

SUPPLEMENTARY MATERIALS

MAKING THE INVISIBLE HAND VISIBLE:

MANAGERS AND THE ALLOCATION OF WORKERS TO JOBS

Virginia Minni*

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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*.

*University of Chicago Booth School of Business, CEPR and IZA. virginia.minni@chicagobooth.edu.

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.¹ 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 found statistically significant coefficients, it would suggest that the inference

¹The 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.

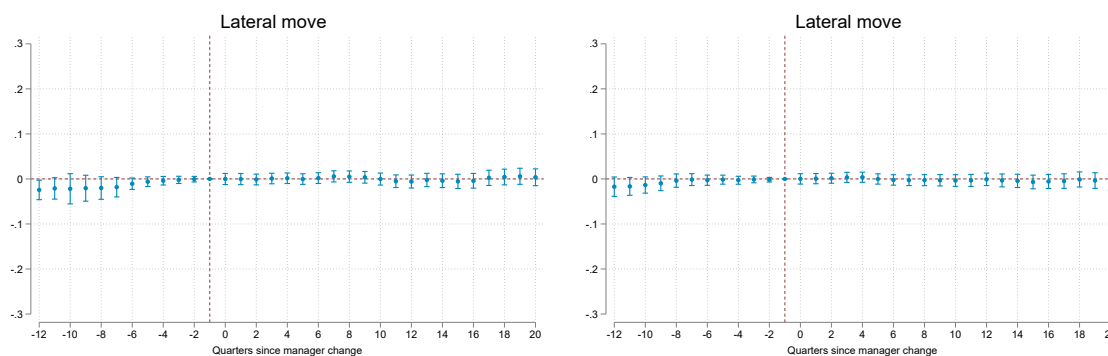
is misleading.

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.4 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

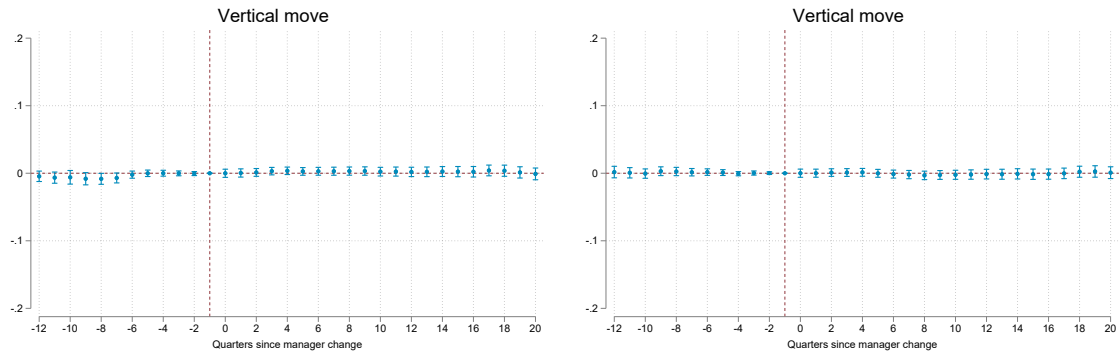
(a) Gain odd-number manager ($\hat{\beta}_{EtoO,s} - \hat{\beta}_{EtoE,s}$) **(b)** Lose odd-number manager ($\hat{\beta}_{OtoE,s} - \hat{\beta}_{OtoO,s}$)



Notes. An observation is a worker-year-month. All coefficients are estimated from a single regression as in equation 2 in the main body of the paper and are aggregated to the quarterly level for ease of presentation. 95% confidence intervals used and standard errors clustered by manager. The scale is the same as the largest of the scales in the corresponding graphs in the main body of the paper that use the high-flyer manager definition.

Figure S.2: Placebo: work-level promotion

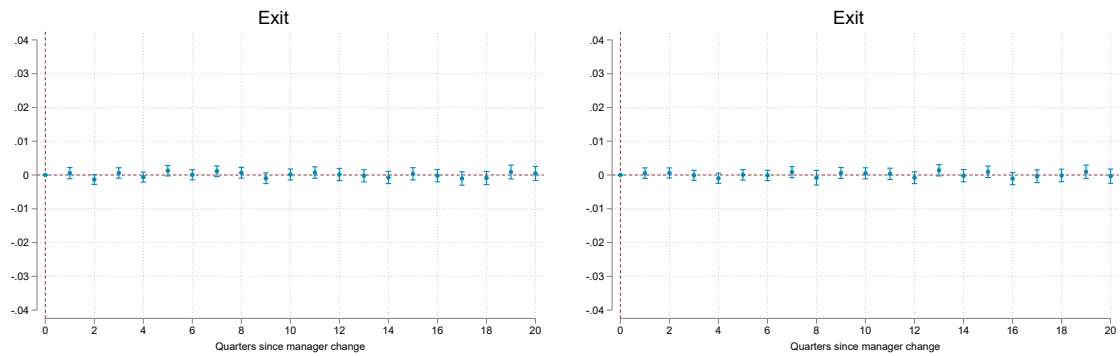
(a) Gain odd-number manager ($\hat{\beta}_{EtO,s} - \hat{\beta}_{EtOE,s}$) (b) Lose odd-number manager ($\hat{\beta}_{OtOE,s} - \hat{\beta}_{OtOO,s}$)



Notes. An observation is a worker-year-month. All coefficients are estimated from a single regression as in equation 2 in the main body of the paper and are aggregated to the quarterly level for ease of presentation. 95% confidence intervals used and standard errors clustered by manager. The scale is the same as the largest of the scales in the corresponding graphs in the main body of the paper that use the high-flyer manager definition.

Figure S.3: Placebo: exit from the firm

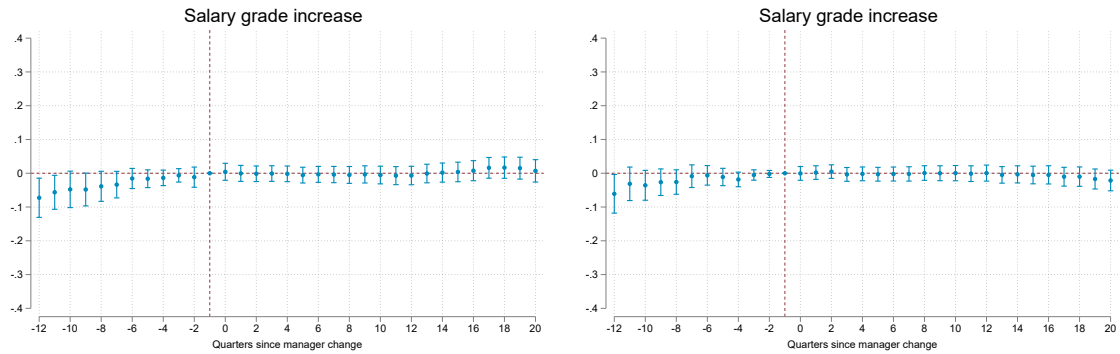
(a) Gain odd-number manager ($\hat{\beta}_{EtO,s} - \hat{\beta}_{EtOE,s}$) (b) Lose odd-number manager ($\hat{\beta}_{OtOE,s} - \hat{\beta}_{OtOO,s}$)



Notes. An observation is a worker-year-month. All coefficients are estimated from a single regression as in equation 2 in the main body of the paper and are aggregated to the quarterly level for ease of presentation. 95% confidence intervals used and standard errors clustered by manager. The scale is the same as the largest of the scales in the corresponding graphs in the main body of the paper that use the high-flyer manager definition.

Figure S.4: Placebo: salary grade increase

(a) Gain odd-number manager ($\hat{\beta}_{EtO,s} - \hat{\beta}_{EtOE,s}$) (b) Lose odd-number manager ($\hat{\beta}_{OtOE,s} - \hat{\beta}_{OtOO,s}$)



Notes. An observation is a worker-year-month. All coefficients are estimated from a single regression as in equation 2 in the main body of the paper and are aggregated to the quarterly level for ease of presentation. 95% confidence intervals used and standard errors clustered by manager. The scale of each graph is the same as the corresponding graph in the main body of the paper that uses the high-flyer manager definition.

3 Flexible projects platform and global employee surveys

To further shed light on the channels behind the results, I make use of two additional sources of data, the platform for flexible short-run projects, and the annual engagement surveys. They complement the administrative data in unveiling more concretely how worker behavior may change when supervised by a high-flyer manager.

In 2019-2020, the firm introduced a platform aimed at fostering an internal talent marketplace (?). This is a tool that enables workers to apply for short-term projects inside the company but outside their current team, which are denoted as flexible projects. These projects can vary in duration but typically range between one to six months and entail one or two days per week of work on the flexible opportunity. The rationale underlying this initiative is rooted in two objectives: to allow workers to engage in small projects, experiment with different jobs, expand and test their skills, as well as to fill new positions in real time in response to quickly changing market needs.

I conduct additional analysis using individual responses to four global annual surveys that the company ran in 2017-2021. Each September, all workers are invited to

the survey and the response rate is around 60%.² 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.4 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, higher up in the hierarchy, and are marginally more likely to have a high-flyer manager (see Table S.5). I only keep respondents who have no missing answers.

For these data sources, I do not have a window long enough to run an event study.³ Hence, I run the following static model on the switchers’ sample 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 α_1 and \mathbf{X}_{it} controls for country and year FE.

Table S.1 looks at worker participation in the initiative of flexible projects, which was conceived to allow greater career and organizational agility by empowering workers to design their own career paths. Workers gaining a high-flyer manager are 17% more likely to register on the platform of the flexible projects (6ppt), 6% more likely to complete their profile in full (3ppt), 12% more likely to state that they are available for flexible opportunities (3ppt), 87% more likely to report being available to be a mentor (11pt) and 24% more likely to apply for jobs (1ppt). Although launched in mid-2018, the flexible project program has taken some time to gain momentum, also due to the COVID-19 pandemic. Hence, the baseline take-up is still low with only 2.3% of workers applying for flexible projects, but it is projected to improve in the future.

Table S.2 looks at the contemporaneous survey outcomes, that is how the worker assesses the manager and team’s performance while being supervised by a high or low-flyer manager. As the survey contains many variables, I aggregate them together in four indices, by grouping together the variables by theme and taking the first principal component.⁴ Table S.4 lists the variables and their grouping in themes. More-

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

³The flexible projects platform was established in 2018 and the first annual pulse survey was run on a random sample of employees in 2017 and then globally from 2018 onward.

⁴Results are unchanged if I take a simple average, see Table S.3 Panel (a).

over, since most people tend to answer four or five out of the 5-point Likert scale, I use binary indicators for whether a worker answers five. Workers under a high-flyer manager are more likely to report higher manager effectiveness (single binary variable) and team effectiveness (index variable), while I do not find statistically significant differences for the indices of job satisfaction, autonomy, and company effectiveness. These results provide support to the interpretation that high-flyers manage their workers more effectively.

Table S.1: Engagement in flexible projects

	(1)	(2)	(3)	(4)	(5)
	Registered on Platform	Profile Completed	Available for Jobs	Available for Mentors	Applied to Position
High-flyer manager	0.0560*** (0.0085)	0.0261*** (0.0093)	0.0290*** (0.0090)	0.1062*** (0.0103)	0.0056* (0.0031)
Mean, low-flyer	0.331	0.473	0.245	0.122	0.023
N	864811	305589	305589	305589	305589
R-squared	0.1214	0.0655	0.4597	0.1591	0.0795

Notes. An observation is a worker-year-month. Standard errors are clustered by manager. Data are taken from flexible project program at the firm since 2020 that allows workers to apply for short-term projects inside the company but outside their current team. *Registered on the platform* indicates whether the employee created an account on the flexible projects platform. The remaining outcomes are for those employees that registered on the platform: *Profile Completed* indicates whether the profile on the platform is fully completed; *Available for Jobs* indicates whether the employee is available for jobs; *Available for Mentors* indicates whether the employee is available for mentors; and *Applied to Position* indicates whether the employee has applied to a position on the platform. Controls include country and year FE. Estimates are obtained by running the model in equation S.1.

Table S.2: Self-reported survey outcomes

	(1)	(2)	(3)	(4)	(5)
	Effective Leader	Team Effectiveness	Job Satisfaction	Autonomy	Company Effectiveness
High-flyer manager	0.0316*** (0.0080)	0.0702** (0.0291)	-0.0084 (0.0330)	-0.0034 (0.0259)	0.0216 (0.0297)
Mean, low-flyer	0.421	-0.051	-0.083	-0.087	-0.108
N	363780	363780	363780	363780	363780
R-squared	0.0472	0.0981	0.1056	0.1197	0.1703

Notes. An observation is a worker-year-month. Data from the annual pulse survey run by the firm since 2017. Standard errors are clustered by manager. Controls include: age-group \times gender FE, and country and year FE. Survey indices are the first principal components of various survey questions, grouped together by theme as detailed in Table S.4. I use binary variables: probability of answering 5 out of 5-point Likert Scale. Estimates obtained by running the model in equation S.1. Table S.3 Panel (a) shows that the results are very similar when using simple averages for the indices instead of the first principal component.

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

	(1)	(2)	(3)	(4)	(5)
	Effective Leader	Team Effectiveness	Job Satisfaction	Autonomy	Company Effectiveness
<i>Panel (a): using averages for the indices</i>					
High-flyer manager	0.0316*** (0.0080)	0.0139** (0.0057)	-0.0014 (0.0059)	-0.0009 (0.0054)	0.0029 (0.0051)
Mean, low-flyer	0.421	0.348	0.350	0.327	0.347
R-squared	0.0472	0.0977	0.1050	0.1185	0.1675
<i>Panel (b): heterogeneous effects by whether worker changes job</i>					
High-flyer × Worker changed job	-0.0050 (0.0140)	0.0094 (0.0516)	-0.0142 (0.0567)	-0.0505 (0.0446)	-0.0075 (0.0504)
Mean, low-flyer	0.421	-0.051	-0.083	-0.087	-0.108
R-squared	0.0472	0.0981	0.1057	0.1197	0.1705
N	363780	363780	363780	363780	363780

Notes. An observation is a worker-year-month. Data from the annual pulse survey run by the firm since 2017. Standard errors are clustered by manager. Controls include: age-group×gender FE, and country and year FE. In Panel (a), survey indices are the average of various survey questions, grouped together by theme as detailed in Table S.4. I use binary variables: probability of answering 5 out of 5-point Likert Scale. Estimates obtained by running the model in equation S.1. In Panel (b), survey indices are the first principal components of various survey questions, grouped together by theme as detailed in Table S.4 and sample is restricted to the first year since the manager transition. Estimates obtained by running the model in equation S.1 interacting indicator for high-flyer manager with an indicator for whether the worker changes job.

Table S.4: Variable construction - Survey Measures

<i>Variable</i>	<i>Components</i>	<i>Possible answers</i>
Panel A: Team effectiveness		
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
Panel B: Worker autonomy		
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
Panel C: Job satisfaction		
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
Panel D: Company effectiveness		
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
Panel E: Effective line manager		
Effective manager	My line manager is an effective leader	1 Strongly disagree - 5 Strongly agree

Table S.5: 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)
Share in Cohort 18-29	0.268 (0.443)	0.206 (0.404)	-0.050*** (0.000)
Share in Cohort 30-39	0.387 (0.487)	0.404 (0.491)	-0.005** (0.017)
Share in Cohort 40-49	0.221 (0.415)	0.247 (0.431)	0.032*** (0.000)
Share in Cohort 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, Tech, Engin, and Math	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)
Share in Work-level 1	0.819 (0.385)	0.742 (0.438)	-0.105*** (0.000)
Share in Work-level 2	0.146 (0.353)	0.206 (0.405)	0.079*** (0.000)
Share in Work-level 3+	0.035 (0.184)	0.052 (0.222)	0.026*** (0.000)
High-flyer manager	0.127 (0.333)	0.201 (0.401)	0.042*** (0.000)
Observations	678,557	158,829	837,386

Notes. This table compares average characteristics of the non-respondents (Column 1) to the subset of employees who responded to the employee survey (Column 2). Standard errors clustered at the worker level used. Controlling for office year fixed effects.

References