Dismissal Conflicts and Unemployment*

José E. Galdón-Sánchez
Universidad Pública de Navarra

Maia Güell
Universitat Pompeu Fabra
CEP (LSE)

This version: February 2001

Abstract

Firing costs are often blamed for unemployment. In this paper, we investigate this widespread belief theoretically. Firing costs are introduced in an efficiency wage model to capture their effects on employment through wages. In addition, dismissal conflicts are modelled explicitly and their cost is derived. These two elements are included and linked. Modelling firing costs in a context where worker effort is not perfectly observable implies that a double moral hazard problem could arise. Whenever firms face a redundancy, they tend to use disciplinary dismissals in order to avoid paying firing costs. Similarly, workers will then tend to deny any disciplinary case to get a compensation. Our claim in this paper is that the resolution of this problem by a third party will be imperfect given the information problem. This implies that disciplinary dismissals will not be costless. Firing costs in turn will have a negative effect on aggregate employment because they modify the rent that has to be paid to workers to prevent shirking. We also find that the solution to the problem does not necessarily imply the elimination of firing costs.

Keywords: efficiency wages, employment protection legislation, disciplinary dismissals, court decisions.

JEL Classification codes: J41, J52, J65.

*We would like to thank Leonardo Felli, Ed Lazear, Miguel A. Malo, Alan Manning and Gilles Saint-Paul for very useful comments and discussions. We are grateful to Yvan Decreux for helping us find the French data. We also thank two anonymous referees and Klaus M. Schmidt for very useful comments and suggestions. M. Güell gratefully acknowledges financial support from the Spanish Ministry of Science and Technology (Project No. BEC2000-1026). J.E. Galdón-Sánchez thanks financial support from the DGICYT P98-0139 and the European Commission for a TMR Marie Curie fellowship. Send correspondence to: Department of Economics and Business, Universitat Pompeu Fabra, Ramon Trias Fargas 25-27, 08005 Barcelona, Spain. Email: maia.guell@econ.upf.es

1 Introduction

Firing costs are often blamed for unemployment in Europe (see, for instance, OECD, 1994). But both theoretical models and empirical studies lead to mixed results when analysing the effect of firing costs on aggregate unemployment (see, for instance, Bertola *et al.,* 2000). The goal of this paper is to investigate this widespread belief from a theoretical point of view and to provide some new insights for empirical analysis. We analyse the institutional sources of dismissal conflicts and their implications for labour costs, adopting a wider view of employment protection legislation.

The model we build has two main characteristics. First, unlike many papers in this area, firing costs are introduced in an efficiency wage model to capture their effects on employment through wages. Second, dismissal conflicts are modelled explicitly and their cost is derived. In particular, two types of dismissals in which employers and employees have conflicting interests are considered, redundancies and disciplinary dismissals. In our model, employee-employer conflicts arise from two facts. First, workers' effort is not perfectly observable. Second, the law in most European countries states that firms have to compensate workers when facing a redundancy, while no compensation is required when facing a disciplinary dismissal. In this sense, the model captures, in a plausible way, some of the important features associated with laying off workers in European countries.

Despite the prevalent idea of the (negative) effect of firing costs on employment, especially among policy makers and employers, there are very different views in the literature depending on the model used. For instance, according to the insider-outsider theory put forward by Lindbeck and Snower (1988), firing costs are a source of market power for incumbent workers (the insiders) *vis-à-vis* the unemployed (the outsiders). Insiders use their market power to exercise upward pressure on their wages and thereby generate unemployment. According to this view, the higher the firing costs, the higher the unemployment.

A completely different view of firing costs is the one by Lazear (1990). He shows that if markets are perfect and complete, then flexible wages can undo all the effects of firing costs and, therefore, firing costs are neutral on employment.[1] Workers pay ex-ante a fee which is equal to the severance payment they get in case they are fired. If they keep the job, they get their fee back with higher wages. In such a world, for any level of firing costs, it is always possible to write an optimal contract that undoes all the effects of severance payments.

A third view of firing costs highlights the possibility of firing costs arising endogenously. This approach is motivated by the fact that sometimes firms and workers negotiate severance payments that do not coincide with the ones legally set; or even, some firms offer severance payments in the absence of employment protection legislation. Several authors have investigated this idea in different contexts. For instance, Booth and Chatterji (1989) construct a model of firm-specific training where both the returns to training and the outside options for workers are uncertain. In such a context, the costs of training are shared between the firm and the worker because there exists the possibility that the worker quits. In case of being dismissed, workers are compensated by this cost with a redundancy payment. Finally, Saint-Paul (1996) explores how firing costs arise endogenously in a dynamic efficiency wage model. Firms may chose to voluntarily offer firing costs in their labour contracts because, in an uncertain environment, these help firms to credibly commit to more stable employment policies.

The three views stated above have radically different ideas on the effects of firing costs over employment. One could crudely summarise that firing costs are "bad" according to the first view, "neutral" according to the second view, or even "good" according to the third view, since they can be an optimal instrument for firms.[2] Consequently, these three frameworks

[1] Bertola (1990) highlights in a model where wages are set by insiders that such neutrality would not arise in the presence of a (binding) minimum wage legislation.

[2] Note that we are not considering models where workers are risk-averse. For a model of this sort, see Booth (1997).

summarise all possible effects of firing costs over employment. The model presented here is an efficiency wage model where dismissal conflicts are costly. As will be seen, modelling firing costs in this way allows the integration of the three different views mentioned above.

Most of the existing work on firing costs focuses on labour demand models and the only types of dismissals considered are redundancies (see, for example, Bentolila and Bertola, 1990, Bentolila and Saint-Paul, 1994, Bertola, 1992, and Nickell, 1978). These models are very useful for understanding the effects of firing costs on the dynamic functioning of the labour market. However, the effects on aggregate employment are ambiguous and remain in partial equilibrium.[3] The implicit assumption of labour demand models is that wages are exogenous and do not change in the presence of firing costs (an exemption of this is Bertola, 1990). In our model, wages are endogenous and firing is exogenous.[4] This highlights another dimension of firing costs which is not captured by standard labour demand models. To focus on the effects of firing costs on wage-setting is particularly important for unemployment models in which the unemployment rate is determined entirely by long-run supply factors (see Layard *et al.,* 1991).

Most industrialised countries have a job protection legislation framework that protects workers against redundancies. The idea is that a redundancy is something exogenous to a worker that imposes a cost on him, and thus he must be compensated for it. At the same time, employers are allowed to fire workers for disciplinary reasons without having to pay any compensation to them. This legislation also permits workers to take cases to court when there is disagreement on the cause of dismissal. And it sets an indemnity to be paid in the case that the court considers the dismissal unfair. These terms are defined from the workers' perspective. An unfair case is when the court considers that the firm is wrong and therefore the worker must receive the unfair firing cost because the dismissal is unjust. The

[3] See Ljungqvist (2000) for a survey on general equilibrium models.

[4] Other models of this sort are Díaz and Snower (1996) and Rotemberg (1998).

fair severance payment is the default indemnity for a dismissal when there is no conflict. This is also the indemnity when the case goes to court and it is decided in favour of the firm. Grubb and Wells (1993) and OECD (1999) provide a comparison of these fair and unfair indemnities in different OECD countries. Note that the unfair rate is the same for both disciplinary and redundancies in all countries.

There is a commonly held idea that firing costs are high because dismissal conflicts involve large administrative and legal costs and that these lead to higher labour costs (see, for instance, Emerson, 1988). Although this point is often made, it is usually modelled in a simplistic way: firing costs paid by firms are assumed to be higher than the indemnity that firms have to pay to workers (see, for example, Burda, 1992). But this is not actually the case in most European countries.[5] Instead, the source of higher firing costs has to do more with the fact that the legislation generally sets a *higher* severance pay for cases taken to court and declared unfair than for those considered fair by court. The fair severance pay of redundancies is the firing cost assumed in most existing models. Moreover, since the fair severance pay of disciplinary cases is zero, this type of dismissal is always ignored when modelling firing costs (at least to our knowledge).

But disciplinary dismissals are very much used in some European countries to fire a worker, and they often end up in court, which implies that they are not always costless. In France, for instance, individual dismissals data for the period 1982-1998 indicate that, on average, as much as 80% of individual dismissals that arrived to court (*Conseil de Prud'hommes*) were disciplinary.[6] And around 74% of cases that arrived to court were declared unfair, which indicates that disciplinary dismissals in France are not costless.[7] Unfortunately, at least to our knowledge, no other European country has such detailed data.

[5] The majority of cases are settled privately between employer and employee in France, Italy, Spain and UK (see Galdón-Sánchez and Güell, 2000).

[6] Source: Ministere de la Justice (France).

[7] This figure corresponds to all conflicts that arrive to the *Conseil de Prud'hommes*; dismissal conflicts represent on average 60% of the total claims finalised in this court.

In Spain, many authors have studied why the disciplinary dismissal has been overused (see Bentolila, 1997, Malo, 1998 and 2000, and Malo and Toharia, 1999). It is agreed that, for firms, disciplinary dismissals, even if declared unfair, can be a cheaper way to fire workers than redundancies. And that for workers, there is an incentive to sue their employer when they are fired for disciplinary reasons because of the difference in compensation when the case is declared unfair. During 1986-1998, on average, around 72% of cases taken to court were declared in favour of the worker, indicating that disciplinary dismissals in Spain are not costless either.[8]

This evidence highlights the fact that there is a disproportionate number of conflicts related to disciplinary dismissals and that they are not costless. Therefore, it seems important to understand what is behind these dismissal conflicts and, in particular, what are the incentives generated by the legislation to induce such high percentage of disciplinary dismissals to be taken to court.

We consider a model of dismissal conflicts which highlights the fact that disciplinary dismissals may be costly due to information problems. In turn, the cost of redundancies may be the unfair severance payment. Therefore, the typical simplification in most existing models of ignoring disciplinary dismissals as well as considering only the fair severance payment for redundancies can be misleading.

Conflicts between employers and employees can arise for very different reasons. In this paper, we concentrate in conflicts in which agents behave strategically.[9] In general, whenever firms face a redundancy, they would like to claim it is a disciplinary dismissal in order to avoid paying firing costs. We model firing costs in a context where workers' effort is not

[8] Source: Ministerio de Trabajo y Asuntos Sociales (Spain). This evidence is remarkably stable across time and regions (see Galdón-Sánchez and Güell, 2001).

[9] Another general class of conflicts is related to the fact that the law leaves room for interpretation. In that case, redundancies could be challenged as such and the problem would be to analyse if the economic situation of the firm justifies the dismissal. See Galdón-Sánchez and Güell (2000) for a model in which these conflicts are modelled explicitly. Note that the results on employment derived in this paper would not be modified if this class of conflicts would have been included (see the appendix, section A2).

perfectly observable. This actually provides a rationale for the existence of workers' right to sue their employers in case of disagreement. In such a context, workers can be in a weaker position because firms can get away with the use of disciplinary dismissals whenever they need to adjust their workforce (i.e. in case of redundancy). Therefore, there is a reason for job protection legislation to include the right for employees to take cases to court. The drawback is that workers will then tend to deny any disciplinary case to get a compensation (especially if the indemnity is higher when the case is declared unfair), again because of the difficulty in observing workers' effort. Therefore, a double moral hazard problem could arise. Our claim in this paper is that the resolution of this problem by a third party will be imperfect given the information problem.

The existence of imperfect resolutions of dismissal cases will in turn imply that disciplinary dismissals will not be costless and firing costs will have a negative effect on aggregate employment. As will be discussed at the end of the paper, the solution does not necessarily imply the elimination of firing costs. Rather, what will appear to be important is the gap between the severance payment for those cases considered unfair and those considered fair.

We concentrate on dismissal conflicts of small/medium firms for which "individual" dismissal regulation applies. In case of large firms, redundancies are generally under the "collective" dismissal regulation which implies that the number of redundancies and their total cost are bargained with a third party (generally, unions).[10]

The rest of the paper is organised as follows. In section 2, firing costs are first described, and their implications for (efficiency) wages and employment are derived. In section 3, we discuss some policy implications. In section 4, we summarise our conclusions.

[10] See Booth (1997) and Booth and McCulloch (1999) for a model of firing costs in unionised sectors of the economy.

2 The model

The model is a modified version of the shirking model of Shapiro and Stiglitz (1984) with firing costs. There are two types of dismissals: redundancies and disciplinary dismissals. In the standard efficiency wage model, in equilibrium, workers are separated from their jobs only for redundancy reasons. Here, we consider a shirking model where there is some shirking in equilibrium and, therefore, there are also disciplinary dismissals. Workers' cost of providing effort is given by $c(p)$, where p is the fraction of times a worker does not shirk. Workers' effort is not perfectly observable and there is a detection technology that catches shirking workers (never erroneously) with some probability q, per unit of time (where $q < 1$). Therefore, workers are dismissed for disciplinary reasons with probability $(1-p)q$. Workers also face an exogenous probability b, per unit of time, of being separated from their job for redundancy reasons.[11] In the next section we describe how firing costs are modelled.

2.1 Redundancies and disciplinary dismissals in conflict

A framework where workers' effort is imperfectly observable is best suited for considering another common feature of job protection legislation, namely the right for workers to sue employers in case of disagreement. In our model, firms will bear a firing cost that is exactly the same as the indemnity received by the worker. This is the case in countries where administrative and legal costs (not transferable to the worker) are negligible. It is also the case in countries in which the administrative approval processes are very complex.[12] In these countries, most of the cases are settled by the worker and the firm out of court, precisely to avoid these administrative and legal costs. Therefore, firms do not bear a higher cost than the indemnity received by workers. Instead, they pay workers a higher severance payment than the default (fair) payment. The worker receives a settlement of an amount that lies

[11] The terms adverse economic shocks and redundancies are used interchangeably here.

[12] Typically, this is the case in Southern European countries (see Grubb and Wells, 1993, and OECD, 1999).

between the legal severance payment and the (expected) cost had the case gone to court. In this sense, the firing costs due to dismissal conflicts that are derived in the present model can be thought as the upper bound of what a worker could receive from bargaining with the firm.

Whenever firms need to adjust their workforce, they want to use disciplinary dismissals to avoid paying firing costs. And the difficulty in observing workers' effort implies there is some chance that firms can get away with such a strategy.[13] The workers' right to sue employers in case of disagreement can compensate for this imperfection. Similarly to firms, workers will then deny any reasons for disciplinary dismissal to get a compensation based on unjust grounds. In such a context, both true disciplinary cases and hidden redundancies arrive to court as disciplinary cases. Courts' decisions are based on whatever evidence (if any) is presented by the agents, which is not perfectly correlated with reality given the information problem. So, in general, courts are not able to perfectly distinguish between true disciplinary cases and hidden redundancies. Thus, the resolution by a third party will tend to be imperfect given the information problem.

In the model, this is represented by the fact that some (true) disciplinary dismissal cases could be mistakenly considered in favour of the worker (i.e. unfair) and some (hidden) redundancies could be mistakenly declared in favour of the firm (i.e. fair) by court. In other words, in the first case, workers are compensated when they should not. And in the second case, firms avoid paying firing costs when they should have paid them.

Let m be the probability that a (true) disciplinary dismissal is mistakenly declared unfair given the information problem, where $m > 0$. That is, with probability m, disciplinary cases cost the unfair rate because they are declared in favour of the worker. Only with probability $(1 - m)$ there is no court mistake and disciplinary cases are costless to the firm.

[13] Malo (1998 and 2000) considers the case where firms use disciplinary dismissals instead of redundancies in a model where, in order to avoid legal costs, firing costs are bargained privately between employer and employee before the case is resolved by the court.

For simplicity, we assume that the probability that a (hidden) redundancy is declared unfair is also m, where $m < 1$, given the information problem. Allowing firms to better prove a true disciplinary case than a hidden redundancy would not alter the results of the paper (see Appendix, section A2).

Assume that the legislation fixes a severance payment of c for redundancies and a severance payment of C if the case is taken to court and is declared unfair, where $c \leq C$. Then, given the double moral hazard problem, the firm's expected firing cost of a (true) disciplinary dismissal is mC and of a (hidden) redundancy is mC. Table 1 below summarises firing costs.

[TABLE 1 HERE]

To sum up, given the context described above, there is always an incentive for firms to declare redundancies as disciplinary cases and for the worker to deny any disciplinary case. A further discussion of this double moral hazard problem is done in the last section of the paper.

2.2 No-shirking condition

We will consider a continuous-time model where there is some shirking in equilibrium. The reason behind this is that firms can only pay a wage that makes workers provide effort for a fraction p of the time, where $p < 1$. The mechanism that drives this result is the nature of the workers' cost function for providing effort. In Albrecht and Vroman (1998), the heterogeneity of workers drives the existence of shirking in equilibrium. Different workers have different costs of providing effort. For a given wage, some workers in a firm will provide effort (those whose cost is low enough) while the others will shirk. In our model, workers are homogeneous, but they do not provide effort all the time.

Workers are risk neutral. Their instantaneous utility function is: $U(w, p) = w - c(p)$, where w is the wage and $c(p)$ is the cost of proving effort, where $c'(p) > 0$, and $c''(p) > 0$. In

this section, we first analyse the workers' decision of how much effort to provide for a given wage. Then, we analyse the incentive-compatible wage.

Workers choose the number of times they provide effort that maximises their utility actualised at rate r. Let V_E be the present discounted utility of an employed worker. This is given by

$$rV_E = w - pc(p) + p_f(V_U + mC - V_E) \tag{1}$$

where $p_f = b + (1-p)q$ is the probability of being fired either for a redundancy (b) or a disciplinary case ($(1-p)q$).

Shirking saves the current disutility of effort but it implies a higher risk of becoming unemployed. This risk is proportional to the probability of being caught shirking (q). Note that for $p = 1$ (and $p = 0$), the above expression gives the discounted utility of an employed worker when shirking (and no-shirking) as in Shapiro and Stiglitz. Firing costs also influence the effort decision here because of imperfect court decisions. With probability m, workers dismissed for disciplinary reasons may be compensated with a severance payment. This reduces the cost of shirking. The first order condition of the worker's problem is given by

$$V_E - V_U \geq \frac{c(p^*) + p^* c'(p^*)}{q} + mC \equiv K \tag{2}$$

where $0 < p^* < 1$. That is, workers provide effort only a fraction of the time.[14] In Shapiro and Stiglitz, the cost function is $c(p) = e$, and $p = 1$, and the above condition is the well-known No-Shirking Condition in terms of utilities (NSC, hereafter). This condition states that in order to provide incentives, the punishment of losing a job must be at least equal to the opportunity cost of shirking, denoted by K. Substituting this condition in equation (1), the incentive-compatible wage for which the worker will provide effort a fraction p^* of the

[14] This is the equivalent condition to that in a model of heterogeneous agents in which there are some types that shirk for any given wage. Here, it is the nature of $c(p)$ which generates some shirking.

time can be written as

$$w \geq p^* c(p^*) - p_f^* mC + rV_u + K\left[r + p_f^*\right] \equiv \widehat{w} \tag{3}$$

where $p_f^* = b + (1 - p^*)q$.

In this wage equation, it is possible to distinguish between the reservation wage (first three terms) and the rent linked to the incentive problem (last term). For $C = 0$, this condition is the same as in the original Shapiro and Stiglitz (1984). In order to provide incentives, wages need to exceed the reservation wage by a rent K. This rent is proportional to the opportunity cost of not shirking weighted by the term $(r+p_f^*)$. The higher the discount rate, the more a worker values the saving of effort today. The higher the probability of being fired, either for other exogenous reasons or due to shirking, the more costly it is to expend effort today.

For $C > 0$, it is possible to distinguish two types of effects of firing costs: those directly related with the incentive problem and those that are not. Firing costs affect the incentive problem because to the extent that (truly) disciplinary dismissals are declared unfair (i.e., $m > 0$), legal severance payments reduce the punishment associated with being fired when caught shirking. This implies that firms have to pay higher rents in order to prevent shirking, as can be seen in the above no-shirking condition (see equation (2)). This effect of firing costs has the same flavour as that in the insider-outsider theory, where firing costs increase the market power of incumbent workers.

At the same time, independently of the incentive problem, the introduction of mandated severance payments allows the employer to reduce the wage exactly by the same proportion that the present discounted utility of an employee is increased, without affecting incentives. This can be seen in the firing cost element of the reservation wage (see equation (3)). The idea is that lower wages today, together with compensation when being fired, leave the present discounted utility of being employed unchanged. This effect of firing costs is the

same as that proposed by Lazear (1990).[15]

Back to the No-Shirking Condition, if a contract satisfies the NSC, that is, if the worker is paid at least $\widehat{w}$ or, if being unemployed is a sufficiently large punishment ($V_E > V_U$), the worker will choose to expend the effort a fraction p^* of the times. Let V_E be the expected utility in equilibrium. The firm chooses the minimum wage at which the worker will not shirk, so that in equilibrium the NSC is binding and $w = \widehat{w}$.

2.3 Hiring decisions

All firms in the model are identical and infinitely lived. They chose employment so as to maximise the expected present value of profits discounted at rate r. When workers shirk, production is zero. Let Π be the present discounted value of marginal profits. Then

$$r\Pi = f'(p^*L) - w - p_f^*(mC + \Pi)$$

where $f(pL)$ is the production function with $f'(pL) > 0$ and $f''(pL) < 0$.

In the presence of firing costs, the marginal cost of hiring a worker is given by the wage plus the future expected cost of being fired. There is no cost of posting vacancies, so firms hire workers to the point where the marginal profit is zero, i.e. $\Pi = 0$. Labour demand in steady state is given by

$$f'(p^*L) = w + p_f^* mC \tag{4}$$

This equation shows that, for given wages, firing costs reduce labour demand proportionally to their expected present value.

2.4 Market equilibrium

Equilibrium occurs when each firm, taking as given all other firms' wages and employment, finds it optimal to offer the going wage rather than a different wage. The key market

[15] So, for $m = 0$, the two models have the same predictions (see section 2.4).

variable that determines individual firm behaviour is the present value of the utility of an unemployed worker, V_U. Let a be the rate of exit from unemployment. To simplify, suppose that unemployment benefits are zero. Then

$$rV_U = a(V_E - V_U)$$

Given that the NSC is satisfied, in equilibrium

$$rV_U = aK \tag{5}$$

Substituting equation (5) in equation (3), the efficiency wage curve in equilibrium can be written as

$$\widehat{w} = p^* c(p^*) - p_f^* mC + K\left[r + p_f^* + a\right] \tag{6}$$

In equilibrium, the incentive compatible wage is higher the higher the exit rate from unemployment. This result is also found in Shapiro and Stiglitz (1984). The rent linked with the incentive problem is weighted by a because the higher a, the less becoming unemployed is a penalty. The exit rate of unemployment can be derived from the steady state flows condition. In steady state, inflows to unemployment are given by $(b+p_f^*)L$, and outflows are given by $a(N-L)$, where N is the total of workers in the economy. Thus, in steady state, $a(N-L) = (b+p_f^*)L$. Therefore

$$a = \frac{(b+p_f^*)L}{N-L} \tag{7}$$

The aggregate NSC can also be written in terms of employment L. Replacing equation (7) into equation (6), this condition can be written as

$$\widehat{w} = p^* c(p^*) - p_f^* mC + K\left[r + \frac{p_f^* N}{N-L}\right] \tag{8}$$

Proposition 1 *If firing costs generate a double moral hazard problem, then they have a negative effect on employment.*

Proof: See Appendix, section A1.

The intuition for this result is the following: the effects of severance payments that are not related with the incentive problem can be fully undone. The idea is that if markets are complete and perfect, and firing costs are fully transferred to workers, then they are neutral on employment because the wage is reduced by the same proportion as the increased shadow cost of labour (see Lazear, 1990).

Although this last mechanism is not directly related with the incentive problem, it has very interesting links with efficiency wages in models in which firing is not exogenous. In the standard efficiency wage model, workers are paid a "firing premium" in order to prevent shirking because expending effort is more costly the higher the probability of being fired. This premium can be offset in the presence of an imposed severance payment because workers are being compensated when fired. This allows firms to lower wages.[16] An important further insight is made by Saint-Paul (1996): in a dynamic efficiency wage model, it is in the interest of firms to voluntarily include a severance pay in the labour contract that they offer. This is one way for the firm to credibly commit to have a more stable employment policy when facing shocks, which then allows it to reduce the paid wage. In the present model, the imperfect court resolutions imply that firms do not want to offer severance payments to workers.[17]

In this model, even if firing costs are fully received by workers, they are not neutral because they affect the rent K. The effects of severance payments on the efficiency wage setting have no counteracting effects through the non-wage component of the shadow cost of labour. Therefore, the wage schedule is shifted to the left and it has a negative impact on employment. It is interesting to note that even if the wage is set by the firm, it is not

[16] See Katsimi (1998) for a more detailed derivation of this mechanism in a fully stochastic efficiency wage model.

[17] The optimal severance payment is such that the "firing premium" of the efficiency wage is completely compensated. If $m = 0$, in the present model firms would offer firing costs. In this case, for $C = e/q$ the two models would coincide. Still, in the present model, severance payments are set legally while in Saint-Paul (1996) they are endogenous. See Booth (1997) for a model in which the level of mandated firing costs may differ from that bargained.

possible to fully endogenise the severance payments in the workers' wage. As mentioned, this result is due to the presence of a double moral hazard problem that can only be resolved imperfectly by a third party. This implies that firing costs have a real effect because they reduce the cost of shirking.

[FIGURE 1 HERE]

In figure 1, labour demand (equation (4)) and the NSC (equation (8)) are represented in the $(w,\ L)$ space. $L_{(C=0)}$ represents the employment level in the absence of firing costs. As mentioned in section (2.3), firing costs reduce labour demand. This is represented by the bold labour demand curve $(L_d^{'})$. As studied in Proposition 1, if there is a double moral hazard problem, firing costs increase the rent to be paid to workers. This shifts the NSC to the left, which is represented by the bold NSC curve (NSC'). The intersection of these two bold curves represents the market equilibrium with (non-neutral) firing costs. If there were no double moral hazard problem (i.e., $m = 0$), then firing costs would have no effect on employment. In that case, the wage would be reduced (see second element of equation (8)) exactly by the same amount that the labour demand is. This situation is characterised by the curve NSC''. The intersection of the latter and the bold labour demand represents the market equilibrium with neutral firing costs, where the level of employment is again $L_{(C=0)}$.

Note that reductions in C move both the labour demand and the NSC to the right, increasing employment. However, this is not the only policy that can generate higher employment levels. A further discussion on the double moral hazard problem and some policy implications are developed in the next section.

3 Policy implications

In the model presented above, the existence of job protection legislation in a context in which workers' effort is not perfectly observable implies that firing costs have a negative effect on

employment. As explained, the problem in such a system is that there is always an incentive for conflict between employer and employee, i.e. for the employer to claim any dismissal to be disciplinary and for the worker to deny any disciplinary case. This, in turn, implies imperfect resolutions by third parties. The resulting average cost of disciplinary dismissals is higher because some dismissals are paid at the unfair rate. The goal of this section is to discuss some possible policy implications derived from the model above.

The mechanism that generates such double moral hazard problem is that, for firms, the expected cost of a redundancy is higher than the expected cost of declaring it a disciplinary dismissal. And in turn, for workers, the expected benefit of denying a disciplinary dismissal becomes positive. Following the model presented above (see Table 1), when firms declare redundancies as disciplinary cases and workers deny all disciplinary cases, the court is not able to perfectly detect all the true disciplinary cases. The court is able to catch a hidden redundancy only with probability m. And it is able to discover true disciplinary cases only with probability $(1 - m)$. Therefore, firms find it worthwhile to declare disciplinary cases when facing redundancies if

$$c \geq mC \tag{9}$$

If firms misuse disciplinary cases, then workers have an incentive to deny any of them because

$$mC \geq 0 \tag{10}$$

If these two conditions are met, then the double moral hazard is an equilibrium. That is, all dismissals are taken to court as disciplinary cases. In such a case, firing costs are not neutral on employment. As can be seen from conditions (9) and (10), policies that concentrate on undoing the double moral hazard problem do not necessarily imply the complete removal of severance payments.

In general, most employment protection legislation systems set higher severance payments for cases being declared unfair than for those considered fair. The idea behind this regulation

seems appropriate in the sense that it tries to punish for unjust dismissals. For large enough C, the incentive of firms to cheat could be undone (see equation (9)). In such a case, high severance payments for unfair dismissals have a punishment role for firms who would use disciplinary dismissals when facing a redundancy. However, such a policy may not be sufficient. If C fails to be high enough, it motivates cheating which in turn generates imperfect court decisions. Moreover, this does not seem to be the most efficient policy since it does not have any punishment role for the worker when he denies true disciplinary cases. A large C implies that the incentive problem from the worker's perspective is larger (see equation (10)).

A more efficient policy would be one that punishes any agent considered to be lying. That is, on the one hand, to set a severance payment that firms have to pay, C_F, when the court catches a hidden redundancy. On the other hand, to set a penalty for workers, C_w, whenever caught denying a true disciplinary dismissal. Table 2 summarises the expected costs of firing for the firm and worker under such policy proposal.[18]

[TABLE 2 HERE]

Proposition 2 *If there is a high enough gap between C_F and c, and a positive penalty to workers, C_w; then truth-telling of both agents is an equilibrium.*

Proof: See Appendix, section A3.

This policy highlights the fact that for an employment protection system to work, especially when workers' effort is not observable, two things are important. First, the difference between the levels of firing costs set for cases declared unfair and fair has to be high enough. Second, different indemnities should be set for unfair cases depending on whether it is considered that it is the worker's or the firm's initiative.

[18]The costs proposed are always a transfer from one agent to the other. In the UK, there is a policy that goes along these lines (see Barnard *et al.*, 1995)

4 Conclusion

Firing costs are often blamed for depressing employment levels. But there are very different views of firing costs among economists: some models indeed predict that firing costs reduce employment while in other contexts firing costs have no effect on employment. In some other environments, firing costs are actually instruments chosen voluntarily by firms. We have proposed a model that stresses that it is not just the level of severance payments what matters, but other dimensions of employment protection legislation. In particular, dismissal conflicts and their cost have been considered.

We have analysed the conflict between employer and employee in cases of disciplinary dismissals and redundancies, in a context where effort is imperfectly observable. In such a context, there is a double moral hazard problem that can only be resolved imperfectly by a third party. The main conclusion of this paper is that when workers' effort is not perfectly observable, firing costs can have a negative effect on employment because they modify the rent that has to be paid to workers in order to prevent shirking. A possible policy to undo the double moral hazard problem is to set a gap wide enough between severance payments for cases declared unfair and cases declared fair together with a punishment to any agent considered to be lying.

The theoretical model presented here suggests that the gap between severance payments for cases declared unfair, and cases declared fair, is an important determinant of labour costs due to the double moral hazard problems that it can generate. In this paper we have ignored other types of conflicts, mainly those related with interpretations of the law. Therefore, more theoretical research is needed along these lines, as well as more empirical analysis that studies court outcomes. In Galdón-Sánchez and Güell (2000) we consider these other types of conflicts and we endogenise the double moral hazard problem proposed in this paper drawing some implications for court outcomes and testing them empirically for

different countries.

As mentioned, available empirical evidence on the effects of firing costs on employment is mixed. Some complex indices have been built, trying to take into account all the different dimensions of employment protection legislation. However, there is little theory suggesting how these different dimensions should be taken into account in such an index. Here we have proposed a theoretical link between two of these dimensions (fair and unfair dismissal costs) and how they affect the cost of labour.

Appendix

A.1. Proof of Proposition 1

Proof. Equilibrium employment can be derived combining equations (4) and (8). This implies

$$f'(p^*L) = p^*c(p^*) - p_f^*mC + K\left[r + \frac{p_f^*N}{N-L}\right] + p_f^*mC \tag{A1}$$

The second and the fourth elements of the RHS of condition (A1) cancel out. This is the well-known result by Lazear (1990). So, we have

$$f'(p^*L) = p^*c(p^*) + K\left[r + \frac{p_f^*N}{N-L}\right] \tag{A2}$$

As it is standard in this literature (see Shapiro and Stiglitz, 1984), employment is a negative function of the rent (K) that has to be paid to workers in order to provide incentives. That is, $\dfrac{\partial L}{\partial K} < 0$. Moreover, in this paper, firing costs increase such rent. From equation (2), it can be seen that $\dfrac{\partial K}{\partial C} = m > 0$. Then, it follows that $\dfrac{\partial L}{\partial C} < 0$. ■

A.2. Discussion on court's error

Removing the assumption that both the probability that a (true) disciplinary dismissal is mistakenly declared unfair and the probability that a (hidden) redundancy is declared unfair are the same does not change the employment results of the model.

As in the text, let m be the probability that a (true) disciplinary dismissal is mistakenly declared unfair given the information problem, where $m > 0$. That is, with probability m, disciplinary cases cost the unfair rate because they are declared in favour of the worker. There is no court mistake and disciplinary cases are costless to the firm with probability $(1-m)$. Let z be the probability that a (hidden) redundancy is declared unfair, where $z < 1$ given the information problem. That is, with probability $(1-z)$, there is a court mistake and redundancies are costless to the firm. The worker is compensated for a redundancy case with probability z.

Given a dismissal case, the probability to win it in court is higher for the party that does not lie about this dismissal case than for the one that lies. That is, the probability that a dismissal taken to court is costless to the firm is higher when it is a (true) disciplinary dismissal, than when it is a (hidden) redundancy, i.e. $z \geq m$. In other words, the probability that the case is declared in favour of the worker is not higher when the case is a (true) disciplinary case.

This modifies the equations (1), (3), (4), (6) and (8) of the model in the following way:

$$rV_E = w - pc(p) + b(V_U + zC - V_E) + (1-p)q(V_U + mC - V_E) \tag{A3}$$

$$w \geq p^*c(p^*) - [bz + (1-p^*)qm]\,C + rV_u + K\left[r + p_f^*\right] \equiv \widehat{w} \tag{A4}$$

$$f'(p^*L) = w + [bz + (1-p^*)qm]\,C \tag{A5}$$

$$\widehat{w} = p^* c(p^*) - [bz + (1-p^*)qm]\, C + K\left[r + p_f^* + a\right] \tag{A6}$$

$$\widehat{w} = p^* c(p^*) - [bz + (1-p^*)qm]\, C + K\left[r + \frac{p_f^* N}{N-L}\right] \tag{A7}$$

This implies that condition (A1) can be rewritten as

$$f'(p^* L) = p^* c(p^*) - [bz + (1-p^*)qm]\, C + K\left[r + \frac{p_f^* N}{N-L}\right] + [bz + (1-p^*)qm]\, C \tag{A8}$$

The second and the fourth elements of the RHS of condition (A8) cancel out collapsing into condition (A2). This implies that the assumption on z is innocuous for the effect of firing costs over employment (but note that the reduction in the reservation wage would depend on z). The intuition for this is simple: z only affects the cost of redundancies, which is neutral on employment (Lazear, 1990).

As mentioned in the introduction, the employment results of the paper would not change if we had also considered other types of dismissal conflicts, in particular, those related to the interpretation of the law. The intuition is the following: the effect of redundancies taken to court due to an interpretation conflict would be similar to that captured by z; and the effect of disciplinary cases taken to court due to an interpretation conflict would be similar to that captured by m.

A.3. Proof of Proposition 2

Proof. : The truth-telling conditions of both agents are

$$c - mC_F \leq 0 \tag{A9}$$

$$-mC_w \leq 0 \tag{A10}$$

Note that, for a given m, a large enough $C_F - c$ is a necessary condition in order for (A9) to be satisfied. Similarly, any positive C_w implies that (A10) is satisfied. ■

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Table 1: Firing costs for redundancies and disciplinary cases

Reality	Declaration of firm	Declaration of worker	Expected Cost for firm
Redundancy	Redundancy	accepts	c
Redundancy	Disciplinary	denies	mC
Disciplinary	Disciplinary	denies	mC

Table 2: Firing costs: a policy proposal

Reality	Declaration		Expected Cost	
	of firm	of worker	for firm	for worker
Redundancy	Redundancy	accepts	c	
Redundancy	Disciplinary	denies	mC_F	
Disciplinary	Disciplinary	denies		mC_w

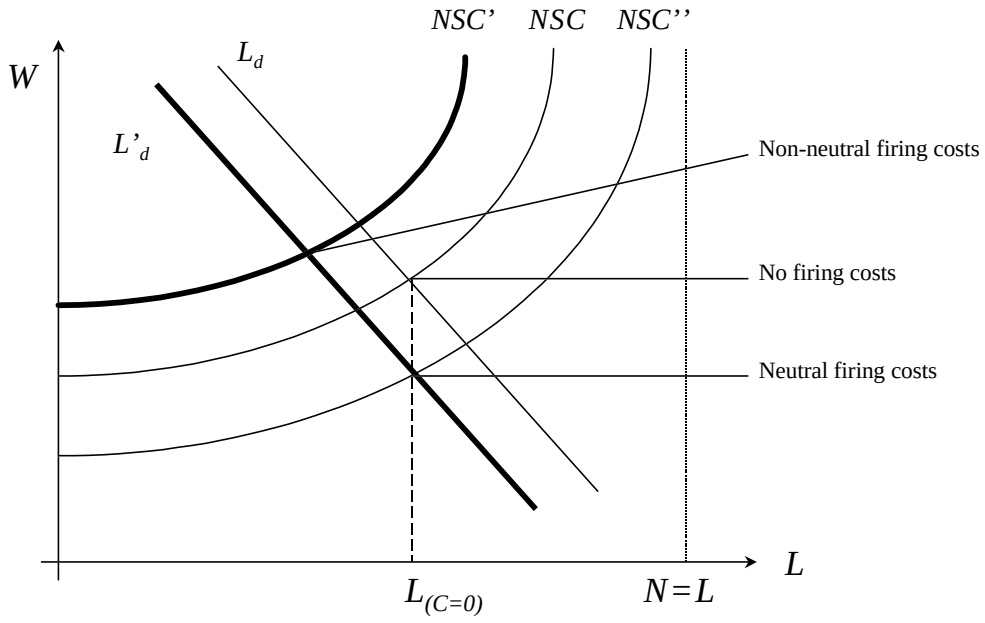

Figure 1: Market equilibrium with neutral and non-neutral firing costs