

# Contours of employment protection reform

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## Introduction

There may be no labor market institution more controversial than employment protection regulation—the set of laws and procedures regulating separations.

- Firms complain not only about the direct cost, but also about the complexity and the uncertainty introduced by such regulation. They argue that it makes it difficult for them to adjust to changes in technology and product demand, and that this in turn decreases efficiency, increases cost and, in so doing, deters job creation.
- Workers, on the other hand, focus on the pain of unemployment, and argue that such pain should be taken into account by firms when they consider closing a plant, or firing a worker. That workers protected

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by employment protection would favor it is no great surprise. But evidence from surveys shows that support for employment protection is more general, more broad based.

- Many economists and international economic organizations, from the OECD to the IMF, tend to side with firms. There is, they argue, a trade-off between insurance and efficiency. The current system impedes reallocation, and, by implication, reduces efficiency. It leads to higher costs, and thus lower employment. At a minimum, it could and should be made more efficient. More likely, overall employment protection should be reduced.
- Faced with conflicting advice and demands, governments have been timid. They have learned, often the hard way, that workers covered by employment protection are not eager to see it reduced, and that these workers represent the majority of the labor force, and a large part of the electorate. So, most if not all of the recent employment protection reforms have worked at the margin, through the introduction and extension of the scope for fixed duration contracts—contracts subject to more limited employment protection and simpler administrative rules. For the most part, employment protection for regular contracts has remained unchanged. The evidence so far is that this dual system has led to an increasingly dual labor market, with mixed efficiency and distributional effects.

Despite the heat and the rhetoric, we are struck at how little work has gone into the question of how “good employment protection regulation” should look like. Starting from the status quo, firms and international organizations have argued for less protection. Workers and unions have fought to keep the protection they had. Governments have looked for politically

feasible incremental reforms. But the ultimate goal, the shape of optimal employment protection, has been left undefined.

Consider for example the following issues:

- Should there be any state mandated employment protection, or should “employment at will” remain the principle, leaving any additional protection to voluntary agreements between workers and firms?
- If there is an argument for state mandated employment protection, should this protection simply take the form of a schedule of payments by firms in case of layoffs, with the layoff decision then left to the firm? Or should there be, in place or in addition to such a schedule, other non-price restrictions? In that context, what should be the role of the judicial process, if any?
- How large should payments by firms either to workers or to the state be? Should firms pay workers directly, or pay the state? Should the payments cover, in expected value or in realization, the unemployment benefits and other payments received by laid-off workers? Should the payments be made by firms at the time the layoffs take place, or should they be paid over time, as in the case in experience rated systems?

This report is an attempt to answer these questions. It must start with two warnings.<sup>1</sup>

- First, the issues are complex ones. As will be clear below, answering the questions listed above requires taking into account a number of

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<sup>1</sup>The same two warnings were issued by Malinvaud [1998] in his report to the same Council on the design of employer-financed social contributions. The reasons were basically the same: These are complex issues, and our understanding is limited. Credibility requires both intellectual honesty and modesty.

imperfections in the labor market. Each of these imperfections has implications and effects on the labor market which are often poorly understood, theoretically or/and empirically. So is the relative importance of these imperfections. This implies that there cannot be any simple, obvious, answer to the question of how to define optimal employment protection.

- Second, any actual reform proposal must map out in detail how to go from the complex set of existing institutions to the new suggested ones. To work out the details of such a transition requires a knowledge of specific institutions, agencies, laws and rules, that we (the authors of this report) do not have. In any case, it would not be our comparative advantage to try.

Yet, despite these warnings, we believe that some conceptual progress can be made, and the contours of employment protection reform defined. To do so, we have organized our report in eight sections.

Section 1 surveys of what is known—and not known—about the effects of existing systems of employment protection on the nature of labor markets—from the flows of separations, to the duration of unemployment, to the level of unemployment, to the response of the economy to shocks.

Sections 2 to 6 then focus on the optimal design of employment protection:

Section 2 starts with a benchmark economy, in which risk neutral firms are both able and willing to provide employment protection to their risk averse workers, and in which the provision of insurance by firms does not impede reallocation and efficiency. As most benchmarks, the benchmark is obviously unrealistic; but, as good benchmarks do, it provides a way of organizing the discussion, and tells us where and how to look for the relevant labor market imperfections.

Sections 3 to 5 explore the implications of three sets of deviations from the benchmark. Section 3 introduces risk aversion and liquidity constraints on firms. Section 4 explores the implications of alternative forms of wage setting. Section 5 explores the design of employment protection in an economy with both layoffs and quits. Section 6 puts all these elements together, and draws conclusions about the contours of optimal employment protection. (Those readers who have no particular love for economic theory can go directly to Section 6).

Section 7 then returns to the employment protection system in place in France today. Our purpose here is not to give an exhaustive description of the system, but rather to examine it in the light of our earlier analysis of how an optimal system might look, and to point out the major differences.

Having done so, we sketch the contours of what employment protection reform might look like in the case of France. This is what we do in Section 8.

To anticipate, and returning to the list of issues listed earlier, we draw in particular the following conclusions:

- There is a strong economic argument for having firms bear at least some of the cost of unemployment for the workers they layoff.
- Firms should not however support the whole cost. In other words, their “contribution rate” to unemployment benefits should be positive, but less than one.

Many factors determine the choice of the best contribution rate. Probably the main one is the trade-off between distortions at the job destruction and the job creation margin:

The higher the contribution rate paid by firms, the more they will take into account the social costs associated with layoffs, and the less distorted will be their layoff decision.

But, under plausible assumptions about wage setting, the higher the contribution rate, the higher the cost paid by firms, the lower their profit, and the lower job creation.

- One way to design employment protection is around two components.

The first and major one is payments from firms to the state—call them unemployment contributions—to finance at least in part the costs of the unemployment insurance system. These payments may be made at the time the layoffs take place, or over time, according to an experience rated, or a bonus-malus, system.

The second is payments from firms to workers, in the form of severance payments. These should be such as to compensate, at least in part, for the costs of becoming (as opposed to being) unemployed. These payments should be a (non linear) function of seniority, with low payments until high seniority has been achieved.

- The role of the judicial system should be to assess whether declared layoffs are indeed layoffs, and declared quits are quits.

To avoid having to pay unemployment contributions and severance payments associated with a layoff, firms may harass workers into quitting. In order to qualify for unemployment benefits and receive severance payments, workers may shirk so as to be laid off.

The role of the judicial system should then be twofold. If asked by workers, to look for evidence of harassment of workers if a separation has been called a quit. If asked by firms, to look for evidence of shirking by workers if the separation has been called a layoff.

The role of the judicial system should not however be to second guess the layoff decisions of firms. If a firm is willing to call a separation a layoff, follow the relevant administrative steps, and pay the associated financial costs, this decision should not be subject to judicial challenge

(except on usual and narrow grounds such as discrimination based on race or sex.)

- Relative to the existing system of employment protection in place in France today, our analysis suggests two main directions of reform.

An increase in the contribution rate of firms. At this stage, unemployment contributions are collected through a fixed rate payroll tax, and so is independent of the layoff behavior of the firm—implying a zero contribution rate. The first direction of reform should be to shift to a positive contribution rate, and thus increase the marginal financial cost of layoffs for firms.

This increase in the contribution rate should come with a decrease in the role of labor tribunals, especially in the case of collective layoffs. If a firm is willing to pay the costs associated with a layoff, we see no justification for judges to question the decision of that firm or to impose additional penalties.

- Our analysis also suggests that such a reform should come largely in replacement to earlier reforms:

The sharp differences in employment protection between fixed-duration contracts (CDD) and regular contracts (CDI), as well as other special measures (such as the Delalande contributions for older workers) have not achieved their goals, and have often proven counterproductive. The same goals would be better achieved by a common regime of employment protection, and the combination of a positive contribution rate for firms, together with a schedule of severance payments to workers. That schedule should be increasing and convex in seniority, starting at zero for low seniority workers, and becoming large for high seniority workers.

## 1 Employment protection and the labor market. Some empirical evidence

Most theories of the labor market suggest that employment protection—that is, either legal and administrative restrictions on layoffs, or tax payments to the state in case of layoffs, or severance payments to laid-off workers—is likely to have the following effects:

- It is likely to lead to lower layoff rates, and thus to smaller flows of workers through the labor market.
- It is likely to increase unemployment duration.<sup>2</sup>
- It is therefore likely to have a strong effect on the nature of the labor market, making it more stagnant, more “sclerotic” (smaller flows in and out, and higher duration of unemployment). But its effect on the unemployment rate itself, the product of duration and flows, is ambiguous.

### 1.1 Cross country evidence

The empirical cross-country evidence is indeed largely consistent with these implications:<sup>3</sup>

- Based on the indexes of employment protection constructed by the OECD and various other authors, there appears to be a strong negative

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<sup>2</sup>The mechanism is the following: The increase in employment protection is likely to increase firms’ costs. This increase in costs leads in turn to lower job creation and so to lower hiring, until the resulting increase in unemployment duration, which makes unemployment more painful, reduces wages and returns costs to a level consistent with the required rate of return on capital.

<sup>3</sup>For recent surveys, see OECD [1999a], and Addison and Teixeira [2001].

correlation across countries between employment protection and flows of workers in and out of employment, or in and out of unemployment.<sup>4</sup>

- Using the same indexes, there appears to be a positive correlation between employment protection and unemployment duration. Countries with high employment protection tend to have higher individual average unemployment duration.
- For a given unemployment duration, lower flows in and out of unemployment decrease unemployment. For given flows, higher unemployment duration increases unemployment. The result of the two effects turns out to be a nearly zero cross-country correlation between protection and the unemployment rate.

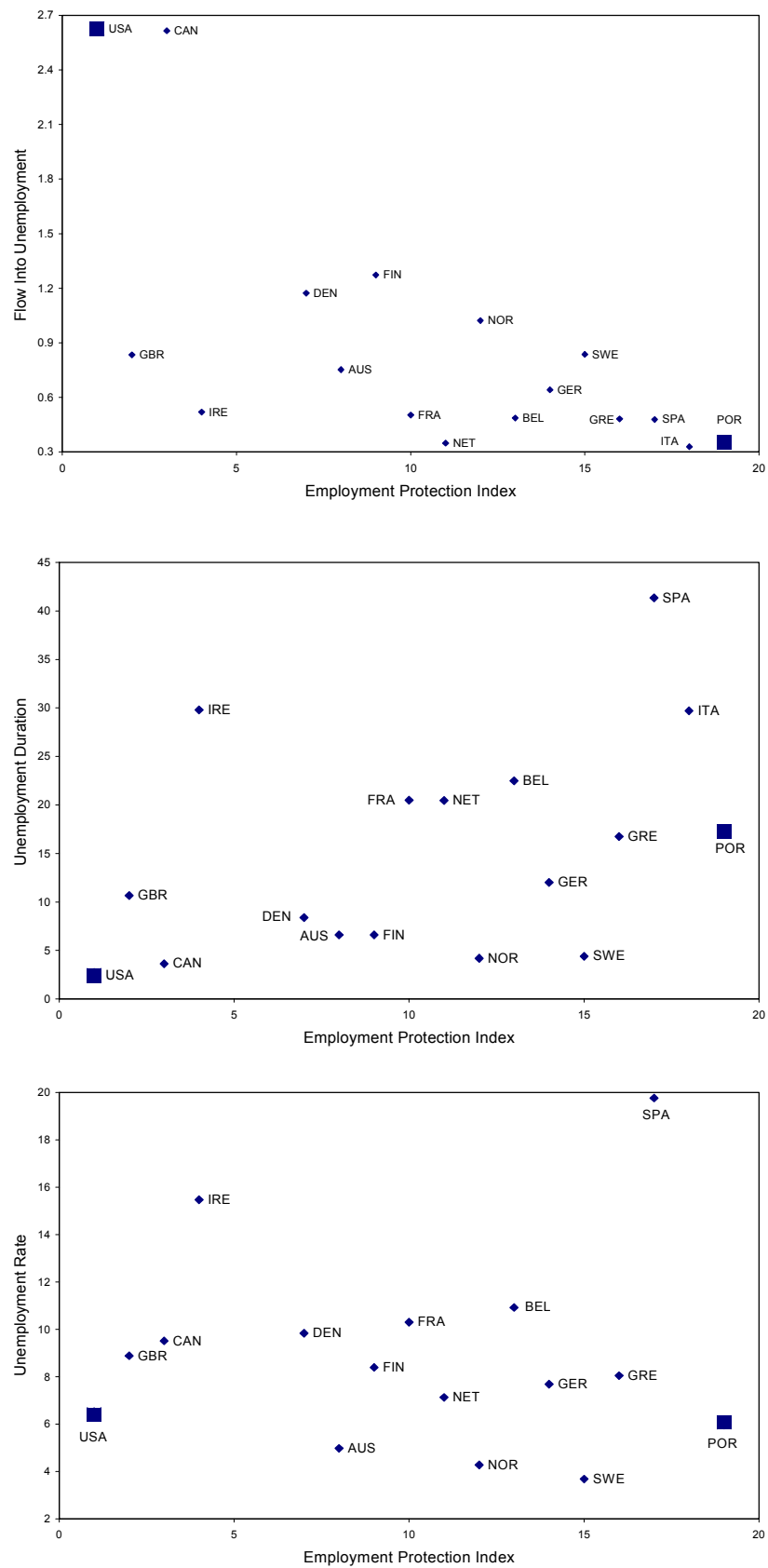
The comparison between Portugal and the United States is revealing here (see Blanchard and Portugal [2001] for more details). Despite the fact that the degree of employment protection is much higher in Portugal than in the United States, the two countries have had roughly the same average unemployment rate over the past 30 years. These two unemployment rates hide however a very different reality: Unemployment duration has been three times higher on average in Portugal than in the United States; flows (relative to employment) three times lower.

These points are illustrated in the three panels of Figure 1, taken from Blanchard and Portugal [2001], that plots flows, duration, and the unemployment rate against measures of employment protection for 19 OECD countries.

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<sup>4</sup>Whether such indexes can successfully capture the many dimensions of employment protection is open to discussion. To a first approximation, we believe the ranking of countries implied by these indexes is not misleading.

Figure 1. Flows, Duration, Unemployment, and Employment Protection



Monthly flows into unemployment are constructed as the average number of workers unemployed for less than one month, for the period 1985-1994, divided by the average labor force during the same period, for each OECD country.

Unemployment duration is constructed as the ratio of the average unemployment rate for the period 1985-1994 to the flow into unemployment constructed above.

The employment protection index, “EPL”, is the overall index constructed by the OECD for the late 1980s (OECD [1999b], Table 2-5); this index is a rank index for 19 countries, going from low to high protection (The index is based solely on institutional aspects of employment protection, not on labor market outcomes.) The value of the index goes from 1 for the United States to 19 for Portugal (10 for France)

The top part of the figure shows a clear negative relation between the flow into unemployment (as a ratio to the labor force) and employment protection. The middle part shows a clear positive relation between unemployment duration and employment protection. The bottom part shows roughly no relation between the unemployment rate and employment protection. Regressions of the log flow, log duration, and the log unemployment rate on the employment protection index give:

$$\begin{aligned}
 \log \text{ flow} &= 0.49 - 0.076 \text{ EPL} & \bar{R}^2 &= 0.46 \\
 & & & (\text{sd} = 0.020) \\
 \log \text{ duration} &= 1.64 + 0.073 \text{ EPL} & \bar{R}^2 &= 0.21 \\
 & & & (\text{sd} = 0.033) \\
 \log \text{ u rate} &= 2.14 - 0.003 \text{ EPL} & \bar{R}^2 &= -0.06 \\
 & & & (\text{sd} = 0.015)
 \end{aligned}$$

Thus, an increase in employment protection leads to a decrease in flows, and an increase in unemployment duration. But the two effects roughly cancel each other when looking at unemployment.

Based on these cross-country findings, the effects of employment protection appear quite bad: Employment protection decreases flows, and thus decreases reallocation and efficiency. And, because it increases unemployment duration, not only does it not decrease unemployment, but it makes individual unemployment experiences much more painful.

In addition, research on the evolution of unemployment over time and over countries, shows that countries with the more sclerotic labor markets (lower flows, higher duration) are also the countries which have suffered the largest and/or the more persistent increases in unemployment over the last 30 years (see for example Blanchard and Wolfers [2000].) This suggests that, to the extent that employment protection leads to more sclerotic labor markets, it also leads to larger and longer lasting effects of shocks on unemployment.

But the case is in fact not as tight as it looks. First, there are a few disturbing puzzles, facts that do not quite fit the general picture. Second—and to state the obvious—correlation does not imply causality. Let us take both points in turn.

### 1.2 *Two puzzles*

In looking at reallocation in the labor market, economists have constructed two different sets of measures:

- The first, called “worker flows”, are measures of the number of workers who change employment status over a given interval of time; for example, monthly flows from employment to unemployment, divided by total employment (as was used in Figure 1 above).
- The second, called “job flows”, are measures of changes in employment levels of firms. Two standard measures here are “job creation”, defined as the sum of changes in employment levels over a given interval

of time, at all firms with a net increase in employment, divided by total employment; and “job destruction” defined as the sum of employment changes over a given interval at all firms with a net increase in employment.

The basic empirical puzzle is the following. As we saw above, measures of worker flows—for example flows out of employment—are lower in countries with higher employment protection. Measures of job flows—for example, measures of job destruction—appear however rather similar across countries. The puzzle is an important one to resolve: Worker flows suggest a strong adverse impact of employment protection on reallocation; job flows do not.

There are conceptually three reasons why the series on flows out of employment and the series for job creation may differ:

- Measurement errors. Worker and job flows are typically constructed from different sources; one source may be more reliable than the other. Also, because of differences in data construction, comparisons across countries may be misleading. While, indeed, comparisons across countries are often difficult, this line does not appear to be the key to solving the puzzle.
- Quits by workers. Such quits will show in worker flows, but if firms quickly replace the workers who have quit, will not show up in changes in employment levels of firms, and thus will not show up in job destruction. Based on a comparison of Portugal and the United States (a pair of countries chosen both for the difference in their labor markets, and the quality and comparability of their data), this appears to be relevant. One hypothesis is that to the extent that employment protection leads to long unemployment duration, it also makes employed workers reluctant to quit and look for another job, leading to lower quits.

- Differences in time intervals. Measures of job creation are typically constructed by looking at employment changes over a year. Measures of worker flows are often constructed at quarterly or monthly frequencies. Thus, transitory movements in firms' employment levels, movements reversed over the course of the year will show up in (say, monthly) worker flows, not in (say, annual) job flows. This indeed seems to be also part of the explanation. Firms in countries with high employment protection appear to smooth employment more, to reduce expected transitory movements in employment.

If this is true, this has an important implication. It suggests that employment protection reduces transitory movements in employment. But it may not stand in the way of low-frequency reallocation, the kind of reallocation required by the process of structural change associated with growth.

These hypotheses are still tentative, and the subject of current research (for further discussion and other hypotheses, see for example Bertola and Rogerson [1997], and Boeri [1999]) But they indicate that the link between employment protection and reallocation is more complex than it looks at first glance.

The other puzzle is a macroeconomic one. One would expect higher employment protection to lead to a slower and weaker response of aggregate employment to fluctuations in aggregate output. While this relation seems to hold roughly across countries, there is a number of exceptions. One striking such exception is Spain, one of the countries with the highest indexes of employment protection, where the response of aggregate employment to aggregate output is both strong and fast, stronger and faster for example than in the United States. (This is true even for the time period when temporary contracts played a much smaller role in Spain than they do today. Bentolila and Blanchard [1990].) We know of no good explanation for this

puzzle.

### 1.3 *Correlations versus causality*

The cross country relation between employment protection and worker flows or unemployment duration, is suggestive of causality, but is hardly conclusive.

It is easy to think of other labor market institutions that may be correlated with employment protection and also affect flows and duration, yielding spurious correlations between protection and flows and duration. In that respect, it is reassuring that, while we looked earlier at simple correlations and bivariate regressions, the empirical evidence suggests that the same results apply to partial correlations and multivariate regressions: Controlling for a number of other labor market institutions, such as the generosity of unemployment insurance systems or the nature of collective bargaining, higher employment protection still appears to affect flows negatively, and unemployment duration positively.<sup>5</sup> But even this evidence can easily be challenged: The other relevant institutions may be poorly measured, or not included in the regressions.

And labor market institutions, including employment protection, are not exogenous. It is also easy to think of factors which might lead to both higher employment protection and low worker flows, without implying a causal relation from protection to flows (Think for example of a poorly developed mortgage market or high turnover taxes on housing, leading to low turnover in the housing market, low labor mobility, and a political demand for employment protection).

More conclusive evidence can only be obtained by observing the effects of changes in employment protection over time and space. Here, and somewhat ironically, most of the available evidence comes from the United States. Iron-

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<sup>5</sup>See for example Nickell [1997].

ically, because the United States is often thought to be the country with no employment protection. But, while, indeed, “employment at will” remains largely the rule and administrative restrictions on layoffs are minimal (for further discussion, see Autor et al. [2002]), the “experience rating” system implies that firms pay a large part of the the cost of the unemployment benefits received by the workers they lay off.<sup>6</sup> And because the design of the system is left ot each state, there are substantial variations both across states and across time.<sup>7</sup> These variations have been exploited by a number of researchers to obtain estimates of the effects of changes in the contribution rate on various dimensions of the labor market.<sup>8</sup>

One must be careful about the lessons one can draw from these empirical studies for the design of employment protection at the level of a country. Increasing the contribution rate in one U.S. state but not in others, under conditions of high labor mobility across states, is likely to have very different implications for wages, flows, and unemployment than would increasing the

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<sup>6</sup>For a review of the U.S. experience rating system and its potential implications for France, see Margolis and Fougere [1999].

<sup>7</sup>Variations over states: In 1996, contribution rates (conceptually the tax payment by the firm to the state associated with the payment of one dollar of benefits paid by the state to a worker laid off by the firm) ranged from 8% in North Carolina to 86% in the state of New York. Variations over time: In 1984, the state of Washington moved from a zero contribution rate to a contribution rate of 50%.

<sup>8</sup>In another ironic twist (relative to the spirit of the debate on employment protection in Europe), this line of research often starts from the presumption that increasing the contribution rate to one—in other words, increasing employment protections— would be desirable. The argument is that this would lead firms to fully take into account the social costs of unemployment. As we shall see, this argument is incomplete at best, as it does not take into account the effects on profit and job creation.

contribution rate in all U.S. states at once (the type of change we want to think about when thinking about reform in a country). Nevertheless, some results come out relatively clearly, and are of direct relevance for us. In particular, a higher contribution rate clearly leads to a decrease in layoff rates. For example, estimates from Anderson and Meyer [1998], based on the 1984 change for the state of Washington, imply that an increase in the contribution rate from zero to one would have decreased the layoff rate by 10% to 33%. Other relevant findings are that a higher contribution rate decreases seasonal fluctuations in employment (for a review, see Baicker et al. [1997]), and that a higher contribution rate increases the use of temporary help services by firms (Autor [2001]).

#### *1.4 The effect of recent reforms.*

Over the past 20 years, many European governments have attempted to reduce employment protection at the margin, by allowing firms, under specific conditions, to offer contracts with more limited employment protection. These contracts are typically of short maximum duration, with restrictions on renewals, on what type of worker or what type of job they can be used for. In France, these contracts are known as CDD (“contrats à durée déterminée,” fixed duration contracts), in contrast to the regular contracts, known as CDI (“contrats à durée indéterminée”, contracts of indeterminate duration), and now account for 70% of new hires and 11% of employment (46% of employment for the 20 to 24 year olds).

The evidence is that the introduction of these temporary contracts considerably modifies the nature of the labor market.<sup>9</sup> It leads to higher

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<sup>9</sup>See the symposium on this topic in the *Economic Journal*, 2002, including Dolado et al. [2002] for Spain (the country with the highest proportion of workers on fixed duration contracts), and Blanchard and Landier [2002] for France.

turnover for those eligible for such contracts. The effects on both unemployment and estimates of welfare however are far from obvious. Much of the turnover appears to reflect a succession of low productivity, often dead end, jobs, and an increasingly dual labor market. Perhaps the main problem is that firms are very reluctant to keep workers at the end of their CDD: Even if the worker proves to be good, it may be more attractive for firms to let him go and hire a new worker on a CDD, rather than keeping the existing worker under a CDI.

## 2 Designing employment protection. A benchmark.

In thinking about the issues, it is useful to start from a simple benchmark. It turns out that, in that benchmark, firms willingly offer employment protection, and provide insurance to workers at no cost in terms of economic efficiency. In that benchmark also, there is no reason for the government to mandate employment protection: Firms provide the right amount on their own. This benchmark is obviously not realistic. The questions will then be: Why not? And, if so, should/can the state do something about it?

First, the benchmark.

### 2.1 *The benchmark economy*

Think of the following economy.<sup>10</sup>

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<sup>10</sup>To think about the arguments in this and the next four sections, we have found it useful to develop a formal model, which will be available in a separate paper. The presentation of the formal model parallels the development of the report, with the introduction of the benchmark, and then the introduction of a number of imperfections. (We are still some way from an integrated model, and some of the arguments presented in the text go beyond what we have derived formally). A sketch of the benchmark model and some of the extensions is presented in the appendix to this report.

- Firms hire workers.
- After a worker has been hired, the firm learns about the productivity of the worker (that productivity may depend on the quality of the match between the worker and the firm, or on the demand for the firm's product, and so on)
- The firm may then want to keep the worker and produce, or lay the worker off. If the worker is laid off, he becomes unemployed.
- Absent any additional income, the utility of the worker when unemployed, is very low: Put another way, and the terminology will be useful below, absent additional income, the "wage equivalent of being unemployed" is very low.
- Workers are risk averse. Firms are risk neutral.
- There are no information problems, so everything is observable and contractable.

Under these conditions, firms will offer the following contract to workers:

- They will fully insure workers. They will do so by paying a constant wage to the workers they keep, and a severance payment to the workers they lay off.

The severance payment will be such that the severance pay is equal to the wage, minus the wage equivalent of being unemployed. Workers will therefore have the same level of utility, whether or not they are employed or unemployed.

- They will lay workers off when productivity is lower than the wage equivalent of being unemployed.

This is clearly the efficient rule for layoffs: From an efficiency point of view, workers should be kept on only if their productivity is higher than what the wage equivalent of being unemployed.

And firms do not need to commit to do so, because they fully internalize the cost of a layoff for workers. Given the wage and the severance pay, ex-post profit maximization leads them to lay a worker off only if productivity is less than the net labor cost, that is less than the wage minus severance pay, equivalently if productivity is less than the wage equivalent of being unemployed. But this is exactly the same as the efficiency condition above.

In short: Severance pay will be used to fully insure workers. And its presence will lead firms to take efficient separation decisions.

- Knowing that they will receive severance payments if they are laid off will lead workers to accept a lower wage in exchange. And because workers are risk averse, the provision of insurance by firms will decrease their overall expected labor cost. Thus, firms will be eager to offer severance payments: this increases their expected profit.

In that economy, there will be substantial employment protection. It will take the form of severance payments by firms to laid off workers, sufficient to insure them against the loss of utility if unemployed. But, in that economy also, there will be no need for the government to mandate employment protection: Firms will provide it willingly, and in the right amount.<sup>11</sup>

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<sup>11</sup>It may be useful here to refer to a old line of research in labor economics known as “implicit contracts” (in particular Azariadis [], Akerlof and Miyazaki [1980]). That line focused on the optimal contract between risk neutral and risk averse workers, and derived very different conclusions from those stated here. In particular, one of the results was that firms should provide insurance by reducing layoffs, by keeping workers employed beyond

Why don't we observe anything like the outcome predicted by this benchmark? Why are firms reluctant to offer severance payments? <sup>12</sup> Why does the state feel it has to impose employment protection? Obviously, because many of the assumptions underlying the benchmark are not satisfied in reality.

A first, and rather obvious, issue is that, even if firms were willing to provide such insurance to laid off workers, they may not be able to. We take this issue up in the rest of this section, and leave a discussion of other deviations to the following sections.

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the point where their marginal product was equal to the reservation wage if unemployed (an idea often found in popular debates about employment protection). This conclusion however was the result of the assumption that firms could not pay severance payments. In that case, indeed, the only way firms can provide some insurance to workers is through employment. But firms clearly can pay severance payments. In this case, it is more efficient for them to provide insurance through severance payments than through employment.

<sup>12</sup>There are examples of firms voluntarily offering severance payments to some of their workers: From CEOs and their golden parachutes, to university professors and tenure, to generous severance packages for some white collar workers. In many of these cases, considerations other than insurance are clearly central in explaining severance payments. Golden parachutes often result from the capture of compensation committees, or the desire by boards to give incentives to CEOs not to resist takeovers. Tenure is intended to guarantee independence for researchers. Severance packages are also often designed to give incentives to workers to invest in firm specific skills. One may argue that the absence of such voluntary provisions for most blue collar worker contracts simply reflects the fact that the state has mandated too much employment protection already. But history shows that, before such protection was in place, severance payments were typically not very widespread nor very generous.

## 2.2 *Introducing an unemployment agency*

To insure workers, firms must be able to assess the utility loss from unemployment. This is not easy:

- As of the time of layoff, this loss is a random variable: The outcome of search is uncertain, and the worker does not know how long he is going to be unemployed. If the firm were to make a one-time severance payment to offset that loss, this one-time payment would do a poor job of insuring the laid off worker.
- If the firm decides instead to pay the laid off worker over time, contingent on his unemployment status, then many other issues arise: The difficulty for the firm to actually track the worker, and determine whether he is still unemployed or has found another job; the difficulty in monitoring his search effort and making sure that he is indeed looking for another job.
- Rather obviously, individual firms cannot monitor laid off workers well enough to provide them with adequate insurance. The role of monitoring unemployment status and search intensity must be therefore delegated to an agency, private or public.

The state, given its existing administrative structure, is likely to be in the best position to do the monitoring, and to administer the payment of unemployment benefits, either alone or in conjunction with the private sector.<sup>13</sup>

So, go back to our benchmark, but now suppose that an agency is put in charge of monitoring and distributing unemployment benefits to the unemployed. Suppose further, and for the time being, that the agency can

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<sup>13</sup>This is indeed the French solution, with the combination of the state run ANPE and the tripartite (government, business organizations, and unions) UNEDIC-ASSEDIC.

perfectly monitor and thus provide unemployment insurance at no cost in terms of search intensity of the unemployed. How will this change the outcome relative to the benchmark?

The answer is: Not much. Firms, when they lay a worker off, will make unemployment contributions to the agency —payments equal to the expected value of the unemployment benefits to be paid to the laid off worker, or payments over time corresponding to the unemployment benefits actually paid to the laid off worker. The agency in turn will monitor and give unemployment benefits to the laid off workers. There will be a sharper distinction between unemployment contributions (paid by firms to the agency) and unemployment benefits (paid by the agency to workers). Otherwise, the allocation will be the same. Workers will be fully insured. Firms, because of the unemployment contributions they have to make to the agency in case of layoff, will choose an efficient level of separations. There will be no trade-off between insurance and efficiency.

Will firms be happy to have this system of employment protection cum unemployment benefits? The answer is, as before, yes. While firms are now paying unemployment contributions, this additional cost will be more than offset by the reduction in the wage that the risk averse workers are willing to accept given the provision of insurance. Obviously, each firm would rather have the agency pay the unemployment benefits, and itself not have to pay unemployment contributions. But, as a whole, firms will benefit from and thus be in favor of the overall system. This suggests that we have to look at other deviations of the benchmark. But before we do so, we take two related issues.

- What will happen if the agency cannot fully solve the monitoring problem?

Recent reforms of the unemployment system, such as the PARE in France, have had as their goal is to combine more generous and longer

lasting unemployment benefits with stronger incentives for the unemployed to accept jobs if offered by the unemployment agency. They clearly go in the right direction. They potentially offer better tailored insurance: If truly no jobs are available, then the unemployed continue to receive unemployment benefits.<sup>14</sup> But realistically, even the best designed systems cannot fully eliminate monitoring issues, and in this case, less than full insurance is optimal: There has to be some utility cost to unemployment to motivate search. The optimal employment protection/unemployment benefits system is then more complex to characterize. The general architecture is the same, but the details are different:

The unemployment agency pays unemployment benefits to workers, providing partial insurance. But the lower the feasible level of insurance, the higher the costs that layoffs impose on laid off workers. To lead firms to take into account these costs, unemployment contributions by firms to the agency must now exceed the unemployment benefits paid to workers: The optimal contribution rate is now higher than one. The more stringent the constraints on the amount of insurance the agency can provide, the larger the deviation from the benchmark.

- Should all the payments from firms be to the state, or can some of the payments be made directly to workers in the form of severance payments?

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<sup>14</sup>The implementation of the PARE has shown a serious problem with its design. Unemployment benefits have become more generous in their duration. But the pressure by the unemployment agency on the unemployed to take jobs if offered has been limited: One reason may be that employees of the agency may have little incentive to put such pressure on the unemployed. This issue is important in its own right, but also a reminder of the pitfalls of reforms, even when well intended.

A system in which all payments are made from firms to the state rather than to workers provides employment protection to the workers: It makes it more expensive for firms to lay workers off, and thus reduces layoffs. But it may not look and feel like employment protection to the workers, who do not see the unemployment contributions paid by firms to the state, and do not receive payments directly from the firm. It is therefore worth asking whether some payments can be made by firms to workers directly at the time of layoff. To do so, it is useful to distinguish between the costs of “becoming unemployed” and the costs of “being unemployed.”

(1) The cost of becoming unemployed is the cost associated with losing a job, not with unemployment per se. It is a psychic cost, and while it is often ignored by economists, it plays an important role in public discussions of employment protection.<sup>15</sup> And its relevance is well documented by social psychologists.<sup>16</sup> The loss of a long held job can and often does lead to a loss of a network of workplace friends, health deterioration, a loss of self esteem.

(2) The cost of being unemployed is the financial and psychic cost from remaining unemployed until one has found another job.

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<sup>15</sup>Two quotes from judges at the Prud’hommes, the French labor courts: “Les employeurs peinent á comprendre qu’il n’y a pas que la perte financière. Psychologiquement, un licenciement c’est très dur. Pour la famille, pour la santé. C’est toute une vie qu’on touche” and “Le travail, c’est une reconnaissance. Il y a des gens qui mettent toute leur vie dedans. Et d’un seul coup, comme ca, on leur prend tout.” Liberation Dec 2, 2002. Of course, such quotes do not disentangle the costs of becoming unemployed from the cost of being unemployed, but they suggest that the former are not negligible.

<sup>16</sup>For example, Price [1992], and studies at the Michigan Prevention Research Center.

For our purposes, the main difference between the two costs is that the first is incurred at the time of the separation, and thus can be offset (in terms of utility) by a one-time payment from the firm to the worker. The second, instead, is random at the time of the layoff. This suggests a natural division of tasks: Severance payments from firms to workers, at the time of the layoff, to compensate them for the cost of becoming unemployed. And unemployment benefits from the agency to workers, paid over time, and financed by payments from firms to the agency, to compensate workers for the cost of being unemployed.

In that light, how should the schedule of severance payments look like? The psychic loss appears to be primarily a function of time in the job of seniority. It is likely to be low for workers with low seniority, and to become high only with high seniority.<sup>17</sup> This suggests an increasing and convex schedule of severance payments as a function of seniority.<sup>18</sup>

### 3 Risk aversion and liquidity constraints

The assumption made in our benchmark that firms are risk neutral and can fully insure workers (with the help of an agency to run the unemployment benefit system, and subject to the discussion we had about observability and incentives to search when unemployed) is clearly much too strong.

It is based on the idea that, if firms are widely held, most of the risk faced

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<sup>17</sup>A fact consistent with this hypothesis (but also with a number of others): In France, there are four times as many quits as layoffs for workers with 2 to 9 years of seniority, but four times as many layoffs than quits for workers with 10 or more years of seniority (Goux and Maurin [2000], Table A1.)

<sup>18</sup>The schedule cannot however be too steep; otherwise it would give incentives for firms to layoff workers at mid-career, i.e. when the severance payments associated with laying them off are still relatively low.

by a firm is diversifiable. But while most of the variations faced by firms are idiosyncratic, some are not. And most small firms are not widely held. Many are privately held, and their owners' wealth is not much diversified. So, the assumption of risk neutrality is, especially for small firms, too strong.

Even if we were to assume that firms are risk neutral, the assumption that they have deep pockets, and thus can pay workers in bad states, is also too strong. Clearly a firm which has gone bankrupt may not be able to pay severance. But short of this extreme case, corporate finance suggests that the shadow price of internal funds to firms is likely to be a decreasing function of the state: The shadow price of severance payments to workers or payments to the state in bad states, even if feasible, may be high: The funds may be better used elsewhere.

Let us take both issues in turn.

### 3.1 *Risk averse firms*

What happens, in our benchmark, if we assume that firms are risk averse rather than risk neutral? (Ignore the potential role of the state in providing insurance for the time being.) Assume also that labor contracts can be indexed to the level of productivity.

- Not surprisingly, firms will no longer be willing to fully insure workers, either on the job, or off the job, if laid off: Rather than being constant, the wage will be a decreasing function of productivity. And severance pay will be lower. So there will be limited insurance.
- Layoff decisions will however still be efficient. Layoffs will take place only when productivity is less than the net labor cost, the wage minus severance pay.
- In short, there will be less insurance, but firms will be happy to provide it. Severance pay will be lower, but positive. It will not interfere with

efficient destruction.

What we just described assumed that contracts were just between firms and workers, with the state playing no role. But the state has a potential role to play here. The state can clearly diversify the idiosyncratic risk faced by firms. And, within limits, it has the ability to tap the future income of current and future generations, and thereby is able to smooth some of the macroeconomic risk.

To see what this implies, go back to our benchmark case, assume that firms are risk averse, but now assume the state (think of the unemployment agency, introduced earlier) can act as a risk neutral insurance company. Firms make unemployment contributions to the agency. The agency pays unemployment benefits to the workers. Continue to assume, for simplicity, that productivity is observable and contractable by all parties, including the government. How will things look like in this case?

- Not surprisingly (given the presence of a risk neutral agent, the state), the workers will be fully insured, and receive exactly the same payments as in the benchmark case: They will receive a constant wage from firms when employed, and unemployment benefits from the agency when laid off.

What is more interesting for our purposes is the form of the schedule of unemployment contributions by firms:

- Unemployment contributions will be high in good states (high productivity), low in bad states. (This is obviously how the state is playing its insurance role vis a vis firms).
- The expected payments to the agency will depend on the threshold productivity chosen by the firm—the value of productivity below which it lays off a worker. The higher the threshold, the higher the probability that the firm will layoff a worker, the higher the average unem-

ployment contribution the firm will have to pay. Indeed, the expected contribution rate, the ratio of expected contributions paid by the firm to expected benefits paid to the workers who are laid off, is equal to one. This is what leads firms to take into account the social costs of unemployment and choose the efficient threshold for layoffs.

These results are important as they suggest divorcing the timing of unemployment contributions from the timing of layoffs. But they also raise two important issues:

- Why is the state in a special position to provide insurance to the firms? Why not, for example, have the state require full payments from firms at the time of layoffs, and have the private sector provide the required funds to the firms? Even if firms are privately held and have limited access to explicit insurance, can't banks for example extend sufficiently large lines of credit to firms to allow them to make the required payments to the state?

The answer is probably twofold. First, the state is probably in a better position to diversify not only the idiosyncratic risk, but also part of the macroeconomic risk.<sup>19</sup> And, second, as we discussed earlier, the state has to be involved in the running, alone or in combination with the private sector, of the system of unemployment benefits. It already has much of the information that would be needed by the private sector to offer that insurance.

- How can the insurance contract between firms and the state we describe earlier be actually implemented? In that contract, the level of

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<sup>19</sup>The argument can however be made that the state could provide these funds to banks and insurance companies in downturns, and let them insure firms against macroeconomic shocks.

contributions depends on the probability of layoff. This probability is not directly observable. This suggests making contributions a function of the layoff history of the firm. We shall return to this issue below, after we have discussed issues of liquidity.

### 3.2 *Liquidity constraints*

Suppose firms face some form of liquidity constraints. To be more specific, suppose that the shadow cost of paying one more dollar—either to workers or to the unemployment agency—is decreasing in their net cash flow. In less pedantic terms, suppose that, in bad states, it is very costly, indeed perhaps impossible, for firms to make substantial severance payments to workers or unemployment contributions to the state.

Then, we can go very much through the same steps as we just did for the case of risk aversion, with very much the same caveats.

Taking liquidity constraints as given, it is clearly better if firms make unemployment contributions in good states—when the shadow cost of such payments is relatively low—rather than in the states in which they layoff workers—when the shadow cost of these payments is presumably fairly high. So as before, the timing of unemployment contributions should no longer be the same as the timing of layoffs.

This conclusion however raises the same two issues as before. The first question, the comparative advantage of the state over the private sector in providing insurance, is even more central here:

Presumably liquidity constraints are not exogenous. Following a corporate finance approach, we can think of the firm as composed of both entrepreneurs and investors (see for example Tirole [2001]). The entrepreneurs can run the firm, but do not have enough funds to operate on their own. The investors provide the funds, but cannot fully monitor the entrepreneurs. In that context, we can think of the extent of liquidity constraints as en-

ogenous, as they are influenced by the contract between investors and entrepreneurs. Suppose for example that investors want to leave the entrepreneurs with a given amount of net cash flow in each state. If the state asks for full payments to the agency at the time layoffs take place, investors will provide more funds to the firm in those states, so as to leave net cash flow unchanged. In this case, the exact timing of payments to the unemployment agency will not matter (provided, of course, that delays in payments do not allow the firm to escape more easily its liabilities to the fund): Whatever schedule of payments is chosen will be offset by investors to leave the same cash flow in each state.

In short: To determine the optimal schedule of payments by firms, it may be misleading to take liquidity constraints as given. These are likely to adjust, at least in part, to the schedule of payments imposed on firms.

### *3.3 Bonus-malus systems, and experience rating*

Take it as a given that it is desirable to separate the timing of unemployment contributions from the timing of layoffs, and that payments to the agency should depend on the probability of a layoff: Firms which, for some reason (a different distribution of productivity shocks for example), have a higher probability of laying workers off should make higher contributions.

One obvious problem in practice is that this probability is not observable. A natural solution is to base the payments of the firms on the behavior of the firm in the past. This is the rationale for so called “experience rated” systems of unemployment contributions used in particular in the United States.

The systems vary across U.S. states. It is useful to describe the most commonly used system, called the “reserve ratio” system of unemployment contributions. Leaving aside the many complicated details, its principle is simple:

Each firm has a running balance with the state unemployment agency, with contributions by the firm to the fund on one side, and benefits paid by the agency to the workers laid off by the firm on the other. Once a year, the state computes the net outstanding balance, and requires the firm to pay some proportion of this outstanding balance over the following year. The factor of proportionality depends both on the net balance of the firm, and the net balance of the state fund as a whole. This system has two implications:

- Ignoring discounting, and assuming that firms do not go bankrupt and do not hit the various ceilings that limit contributions (all considerations being relevant in practice), firms eventually pay the full cost of unemployment benefits for the workers they lay off—the contribution rate is equal to one.
- The factor of proportionality determines how the timing of payments depends on current and past layoffs. If the factor of proportionality is equal to one, so firms are asked to return to zero balance each year, then payments are closely related to current (or more precisely last year's) layoffs. The lower the factor of proportionality, the more contributions depend on past layoffs.

How should one think about the choice of the factor of proportionality? If firms are operating in a stable (ergodic, to be pedantic) environment, going sometimes through good times, sometimes through bad times, then letting the factor of proportionality be close to zero will make firms contributions depend on its mean observed layoff rate in the past, which is also equal to the probability of a layoff in the future. If, however, as is more likely, the underlying probability changes over time, then a higher factor of proportionality, giving more weight to recent layoffs, will be closer to the underlying current probability.

What if the environment is far from ergodic, if some firms go from bad to worse, if some firms actually go bankrupt? It is clear that, in this case, firms that go bankrupt should owe the state the remaining balance, and the state should be among the senior creditors. As the recent example of MetalEurop shows, this does not guarantee however that the firm will have enough assets left to pay its contributions to the agency—or the severance payments it owes to its workers.<sup>20</sup>

Should firms then be asked to put up collateral in the form of Treasury notes for example, or to secure bank guarantees? Such collateral does not come for free, as it reduces the ability of firms to raise financing for other uses. One advantage however is that it delegates to the guarantors (in the case of guarantees) the assessment of the firm's risk of layoffs and the monitoring of the assets of the firms (so the firm is not an empty shell when it declares bankruptcy).

We are still not where we want to be: In the extension of the benchmark we just considered, firms will still be happy to offer employment protection, in the form of both payments to laid-off workers, and contributions to the state. The reason is the same as before: These payments lead to a decrease in the risk faced by workers, and thus allow firms to decrease their overall expected labor cost (wages, plus payments to the state). Collectively, firms like this system of employment protection cum unemployment insurance. This does not however seem to be the case in practice. One reason, we believe, is the second important deviation from the benchmark, ex-post wage setting.

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<sup>20</sup>Our understanding from Table 4 in Margolis and Fougere [1999] is that the proportion of contributions due but not paid because of bankruptcy is under 10% in most U.S. states, with some exceptions (for example, California with 13%.)

## 4 Insurance, employment protection, and wage determination

We have assumed so far that wages were set at the time of hiring. So, to the extent that firms offered insurance in case of layoff, risk averse workers were willing to accept a lower wage on the job, and willing to accept lower expected income overall.

This may not be the right view of wage setting. True, initial wages are set at the time of hire. But these are only set for a short period of time, at which point they may be renegotiated. At that point, wages will reflect the bargaining position of each side. This has important implications.

### 4.1 *Ex-post wage setting, and bonding*

Consider two firms:

- One offers severance payments to its workers, makes unemployment contributions to the state, and the workers it lays off receive unemployment benefits. The other does not offer severance, does not make unemployment contributions, and the workers it lays off do not receive unemployment benefits.

If wages are set at the time of hiring, the first firm will be able to offer lower wages, and indeed, because workers are risk averse and value the insurance the firm provides, it will have lower expected labor costs than the second.

- Now suppose that workers can renegotiate wages after hiring. Then, workers in the first firm will be in a much stronger bargaining position than in the second. If they find themselves unemployed, they will receive unemployment benefits. And, if the firm wants to lay them off, the firm will have to pay severance and contributions to the state.

Thus, the firm that provides insurance will now have higher wages and by implication expected labor costs than the second.

- Given the choice, firms will therefore not be eager to offer insurance. And, if the state puts in place a schedule of severance payments, a system of unemployment contributions, and a system of unemployment benefits, along the lines we described earlier, all three components will lead to higher wages, and thus to higher expected costs for firms.

This view of wage setting may itself be too extreme. The central issue here is known in labor economics as “bonding”.

Suppose firms could extract “bonds” from workers—that is payments from workers at the time of hiring to compensate for the increase in wages they know will take place after hiring. Firms could then eliminate the effects of ex-post bargaining on cost.<sup>21</sup> If bonding was prevalent, we would be back to the benchmark model or its earlier extensions: Firms would be willing to pay severance to the workers or make payments to the state as under our benchmark.<sup>22</sup> Whatever increase in cost this implied, they could recoup through the receipt of a sufficiently large bond at the time of hiring.

The obvious remark at this point is that we just do not observe “naked” bonding: Workers do not pay firms at the time of hiring. Bonding however exists in more disguised forms: Some workers accept to be paid a low initial wage, in effect paying a bond early in their job tenure, to partly compensate the firm for the higher wages later in their job tenure. Yet, in practice, the room for bonding is limited, and so the conclusion must be that insurance

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<sup>21</sup>For an early discussion of the role and the scope of bonding in the context of employment protection, see Lazear [1990].

<sup>22</sup>With a small difference relative to our benchmark. Because workers have some bargaining power, the wage would vary with productivity, so workers would not have full income insurance while on the job.

cum employment protection is more likely to increase than to decrease labor costs.<sup>23</sup>

This leads then to the following trade-off in the choice of the contribution rate by the state (leave aside direct severance payments for the moment).

- A contribution rate equal to one, i.e. a system that makes firms pay for the full cost of an additional layoff, will lead firms to take the right decision at the destruction margin: Layoffs will take place only when the productivity of a job is less than the wage equivalent of being unemployed.

But this high contribution rate will also increase the bargaining power of workers, and thus increase the wage. This will increase the overall cost of labor, both directly and indirectly, and will adversely affect job creation. How much will depend on the amount of effective bonding.

- A contribution rate less than one, will lead firms, in contrast, to destroy too many jobs, and lead to too many layoffs. It will however lead to a smaller increase in the overall cost of labor, both directly and indirectly (through the effect on wages), and thus have a smaller adverse effect on employment creation.<sup>24</sup>

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<sup>23</sup>Think for example of public employees. Given the high degree of employment protection and the typically generous retirement benefits, many are willing to become public employees even if wages are lower than in the private sector. But, because they cannot be laid off, except at great cost, public employees are in a very strong bargaining position, and sometimes use it to extract higher wages or other advantages from the state.

<sup>24</sup>There is a set of taxes and transfers which can achieve both efficient destruction and efficient creation. A contribution rate of one, so there is no distortion at the destruction margin. A subsidy to new jobs to eliminate the adverse effects of the increase in cost on

Parallel arguments apply to the direct severance payments part (but for one difference: In the case of the contribution rate, we were looking at the effects of varying firm contributions, keeping unemployment benefits the same. Here, by the very nature of direct severance payments, we are changing both the firm's contributions, and the benefits received by workers). The closer these payments are to fully compensating for the psychic costs to workers of being laid off, the less distorted the destruction decision. But the higher is then the cost of labor, both directly and indirectly, and so the more distorted is the creation margin.

In short, the more firms are made to pay for the expected cost of unemployment benefits, the smaller the distortion will be at the destruction margin, but the larger the distortion will be at the creation margin.<sup>25</sup>

- Because of these distortions, there is now a trade off between insurance and efficiency. Even if it were feasible (there was no problem in monitoring the search behavior of the unemployed), it is no longer optimal to provide full insurance to laid off workers.
- And the optimal contribution rate will be less than one. It will depend on factors such as the scope for bonding, the distribution of shocks to productivity, and the elasticity of the supply of capital to the profit rate:

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job creation (see for example Mortensen and Pissarides [2001]) But this raises in turn the issue of how these job subsidies themselves are financed (they may have to be very large). So our discussion here is predicated on the absence of job subsidies.

<sup>25</sup>This is why the line of argument used in the context of experience rating to argue that the contribution rate should be equal to one is misleading. Such a rate removes distortions at the destruction margin, but can have a large adverse effect on creation.

The higher the scope for bonding, the smaller the adverse effect on creation, the higher the optimal contribution rate.

The higher the bargaining power of workers, or the lower the commitment ability of firms, the lower the optimal contribution rate.

The more dispersed the shocks to productivity, the smaller the adverse effect of a low contribution rate on the destruction margin, and so the lower the optimal contribution rate.

The more inelastic job creation, the higher the optimal contribution rate.<sup>26</sup>

This is not a clean, simple, characterization, but it is probably the right one.<sup>27</sup>

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<sup>26</sup>A case often analyzed in the research on labor market equilibrium is the case of zero bonding and a fully elastic supply of capital (see, for example, Pissarides [2000]). In that case, a strong—and depressing—result emerges. The “pain of unemployment”, more specifically the difference in the value of being employed over the value of being unemployed, remains constant: What the unemployed gain relative to the employed through, for example, higher unemployment benefits when unemployed, they must lose in equilibrium through higher unemployment duration. (Otherwise, wages would be too high, profits too low, and firms would not create jobs). The result is extreme, but an important warning nevertheless that general equilibrium effects can lead to effects quite different for those intended by the policy maker.

<sup>27</sup>Can the optimal contribution rate actually be zero (or even negative) ? To answer that question, one must be explicit on what other taxes are used to finance the payment of unemployment benefits. If for example, we assume that unemployment benefits are either financed through a tax proportional to layoffs or a fixed rate payroll tax (i.e. a tax, such as the tax currently used in France, proportional to payroll, not to layoffs), then it may be that the optimal combination is indeed not to use the layoff tax at all, and rely entirely

#### *4.2 Heterogeneity of firms and workers. Modulating the contribution rate?*

Not all firms and all workers are alike. Some firms operate in more volatile goods markets, and so are more likely to have a high layoff rate. Some workers, if laid off, may be able to find a job more easily than others. What does a positive contribution rate imply for their respective fortunes?

To think about this question, first go back to our benchmark case first, in which wages are set at the time of hiring.

- In that benchmark, firms must offer the same level of utility to a given worker, otherwise the worker will not accept the job offer. Thus, firms that face more volatile demand, and thus higher layoff rates will have to make higher overall unemployment contributions and will not be able to pass those costs on to workers through lower wages. They will therefore have higher costs. This is indeed as should be given that they impose larger social costs.
- In that benchmark, if workers are substitutes in production, a worker with higher expected unemployment duration if laid off will be hired by a firm only if the total cost he imposes on the firm is the same as that for other workers. Thus, workers with worse labor market prospects, will have to accept lower wages. At those lower wages, firms will be willing to employ them.

Now turn to the case where, instead of being set ex-ante, wages are set

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on the fixed rate payroll tax (so have in effect a contribution rate of zero). The reason is that, why the fixed rate payroll tax introduces large distortions at the destruction margin, it has less of an effect on the bargaining power of workers than a layoff tax, and thus less of an effect on the wage. This second effect could dominate the first, leading to the use of the payroll tax only.

ex-post through bargaining, and the contribution rate is positive. Then:

- Then, as wages are now likely to increase rather than decrease in response to a positive contribution rate, all firms will face higher costs. But, to a first approximation, the increase in the wage will be the same across firms, so the increase in costs (relative to the benchmark) is the same at all firms. There is therefore no obvious reason why the contribution rate should thus be modulated across firms, for example, why it should be smaller for firms with high turnover rate.

An issue arises however with respect to firms operating in different labor markets. Take for example the case of a firm operating in a depressed region. If the firm is the only one around, and closes its plant, it may be very difficult for workers to find other jobs. The layoffs will have high social costs. This suggests imposing larger contributions on the firm that is laying off. But, with such large contributions, which firm will ever want to open another plant in that labor market? To the extent that the state wants to maintain employment in the region, the solution is not to modulate the contribution rate, but rather to use job creation subsidies.

- The situation is different for workers. Workers who are perceived by firms to be more risky, either in the sense of a higher probability that the worker will have to be laid off, or will remain unemployed longer if unemployed, will cost more to firms. Once they have been hired, they will be able to renegotiate the wage, and thus increase firm's costs. The increase in costs will be the larger, the higher the probability that the worker may be laid off, or the longer his or her expected unemployment duration. Knowing this however, firms will not want to hire these workers in the first place.

Thus, a positive contribution rate (in general any employment protection) will lead to discrimination by firms in the labor market. Workers

with a short labor market history, workers with poor skills, older workers may have a hard time finding jobs.

This issue of discrimination is a serious one (and it will be present in any system with employment protection and ex-post wage setting). One can think of at least two types of solutions:

Targeted hiring subsidies, but this is likely yet another layer of complexity in the employment protection system. The French experience is revealing in this respect.

Or/and a contribution rate by firms which depends on the number of layoffs, rather on than the expected or actual unemployment benefits paid by the agency to the workers laid off by the firm. This second solution does not eliminate the problem raised by different ex-ante probabilities of layoffs for different workers, but it eliminates the problem raised by different ex-ante unemployment durations for different workers.

Let us end this section with one remark, which previews our discussion of the French system of employment protection later on:

If the contribution rate is less than one, or if direct severance payments only partly compensate high seniority workers for their loss, does this mean that there should be additional, non-price, restrictions on layoffs? The answer is no: The reason why the contribution rate is less than one in the first place is to limit the effects of employment protection on job creation. If it is not desirable to have a higher contribution rate, it is, for the same reasons, not desirable to have a judge impose additional non-price restrictions. Thus, while firms may, as a result of a contribution rate less than one, layoff too much (from a social point of view), this is not a justification for additional non price restrictions, nor for judicial intervention.

## 5 Quits and layoffs

We have focused so far on adverse shocks to productivity, shocks which lead the firm to lay a worker off even if the worker does not have another job opportunity. The reason was that these are obviously the shocks where unemployment insurance and employment protection may have a role to play. But these are not the only shocks triggering separations. Workers leave for other reasons, often because they have a more attractive job opportunity elsewhere. In France today, leaving aside the separations that take place at the end of fixed duration contracts (CDD), layoffs account only for about one third of separations, quits for the remaining two thirds (Goux and Maurin [2000]).

The presence of both layoffs and quits introduces a number of issues in the design of employment protection, and these are the issues we discuss in this section.

### 5.1 *Introducing quits and layoffs*

Go back to our benchmark model. Assume now that there are two shocks that take place after a worker has been hired. First, as before, productivity is realized. Second (and simultaneously), with positive probability, the worker receives an outside job offer. Suppose, for simplicity, that if the outside job offer comes, it dominates any offer the firm can make to the worker.

There are now two reasons why there may a separation. Productivity may be low, and the worker becomes unemployed. Let's call this a layoff; it is initiated by the firm. Or, the worker may receive an outside job offer, in which case he will leave. Let's call this a quit.

If the level of productivity, and the existence of a job offer, are both observable, and if required, verifiable in court, the conclusions we reached earlier extend straightforwardly to this case. If a separation comes from low productivity, and is therefore a layoff, firms make contributions to the state,

and pay severance payments to the worker. If a separation comes from an outside job offer and is therefore a quit, it triggers neither severance payments, nor unemployment contributions by the firm, nor unemployment benefits to the worker.

The problems arise when the reason behind the separation is unobservable, or not verifiable, or worse, manipulable by firms or by workers. This generates two types of potential games, first between firms/workers and the state, second between firms and workers themselves.

### 5.2 *Games between the firms/workers and the state.*

Focus first on the payments from the firm to the state to finance unemployment benefits. And assume, for reasons we discussed in the previous section, that firms support only a proportion of these costs: the contribution rate is less than one. This opens the possibility that, for the firm and the worker taken together, each layoff may be associated with a net subsidy from the state (the firm pays less to the state than the payment of the state to the laid off worker). Thus, to the extent that firms and workers collude, they may have an incentive to call every separation a layoff.

Is this likely to be a serious issue in practice? Probably not: The parties may have neither the ability nor the incentive to collude:

- It may not be easy for the firm and the worker to collude. Collusion implies a payment from the worker to the firm, so as to offset the payment from the firm to the state. To the extent that the payment is based on future unemployment benefits or future wages received by the worker, the ability of the firm to make sure that such payments actually take place may be limited.
- The exact nature of contributions by firms to the agency matters here. If contributions by firms depend on actual unemployment benefits paid

to the workers who were laid off, then indeed firms and workers together benefit from calling a quit a layoff. Suppose instead that contributions depend (for the reasons discussed at the end of the previous section) only on the number of layoffs, or, equivalently, on the number of layoffs times the average duration of unemployment benefits. In this case, it is much less obvious that the firm and the worker together will benefit from declaring a quit to be a layoff:

Workers who quit are likely to have a shorter unemployment duration than average, and thus receive smaller unemployment benefits, than average. In particular, many of the quits are directly to another job, in which case the worker receives no unemployment benefits at all. In that case, there is no gain to the worker, and a loss to the firm in declaring it a layoff. There is no incentive for them to call the quit a layoff.

### 5.3 *Games between workers and the firm*

Assume now that the contribution rate is one, so that we can ignore the previous game between firms/workers and the state. There is another game we have to consider: Other things equal, firms would rather have a separation be called a quit and save on severance payments and unemployment contributions. Symmetrically, workers would rather have a separation be called a layoff, and receive both severance payments and unemployment benefits.

If the worker could not affect the productivity of the match, and the firm could not affect the relative attractiveness of the outside option of the worker, then there would still be no problem. Firms with a low productivity shock could not force the worker to quit. Workers with an outside job offer could not force the firm to lay them off. But, in fact, workers can affect the productivity of a match, and firms can affect the relative attractiveness of the outside option of the worker:

A worker who wants to quit but also wants to receive severance payments and unemployment benefits, can shirk and decrease the productivity of the match, leaving no choice to the firm than to lay him off. A firm that wants to lay a worker off but would rather have him quit so as to save on severance payments and unemployment contributions, can harass the worker into quitting. The stronger the stakes, that is the higher the contribution rate and the higher the severance payments, the higher the incentives to harass or to shirk.<sup>28</sup>

As in the game between firms/workers and the state we discussed earlier, there is a relevant difference between severance payments and unemployment benefits. If a worker has an outside job offer, it makes sense to shirk, so as to be laid off, and receive severance pay. But, if the worker intends to take the other job right away, shirking so as to be laid off and receiving unemployment benefits is of no value to that worker: he will not be unemployed. This has two implications: Unemployment benefits are, in that respect, less likely to lead to gaming, than severance payments. Shirking by workers may be less of an issue than harassment by firms.

Until now, in our argument, there was no reason to have courts involved in the process of separation (except for the usual reasons: Making sure that existing rules—payment of severance, advance notice, no discrimination on the basis of sex, age, physical appearance, no layoff of union representatives, and so on—that are in place are not violated.) But the issues we just discussed now create such a role. Let's turn to this.

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<sup>28</sup>Anderson and Meyer [1998] show that the 1985 increase in the contribution rate in the state of Washington led to a substantial increase in the number of denial of benefit cases brought up by firms.

#### 5.4 *The role of courts*

Under the logic of our arguments, what courts have to do is conceptually clear (if not necessarily easy to do in practice):

- If a separation has been reported as a layoff, look, if requested by the firm, at evidence of shirking by the worker. (This can take different forms, with different ways of allocating the burden of proof. A firm that does not want to pay severance payments to a worker and the payment to the state, may state that the separation is the result of misbehavior by the worker, and, if challenged by the worker, has to prove it in court).
- If a separation has been reported as a quit, look, if requested by workers, at evidence of harassment by the firm.

An important remark at this point, to which we shall return after having described the current French employment protection system, and the role of courts in that system: The role of courts described above is very different from their role in France today. In particular, in our framework, if a firm is willing to call a separation a layoff and make the associated payments to the state and to the worker, there is no justification for the court to second guess the decision of the firm, no justification for the court to intervene at all. This is not the case today.

## 6 **The contours of optimal employment protection**

The purpose of this section is simply to summarize the main results and conclusions reached in the previous four sections.

- The first point, namely the optimal design of unemployment insurance, falls outside of the scope of the report. But we must nevertheless start there.

Individual private or self insurance does not appear sufficient to insure workers against the risk of job loss and unemployment. Perhaps more could and should be done here (for example along the lines of the unemployment accounts proposal presented in Feldstein and Altman [1998]; see also Kugler [2002], for an analysis of severance payment savings accounts in Colombia). In any case, we take as given in this report that such private accounts cannot simply replace traditional unemployment systems.

This implies the need for an agency to administer unemployment insurance. This agency can be either a public agency, or a public-private partnership: Only the state has the required administrative infrastructure, to follow the unemployed, to distribute benefits, and to collect contributions for firms. A public agency may however not have all the right incentives. We see this in some of the problems emerging in the implementation of the Pare in France. The Pare represents an attempt to provide more generous (in time) unemployment benefits, in exchange for stronger incentives for the unemployed to accept jobs if such jobs are available. Agency employees do not however have strong incentives to force the unemployed to take jobs, and the preliminary evidence suggests an increase in benefits has not come with much stronger inducements for the unemployed to take jobs. A public-private agency might have stronger incentives to place the unemployed into jobs.<sup>29</sup>

- Firms should, at least partially, take on the costs of these benefits, through unemployment contributions to the agency. The reason is that layoffs impose costs to workers and to society that firms should take into account.

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<sup>29</sup>For a similar discussion in a different context, see Hart et al. [1997].

The contributions of firms should depend on the unemployment benefits, actual or expected, paid to the workers that they layoff. The contribution rate—that is the increase in taxes resulting from an additional dollar paid by the agency in benefits, should be less than one.

The reason is the presence of a trade-off between distortions at the job destruction margin (how many workers are laid off), and distortions at the job creation margin (how many workers are hired in the first place). A contribution rate of one implies that the firms fully internalize the costs associated with layoffs, and thus eliminates distortions at the destruction margin. But, under plausible assumptions about wage setting, a higher contribution rate will increase wages, increase costs, decrease profit, and thus lead to a larger distortion at the job creation margin: In other words, less jobs will be created. Given this trade-off, the contribution rate should be less than one.

A related question is whether the contribution rate should be modulated across firms or across sectors. Some sectors have much higher turnover than others. This turnover may decrease as the contribution rate is increased. But it is likely that some sectors will continue to have higher turnover and higher costs. This is however as it should be: These sectors impose higher costs on society, and this should be reflected in higher costs.

The contribution rate may however have be modulated across types of workers. Some workers have higher expected unemployment duration than others; this may be because of age, of skill, or other characteristics. Under plausible assumptions about wage setting, these workers are likely to cost more for firms to employ. This may lead firms to discriminate against workers who are, or are perceived as, likely to remain unemployed for a long time. A coarse solution is to have unemployment contributions depend not on actual or expected unemployment

benefits, but on the number of layoffs, or the number of layoffs times average duration of unemployment benefits. In this case, firms have no incentives to discriminate.

- Considerations of risk aversion on the part of firms, or liquidity constraints, suggest that it might be desirable to separate the timing of contributions paid by firms to the agency from the timing of layoffs. In bad times—which is when they are likely to be laying off—firms may have serious liquidity problems. It may be better if they make these contributions in better times.

This suggests having a system of contributions based on two elements. First the history of firms' layoffs to assess the layoff behavior of the firm in the past. Second, a rule for how to set unemployment contributions as a function of past layoffs. The reserve ratio system, used in a majority of U.S. states looks like a potential starting point.

In case of bankruptcy, unpaid outstanding balances should be counted as a liability of the firm, and the state should be a senior creditor. It may also be desirable to have these outstanding liabilities to the unemployment agency be backed by collateral or by bank guarantees. This would transfer the monitoring of the balance sheet of firms to banks, and possibly avoid an outcome such as MetalEurop.

- The previous point concentrated on contributions by firms to the state. But there is also a potential role for severance payments, payments made directly to workers.

Their function should not be to help workers finance unemployment. This is done through unemployment benefits. Their role should be more limited: It should be to compensate, at least in part, for the costs of becoming (as opposed to being) unemployed. These payments should be a (non linear) function of seniority, with low payments until

high seniority has been achieved.

Thus, on the financial side, employment protection could take two forms: Unemployment contributions to the state; while these are not directly visible to workers, they protect employment in the sense of making layoffs more expensive. And severance payments directly to workers.

- While we focused in the previous sections on the role of contributions, benefits, and severance payments, it is clear that institutions which give more time for workers to find another job (advance notice) or help them prepare and train for another job (training programs or subsidies) are highly desirable and should be part of the employment protection system.
- This takes us to the potential role of the judicial system. In addition to making sure that administrative steps are followed, the role of the judicial system should be to assess whether declared layoffs are indeed layoffs, and declared quits are quits.

To avoid having paying unemployment contributions and severance payments, firms may harass workers into quitting. In order to qualify for unemployment benefits and receive severance payments, workers may shirk so as to be laid off.

The role of the judicial system should then be twofold. If asked by workers, to look for evidence of harassment of workers if a separation has been called a quit. If asked by firms, to look for evidence of shirking by workers if the separation has been called a layoff.

The role of the judicial system should not however be to second guess the layoff decisions of firms. If a firm is willing to call a separation a layoff, follow the relevant administrative steps, and pay the associated financial costs, this decision should not be subject to judicial challenge

(except on usual and narrow grounds such as discrimination based on race or sex.)

## 7 The French employment protection system

Our purpose here is not to give an exhaustive presentation of the French employment protection system but rather to present it in such a way as to facilitate the comparison with the conclusions of the previous section.<sup>30</sup>

Much of the evolution of employment protection has been organic, the result of jurisprudential decisions, codified once in a while by new laws. While the Napoleonic code was based on the notion of “employment at will”, the law has evolved towards the notion of “social responsibility” of firms (what this means, we shall argue below, is far from clear).

This evolution has been a slow, steady, one. It accelerated, in the direction of stronger employment protection, in the 1970s and early 1980s, probably in response to the steady increase in unemployment during the period. In 1973 for example, the burden of the proof that a layoff is justified was shifted to the firm. In 1975, the state introduced the requirement of prior administrative approval for layoffs; this requirement was eliminated in 1986. Except for the extension of the scope for fixed duration contracts, not much has happened since to employment protection for regular contracts. Indeed, and here France is an outlier in Europe, the most recent law, the “Loi de Modernisation Sociale” passed in 2002, has reinforced employment protection for regular contracts.

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<sup>30</sup>Three useful sources on institutions are Pélissier et al. [2002] (which presents the legal structure), CFDT [2003] (which gives a user guide for workers) and JurisClasseur Groupe Lexis-Nexis [2002], which gives the text and interpretation of the 2002 law, called “Loi de Modernisation Sociale”.

### 7.1 *The need for motive*

The general principle today is the need for motive: The firm must have and show “real and serious cause”. Only if such a cause exists can the firm layoff a worker.

The law distinguishes between two types of layoffs:

- “Personal” (that is related to the behavior of the employee.) The firm must show that the layoff is the result of a “serious misdemeanor” (*faute serieuse*).

What “serious” means is not clearly defined (one definition, found in the reference labor law text (Pélissier et al. [2002]), is: “serious: sufficient to justify the layoff”...) It does not require malicious intent, but it must be more than a “light misdemeanor” (*faute légère*), which does not justify a layoff.

- “Economic” (that is related to the situation of the firm). The firm must show that the layoff (or layoffs) are the result of “real transformation or elimination of job(s)”.

What this exactly means is even more unclear. The ambiguity, and why this is an issue, is best shown in the recent case of layoffs at Michelin–Wolber. In July 1999, Michelin decided to layoff 451 workers at its Wolber plant, at the same time as it was announcing large benefits for the group as a whole. In February 2002, the labor tribunal concluded that the layoffs were not justified, and asked Michelin to pay a total of 10 million Euros to the 162 laid off employees who had contested the decision, or about 60,000 euros per employee. The tribunal argued that “layoffs for economic reasons cannot be justified on the basis of improving the competitiveness or the profits of the firm, but only on the basis of maintaining its competitiveness. In the case of Michelin, the purpose was to improve competitiveness, and thus the

layoffs were not justified". (The decision is being appealed).

A charitable interpretation of the court's opinion is that the firm should exercise more restraint with regards to layoffs when it is not liquidity constrained (such a conditioning would make economic sense). We doubt, though, that the courts have the ability and the information to make such business judgments.

Lest one think that this is an isolated case, very much the same thinking was embodied in the 2002 law, which stated that, only when other avenues had been exhausted, were layoffs justified. Two of the provisions of the law were subsequently thrown out by the French Supreme Court (the Conseil Constitutionnel) on the grounds that the law had moved from the principle that layoffs were justified if they were required to maintain competitiveness to the principle that layoffs were justified if they were required to maintain the survival of the firm—a much more stringent criterion.

In short, the principles that the courts must use in assessing whether layoffs are justified are extremely unclear. The fact that the firm decided that such layoffs were necessary is clearly not by itself sufficient proof for the courts.

## 7.2 *A long procedure*

On the one hand, firms that decide to layoff workers for personal or for economic reasons must follow an often long series of administrative steps. On the other hand, mandated severance payments, and the advance notice period, are relatively low.

- Firms that layoff workers must follow a carefully defined set of steps. These steps clearly have two separate purposes.

The first purpose is to give time to the workers to prepare themselves for the layoff and to facilitate their reemployment. Depending on seniority, workers get an advance notice of up to three months. Workers in large firms (1000 employees or more) are entitled to a retraining period (“congé reclassement”) of 4 to 9 months. For the part of the period that coincides with the advance notice period, workers get 100% of their salary; for the rest of the period, they get 65% of their salary, paid by the firm. Under the new unemployment insurance system, workers in smaller firms are eligible for training and help in finding jobs from the start of their advance notice (the “PARE anticipé”), not the moment they become unemployed.

The other purpose is, officially, to make sure that alternatives to the layoffs have been fully explored. The steps (which must take place before workers are notified of the layoff) grow more numerous with the size of the firm, and the size of the layoffs. For layoffs for personal reasons, the steps are typically minimal—an interview and the sending of an official letter. For layoffs for economic reasons, and for firms with more than 100 workers, the process can take up to half a year. The steps involve a number of meetings with the representatives of the workers, the presentation by the firm of a detailed “plan to save jobs” (“plan de sauvegarde de l’emploi”), the approval of the labor inspection office; they may also involve the nomination of an auditor if requested by worker representatives, and the recourse to an arbitrator if the workers’ representatives disagree with the firm’s plan.

At the end of this process, the firm can start the advance notice period, and then proceed with the layoffs. But the workers, if they disagree, can go to court. Different courts have different jurisdictions. In case of collective layoffs, workers or firms go to regular tribunals, either “Tribunaux d’instance” or “Tribunaux de grande instance”. For individual

layoffs, and most labor contract issues, the standard court is the a labor tribunal known as the “Prud’hommes”, an institution created in 1806. Each such tribunal has two elected union representatives and two elected representatives from business organizations. In case of a tie, the decisive vote is cast by a professional judge.

When a case is taken to the Prud’hommes, the first step is an attempt at arbitration (“audience de conciliation”). The second is a judgment (audience de jugement), which can decide that layoffs were not justified, and impose fines and payments to the firm. (98% of the cases are brought by workers, only 2% by firms; 80% of the cases are decided in favor of workers). The judgment can then be appealed, going first to the appeals court (“Cour d’appel”), then possibly to the highest court (“Cour de cassation”); 50% of the cases are appealed, 70% are decided in favor of workers.

The number of cases taken by the Prud’hommes has increased rapidly in the recent past, reaching close to 200,000 new cases (half of those related to layoffs) per year at the end of the 1990s. Both at regular tribunals, and at the Prud’hommes, the delays in reaching a decision can be substantial (the mean time to the first judgment at Prud’hommes is now around 10 months. The Michelin case, which went through regular tribunals and is now on appeal, is now more than 3 years old).

- If layoffs are not contested, or are found by the court to be justified, the direct financial costs to firms are relatively limited:

Contributions by firms to unemployment benefits are collected through payroll taxes. The rate is independent of independent of the history of layoffs by the firm—in other words, the contribution rate is zero.

One exception is the “contribution Delalande”, introduced in 1987, and mandating additional payments to the unemployment agency in case of layoffs of older workers. For large firms (50 employees or more),

the contribution is equal to two months for a worker 50 years old, increasing to 12 months for a worker 56 years old, and decreasing back to 6 months for a worker 59 years or more. (the number of months is halved for firms with less than 50 employees).

Mandated severance payments are relatively low, and non linear in seniority: 2/10 months per year of seniority, plus, for workers with more than 10 years, 2/15 months per year above 10 years. Thus, 2 months for a worker with 10 years seniority, 8.3 months for a worker with 30 years seniority (Estimates by Abowd and Kramarz [1997] suggest a marginal cost of a layoff to a firm of 77,000 FF to 129,000 FF (in 1992 francs, for 1992) or 5 to 7 months of average labor costs per worker in their sample. This appears higher than implied by the official schedule of severance payments. Other costs, for example (the congé reclassement for large firms), or the costs of going to court, or the setting of higher severance payments in collective bargaining agreements, may explain the difference.<sup>31</sup>)

- If layoffs are found not to be justified however, severance payments costs can be substantially higher. If for example the firm has more than 11 employees, and the worker has more than two years seniority, severance payments must be at least equal to six months.

### 7.3 *Recent reforms. CDD versus CDI.*

Since the late 1970s, successive governments have introduced fixed-term contracts, called “contrats à durée déterminée”, or CDDs. These contracts still require a severance payment, but eliminate the recourse to courts when

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<sup>31</sup>We have not been able so far to get numbers on severance payments as set in different collective bargaining agreements.

termination takes place at the end of the contract.<sup>32</sup>

A brief history of CDDs goes as follows: CDDs were introduced in 1979. With the election of a socialist government in 1981 and the passage of another law in 1982, their scope was reduced: A list of 12 conditions was drawn, and only under those conditions could firms use fixed-term contracts. In 1986, the 12 conditions were replaced by a general rule: CDDs should not be used to fill a permanent position in the firm. The current architecture dates for the most part to an agreement signed in March 1990.

Under this agreement, CDDs can be offered by firms for only one of four reasons: (1) The replacement of an employee on leave (2) Temporary increases in activity (3) Seasonal activities (4) Special contracts, aimed at facilitating employment for targeted groups, from the young to the long term unemployed. The list of special contracts has grown in the 1990s, as each government has tried to improve labor market outcomes for one group or another; some of these contracts require the firm to provide training, and many come with subsidies to firms.

CDDs are subject to a very short trial period, typically one month. They have a fixed duration, from 6 to 18 months depending on the specific contract type. Mean duration is roughly one year. They typically cannot be renewed, and, in any case, cannot be renewed beyond 24 months. If the worker is kept, he or she must then be hired on a regular contract (CDI). If the worker is not kept, he or she receives a severance payment equal to 10% of the total salary received during the life of the contract. (Note that this is a much higher percentage of salary than is the case for severance on regular contracts. But workers on CDDs cannot go to the Prud'hommes to contest the end of employment on the CDD.)

As we indicated earlier, these CDD have been very popular with firms, and represent now 70% of the flow of hires, and a bit above 10% of total

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<sup>32</sup>Poulain [1994] gives a detailed description of the rules governing CDDs.

employment.

## 8 Contours of employment protection reform in France

When we compare the existing French system of employment protection to the structure that emerges from our analysis, we believe that there is a strong case for a reform along two main lines:

- An increase in the marginal financial cost of layoffs for firms.
- A decrease in the role of courts in case of layoffs, leading to a less costly and less uncertain process for firms.

Or in more detail:

- An increase in the contribution rate of firms to the financing of unemployment insurance.

Firms at this stage finance a large part of the unemployment insurance system; but they do so through a fixed rate payroll tax, so the marginal contribution rate (through that tax) is equal to zero. Our analysis suggests the following conclusions:

This contribution rate should be positive, although less than one.

Starting from the current legislation, this implies a reduction in the payroll tax (on employers and employees), and the introduction of unemployment contributions by firms related to their layoff behavior.

The contributions need not be made at the time of layoffs. Some form of experience rating (for example along the lines of the reserve ratio system described in Section 3) appears appropriate.

To avoid discrimination by firms against workers with different labor market prospects, contributions by firms might be based on the number of layoffs, rather than on expected or actual unemployment

benefits. Age based supplementary contributions, such as for example the contribution Delalande, may generate discrimination against middle age workers, and be counterproductive.

- While shifting to a positive contribution rate will lead firms to reduce layoffs, this increase in employment protection (with payments from firms to the state, rather than directly to workers) will be less visible to workers than some of the other forms of employment protection. But it is nevertheless an increase in employment protection: It leads firms to take into account the social costs of unemployment, and decrease their layoff rate.
- Is there a role left for severance payments, direct payments to workers? We think so, but their role should be only to offset the costs of job loss (as separate from unemployment). This should be their only and limited purpose; unemployment insurance is better provided through unemployment benefits).

Given that the costs of job loss appear to be increasing and convex in seniority, this suggests the use of a schedule which is increasing and convex in seniority, with low payments until high seniority is achieved. We do not have a view as to whether the schedule currently in place has the right level and curvature. As noted earlier in the discussion of the Delalande contribution, there are constraints on how steep the schedule can be at high seniority. If it is too steep, it runs the risk of generating discrimination against middle age workers.

- In case of bankruptcy, firms should be liable for contributions and severance payments due to their workers, and the state should be a senior creditor.

As we know however from recent cases, firms have an incentive to escape those liabilities by designing complex structures of ownership

so as to benefit from limited liability. The problem will only grow more serious, if, as we argue should happen, contribution rates are increased. The problem is an old one and has given rise to an intense debate in the area of environmental liability on how to reach solvent principals. Something can be learned from this debate both about the difficulties involved in assigning liability and about the techniques that can achieve this.

If liability tracing cannot be achieved without creating large administrative costs or creating perverse incentives for the private sector, a simple alternative could be the deposit of some form of collateral: firm's assets (but state agencies have little expertise in assessing the value of this collateral and in monitoring that it is maintained adequately), bank guarantees, or financial assets (interest, dividends, and possibly the principal would be adjusted over time so as to maintain the value per worker).

- Advance notice periods combined with retraining, and other measures designed to help laid off workers find another job (such as the *congé reclassement*, the *Pare anticipé*, and the *PAP*), are highly desirable and justify delays between the layoff decision and its implementation.
- The heavy hand of the judicial process, as it now exists, seems however largely unjustified.

We do not see why an auditor, an arbitrator, the *Prud'hommes* or the other tribunals, the appeals court, and the *cour de cassation*, should be asked to second guess the decision of the firm, if the firm goes through the proper administrative steps and is willing to pay both contributions to the state and severance payments to its workers.

- The role of the tribunals should therefore be much more limited than it is today. In particular, if a firm is willing to declare a separation

a layoff and to pay the associated costs and severance payments, either the Prud'hommes or the Tribunaux d'instance should not second guess the firm's decision, and should not intervene. In the case of collective layoffs for example, the role of the courts should be to check that proper administrative steps have been taken, contributions and severance paid, not to assess whether the firm was justified in laying the workers off.

- The sharp contrast between the CDI and CDD regimes that exists today should be eliminated. The contribution rate should be the same for all layoffs.

At the short end of the seniority scale, there is however an important role for a trial period at the start of a contract, and termination during that period should not trigger either the payment of unemployment contributions or severance. The period should be long enough to allow both sides to learn about the match, but short enough to make it unprofitable for firms to use the trial period to rotate workers into a given job. At this stage, these periods are typically determined in collective bargaining agreements. There is no obvious reason why this should change.

At the long end of the seniority scale, we have argued that severance payments should be non linear in seniority, so that it is more expensive for the firm to layoff workers with high seniority. (The non linearity should however come in at much higher seniority levels than the one-year or two-year duration of fixed term contracts).

The elimination of this two-contract regime should reduce the dual nature of the labor market, which we see as a major and perverse effect of recent reforms.

- The increase in the financial marginal cost of laying off a worker, compensated by a decrease in the complexity and the uncertainty of the layoff process, might well be more attractive both to firms and to workers. The example of CDDs, which combine a higher severance pay than CDIs, with a much simpler process of termination, suggests that firms would be eager to accept such a trade off. But we believe that this need not come with a decrease in the welfare of workers, both those on CDDs, and those on CDIs. Given its goals, the current system is inefficient. Efficiency gains can make both sides better off.

As we have emphasized throughout, these are only the contours of a reform of employment protection in France. There are many issues to be explored. Leaving aside the many complex problems of implementation, two conceptual issues we want to explore further are:

Whether firms should be presented with a menu of options, for example a flat payroll tax, or a combination of a flat payroll tax and unemployment contributions with a positive contribution rate.

Whether the contribution rate should be increased at once, or only gradually over time. Average unemployment and benefit duration are very high in France today. Thus, shifting to a positive contribution rate implies a substantial increase in the marginal cost of laying off workers. Hopefully, both unemployment insurance and employment protection reform will contribute to decrease unemployment duration and thus decrease the burden on firms. It may make sense during the transition to this lower duration to have either a lower contribution rate, or a ceiling on the average duration of benefits used to compute firms' unemployment contributions.

## 9 Appendix

### 9.1 The benchmark model

Consider a worker and a firm. The firm hires the worker before his productivity is known.

The firm is risk neutral and so maximizes expected profit.

The worker is risk averse, with utility  $U(\cdot)$ . Consumption is equal to income. In the absence of any severance pay or unemployment benefits, the wage equivalent of being unemployed is  $b$ , so utility is  $U(b)$ . If employed, utility is given by  $U(w)$ . Before being hired, the worker has a reservation utility of  $\bar{U}$ .

Productivity is equal to  $y$  and is random, drawn from a uniform distribution on  $[0, 1]$ . The firm is risk neutral and so maximizes expected profit.

A contract is a choice of a wage schedule,  $w(y)$ , a severance payment  $s$ , and a threshold value  $y^*$ , where  $y^*$  is the threshold level of productivity below which the job is terminated.

The firm chooses these so as to maximize:

$$E\pi = - \int_0^{y^*} s dy + \int_{y^*}^1 (y - w(y)) dy$$

subject to:

$$\int_0^{y^*} U(b + s) dy + \int_{y^*}^1 U(w(y)) dy = \bar{U}$$

The solution is:

$$w(y) = w = b + s$$

$$U(w) = \bar{U}$$

The wage is constant across states. Severance pay is equal to the difference between the wage and the wage equivalent of being unemployed. Utility is constant

across states.

$$y^* = w - s = b$$

The threshold for layoffs is equal to the net cost of labor to the firm, which is itself equal to the wage equivalent of being unemployed.

The first equality implies that the firm can be left free to ex post profit maximize (there is no implicit contract by the firm to keep employment until the marginal product is strictly less than the cost of labor for example).

The second equality implies that the layoff decision is efficient. Only those jobs with productivity below  $b$  will be terminated.

## 9.2 Risk averse firms

Suppose instead the firm is risk averse with concave objective function  $V(\pi)$ . Then, it maximizes:

$$EV(\pi) = \int_0^{y^*} V(-s)dy + \int_{y^*}^1 V(y - w(y))dy$$

subject to the same constraints as before. The solution is then given by:

The standard equality conditions for marginal rates of substitution:

$$\frac{V'(y - w(y))}{U'(w(y))} = \lambda$$

$$\frac{V'(-s)}{U'(b + s)} = \lambda$$

The wage is an increasing function of productivity. Severance obviously is constant.

The threshold productivity level is given by:

$$y^* = w^* - s = b$$

Again, the first equality implies that firms will be happy to implement the contract ex post, and the second equality implies that the destruction decision will be efficient.

In short, firms will offer lower severance pay when they lay off, and a wage increasing in productivity when they keep the worker. This decrease in insurance (relative to the risk neutral firm case) will reduce the utility of workers. The destruction margin will however continue to be efficient.

### 9.3 Risk averse firms, and an insurance company

Now suppose that both firms and workers are risk averse, but firms can contract with an insurance company (equivalently, the state). Let payments to the insurance company when production takes place be given by  $x(y)$ , payments from the insurance company to the firm in case production does not take place, be given by  $z$ .

Then, firms maximize:

$$EV(\pi) = \int_0^{y^*} V(-s + z)dy + \int_{y^*}^1 V(y - w(y) - x(y))dy$$

subject to:

$$\int_0^{y^*} U(b + s)dy + \int_{y^*}^1 U(w(y))dy = \bar{U}$$

and:

$$\int_0^{y^*} z dy = \int_{y^*}^1 x(y) dy$$

Then, the solution is given by:

$$w(y) = w = b + s$$

$$x(y) = y - b - s - a$$

$$z = s - a$$

$$y^* = b$$

where  $a$  is a constant determined by the level of utility  $\bar{U}$ . The wage is constant, and severance pay is such that workers are fully insured.

Contributions to the insurance company are proportional to productivity. Note that for low productivity, contributions are actually negative.

Firms, in choosing  $y^*$  ex ante, take into account the effect on contributions, through the budget constraint. This leads them to choose the efficient level for the threshold  $y^*$ . (A payroll tax would not lead to efficient destruction).

Ex-post, because firms are fully insured, they receive the same level of profit in all states, and are indifferent whether or not to layoff a worker for any value of  $y$ . Thus firms must either commit to  $y^*$  ex-ante, or agree to choose it ex-post (they are indifferent).

#### 9.4 Ex post wage setting

Let  $s$  be unemployment benefits paid by the state. Let  $\lambda s$  be the payment by the firm to the state. ( $\lambda = 1$  is a full contribution rate, or is a direct severance payment by the firm to the worker.)

Assume that the state and the firms commit to  $s$  and  $\lambda s$ , but workers can renegotiate the wage if and when employed. Firms are free to decide ex-post whether to keep the worker. By the time bargaining takes place, firms cannot find another worker, and workers cannot find another job.

Assume Nash bargaining, with weight  $\beta$  and  $1 - \beta$ . The wage will then be given by:

$$w(y) = \beta(y + \lambda s) + (1 - \beta)(b + s)$$

The threshold for layoffs is given by  $y^* < w(y^*) - \lambda s$ , or equivalently:

$$y^* = b + (1 - \lambda)s$$

If  $\lambda = 1$ , then the wage for any level of output will go up by  $s$ , a very large effect on costs, and on expected profit. But there will be no distortion at the destruction margin.

If  $\lambda = 0$ , then the wage will increase by only  $(1 - \beta)s$  (which may still be quite large, as we think of  $\beta$  as around .2 or so, but must be smaller than in the previous case), but firms will destroy too much, choosing  $y^* = b + s$ .

This is the trade off described in the text. This discussion assumes no bonding, so any increase in the bargained wage leads to a an increase in cost. In the presence of bonding, the effect of the increase in the bargained wage may be partly offset by the payment of the bond, and thus have a smaller effect on job creation. This increases the optimal contribution rate.

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