Credit Markets and Employment Protection: Towards a New Political Economy of Labor Market Reform*

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Abstract

We build a simple model to show why the unemployed vote for employment protection. An unemployed individual who finds a job might face a credit constraint: the bank fears that the individual might lose his job and not repay the loan. Credit constraints for newly employed individuals become more severe as employment protection decreases. A decrease in employment protection also increases expected income. The unemployed might prefer the steady state without employment protection to the steady state with employment protection, but will not vote for liberalization, as the transition phase, where credit constraints are strongest, gives them a net loss.

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1 Introduction

The "traditional" literature on the political economy of labor markets assumes that reform is mainly a conflict between insiders (individuals that are employed) and outsiders (individuals searching for a job) (Saint-Paul, 2002). Higher employment protection reduces the job destruction rate and therefore protects insiders. In a frictional labor market, the firing cost decreases the firm's outside option, and hence allows the worker to increase the wage in a bargaining framework. Moreover, as the job destruction rate decreases, the average duration of a job increases and the worker is able to enjoy this rent during a longer time period. The downside of employment protection is that it also decreases job creation rates. Knowing that it will be difficult to destroy a job in case of bad economic conditions, firms may not create jobs. While insiders also suffer from this negative effect (in case they lose their job), the main burden of employment protection lies on the outsiders. Under higher employment protection, they have more difficulty to find a job, and on average, suffer a longer unemployment span. As a consequence - so the model goes - insiders represent political support for employment protection, while outsiders support the liberalization of employment protection.

The first part of this theory finds some empirical support. Unions - mainly as representatives of the insiders - generally support employment protection. However, there is much less support for the second part of the theory. Outsiders are not overwhelmingly against employment protection. In the presidential election 2007 in France[1], the unemployed voted massively for the socialist candidate[2], while the conservative opponent proposed a reform that (slightly) decreased employment protection. While this fact might be explained by other policy proposals of the candidates, or by the fact that the unemployed may not constitute a representative part of the outsiders (in particular, long-term unemployed, who might have difficulties to find a job even if employment protection decreases, make an important share of the unemployed in France), this fact casts some doubts on the prediction of the "traditional" insider-outsider paradigm.

Anecdotal evidence also challenges the traditional view. Whenever the French government tried to soften employment protection for young workers, (high-school and university) students went massively - and often successfully - on the streets to protest against this measure. This is surprising, as the students can be thought of as a representative part of the outsiders (not concerning age, but there are no selection problems with

[1] For the academic discussion about employment protection in France, see e.g. Cahuc and Karmarz (2004) and Blanchard and Tirole (2003).

[2] If we split the population according to the employment status, the Ipsos exit poll of the second round shows that 75% of unemployed voted for Royal, while only 47% of the whole population did so. Among students, the support for Royal was 58%, the second-highest group (above the support of employees in the public sector, who are often seen as the main group of support for the left-wing candidate in France). See http://www.ipsos.fr/presidentielle-2007/pdf/ssu-2eTour.pdf

respect to ability as it is the case for the unemployed). On the other hand, we do not observe any form of manifestation by outsiders in favor of more flexible labor markets. Hence, we have strong doubts that the second part of the predictions of "traditional" political economy of labor markets corresponds to reality.

But what can explain this discrepancy between theory and reality? What exactly is the "traditional" theory missing? Sure, ideology plays an important role. However, we argue in this paper that there might be some simple economic reasons for outsiders to oppose a decrease in employment protection. In our model, credit constraints play a crucial role. We show that individuals who move from the unemployment pool to a job might prefer employment protection as this decreases credit constraints for them. In particular, consider a person who just found a job. If employment protection is high, then the bank can be sure, that the individual will keep the job for a long time, whereas this is not the case if employment protection is low. The bank might thus give credit to this newly employed worker if employment protection is high, but not if employment protection is low. If the cost of credit constraints for individuals is realitively high, then an unemployed might actually vote against liberalization of employment protection, even if this would increase his expected income.

The existing literature in political economy of employment protection concentrates on the voting pattern of the insiders, but does not say much about voting behavior of the outsiders (except that they should - as mentioned above - be in favor of liberalization). Saint-Paul (2002) develops a model in which creative destruction plays an important role. Employment protection decreases creative destruction, and has thus a negative impact on growth. This implies that old workers, and workers with more experience, are more in favor of employment protection than young workers. Brügemann (2008) investigates to what degree the presence of involuntary separations (due for example to wage rigidity) can explain the voting pattern of the population. He finds that workers with low productivity - who face a higher risk of job destruction - favor employment protection to a higher degree than workers with high productivity. He shows that multiple equilibria might exist, and employment protection might create its own support. In contrast to those papers, we concentrate on the voting behavior of the outsiders. We do not investigate the behavior of the insiders, as the existing literature covers it already.

The paper is organized as follows. In the next section, we sketch our model and give the intuitions. Section 3 then develops the formal model. In section 4, we discuss some extensions, and section 5 concludes.

2 A sketch of the model and economic intuition

In many European countries - especially in countries with high employment protection like France or Italy - a permanent employment contract does not only give income. It also creates access to other markets. A landlord will hesitate to rent his apartment to an outsider - he fears that the outsider won't be able to pay the rent next month. Landlords thus ask for guarantees of payment, and a permanent employment contract counts as one of the strongest guarantees. Or consider an individual who wants to buy a car, but has not enough cash on hand. The bank will be willing to give credit to the person if she has a permanent employment contract. This effect is stronger, the stricter the employment protection. With strict employment protection, the bank can be quite sure that the person has a constant permanent income stream in the future. If employment protection becomes lower, then it becomes more risky for the bank to lend money: It could be that the firm fires the person, and she can't repay the loan. The worst case for the bank however is the outsider in a country with strong employment protection: It will last quite some time before he will be able to find a job and thus repay the loan. Outsiders are thus more credit-constrained than insiders, and the difference becomes higher as employment protection increases. The entry to other markets like the marriage market might also depend on a permanent employment contract. In our model, we simply model the credit market, and let other markets aside. But this relation between credit constraints and employment protection plays a key role in our argument. Our argument however also extends to other markets like the housing market or the marriage market. We just concentrate on the credit market as this seems to most obvious case.

Now assume the world consists in two kind of jobs: risky jobs and stable jobs. Stable jobs are for work that has to be done in every economic conditions. Those jobs are secure, and job destruction happens very rarely. On the other side, the risky jobs depend on economic conditions (that can be idiosyncratic among jobs). If there is no employment protection, then those jobs exist during good economic conditions for the firm, and they are destroyed otherwise. In other words, those risky jobs are subject to a much higher job destruction rate than the secure jobs. To simplify the matters, lets assume that only the firm knows the nature of the job.[3] We further assume - for the moment being - that the firm has to pay the same wage to all workers (otherwise the wage would be a signal about the type of the job, which the bank could use as information) and that this wage is fixed (independent of employment protection). In particular, this means

[3]This assumption is not crucial. What is important, is that the worker cannot credibly signal the kind of job he holds to the bank. This might however even be the case when the worker knows the kind of job he is in.

that workers in risky jobs and workers in secure jobs get the same wage. This could be the case for an economy where the union sets the wage. We will come back on this assumption in section 4.

Assume as well that employment protection is total: A job that is created cannot be destroyed unilaterally by the firm. If the worker is hired in period 1, the firm has also to pay the wage to the individual in period 2. Alternatively, the wage payment to the worker in period 2 could be seen as severance payment. Without employment protection, the firm can destroy the job whenever it wants. Again, this assumption is not crucial, but simplifies our arguments and our model considerably.

Now, the first question is: What is the impact of employment protection on labor demand? To get an interesting case, we assume that the risky jobs are not created when there is employment protection. Liberalization thus leads to an increase in production: More jobs are supplied.

Let us also assume, again to get to the most interesting case, that at *steady state* without employment protection, the employed individuals are not credit constrained, while unemployed are. This implies that with employment protection and at steady state, the employed are not credit constrained while the unemployed are. Since we assumed that wages are not influenced by employment protection, this means that the outsiders strictly prefer the steady state without employment protection (it increases the hiring rate, and induces no change in credit constraints).

However, the important aspect is the *transition* from a world with employment protection to a world without employment protection. In the first period after liberalization, all potential risky jobs are created. Also a constant share of the secure jobs are open (due for example to retirement of old workers). In the second period after liberalization, some - but not all - risky jobs are destroyed and others are created (and again, a constant share of the secure jobs are destroyed and created). What is important to note in this context is the mix of open jobs. In the first period, the open jobs are mainly risky jobs. In the second period, the mix shifts more towards secure jobs, simply because also some risky jobs survive.

The bank obviously knows the mix of open jobs, even though it cannot say which job is risky or secure. It might thus be the case that the bank does not give the loan to new workers in the first period: The risk that they got a risky job and will be fired next period (such that they cannot repay the loan) is too high. Hence, getting the job in the first period - even if the job is a secure one - leaves the worker credit constrained.

The reduction of employment protection has then two effects on outsiders: First, it increases the probability to find a job (compared to the case with employment protection). This is the "traditional" effect and makes outsiders favorable to a reduction in employment protection. However, a second effect goes in the

opposite direction: With employment protection, they can get credit ("buy a car") if they find a job. Without employment protection, the bank will not give a loan to those people, and they are still credit constrained even if they find a job (they cannot "buy a car"). If this second effect dominates the first one, the outsiders will oppose a reduction in employment protection.

We think - based on several discussions with French persons - that this fear is real. Outsiders do fear that without employment protection, they get a risky job that does not give them the possibility to access the credit or housing market.

3 The model

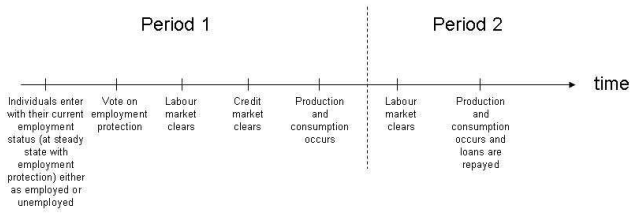
3.1 Notations

The wage is exogenous and fixed at w. The reason for this wage rigidity might be institutions on the labor market, like unions. The unemployed receive no unemployment benefit, hence their income is 0. Hence, insiders get higher utility than outsiders; in other words, they command some rents. Utility is linear in income. Thus, there is no risk aversion. Our argument does not depend on the presence of risk aversion, but with risk aversion, explicit solutions are not available. The individuals can also buy a durable good at price p_d which gives them the intertemporal utility d. However, the price of this good is sufficiently high so that the single-period wage is not sufficient to buy it. They thus need a loan from the bank. The individuals may default on the repayment of the loan in case they do not have sufficient income in the second period the make the repayment. The utility is additive in consumption and the utility from durables.

Population is normalized to 1. There are l_s safe jobs in the economy, and l_r potential risky jobs, with $l_s + l_r < 1$, so there's always some unemployment, even without employment protection. Safe jobs get destroyed in the next period (i.e. the output of this job falls to zero) with probability δ_s, while risky jobs get destroyed with probability δ_r, with $\delta_r > \delta_s$. Job destruction probabilities are i.i.d. across jobs. With employment protection, the firm cannot end the employment contract even if the job is "destroyed". In this case, the firm just has to pay the wage to the worker, and production is 0. We assume that firms are have enough cash on hand to pay the wages even in bad economic times (no bankruptcy). A job produces output y. The productivity is assumed to be exogenous.

3.2 Timing

We assume that the economy has had employment protection for a long enough time span, so as to find itself at the steady state with employment protection. Some people have found a stable job, while others are unemployed. The individuals thus enter our model with a given employment status. In period 1, they first vote about employment protection, i.e. they vote whether to liberalize the labor market and scrap the strict employment protection legislation. Next, still in period 1, the labor market clears, that means there are the steady-state flows between employment and unemployment. Then, individuals, given their new employment status, can apply for a loan from the bank to buy the durable good. There is perfect competition and free entry in the banking sector, so the expected profit of a bank is 0. Finally, as a last step in period 1, production and consumption occurs. Period 2 starts with the clearing of the employment market, so individuals may again change their employment status. Then, production and consumption, as well as repayment of the loan occur. To keep our model as simple as possible, we assume that there is no discounting in our economy[4]. Figure 1 summarizes the timing in our model.



3.3 Steady state with employment protection

The per-period profit of a firm is $y - w$. With probability δ_s, a safe job gets destroyed, and with probability δ_r, a risky job gets destroyed, and output of the destroyed job falls to 0. With employment protection, the firm however has to continue paying the worker the wage w for the next period. Hence, the expected intertemporal profit for a new safe job is $y - w + (1 - \delta_s)\, y - w$. For a risky job, the expected intertemporal

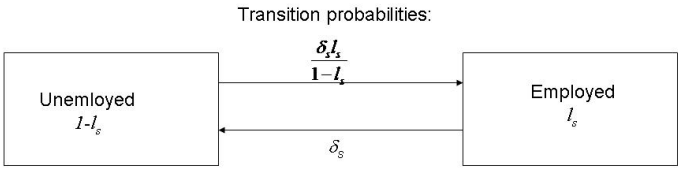
[4] Again, discounting would complicate the calculations, but would not change the mechanism we highlight.

profit writes $y - w + (1 - \delta_r) y - w$. To make the role of the employment protection non-trivial, we assume that the intertemporal profit of the safe job is positive while that of the risky job is negative. This implies that y satisfies

$$\frac{2w}{2 - \delta_s} < y < \frac{2w}{2 - \delta_r}$$

Hence, the firm creates safe jobs, but not risky jobs, since the risky ones give negative expected profits.

The number of employed people per period is thus equal to the number of safe jobs l_s. A safe job gets destroyed with probability δ_s, so the number of new open jobs in the steady-state has to equal $\delta_s l_s$. Hence, given that the pool of the unemployed is $1 - l_s$, the probability for an unemployed to find a job equals $\frac{\delta_s l_s}{1 - l_s}$. Figure 2 summarizes the transition probabilities at steady state with employment protection.



The bank has no interest to lend to an unemployed person in period 1: the unemployed might get a job in period 2, but his wage will be insufficient to cover the cost of the durable good, p_d. However, the bank might lend to an employed individual in period 1. The individual needs just enough money to buy the durable good, so he will ask for a loan equal to $p_d - w$. In period 2, the individual has to repay his debt, including a default premium. The worker loses his job with probability δ_s and defaults on the repayment, as his second-period income equals 0. The loan contract asks for a repayment of x^{EP} in the second period. The banking sector is assumed perfectly competitive, hence profits equal zero. Thus, one has the zero-profit condition for the bank

$$-(p_d - w) + (1 - \delta_s) x^{EP} = 0$$

It follows that $x^{EP} = \frac{p_d - w}{1 - \delta_s}$. We assume that $x^{EP} < w$, so a worker who keeps his job can repay the loan

in the second period.[5] The bank has no reason to condition the loan on the previous employment history (because of the i.i.d. assumption). The individual buys the durable good only if $d > w + x^{EP}$, that is, if the utility is above the price he pays. We assume that this condition is satisfied.[6] Furthermore, denote by p_d^{EP} the maximum price for the durable good for which the bank would give a credit to the individual in an economy with employment protection. p_d^{EP} thus solves $-\left(p_d^{EP} - w\right) + (1 - \delta_s)\, w = 0$. Hence,

$$p_d^{EP} = (2 - \delta_s)\, w \tag{1}$$

.

Now, for a person that is initially unemployed, there are four possible states. He can get a job in period one and keep it. He can get a job in period one and lose it in the second period. In both these cases, as shown above, the person gets the credit and buys the durable good. Hence, in the first case, his utility would be $d + w - x$, and this happens with probability $\frac{\delta_s l_s}{1-l_s}(1 - \delta_s)$, where the first term is the probability to find a job in the first period, and the second term is the probability to keep the job in the second period. In case he loses the job in the second period, he gets utility d (he gets credit and buys the durable in the first period, has no income in the second period, and defaults on repayment). This case happens with probability $\frac{\delta_s l_s}{1-l_s}\delta_s$. The person might also not find a job in the first period. In that case, the bank won't give a loan. If he doesn't find a job in the second period, he has no income at all, and his utility is thus 0. This happens with probability $\left(1 - \frac{\delta_s l_s}{1-l_s}\right)\left(1 - \frac{\delta_s l_s}{1-l_s}\right)$. If however, he finds a job in the second period, he gets utility w in this second period. This happens with probability $\left(1 - \frac{\delta_s l_s}{1-l_s}\right)\frac{\delta_s l_s}{1-l_s}$, where the first term is the probability of not getting a job in the first period, and the second term is the probability to get a job in the second period. Hence, expected utility of an individual that is unemployed at the beginning of our model (thus before period 1) in an economy with employment protection can be written

$$U_U^{EP} = \frac{\delta_s l_s}{1 - l_s}\left[d + \left(w - \frac{p_d - w}{1 - \delta_s}\right)(1 - \delta_s)\right] + \left(1 - \frac{\delta_s l_s}{1 - l_s}\right)\frac{\delta_s l_s}{1 - l_s} w \tag{2}$$

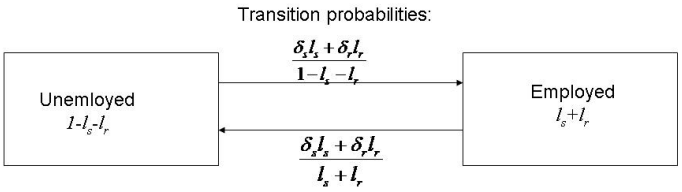
3.4 Steady state without employment protection

Here we look at the case where the economy has been without employment protection for a long enough time span so as to find itself at the steady state. Obviously, in this case, both risky jobs and safe jobs are created, as the firm doesn't have to pay the worker anymore if the job is destroyed. Hence, total employment is $l_s + l_r$

[5] Otherwise, the bank wouldn't lend to anyone, and all individuals would be credit constraint, whatever the state of employment protection, or the employment status.

[6] Again, otherwise, no one would buy the durable good, and credit constraints wouldn't play any role.

and unemployment equals $1 - l_s - l_r$. Each period, a safe job is destroyed with probability δ_s, and a risky one with probability δ_r. The total number of destroyed jobs is thus $\delta_s l_s + \delta_r l_r$. At steady state, the number of destroyed jobs equals the number of created jobs. Hence, the probability for an unemployed to find a job is $\frac{\delta_s l_s + \delta_r l_r}{1 - l_s - l_r}$ and the probability for an employed person to lose his job is $\frac{\delta_s l_s + \delta_r l_r}{l_s + l_r}$. Figure 3 summarizes the transition probabilities in this case.



As in the previous subsection, the bank will not lend to an unemployed, because the unemployed will not have enough income to repay the loan. The bank might however lend to an employed individual the amount $p_d - w$, against a repayment x^{NP} in the second period. The bank has no private information about the type of job of the individual. In what follows, we are mainly interested in the individual who finds a job in period one, but was previously unemployed. With probability $\frac{\delta_s l_s}{\delta_s l_s + \delta_r l_r}$, he is in a safe job, and with the complementary probability $\frac{\delta_r l_r}{\delta_s l_s + \delta_r l_r}$, he has a risky job[7]. Hence, the zero-profit condition of the bank writes

$$-(p_d - w) + \left[\frac{\delta_s l_s}{\delta_s l_s + \delta_r l_r}(1 - \delta_s) + \frac{\delta_r l_r}{\delta_s l_s + \delta_r l_r}(1 - \delta_r)\right] x^{NP} = 0$$

where the term in brackets gives the probability of keeping the job in period 2 conditional on having found a job in period 1. To simplify notations in what follows, define $k^{NP} \equiv \frac{\delta_s l_s}{\delta_s l_s + \delta_r l_r}(1 - \delta_s) + \frac{\delta_r l_r}{\delta_s l_s + \delta_r l_r}(1 - \delta_r)$. The parameter k^{NP} is simply the probability that the individual who found a job in period 1 is still employed in period 2. Then, one obtains $x^{NP} = \frac{p_d - w}{k^{NP}}$. If and only if $x^{NP} \leq w$, then the bank gives the loan to the employed individual. Denote by p_d^{NP} the maximum price of the durable for which the bank gives the loan.

[7] Note that the probability to have a risky job conditional on being previously unemployed is above the proportion of risky jobs in the economy. This comes from the fact that risky jobs get more easily destroyed, and thus have a higher turnover. They make thus a bigger part of the jobs created every period than the proportion of risky jobs in the economy.

We thus have

$$p_d^{NP} = \left[1 + k^{NP}\right] w \tag{3}$$

Again, we have four possible cases for an initially unemployed individual. The person might find a job in the first period and keep it. In this case, his utility is $d + w - x$ if $x^{NP} \leq w$, and $2w$ otherwise. This first case happens with probability $\frac{\delta_s l_s + \delta_r l_r}{1 - l_s - l_r} k^{NP}$. He might also get a job in the first period and lose it in the second period, in which case his utility is d if $x^{NP} \leq w$, and w otherwise. This second case occurs with probability $\frac{\delta_s l_s + \delta_r l_r}{1 - l_s - l_r} \left(1 - k^{NP}\right)$. Third, he might not find a job in the first period, but find one in the second period. Then his utility is w. This happens with probability $\left(1 - \frac{\delta_s l_s + \delta_r l_r}{1 - l_s - l_r}\right) \frac{\delta_s l_s + \delta_r l_r}{1 - l_s - l_r}$. Finally, he might stay unemployed all the time, in which case his utility is 0. This happens with probability $\left(1 - \frac{\delta_s l_s + \delta_r l_r}{1 - l_s - l_r}\right)^2$. Hence, the expected utility of a individual that enters our model as unemployed equals

$$U_U^{NP} = \frac{\delta_s l_s + \delta_r l_r}{1 - l_s - l_r} \left[d + \left(w - x^{NP}\right) k^{NP}\right] + \left(1 - \frac{\delta_s l_s + \delta_r l_r}{1 - l_s - l_r}\right) \frac{\delta_s l_s + \delta_r l_r}{1 - l_s - l_r} w \tag{4}$$

if $x^{NP} \leq w$ and

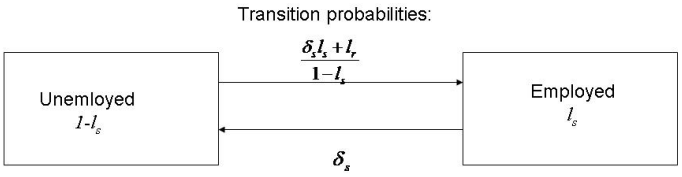
$$U_U^{NP} = \frac{\delta_s l_s + \delta_r l_r}{1 - l_s - l_r} \left[w \left(1 + k^{NP}\right)\right] + \left(1 - \frac{\delta_s l_s + \delta_r l_r}{1 - l_s - l_r}\right) \frac{\delta_s l_s + \delta_r l_r}{1 - l_s - l_r} w \tag{5}$$

otherwise.

3.5 Liberalization

Finally, we examine the case where the economy starts at the steady state with employment protection, and then changes legislation to abandon employment protection. Hence, the individuals enter in our model with the steady state of employment protection, and we analyze the incentives of outsiders to vote for scrapping the strict employment protection legislation (before the labor market clears in period 1).

In this case, employment increases from $l_s$to $l_s + l_r$ right after the vote, and unemployment decreases from $1 - l_s$ to $1 - l_s - l_r$. The number of destroyed jobs equals $\delta_s l_s$, while the number of created job is equal to $\delta_s l_s + l_r$. So in this case, the destroyed safe jobs are re-created, while all potential risky jobs are newly created. Hence, the transition probabilities in the first period are as follows (where the boxes indicate the initial stock):



In the second period, transition probabilities (unconditional on previous employment history) are as in the figure in subsection 3.4.

As in the previous subsection, the bank will not lend to an unemployed in period 1. The bank might however lend to an employed individual the amount $p_d - w$ for a repayment x^T in period 2. Again, the bank has no information about the type of job of the individual, but it has information about the employment history of individuals. In particular, the bank can get to know whether the worker found a job in period one, or whether he holds the same job for a longer time already. If the worker had the job already under employment protection, then the bank can be sure that the worker has a safe job. Hence, the credit analysis is the same as in subsection 3.3. However, if the person found a job only in period 1, then the bank knows that with probability $\frac{l_r}{l_r + \delta_s l_s}$, the worker holds a risky job, while with the complementary probability $\frac{\delta_s l_s}{l_r + \delta_s l_s}$, he holds a safe job. Hence, the zero-profit condition for the bank on newly employed workers becomes

$$-(p_d - w) + \left[\frac{\delta_s l_s}{l_r + \delta_s l_s}(1 - \delta_s) + \frac{l_r}{l_r + \delta_s l_s}(1 - \delta_r)\right] x^T = 0$$

where the term in brackets gives the probability of keeping the job in period 2 conditional on having found a job in period 1. To simplify notations in what follows, define $k^T \equiv \frac{\delta_s l_s}{l_r + \delta_s l_s}(1 - \delta_s) + \frac{l_r}{l_r + \delta_s l_s}(1 - \delta_r)$. Then, one obtains $x^T = \frac{p_d - w}{k^T}$. If and only if $x^T \leq w$, then the bank gives the loan to the employed individual. Denote by p_d^T the maximum price of the durable for which the bank gives the loan. We thus have

$$p_d^T = \left[1 + k^T\right] w \tag{6}$$

We then again have four possible cases for an initially unemployed person. He might find a job in period

one and keep the job in period 2. This happens with probability $\frac{l_r+\delta_s l_s}{1-l_s}k^T$. If $x^T \leq w$, then his utility is $d+w-x^T$. Otherwise, his utility is $2w$. He loses the job he found in period 1 in period 2 with probability $\frac{l_r+\delta_s l_s}{1-l_s}\left(1-k^T\right)$, in which case his utility is d if $x^T \leq w$ and 0 otherwise. He might also find a job only in period 2, in which case he gets utility w, and this occurs with probability $\left(1-\frac{l_r+\delta_s l_s}{1-l_s}\right)\frac{\delta_r l_r+\delta_s l_s}{1-l_s}$. Finally, with probability $\left(1-\frac{l_r+\delta_s l_s}{1-l_s}\right)\left(1-\frac{\delta_r l_r+\delta_s l_s}{1-l_s}\right)$ he finds a job neither in period 1 nor in period 2 and has utility 0. Hence, the expected utility for an individual who is unemployed at the beginning of our model is

$$U_U^T = \frac{l_r+\delta_s l_s}{1-l_s}\left[d+\left(w-x^T\right)k^T\right]+\left(1-\frac{l_r+\delta_s l_s}{1-l_s}\right)\frac{\delta_r l_r+\delta_s l_s}{1-l_s}w \tag{7}$$

if $x^T \leq w$ and

$$U_U^T = \frac{l_r+\delta_s l_s}{1-l_s}\left[w\left(1+k^T\right)\right]+\left(1-\frac{l_r+\delta_s l_s}{1-l_s}\right)\frac{\delta_r l_r+\delta_s l_s}{1-l_s}w \tag{8}$$

otherwise.

3.6 Comparisons

In this section, we want to compare the outcomes under the different regimes. In particular, we want to explain the voting behavior of the unemployed.

First, we note the following Lemma:

Lemma 1 $p_d^T < p_d^{NP} < p_d^{EP}$.

Proof. This follows directly from the equations (1), (3) and (6). ■

This lemma simply tells us that credit constraints for a newly employed individual are most stringent in the transition phase, and weakest in a regime with employment protections. The regime without employment protection at steady-state ranks in between. This, we summarize in our first proposition:

Proposition 2 *Credit constraints for previously unemployed individuals are more often binding in an economy that goes through a transition from employment protection to no employment protection than in an economy without employment protection and least binding in an economy with employment protection.*

We omit the proof as it follows directly from Lemma 1. The most interesting case - for our purpose - is given in the following corollary:

Corollary 3 *If $p_d^T < p_d < p_d^{NP} < p_d^{EP}$, then the previously unemployed gets credit in the steady state without employment protection and in the steady state with employment protection, but not during the transition phase between employment protection and no employment protection.*

Hence, credit constraints are only a problem during the transition phase. They do not appear in the steady state without employment protection (and thus, by Lemma 1, they also not appear at the steady state with employment protection).

Proposition 4 *If $p_d^T < p_d < p_d^{NP} < p_d^{EP}$ and if d is sufficiently high, then the unemployed at the beginning of our timing vote in favor of employment protection, even though she prefers the steady state without employment protection to the steady state with employment protection.*

Proof. By corollary 3, the unemployed gets no credit, and hence the expected utility of the unemployed is given by equation (8) in case the employment protection is abandoned. If the employment protection persists, then his expected utility is given by equation (2). Comparing the two equation, we find that expected utility with employment protection is higher iff

$$d > p_d + w\frac{l_r}{(1-l_s)\,\delta_s l_s}\left(1 - l_s\left[1-(1-\delta_r)\left(\delta_s - 1\right)\right]\right)$$

If d satisfies this inequality, then the unemployed prefer to vote for employment protection.

However, by corollary 3, the individual would not be credit constraint in the steady state without employment protection. Hence the expected utility of an unemployed is given by equation (4). But (4) is strictly higher than (2), which means that the unemployed would prefer the steady state without employment protection to the steady state with employment protection. ■

If the unemployed finds a job with employment protection, then he enjoys the durable, which gives a net utility of $(d - p_d)$. In the transition regime, he would not have access to the durable, and would instead enjoy current consumption. Since the durable is assumed to be desirable, this would constitute a net expected loss to the unemployed in case he enters the transition regime. On the other side, the liberalization would increase his probability to find a job, and thus increase his expected income. The unemployed thus compares expected additional income with the loss from credit constraints which only appears in the transition regime. If the utility from the durable, d, is high enough, then the loss is higher than the expected additional income, and the unemployed votes against employment protection.

If we are in the situation depicted above, that is, if the credit constraint is only a problem in the transition regime, then the unemployed would always prefer the steady state without employment protection to the steady state with employment protection. The steady state has then no cost in terms of credit constraints, but has an increase in expected income.

The unemployed thus vote against liberalization because of a transition problem. They would prefer to have no employment protection, but the transition hurts them too much, so that the expected gain is below the transition loss. In a certain sense, the unemployed are trapped in the regime with employment protection.

4 Extensions and discussion

In this section, we discuss some possible extensions. We do not think they change our main intuitions and results. We do not develop them formally, but intend to do so in future work.

4.1 Labor demand

For the moment, we have taken the number of jobs as fixed (but the creation of risky jobs depends on the employment protection regime). As long as the wage is taken as fixed, this assumption is not so completely stupid as it might seem at first sight. Actually, if one takes a neoclassical labor demand equation $l_i = L_i(w)$, then with the wage being fixed, that gives a unique number, l_s or $l_s + l_r$ respectively in our model. Nevertheless, a "realistic" labor demand might increase the attractivity of the model. I guess that if we put the marginal product as a decreasing function of employment at the firm level, i.e. $y_i = y_i(l_i)$ with $y' < 0$, then it would be possible to build up a matching model. Downside of the integration of labor demand is that some risky jobs will be created even with employment protection, so this someway weakens our mechanisms, but still, they're there and the results stay as they are.

4.2 Endogenous wages

If wages are negotiated and if the worker knows the riskiness of the job, then the wages of risky jobs will be different from the wages in safe jobs (unless one makes some very specific assumption about the productivity). If the wages are different, then the wage serves as a perfect signal of the riskiness of the job, and the bank can use this signal, which destroys our mechanism. This however does not seem a very realistic assumption. Banks do not know the riskiness of a job, and workers might not have perfect information either. If one assumes that the riskiness of the job is private information to the firm, then our model still holds, and the results don't change. Another possibility might be to assume that there is a distribution of productivity, in both types of jobs, risky and safe. Then the bank would make some sort of Bayesian inference, which would weaken our mechanism, but not destroy it. Now, if we introduce a zero-profit condition for firms (and thus some form of labor demand), this might again disappear. The other point is, that with endogenous wages,

there are many cross-effects that appear. Wages have an influence on labor demand, which again influences wages and utility of course. So the model might become much more complex. The exact magnitudes will depend on the exact modelization of labor demand. However, there is no reason to believe that our mechanism disappears.

4.3 Unemployment benefits

In the basic model, we assume that unemployment benefits don't exist (income is 0 for unemployed persons). If there is an unemployment benefit financed by proportional income taxation, then the insiders might vote against employment protection, and especially insiders with high incomes (in case one has a distribution of productivity). Those people would not benefit much from employment protection (their productivity is high anyway, so they don't risk to be fired), but they have to pay the cost (taxes) of employment protection (higher unemployment). Now, that seems to us the most realistic pattern of attitudes towards employment protection: the capitalists and the rich workers are against, the poor workers and the outsiders are in favor.

Again, this would probably make the model much more complex (one has to introduce the government budget constraint). But again, this would not erase our basic mechanism.

4.4 Timing of reform

Here the idea goes that credit constraints depend on the mix of new open jobs. Hence, one would like to make the reform at the moment when the amount of new safe jobs is highest. This might be at the end of a recession, when many new safe jobs are created. In this time, the cost in terms of credit constraints for newly employed workers might be lowest.

5 Conclusion

While the current literature assumes that outsiders vote against employment protection, there is not much evidence for this. We built a simple model that shows why the unemployed might vote in favor of employment protection. They do face a trade-off: If employment protection decreases, then they might face credit constraints. In particular, we showed that credit constraints for newly employed individuals become more severe as employment protection decreases. On the other hand, a decrease in employment protection increases expected income.

The situation might even be such that the unemployed prefer the steady state without employment protection to the steady state with employment protection, but will not vote for liberalization, as the

transition phase, where credit constraints are strongest, gives them a net loss.

We also highlighted some extensions that we plan to do in future work.

While our model highlights motivations for the unemployed, we did not develop a theory that explains the behavior of the insiders. However, here as well, our model might - though in a slightly different version - give interesting insights. In particular, one might think that people who are in risky jobs are more in favor of employment protection that people in safe jobs. If there is a negative correlation between the riskiness of a job and the wage, then a variant of our model might explain why richer individuals oppose employment protection, while individuals with low incomes favor it.

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