

# Lecture 11: Promotions as Tournaments

## Compensation in Organizations

Jacob Kohlhepp

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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?

## Changing CEOs at GE

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

## 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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Issues with Tournaments

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

# Bandiera, Barankay, and Rasul (2005)

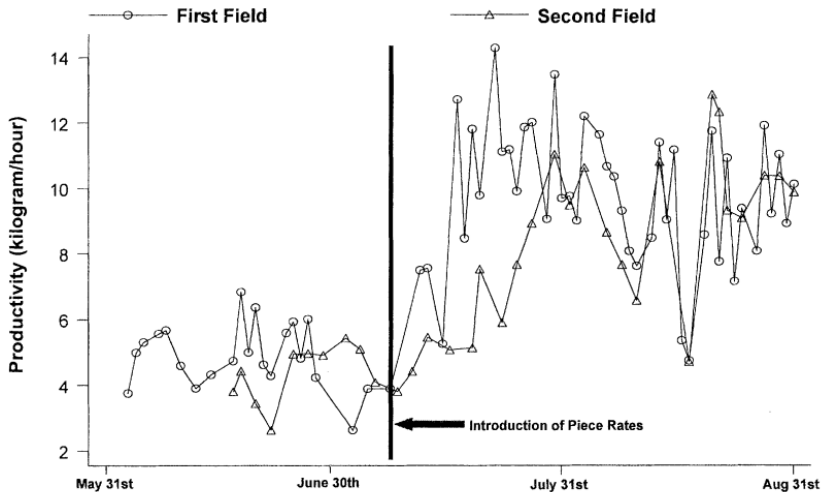


FIGURE I  
Productivity (kilogram/hour) over the Season

# Bandiera, Barankay, and Rasul (2005)

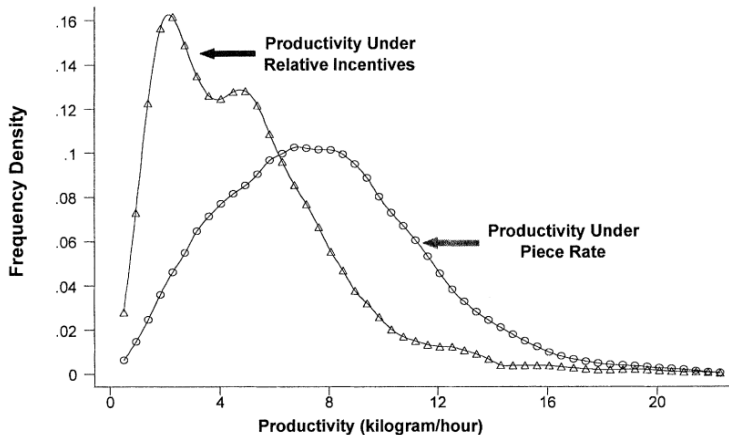


FIGURE II  
Distribution of Productivity (kg/hr) by Incentive Scheme



## 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 $\times$ 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)

DEPENDENT VARIABLE = LOG OF WORKER'S PRODUCTIVITY

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ROBUST STANDARD ERRORS REPORTED IN PARENTHESES, ALLOWING FOR CLUSTERING  
AT FIELD-DAY LEVEL

	(1) Fruit type 2	(2) Fruit type 1	(3) Fruit types 1 and 2 combined
Piece rate dummy ( $P_t$ )	-.063 (.129)	.483*** (.094)	
Piece rate $\times$ fruit type 2			-.100 (.095)
Piece rate $\times$ 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

*[tə 'pē-tər 'prin(t)-s(ə-)pəl]*

The idea that people will be promoted up to a point where they are no longer qualified, leaving a company full of incompetent employees.

## 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.