

Labour Economics: An European Perspective

Inequalities in EU Labour Market

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A road map of lectures

- The distribution of compensation per employees in EU regions
- Between and within-country inequality in the distribution of compensation per employees
- The distribution of compensation per employees in EU regions at sectoral level
- Macroeconomic theories on wages
- Migration: theory and an application to Italy
- Occupational mobility: theory and an application to Italy

Figura: Compensations per employee in 1991

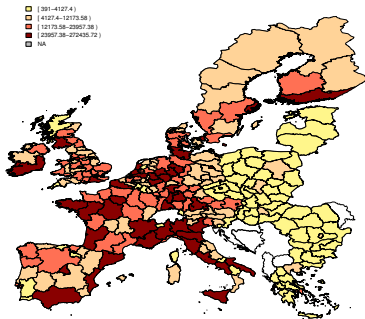
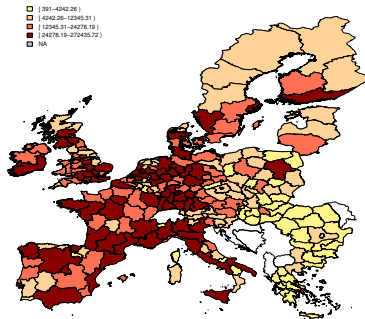


Figura: Compensations per employee in 2012



Theory of compensations

Four main theories for the determination of compensations with labour homogeneity:

- The theory of subsistence wage (Malthus, 1789) and of natural level of wages (Ricardo, 1820)
- Real wages are equal to the **marginal productivity of labour** (marginalistic revolution, end of XX century)
- The theory of efficiency wages (Stiglitz and Weiss)
- Real wages are the result of **bargaining between unions and firms** in an economy with imperfectly competitive markets (both the factor and good markets).

However, in four theories marginal productivity of labour is a reference point for the level of (real) wages.

The theory of subsistence wage: Malthus in 1798

Malthus

Any temporal divergence from the subsistence wage is compensated by a change in population/employment leading to a convergent dynamics.

$$\dot{N}^S = N^S \left(\frac{W}{P} - \left(\frac{W}{P} \right)^S \right), \quad (1)$$

where $(W/P)^S$ is the (constant over time) subsistence wage and $N^S(\cdot)$ is increasing in its argument.

The theory of natural wage: Ricardo in 1820

Ricardo

Natural wage is defined as the level of wage leaving the population/employment constant over time.

Any temporal divergence from the natural wage is compensated by a change in population/employment leading to a convergent dynamics.

$$\dot{N}^S = N^S \left(\frac{W}{P} - \left(\frac{W}{P} \right)^N \right), \quad (2)$$

where $(W/P)^N$ is the natural wage and $N^S(\cdot)$ is increasing in its argument.

$(W/P)^N$ can change over time. Habit formation and conspicuous consumption are key features of this change (see also Thorstein Veblen).

Marginal approach at the end of 19th century

Real wages are equal to the **marginal productivity of labour** as the result of maximization of profits in a perfectly competitive economy:

$$\frac{W}{P} = \frac{\partial Y}{\partial N} \quad (3)$$

Any departure of this rule is doomed to be disappear in the long run for effect of competition.

The rule requires strict assumption on the homogeneity of labour, full information of firms and workers, etc..

The theory of efficiency wages

There exists several models explaining why in a labour market with imperfect information on the quality of workforce and/or costly monitoring of workers' effort the level of real wage is higher than the marginal productivity of labour.

Moral hazard The basic idea is that in a perfectly competitive market in absence of (involuntary) unemployment workers have not an incentive to produce the maximum effort because the possible sanction is not effective given that they can find an occupation at the same wage with certainty. Firms must pay a higher wage to discipline workers, which at the same time produces unemployment in the market and increase the cost of firing for workers.

Therefore the level of wage in market with imperfect information is not equal to marginal productivity of labour but higher to avoid shrinking (Shapiro, Stiglitz).

The theory of efficiency wages (cont.d)

Consider a model where labour supply is constant, i.e. $N^S = \bar{N}^S$ and labour demand is given by the usual condition $W/P = \partial Y / \partial N$.

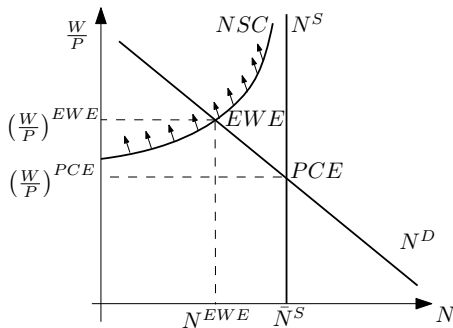


Figura: Equilibrium in the labour market with possible shrinking

In Figure 3 *PCE* represents the perfectly competitive equilibrium without any asymmetric information.

The theory of efficiency wages (cont.d)

Suppose that worker can choose to produce an effort or not. To produce an effort is costly for the worker. Assuming that effort can take only two values, 0 and 1, i.e. $e \in \{0, 1\}$ and that the utility of not produce effort denoted by $U(e = 0)$ is higher than the utility of producing an effort denoted by $U(e = 1)$.

Firm monitors worker with a constant probability p . Worker found to produce an effort equal to zero is immediately and without cost fired. This implies that fired worker has an expected utility depending on the state of labour market, i.e. $(1 - u) \frac{W}{P} + U(e = 0)$.

The condition to incentive a risk-neutral worker to produce an effort is:

$$\frac{W}{P} + U(e = 1) \geq p \left[(1 - u) \frac{W}{P} + U(e = 0) \right] + (1 - p) \left[\frac{W}{P} + U(e = 0) \right] \quad (4)$$

The theory of efficiency wages (cont.d)

Therefore the No-Shrinking Condition (NSC), which identifies the region where optimal effort is equal to 1:

$$\frac{W}{P} \geq \frac{U(e=0) - U(e=1)}{p(1 - N/\bar{N}^S)} \quad (5)$$

The Efficiency-Wage Equilibrium(EWE), which is at the cross between the curves N^D and NSC , satisfies the condition of maximization of profits and the condition to provide the incentive to worker to produce effort.

The introduction in the framework of **unemployment benefits**, **employment protection legislation**, etc. produces intuitive effects on equilibrium level of wage and occupation.