Lecture 11: 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.
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- 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.
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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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Bandiera, Barankay, and Rasul (2005)

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

Bandiera, Barankay, and Rasul (2005)

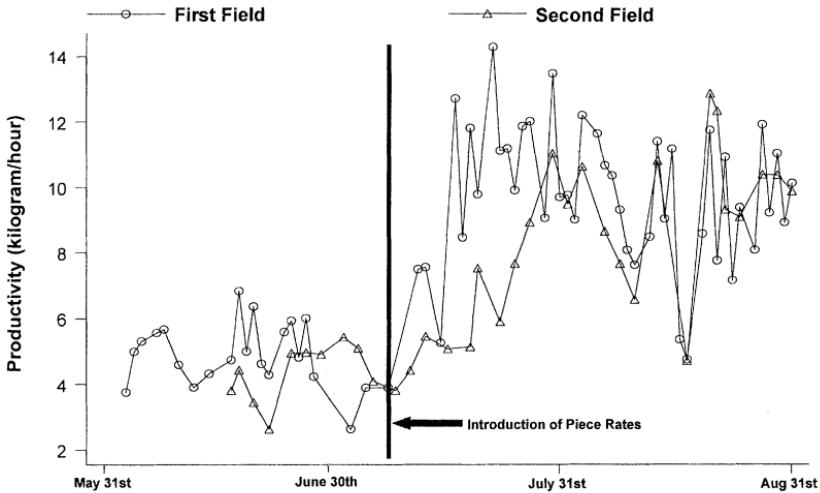


FIGURE I
Productivity (kilogram/hour) over the Season

Bandiera, Barankay, and Rasul (2005)

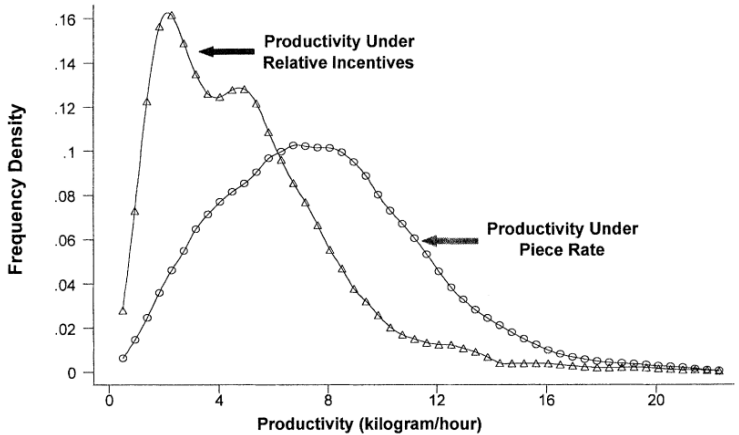


FIGURE II
Distribution of Productivity (kg/hr) by Incentive Scheme

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***	−5.52**	.072	1.17
	(.647)	(2.36)	(.493)	(1.60)
Share of workers in the field who are friends × number of workers in same field		1.60**		−.285
		(.684)		(.501)
Number of workers in same field		.182		.085
		(.117)		(.069)
Marginal effect of group size (at mean friends' share)		.236**		.076
		(.110)		(.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
(KILOGRAM PICKED PER HOUR PER FIELD-DAY)
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	.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

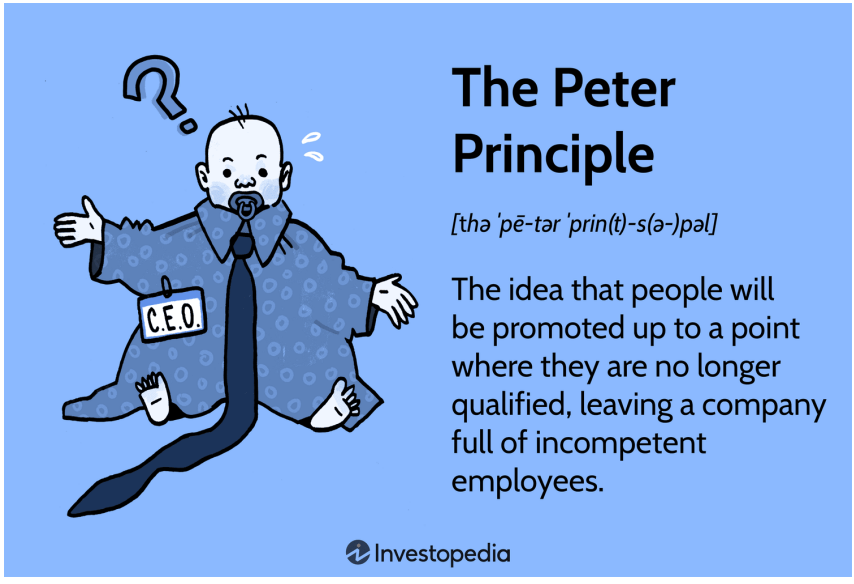
- Chickens raised for meat are often grown by contractors.
- These growers are often paid via a tournament.
- There is a threat of collusion because growers are located near each other.
- One method used to combat this is to rotate who competes with who.
- Broilers (the main company) does this by changing 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.
- TRhey find that larger prizes (which they interpret as bigger promotions) reduce worker's "helping efforts."
- The reduction is both economically and statistically significant.