E C O N O M I C S B U L L E T I N

The Effect of unemployment benefit degression on union membership of unemployed people

SANDI mourad
LEN−CEBS

Abstract

In a non competitive labour market, wages are determined by negotiations between trade unions and employers. We also suppose that two kinds of unemployment benefits follow. In the first, described as stationary, a stable benefit is paid whatever the duration of unemployment. In the second, described as non stationary, a digression is assigned in the unemployment benefit payments, depending on the duration of unemployment. In this paper we will show the impact of this digression on trade union membership choices.

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Introduction

Membership choices are often affected by the institutional organisations of the labour market and by the economic interactions within a product market. For example, unemployment growth can promote or discriminate against the membership advantages depending on the unions participation in managing the unemployment insurance fund[1]. The legislation of employment protection, minimum wages and the index-linked salaries can also affect membership, since they can be seen as substitutes for the expected gains from the union action. What seems to guide the individual in his choice of union membership ?

The answers to this question put forward in the social and economic literature have been numerous and varied since the publication of the works of Olson (1965)[2], but they all have one mutual interest, confirmed historically, stipulating that material benefits seem to be factors of attraction to union membership that cannot be ignored (Boyer, 1988). However, when wages are the only advantages a member can have, non-membership remains the individually rational strategy. The public character of goods and services offered by the trade union[3] (secure working place, comfort, good lightening, etc.) give rise to the problem of free-riders. Unions thus considerably influence wage distribution and employment probability, stimulating membership (Booth, 1984; Booth and Chatterji, 1995; Jones and McKenna, 1994) or offering selective benefits in order to maintain and/or recruit new members (Olson, 1965)[4].

Most studies analyse membership choices assuming that the wage population is homogeneous. Few studies have analyzed the choices of a special category such as the unemployed. Even less studies have described the impact of unemployment benefit degression on the membership choice of union.

We will suppose in this paper that membership decisions are not a simple matter of desire or ideological commitment. Membership is an individual decision. The economic agent makes his choices by comparing monetary and mental[5] costs (time spent in union action, the reputation and the penalties that go with membership, etc.) with gains that membership provides in terms of tenure of employment (Jones and McKenna, 1989) and/or privative goods allocated by the unions to their members. This job security is supposed to be a factor that is both endogenous (the effect of union actions on company competivity, technology and national growth) and exogenous to the unions actions (an aversion to risk by employees, and the global situation).

The subject matter of this paper is structured around four points. Firstly, we will present the hypothesis of the model. Secondly, we will address the main determining factors of the

[1] The Ghent System observed in Finland, Belgium, Sweden and Denmark attaches importance to unemployment insurance fund management. Government participation is often made with transfer of funds.

[2] According to the author, each one has an interest in the collective action without participating, that is to say that it is the interest of each one to have free rider behaviour, each taking advantage of the collective action without having to bear the costs that the collective action incurs.

[3] The research by Booth and Chatterji (1995) includes the participation in the legal land pension boards, promotion and grievance procedures, etc., in these goods and services

[4] Olson supposes two solutions :

* To penalize people that do not participate in giving more benefits to those who « put more efforts in ».
* To put pressure on the "non strikers" to ostracize them from the group.

[5] Reynolds, Maters and Moser (1999), estimate that the membership cost accounts, more or less, for the equivalent of two working hours per month and that the union action takes 1% of the labour of a typical member.

membership choices of the unemployed. The impact of degression on these membership choices will then be discussed and finally the results of the model presented.

Presentation of the model

In a non competitive labour market, we suppose that all workers are identical. Each of them supplies a work unit for a wage rate determined during the negotiations between unions and employers. The work demand from the company originates from profit maximization subject to wage rate. This demand is both continuously differentiable and deceases with the wage. We suppose that the agent is neutral when faced with risk and we disregard labour disutility. The instant utility is thus simply equal to w. However, we suggest that at each period any work unit can disappear with a stable and exogenous probability q.

The utility expected from an employee working on the date t for the wage w :

$$V(w) = w + \beta[(1-q)V(w) + qV_u] \qquad (1)$$

$\beta \in [0,1]$ indicates a discount factor.
V_u indicates the utility expected from an individual becoming unemployed.

Firstly, it can be noted that the intertemporal utility of the unemployed is a stable scale.
This relation (1) makes it possible to express the intertemporal utility of the employee that receives the wage w in the flowing way :

$$V(w) - V_u = \frac{w - (1-\beta)V_u}{1-\beta(1-q)} \qquad (2)$$

It appears thus that the difference between the utility expected from an employee and a jobless person increases with the wage and decreases with utility expected from the unemployed.

The question we will ask in this article is based on the impact of the unemployment benefit degression on the membership choice in the union by the unemployed. In order to address this, we will define the main determinants of these membership choices. We will then analyze the effect of the digression on these determinants in order to finally find its impact on the agent's behaviour regarding unionism.

The membership choices of the unemployed

It is supposed that in each period membership incurs costs. These can be financial, e.g., contributions, in which opportunity membership cost must be included, i.e., the time value spent on militant activities that could have been spent on other activities. We will make the scalar $c > 0$ to the set of these costs. Gains can also be associated with union memberships. These are made up of private goods given to the members by unions, reputation, security of work, etc. If we make the scalar $g > 0$ the set of these goods, the net gains of membership, that with will be denoted as z, is thus equal $(g - c)$.

The intertemporal utility expected from an unemployed person worker is written :

$$V_u = z + \beta\left\{\lambda\left[\int_0^x V_u dH(w) + \int_x^{=\infty} V(w)dH(w)\right] + (1-\lambda)V_u\right\} \quad (3)$$

where $H(.)$ is the function of distribution of all the possible salaries. The relation can (3) easily be understand if we note that the term between brackets represents the future utility expected by the unemployed receiving a job offer in the current period, and that outcome comes with the probability λ. The unemployed person refuses any job with a salary that is less than x. Consequently, he obtains V_u. If the salary proposed is more than x, the unemployed person accepts the job and has an expected utility $V(w)$. Using the relations (1) and (2), we eliminate $V(w)$ and V_u, and this leads us to the following function that implicitly defines the net gains of membership according to the arguments of the model :

$$z = x - \frac{\beta\lambda}{1-\beta(1-q)}\int_x^{+\infty}(w-x)dH(w) \quad (4)$$

The comparative static properties of the model makes it possible to specify the impact of unemployment benefits, the preference for the present, job offer probability and the employment destruction rate on the membership net gains and the average unemployment period. In addition, the model casts a rather interesting light on the choice between activity and inactivity.

The comparative static properties

The comparative static properties of the model are established if we write the relation (4) in the following way:

$$z = \Phi(x, \beta, \lambda, q)$$

with

$$\Phi(x, \beta, \lambda, q) = x - \frac{\beta\lambda}{1-\beta(1-q)}\int_x^{+\infty}(w-x)dH(w)$$

We can verify that partial derivates of this function have the following proprieties:

$$\Phi_x > 0,\ \Phi_\beta < 0,\ \Phi_\lambda < 0,\ \Phi_q > 0,\ \Phi_w < 0$$

The salary level seems to produce a negative effect on the membership net gains. Theoretically, a wage increase will lead to a decrease in the number of unemployed people belonging to a union, because it jeopardizes their situations. Consequently, the results of the model mean that an unemployment benefit increases, all things being equal, should lead to an increase of net gains in membership to unions. This result is very intuitive and this stems from the fact that an employed and better compensated person is becoming more demanding in terms of salary, that increases the unemployment duration on averageand can favour the membership to unions for at least two reasons. In the first place, it strengthens the dependence of the unemployed expected from their union, when the latter participates in the management

and/or development of the social fund policies. As a result, the wage increase claims by the union can damage the situation of the unemployed in the long-term, by saddling them to a situation of unemployment.

A β increase characterizes an unemployed person who attaches more importance to the future than someone else . This kind of individual will have a more significant fall-back salary and the woes of his average unemployment will be longer. When the probability q of being again jobless increases, the current demand from the unemployed decreases, because the difference between the utility expected from an employee and an unemployed dwindles, and this reduces the average unemployment duration.

Now that we have characterized the main determinants of membership choices by the unemployed, let us now question the impact of the unemployed benefit degression on membership net gains. In order to provide answers, we will use deductive reasoning that consists in determining this effect by studying the correlation between membership determinants characterized before and after unemployment benefit degression. This will lead to us mainly studying the impact of the latter on the salary and unemployment levels.

The impact of degression on membership choices

In order to determine the preferences of the unemployed between activity and inactivity and the union preferences in the determination on the level of wage an its impact on the unemployment rate, this paragraph will comprise the theory of employment prospecting. This theory supposes that with a given economical situation (growth, job, etc.), an unemployed person determines his job offer behaviour by comparing the salary offered with the fall-back salary. The basic framework of the theory of the sequential job search is the following : at any time, the unemployed person decides the intensity with which he prospects job offers, and the minimum salary with which he accepts to work. In this first approach, the job search environment is stationary in that every unemployed person faces the same problem of decision at any time. Time is continuous, and for the sake of simplicity, the individuals are supposed to be neutral regarding risk. They anticipate the future with the instant rate $\beta > 0$ and their lives are supposed to be infinite. The unemployed person may have a salary proposal at anytime and he is free to refuse or to accept. If the employee accepts the offer, he becomes salaried and definitely abandons the job search. If he refuses, he continues his job search.

There exist many very good syntheses about job search models and about the impact of unemployment benefit (Acemoglu and Shimer 1999, Atkinson 1995, Burdett 1979, Cahuc and Lehmann 2000). The most common approach emphasizes the negative impact of unemployment benefit on the intensity of the search. However, there are also reasons to believe that, in some circumstances, generous unemployment benefits can improve the effectiveness and provide a positive impact on its intensity. A very large number of empirical valuation have made it possible to estimate the answers concerning the rates of people leaving unemployment and the various characteristics of unemployment benefit systems, such as the level of the benefits, their duration, their temporal profits and many eligibility conditions that are associated to them (Devine et Keifer 1991, Holmlund 1998, Cahuc et Zylberberg 2001). The results obtained in this way emphasize the a profile of decreasing benefits in time, with a focus on the incentive to search.

In order to simplify this research need for it can be noted that an unemployed person has a salary proposal w from an employer that he is free to accept or to refuse. He accepts this

salary offer if $V(w) > V_u$. Since the intertemporal utility expected V_u of an unemployed person is not dependent on a particular formulation of the salary offer w, the relation (2) shows that $V(w)$ is a gnawing lineal function of the salary proposed. This also means that the acceptance phases of the salary offer becomes equivalent to a stopping rule. This rule consists in accepting the salary w if, and only if it is higher than a threshold value x (called reservation salary), of which the equation (2) means that it is defined by[6] :

$x = (1-\beta)V_u$.

The latter depends on the unemployment benefit level, the arrival rate of future job offers, and the distribution of wages offered. These variables that determine the salary of reservation can change according to the average period of unemployment:

- ✓ when the terms of unemployment pay anticipate a degression of the benefit;
- ✓ given the fact that the arrival rate of job offers can be lower because of the stigmatization that affects long-term unemployed people;
- ✓ because the distribution of the salaries offered can more downward narrower because of the skill loss that comes with long-term unemployment.

The reservation salary therefore depends on the average period of unemployment. The estimations of the rate of unemployment exits in a model of reduced size reveals a lower rate of leaving unemployment with the average period of unemployment (Narendranathan, Nickell et Stern, 1985), and this complies with "non stationarity". Other studies show that the unemployed adjust their reservation salaries downwards during the unemployment period (Kasper 1967, Kiefer et Neumann, 1979, 1981).

This paragraph continues by introducing the « non stationarity » of unemployment payments, in order to study its impact on the membership choices by the unemployed. To provide answers the following questions are asked : what are the consequences of a rule modification of unemployment benefits on the employment and salary levels. How does the degression of unemployment benefit change the features of the job offer? What will the impact of the degression be on the amount of the salary determination by union? Will this degression lower the unemployment rate andnd will it foster a net gain in union membership?

In practice, an unemployed person who is about to lose entitlement to unemployment benefit experiences a situation that is similar to an employed person who is not compensated. We will write s the duration of unemployment, and $b(s)$ the amount of unemployment benefits, this amount being contingent to the duration of unemployment. The unemployment benefit profile is supposed to be discountinuos. So, $b(s) = b_1$ if $s \leq T$ and $b(s) = b_2 < b_1$ if $s > T$ where T indicates the potential duration of compensation. When the unemployed person attains and then exceeds the duration T of being unemployed, he turns to an assistance scheme.

V_u indicates intertemporel utility of an unemployed person of which the average period of unemployment is s, insofar as the unemployment benefit profile decreases with the time spent being unemployed, V_u is no longer a constant. As a result, the optimal salary of reservation is contingent to the duration of unemployment. Clearly, we suppose that unemployment benefit depends on the duration of unemployment. A benefit b_1 is allocated to

[6] See Cahuc et Zelberberg 1997.

short-term unemployed people and a b_2 to long-term ones (with $b_1 > b_2$). Many economic studies have demonstrated the existence of a correlation between the amount and duration of the benefit on the one hand and the unemployment rate on the other hand (Oswald 1985, Fraber 1986, Booth 1995, Mortensen 1977, Burdett 1979, Katz andt Meyer 1990, Shavell and Weiss 1979, Fredriksson and Holmlund 1998, Atkison 1995, Cahuc and Lehmann 2000).

The objective function of the union is written :

$$U(w, b_1, b_2) = (1-u)w + u[(1-\varphi(u))b_1 + (\varphi(u))b_2] \quad (5)$$

where $u = u(w)$ is the unemployment rate;

$(1-u)$ is the employment probability;

$(1-\varphi(u))b_1$ and $\varphi(u)b_2$ respectively denotes the fraction of short-term unemployment and the fraction of long-term unemployment.

It can be seen that the elasticity $\eta(u)$ of long-term unemployment regarding general unemployment is positive ($\eta(u) \equiv \varphi'(u)u / \varphi(u) > 0$), like most of the models of employment prospecting (Jovanovic 1984, Kreiner and Whitta-Jacobsen 2002, etc.). As a consequence, when unemployment increases, the long-term unemployment fraction increases faster than the short-term unemployment fraction. This is due to the decrease in the frequency a job offers with the amount of time spent unemployed. This decrease could originate from productive drop in skills, or simply from the fact that for employers this duration unemployment can be a sign o potentially poor productivity of the unemployed person.

As in model of union monopoly, we suppose that this phenomena works out the salary given the level of b_1 and b_2 of the unemployment benefits. The first order condition gives the following salary :

$$w = \frac{(1-\varphi)b_1 + \varphi b_2 - \varphi\eta(b_1 - b_2)}{1 - 1/\varepsilon} \quad (6)$$

We assume that the second order condition $U_{ww} < 0$ is fulfilled, and that the elasticity of job demand is higher than the unit $\varepsilon(w) > 1$. The elasticity of labour demand at the wage rate w is given by the following formula : $\varepsilon(w) = -L_w w / L(w) = u'(w)w/[1-u(w)]$

In most of the negotiation models between unions and employers the salary rate depends on the alternative opportunities (or on the opportunity cost of employment, in this case the loss of benefits). As a result, a low substitute wage generates a low salary and a low unemployment rate. In addition, as in most of the models of unionism, it was found that the generosity of the welfare systeme of unemployment insurance increases the power of negotiation and therefore raises the levels of salaries and unemployment. However, in a “non stationarity” framework (b_1 and b_2),, the effect of benefits on unemployment and salaries can be different. We will demonstrate that degression of payments can encourage unions to moderate their wage demand in order to reduce unemployment.

The effect of the variation b_1 is determined by the first order condition:

$$\frac{dw}{db_1} = -\frac{U_{wb_1}(w, b_1, b_2)}{U_{ww}(w, b_1, b_2)} = -u'(w)\frac{1-\varphi(u)(1+\eta(u))}{U_{ww}(w, b_1, b_2)} \quad (7)$$

Since $U_{ww} < 0$, $u'(w) > 0$ and $\eta(u) > 0$, this expression shows that an increase in b_1 can reduce the wage w if $\frac{1-\varphi(u)}{\varphi(u)} < \eta(u)$. As a result, it is seen that the impact of the unemployment benefit degression on the salary determined by the unions depends on the fraction of the short-term unemployed in relation to long-term ones, and the elasticity of long-term unemployment in relation to general unemployment.

As in the case of anyone looking for a job, the union anticipates the discontinuity that should occur in the unemployment benefit payment after T consecutive unemployment period, and the union reduces his salary requirements when the term comes closer. This result means the rate of leaving unemployment , that is $a_t = \lambda[1 - H(x)]$ increases with the duration of research. However, long-term unemployed people probably have less chance of leaving of unemployment lower than short-term unemployment people.

The effect of the unemployment benefit degression on the utility of an employee therefore depends on two factors. On the one hand, it depends on his situation in the labour market, job or unemployed and on the probability q to become again unemployed. When this probability increases, the current requirements of the unemployed person and employees decrease. On the other hand, the effect of the degression depends on the employees evaluation of the relation cost benefit of such a measure.

Conclusion

In conclusion, it can be seen that degression encourages membership of the unemployed to a union. This deduction is made from the conjunction of two main results arising from the model.

Firstly, we found that levels of salary and unemployment are key determinants of the unemployed peoples membership to a union. We have thus investigated the impact of the degression of unemployment benefit on the determination of salaries by unions and the inferred unemployment rate.

Secondly, we have demonstrated that such a degression can reduce the salary levels determined by the union and consequently absorbs unemployment. This is affected in two ways. First of all, degression moderates union demands in terms of salaries, and a consequence of the wage moderation will be a drop in unemployment rate, because it is an increasing function of the salary rate ($u'(w)w/[1-u(w)] > 0$). As a result this degression plays an incentive role in the unemployment outing rate. This result can be explained in many ways. The decrease in long-term benefit can be perceived as a penalty. In this case long-term unemployed people will e more encouraged to look for a job activity. In practice, an unemployed person that approaches the date of the end of rights experiences a situation relatively close to an unemployed person who does not receive benefits. Many economic studies proved this positive effect on the job search (Abbring et al. 1997, Van den Berg et al. 2002, Jensen et al. 1999).

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