Employment Protection: Tough to Scrap or Tough to Get?

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Abstract

Differences in employment protection across countries appear to be quite persistent over time. One mechanism that could explain this persistence is the so called constituency effect: high employment protection creates a mass of workers in favor of maintaining high protection because deregulation would mean that they would lose their jobs. To the extent that this mechanism is at work, employment protection would appear to be a policy that is difficult to deregulate once it has been introduced.

In this paper I consider an alternative mechanism generating persistence that makes employment protection a policy that is difficult to *introduce*. If a legislative process is initiated to introduce employment protection, it is reasonable to assume that firms have an opportunity to lay off workers before employment protection becomes effective. Firms would have an incentive to do so in order to avoid the cost associated with stringent employment protection in the future. Anticipating this, workers whose situation is already precarious may not find it in their best interest to support the legislative process to introduce employment protection in the first place.

The main result of the paper is that the ability of firms to adjust employment before an increase in employment protection becomes effective may give rise to situations in which both low and high employment protection are stationary political outcomes.

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Differences in employment protection across countries are substantial and quite persistent over time. One strand of recent work tries to explain these differences through persistent differences in fundamentals such as civic attitudes (Algan and Cahuc (2006)), religion (Algan and Cahuc (2004)) and credit market imperfections (Fogli (2004)). A second and complementary line of research has considered mechanisms that can generate additional amplification and persistence of differences in employment protection. For example it has been suggested that once employment protection has been introduced, it maintains some workers in jobs that would otherwise have been destroyed, thereby generating an endogenous constituency that would like to keep stringent employment protection in place. This has been referred to as the *constituency effect* of employment protection (Saint-Paul (2002a), Vindigni (2002) and Brügemann (2006)), and to the extent that this mechanism is at play, employment protection would appear to be a policy that is difficult to deregulate once it has been introduced.

This paper is part of this second line of research, examining a mechanism that gives rise to amplification and persistence. However, rather than making employment protection a policy that is difficult to deregulate, the mechanism considered here makes employment protection a policy that is difficult to introduce. Consider an economy that currently has no employment protection, with a proposal to introduce employment protection on the table. The legislative process in most countries is subject to numerous institutional constraints that makes the introduction of legislation on employment protection a protracted proposition. These constraints makes it reasonable to assume that even after the proposal for the introduction of employment protection has cleared most political hurdles and is almost certain to be adopted, firms will still have sufficient time to adjust employment levels before employment protection actually comes into effect. Placed in this situation, firms would have an incentive to lay off some workers before the policy becomes effective in order to avoid difficulties with layoffs subject to stringent employment protection in the future. Anticipating this, workers that would be subject to this last round of layoffs will not find it in their best interest to provide support for the introduction of employment protection in the first place.

This mechanism is absent in previous work on the political economy of employment protection analyzing the constituency effect. Its absence is due to the timing of political and

economic events assumed in work. There it is assumed that the economy starts out in the steady state associated with some past level of employment protection. Then the opportunity to change the policy arises, workers vote on the new level of employment protection which is then implemented immediately after the vote. From the perspective of firms, the opportunity to change the policy arises unanticipatedly, and neither before the vote nor after the vote but before implementation do they have the opportunity to adjust employment.

I modify this sequence of events by allowing firms to adjust employment between the vote and before implementation of the new level of employment protection. The purpose of this modification is to capture in a simple way the idea that a change in employment protection is a multistage political process in which at some stage the adoption of the change is already virtually certain, but firms still have an opportunity to adjust employment levels before the new level of employment protection is implemented.

The main result of my analysis is that delayed implementation can give rise to multiple stationary political outcomes. In an economy that inherits low employment protection from the past, maintaining low protection can be a political equilibrium because introducing strong protection would trigger a wave of layoffs before the new policy becomes effective, undermining the political support for the reform. At the same time, in an otherwise identical economy that inherits stringent protection from the past, maintaining this high level of employment protection would not be associated with such a wave of layoffs and can be a political equilibrium.

The remainder of the paper is organized as follows. The model is described in section 1. In section 2 I solve for the economic equilibrium. Preferences for employment protection for both immediate and delayed implementation are described and compared in section 3. A numerical example in which delayed implementation gives rise to multiple stationary political outcomes is presented in section 4. In section 5 I examine three recent episodes of increases in employment protection in the United Kingdom and the United States for hints whether elements of the mechanism described here may have been at play. Section 6 revisits how the timing of events matters for the possibility of multiple stationary political outcomes by considering the case in which a new policy is implemented immediately after the vote but firms

have an opportunity to adjust employment before the vote takes place. Section 7 concludes.

1 Model

The economic environment is a simplified version of the model of job creation and destruction developed in Blanchard and Portugal (2001), which provides a parsimonious framework do illustrate the political economy mechanism of interest.

There is a continuum of workers of mass one. There are many firms, and the production structure consists of many production units, each composed of one worker and one firm.

Preferences. All agents have linear utility with discount rate r: the utility of a consumption stream $C(t)$ is given by $\int_0^\infty e^{-rt}C(t)dt$.

Creation. A firm creating a new production unit must undertake a specific investment $c > 0$. The model has "workers waiting at the gate": there are no matching frictions, firms can hire workers instantaneously while workers have to wait.

Destruction. Production units are destroyed either through layoff or quit. The productivity of a new production unit is given by y_0. It falls at rate g thereafter. The decline in productivity over time gives rise to endogenous layoffs.[1] When laying off a worker, a firm is bound by mandatory employment protection, which is modeled as a wasteful firing cost F. A second source of destruction are quits by workers. I assume that workers quit exogenously at rate δ.[2]

[1] Blanchard and Portugal (2001) allow for more complicated processes of match specific productivity. All that is needed here is a reason for endogenous layoffs, so I choose exponentially declining productivity for simplicity. Exponentially declining productivity may like an unimportant source of turnover in practice. However, notice that the model with declining productivity is isomorphic to a model with constant productivity over the lifetime of a production unit while the productivity of newly created units is growing at rate g, that is a model with embodied technical change. Indeed, this is the source of endogenous destruction used in Saint-Paul (2002a).

[2] Blanchard and Portugal (2001) are interested in the effect of employment protection on quits, so their model has endogenous quits driven by shocks to the utility the worker receives from the job. Endogenous quits are not essential here, so I assume that workers quit exogenously at a fixed rate.

Wage Determination. The wage in a production unit is determined by Nash bargaining between the worker and the firm: the worker receives a share β of the surplus of the production unit while the firm receives the remaining share $(1-\beta)$ where $\beta \in (0,1)$. Bargaining takes place only once at the time of creation of the production unit and the wage chosen at that time remains constant for the duration of the match. The absence of renegotiation will give rise to layoffs that are privately inefficient and involuntary from the perspective of the worker. This is the feature of the model that creates a demand for employment protection on the part of the workers. I assume that at the time of creation the firm can still walk away without having to pay the firing cost.[3]

Politics. On the political economy side of the model I stay close to the approach adopted in the papers on the constituency effect of employment protection cited above. The economy inherits a level of firing cost F_0 from the past and at time $t = 0$ the economy is presumed to be in the steady state induced by this level of firing cost. At time $t = 0$ there is a once and for all opportunity to change the level of firing cost. The arrival of this opportunity is assumed to be unanticipated in order to be consistent with the assumption that the economy is in steady state at time $t = 0$. The new level of firing cost F is determined by voting among workers. Both majority voting and probabilistic voting will be considered. The crucial departure from previous work considered in this paper is that after the vote but before the new level of firing cost takes effect, firms have a last opportunity to fire workers subject to the old level of firing cost F_0.

[3]Blanchard and Portugal (2001) assume that the firm is already subject to the firing cost at the time of bargaining in order to capture that employment protection strengthens the hand of workers in bargaining. This creates a second motive for workers to demand employment protection. For my purpose a single motive for employment protection is all I need to generate political equilibria with a positive firing cost, so for simplicity and transparency I use a model in which employment protection has a single purpose. The reasons why I rely on inefficient separations rather than an enhanced bargaining positions are discussed in the conclusion.

2 Economic Equilibrium

In this section I will solve for the equilibrium path of the economy after time $t = 0$, that is given the new level of firing cost F. As a first step, I analyze the partial equilibrium layoff decision of the firm in section 2.1. Then I solve for general equilibrium in section 2.2. Finally in section 2.3 I use these results to determine the steady state level of employment and the steady state productivity distribution induced by the past level of firing cost F_0.

2.1 Layoff Decision

The utility of unemployed workers U will be constant along the equilibrium path. Thus the payoffs in case of destruction do not change over time: the firm has to pay the firing cost F and the worker receives U. Consider a production unit with current productivity y and current wage w operating in this environment.

The flow benefit of continued operation is the sum of output y and the benefit from delaying the payment of the firing cost which is given by $(r + \delta)F$. The cost of continued operation is the wage w. Thus it is optimal for the firm to layoff the worker if productivity y satisfies $y \leq w - (r + \delta)F$. In particular if $w \leq (r + \delta)F$ layoff is so costly that continued operation is optimal at all levels of productivity. Thus layoff occurs if and only if productivity y falls short of the threshold

$$\underline{y}(w, F) \equiv \max[w - (r + \delta)F, 0]. \tag{1}$$

Using this threshold, the present value of the firm can be expressed as a function of productivity y, the wage w and firing cost F:

$$J(y, w, F) = \frac{y}{r + \delta + g} - \frac{w}{r + \delta} - \left[\frac{\underline{y}(w, F)}{r + \delta + g} - \frac{w}{r + \delta} + F\right] \left(\frac{\underline{y}(w, F)}{y}\right)^{\frac{r+\delta}{g}}.$$

The worker receives the wage w until he quits exogenously or is laid off, so his utility is given by

$$W(y, w, F, U) = \frac{w + \delta U}{r + \delta} - \frac{w - rU}{r + \delta} \left(\frac{\underline{y}(w, F)}{y}\right)^{\frac{r+\delta}{g}}. \tag{2}$$

2.2 General Equilibrium

In this section I will solve for the wage $w(F)$ bargained in matches created after the change in firing cost and the utility of unemployed workers $U(F)$ after the policy change, both as functions of the new level of firing cost.

Recall that a new production unit starts out with productivity y_0, so the value of a new production unit is given by $J(y_0, w, F)$. I assume that $J(y_0, 0, F) = \frac{y_0}{r+\delta+g} > c$.[4] This implies that at a zero wage it would be worthwhile for a firm to incur the specific investment c to create a production unit. This assumption insures that in equilibrium there will be entry and that the entry condition must be satisfied with equality:

$$J(y_0, w, F) = c. \tag{3}$$

The equilibrium wage $w(F)$ is then simply the solution to equation (3). This equation has a unique solution in the interval $(0, y_0 + (r+\delta)F)$: for $w = 0$ the left hand side is positive due to the assumption introduced above, and for $w = y_0 + (r+\delta)F$ the best the firm can do is to layoff the worker immediately so that the left hand side takes the non-positive value $-F$. In particular, if firing cost satisfy $F \geq \bar{F} \equiv \frac{y_0}{r+\delta+g} - c$, then they are sufficiently high to prohibit layoffs entirely and the equilibrium wage is given by $w(F) = (r+\delta)\left(\frac{y_0}{r+\delta+g} - c\right)$. Levels of firing cost above $\bar{F}$ would give rise to the same equilibrium as $\bar{F}$. As both an increase in the wage w and an increase in firing cost F reduce the value of the firm $J(y_0, w, F)$, it follows that an increase in firing cost must be offset by a drop in the wage to restore the entry condition. Thus the function $w(F)$ is strictly decreasing for $F \in [0, \bar{F}]$.

With some abuse of notation, let $\underline{y}(F)$ be the equilibrium layoff threshold, that is

$$\underline{y}(F) \equiv \max[w(F) - (r+\delta)F, 0]. \tag{4}$$

This threshold is decreasing in F for two reasons: higher firing cost directly delay layoff and in equilibrium they reduce the wage which also acts to delay layoff.

Notice that I have solved for the equilibrium wage without utilizing the assumptions about wage determination. These assumptions are coming into play when solving for the equilibrium

[4]The value of a firm at a zero wage $J(y_0, w, F)$ is independent of firing cost because at a zero wage the firm will never layoff the worker because productivity is nonnegative.

utility of unemployed workers $U(F)$. If the utility of unemployed workers U is high, then workers have a strong outside option in bargaining and will negotiate a wage that exceeds the level $w(F)$ consistent with the entry condition. Similarly, at low levels of U workers would bargain to a wage that falls short of $w(F)$. In equilibrium U adjusts so that workers obtain precisely $w(F)$ in wage negotiations.

Nash bargaining with shares β and $(1-\beta)$ yields the condition

$$(1-\beta)\left[W(y_0, w(F), F, U) - U\right] = \beta J(y_0, w(F), F). \tag{5}$$

Here $J(y_0, w(F), F)$ is the surplus of the firm because since outside option of the firm at the time of bargaining is zero. This is because I assumed that at that time the firm can still walk away without being subject to the firing cost. The term in square brackets on the left hand side is the surplus of the worker. Using the fact that $J(y_0, w(F), F) = c$ and substituting from equation (2) yields

$$U(F) = \frac{1}{r}\left\{w(F) - (r+\delta)\left[1 - \left(\frac{\underline{y}(F)}{y_0}\right)^{\frac{r+\delta}{g}}\right]^{-1} \frac{\beta}{1-\beta}c\right\}. \tag{6}$$

The effect of firing cost on the equilibrium utility of the unemployed $U(F)$ is ambiguous. If the layoff decision were privately efficient, then an increase in the firing cost would unambiguously reduce the surplus of the production unit for constant U, so U would have to fall in order to restore the surplus to its required equilibrium value (the equilibrium surplus must always be equal to $\frac{c}{1-\beta}$ because a share $(1-\beta)$ of the surplus must cover the entry cost c). However, here the layoff decision is privately inefficient and so it is possible that an increase in firing cost increases the surplus of the production unit for constant U constant, in which event an increase in U is required to restore the surplus to its required equilibrium value. Hence in principle it is possible that even unemployed workers benefit from an increase in firing cost. Nevertheless, in the numerical examples constructed in this paper this feature will not play an important role.

Notice that I have solved for the equilibrium utility of the unemployed without referring at all to the rate at which unemployed workers are hired. The hiring rate has to adjust in order to generate the utility of the unemployed $U(F)$ necessitated by the entry condition and

wage determination. If the hiring rate is too high, then unemployed workers find jobs quickly and the utility of unemployment would exceed $U(F)$. Conversely, if the hiring rate is very low, then the utility of unemployment would fall short of $U(F)$. In equilibrium the hiring rate adjusts so that the utility of the unemployed is exactly $U(F)$. The utility of unemployed workers and the hiring rate h satisfy the following relationship

$$rU(F) = h\left[W(y_0, w(F), F, U) - U\right].$$

The flow value of unemployment is the hiring rate h times the capital gain of finding a job.[5] Equations (3) and (5) imply that the this capital gain is simply $\frac{\beta}{1-\beta}c$. Thus solving for the hiring rate yields

$$h(F) = \frac{1-\beta}{\beta}\frac{rU(F)}{c}.$$

The hiring rate depends on firing cost only through the utility of unemployment $U(F)$ and thereby shares the property of $U(F)$ that the sign of the effect of an increase in firing cost is ambiguous.

2.3 Steady State induced by F_0

As previously discussed, in the political economy analysis below I will make the assumption that at the time $t = 0$ of the vote over the new level firing cost occurs the economy is in the steady state induced by the past level of firing cost F_0. Thus the past level of firing cost will affect the political equilibrium at time $t = 0$ through the level of unemployment and the productivity distribution it induces. As preparation for the political economy analysis, this section is devoted to computing the steady state employment level and productivity distribution associated with a past level of firing cost F_0.

Production units are destroyed endogenously when reaching the layoff threshold $\underline{y}(F_0)$ and exogenously at rate δ due to quitting on the part of the worker. These two sources of

[5] I follow Blanchard and Portugal (2001) in assuming that the sum of the utility of leisure and unemployment benefits is zero for notational simplicity.

destruction imply the overall steady state destruction rate

$$d(F_0) \equiv \frac{\delta}{1 - \left(\frac{\underline{y}(F_0)}{y_0}\right)^{\frac{\delta}{g}}}.$$

Higher firing cost reduce the rate of layoffs and thereby the overall destruction rate. Steady state employment is then given by

$$L(F_0) \equiv \frac{h(F_0)}{h(F_0) + d(F_0)}.$$

An increase in firing cost that increases the hiring rate would increase employment. But the employment effect of an increase in firing cost which reduces hiring could go either way.

The productivity of units declines exponentially at rate g, units are destroyed at rate δ due to quits or when productivity reaches the layoff threshold $\underline{y}(F_0)$. Thus the distribution of productivity among employed workers induced by past firing cost F_0 is given by

$$P(y|F_0) \equiv \frac{\left(\frac{y}{y_0}\right)^{\frac{\delta}{g}} - \left(\frac{\underline{y}(F_0)}{y_0}\right)^{\frac{\delta}{g}}}{1 - \left(\frac{\underline{y}(F_0)}{y_0}\right)^{\frac{\delta}{g}}}$$

In the political economy analysis I will examine the preferences over employment protection of workers at different percentiles in the productivity distribution, so it will be useful to compute what these percentiles are. Let $y_\pi(F_0)$ be the πth percentile of the productivity distribution if initial firing cost are F_0. It is convenient to include unemployed workers in the productivity distribution by assigning them the productivity level $y = 0$. Thus $y_\pi(F_0) = 0$ for $\pi \leq 1 - L(F_0)$. For $\pi > 1 - L(F_0)$

$$y_\pi(F_0) \equiv \left\{1 - \frac{1-\pi}{L(F_0)}\left[1 - \left(\frac{\underline{y}(F_0)}{y_0}\right)^{\frac{\delta}{g}}\right]\right\}^{\frac{g}{\delta}} y_0.$$

3 Preferences over Employment Protection

In this section I will discuss the preferences of workers over the new level of firing cost set through voting at time $t = 0$. As a benchmark I will discuss preferences over employment protection if the new level of firing cost takes effect immediately after the vote. This is done

in subsection 3.1. Then in subsection 3.2 I examine how these preferences change if after the vote firms are given a last opportunity to carry out layoffs subject to the old level of firing cost F_0.

3.1 Immediate Implementation

If the new level of firing cost is implemented without delay, an employed worker need not worry that he will be laid off if there is a large hike in firing cost. The worker only needs to be concerned about becoming unemployed if firing cost are lowered to a level insufficient to deter the firm from firing him.

Let the initial level of firing cost be given by $F_0 \leq \bar{F}$.[6] Consider a worker employed at time $t = 0$. The current wage of this worker is given by $w(F_0)$ and as wages are not renegotiated this continues to be his wage after the change in policy. As the worker is employed at time $t = 0$, it must be the case that the productivity of the production unit in which he is employed is at least $\underline{y}(F_0)$, which is the layoff threshold before the policy change. Notice that the wage of the worker $w(F_0)$ will in general be different from the wage $w(F)$ negotiated in production units created after the change in policy. This implies that the layoff threshold for workers in production units created before the change in policy is not $\underline{y}(F)$ as defined in equation (4). Instead the optimal layoff rule of equation (1) implies the threshold

$$\underline{y}(F, F_0) \equiv \max[w(F_0) - (r + \delta)F, 0]$$

for these workers. Thus a worker in a production unit created before the policy change will be dismissed if and only if $y < \underline{y}(F, F_0)$, a condition which can equivalently be expressed as a threshold on the new level of firing cost:

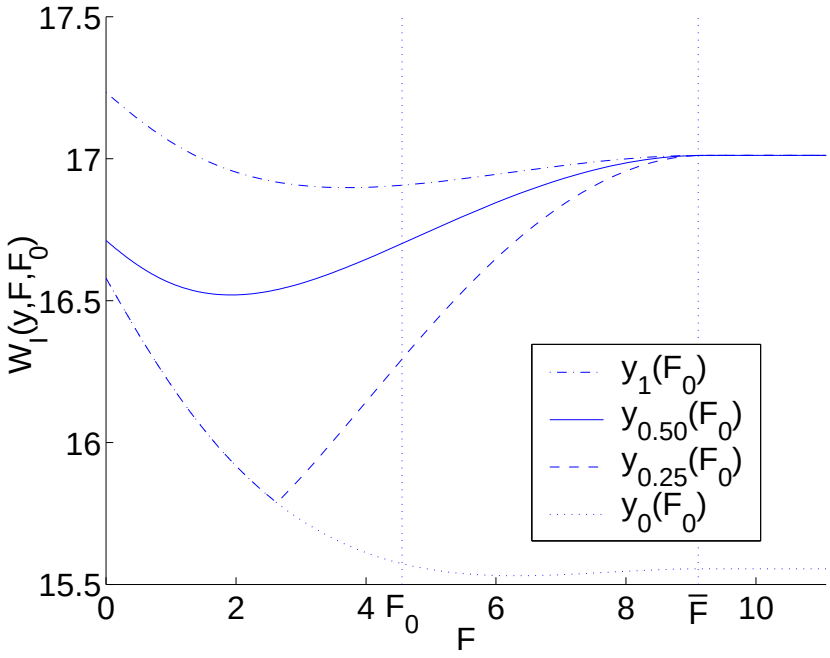
$$F < \underline{F}(y, F_0)$$

where

$$\underline{F}(y, F_0) \equiv \frac{w(F_0) - y}{r + \delta} = F_0 - \frac{y - \underline{y}(F_0)}{r + \delta}.$$

[6]Levels of firing cost $F_0 > \bar{F}$ induce the identical steady state level of employment and productivity distribution as $\bar{F}$, so this restriction is without loss of generality.

Figure 1: Worker Utility, Immediate Implementation, $F_0 = \frac{1}{2}\bar{F}$



The second equality uses the definition of $\underline{y}(F_0)$ provided in equation (4). The productivity of units existing at time $t = 0$ satisfies $y \geq \underline{y}(F_0)$, which insures that $\underline{F}(y, F_0) \leq F_0$. In other words, currently employed workers only need to be worried about being laid off at time $t = 0$ if firing cost are reduced. Having defined this threshold, the utility of an employed worker at time $t = 0$ can be written as

$$W_I(y, F, F_0) \equiv \begin{cases} U(F), & 0 \leq F < \underline{F}(y, F_0), \\ W(y, w(F_0), F, U(F)), & F \geq \underline{F}(y, F_0) \end{cases} \tag{7}$$

where the function W was defined in equation (2). The subscript I of the function W_I indicates that this function applies in the benchmark case when implementation of the new level of firing cost is immediate. Recall that for convenience I assigned unemployment workers the productivity level $y = 0$, so they are incorporated in this formulation by setting $W_I(0, F, F_0) \equiv U(F)$ for all $F \geq 0$.

Figure 1 provides an illustration of the shape of preferences in this case for an intermediate

level of initial firing cost $F_0 = \frac{1}{2}\bar{F}$.[7] The dotted line shows the utility of an unemployed worker. It is declining in the level of firing cost over most of the range $[0, \bar{F}]$. However, as discussed in section 2.2 it is possible for the utility of the unemployed to increase with the level of firing cost, and here indeed the utility of the unemployed recovers slightly as firing cost approach the prohibitive level $\bar{F}$.

The dashdotted line shows the utility of a worker in a production unit with maximal productivity y_0. This worker need not fear dismissal even if firing cost are reduced to zero. Actually, zero firing cost is the preferred policy of this worker. The shape of the utility of an employed worker as a function of the new level of firing cost F is driven by the trade-off between the delay of involuntary layoff and a reduction in the utility of unemployment. For a worker with maximal productivity involuntary layoff is an event in the distant future, making the benefits of delaying such layoffs relatively small. Thus this worker is more concerned about the negative effect of firing cost on the utility of being unemployed, due to the possibility that he may have to quit his job and find new employment.

The solid line shows the preferences of a worker with median productivity. The production unit in which he is employed is still sufficiently productive so that this worker does not face immediate layoff even if firing cost are eliminated. Nevertheless – as compared to the worker with maximal productivity – employment protection is now a more attractive proposition due to the fact that involuntary layoff is much less remote.

The final plot is the utility of a worker in a production unit with productivity at the 25th percentile of the productivity distribution, given by the dashed line. At the old level of firing cost F_0 this worker remains employed. But if the level of firing cost is reduced sufficiently below F_0, then this worker will be laid off and his utility coincides with that of unemployed workers. Conditional on being laid off, this worker would prefer zero firing cost, but overall his preferred level of firing cost would prohibit him from being laid off.[8]

[7] The parameters are $r = 0.03$, $\delta = 0.03$, $g = 0.03$, y_0=1, $c = 2$ and $\beta = 0.4$ and will later be used to provide an example of multiple stationary equilibria.

[8] The level of employment protection $\bar{F}$ is sufficient to prohibit workers receiving a wage $w(\bar{F})$ from being laid off. Here $F_0 < \bar{F}$ which implies that $w(F_0) > w(\bar{F})$, so the level of firing cost needed to prohibit currently employed workers from being laid off is given by $\bar{F}(F_0) \equiv \frac{w(F_0)}{r+\delta} > F_0$.

3.2 Implementation Delay

In this section I introduce the main departure of this paper from previous work. Now – after the vote – firms are given an opportunity to lay off workers subject to the old level of firing cost before the new level is implemented. As a consequence, employed workers not only need to worry about being laid off when firing cost are reduced too much, in addition they must be concerned with becoming unemployed if there is a large hike in firing cost.

Once again consider an initial level of firing cost $F_0 \leq \bar{F}$ and a worker employed at time $t = 0$ in a production unit with productivity y. Moreover, consider an increase in firing cost to a level $F \geq F_0$. Recall that currently employed receive the wage $w(F_0)$, so the value of continuing to employ the worker is given by $J(y, w(F_0), F)$. In contrast to the preceding section, the firm now has the opportunity to lay off the worker subject to the old level of firing cost F_0. It is optimal to do so if

$$J(y, w(F_0), F) < -F_0. \tag{8}$$

For $F = F_0$ condition (8) fails: since the worker is currently employed, it is optimal to retain him if firing cost remain unchanged. But as the new level of firing cost F increases starting from F_0, the left hand side of equation (8) decreases, and it becomes more and more attractive to lay off the worker before the new level of firing cost is implemented.

Notice that once the new level of firing cost reaches $\bar{F}(F_0) \equiv \frac{w(F_0)}{r+\delta}$ it is prohibitively high. That is, if a currently were retained beyond the implementation of $F = \bar{F}(F_0)$, he would be entirely safe from layoffs thereafter. This implies that one can restrict attention to the range $F \in [0, \bar{F}(F_0)]$, since raising firing cost beyond $\bar{F}(F_0)$ would have exactly the same effect as setting them equal to $\bar{F}(F_0)$.

There are now two possibilities. If condition (8) is satisfied for the prohibitive level $\bar{F}(F_0)$, then there is an interior level of firing cost $\bar{F}(y, F_0) \in (F_0, \bar{F}(F_0))$ such that if firing cost are raised to $F > \bar{F}(y, F_0)$, then it is optimal for the firm to lay off the worker before F is implemented. On the other hand, if condition (8) fails for $F = \bar{F}(F_0)$, then the worker with productivity y is safe from layoff before implementation no matter how large the hike in firing cost. In this case I set $\bar{F}(y, F_0) = +\infty$. Clearly the threshold $\bar{F}(y, F_0)$ is increasing

in productivity y as higher productivity makes it less attractive to take advantage of the opportunity to layoff before implementation of the new level of firing cost. Thus for any $F \geq F_0$ there is a productivity threshold $\bar{y}(F, F_0)$ such that the condition $F > \bar{F}(y, F_0)$ can be equivalently written as $y < \bar{y}(F, F_0)$. The interpretation of this productivity threshold is that production units with productivity below $\bar{y}(F, F_0)$ will be destroyed before implementation when firing cost are increased from F_0 to F. This productivity threshold will come in handy when discussing probabilistic voting, but for now it will be more convenient to work with the firing cost threshold $\bar{F}(y, F_0)$.

Having constructed this additional threshold, the utility of an employed worker at time $t = 0$ can be written as

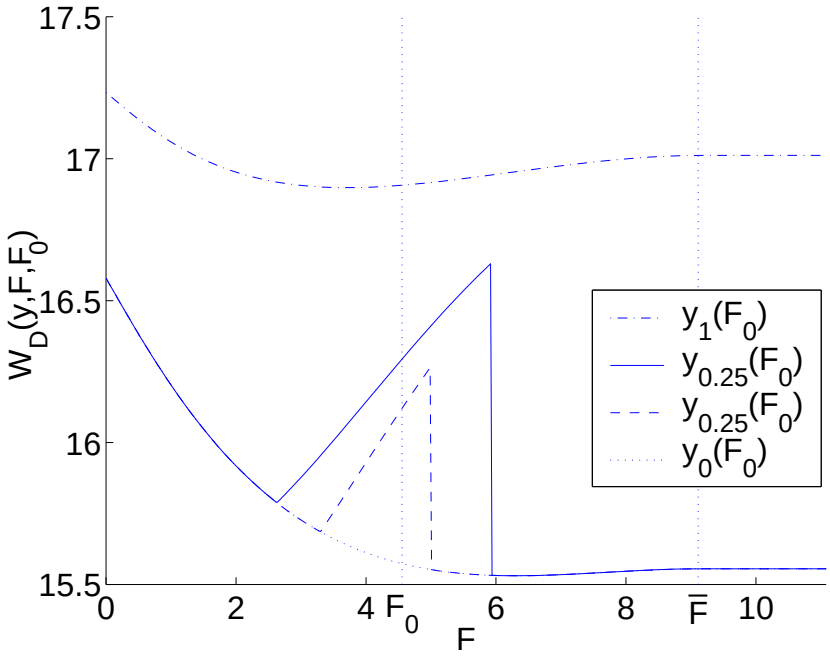
$$W_D(y, F, F_0) = \begin{cases} U(F), & F \leq \underline{F}(y, F_0), \\ W(y, w(F_0), F, U(F)), & \underline{F}(y, F_0) \leq F \leq \bar{F}(y, F_0), \\ U(F), & F > \bar{F}(y, F_0), \end{cases} \tag{9}$$

where the function W was defined in equation (2) and the subscript D indicates delayed implementation. Once again unemployed workers are assigned productivity zero and incorporated by setting $W_D(0, F, F_0) = U(F)$ for all $F \geq 0$.

Figure 2 is the counterpart to Figure 1. A worker in a production unit with maximal productivity y_0 will retain his job no matter how large the hike in firing cost. This is not the case for a worker in a production unit at the 25th percentile. If the new level of firing cost is sufficiently large the firm will dismiss the worker and the worker's utility coincides with that of the unemployed. Notice that utility is continuous at the lower threshold $\underline{F}(y, F_0)$. Being slightly to the right of this threshold means remaining employed at the wage $w(F_0)$ for a very short time, which is not much better than being unemployed. On the other hand, utility is discontinuous at the upper threshold $\bar{F}(y, F_0)$. A worker slightly to the left of this threshold barely escapes layoff at time $t = 0$, but taking this hurdle means benefiting from the new higher level of firing cost, which is considerably better than being unemployed.

Comparing a worker at the 20th percentile to a worker at the 25th percentile illustrates how the thresholds $\underline{F}(y, F_0)$ and $\bar{F}(y, F_0)$ vary with productivity. For the worker with lower productivity both a smaller increase and a smaller reduction in firing cost are enough to

Figure 2: Worker Utility, Implementation Delay, $F_0 = \frac{1}{2}\bar{F}$

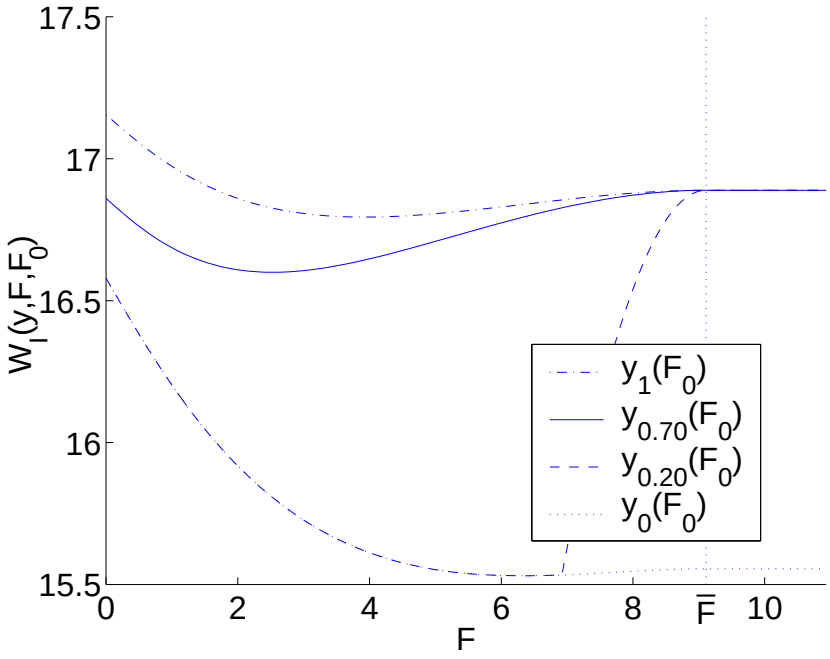


instigate a layoff.

4 An Example of Multiple Stationary Equilibria

In this section I provide a numerical example in which both zero firing cost and prohibitive firing cost are a stationary political outcome if implementation is delayed. That is, if the economy inherits zero firing cost from the past, then it will be a political equilibrium for zero firing cost to be confirmed in the vote at time $t = 0$, and if the economy inherits prohibitive firing cost from the past, it will also be a political equilibrium for prohibitive firing cost to be confirmed in the vote at time $t = 0$. In the numerical example considered here, this outcome arises irrespective of whether the majority voting model or the probabilistic voting model is used to determine the outcome of the vote at time $t = 0$. The parameters used in the numerical example are the same as the parameters used to generate the figures in section 3: $r = 0.03$, $\delta = 0.03$, $g = 0.03$, $y_0 = 1$ (this is a normalization), $c = 2$ and $\beta = 0.4$. Section 4.1

Figure 3: Worker Utility if $F_0 = \bar{F}$



considers majority voting, section 4.2 probabilistic voting.

4.1 Majority Voting

Under majority voting a level of firing cost F is a political equilibrium at time $t = 0$ if it is a Condorcet winner, that is if there is no other level of firing cost that would defeat F in a pairwise vote.

Which levels of firing cost are Condorcet winners at time $t = 0$ depends on the level of firing cost F_0 inherited from the past. This is because F_0 affects the productivity distribution at time $t = 0$, and preferences for employment protection vary by productivity level.

I will say that a level of firing cost F_0 is a stationary political equilibrium if F_0 is among the political equilibria at time $t = 0$ given that F_0 is inherited from the past.

First I will show that prohibitive firing cost $\bar{F}$ constitute a stationary political equilibrium. If firing cost are already prohibitive, then an increase in firing cost would have no effect, and thus it would not induce any layoffs in the case of delayed implementation. Thus with $F_0 = \bar{F}$

it does not matter whether implementation is delayed or immediate.

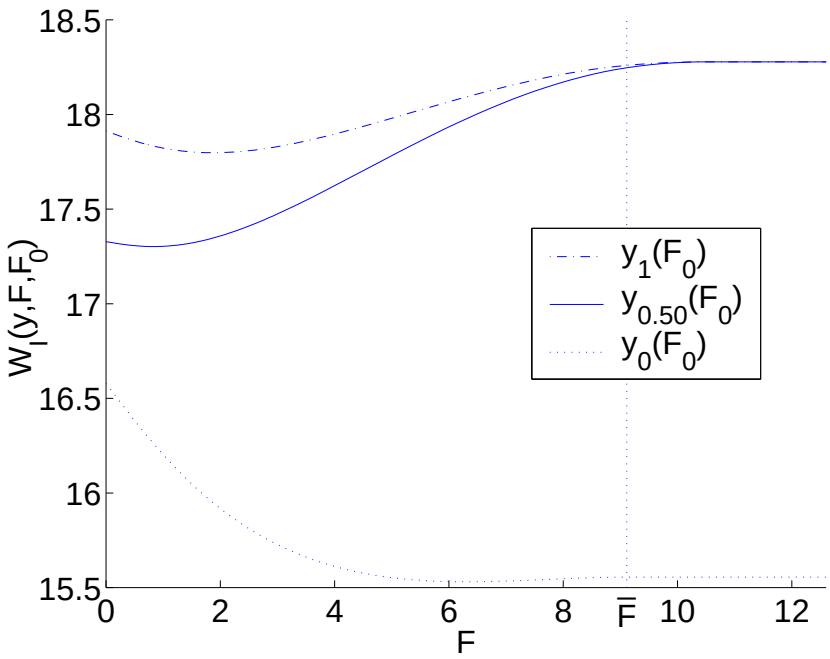
Figure 3 shows the preferences of workers at different percentiles of the productivity distribution. A worker with maximal productivity y_0 would prefer that employment protection be eliminated. At the 70th percentile a worker would not face immediate layoff if firing cost were reduced to zero, but benefits sufficiently from the protection from involuntary layoff that his most preferred outcome is to keep prohibitive firing cost in place. A worker at the 20th percentile would be immediately laid off if firing cost were to be eliminated, and also has $\bar{F}$ as his most preferred outcome. Thus a majority of voters, those between the 20th and the 70th percentile, have prohibitive firing cost $\bar{F}$ as their utility maximizing outcome, so this level of firing cost cannot be defeated in a pairwise vote. It follows that $\bar{F}$ is a stationary political equilibrium both in the case of immediate and in the case of delayed implementation.

Now I turn to the economy that has inherited zero firing cost $F_0 = 0$ from the past. Here I need to consider the cases of immediate and delayed implementation separately.

Figure 4 shows preferences in the case of immediate implementation. If firing cost were low in the past, then current wages of employed worker are high, which makes employment protection a more attractive proposition as compared to the case of high past firing cost $F_0 = \bar{F}$. As a consequence it is now the case that even a worker with maximal productivity y_0 prefers prohibitive firing cost over zero firing cost. Notice that due to the high wage, the prohibitive level of firing cost is given by $\bar{F}(0) > \bar{F}$, and this is the utility maximizing level of firing cost for all employed worker. It follows that $\bar{F}(0)$ is the unique Condorcet winner, which in turn implies that with immediate implementation $F_0 = 0$ is not a stationary political equilibrium.

Figure 5 displays preferences for zero past firing cost $F_0 = 0$ if implementation is delayed. As discussed in section 3.2, now workers must consider the possibility that they will be laid off if the increase in firing cost is too large. As it turns out, this is of no concern to workers in production units with maximal productivity, since even in the case of the introduction of prohibitive firing cost it would still be optimal for firms to retain these workers. The situation is different for a worker at the 50th percentile. Even a moderate increase in firing cost would give the firm an incentive to lay off this worker before the increase in employment protection

Figure 4: Worker Utility, Immediate Implementation, $F_0 = 0$

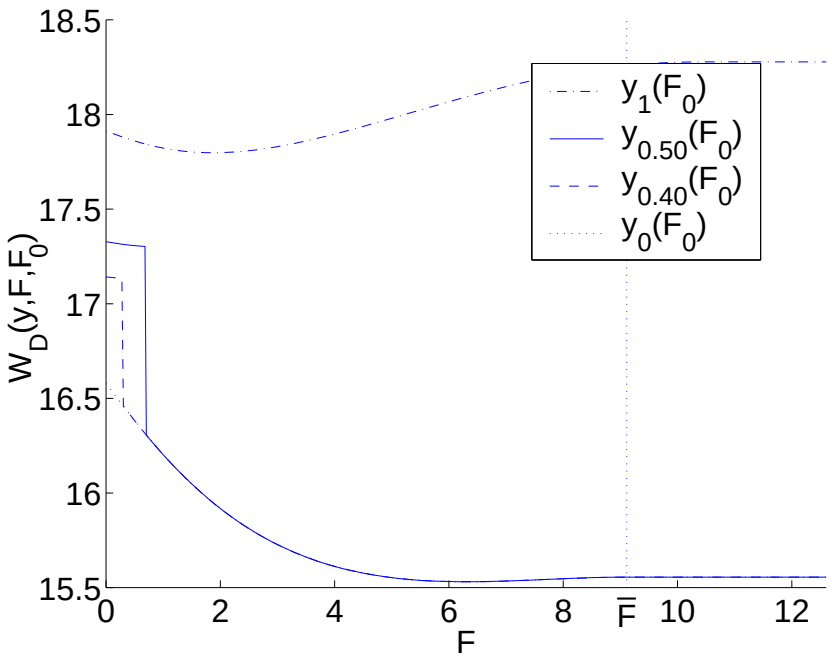


takes effect. As a consequence, zero firing cost is the most preferred level of all workers below the 50th percentile in the productivity distribution, making zero firing cost the unique Condorcet winner. It follows that in contrast to the case of immediate implementation, zero firing cost is a stationary political equilibrium if implementation is delayed.

4.2 Probabilistic Voting

In this section I assume that the outcome of the vote at time $t = 0$ is determined through a two-candidate model of probabilistic voting as in Lindbeck and Weibull (1997). A detailed exposition of this model is provided in Persson and Tabellini (2000) and will not be repeated here. In this model voters care not only about the policy at hand – here employment protection – but also about some second dimension which Persson and Tabellini (2000) refer to as "ideology". A standard result for this model is that equilibrium policies maximize a weighted sum of individual utilities. In general the model allows for heterogeneity among voters in the strength of the concern for ideology, and a stronger concern for ideology translates into a

Figure 5: Worker Utility, Implementation Delay, $F_0 = 0$



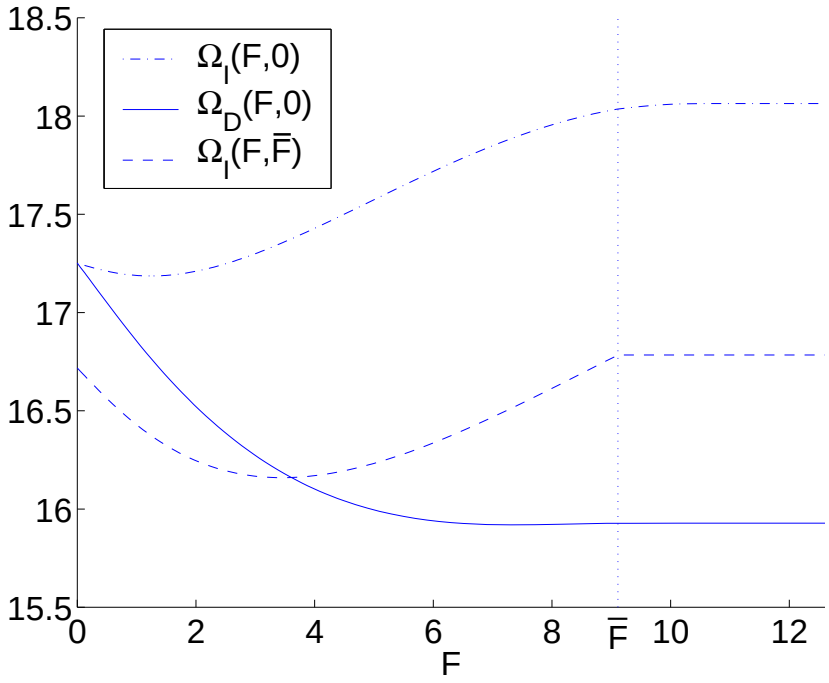
lower weight. Intuitively, it is more attractive for candidates to attract the support of "swing-voters" with little ideological attachment, which gives these voters a stronger influence on equilibrium policy. Here for simplicity I assume that all workers are identical with respect to their concern about ideology, which implies uniform weights, so equilibrium policies simply maximize average utility of workers.

In order to construct the objective functions for immediate and delayed implementation, it is convenient to first define the following auxiliary function:

$$\Omega(F, F_0, \underline{y}) \equiv \left[(1 - L(F_0)) + L(F_0)P(\underline{y}|F_0)\right] U(F) + \int_{\underline{y}}^{y_0} W(y, w(F_0), F, U(F)) dP(y|F_0). \tag{10}$$

This function gives average utility of workers if past firing cost are F_0, future firing cost are F, and workers with productivity of at least $\underline{y}$ are retained beyond time $t = 0$. Immediate and delayed implementation differ with respect to the threshold $\underline{y}$. In particular, average utility

Figure 6: Average Worker Utility



of employed workers for immediate implementation is given by

$$\Omega_I(F, F_0) = \begin{cases} \Omega(F, F_0, \underline{y}(F_0)), & F \geq F_0, \\ \Omega(F, F_0, \underline{y}(F, F_0)), & F < F_0. \end{cases} \tag{11}$$

If firing cost are increased, all currently employed workers remain employed, so the threshold is $\underline{y}(F_0)$. If firing cost are reduced, then workers with productivity below $\underline{y}(F, F_0)$ are laid off after the reduction in firing cost has been implemented.

With delayed implementation

$$\Omega_D(F, F_0) = \begin{cases} \Omega(F, F_0, \bar{y}(F, F_0)), & F \geq F_0, \\ \Omega(F, F_0, \underline{y}(F, F_0)), & F < F_0. \end{cases} \tag{12}$$

The only difference occurs for increases in firing cost. Under immediate implementation all currently employed workers remained employed after an increase in firing cost. Here workers with productivity below $\bar{y}(F, F_0)$ are laid off before implementation of the increase.

As with majority voting, delayed implementation will give rise to multiple stationary political equilibria. This is illustrated in Figure 6. The dashed line shows average worker utility for

an economy that inherits the prohibitive level $F_0 = \bar{F}$ from the past. Once again, as firing cost are already prohibitive, it does not matter whether implementation is immediate or delayed. The plot shows that maintaining prohibitive firing cost maximizes average utility, yielding slightly higher average utility than elimination of firing cost. Thus – as with majority voting – $\bar{F}$ is a stationary political equilibrium both under immediate and delayed implementation.

The remaining two plots in Figure 6 apply to an economy which inherits zero firing cost from the past. The dashdotted line shows average utility for immediate implementation, while the solid line represents the case of delayed implementation. Average utility must be the same in both cases if zero firing cost are maintained, so the two plots coincide at $F = 0$. But increasing firing cost is a much less attractive proposition if implementation is delayed as more and more workers face lay off before implementation of the new policy. It follows that – as with majority voting – zero firing cost constitute a stationary political equilibrium with delayed implementation but not with immediate implementation.

5 Recent Episodes of Increasing Employment Protection in the United Kingdom and the United States

In this section I examine three recent episodes of increasing employment protection in the United Kingdom and the United States for hints whether firms had an opportunity to lay off workers before the increase became effective and whether they took advantage of that opportunity. Both countries have very low levels of employment protection when compared to continental Europe and Latin America and the increases in employment protection I consider here are either small in magnitude or limited in scope. Notice that I consider successful increases in employment protection, so interpreted in the light of the model these are situations in which the mechanism proposed in this paper was not sufficiently strong to prevent the increase in employment protection. Finding hints that firms did resort to layoffs before these small increases became effective could mean that sufficiently larger waves of layoffs would occur if the United Kingdom or the United States were to introduce levels of employment protection similar to continental Europe.

5.1 United Kingdom: Unfair Dismissal Qualifying Period (1999)

Legislation that protects workers from unfair dismissal was first introduced in the UK in the 1971 Industrial Relations Act. To qualify for this protection, the worker must have been continuously been employed by the employer for a minimum period of time. Initially this qualifying period was set at 24 month, but was subsequently reduced to 6 month by the mid 1970s. When Margaret Thatcher came to power in 1979 it was immediately increased to 12 month. In 1980 it was further increased to 24 month for small firms with less than 20 employees, while in 1985 uniformity across firm sizes was restored by increased the qualifying period to 24 month for large firms as well. After coming to power in 1997, the Labour government reduced the qualifying period to 12 month in 1999, and this is the change I will focus on here.[9]

The qualifying period can be changed through Statutory Instruments, an Act of Parliament is not required. Hence it can be changed relatively quickly, suggesting that here firms should have less opportunity to adjust before a change takes effect as compared to more dramatic changes in employment protection that would require a change in primary legislation. Approval of each House of Parliament was required, however.

The government announced its intention to reduce the qualifying period to 12 month in the *Fairness at Work* white paper published on May 21, 1998. The draft Statutory Instrument was laid before Parliament on April 28, 1999. Approval was given by the House of Commons Standing Committee on May 13. Reporting on this approval *The Daily Express* wrote "They [labor lawyers] also noted that the new laws were being introduced far earlier than expected. This is to prevent unscrupulous employers from dismissing staff ahead of the change unless they are on very short notice periods."[10] The House of Commons gave approval on May 19 and the House of Lords followed on May 21. The Order was made on the 23rd, coming into force on June 1st. An examination of six major British newspapers for the time between parliamentary

[9] Marinescu (2006) analyzes the effect if this reduction in the qualifying period on labor market outcomes and finds a reduction in the hazard of being fired for workers with tenure between 1 and 2 years after the implementation of the reform.

[10] "Unfair dismissal claims to soar after rule change", *The Daily Express*, May 14, 1999.

approval and effective date yields four articles that address the change in legislation, and every one of these articles makes reference to concerns about layoffs in advance of the new law coming into force.[11] *The Guardian* pointed out that "employers who dislike words like 'fairness' and want to shed staff ahead of the deadline must wield their axes on Monday because employees are still entitled to a week's notice." *The Independent* titled "Sackings feared in race to beat law" and cited a law firm circular saying that "employment lawyers are advising companies to dismiss unsatisfactory employees before the end of the month". *The Financial Times* titled "Rush to beat change in unfair dismissal law". Additionally, it mentioned a survey of 400 companies according to which three quarters of companies surveyed were aware of the change in legislation, despite the fast introduction of the change. *The Herald* cited an employment law expert as saying that "The short notice of this change has come as a major surprise to many. However, we have it on good authority that the Department of Trade and Industry, which is responsible for the employment tribunal system, decided that if they gave longer notice, then that would encourage a spate of random sackings."

Thus according to these reports, firms were well aware of the change in law and received advice to dismiss unsatisfactory workers before the change took effect. Moreover, the reports also suggest that the government was concerned about inducing a wave of layoffs and attempted to prevent this by introducing the change earlier than expected. Here the government was able to do so at least to some extent as the change could be made through Statutory Instrument.

[11] "Management: Fairness law for workers launched", *The Guardian*, May 22, 1999. "Sackings feared in race to beat law", *The Independent*, May 23, 1999. "Rush to beat change in unfair dismissal law", *Financial Times*, May 25, 1999. "Change in rules on sacking",*The Herald*, June 1, 1999. In addition to these four papers, *The Daily Telegraph* and *The Observer* were also included in the search, but did not report on the change in legislation.

5.2 United States: Worker Adjustment and Retraining Notification Act (1988)

Numerous attempts at passing legislation requiring advance notification regarding plant closings were made starting in 1974. However, not until 1985 was draft legislation reported out of either House, and it took three additional years for legislation to be passed. The Senate passed the Worker Adjustment and Retraining Notification Act (WARN) on July 6, 1988, and the House followed on July 13. President Reagan earlier that year had vetoed a trade bill including similar provisions on plant closings, but allowed WARN to be enacted on August 4 without signature. The effective date of the legislation was February 4, 1989. As the law requires 60 days of advance notification, there was some confusion whether this effective date implied that notification was required starting on December 6, 1988. A LexisNexis search of major newspapers for the time period between enactment and effective yielded seven articles concerned with the act. Two articles are primarily concerned with the confusion about the starting date, an issue addressed in all seven articles. Three of the articles make reference to firms accelerating layoffs in an effort to avoid being subject to the new law.[12] On October 27, *The New York Times* reported that "in-house attorneys at securities firms are pointing to the statute as an added incentive to speed up any layoffs before the law becomes effective on Feb. 4." On December 26 the same paper wrote about layoffs at Grumman Corporation that "It was no accident that the Long Island aircraft company's planned layoffs would be completed only days before the Feb. 4 effective date of the Worker Adjustment and Retraining Notification Act." On February 7 the *St.Louis Post-Dispatch* titled "Timing of Steel Plant Closing attacked" and writes "A top St. Louis labor leader said Saturday that the closing of a St. Louis steel plant was 'particularly despicable' because Friday's shutdown took place just one day before a new federal plant closing law went into effect." On February 6, *Business Week* titled "The Plant-Closing Law Could Explain The Spike In Layoffs", suggesting that "such a rise may simply reflect an acceleration in planned layoffs to avoid costly restrictions imposed

[12] "The Plant-Closing Law Reaches Into Wall St.", *The New York Times*, October 27, 1988. "Plant-Closing Law Is Being Felt", *The New York Times*, December 26, 1988. "Timing of Steel Plant Closing attacked", *St. Louis Post-Dispatch*, February 6, 1989.

by the plant-closing notification law that goes into effect in February."

This episode provides an example of the protracted legislative process associated with introducing policies such as employment protection. Here firms could wait until very late in the game and still adjust employment before the effective date of the Act. While the *Business Week* headline may be exaggerated, the reports suggest that some firms took advantage of this opportunity.

5.3 United States: Americans with Disabilities Act (1990)

The Americans with Disabilities Act (ADA) was enacted in July 1990 and became effective in July 1992. In addition to requiring employers to provide "reasonable accommodation" for their disabled workers, it also prohibits discrimination against the disabled in wages, hiring, firing and promotion. The ADA is enforced by the Equal Employment Opportunities Commission (EEOC) and the courts. Acemoglu and Angrist (2001) report that among claims filed directly with the EEOC between July 1992 and September 1997, 62.9 percent pertain to "wrongful termination" while 29 percent mention "failure to provide accommodation". The large percentage of wrongful termination charges motivates their interpretation of the ADA as providing a form of employment protection. Their econometric analysis reveals a sharp drop in the employment of disabled workers after the ADA went into effect in 1992, with no evidence that employment already declined after enactment and before the effective date. In contrast – using a different identification strategy – Jolls and Prescott (2004) find sizable negative employment effects for the time period between enactment and effective date. They compare states that already had reasonable accommodation requirements before the ADA with states for which the introduction of such requirements through the ADA was an innovation, and they find a relative decline in disabled employment in the latter states in the neighborhood of 10 percent. While almost all states already mandated some form of anti-discrimination provisions, the ADA likely strengthened these provisions, for example by making available EEOC enforcement and federal court adjudication.[13] Thus one reading of Jolls and Prescott's

[13]The fact that all but three states in the South states already had anti-discrimination provisions is the reason why their identification strategy is less powerful with respect to the employment effects of an increase

results is that in states without pre-ADA reasonable accommodation provisions employers where facing the following choice: either reduce disabled employment before the ADA effective date while anti-discrimination provisions were still weak, or being forced to provide reasonable accommodation after the ADA becomes effective. Meanwhile employers in states with pre-ADA reasonable accommodation already provided accommodation and thus had less of an incentive to reduce disabled employment while anti-discrimination provisions were still weak.

6 Timing and Multiplicity

As discussed in the introduction, previous work analyzing the constituency effect of employment protection assumed that firms are taken by surprise by the change in policy, and are not able to adjust either before the vote or after the vote but before implementation. I departed form this assumption by introducing delayed implementation, allowing firms to layoff workers after the vote and before the effective date of the new level of employment protection. Alternatively, one could have departed from previous work in the following way: the opportunity to change the policy still arises unanticipatedly, and the new policy is implemented immediately after the vote, but firms are given an opportunity to lay off workers before the vote takes place.

In this section I will analyze political equilibrium under this alternative timing assumption, show that multiplicity does not arise in this context, and use this contrasting result to discuss what features of the legislative process are important for multiplicity to arise.

Consider an economy that inherits zero firing cost $F_0 = 0$ from the past and assume that the new level of firing cost is determined by majority voting. The new policy is implemented immediately after the vote, but firms have an opportunity to lay off workers before the vote. Clearly maintaining zero firing cost is not a political equilibrium. If firing cost remain at zero, then firms have no reason to lay off workers before the vote. But then the preferences displayed in Figure 4 imply that a majority of workers would vote for prohibitive firing cost $\bar{F}(0)$. Similarly, the introduction of $\bar{F}(0)$ is not a political equilibrium. The thresholds in

in this type of provision.

Figure 5 imply that if firms predict the implementation of $\bar{F}(0)$ the induced layoffs would raise unemployment above 50 percent. But with unemployment above 50 percent zero firing cost would be the outcome of the vote. In this situation the political equilibrium takes the following form: at the time of the vote 50 percent of workers must be unemployed, which insures that both zero firing cost and $\bar{F}(0)$ are Condorcet winners. Zero firing cost are enacted with probability p while $\bar{F}(0)$ is enacted with probability $(1-p)$ where the probability p must be such that the round of layoffs before the vote yields exactly 50 percent unemployment, i.e. firms must be indifferent about laying of workers with median productivity $y_{0.50}(0)$:

$$pJ(y_{0.50}(0), w(0), 0) + (1-p)J(y_{0.50}(0), w(0), \bar{F}(0)) = 0. \tag{13}$$

In the numerical example this is accomplished by $p = 0.82$. Thus zero firing cost are not a stationary political equilibrium as with some probability the prohibitive level of firing cost $\bar{F}(0)$ will be adopted.

The equilibrium is very similar in the case of majority voting. Here firms must lay off all workers below some threshold $\tilde{y}$ such that at the time of the vote both $F = 0$ and $F = \bar{F}(0)$ yield the same average worker utility, that is

$$\Omega(0, 0, \tilde{y}) = \Omega(\bar{F}(0), 0, \tilde{y}).$$

where the function Ω was defined in equation (10). Again zero firing cost are enacted with some probability p while $\bar{F}(0)$ is enacted with probability $(1-p)$. Now the probability p must satisfy equation (13) with $y_{0.50}(0)$ replaced by $\tilde{y}$. In the numerical example this is accomplished by $p = 0.84$.

Immediate implementation does not appear to be a feature of the episodes of increasing employment protection considered in section 5. Nevertheless, rather than reflecting constraints of the legislative process, this may simply be a reflection of the fact that layoffs before implementation are not a major concern in practice.

However, even if the last stage of the legislative process is associated with immediate implementation, multiple stationary political equilibria are easily restored if a legislative proposal has to clear multiple stages with firms adjusting in between. As an example, consider the model with probabilistic voting with the following timing assumptions: first a vote takes

place concerning whether or not an increase in employment protection is put on the political agenda, next firms adjust employment, then a final vote about the level of employment protection takes place and becomes effective immediately. From the analysis above, putting employment protection on the legislative agenda yields average worker utility $\Omega(0, 0, \tilde{y})$. If employment protection is not put on the agenda, then zero firing cost remain in place, yielding average worker utility $\Omega(0, 0, \underline{y}(0)) > \Omega(0, 0, \tilde{y})$. Here the inequality is due to the fact that $\tilde{y} > \underline{y}(0)$: if the legislative were to go ahead, workers with productivity between $\underline{y}(0)$ and $\tilde{y}$ would be laid off. Similar to the model with delayed implementation, workers anticipate that if they push ahead with the legislative proposal firms will respond with layoffs. As a consequence they let the proposal die at this earlier stage, once again making zero firing cost a stationary political equilibrium. Thus the assumption of delayed implementation may be a useful shortcut to capture the forces working against the introduction of employment protection associated with more realistic models of the legislative process.

7 Conclusion

In this paper I have argued that workers may be reluctant to support increases in employment protection due to concerns about being subject to layoffs before the increase in protection becomes effective. This is a mechanism that makes employment protection a policy that is difficult to introduce. Thereby it provides a force that can amplify and sustain differences in employment protection across countries.

Another mechanism generating amplification and persistence of differences in employment protection which has been proposed is the constituency effect discussed in the introduction. In Brügemann (2006) I provide a numerical example in which the constituency effect gives rise to multiple stationary political equilibria. That numerical example as well as the example provided in the present paper are designed to illustrate the theoretical possibility of multiplicity. Whether multiplicity is likely to arise in carefully calibrated versions of models of job creation and destruction remains an open question, and may require models in which several mechanisms work together. In fact, my modeling choice of generate demand for employment

protection by making layoffs involuntary is motivated by the goal of building a model in which both the constituency effect and the mechanism of this are present. In Brügemann (2006) I show that the constituency effect is absent in a model where wages are determined through Nash bargaining, separations are bilaterally efficient, and firing cost strengthen the hand of workers in bargaining. I also demonstrate that it naturally arises in a model were separations are bilaterally inefficient and involuntary from the perspective of workers. Thus the model developed here is a step towards developing a framework in which both mechanisms can be evaluated quantitatively.

The model developed here should also be useful in analyzing the macroeconomic conditions conducive to the introduction as well as the removal of employment protection. The analysis presented here suggests that the introduction of employment protection may be more likely in an economic boom when few workers are close to the layoff threshold. But this argument does not take into account the effect of macroeconomic conditions on the gains from introducing employment protection, warranting a more careful examination of this issue in future work.[14]

[14]See Saint-Paul (2002b) for a discussion of the link between macroeconomic fluctuations and the timing of labor market reform.

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