PROMOTIONS AND THE PETER PRINCIPLE

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September 24, 2020

1 Introduction

This paper provides the first large-scale empirical evidence of the Peter Principle.

- When firms promote their worker to a manager, they take into account two factors: worker's performance in current position and her potential skills required as a manager.

- When these two factors do not perfectly correlate, firms need to decide on which factors to prioritize.

- In the case of sales, best salespeople may not be best managers.

- On the one hand, prioritizing current performance may cause mismatch in managerial position. On the other hand, prioritizing worker's potential managerial skills may weaken incentives for workers in current position.

- Under this trade-off, the Peter Principle suggests that firms prioritize current performance over choosing the best potential manager.

- To test the hypothesis, they show that i) firms put positive weight on worker sales performance and ii) firms put more weight on sales performance than a policy aimed solely at maximizing managerial quality.

2 Data and Quality Measure

This paper uses transaction-level data of sales records and promotion records.

- The data contains a panel of 38,843 workers, 1,553 of whom were promoted into managerial positions during their sample period.

- The data cover 131 different U.S.-based client firms in a range of industries from 2005 to 2011.

- Variables used in the analyses include: the dollar value of sales, organizational hierarchy, the number of colleagues with whom a worker shared credit on transactions, and worker's characteristics.

- They construct standardized measure of individual sales (removing firm-year-month fixed effect).
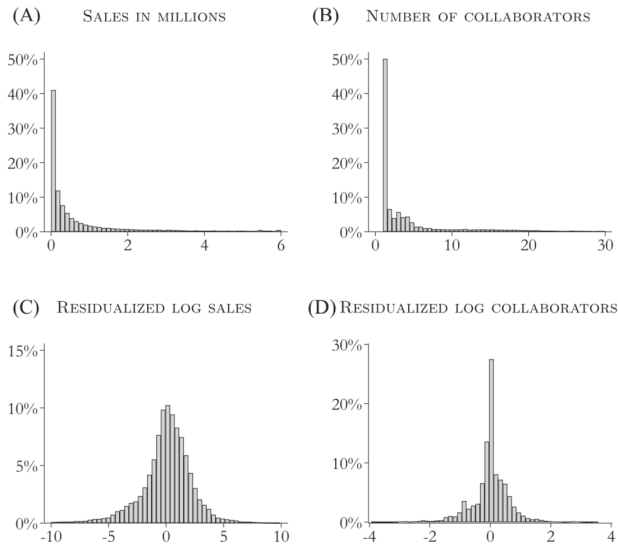

FIGURE I

Distribution of Sales and Number of Collaborators

Panels A and C present the 12-month moving average of sales at the worker-month level, excluding those with zero sales over the past 12 months. Panels B and D do the same for the number of collaborators (including oneself). Panels A and B show the untransformed distributions. Panels C and D show the residuals after the log-transformed variables are regressed on firm-year-month fixed effects. Sales are deflated to January 2010 dollars using the Consumer Price Index for All Urban Consumers (CPI-U).

To measure manager quality, they estimate the manager's value added to their subordinates.

$$\text{Sales}_{imft} = a + \delta_i + \delta_m + \delta_{f \times t} + X_{it} + \varepsilon_{imft} \tag{1}$$

- Dependent variable: subordinates' log sales amount of worker i under manager m at firm f and year-month t.

- Independent variables: Worker, manager, and firm-year-month fixed effect.

- The parameter of interest: manager fixed effect, that is, manager's contribution to a subordinate's sales.

- Firm-year-month fixed effect eliminates firm/industry specific and macroeconomic factors.

- X_{it} includes individual's tenure, which accounts for return to experience.

3 Results

To test the Peter Principle, they show that i) firms put positive weight on worker sales performance and ii) firms put more weight on sales performance than a policy aimed solely at maximizing managerial quality.

3.1 Correlational Analysis

For i), they regress an indicator of whether a worker is promoted in the next month on monthly sales averaged over past 12 months (with firm-year-month fixed effect).

- Positive correlation between promotion probability and sales amount.

- Doubling sales induce 0.074 percentage points increase (a 32% increase from the base rate).

For ii), they regress manager quality on her pre-promotion sales amount.

- Sales skill negatively correlates with management skill.

- "Great sales workers are motivated by a desire for personal - rather than team - achievement".

- Managerial quality is measured only for those promoted. Thus, positive selection among low-sales workers are likely.
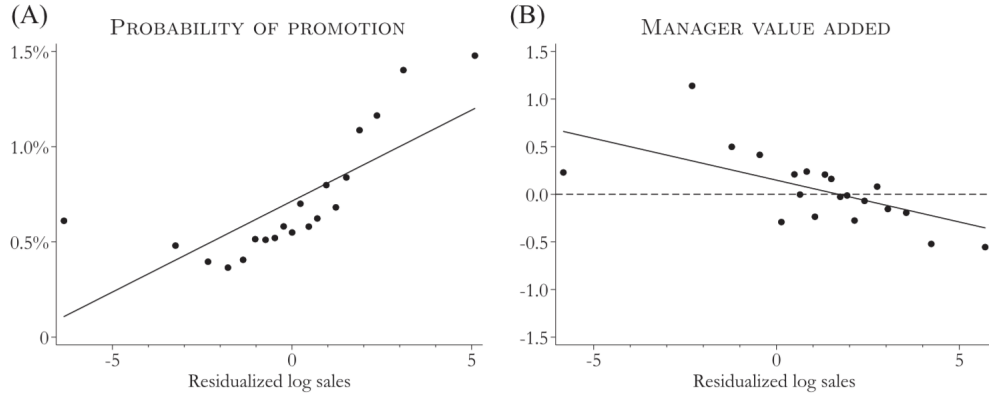
Panel A shows a binned scatterplot relating worker sales and the monthly probability of promotion. Residualized log sales is the residual from a regression of the 12-month moving average of log prepromotion sales on the following controls: the 12-month moving average of log prepromotion number of collaborators, an indicator for having no collaborators, fixed effects for tenure bins, and firm by year-month fixed effects. Panel B plots the relation between the same residual prepromotion sales performance variable and manager value added, weighted by the inverse variance of the estimated manager value added effect. These data are at the manager level and include only promoted managers.

3.2 Causal Analysis

To implement formal test of the Peter Principle, they compare marginally promoted workers.

- If managerial performance of those who are promoted with high sales is lower than managerial performance of those who are not promoted with low sales, then firms can improve managerial performance by changing promotion policy (i.e. by replacing high sales workers with low sales

workers). If this is possible, the firm fails to maximize managerial performance because they put too much weight on sales amount in their promotion policy (= the Peter Principle).

- The problem is that they do not observe managerial potential, M, of those who are not promoted. Thus, they use marginally promoted workers ($P^{Z=1} > P^{Z=0}$) to estimate managerial performance of non-promoted workers (= estimate Local Average Treatment Effect with instrument orthogonal to managerial performance).

$$k(S, X) \equiv E[M|S, X, P^{Z=1} > P^{Z=0}] \tag{2}$$

The Peter Principle implies $k(S^{high}, X) < k(S^{low}, X)$, where S^{high} and S^{low} represents sales amount of high-sales workers and low-sales workers.

- To construct Z, they use a jackknife IV approach: instrument for an individual promotion with the average promotion rate in their firm-month, leaving out worker i and their teammates.

  - Exclusion restriction: note that their measure of management quality is orthogonal to any firm-year-month specific factors. Leaving out themselves and teammates eliminates the possibility of reverse causality (more promotion in the firm because of good manager/team).

- This test is equivalent to a so-called Becker outcomes test for discrimination

- In top tercile of pre-promotion sales, managers perform worse than overall mean. The result shows that there exists an alternative policy that can improve overall managerial quality.
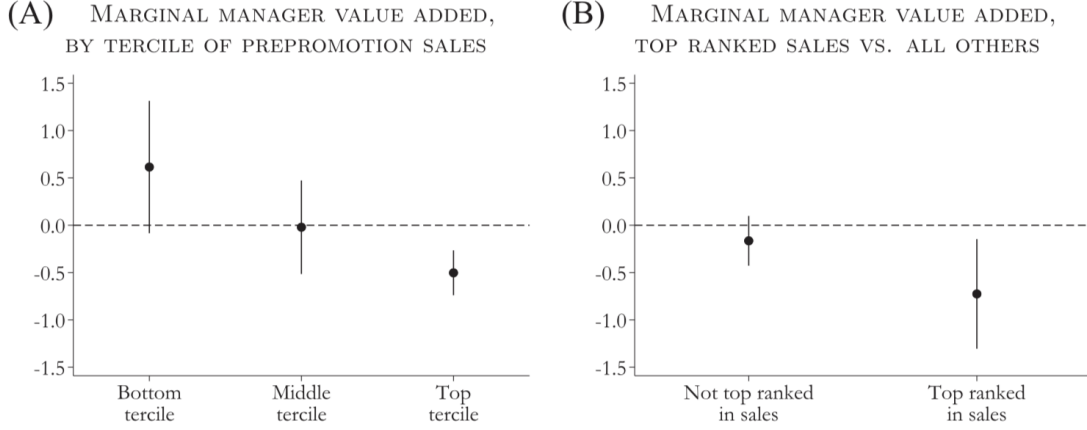
(A) MARGINAL MANAGER VALUE ADDED, BY TERCILE OF PREPROMOTION SALES

(B) MARGINAL MANAGER VALUE ADDED, TOP RANKED SALES VS. ALL OTHERS

FIGURE III

Manager Value Added for Marginally Promoted Workers, by Sales Performance

These figures plot the estimates from Table IV. Panel A plots the coefficient a_1 from equation (6) for each of three terciles of a worker's sales performance, instrumenting a worker's promotion status with the jackknife average promotion rate in each firm-year-month, weighted by the inverse variance of the estimated manager value added fixed effect. The coefficient can be interpreted as the manager value added of the marginally promoted manager, among workers with sales performance in each of three terciles. See Section V.B for more discussion. Panel B plots the analogous graph of marginal managerial quality of promoted managers who were not the top-ranked sales person in their team versus the marginal quality of promoted managers who were. Bars represent 95% confidence intervals.

3.3   Counterfactual Analysis

By considering sample selection model (instead of nonparametric comparison), they implement counterfactual analysis.

- As a result, they find about 30% improvement of managerial quality (=increase in subordinates' sales).

- This does not necessarily imply that firms make mistake. Rather, it implies that firms need 30% of benefit from other channels to justify their promotion policy.

6

Indirect evidence that firms are aware of this trade-off includes:

- When a manager has more responsibility, they weight managerial potential more.

- When firms can offer less incentive pay, they offer more promotion incentive.

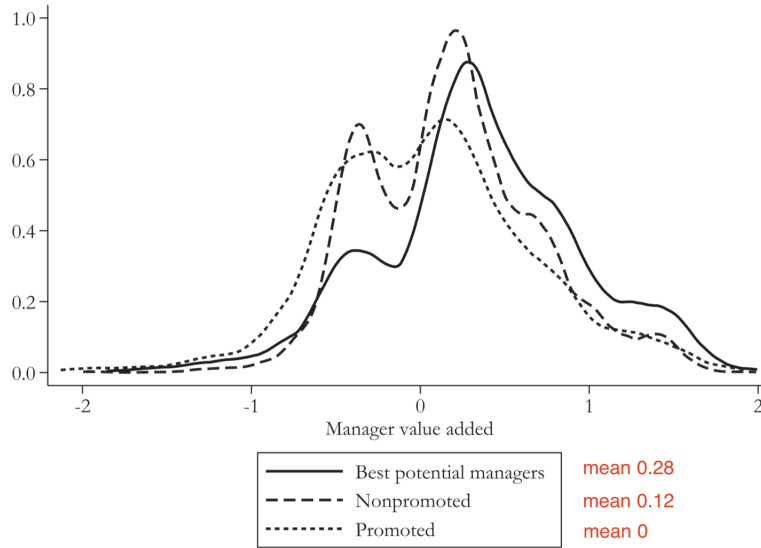- When lower sales workers are promoted, the first ranked are discourage to stay on.