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Oliver

Two more articles on the website.

Prendergast, Waldman today

Investments in human capital (firm specific here)

Gen'l human capital:

- 1] Worker pays for them or
- 2] Worker takes early-on wage cut. Same spirit as 1].

Specific human capital

- Is the skill contractible? If so, not an issue.
- If not, how to encourage worker to invest?
  - Indirectly, can assign them to a task (promotion)
  - second-best incentive constrained.

Model:

◦ 2 jobs  $i = D, E$

◦ Training  $s = 0, 1$

◦ assume  $y_D(0) < y_E(0) < y_E(1) < y_D(1)$

revenue from difficult job if worker was not trained.

◦ Firm sets  $w_D, w_E$  (legally binding)

◦ To encourage training, need:

◦  $y_D(1) - w_D \geq y_E(1) - w_E$  (also,  $y_D(0) - w_D < y_E(0) - w_E$ )

$$w_D - w_E \geq c$$

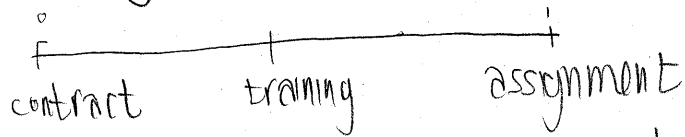
◦  $c$  - borne by worker because not contractible

◦ First best is achievable if  $y_D(1) - y_E(1) \geq c$

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Training is socially efficient if  $y_D(1) - y_E(0) \geq c$   
 • can have that  $y_D(1) - y_E(0) \geq c > y_D(1) - y_E(1)$ ,  
 though so FB is to train but is not attainable.



Suppose ability  $\eta$  is realized and  $y_D(s, \eta), y_E(1, \eta)$   
 are the outputs. Noisy.

Important to actually have different jobs, not just titles.

Compares this to the "up-or-out".

Single task E  $y_E(1) > y_E(0), s=0$  or 1  
 • How about setting  $\begin{cases} w_1 = \text{wage if not fired} \\ w_0 = \text{wage if fired} \end{cases}$

• set  $w_1, w_0$  such that  $y_E(1) \geq w_1 - w_0 > y_E(0)$

• incentive to train as long as  $w_1 - w_0 \geq c$

• is  $y_E(1) - y_E(0) \geq c \Rightarrow y_E(1) \geq c$

But up-or-out is "harsh."

Renegotiation in up-or-out, a potential problem  
 with up-or-out is noise.

Set  $w_0 = 0 \Rightarrow y_E(1) \geq w > y_E(0)$

Set  $w = y_E(1)$

- Hart-Moore '88 (self-investments)
- Che-Hausch '98 (cross-investments) [Malcomson-McLeod]
- Prendergast's model fits in this framework.

Suppose  $\tilde{y}_E = y_E(s, \eta)$   
ability random shock

- Contract: set  $w$  (wage if hired)
- Let  $W$  (worker) have right to reduce  $w$ .
- Set  $\hat{w}$  very high
  - Let worker decrease  $\hat{w}$  to  $w = y_E(1, \eta)$
- Expected wage:  $E_\eta [y_E(1, \eta) - c] > E_\eta [y_E(0, \eta)]$
- True or else  $s=1$  is not efficient anyway.

Seem to be doing just fine with only one task,  
 Why do we need two tasks?

One criticism: Firm could fire worker and then renegotiate. (50/50 split):

- Join only if  $B(y_E(1) - y_E(0)) > c$   
Worker's bargaining power.
- efficiency:  $y_E(1) - y_E(0) > c$ .

Some problem in the multi-task model.

(\*) In what setting does Prendergast's model actually matter? (When do we need two tasks vs. up-or-out?)

Waldman - Promotions may not be used as much as they should be.

(\*) Why don't firms lay off older workers?