

Economics of Information

LECTURE 5

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Equilibrium unemployment

involuntary unemployment

“a situation where an unemployed worker is willing to work for less than the wage received by an equally skilled employed, yet no job offers are forthcoming”

[ibidem, p. 433]

- involuntary unemployment is a persistent feature of the labour market
- why don't wages fall to clear the market?

Shapiro and Stiglitz (1984)

- *equilibrium* involuntary unemployment can be explained by the information structure of employer/employee relationship
- in particular, by the inability of the employer to *costlessly* observe workers' on-the-job effort

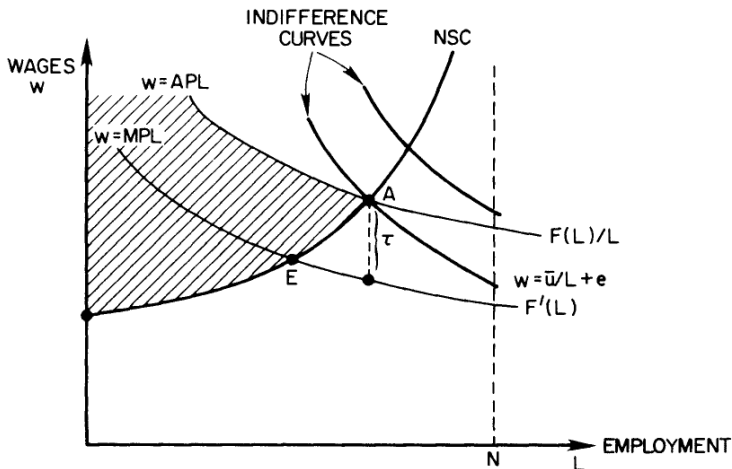
conventional competitive paradigm

- all workers receive the market wage
- no unemployment
- a worker caught shirking is immediately fired
- but is also immediately rehired by another employer for the same wage
- the worker pays no penalty for her misdemeanor
- with full employment and imperfect monitoring all workers shirk

Shapiro and Stiglitz (1984)

- to induce the worker to *'behave'* the firm offers an higher wage
- a worker caught shirking now pays a penalty
- if a firm is better off raising the wage, then all firms follow
- but then with no wage differential the penalty disappears
- however raising wages decreases labour demand
- unemployment results
- if a worker is fired, she will not be rehired immediately
- in equilibrium, unemployment is large enough that it pays workers to work, rather than taking the risk of being caught shirking
- *"equilibrium unemployment as a worker discipline device"*

Welfare analysis



Source: Shapiro and Stiglitz (1984, p. 440, fig. 4)

Welfare analysis (cont'd)

- with constant returns to scale the equilibrium is Pareto optimal
 - $F'(L) \cdot L = F(L) \rightarrow A = E$
- but in general the equilibrium is *not* Pareto optimal
- natural rate of unemployment is too high
- a profit tax τ that subsidises wages is a strict Pareto improvement

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- this is true when *workers = owners*
- if *workers \neq owners*, profit tax τ is *not* a Pareto improvement
- in this case equilibrium *is* Pareto optimal
- although it does *not* maximise national product
- Pareto optimality depends on distribution of wealth
- the standard equity/efficiency separation doesn't hold

endogenous monitoring

- employees can select monitoring intensity q
- trade-off between (costly) stricter monitoring and higher wages $\frac{\partial \hat{w}}{\partial q} < 0$
- in general it is impossible to fully characterise the equilibrium
- with C.R.S. equilibrium entails too much monitoring and employment
 - firms believe only instrument for reducing shirking is monitoring
 - but also reducing employment induces workers not to shirk
 - this enables society to save resources spent on monitoring
 - these gains more than offset loss from reduced employment
 - taxing monitoring with lump-sum transfers increases welfare
 - and it leaves no-shirking and resource constraints unaffected

risk aversion

- under risk neutrality optimal unemployment benefit $\bar{w} = 0$
- this cannot be optimal if workers are enough risk averse
- social optimum involves $\bar{w} > 0$
- but market equilibrium supports $\bar{w} = 0$ regardless of risk attitude
 - (see *ibidem*, p. 440, footnote 16)
 - $\bar{w} > 0$ merely reduces penalty of being fired
 - market provides no incentives for unemployment benefits
- justification for mandatory minimum benefit levels

endogenous turnover

- turnover rate b affects the rate of hiring out of unemployment pool a
- through V_u it also affect other firms' individual NSC
- this externality makes firms' choice of employment non-optimal
- policies discouraging labour turnover are attractive
- they make unemployment more costly to shirkers



Results and implications

- with imperfect monitoring, equilibrium entails unemployment
 - unemployment (job rationing) act as a discipline device
 - unemployment benefits increase equilibrium unemployment rate
 - not only because of lack of incentives to search for jobs
 - they reduce the penalty associated with being fired
 - high labour turnover, monitoring costs, discount rates, all increase natural rate of unemployment
 - wages adjust slowly to aggregate shocks
 - labour demand \downarrow , wage \downarrow , unemployment \uparrow (sluggish process)
 - market equilibrium in general is not Pareto optimal
 - there is too much unemployment
 - e.g. wage subsidies might bring a strict Pareto improvement
- focus of the analysis is on labour market
- but can be easily generalised to any market equilibrium framework with *agency problems* and *quantity rationing*

Thank you for your attention!

see you on
Monday, 1st April
h. 18:00 – Aula 6

