

Part 1 – Unemployment

Excercise

Over the last weeks we have covered several influences on or sources of unemployment. Briefly describe the main mechanisms involved and briefly assess the empirical relevance of the mechanisms in light of the evidence presented in the book:

- ▶ Technological progress
- ▶ Collective bargaining and wage bargaining
- ▶ Minimum wage (part 2)
- ▶ Employment protection
- ▶ Taxation

Technological progress and job reallocation.

Does technological progress destroy jobs?

- ▶ Jeremy Rifkin in *The End of Work*, 1995: “We are entering a new age of global markets and automated production. The road to a near-workerless economy is within sight.”
Technological unemployment, a concept already emerged during the 1930s Great Depression.
- ▶ Is productivity growth neutral, labor augmenting or capital saving? Combining all three aspects, a Cobb-Douglas production function can be rewritten as,
$$Y = A(A_L L)^\alpha (A_K K)^{(1-\alpha)}.$$
- ▶ Capitalization effect. Technological progress improves labor productivity and increases profits due to job creation.
- ▶ Creative destruction. Jobs are reallocated, but frictions can generate temporary individual unemployment.

Creative destruction

The term is often associated with Schumpeter (1934) who used it to describe innovative entry by entrepreneurs destroying established companies and workplaces that earlier enjoyed some degree of monopoly.

Example

Xerox in copiers or Polaroid in instant photography have seen their profits fall and their dominance vanish as rivals launched improved designs or cut manufacturing costs.

Formalized mathematically by Aghion and Howitt (1992) in their paper “A model of growth through creative destruction.”

Creative destruction

Job destruction model from the book:

- ▶ Productivity of each *new* job increases at an exogenous rate.
- ▶ Productivity of *old* jobs remains at the same level.
- ▶ A new job is created when an unemployed person and a vacant job are matched up. Free entry of firms, but search costs.
- ▶ A job disappears when the cost of keeping it going is greater than what it brings in, i. e. endogenous job destruction.
- ▶ In equilibrium, the life span of a job diminishes when growth accelerates.
- ▶ Technological progress increases unemployment. It follows from the fact the older jobs do not benefit from technological progress and must be destroyed.

Collective bargaining

Right-to-manage model

Generalization of the union monopoly model with the assumption that the firm always decides its own labor demand, but that wages are bargained over.

The labor union cares about wages *and* employment. However, these goals must be balanced. We have previously derived the wage markup

$$\frac{v(w) - v(\bar{w})}{wv'(w)} = \frac{\gamma}{\gamma\eta_w^L + (1 - \gamma)\eta_w^\pi}.$$

Insider-Outsider model

In the insider-outsider model, insiders are indifferent to employment as long they keep their job. Hence $\eta_w^L = 0$ and total employment is less due to the higher wage.

Employment protection

- ▶ In a matching model with *endogenous* job destruction due to productivity shocks, firing costs have an ambiguous effect. Such costs increase *labor hoarding*, but also lower the expected profit from new jobs. (Wages are exogenous.)
- ▶ When wages are bargained over, severance payments have no effect on the exit rate from unemployment and job destruction. However, administrative costs and hurdles have an impact on job creation. The latter has to be taken into account when creating a job.
- ▶ Lazear (1990) finds that severance payments are responsible for the rise in unemployment in Europe the period 1956–1984. Other studies, e. g. Nickell (1997), find the opposite or nothing, e. g. Bertola (1990), Garibaldi et al. (1997).

Taxation

Taxation creates a gap between the cost of labor and the purchasing power of wages.

- ▶ It can disturb the optimal labor-leisure choice. In the book, this is exemplified for the matching model with progressive taxes. It reduces the number of hours worked by individuals.
- ▶ Daveri and Tabellini (2000) show that labor taxes have a positive effect on the unemployment rate, except for nordic countries in which wage setting is highly centralized.

Part 2 – Minimum wage

Discuss the impact of market power in both the product and labor market for the relationship between the real wage and the marginal productivity of labor:

Perfect competition

In a perfectly competitive market with free entry of firms, wage must equal the marginal productivity of labor. If some firm pays less, labor supply becomes zero.

Monopoly, Oligopoly

Market power gives rise to product prices above marginal productivity. Hence, a firm with market power can make positive profits even if wages are set above marginal productivity.

Discuss the effect on the employment level of a firm of a minimum wage increase under perfect competition and monopsony:

Perfect competition

A minimum wage above the competitive wage gives rise to unemployment. Labor demand is reduced until the marginal productivity of labor equals the minimum wage.

Monopsony

If a single firm dominates a particular segment of the market and becomes the single buyer of labor, the monopsonist firm could reduce wage costs by reducing labor supply. A minimum wage could increase wages and employment up to the point where the minimum wage equals productivity.

Discuss the difference between a firm's demand elasticity of labor and the demand elasticity at the industry level:

Elasticity of labor demand

In the short run, it is hard for a whole industry to substitute workers. However, firms could be more flexible.

Which is more elastic, the short run elasticity of labor demand or the long run elasticity of demand:

Short run vs. long run

In the long run, by definition every adjustment is possible. Hence, the long run elasticity must be higher.

Briefly describe a couple of the newer mechanisms discussed in the book that allow the minimum wage to have beneficial effects for the employment level:

- ▶ Good and bad jobs (Jones, 1987). Worker with good jobs accomplish complex tasks and effort is observed imperfectly. Those workers are thus paid efficiency wages. The reservation wage is paid for bad jobs. A minimum wage reduces the efficiency wage and increases the number of good jobs.
- ▶ Drazen (1986). Minimum wages increase the average wage level. With imperfect information and outside options that depend on workers' productivity, an increased average wage attracts high productivity workers.
- ▶ Acemoglu (2001). Good jobs have higher productivity and costs more to create. In equilibrium, too few good jobs are created, but a minimum wage slightly higher than the lower limit of the distribution of wages could increase the number.