	(0.039)	(0.018)
Worker FEs	✓	✓	✓	✓
Expat manager × Period FEs	✓	✓	✓	✓
Manager × Year × Female FEs	✓	✓	✓	✓
N	209,113		209,113	

Notes: Columns (1) and (2) report coefficients from one single regression, the same holds for columns (3) and (4). Controls include worker's age, age^2, tenure, tenure^2. Standard errors are double clustered by worker and expat manager's home country × worker's gender.

Table B.4: Impact of Destination Country's Norms on Expat Manager

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)
	Log(Pay + bonuses)			**Work level**		
Sample: Expat mgr.'s home country	All	Low norms	High norms	All	Low norms	High norms
Low norms prior dest. × Female × During	0.036*	0.040	0.034*	0.060*	0.070	0.048
	(0.020)	(0.031)	(0.020)	(0.031)	(0.048)	(0.038)
Low norms prior dest. × Female × Post	0.032	0.004	0.054**	0.056	0.111**	0.012
	(0.024)	(0.039)	(0.026)	(0.041)	(0.046)	(0.051)
Worker FEs	✓	✓	✓	✓	✓	✓
Expat manager × Period FEs	✓	✓	✓	✓	✓	✓
Manager × Year × Female FEs	✓	✓	✓	✓	✓	✓
N	2,056,929	2,056,929		2,056,929	2,056,929	

Notes: Columns (2) and (3) report coefficients from one single regression, the same holds for columns (5) and (6). Controls include worker's age, age^2, tenure, tenure^2; expat manager's norms x worker's gender x exposure period; low norms expat manager's home country x low norms prior destination country x low norms next destination country. Standard errors are double clustered by worker and expat manager's home country × worker's gender.