

SUPPLEMENTARY MATERIALS

MAKING THE INVISIBLE HAND VISIBLE:  
MANAGERS AND THE ALLOCATION OF WORKERS TO JOBS

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## 1 Manager rotations

I provide additional background information about the firm rationale for the managers' rotations and more broadly the firm personnel strategies at different levels of the hierarchy.

For entry-level workers in work-level 1, the firm's objective is to find the area inside the company where they can thrive. Workers are encouraged to actively think about their skills, interests, and their future goals and to keep a continual dialogue with their line managers on career development. In other words, *exploration* is deemed more important than *exploitation*.

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For work-level 2 managers, the objective is to train them within a given area of work and understand who would be capable of progressing to work-level 3, hence the firm conducts lateral rotations across teams. Again, *exploration* is deemed more important than *exploitation* although the former is typically conducted within a given sub-function. As opposed to employees in work-level 1, the nature of the job does not change substantially in these rotations, what changes are the people the manager interacts with and the projects. The exploration that the firm cares about in this case is the one required to find the right work-level 3 managers, who start to have bigger responsibilities, such as setting strategy and making budget allocation decisions.

This paper focuses on work-level 1 workers and work-level 2 managers, but below I also provide information on the higher work-levels for context.

For work-level 3 (around 2,200 employees in the cross-section), the objective is to exploit the knowledge they have accumulated in the specific area and avoid frequent rotations, hence *exploitation* is deemed more important than *exploration*.

For work-level 4 and above, there are a number of different considerations that aim to strike a balance between exploitation and exploration in order to get relevant work experience for the executive suite: some rotations, e.g., across countries, are encouraged, although they typically last longer. This is a very selected pool of employees at the top echelons of the multinational (around 500 employees in the cross-section).

## 2 Placebo events: managers' position number oddness

As a robustness check, I reproduce the analysis, but instead of focusing on high-flyer managers as the relevant characteristic of managers, I focus on a characteristic that I know ex-ante should not be relevant: whether the manager's "position number" (generated automatically by the HR system when hiring a worker) is even or odd.<sup>1</sup> This placebo test provides a useful sanity check. First, it helps rule out mechanical reasons why my event-study framework would generate spurious effects. Second, this placebo analysis can be used to assess whether my standard errors are adequate: e.g., if I were to find statistically significant coefficients, it would suggest that the inference

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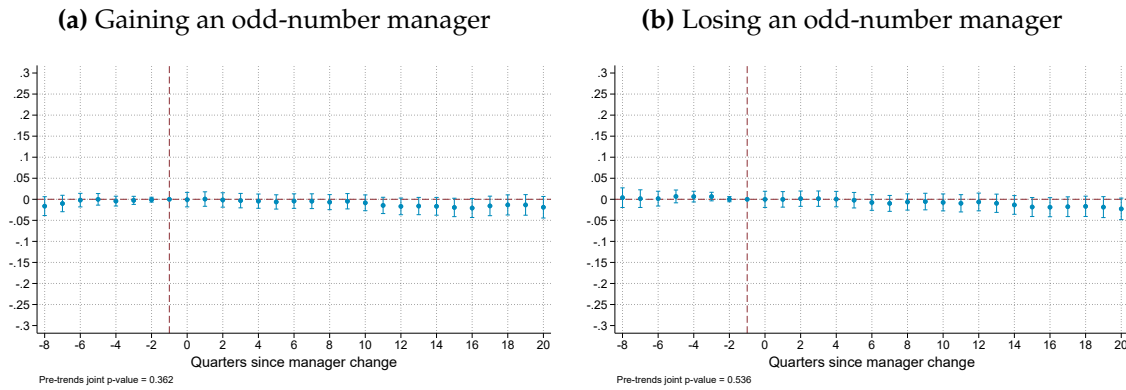
<sup>1</sup>The position number is distinct from the employee ID number, the official number used for identification of an employee inside the firm. The position number is also unique at the employee level but it is only used administratively by HR.

is misleading.

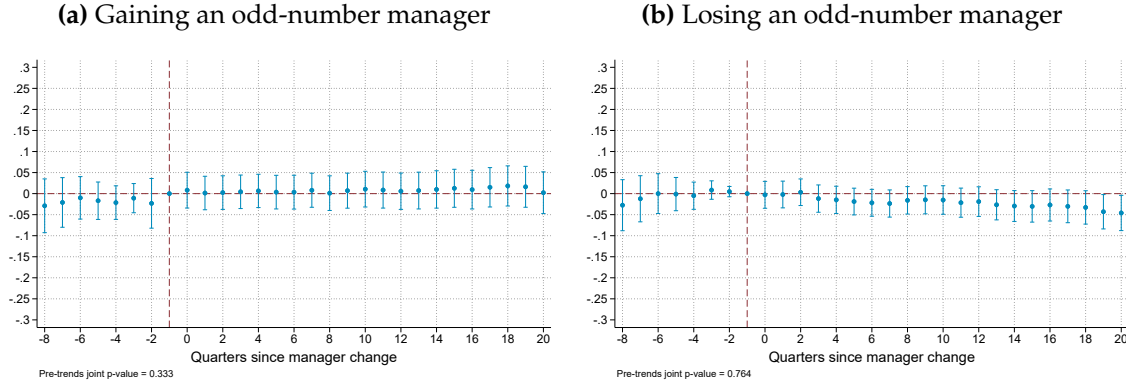
The regression of interest is identical to the main specification from equation 2 in the paper, except that managers' performance is replaced everywhere by the managers' position number oddness. Hence, the set of manager transitions can be denoted as  $j \in \{EtoO, EtoE, OtoE, OtoO\}$ . I identify analogous difference estimates for these placebo events. For example, the difference estimates  $\hat{\beta}_{EtoO,s} - \hat{\beta}_{EtoE,s}$  measure how workers react to gaining an odd-number manager (i.e., transitioning from an even-number manager to an odd-number manager, relative to transitioning from an even-number manager to another even-number manager).

Figures S.1-S.2 are equivalent to the event-study figures in Section 5 of the paper, but they are based on the manager's position number oddness instead of high-flyer status. As expected, they show no significant difference between the two types of transition, either before or after the event. For instance, at 10 quarters after transitioning from an even-number to an odd-number manager (relative to another even-number manager), the difference between the number of lateral moves of odd-number and even-number workers is very close to zero, statistically insignificant, and precisely estimated (Figure S.1).

**Figure S.1:** Placebo: lateral transfer



**Figure S.2:** Placebo: salary grade increase



### 3 Results from global employee surveys

I conduct additional analysis using individual responses to four global annual engagement surveys that the company ran in 2017-2021. Each September, all workers are invited to the survey and the response rate is around 60%.<sup>2</sup> The survey is designed to measure the “pulse” of workers across the globe, gathering data on how the organization is perceived by the workers themselves and on workers’ job satisfaction and well-being. Table S.1 shows the questions, which are rated on a 5-point Likert scale.

Respondents are broadly similar to non-respondents in terms of demographics; they generally tend to be slightly older and higher up in the hierarchy (see Table S.2). I only keep respondents who have no missing answers. For this data source, I do not have a window long enough to run an event study. Hence, I run the following static model on the sample of workers who are in the event studies after the manager transition to estimate the contemporaneous impact of having a high-flyer manager:

$$y_{it} = \alpha_0 + \alpha_1 \text{High flyer manager}_{it} + \mathbf{X}_{it}'\boldsymbol{\beta} + \eta_{it} \quad (\text{S.1})$$

where the coefficient of interest is  $\alpha_1$  and control variables include year fixed effects, fixed effects of the interaction of office and function, as well as the interaction between age band and gender. Standard errors are clustered at the manager level.

As the survey contains many variables, I aggregate them together in four indices, by grouping the variables by theme (see Table S.1). I construct their simple average, as

<sup>2</sup>In 2017 and 2018, the survey was only sent to a random sample of employees.

well as take the first principal component from PCA as a robustness check. Since most respondents tend to answer four or five out of the 5-point Likert scale, I use binary indicators for whether a worker answers five.

Table S.3 shows how the worker assesses the manager and team's performance while being supervised by a high or low-flyer manager. Workers under a high-flyer manager are more likely to report higher manager effectiveness and team effectiveness, while I do not find statistically significant differences for the indices of job satisfaction, autonomy, and company effectiveness. These results provide support for the interpretation that high-flyers manage their workers more effectively. I also investigate if the survey results are different for workers who change their jobs after the manager transition event, and as Table S.4 suggests, the conclusion remains the same.

**Table S.1: Variable construction: Survey measures**

Variable	Components	Possible answers
<b>Panel A: Team effectiveness</b>		
Team inclusive	In my team, we have an inclusive working environment	1 Strongly disagree - 5 Strongly agree
Team agility	I feel that over the last 12months the speed & agility has improved in my teams	1 Strongly disagree - 5 Strongly agree
Trust leaders	I trust the Senior leaders in my part of the organization	1 Strongly disagree - 5 Strongly agree
Leaders strategy	Leaders in my part of the org. clearly demonstrate strategy in their behaviour	1 Strongly disagree - 5 Strongly agree
Leaders inclusive	Leadership in my part of the org. visibly stands for diversity & inclusion	1 Strongly disagree - 5 Strongly agree
Customers at heart	My team puts the needs of our customers at the heart of everything we do	1 Strongly disagree - 5 Strongly agree
<b>Panel B: Worker autonomy</b>		
Focus on performance	I am able to manage distractions and focus on what matters	1 Strongly disagree - 5 Strongly agree
Access learning	I can access the learning resources I need to do my job effectively	1 Strongly disagree - 5 Strongly agree
Prioritization	I have control over prioritizing tasks when facing multiple demands at work	1 Strongly disagree - 5 Strongly agree
Development	I am satisfied with my development opportunities at Company	1 Strongly disagree - 5 Strongly agree
Wellbeing	I believe that Company cares about my Wellbeing	1 Strongly disagree - 5 Strongly agree
Report unethical behavior	I feel able to report potential bus. principle breaches w/o fear of retaliation	1 Strongly disagree - 5 Strongly agree
<b>Panel C: Job satisfaction</b>		
Work life balance	I can maintain a reasonable balance between my personal life and work life	1 Strongly disagree - 5 Strongly agree
Job satisfaction	Overall, I am extremely satisfied with Company as a place to work	1 Strongly disagree - 5 Strongly agree
Refer Company	I would gladly refer a friend or family member to Company for employment	1 Strongly disagree - 5 Strongly agree
Proud to be at Company	I am proud to say that I work for Company	1 Strongly disagree - 5 Strongly agree
Live purpose in Company	I believe I can live my purpose in Company	1 Strongly disagree - 5 Strongly agree
Leaving Company	I am not seriously considering leaving Company	1 Strongly disagree - 5 Strongly agree
Extra mile	My job inspires me to go the extra mile	1 Strongly disagree - 5 Strongly agree
<b>Panel D: Company effectiveness</b>		
Strategy to win	Company has the right strategy in place to win	1 Strongly disagree - 5 Strongly agree
Sustainability	My job contributes to the sustainability plan and drives sustainable growth	1 Strongly disagree - 5 Strongly agree
Technology	Company processes & technologies available to me make it easier to do my job	1 Strongly disagree - 5 Strongly agree
Competition	Company better than competition at responding rapidly to changes in the market	1 Strongly disagree - 5 Strongly agree
Removing barriers between teams	Company helps me to work efficiently by removing barriers between teams	1 Strongly disagree - 5 Strongly agree
Integrity	I believe that in Company business is conducted with integrity	1 Strongly disagree - 5 Strongly agree
Recommend products	I would recommend Company's products to my family and friends	1 Strongly disagree - 5 Strongly agree
<b>Panel E: Effective line manager</b>		
Effective manager	My line manager is an effective leader	1 Strongly disagree - 5 Strongly agree

**Table S.2:** Comparison of non-respondents to respondents: employee annual survey

Variable	(1)	(2)	(3)
	Mean / (SE)		Difference in means / (p-value)
	Non-respondents	Survey respondents	Difference
Female	0.432 (0.495)	0.466 (0.499)	0.009*** (0.000)
Age 18-29	0.268 (0.443)	0.206 (0.404)	-0.050*** (0.000)
Age 30-39	0.387 (0.487)	0.404 (0.491)	-0.005** (0.017)
Age 40-49	0.221 (0.415)	0.247 (0.431)	0.032*** (0.000)
Age 50+	0.124 (0.330)	0.143 (0.350)	0.023*** (0.000)
Econ, Business, and Admin	0.476 (0.499)	0.488 (0.500)	0.003 (0.570)
Sci, Engin, Math, and Stat	0.309 (0.462)	0.300 (0.458)	0.007 (0.112)
Social Sciences and Humanities	0.146 (0.353)	0.147 (0.354)	-0.003 (0.430)
Other Educ	0.075 (0.263)	0.071 (0.256)	-0.008*** (0.002)
Tenure (years)	8.199 (8.765)	9.341 (8.937)	1.677*** (0.000)
Work-level 1	0.000 (0.001)	0.000 (0.000)	-0.000 (0.317)
Work-level 2	0.819 (0.385)	0.742 (0.438)	-0.105*** (0.000)
Work-level 3+	0.146 (0.353)	0.206 (0.405)	0.079*** (0.000)
Observations	678,557	158,829	837,386

Notes. An observation is a worker-year (in September for each year when the survey is administered). This table compares average characteristics of the non-respondents (Column 1) to the subset of employees who responded to the employee survey (Column 2). Control variables include office and year fixed effects. Standard errors are clustered at the worker level.

**Table S.3: Self-reported survey outcomes**

	Effective Leader	Team Effectiveness	Job Satisfaction	Autonomy	Company Effectiveness
	(1)	(2)	(3)	(4)	(5)
<i>Panel (a): using averages for the indices</i>					
High-flyer manager	0.036*** (0.01)	0.013* (0.01)	-0.003 (0.01)	0.001 (0.01)	0.003 (0.01)
R-squared	0.164	0.224	0.246	0.240	0.301
Mean, low-flyers	0.407	0.343	0.327	0.353	0.347
Obs	203067	203067	203067	203067	203067
<i>Panel (b): using the first component of PCA for the indices</i>					
High-flyer manager	0.036*** (0.01)	0.068* (0.04)	-0.015 (0.03)	0.007 (0.04)	0.017 (0.03)
R-squared	0.164	0.225	0.248	0.241	0.305
Mean, low-flyers	0.407	-0.003	-0.004	0.052	-0.022
Obs	203067	203067	203067	203067	203067

Notes. An observation is a worker-year. Estimates are obtained by running the model in equation (S.1). Data comes from the annual pulse survey run by the firm since 2017. Standard errors are clustered by manager. Control variables include the fixed effects of the interaction of office and function, as well as the interaction between age band and gender, and year fixed effects. In panel (a), survey indices are the averages of various survey questions, grouped together by theme as detailed in Table S.3. In panel (b), survey indices are the first component of PCA using variables from the same group. I use binary variables to construct the first principal components and averages: probability of answering 5 out of 5-point Likert Scale.

**Table S.4: Self-reported survey outcomes: robustness**

	Effective Leader	Team Effectiveness	Job Satisfaction	Autonomy	Company Effectiveness
	(1)	(2)	(3)	(4)	(5)
High-flyer manager	0.060*** (0.02)	0.027** (0.01)	0.003 (0.01)	0.017 (0.01)	0.009 (0.01)
High-flyer manager $\times$ worker changed job	-0.030 (0.02)	-0.017 (0.01)	-0.008 (0.01)	-0.020 (0.01)	-0.008 (0.01)
R-squared	0.164	0.224	0.246	0.241	0.302
Mean, low-flyers	0.407	0.343	0.327	0.353	0.347
Obs	203067	203067	203067	203067	203067

Notes. An observation is a worker-year. Estimates are obtained by running the model in equation (S.1) interacting the indicator for high-flyer manager with an indicator for whether the worker changes job after the event. Data comes from the annual pulse survey run by the firm since 2017. Standard errors are clustered by manager. Control variables include the fixed effects of the interaction of office and function, as well as the interaction between age band and gender, and year fixed effects. Survey indices are the averages of various survey questions, grouped together by theme as detailed in Table S.3. I use binary variables to construct the averages: probability of answering 5 out of 5-point Likert Scale.