LECTURE 9

HIRING AND RETENTION

GETTING AND KEEPING THE RIGHT PEOPLE

An organisation faces a challenge in:

- attracting and hiring the right employees
- retaining them.

The right employees, if motivated, will increase the value of an organisation.

This week's lectures are focussed on an important relationship **inside the firm**: the relationship between the employer (the firm or organisation) and the employee.

OUTLINE

9.0 Hiring and retention

9.1 Hiring: signalling quality

9.2 Hiring: risk

9.3 Hiring: matching firms and employees

9.4 Contracts and pay

9.5 Internal labour markets

9.6 Fringe benefits

READING

Chapter 1, “Setting Hiring Standards” and Chapter 2, “Recruitment” in Lazear and Gibbs (2007) *Personnel Economics in Practice*

LECTURE 9.1

HIRING: SIGNALING QUALITY

THE RECRUITMENT PROCESS

A firm that is hiring needs to:

- Weed out undesirable applicants
- Attract the right types of applicants

Firms face a problem of adverse selection. Applicants know what type of person they are, but the firm doesn't. Adverse selection is a problem of asymmetric information.

How to overcome this?

Use credentials: CVs – look at education, work experience etc. How costly was the credential to attain?

Screening: Screening tests are imperfect, and can take many forms:

- Simple tests – but perhaps these can be gamed.
- A probation period – but this might be costly for the firm.
- Fixed term contracts

HIRING: SIGNALING QUALITY

Spence, M. (1973), Quarterly Journal of Economics, 87(3), pp. 355-374

Consider a firm seeking a productive worker. The firm's production function is g(θ), where θ is the productivity of the worker.

- productive workers: $\theta = H$
- unproductive workers: $\theta = L$

A more productive worker produces more for the firm

- $g(H) > g(L)$, where $H > L$

Workers obtain an education to signal productivity. Timing of the game:

1. The worker chooses an education level, *e*.
2. The employer offers a wage, *w*.

HIRING: SIGNALING QUALITY

The worker's payoffs are:

$$w - \frac{e}{\theta}$$

It is costly to obtain an education. It is less costly for a productive worker.

The firm's payoffs are

$$g(\theta) - w$$

Comments:

- Note that education does not influence productivity (this is not an essential feature)
- We will assume wages are determined in competitive markets

HIRING: SIGNALING QUALITY

Consider a separating equilibrium in which the employer can distinguish between *H* and *L* type workers by observing their education: $e_H > e_L$

- *L* workers choose *e* = 0 (why?)
- *H* workers choose *e** > 0
- The firm offers w_H to *H* types (*e* = *e**) and w_L to L types (e < e*)

The education level *e** must satisfy two incentive compatibility constraints. To ensure *L* workers don't pretend to be *H* workers:

$$w_H - \frac{e^*}{L} \leq w_L$$

To ensure H workers don't pretend to be L workers:

$$w_H - \frac{e^*}{H} \geq w_L$$

HIRING: SIGNALING QUALITY

Comments:

1. There are multiple equilibria. The education level e∗ must satisfy

$$e^* \geq (w_H - w_L) \times L, \qquad e^* \leq (w_H - w_L) \times H$$

2. The model does not describe how w_H and w_L are determined. One possibility is that they are determined on competitive markets. In this case, wages are given by the expected productivity of the worker. e.g. $w_H = g(H)$ and $w_L = g(L)$.
3. There may also be a pooling equilibrium: both types of worker choose the same education and have no incentive to adjust their education. In this case, wages would be based on the average productivity of workers.
4. This is a cynical view of the role of education: education has value only as a signal. The intuition carries over if education has some productive value.

LECTURE 9.2

HIRING: RISK

WHO TO HIRE

Consider the problem faced by a bank in hiring someone. There are two candidates:

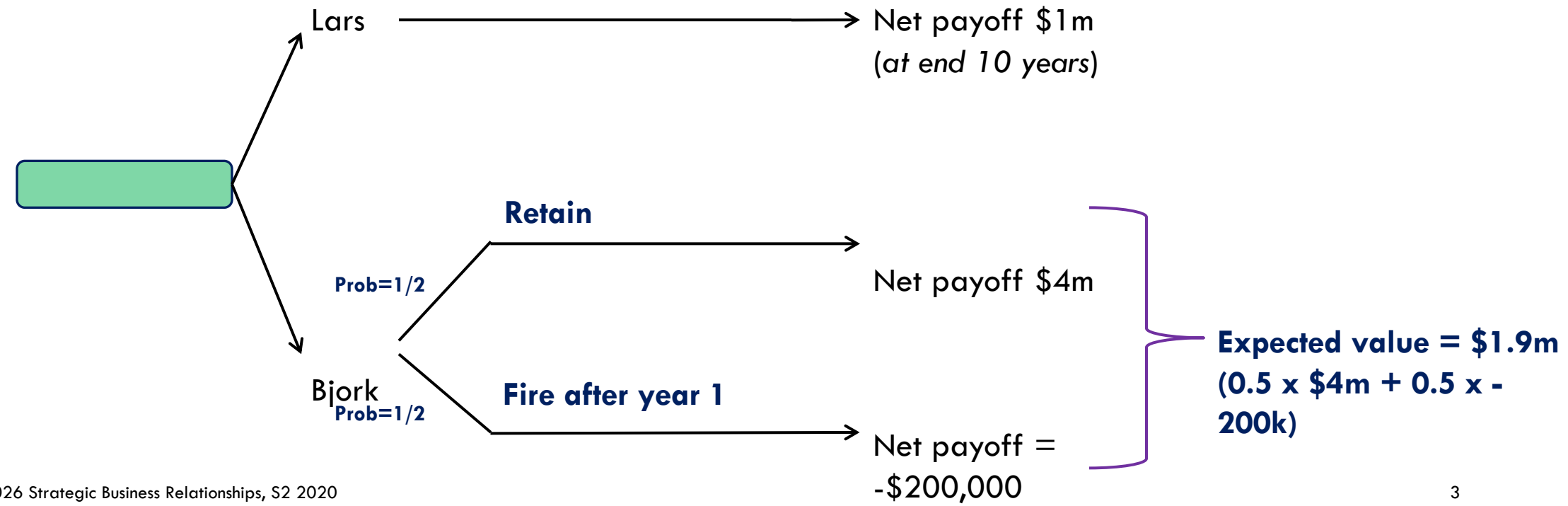
- Lars: good pedigree, degree in economics, MBA, summer internship. Certain he can generate $200,000 in revenue per year.
- Bjork: appears to be extremely talented but you are not sure. She may be a star and generate $500,000 in revenue (probability = 0.5) or be a dud and generate a $100,000 loss each year (probability = 0.5).
- Salary for either is $100,000 per year

Looking at expected value of revenue generated by each candidate doesn't help. It is the same.

Suppose talents are revealed at end of first year and either employee is expected to work at firm for 10 years. Who should you hire? Why?

WHO TO HIRE

If the bank hires Bjork, they retain her after probation only if she is productive.



WHO TO HIRE

Go for the risky option because you can always fire or ‘let go’. The probation period gives the firm insurance against risk.

If termination is difficult, the firm may be reluctant to gamble

But this is a simple model. We might need to consider:

- Terminations costs
- The firm may be risk averse.
- The longer the probation, the greater the potential risk the firm exposes itself to.
- Length of employment: Affects the value of making a hire, a star who stays a long time is valuable
- The reliability of the assessment of quality
- If Bjork is a star, will she stay? Can the firm benefit from asymmetric information and retain the star? Would she be a star elsewhere (firm specific productivity)?

LECTURE 9.3

HIRING: MATCHING FIRMS AND EMPLOYEES

WHAT STANDARDS TO APPLY?

Should you always hire the best workers?

Consider: If University graduates are about 28% more productive than HS graduates we should also consider the wage that must be paid.

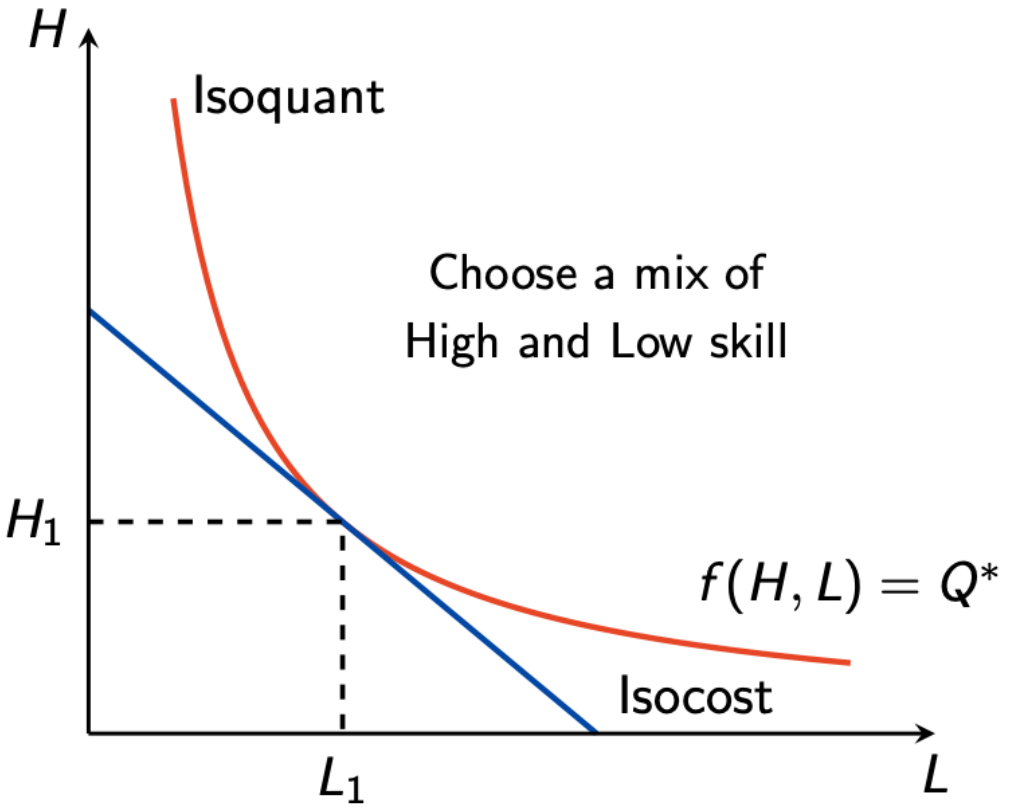
In fact the optimisation consideration is generally:

$$\frac{w_H}{MP_H} = \frac{w_L}{MP_L}$$

We should know what this equilibrium condition is actually saying..

- Make sure that you compare the costs and benefits of hiring different types of workers
- Equate the slope of the isocost line with that of the isoquant line.

WHAT STANDARDS TO APPLY?



WHAT STANDARDS TO APPLY?

What mix of ‘high’ and ‘low’ workers to hire needs some considered thought.

One consideration that is likely to be important is the nature of production. We should ask ourselves if:

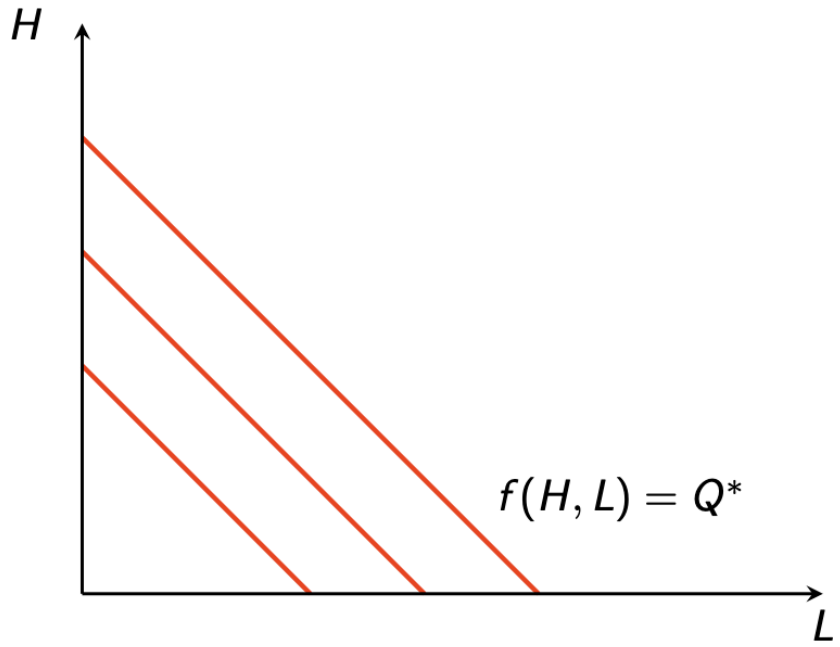
a) Productivity is independent of co-workers

b) Productivity depends on co-workers

c) Productivity of workers depends on something else (e.g. capital)

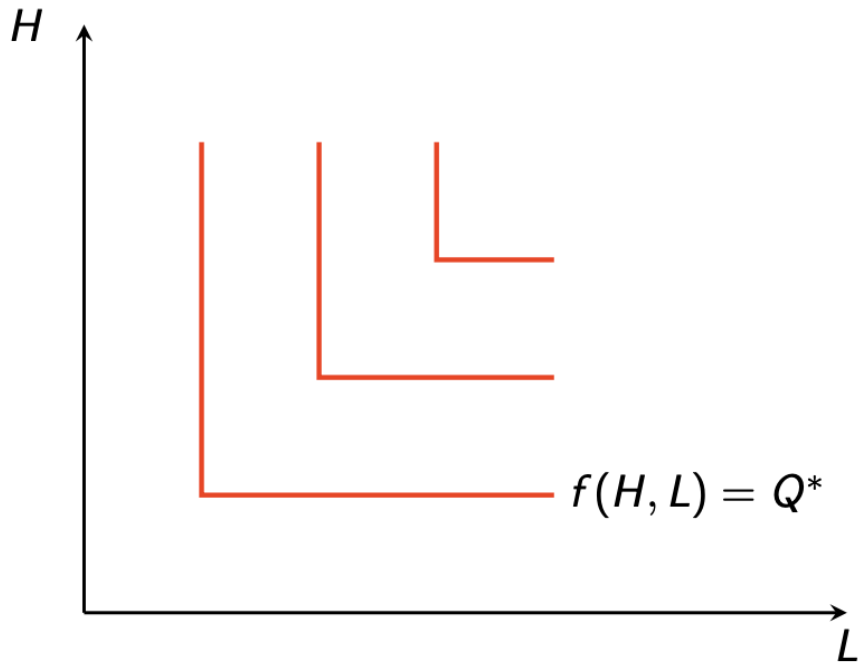
WHAT STANDARDS TO APPLY?

What if high and low skill workers are perfect substitutes?



WHAT STANDARDS TO APPLY?

What if high and low skill workers are perfect complements?



LECTURE 9.4

CONTRACTS AND PAY

CONTRACTING OBJECTIVES

Remember that one perspective of the firm is as a series of contracts. One of the most important of these set of contracts is that between the firm and its employees.

A good contract will be one that maximizes the size of the pie to be shared, allowing both the firm and employee to be better off.

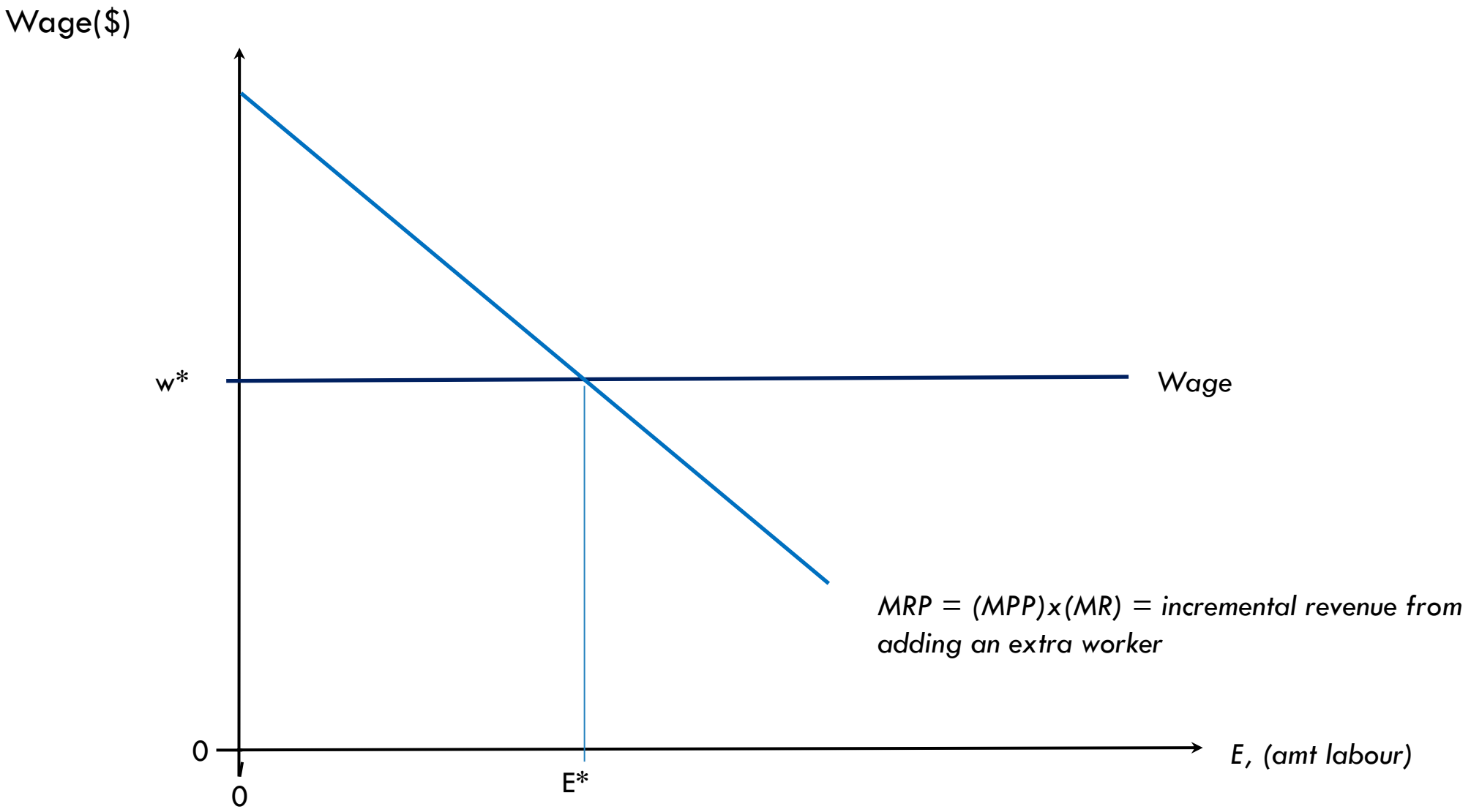
The owner of the firm and the employee must each receive at least their reservation level of utility.

- For the owner of the firm, that is the return on capital of the next most valuable input.
- For the employee, that is the wage in the next best alternative job.

THE LEVEL OF PAY

Consider the basic competitive model. Assume:

- The firm is a price taker in the labour market
- Wages are determined in the competitive market
- No long term contracts, only spot markets
- Homogeneous workers


Wage($)
w*
Wage
MRP = (MPP)x(MR) = incremental revenue from adding an extra worker
0
0
E*
E, (amt labour)

THE LEVEL OF PAY

Workers are, of course, not homogeneous. The value of an employee to a firm depends on:

- General human capital: skills and education that is valued equally by an array of firms.
- Specific human capital: skills and education that is valued more highly by one employer compared to an alternative employer.

THE LEVEL OF PAY

Not all jobs are created equal. Some jobs are dangerous, unpleasant, boring and repetitive.

To attract people to these jobs, we need to pay them more: a ***compensating differential***.

- They force employers to make choices about whether to have higher labour costs or make some other type of adjustment such as improving safety.

Example: Unskilled workers have a choice between two jobs. The first job offers clean and safe working conditions. The second job is in a dirty noisy factory.

- A wage of $15 per hour in both jobs could not be an equilibrium.
- If the second job must pay $17.50 per hour to attract workers, the compensating wage differential is $2.50 per hour.

LECTURE 9.5

INTERNAL LABOUR MARKETS

INTERNAL LABOUR MARKETS

Firms use internal labour markets to fill vacancies within the firm. Why use internal labour markets?

- Easier than external hiring
- Information asymmetries are largely resolved
- Provide greater incentive for individuals to invest in firm specific human capital
- Motivation – long term relationships can encourage individuals to work hard
- Learning benefits for the employer and the employee.

INTERNAL LABOUR MARKETS

In a long-term relationship, employees look beyond their immediate payoff.

Suppose that a firm does not pay the market wage ***initially***, but that compensation increases over time. What is important is the net present value (NPV) of the earnings profile: the career earnings path.

There are at least three ways that firms can retain workers and encourage effort:

- Efficiency wages: pay above market rates
- Upwards sloping earnings profiles: offer pay rises for seniority to encourage retention
- Promotions: offer promotions to productive workers

INTERNAL LABOUR MARKETS – EFFICIENCY WAGES

To encourage effort and loyalty, firms may offer efficiency wages: wages above the market rate.
Rationale:

- suppose effort is costly to monitor
- to induce effort, offer high wages
- combine with light or probabilistic monitoring
- and threaten termination for poor effort
- with above-market wages, workers are motivated to work hard to avoid termination

INTERNAL LABOUR MARKETS – EFFICIENCY WAGES

Example:

- One period model.
- Workers prefer to shirk. Cost of working hard is \$50.
- The outside market wage is *w*. The firm offers wage $\widehat{w} > w$.
- The firm can detect shirking with probability p

Therefore we expect the employee to work hard if.

$$\widehat{w} - \$50 > pw + (1-p)\widehat{w}$$
$$p(\widehat{w} - w) > \$50$$

So how to discourage shirking? Offer a higher wage $\widehat{w}$ or monitor more carefully.

INTERNAL LABOUR MARKETS – EFFICIENCY WAGES

Benefits of efficiency wages:

- Attracting better employees
- Building better employee commitment. Workers are less likely to quit. Firms may be more likely to offer training.
- Create a greater perception of equity. Employees may feel that an employer is ‘sharing’ the surplus fairly.
- Greater productivity.

INTERNAL LABOUR MARKETS – EFFICIENCY WAGES

Is there any evidence that firms pay efficiency wage?

The Ford Motor company is often cited as the classic example.

- With introduction of assembly lines, large workforce of relatively unskilled labour that exhibited high rates of turnover (370%); high absenteeism. In 1913, wages rates were about $2.50 per day.
- From January 1914 wage rates increased to $5.00 per day for workers who had been employed for 6 months or more.

The effect?

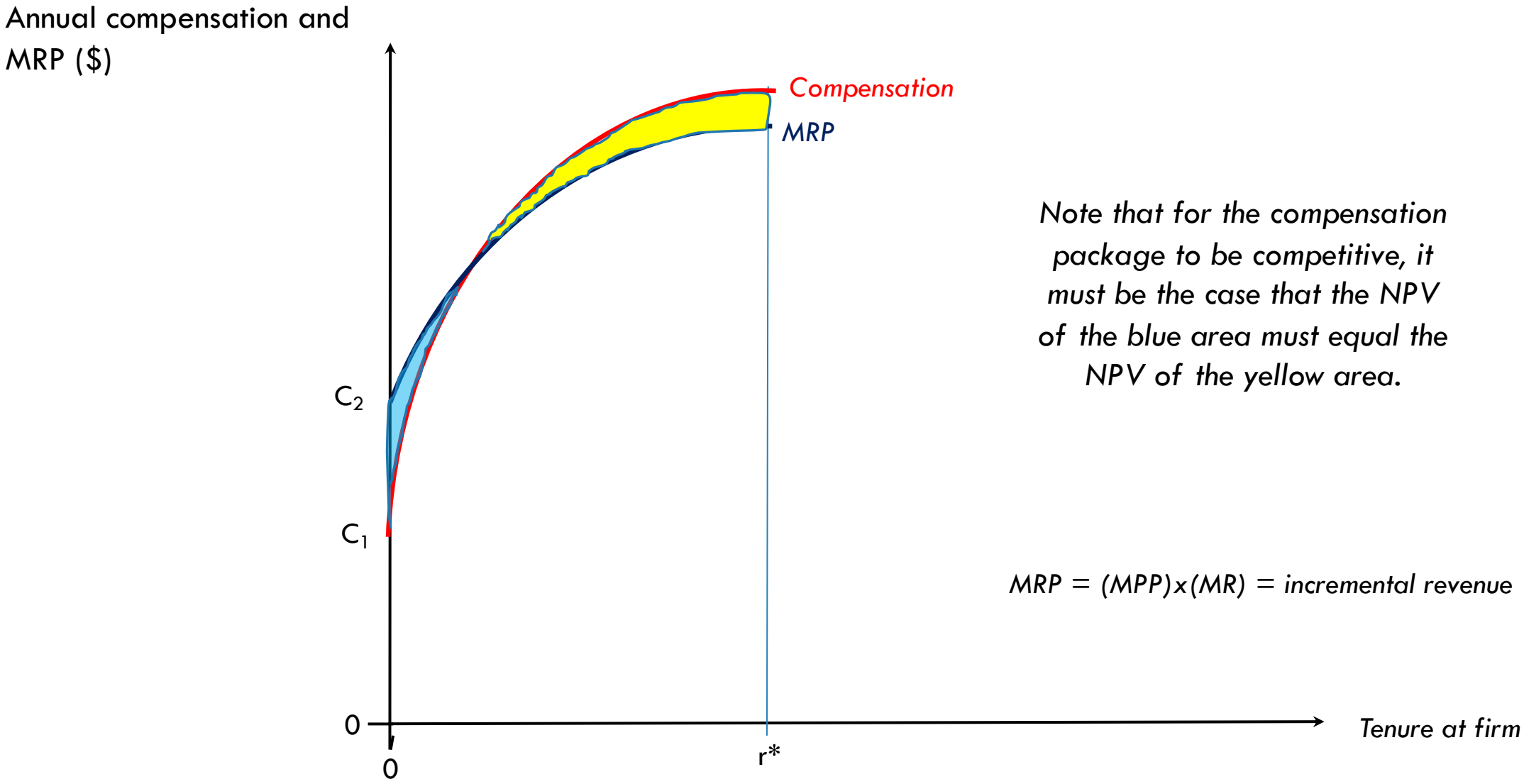
- Quit rate fell by 87%, discharges fell by 90%, and absenteeism fell by 75%.
- There were other factors at work, but nonetheless is a lesson in the incentive provided by higher wages.

INTERNAL LABOUR MARKETS – JOB SENIORITY

Another common mechanism is to reward seniority.

- In the initial stages of the employment relationship workers are paid below their MRP (underpaid)
- They are paid more than their MRP (overpaid) in later years.

Compensation increases more rapidly than productivity.



Note that for the compensation package to be competitive, it must be the case that the NPV of the blue area must equal the NPV of the yellow area.

MRP = (MPP)x(MR) = incremental revenue

INTERNAL LABOUR MARKETS – JOB SENIORITY

Rationale for workers:

- Workers accept the job because they anticipate future rewards
- Workers are motivated to work hard because of future rewards

Benefits to the firm:

- Selection: high future wages attracts workers who are likely to stay
- Incentives: workers exert effort, lured by later rewards (possibly reducing monitoring costs)
- Incentives: workers are motivated to make firm-specific investments

Potential challenge

- Approach depends crucially on trust. The reputation of the firm will be critical. Will pay really increase with seniority?

INTERNAL LABOUR MARKETS – PROMOTIONS

Firms are typically hierarchical. This provides opportunities for individuals to move up.

Promotion tournaments have the following characteristics:

- Winner is uncertain.
- The winner takes all.
- Promotion is based on **relative** performance rather than absolute measure.

Consider the following model:

The firm encourages effort by linking promotion to effort. For the staff member, they face the following problem:

$$\max_{e} \; p(e)(w^* - w) - c(e)$$

Where e is worker effort, $\mathrm{p}(e)$ is the probability of getting promoted, w^* is the wage if promoted, w is the wage if not promoted and $c(e)$ is the cost of effort.

INTERNAL LABOUR MARKETS – PROMOTIONS

Benefits of promotion tournaments:

- The prospect of promotion encourages effort
- Adjustable: larger prizes can be used for bigger promotions
- Commits the firm to performance reviews
- Relative performance evaluation filters out firm-wide shocks.

Potential drawbacks:

- Relative performance evaluation can reduce cooperation
- A coarse mechanism: what happens to those who just miss out?
- Promotion leads to more responsibility; not all workers want this

LECTURE 9.6

FRINGE BENEFITS

THE SALARY- FRINGE BENEFIT MIX

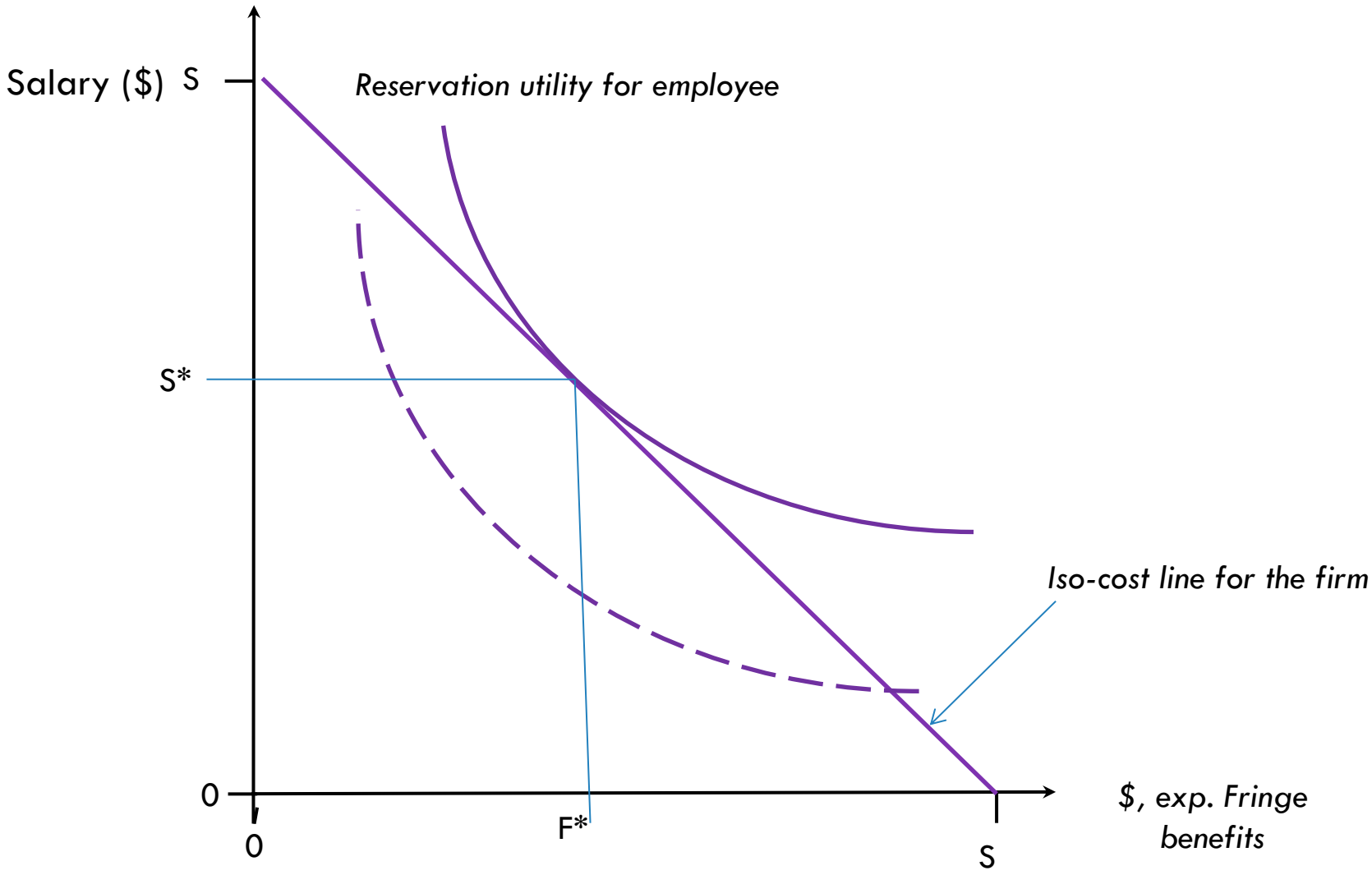
While health insurance is not a big part of the compensation package offered for Australian employees, other consideration such as superannuation / pensions and leave entitlements are.

In general employees do not value fringe benefits equally to cash in hand – why?

- *Tax considerations*
- *How an equivalent amount of cash would actually be spent*

Employers may or may not be indifferent about the mix of salary and fringe benefits

- *Tax considerations*
- *Who applies and how they behave*


Salary ($)
S
Reservation utility for employee
S*
Iso-cost line for the firm
0
0
F*
S
$, exp. Fringe benefits

THE SALARY- FRINGE BENEFIT MIX

Of course, the tradeoff doesn't have to be a one-to-one exchange.

It may be cheaper for firms to offer some types of fringe benefit either for tax reasons or because of discounts associated with the purchase of the item.

While the diagram changes a little, the basic idea remains the same – the firms will offer a mix of salary and fringe benefits that minimizes its costs, while ensuring that the reservation utility of the employee is satisfied.