Lecture 14: Promotions as Tournaments

Compensation in Organizations

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Performance Pay is Not the Norm

- ▶ 2/5 of hours worked were in jobs with performance pay

- ▶ Performance pay is more common in some industries and not others.

- ▶ It has been declining over time.

- ▶ How can firms encourage effort without explicit incentives?

Big Question: What motivates people to work hard when they are paid a flat salary?

The Logic of Performance Pay

- **Performance Pay:** More pay when you put in more effort (on average)
  - I work hard to make more at my current job!

Three Alternatives

- ▶ We will study three alternative ways to encourage performance.

- ▶ **Relational Contracts:** The possibility of termination.
    - ▶ I work hard to keep my job!

- ▶ **Career Concerns:** The possibility of getting a better job at a different firm.
    - ▶ I work hard to get a better future job!

- ▶ **Tournaments/Promotions:** The possibility of getting a better job at my current firm.
    - ▶ I work hard to get promoted!

Changing CEOs at GE

- ▶ In 2000, Jeffrey Immelt was a VP at General Electric with a salary of $1 million.

- ▶ In 2001, Jack Welch retired as CEO of General Electric.

- ▶ Jeffrey Immelt then became CEO, and made $2.75 million his first year.

- ▶ Discussion: Did the value of Immelt's skills increase 3 times in 1 year?

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- In 2001, Jack Welch retired as CEO of General Electric.

- Jeffrey Immelt then became CEO, and made $2.75 million his first year.

- Discussion: Did the value of Immelt's skills increase 3 times in 1 year?

- The job of CEO was itself a form of prize or reward.

I may work hard to get a better job at my current company!

CEO Pay

- CEOs already have the biggest prize in the promotion tournament.

- Therefore if tournament theory holds weight, they must be compensated in other ways.

- CEOs are indeed paid in large part via bonuses and stock options.

- This is more similar to traditional performance pay.

Verbal Model: Tournaments

▶ Suppose there are two workers and one firm.

▶ Worker output is effort plus some noise/luck: $y_i = e_i + \epsilon_i$

▶ Effort has cost $c(e)$

▶ The firm gives a "prize" w to whoever has the highest output.

▶ Workers exert effort in order to increase the probability they get the prize:

$$\max_{e_1} w \cdot Pr(e_1 + \epsilon_1 \geq e_2 + \epsilon_2) - c(e_1)$$

▶ The chance of winning plays the role of β and motivates workers to exert effort.

Tournaments vs. Promotions

- ▶ We did not specify what w was.

- ▶ We only required that the workers care about it.

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Tournaments vs. Promotions

- ▶ We did not specify what w was.

- ▶ We only required that the workers care about it.

- ▶ It could be an actual cash prize/bonus...

- ▶ Or a promotion.

- ▶ What is crucial is that there is competition: only the person who produces the most gets it!

- ▶ This introduces some new issues.

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A leading farm in the UK switched from relative pay to piece rates.

Discussion: Bandiera et. al. (2005)
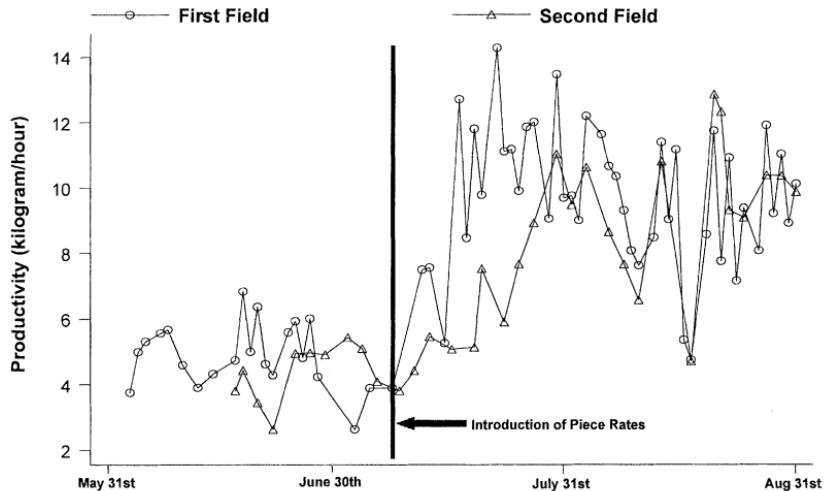
Bandiera, Barankay, and Rasul (2005)

FIGURE I
Productivity (kilogram/hour) over the Season
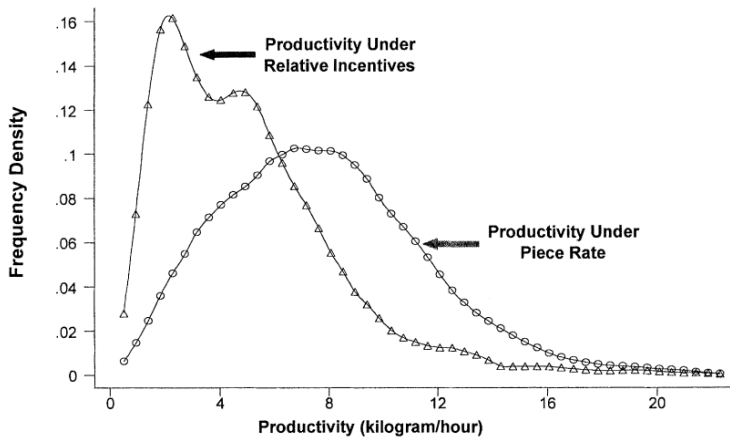
Bandiera, Barankay, and Rasul (2005)

FIGURE II
Distribution of Productivity (kg/hr) by Incentive Scheme

Bandiera, Barankay, and Rasul (2005)

THE EFFECT OF GROUP COMPOSITION ON PRODUCTIVITY BY INCENTIVE SCHEME
DEPENDENT VARIABLE = LOG OF WORKER'S PRODUCTIVITY
(KILOGRAM PICKED PER HOUR PER FIELD-DAY)
ROBUST STANDARD ERRORS REPORTED IN PARENTHESES, ALLOWING FOR CLUSTERING
AT FIELD-DAY LEVEL

	(1a) Relative incentives	(1b) Relative incentives	(2a) Piece rates	(2b) Piece rates
Share of workers in the field who are friends	−1.68*** (.647)	−5.52** (2.36)	.072 (.493)	1.17 (1.60)
Share of workers in the field who are friends × number of workers in same field		1.60** (.684)		−.285 (.501)
Number of workers in same field		.182 (.117)		.085 (.069)
Marginal effect of group size (at mean friends' share)		.236** (.110)		.076 (.065)

Bandiera, Barankay, and Rasul (2005)

- ▶ Is the friends result because people are altruistic?
  - ▶ I want my friends to get paid more.

- ▶ Or is it because of collusion?
  - ▶ My friends and I work together to get more from the system?

- ▶ It turns out that the fruit company grew two types of fruit.
  - ▶ Fruit that grows in 6-7 foot dense shrubs (Type 2) where it is hard to see coworkers.

  - ▶ Fruit that grows in such a way where it is easier to see coworkers (Type 1)

- ▶ If this monitoring channel matters, this suggests collusion. If not, this suggests altruism.

Bandiera, Barankay, and Rasul (2005)

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(KILOGRAM PICKED PER HOUR PER FIELD-DAY)
ROBUST STANDARD ERRORS REPORTED IN PARENTHESES, ALLOWING FOR CLUSTERING
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	(1) Fruit type 2	(2) Fruit type 1	(3) Fruit types 1 and 2 combined
Piece rate dummy (P_t)	−.063	.483***	
	(.129)	(.094)	
Piece rate × fruit type 2			−.100
			(.095)
Piece rate × fruit type 1			.490***
			(.092)
Worker fixed effects	Yes	Yes	Yes
Field fixed effects	Yes	Yes	Yes
Other controls	Yes	Yes	Yes
Adjusted R^2	.3015	.3777	.6098
Number of observations (worker-field-day)	934	4224	5150

Can Collusion be Prevented? Another Example

▶ Chickens raised for meat are often grown by contractors.

▶ These growers are often paid via a tournament.

▶ There is a threat of collusion because growers are located near each other.

▶ One method used to combat this is to rotate who competes with who.

▶ Broilers (the main company) does this by changing the delivery schedule.

Source: "A Real Game of Chicken," Knoeber (1989)

Intrinsic Differences in Productivity

- ▶ Our model assumed both workers had the same base productivity.

- ▶ But what if one worker is just more productive at every level of effort?

- ▶ The less skilled worker then may exert no effort because they have no chance.

- ▶ Knowing this, the more skilled will also exert no effort.

The Peter Principle

The Peter Principle

- ▶ We have shown that firms can use tournaments to encourage effort.

- ▶ But if promotions are the prize, then people are promoted based on performance at a different job.

- ▶ Example: becoming CEO because I am good at accounting.

- ▶ This suggests a trade-off between using jobs as prizes and using them as actually productive functions.

- ▶ Whether this trade-off is real depends on whether jobs fundamentally change as you move up.

- ▶ In economic consulting, analysts program and partners solicit clients.

- ▶ There is some empirical evidence of this (Acosta 2010)

Promotions Discourage Helping Others: Drago and Garvey (1998)

- ▶ A survey of 938 Australian employees.

- ▶ A researcher visited each workplace and identified who worked together.

- ▶ Two people are said to be in a work group if they worked at the same workplace, the same occupation and in close physical proximity while performing most tasks.

- ▶ The paper proxies for a promotion or prize as the spread in wages within a group.

- ▶ They find that larger prizes (which they interpret as bigger promotions) reduce worker's "helping efforts."

- ▶ The reduction is both economically and statistically significant.