



Chapter 7 Managing Turnover

Economics 136

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Key Questions

- 1) When is turnover (quitting) good for firm?
- 2) What are good retention strategies?
- 3) Bidding for workers at other firms (raiding)
- 4) If firm needs to downsize, who should it lay off? Are there legal considerations?
- 5) When and how to “buy out” older workers?

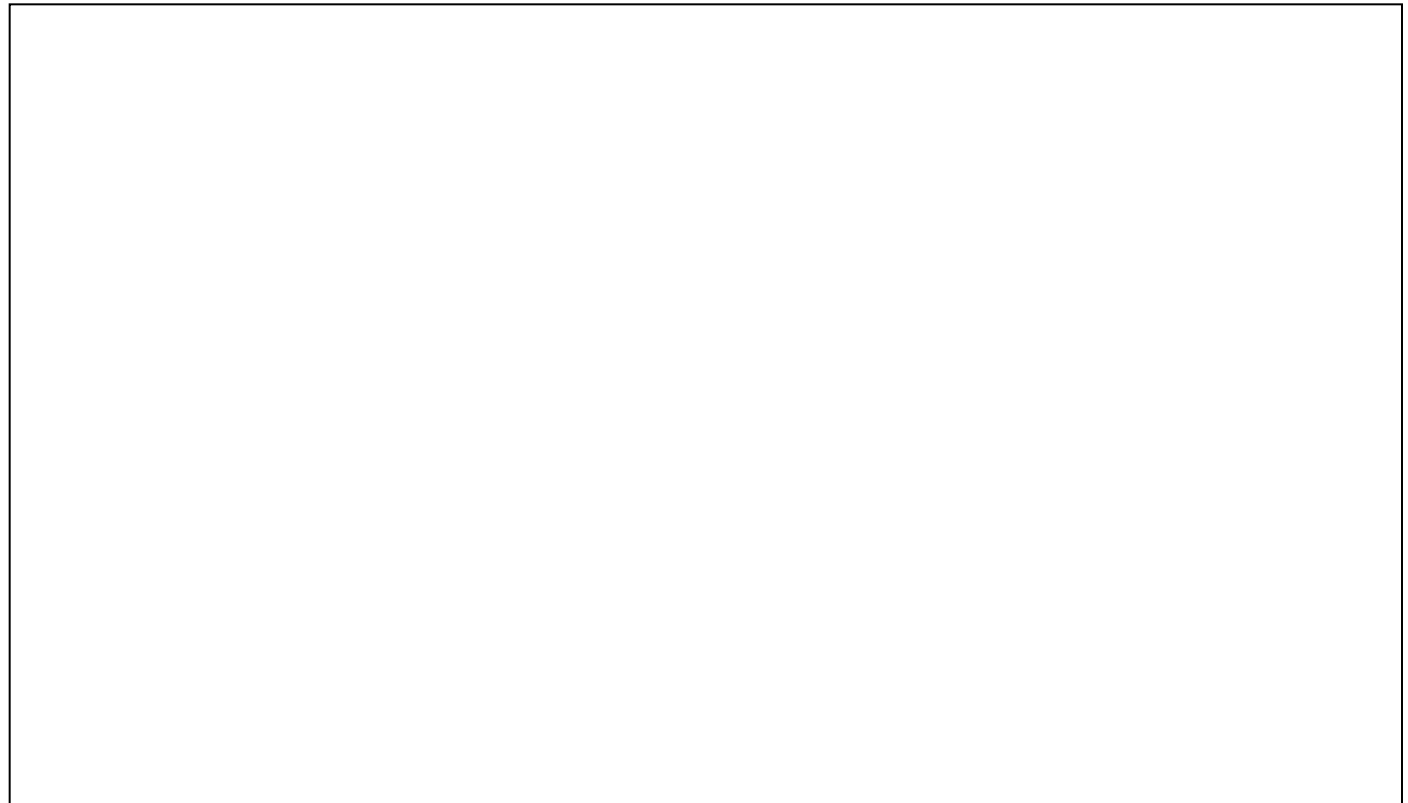
1) When is turnover (quitting) good for a firm?

- ...when

- Example: Combination of workers by age
 - Older workers: more firm-specific human capital and more OJT
 - Younger workers: more recent education, more technological know-how

Diminishing returns to hiring more young workers if keep number of older workers fixed

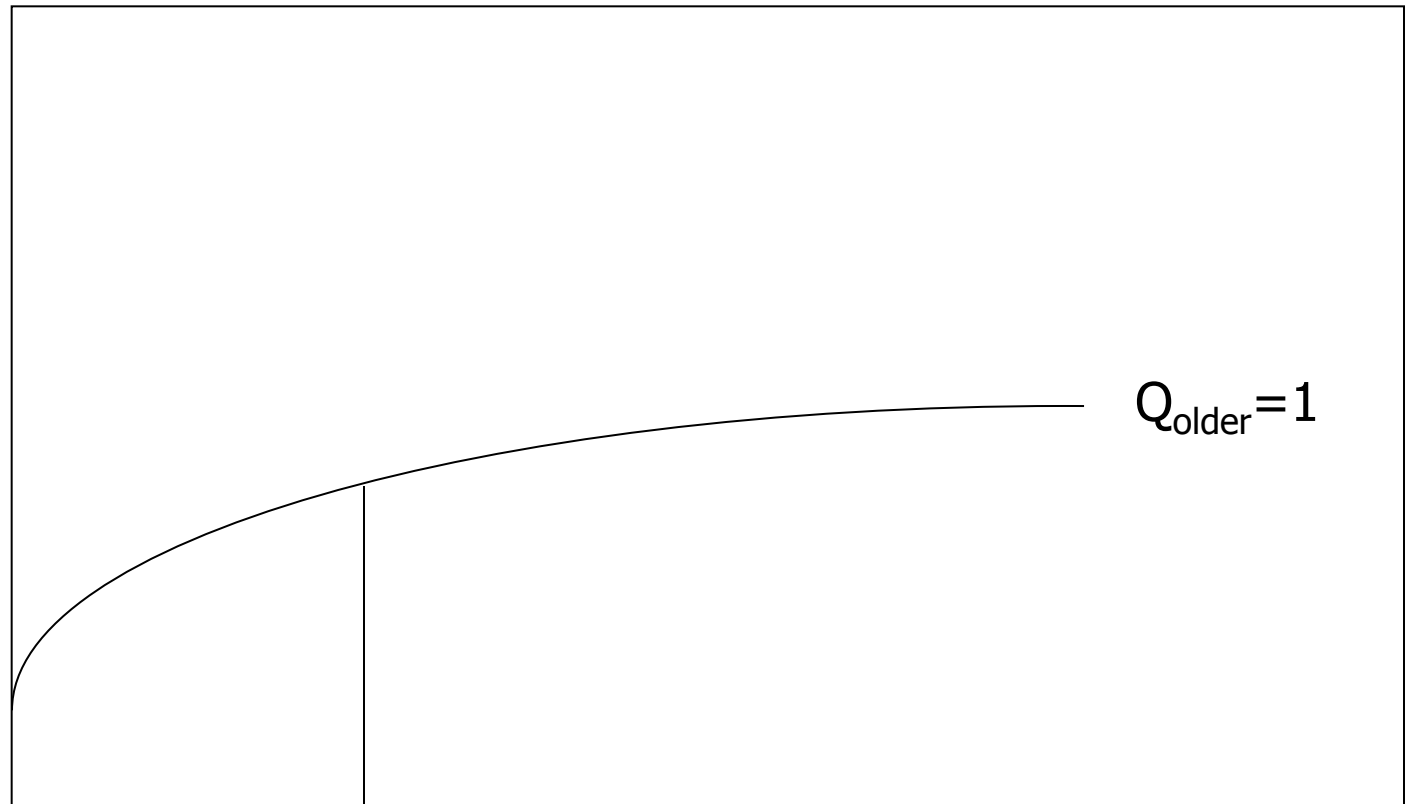
Output



younger workers

Also, diminishing returns to hiring more older workers if keep number of younger workers fixed

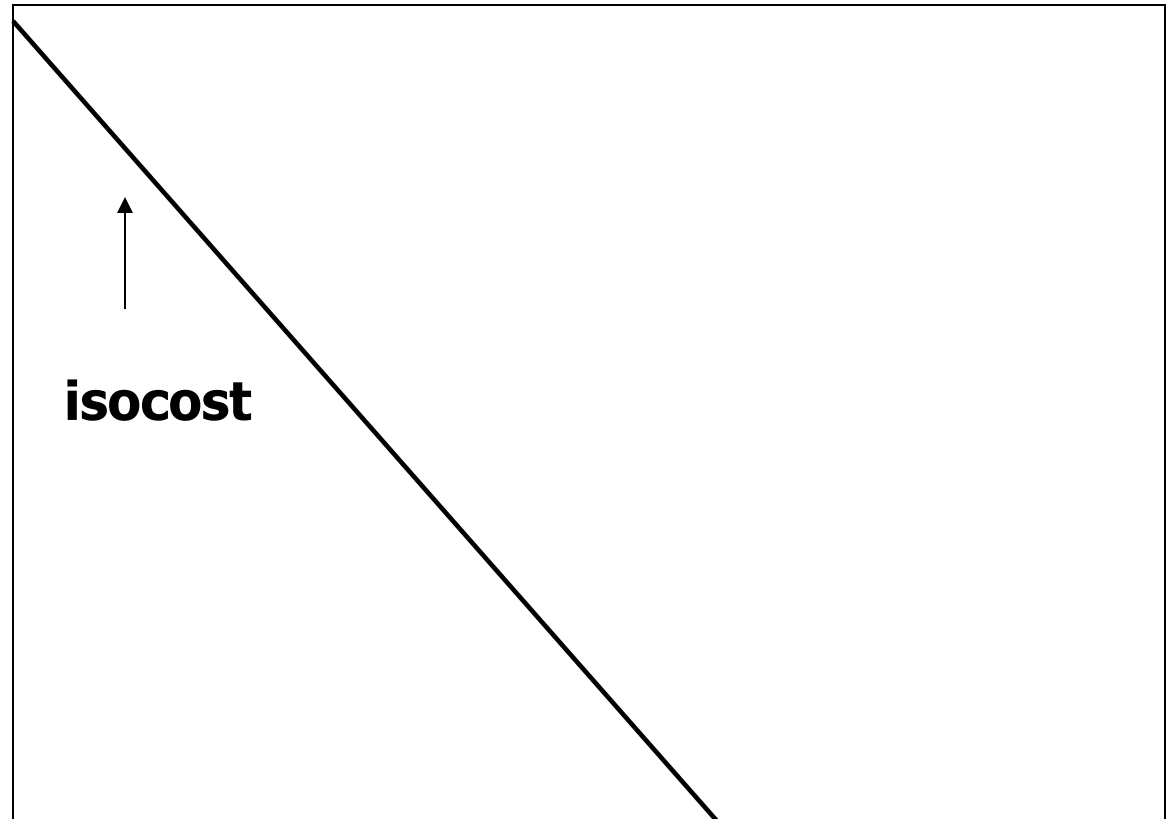
Output



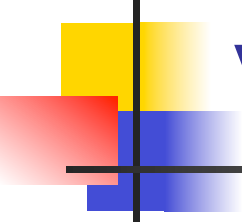
younger workers

At output of Q' , could have wrong mix of younger vs. older workers, in which case turnover helps

Number of older workers



Number of younger workers



3 factors that might favor younger workers at a firm

- 1) If technological change rapid
- 2) If most human capital is obtained through schooling, not OJT
- 3) If OJT at the firm does not involve much firm-specific human capital
 - “Plain vanilla” training



Other Factors that Make Turnover a Good Thing

- Organizational change
 - Text gives example of a firm moving into international sales – will need to hire workers with relevant experience
- A firm at which differences in talent matter
 - Heavy emphasis on probation/up or out
- Firms with hierarchy that narrows markedly
 - Firms rely on departures to open up spots to promote from lower ranks

2) What are good retention strategies?



- Increase pay, or offer stock options
- Provide nonpecuniary benefits such as flexible worktime
- Offer variety of work and related training
- Don't overpromise initially (see Cummins Engine story on page 86)
- Reduce costs of losing key employees by have them train others and collaborate with others



3) Bidding for workers at other firms (raiding)

- Often, firms hire more experienced workers who already work for other firms rather than younger workers
- What are advantages/disadvantages
- What should your firm do when it itself is raided?!

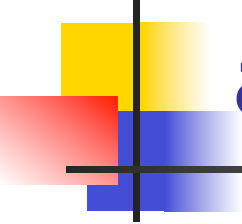
When should a firm raid other firms for workers?



- 1) If firm finds a worker with unusual skill set it thinks will be more valuable at firm than at current employer
- 2) Current employer must not overvalue the employee
 - Risk: Asymmetric info. Current employer knows more about worker than raider does. It can match raider's wage offer **if it wants to**
 - “Winner's curse



Some factors that could increase the attractiveness of hiring a worker from another firm



- 1) Workers who recently completed education unlikely to find best job match in first job or two
- 2) Employees of declining firms or declining industries
- 3) Workers in industries with rapid technological change
- 4) If your firm is quite big it could offer better wage/job guarantees than a smaller firm could.
 - Could appeal to a risk averse worker

If your firm gets raided, should you as a manager always match outside offers, or never match?



- Depends on whether
 - a) Worker values non-monetary (“nonpecuniary”) aspects of current job
 - b) Worker is paid less than is worth
- If both a) and b) apply, then worker may seek outside offers with higher wage solely to increase wage at current firm.
 - Probably won't accept because likes nonpecuniary aspects of current job
 - Firm in such case should not match in general
- If a) and b) don't apply then firm should retain option to match offers, for cases where workers more productive than elsewhere

4) If firm needs to downsize, who should it lay off?

- Most firms give new workers some firm-specific OJT.
 - Firms lose money while subsidizing training but later make $\pi > 0$ each year because $VMP > \text{wage}$
- In general firm will want to keep workers if



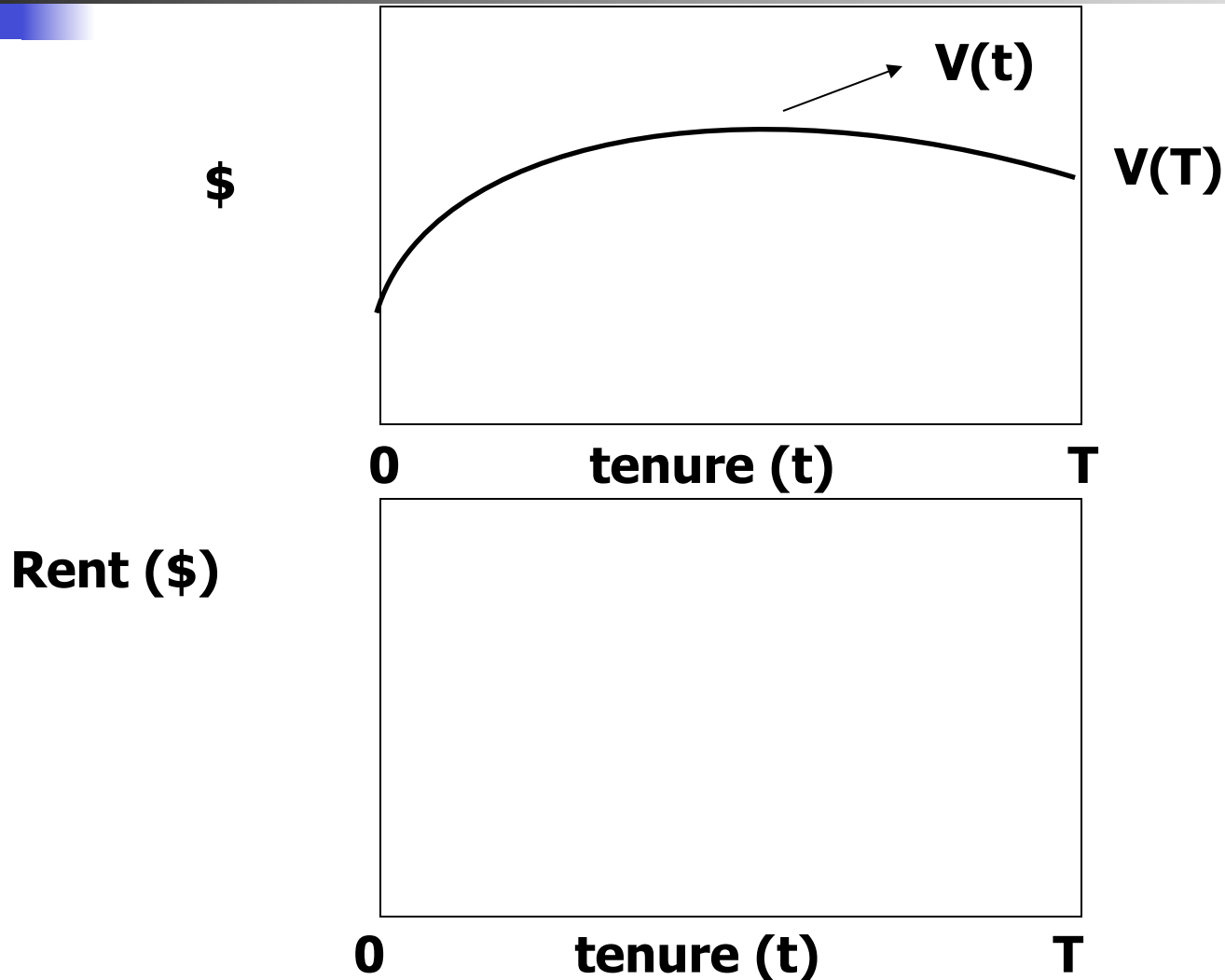
Defining rent at time t

- Let:
 - t = current year with firm
 - $V(t) = VMP(t)$
 - $W(t)$ = wage paid to worker
 - T = retirement year (T years after start with firm)
 - r = discount rate
- Define R_t as rent to firm from keeping worker from age t to T

What will be the shape of Rent plotted against age t ?

- At year 0 (when worker initially hired), $R_0 = 0$ because firm must pay worker pdv of V over career
- At year T , $R_T = 0$ because firm has “earned back” its initial training cost
 - (If $R_T > 0$ then other firms will imitate and bid up wages)
- Assuming all OJT occurs in first few periods...

Rent is 0 at start and end of relationship



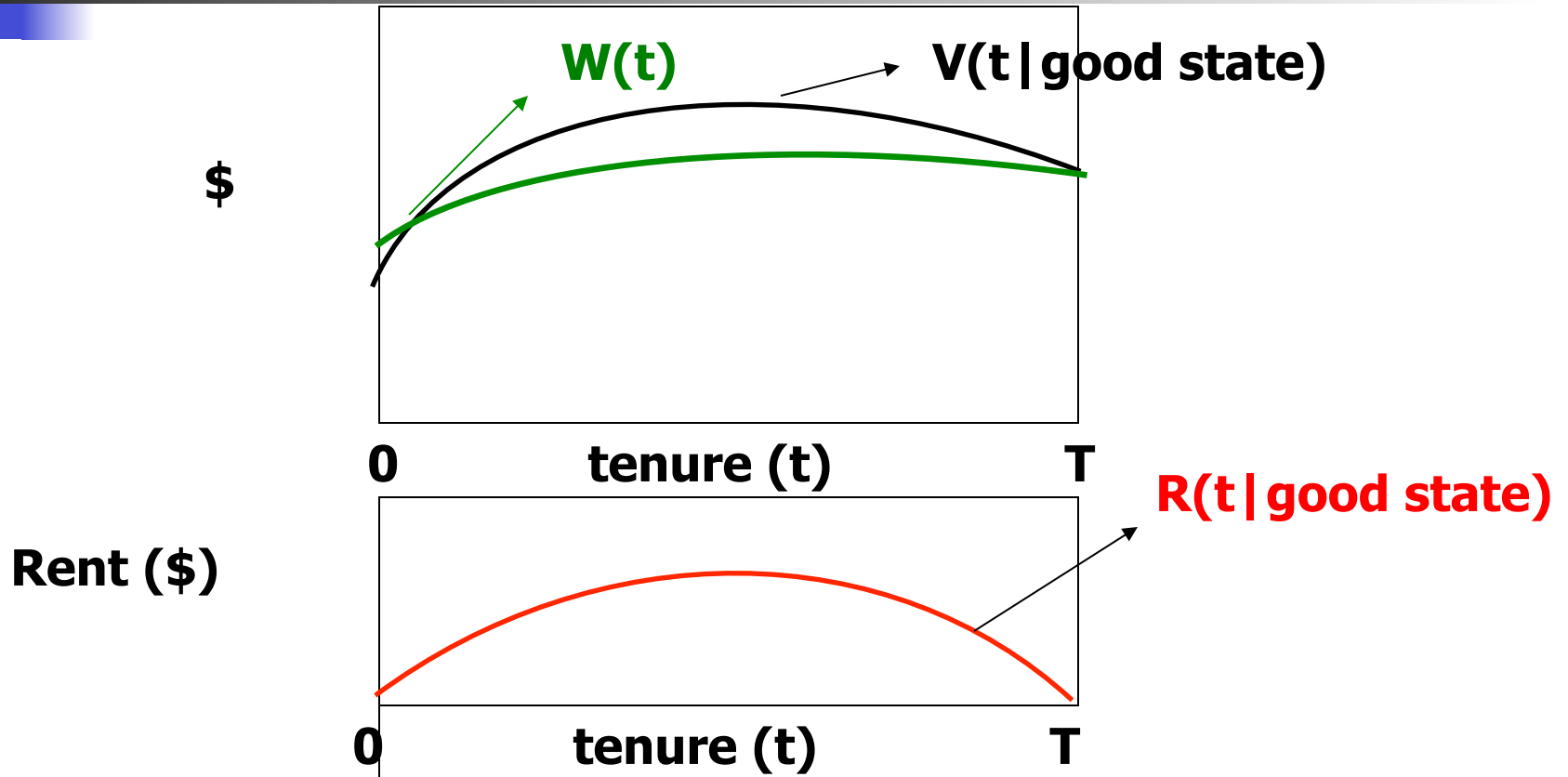
What happens if demand for firm's product falls?



- $V(t)$ falls in all periods, and therefore so does rent
- Lay off youngest and oldest workers, because



Graphical illustration of how an adverse demand shock encourages laying off the workers with least and most tenure





Are there legal considerations?

- Age Discrimination in Employment Act prohibits firms from laying off workers based on age, and specifically protects workers aged 40 and above
- In practice, can't be seen to lay off oldest workers, with most seniority, first
 - Continental Can was sued for several hundred million dollars



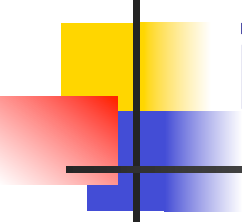
5) When and how to “buy out” older workers?

- Buyout: An offer to workers of specific age to retire early in exchange for severance payment. **Voluntary.**
- Buyouts are a solution to the Age Discrimination in Employment Act
- Second reason to offer buyouts:

Rule on when to buy out a worker



- Rule: Buy out a worker only if present value of worker's alternatives exceeds present value of productivity
- Proof in appendix. Let:
 - $PV(A_t)$ = present value of best alternative job at age t
 - $PV(V_t)$ = present value of production at current job
 - B = present value of buyout



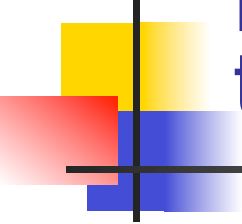
Proof that should offer buyout if $PV(A_t) > PV(V_t)$

- Firm will offer buyout iff (“if and only if”)
 $B < PV(W_t) - PV(V_t)$
- (= loss if keep worker on)
- Worker accepts buyout iff
- $B + PV(A_t) > PV(W_t)$
- So need
 $PV(W_t) - PV(V_t) > B > PV(W_t) - PV(A_t)$ or.....
- $PV(A_t) > PV(V_t)$
 - Firm’s goal: Offer close to $PV(W_t) - PV(A_t)$



Assignment:

- Read pages 102-104 on own.
- Deals with practical considerations in how to do buyouts
- But we will cover one issue in the next slides:
- Firm can threaten to lay off a fraction of those who turn down a buyout, and reduce the buyout offer it needs to make.



Proof that threatening to lay off a fraction p of those offered the buyout who refuse to accept lowers the required payout

- Now, if refuses buyout B , worker has probability p of layoff in which case $PV(A)$ is the PV of the worker's best alternative, and probability $(1-p)$ of having PV of $PV(W)$ (because stays at firm)
- So accepts buyout if...



Accepts Buyout If....

- Simplifying, the minimum buyout B^* worker will accept is:
- $B^* = (1-p)\{PV(W) - PV(A)\}$
- Note: as p rises, B^* falls because $PV(W) > PV(A)$ or else worker would already have quit!

Sample Problem from Spring 2003 (Also good review for Ch. 3)

- 5. (25 points) Suppose that a firm will hire a worker for up to 5 periods, after which the worker retires. The firm has to provide *firm-specific* training in periods 1 and 2, which boosts the worker's Value Marginal Product (VMP) in periods 3 to 5, such that VMP by period is 7,7,12,12,12. The worker can choose to work for this firm or can work for a firm that provides no training, earning 10 each of the 5 periods before retirement.
- Assume that neither the worker nor the firm discount future cash flows. Thus, this firm has a present value of VMP that equals that of other firms: because the discount rate is zero, $PV=7+7+12+12+12=10+10+10+10+10$.
- a) One option is for the firm to make the worker pay for the entire costs of the specific training, and then boost his pay in periods 3 to 5 to reflect the increase in productivity that results in periods 3 to 5, so that his wages are his VMP each period: 7,7,12,12,12.
- Explain clearly why the worker would not want this. For full points explain what the firm will be tempted to do when wages are set this way. (3)
- b) A second option is for the firm to bear the entire costs of the training, and then to “pay itself back” in later periods, so that the wages it pays are 10 in each period.
- Explain clearly why the firm would not want this. For full points explain what the worker will be tempted to do when wages are set this way. (3)



Your answer

Sample Problem from Spring

2003

- c) A good compromise is for both the worker and firm to share in the training costs in periods 1 and 2, with both the worker and firm sharing in the rents that accrue in periods 3 to 5. Here is one example: the wages in periods 1 to 5 could be set to \$8.50, \$8.50, \$11, \$11, \$11. **(This pay rate applies for questions c, d and e below.)**
- Verify that in this situation the present value of the firm's profits is 0 i.e. the firm makes normal profits. Also verify that the worker's total pay over 5 periods is the same as if he had instead taken the alternative job that pays \$10 each period. (Hint: Recall that both worker and firm have a discount rate of 0.) (2)
- d) The firm's rent at the start of age t for a worker, $R(t)$, is defined as the present value of the sum of VMP - wages from age t through period 5. Let's call the rent to the firm over the entire 5 periods $R(1)$. In part c) you proved that $R(1)=0$. Now calculate $R(2)$, $R(3)$, $R(4)$ and $R(5)$. For example, $R(4)$ is the sum of VMP-wage in period 4 plus VMP - wage in period 5. Finally, draw a graph of R against age t , plotting the values you obtained for $t=1$ through $t=5$. (7)



Your answer

Sample Problem from Spring

2003

- e) Suppose that a one period recession hits this firm, so that the VMP of ALL workers at the firm regardless of age falls by \$1.75 for the current period only before returning to normal. Re-draw your graph of rent $R(t)$ against t , reflecting a downward shift of \$1.75 in the rents associated with a worker of any age from 1 through 5. (3)
- f) Use this graph to decide whether
- i) the firm will want to hire any new young workers ($t=1$) (YES/NO) (1 point)
- ii) whether the firm will want to lay off any of the other workers (aged 2 through 5). Explain. (4)
- If the firm made any layoffs as under item ii), are there any legal considerations that could get the firm into trouble? The firm operates in the United States. (Be as specific as possible!) (2)



Your answer
