Employment protection and active employment policies.
Labour Economics - set 5

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Introduction I

- Employment protection legislation (EPL) limits firms' capacity of reducing their labour force.

- Typically, EPL imposes firms to pay an indemnity to the workers they dismiss (severance payment) and often set strict (and costly) legal procedures that might involve a third party (judge)
  - minimum notice period
  - individual/collective dismissal procedures
  - legitimacy of the dismissal (ascertained by a labour court)

- The purpose is that of reducing flows into unemployment and that of offering an insurance against dismissal to the workers.

- Therefore, in principle, on the one hand EPL causes efficiency losses by reducing flexibility. On the other hand it provides risk averse workers an insurance device (efficiency gains).

- From firms' standpoint EPL has a cost $T = T_R + T_X$ composed of a pure transfer from the firm to the employee and a tax paid to a third party (i.e. all the procedure costs). In Italy Garibaldi and Violante (1999) estimate that T_X is about 20% of T.

Few facts I

What countries are rigid and what are flexible?
Indicators are an average of several scores

- rigidity of individual open ended employment contracts
- rigidity of individual fixed term employment contract
- rigidity of collective dismissal procedures

Each indicator is an average of other subindicators. Each elementary issues is evaluated between 1 (most flexible) and 6 (most rigid).
Table from Boeri and Van Ours p.236

Neutrality I

If

- *wages are flexible*
- workers are risk neutral,
- EPL consists only of a severance payment

then EPL is neutral, i.e. it has no effect on employment.

Hint:

- Suppose that the contract between a worker and a firm lasts two periods and worker's productivity is constant (no uncertainty).
- The firm can intially pay the worker part in cash and part with a bond. In the second period the worker will receive his "regular wage" plus the reimbursement of the bond (and the interests). The latter will represent the severance payment
- In other words, part of the initial wage is postponed.

Neutrality II

- If the worker is risk-neutral (i.e. linear preferences) he will be indifferent to this "reshuffling"
- From the firm's standpoint, the (present value of the) cost of labour is the same so that the amount of work hired remains constant.

Of course neutrality fails if the worker is risk averse (concave preferences). Income variability will impose a disutility to him and induces him to ask for higher (average) wages.

More on neutraliy I
EPL with rigid wages and uncertain productivity

- Assume that wages are **rigid** (be careful, this is not an EPL policy!) and the worker is risk neutral.

- Productivity can be high or low with a certain probability
Let $F(L) = A^i \log L$ be the production function with $A = A^H$ with probability p and $A = A^L$ with probability $1 - p$

- firms maximize expected profits $\pi = E(A^i \log L - wL)$

case 1) *the flexible country:* firm can choose occupation in all contingencies, i.e. it chooses both L^H and L^L. In this case marginal productivity is equal to the (rigid) wage under both events (highest possible efficiency) so that $L^H = A^H / w$ and $L^L = A^L / w$. Employment will then be volatile and average employment is equal to $E(L) = E(A)/w$

case 2) *the rigid country*: employment level is rigid because of strong EPL (for instance very high severance payment that prevents firms to change employment). The firm cannot vary employment across contingencies and has to choose a unique employment level. To maximize expected profits it will choose $L = E(A)/w$. In this case, employment is not volatile but efficiency is lower (wages never coincide with marginal productivity).

Remark: average employment is the same in both cases: in other words, the implication is that EPL does not affect (long run) employment, but it causes a loss of efficiency in the system.

More on neutrality I
EPL in a search model

Recall what we have seen in the Pissarides model.

- With strong EPL firms will dismiss less, but will also open less vacancies
- There are lower flows into a and out of unemployment
- The effect on the stocks of employment and unemployment are ambiguous (it depends which flow is larger)
- Long term unemployment will rise (average unemployment length will increase).

EPL reforms I

- In recent years several countries have reformed their EPL (think to Italy!).

- However, most reforms (with the notable exception of the Fornero law in Italy) have worked at the margin, i.e. they have not modified the condition of the "long term employed", but only that of the new hired.

- Typically, this choice has been dictated by the political power of the insiders.

- These reforms have reduced the protection to the new workers, favouring fixed term contracts.

EPL reforms II

Honeymoon effect:

- suppose an economy initially endowed with strong EPL. There, employment is constant in bad and good times at its average level. In this economy a reform at the margin is introduced.
- firms hire temporary workers in good times up to the optimal level and are able to reduce employment in bad times.
- of course, in bad times firms cannot go below the previous "long term employment".
- thus, on average, we observe higher employment than before the reform
- however, as soon as the "long term employees" retire, the reform applies to more and more employees. Occupation in bad times can be reduced more.
- eventually, average employment will be the same that was observed before the reform and the *honeymoon effect ends*

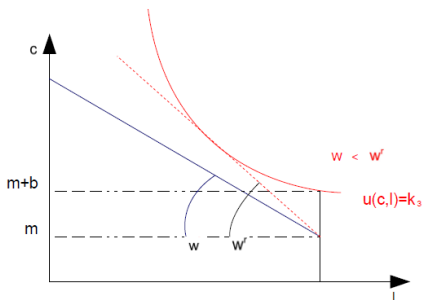# Riforma Fornero.

[...]

Unemployment benefits I

- Unemployment benefits are an insurance against the risk of loosing the job.
  - The length and the level of the benefits depend on the amount of contributions paid when on-the-job
  - Therefore unemployment benefits are rather small and limited for the young workers.
  - Besides, there exist other possible forms of income support, financed by general taxation and independent of the contributions paid.
- To measure unemployment benefits we generally look at the replacement rate between wages and benefits.
- The substitution rate tends to be higher for the lower-paid jobs and decreasing with unemployment duration (with some notable exceptions) Table 11.1 Boeri and Table 11.2

Unemployment benefits II

- OECD takes the average of the replacement rates in the first four years of unemployment
  - However this measure is incomplete because it does not account for the fact that not all unemployed receive an unemployment benefit (for instance because benefits cease before the unemployment status ends, or because only "privileged" workers are covered).

Case 1 - Perfect labour market

- Unemployment benefits need to be financed, either by taxation or social contributions
- Unemployment benefits are received only... in case of unemployment
- These two elements imply that unemployment benefits tend to reduce employment and to reduces the number of hours worked when employed

- Particularly, unemployment benefits increase worker's reservation wage and taxation make market wages less likely to exceed the reservation wage.

Effects of unemployment benefits on labour supply III

- At the aggregate level, labour supply schedule shifts up (at any given market wage, less people work and there is less labour supply). Thus the new equilibrium after the introduction of unemployment benefits is characterized by higher wages and lower employment.

- However note that there is a conceptual contradiction: in perfect market there is no involuntary unemployment. What is then the meaning of unemployment benefits in this case?

Case 2 - Imperfect markets
Consider the *Pissarides model* (market with frictions).

- There, only firms paid a search cost and we supposed that all firms and workers provide the same search intensity.

Effects of unemployment benefits on labour supply IV

- We saw that higher unemployment benefits imply higher wages (UB increases workers outside option). The wage-setting equation shifts up. This implies also a lower $\phi ->$ higher u and lower v. To firms, jobs are less profitable, since wages are higher.

Consider now a *slightly modified model* where both firms and workers search and *search intensity is endogenous*.
Let's search intensity be denoted by $s \in [0, 1]$.

- The more intense is search, the more it costs: $\gamma(s)$, increasing and convex in s, $\gamma(0) = 0, \gamma(1) \rightarrow \infty$
- Unemployed workers receive $b = b^w w$ (b^w is the replacement rate)

- The net present value of unemployment is

$$V_u = \frac{\max_s \left[b - \gamma(s) + \mu s(V_e - V_u)\right]}{\rho}$$

  where μs is the probability of finding a job, increasing in s.

- The optimal search intensity is such that

$$\gamma'(s^*) = \mu(V_e - V_u)$$

- The net present value of employment is

$$V_e = \frac{w + \delta(V_u - V_e)}{\rho}$$

  where δ is the exogenous destruction rate.

- Let the matching function be

$$m(su, v) = A(su)^{1-\eta} v^{\eta}$$

  - **Note:** search intensity is u-augmenting.
  - The probability of finding a job is

$$\mu = \frac{m(su, v)}{su} = A\left(\frac{v}{su}\right)^{\eta} = A\theta^{\eta} \quad \text{with} \quad \theta = \frac{v}{su}$$

  (number of matchs per unit of effective unemployed).
  - Tightness on the labour market is $\theta = \frac{v}{su}$

- To a firm the net present value of a filled vacancy is

$$J_e = \frac{y - (1 + t)w + \delta(J_v - J_e)}{\rho}$$

  and the net present value of a empty vacancy is

$$J_v = \frac{-c_v + \mu/\theta(J_e - J_v)}{\rho}$$

  where t is the tax rate to finance unemployment benefits, c_v is the cost of search and μ/θ is the probability that an empty vacancy turns into a filled vacancy.

  - Recall: the latter probability is $\frac{m()}{v}$ that turns into $\frac{m()}{su} \frac{su}{v} = \mu/\theta$.

- Equilibrium (i.e. zero profit condition) implies that $J_v = 0$.

- The **job creation equation** is thus

$$w = \frac{y - (\delta + \rho)J_e}{1 + t} = \frac{y - (\delta + \rho)c_v\theta/\mu}{1 + t}$$

- Wage Bargaining:

$$\max_w \left(V_e - V_u\right)^\beta \left(J_e - J_v\right)^{1-\beta}$$

- Nash Bargaining solution with β bargaining power of the worker.
- Substituting out V_e and J_e we end up with

$$\max_w \left(\frac{w}{\rho + \delta} - \frac{\rho}{\rho + \delta}V_u\right)^\beta \left(\frac{y - (1 + t)w}{\rho + \delta}\right)^{1-\beta}$$

whose first order condition is (**wage setting equation**)

$$w = (1 - \beta)\rho V_u + \beta\frac{y}{1 + t}$$

Effects of unemployment benefits on labour supply IX

- Note: V_u is increasing in θ: in tight markets, it is easier to find a job.

- **Beveridge curve**: flow into unemployment = flow out of unemployment

$$\delta e = \mu s u$$

where e is employment.

- In this model we have three groups: the employed, the unemployed and the inactive

  - Normalize population to 1
  - Suppose that the utility workers get from remaining inactive is ϖ, distributed according to $G(.)$. ϖ is unobservable to the employer and for this reason it cannot enter into the wage bargaining.
  - Then the proportion of the population that is employed or is searching a job, $e + u$, is

  $$\Pr(\varpi < \rho V_u) = G(\rho V_u)$$

- Therefore the Beveridge curve can be written as

$$\delta \left(G(\rho V_u) - u \right) = \mu s u$$

- **Budget constraint**

$$etw = ub^w w$$

Summing up:
the model is composed of
1) job creation equation

$$w = \frac{y - (\delta + \rho)c_v \theta / \mu}{1 + t}$$

2) wage setting equation

$$w = (1 - \beta)\rho V_u + \beta \frac{y}{1 + t}$$

3) Beveridge Curve

$$\delta \left(G(\rho V_u) - u \right) = \mu s u$$

4) Budget constraint

$$t = \frac{u}{G(\rho V_u) - u} b^w \quad \text{i.e.} \quad \frac{1}{1 + t} = \frac{1}{b^w} \left(1 - \frac{u}{G(\rho V_u)} \right)$$

5) Optimal search intensity

$$\gamma'(s^*) = \mu(V_e - V_u)$$

Numerical solutions

We move the policy parameter b^w and we look at its equilibrium effects on s, u and V_u.

Suppose:

$$\gamma(s) = \frac{1 - (1-s)^{1-\kappa}}{1-\kappa} - s \quad \text{with} \quad 0 < \kappa < 1$$

(increasing and convex in s)

1) s^* is decreasing with b^w (and concave) $->$ unemployment length increases

2) u^* is increasing with b^w (and convex) (more people abandon inactivity and search jobs)

3) V_u is inversed U-shaped with b^w (higher unemployment benefits, but less likely to get employed)

3.1) when V_u increases, wages increase (better outside option to the workers)

Empirical evidence I

- Cross country analysis document a rather strong negative relationship between replacement rates and unemployment rates (10% more b^w increases u by 1.7 percentage points). Even stronger effects as regards the maximal length of unemployment benefits

- Micro-econometric analysis using reforms in the unemployment benefits regime found much smaller effects (e.g. in Austria, reform increased UB for workers with low wages only, and UB prolonged for older workers only)

- Reverse causation in the macro cross-country studies?

Final Remark I

Private markets cannot offer insurance against the risk of unemployment

1. adverse selection: only the high-risk will seek insurance
2. moral hazard: less effort ex post

Public intervention solves at least adverse selection because contribution will be compulsory for all
This implies a redistribution as the less risky pay for the more risky.

Insurance reduces the speed of adjustment to exogenous shocks of the economic system

- However, insurance can increase efficiency: if workers and vacancies are heterogenous as regards productivity, UB induce more workers to search and increase the probability that the more productive vacancies are opened. Moreover UB favour reallocation of workers from less productive towards more productive jobs (Acemoglu and Shimer, 1999, 2000; Marimon and Zilibotti, 1999; Boeri and Macis, 2008).

Active labour market policies I

- The purpose of ALMP is that of favouring matching, favoring re-employment of the unemployed and favoring a faster adjustment of the labour market
- Four broad categories of ALMP
    - formation, training
    - incentive to employment (incentives to firms to hire especially vulnerable categories)
    - public employment services (vocational and professional counselling, management of UB)
    - activation policies (incentives/sanctions to the unemployed, compulsory re-qualification courses/counselling meetings, workfare)
- Northern Europe and especially Scandinavian countries are those most ahead in terms of ALMP (Boeri table 12.1)

Active labour market policies II

- In an imperfect labour market, the purpose of the ALMP is that of inducing the Beveridge curve to shift to the left. This represents an improvement in the matching function and will imply a reduction of both vacancies and unemployment for a given level of market tightness.

- Most experimental studies (treatment group is provided with more intense ALMPs and control group with standard ALMPs) conducted in Europe and the US find that ALMP (and especially sanctions and controls over the search intensity) boost unemployed search and eventually reduce unemployment.

  - However it is also possible that sanctions and controls push the unemployed to substitute informal search with formal search (without increasing overall search intensity) (Van den Berg & Van der Klaauw, 2006).