

10

Employment Protection Legislation

Employment protection legislation (EPL) consists of the set of norms and procedures to be followed in case of dismissals of redundant workers. EPL imposes legal restrictions on dismissals and compensations to workers to be paid by their former employers in case of early termination of a permanent employment contract. A number of procedures are also envisaged under EPL that have to be followed in case of both individual and collective layoffs. The final decision on the legitimacy of a layoff generally depends on a court ruling. From the point of view of economic analysis it is very important to note that the firing decision is not only up to the worker and/or the employer, but also can involve the participation of a court, a third party, which can be requested to assess the legal validity of the layoff.

EPL is a multidimensional institution, although from the standpoint of economic theory it can be reduced to two key components: a tax and a transfer. The *tax component* is a monetary transfer from the employer to the worker, similar in nature to the wage. The *transfer component*, instead, is more like a tax because it corresponds to a payment to a third party, external to the worker-employer relationship. Conceptually, the transfer component of EPL consists of *severance payments* and the mandatory *advance notice period*, while the tax component consists of *trial costs* (the payments for lawyers and the like) and all the other *procedural costs*. *Severance payments* refer to a monetary transfer from the firm to the worker to be paid in case of firm-initiated separation. *Advance notice* refers to a specific period of time to be given to the worker before a firing can actually be implemented. Both the severance payment and advance notice that are part of EPL refer to the *legal minima*, that is, statutory payments and mandatory rules that apply to all employment relationships, regardless of what is established by specific labor contracts. Beyond mandatory payments, collective agreements may specify larger severance payments for firm-initiated separations. Another important dimension of EPL consists of the *administrative procedures* that have to be followed before the layoff can actually take place. In most countries the employer is often required to discuss layoff decisions with workers' representatives. Furthermore, legislative provisions often differ depending on business characteristics such as firm (or plant) size and industry of activity.

In most countries legislation distinguishes between *individual* and *collective* dismissals. Individual dismissals should be further distinguished between *economic* dismissals and *disciplinary* dismissals, with most EPL clauses applying only to the former case. Disciplinary dismissals (i.e., worker's fault dismissals) typically do not involve monetary transfers. The procedure for collective dismissals applies to large-scale firm restructuring and requires the dismissal of at least a specific proportion (often 10 percent or an absolute number, say, 50 workers, for larger firms) of the workforce. When a collective dismissal is authorized by the relevant authority, the firm can then implement large-scale dismissals with lower transfers than would be required by applying the individual layoff provisions to all workers. Yet this procedure requires a much tighter administrative burden and procedural costs, in the form of prolonged consultation with workers' representatives.

EPL bears a close relationship to unemployment benefit systems (UBs, chapter 11) in providing insurance against unemployment risk. EPL protects only those who already have a job, while UBs are typically funded by a payroll tax and protect also the unemployed (at least those with previous work experience). Insofar as EPL involves payments by the employers implementing the layoffs, it internalizes the fiscal externality associated with redundancies (the fact that workers are bound to receive unemployment benefits that are paid by all workers and employers, rather than only those responsible for the redundancies).

10.1 Measures and Cross-Country Comparisons

From a cross-country perspective, it would be better to measure EPL by evaluating the average cost of a layoff under different employment protection regimes. Unfortunately, homogeneous measures of these costs relative to the average wage do not exist for all countries. In order to carry out international comparisons of employment protection regimes, economists use the so-called method of the hierarchies of the hierarchies. This method amounts to assigning a number (say, from 1 to 6) to every country for any single feature of the protection regimes. Higher numbers denote more rigid regimes. By taking the average of the several components, a single synthetic measure of the strictness of EPL is then obtained. The synthetic indicators, originally compiled by the OECD, are now available for a relatively large set of countries. In order to obtain the overall indicator of the rigidity of a country, it is necessary to consider simultaneously (1) the rigidity of the firing regulations for individual workers under *permanent contract*, (2) this rigidity for workers under *temporary contracts*, and (3) the rigidity of *collective dismissals*. The average of these three measures gives the overall indicator.

Obviously, each of the three measures is obtained, in turn, through an average of some other submeasures. As an example, consider the indicator for individual firings of workers under permanent contracts. This number is obtained as an average of 4 subindicators: (1) the administrative procedures, (2) the length of the advance

notice period, (3) the amount of the severance payment, and (4) the severity of enforcement (the more or less important role of judges in firing disputes).

A number of caveats apply to the interpretation of the OECD EPL index. First, the OECD overall index averages a number of subindicators covering regular employment contracts, temporary contracts, and collective dismissals. The overall index can therefore change because of variations in one or more subindicators. For this reason it is always advisable to look at the subindicators and use them in the econometric analysis rather than concentrating on an aggregate index.

Second, changes in the EPL subindicators are not independent of one another. For instance, the increasing shares of employment under fixed-term contracts may also be a consequence of strict employment protection for regular workers because more investment may be directed to activities exempted from these provisions, rather than an indication of greater labor market flexibility per se (Bertola et al. 2000). In other words, the coverage of EPL for regular workers is endogenous. As documented later, the share of employment exempted from these regulations (e.g., the share of employment with temporary contracts, the size of the informal sector, the fraction of workers in small units) is larger in countries with particularly strict EPL regimes for permanent contracts. This suggests that it is always better to weight the OECD index for regular workers by the share of workers subject to these regulations. This is done later in table 10.2.

Third, ideally one should obtain indicators of the two crucial components of EPL from the standpoint of economic analysis: the *transfer* and the *tax* components. However, disentangling the tax from the transfer component is not an easy task because it is particularly difficult to measure the legal costs of dismissals, whose amount depends on the probability that the worker files the case in a court, and on the probability that the court invalidates the firm's firing. To give an example, in the Italian case, when the firing decision is overruled by a judge, the firm can be forced to reinstate the employee on the payroll. Garibaldi and Violante (2005) estimated that an Italian employer with more than 15 employees who fires a worker and whose decision is overruled by a court a year after the layoff with an 80 percent probability will have to bear a cost of 15 monthly wages, that is, a year and three months of wages. This amounts to roughly 20 percent of the total costs of the layoff. The distinction between the tax and transfer components of EPL can, however, be approximated by attributing to the tax component the administrative procedures and severity of enforcement measures and to the transfer component the subindicators referred to severance payments and advance notice periods.

With these caveats in mind, table 10.1 displays the overall EPL index and its three subcomponents at the end of the 1980s and in 2003, the last year for which data are available. Two facts are noteworthy. First, there are marked differences across countries in the strictness of EPL. The United States turns out to be the most flexible country, while EPL is much tighter in countries such as Portugal and the new EU member states. Second, EPL for regular workers (workers with permanent

Table 10.1 Strictness of Employment Protection: OECD Index

	Overall		Regular		Temporary		Collective	
	Late 1980s	2003						
Australia	0.9	1.2	1.0	1.5	0.9	0.9	2.9	2.9
Austria	2.2	1.9	2.9	2.4	1.5	1.5	3.3	3.3
Belgium	3.2	2.2	1.7	1.7	4.6	2.6	4.1	4.1
Canada	0.8	0.8	1.3	1.3	0.3	0.3	2.9	2.9
Czech Republic	–	1.9	–	3.3	–	0.5	2.1	2.1
Denmark	2.3	1.4	1.5	1.5	3.1	1.4	3.9	3.9
Finland	2.3	2.0	2.8	2.2	1.9	1.9	2.6	2.6
France	2.7	3.0	2.3	2.5	3.1	3.6	2.1	2.1
Germany	3.2	2.2	2.6	2.7	3.8	1.8	3.5	3.8
Greece	3.6	2.8	2.5	2.4	4.8	3.3	3.3	3.3
Hungary	–	1.5	–	1.9	–	1.1	2.9	2.9
Ireland	0.9	1.1	1.6	1.6	0.3	0.6	2.4	2.4
Italy	3.6	1.9	1.8	1.8	5.4	2.1	4.9	4.9
Japan	2.1	1.8	2.4	2.4	1.8	1.3	1.5	1.5
Korea	–	2.0	–	2.4	–	1.7	1.9	1.9
Mexico	–	3.1	–	2.3	–	4.0	3.8	3.8
Netherlands	2.7	2.1	3.1	3.1	2.4	1.2	3.0	3.0
New Zealand	–	1.5	–	1.7	–	1.3	0.4	0.4
Norway	2.9	2.6	2.3	2.3	3.5	2.9	2.9	2.9
Poland	–	1.7	–	2.2	–	1.3	4.1	4.1
Portugal	4.1	3.5	4.8	4.3	3.4	2.8	3.6	3.6
Slovak Republic	–	1.9	–	3.5	–	0.4	3.3	2.5
Spain	3.8	3.1	3.9	2.6	3.8	3.5	3.1	3.1
Sweden	3.5	2.2	2.9	2.9	4.1	1.6	4.5	4.5
Switzerland	1.1	1.1	1.2	1.2	1.1	1.1	3.9	3.9
Turkey	–	3.7	–	2.6	–	4.9	1.6	2.4
United Kingdom	0.6	0.7	0.9	1.1	0.3	0.4	2.9	2.9
United States	0.2	0.2	0.2	0.2	0.3	0.3	2.9	2.9

Source: OECD (2004b).

Notes: Higher numbers denote stricter EPL regimes. All subindexes are normalized in the 0–6 range.

contracts) hardly changed at all in OECD countries over the period covered by the data. Conversely, the regulation of temporary contracts was eased in most European countries. In particular, the scope of fixed-term contracts was significantly expanded, and temporary work agency (TWA) was introduced, allowing firms to face temporary peaks in demand without having to hire new workers permanently. This corresponds to a *dual-track* reform strategy, involving reforms only at the margin, on a flow basis, for new hires, while the employment security entitlements of the incumbent workers remain unchanged.

In order to gauge the importance of these dual-track reform strategies in reducing the scope of the most restrictive EPL provisions, table 10.2 presents an adjusted

Table 10.2 Adjusting EPL by Coverage

Country	EPL		Coverage	(a)*(b)	(a)*(c)
	Regular worker	Coverage %	(net of shadow employment)		
	(a)	(b)	(c)		
Australia	1.5	75.6	70.7	1.13	1.06
Austria	2.9	79.6	66.9	2.31	1.94
Belgium	1.7	77.7	–	1.32	–
Canada	1.3	74.8	71.5	0.97	0.93
Czech Republic	3.3	77.5	–	2.56	–
Denmark	1.5	83.3	70.5	1.25	1.06
Finland	2.2	73.3	–	1.61	–
France	2.5	76.7	69.8	1.92	1.74
Germany	2.7	76.0	61.5	2.05	1.66
Greece	2.3	56.9	–	1.31	–
Hungary	1.9	80.7	–	1.53	–
Ireland	1.6	82.1	–	1.31	–
Italy	1.8	65.1	45.6	1.17	0.82
Japan	2.4	78.6	–	1.89	–
Netherlands	3.1	76.8	–	2.38	–
Norway	2.3	85.4	–	1.96	–
Poland	2.2	56.4	–	1.24	–
Portugal	4.3	64.0	–	2.75	–
Slovak Republic	3.6	83.0	–	2.99	–
Spain	2.6	54.7	42.7	1.42	1.11
Sweden	2.9	76.0	60.9	2.20	1.77
Switzerland	1.2	74.7	–	0.90	–
United Kingdom	1.1	83.2	–	0.92	–
United States	0.2	86.7	–	0.17	–

Sources: Estimates based on OECD LFS Database (2006) and Schneider and Enste (2000).

Notes: (a) OECD EPL index for regular workers (see table 10.1).

(b) = 100 – (share of fixed-term contract in total employment) – (share of self-employment in total employment).

(c) = (b) × [1 – (shadow employment rate)].

index for permanent contracts that takes into account also the coverage of these provisions. In particular, the coverage is calculated by estimating the share of permanent workers in the economy. The latter is obtained by excluding from total employment workers employed with a temporary contract (either part-time or full-time), as well as workers who are self-employed, and by using, whenever available, estimates of shadow employment (Schneider and Enste 2000), that is, workers employed in the informal sector.

As shown by the table, once the actual coverage of these regulations is taken into account, the OECD ranking of countries by strictness of EPL is quite substantially altered. In particular, southern European countries appear to be much less strict than in the OECD index because they have a large share of employment involved in temporary contracts and a sizable informal sector.

In addition to temporary contracts, there are many other exemptions from the application of EPL rules on permanent contracts. For instance, small units are usually exempt from the reinstatement obligations and other procedural requirements in the light of the fact that these obligations are a source of fixed costs and hence particularly affect small units. The relatively small size of plants and the large informal sector in southern Europe can also be a by-product of the presence in these countries of very rigid regimes for regular contracts.

10.2 Theory

EPL imposes costs on firms for adjustments of the levels of the workforce. To put it another way, employers can avoid paying severance payments and procedural costs by deciding not to change employment levels in response to shocks. Lack of response to shocks could reduce profits of firms, but this loss could possibly be compensated by a decline in wages if employers succeed in shifting to workers the EPL tax as a sort of voluntary insurance scheme. This suggests that in order to fully characterize the effects of EPL, we need a framework with (1) labor market flows, notably job creation and job destruction, and (2) endogenous wage determination. This framework is provided in technical annex 10.8. Because the model is fairly complicated, we will go as far as we can by using a simple static framework and, in any event, confine ourselves here to presenting some numerical simulations from the dynamic model, describing the adjustment mechanism involved under various assumptions about wage determination and the nature of EPL.

10.2.1 A Neutrality Result

Under some rather extreme circumstances EPL has no effects on employment, welfare of workers, and profits. This neutrality case was first highlighted by Edward Lazear (1990) and occurs when three conditions are met:

1. Workers are risk neutral.
2. Wages are flexible; that is, there is no wage floor (minimum wage or collective agreement) preventing downward wage adjustment.
3. EPL consists only of the transfer component, a severance payment to be paid by the employer to the worker involved in the redundancy; the tax component is zero.

Neutrality occurs under these circumstances because EPL affects only the intertemporal structure of wages, leaving the net discounted value of a job for a worker and the worker's employer unchanged. Actually, the employer may use the severance payment as a device to induce the worker to remain with the firm until the end of the contract.

The essence of this result is that the presence of a severance payment is taken into account in the wage contract, which internalizes the future redundancy payment. Employers, in other words, initially pay a lower wage, forcing their employees to buy from them a sort of *bond* or insurance that will give them the right to receive a deferred compensation, the severance payment, at the time of separation, as in the example discussed in box 10.1.

Box 10.1 Example of a Contract Undoing EPL

Suppose we have initially a two-period contract offering wages w in both periods. Under the assumptions of the Lazear model, workers are risk neutral, so their (indirect) utility function reads $u(w) = w$, and there are no wage floors. Now introduce employment protection as a severance scheme, paying TR to the worker at the termination of the two-period contract. In order to keep labor costs unchanged with respect to the situation without EPL, the employer proposes to the worker a contract offering a lower wage in the first period, $(w - B)$, where B is the *bond* entitling the worker to TR in the second period. For the worker, there is no loss in welfare as long as

$$w - B + \frac{w + TR}{1 + i} = w + \frac{w}{1 + i},$$

where i is the interest rate. This condition implies that $B = \frac{TR}{1+i}$, that is, the worker is lending to the firm the transfer that will be delivered at the end of the contract, as depicted in figure 10.1.

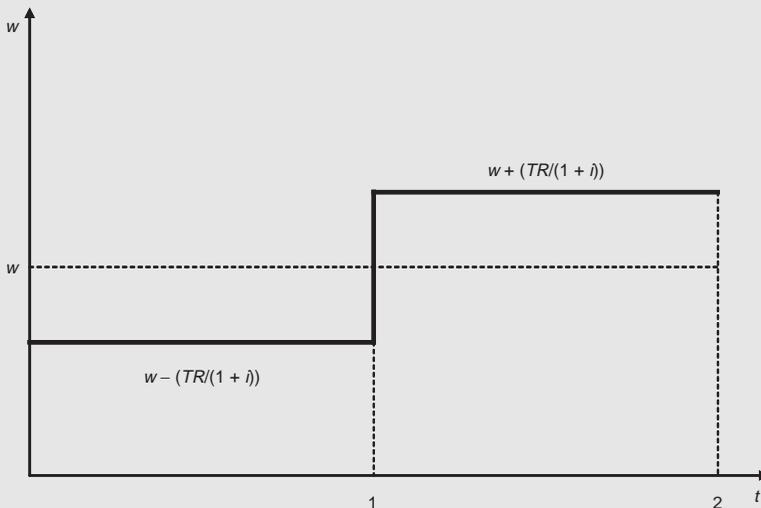


Figure 10.1 A Bonding Scheme Undoing the Severance Payment

(continued)

Box 10.1 (continued)

The risk-neutrality assumption is crucial in this context. Suppose in fact that the utility function $u(w)$ is concave, denoting a risk-averse worker. It follows that

$$u(w) > \frac{1}{2}[u(w - B) + u(w + B)].$$

Hence

$$u(w) + \frac{u(w)}{1+i} > u\left(w - \frac{TR}{1+i}\right) + \frac{u(w + TR)}{1+i}.$$

Thus a bonding arrangements will cause a welfare loss to the employees under these circumstances.

Source: Lazear (1990).

The key to the neutrality result is that the worker receives the same payment in discounted value terms from offering labor with or without EPL. A risk-neutral worker is interested only in the discounted value of the job, not in the time profile of the wage, and the employer, when deciding whether or not to create a job and open a vacancy, will be indifferent to the presence or not of EPL because the net discounted cost of the job is unchanged with respect to the situation without EPL. The contract has succeeded in undoing EPL, which does not affect either labor demand on labor supply.

10.2.2 Removing Risk Neutrality

It is sufficient to relax any of these three assumptions to have some effects on EPL on labor allocation. Take first the case in which workers are risk averse (their indirect utility function is concave rather than linear in wages). This means that they will suffer a welfare loss from experiencing fluctuations in their earnings even if the net discounted value of the job is unchanged with respect to the situation without EPL (see box 10.1).

Workers may then ask for higher wages in order to be compensated for the fluctuations in earnings associated with the bonding arrangement. As labor supply shifts upward the bonding scheme cannot be neutral for the employers as well: the introduction of EPL is bound to affect the labor market equilibrium.

10.2.3 EPL with Rigid Wages

Suppose now that assumption 2 is relaxed, that is, that wages are rigid and therefore do not adjust after the introduction of EPL. Because the introduction

of the severance payment cannot be accompanied by a reduction of the wage, labor supply will be unaffected, and we can concentrate on labor demand, as in box 10.2.

Box 10.2 Flexiland and Rigidland

In order to highlight the effects of EPL under rigid wages, it is instructive to consider an economy where only two states of the world are possible—a good and a bad state, for example, a boom and a recession—affecting the value of the marginal product of the firm. In particular, let us take a simple logarithmic production function (labor is the only factor of production) and hence write firm's profits in the *flexible regime* (denoted with superscript F) as follows:

$$\pi^F = A^i \log L - wL,$$

where L is labor and A^i is the price of the good being sold by the firm, which varies depending on the state of the world: A^i assumes value A^h under the good state and A^L under the bad state, where $A^h > A^L$. In every period there is a probability p that the price is equal to A^h and a probability $1 - p$ that the price is equal to A^L . The wage is fixed and equal to w independently of the cyclical conditions.

The employer has to decide how many workers to hire. Without EPL, hiring and firing can take place at no cost, and the firm can freely choose the profit-maximizing employment level (equating the value of the marginal product of labor to its marginal costs or wage rate) under any state of the world. With EPL, the firm is instead forced to keep always the same employment level regardless of cyclical conditions; we are here assuming that EPL is unboundedly expensive, so that an employer would never lay off a worker.

Without EPL, the firm chooses employment after observing the productivity level. Optimal employment in this case equates the value of the marginal product, $\frac{A^i}{L}$, to the wage, so that, solving for employment,

$$L^F = \frac{A^L}{w} \quad \text{if } A^i = A^L,$$

$$L^F = \frac{A^h}{w} \quad \text{if } A^i = A^h.$$

Thus the firm will fire (hire) $\Delta L^F = \frac{A^h - A^L}{w}$ workers when the economy moves from booms (recessions) to recessions (booms), as depicted in figure 10.2. Because the economy experiences, on average, a fraction p of booms and a fraction $(1 - p)$ of recessions, the average employment in the long run will be

$$\bar{L}^F = \frac{(1 - p)A^L + pA^h}{w}.$$

Consider now the behavior of the firm when EPL is present. Because laying off workers during recessions is too expensive, the firm can only choose the

(continued)

Box 10.2 (continued)

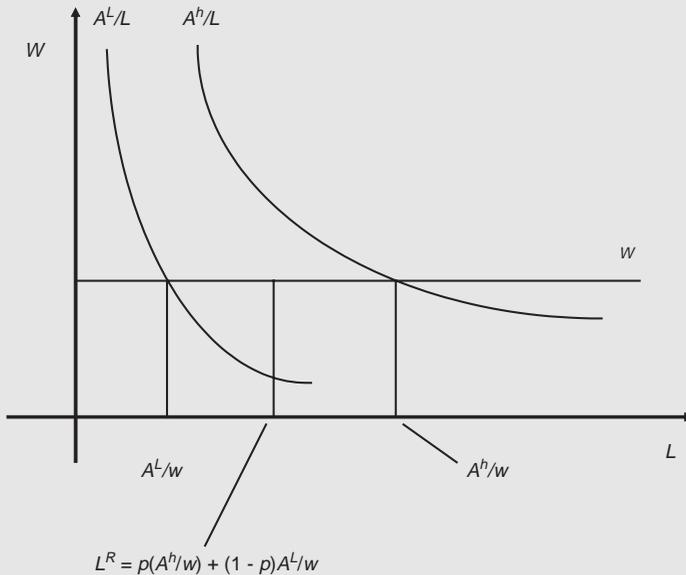


Figure 10.2 Employment in the Flexible and Rigid Regimes

employment level that maximizes the *expected* value of the profits, holding this level constant over time, independently of cyclical conditions. This implies that the employer in the *rigid regime*, R , will solve the expected profit-maximization problem

$$\pi^R = \max_L \{ [(1-p)A^L + pA^h] \log L - wL \}.$$

The first-order conditions of this problem provide the value of employment in the rigid regime as

$$L^R = \frac{(1-p)A^L + pA^h}{w}. \quad (10.1)$$

This optimal employment level in the rigid regime, L^R , is therefore a weighted average of the levels of employment that, without EPL, would prevail during the expansions and recessions, respectively, where weights are given by the probabilities of the two events. Notice that L^R coincides with \bar{L}^F , the long-run employment level in flexiland. Thus employment in the long run is the same in the two regimes. However, during the cycle, employment in the rigid regime will never be as in flexiland: it will be lower under upturns and higher during downturns. The only case when L^R equals L^F (employment in flexiland in the short run) is when the economy is always in one of the two states of the world (if $p = 0$ or $p = 1$). Finally, notice that $\pi^R < \pi^F$ even in the long run because the firm realizes lower profits (using suboptimal employment levels) in both booms and recessions.

Generalizing from the results in box 10.2, we conclude that EPL with fixed wages

1. has no effects on average employment or unemployment,
2. lowers the volatility of employment over the business cycle, and
3. reduces profits.

The first two implications are intuitive in the light of the preceding discussion. The third draws from the fact that the employment level chosen without EPL is the only level that maximizes profits in each period. Consequently, in each period profits are higher without EPL than with EPL. With the same level of employment on average, the firm without EPL is able to make a higher level of profits. In other words, the firm operating without EPL is more efficient.

10.2.4 EPL as a Tax

Finally, relax assumption 3 of the Lazear model and let EPL no longer be a transfer, but a tax, notably a payment to a third party, say, a lawyer. Now, even when wages are flexible and workers are risk neutral, EPL can no longer be undone by a new labor contract compensating the employer for the tax.

The effects of employment protection on employment and wages when EPL is a tax can be characterized only by using a dynamic framework like the model developed in technical annex 10.8. Dynamics are needed because the EPL tax is a particular type of tax on the firm, namely, a tax that the employer can avoid paying if it does not reduce employment levels over time. This means that the presence of the EPL tax is taken into account by the employer also when issuing a vacancy and hiring an employee because this hiring carries with it a higher risk of having to pay the EPL tax in the future. To put it another way, the EPL tax displays its effects by acting mainly on labor market flows, on hiring and separation rates.

As shown in the technical annex, an EPL tax reduces job creation because employers are more reluctant to open a vacancy: the net discounted value of a job is lower with EPL than without EPL. At the same time, however, job destruction is also lower in the presence of EPL because it is more costly for firms to lay off workers. The effects of EPL on employment and unemployment are therefore ambiguous; they can increase or decrease depending on the relative strength of the effects on job creation and job destruction margins. An unambiguous theoretical prediction, however, is that labor market flows decline with employment protection: a world with an EPL tax is one with less job creation, job destruction, and unemployment inflows, as well as unemployment outflows, and hence longer unemployment duration (Bentolila and Bertola, 1990).

As long as wages are flexible, they will also react to the introduction of EPL. As argued earlier, an EPL tax cannot be undone by contractual arrangements between

the employer and the worker. Yet wages are nevertheless bound to be affected by EPL. Suppose, for instance, that wages are set as a result of a bargaining process between the employer and the worker, as in the models discussed in chapter 3. These models predict that wages are increasing with the bargaining power of workers and decreasing with their fallback option, that is, the net discounted value of being unemployed. EPL has two effects on wage setting in this context. On the one hand, it increases the bargaining power of those who have a job, the *insiders*, who now are more protected from wage underbidding by unemployed jobseekers, or *outsiders*. This increases the equilibrium wage in comparison with the situation without EPL. On the other hand, EPL reduces the fallback option of workers because unemployed jobseekers face lower reemployment probabilities under strict EPL. This second effect reduces wages under the EPL tax regime. Because of these two offsetting effects, the relationship between EPL and wages is likely to be hump shaped: for low values of EPL, wages are bound to increase as a result of increased bargaining power of insiders, but for high values of EPL, wages may well decline because the welfare loss associated with unemployment becomes very large. Figure 10.3 displays numerical simulations of the model in technical annex 10.8 that correspond precisely to this nonmonotonic profile of the relationship between wages and EPL: wage levels are expressed as fractions of monthly value added.

Even when EPL does not increase wages, insiders are better off with the EPL tax because the risk of job loss is lower. With regard to income distribution, EPL involves lower profits for firms and lower welfare for unemployed individuals, who now experience longer unemployment duration, but higher welfare for those who have a job, notably when individuals care much about their future (have a high discount factor).

10.2.5 Two-Tier Regimes

The preceding theoretical results on the effects of EPL are relevant to predict labor market adjustment in environments with different degrees of strictness of EPL involving all workers. However, as documented earlier, many EPL reforms are asymmetric in that they change regulations only for a subset of the eligible population. This unbundling of reforms, reducing EPL only at the margin for new hirings, seems to be a viable political economy strategy when there are strong political obstacles to reforms (Saint-Paul 1997).

As suggested by Boeri and Garibaldi (2007), these two-tier reforms involve important transitory job creation (*honeymoon*) effects and a decline in productivity. The intuition runs as follows. Starting from a rigid environment where employers do not adjust employment to cyclical conditions (like rigidland in box 10.2), the firm is allowed to enjoy *flexibility at the margin*; that is, it can hire and fire workers on a temporary basis, but at the same time it cannot reduce at will the existing stock

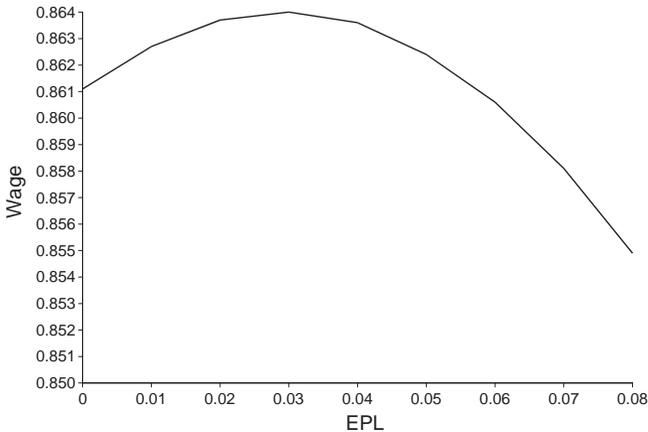


Figure 10.3 Numerical Simulations of the Model in Technical Annex 10.8

of permanent contracts. Thus in good times the firm hires temporary workers up to the optimal employment level in the frictionless environment and dismisses these workers in bad times. This means that during upturns there will be more employees than before the two-tier reforms, while during downturns employment will be as in the fully rigid environment, that is, higher than in the flexible environment. It follows that these dual-track reforms temporarily increase average employment.

These transient honeymoon effects fade away as the stock of permanent workers is gradually replaced with flexible contracts. Natural attrition (retirement) reduces gradually the stock of permanent workers, and hence the firms can build up a buffer stock of workers with flexible contracts (Bentolila and Dolado 1994), allowing them to adjust employment optimally to business conditions. When all workers are replaced, the economy is under a fully flexible regime where the previous theoretical results apply.

Throughout the honeymoon firms enjoy higher profits and lower labor productivity because total output is the same as in the rigid environment, but employment is higher. Profits increase throughout the transition until they reach the same levels as in the flexible regime. The positive effects on employment and the negative effects on labor productivity of two-tier regimes are transitory: they fade away when the honeymoon is over.

10.3 Empirical Evidence

10.3.1 Cross-Country Analyses

Most studies of the effects of EPL take a cross-country approach; that is, they compare employment dynamics in countries that, according to some measure

Table 10.3 The Effects of Employment Protection on the Labor Market: Empirical Results

Author(s)	Stocks		Flows	
	Employment	Unemployment	Employment	Unemployment
Emerson (1988)	?	?	–	–
Bertola (1990)	?	?	?	–
Lazear (1990)	–	+		
Grubb and Wells (1993)	–			
Garibaldi, Koenig, and Pissarides (1994)	?	?	?	–
Addison and Grosso (1996)	?	?		
Jackman, Layard, and Nickell (1996)	?	?	–	–
Gregg and Manning (1997)	?	?		–
Boeri (1999)	?	?	+	–
Di Tella and McCulloch (1998)	–	+		
OECD (1998)	?	?	?	–
Kugler and StPaul (2000)			+	–
Belot and van Ours (2001)		–		
Nickell, Nunziata, and Ochel (2005)	?	?		

of the strictness of EPL, display different degrees of employment protection. Table 10.3 reviews this literature. A few studies found significant effects of employment protection (generally measured using the OECD cross-country ranking) on employment and unemployment *stocks*. This finding is consistent with economic theory: as a tax on labor adjustment (or on the capitalized value of the firm), EPL should affect hirings and separations, and hence unemployment inflows and outflows, but it should not be correlated with employment and unemployment stocks. Consistent with economic theory, a robust finding of this literature is that EPL negatively affects unemployment inflows and outflows: countries with the strictest EPL have more stagnant unemployment pools. EPL seems also to affect the composition of employment and unemployment (OECD 2004b): countries with more EPL display higher youth unemployment rates and lower unemployment among central age groups. This finding is also consistent with economic theory because central age groups are typically insiders (they already have a job and are sheltered by EPL from labor market adjustment), while youngsters are typically outsiders (they are first-time jobseekers and hence are hit by the longer duration of unemployment).

No unambiguous result is instead obtained concerning the impact of EPL on labor turnover (the sum of hirings and separations) and job turnover (the sum of

job creation and destruction), although economic theory unambiguously predicts a negative effect of the strictness of employment protection on labor market flows. Explanations of this discrepancy between theory and facts—for example, Bertola and Rogerson (1997) and Boeri (1996)—typically call into play the interaction of EPL with other institutional features (chapter 13), as well as measurement errors. For instance, it is argued that institutions that compress wage structures tend to counteract the negative effects of EPL on labor market flows because they reduce the scope of price-driven adjustment mechanisms. If employers cannot adjust wages when they face changes in the demand for their product, they are forced to adjust employment.

These potential interactions with other institutional features question the relevance of a cross-country approach relying mostly on pairwise correlations of country scores in the EPL index and measures of aggregate labor market outcomes. As discussed earlier, there is also quite substantial within-country variation in the actual enforcement of regulations, which is not captured by cross-country analyses.

10.3.2 Within-Country Studies

More and more empirical work is using data referred to the same country and is exploiting any time series available for regulations. Work carried out in the United States has been drawing on cross-state differences in the adoption of wrongful-discharge protections over and above the doctrine of employment at will. Work carried out in Europe has been exploiting another dimension of within-country variation, the exemption of small units from the strictest EPL provisions. By combining these exemptions with dual-track reform strategies, it is possible to carry out difference-in-differences policy evaluation studies. For instance, Boeri and Jimeno (2005) used the difference between permanent fewer than and workers and temporary contracts introduced by dual-track regimes in combination with the difference involved by exemption of small firms (see box 10.3).

Box 10.3 Learning from Within-Country Variation

Boeri and Jimeno (2005) analyzed dismissal rates for temporary and permanent employees in establishments of different sizes by drawing on data from the Italian Labor Force Survey in the 1993–95 period. In Italy the most restrictive EPL provisions concern permanent workers in firms with more than 15 employees. The table in this box obtains an indication of the effects of EPL by drawing on two differences: the difference between workers in firms of fewer than and more than 15 employees, and the difference between permanent workers and temporary workers.

(continued)

Box 10.3 (continued)

	Probability of being dismissed (%)		
	Permanent workers	Temporary workers	Difference
Firms with fewer than 15 employees	1.7	0.8	0.9
Firms with more than 15 employees	0.9	2.2	-1.3
Difference	0.8	-1.4	2.2

Because temporary workers are not covered by EPL provisions upon termination of their contract, their dismissal rates are expected to be higher than those of permanent employees when the strictest EPL provisions for permanent workers hold. This is confirmed by the data in the table: while below the 15-employees threshold the dismissal rate of permanent workers is higher than that of temporary workers, above the 15-employees threshold it is the other way around. These difference-in-differences effects of EPL hold also in different partitions of the sample, for example, by industry, region, gender, age, and skills, and when all these personal characteristics are simultaneously taken into account. Boeri and Jimeno also carried out another difference-in-differences estimation by comparing growth rates of establishments below and above the 15-employees threshold, before and after a reform that in 1990 increased the costs of dismissals for units with fewer than 15 employees. They found that firm size became more persistent after the reform only in units with fewer than 15 employees, an indication of the role played by EPL in reducing adjustment of employment levels in firms. A Stata data file with the Boeri and Jimeno dataset, a do file, and a log file are available at the website <http://press.princeton.edu/titles/8771.html>.

Source: Boeri and Jimeno (2005).

These within-country studies generally found some negative effects of EPL on dismissal rates (Miles 2000; Autor, Donohue, and Schwed 2006; Boeri and Jimeno 2005). Garibaldi, Bargarello, and Pacelli (2003) also found that the presence of firm-size thresholds (e.g., 15 employees, as in Italy) below which EPL does not hold increases firms' persistence, that is, the probability that a firm does not change the number of employees from one year to the next, just below the threshold. These effects are generally small but qualitatively consistent with the predictions of economic theory.

10.3.3 Endogeneity of EPL

An important issue in the empirical assessment of the effects of EPL is whether the role played by judges in the enforcement of EPL makes these regulations

dependent on underlying labor market conditions. Judges may feel that under severe labor market slack in a region or during a cyclical downturn, workers should be more heavily protected against dismissals than in a buoyant labor market.

Available information on the enforcement of EPL, discussed in Bertola et al. (1999), suggests that the nature and stringency of EPL enforcement do indeed vary across countries and over time and are quite strongly influenced by underlying labor market conditions. In particular, long-term unemployment is positively correlated with the number of cases brought before courts (as a fraction of the population of working age) across the OECD countries for which data on EPL enforcement were available. Another dimension of jurisprudence that seems to be linked to labor market conditions, both across countries and over time, is the percentage of cases favorable to workers: the countries where tribunals are most frequently involved in labor disputes on the termination of a contract are those with the highest percentage of cases favorable to workers. Spain is a case in point. Here almost 72 percent of cases in 1995 were won by workers, compared with less than 50 percent in North American countries and a low of 16 percent in Ireland, all countries where tribunals seem to intervene rather infrequently in labor disputes concerning contract termination. The high incidence of judicial procedures in France may also be partly explained by a large share (74 percent) of cases favorable to workers. The likelihood that court rulings are favorable to employees tends to play an important role in inducing workers to bring their cases to the courts, although it may, on the other hand, also encourage employers to reach extrajudicial agreements.

With regard to time-series variation in EPL enforcement, Bertola et al. (1999) found a marked covariation of the incidence of jurisprudence (cases brought to court as a percentage of the labor force) and unemployment in Germany. Comovements of indicators of jurisprudence and unemployment are also observed in Spain, especially when the focus is on cases ended with sentences favorable to employees, and in Italy, where evidence on case law points to a strong link between law enforcement and regional labor market conditions.

10.4 Policy Issues

10.4.1 How Much Protection Should EPL Provide?

Workers are generally risk averse and have limited, if any, access to capital markets. Their (indirect) utility function is concave in wages. This means that, when comparing two jobs that offer, on average, the same wage, they will always opt for the one that has less variability in earnings. Employers are instead generally risk neutral: firms have better access than workers to capital markets. This means that

they can insure against negative shocks to their business by investing in capital markets and diversifying risk.

Under these conditions it is always optimal to have employers providing some insurance to their workers, allowing them to smooth out income fluctuations. As argued in this chapter, EPL is the most common way for employers to provide such insurance. Unemployment benefits, discussed in the next chapter, offer an alternative. But if we suppose that there is no unemployment benefit system, how much insurance should be provided? Can it be made less distortional?

Blanchard and Tirole (2004) consider a simple case where wages are unaffected by employment protection, there is no asymmetric information (hence workers' effort can be fully monitored by the employer), and EPL consists only of transfers: it is a pure severance scheme. They show that under these conditions the optimal insurance offered by EPL may be a *complete insurance*, preventing any fluctuation in the income of the workers, provided that productivity exceeds the reservation wage of individuals.

However, wages do react to the provision of this insurance. Under rather general circumstances (e.g., a bilateral monopoly in wage bargaining), the theories previously reviewed and the model in the technical annex suggest that EPL has two offsetting effects on wages. On the one hand, EPL strengthens the bargaining power of insiders, exerting an upward pressure on wages. On the other hand, EPL reduces the fallback option of workers, exerting a moderating effect on wages. When workers are fully insured against the risk of job loss (e.g., the severance payment offered by employers compensates them throughout their entire unemployment spell), there is no longer this second, moderating effect on wages related to the outside option of workers. This means that wages are bound to increase unambiguously as a result of EPL, and hence firms providing full insurance to their workers will not be able to partly recover the costs of this insurance through lower wages paid to their workers. If employers are forced by regulations to provide this full insurance, employment will be lower under full insurance.

The presence of moral hazard also prevents the provision of full insurance. Workers require incentives, in terms of a penalty associated with the fact of being fired because of misconduct, in order to avoid shirking, as highlighted by the efficiency wage models summarized in box 10.4. If EPL makes disciplinary layoffs more difficult, then opportunistic behavior is encouraged.

Thus under general circumstances there will be some optimal level of employment protection providing less than full insurance. How much insurance should be provided depends on a number of factors, including the degree of risk aversion of employees, the depth of capital markets, and the underlying wage-setting mechanism. Interactions with other institutions, notably unemployment benefits (chapters 11 and 13), are also very important in this context.

Box 10.4 Efficiency Wages and Employment Protection

The efficiency wage model (Shapiro and Stiglitz 1984) can generate involuntary unemployment as an equilibrium phenomenon. It is also particularly useful in characterizing the effects of employment protection legislation on the productivity of insiders. Unemployment is generated in these models because employers find it optimal to pay a wage above the market-clearing level and use involuntary unemployment as a disciplining device to induce their workers to put more effort into the job. This happens because employers have only imperfect information about the effort of their employees. Hence they pay *efficiency wages* above the market-clearing level in order to discourage their workers from shirking.

The workers face a trade-off. Either they put in effort, which provides a disutility to them, or they shirk and face some positive probability of being detected and being fired. We can use the dynamic framework presented in technical annex 10.8 to illustrate the efficiency wage model in more detail. The value of a job to a person who does not shirk is

$$\rho V_e^N = w - e + \delta(V_u - V_e^N), \quad (10.2)$$

where w is the wage, e is the effort, δ is the exogenous job separation rate (independent of the behavior of the employee), and V_u is the value of being unemployed. For shirkers, the flow value of a job is

$$\rho V_e^S = w + (\delta + q)(V_u - V_e^S), \quad (10.3)$$

where q is the rate at which shirkers are detected and fired, that is, the probability of a disciplinary layoff. The no-shirking condition implies that the value of shirking is lower than or equal to the value of not shirking, that is, $V_e^S \leq V_e^N$. Using this condition together with (10.2) and (10.3), we can then derive the efficiency wage:

$$w^* \geq \rho V_u + e \left(1 + \frac{\rho + \delta}{q} \right). \quad (10.4)$$

From this it appears that the efficiency wage is increasing with the effort required in the job, with the discount rate, and with the exogenous job separation rate, while it is decreasing with the probability of a disciplinary layoff. These effects are intuitively clear. On the one hand, a higher effort, a higher discount rate, and a higher exogenous job separation rate all reduce the value of the job, which means that the penalty associated with being caught shirking, the fact of being laid off by the employer, is lower. Hence there is a need to pay higher wages in order to prevent shirking. On the other hand, a higher probability of disciplinary layoffs reduces the value of the shirking option compared with the value of non shirking, making it less necessary for employers to pay higher wages in order to deter opportunistic behavior.

Employment protection negatively affects both the economic (exogenous) layoff and the disciplinary layoff probabilities. This happens via the costs of

(continued)

Box 10.4 *(continued)*

judicial procedures required to implement the dismissals. EPL usually establishes that either economic or disciplinary reasons have to be provided for dismissal by the employer, who has the burden of proof. Layoffs are considered unfair in most countries when there are neither subjective (misconduct) nor objective (economic) grounds for the interruption of the relationship. Penalties applied to employers implementing unfair dismissals do not discriminate among the two types of justifications (disciplinary and economic), and an employer who finds it hard to prove misconduct can always try to justify the dismissal on economic grounds. Thus the costs of disciplinary layoffs are unavoidably interrelated with those of economic dismissals. Overall, insofar as EPL negatively affects disciplinary layoffs, it increases the efficiency wage; when EPL instead acts mainly on economic layoffs, it reduces the efficiency wage. This suggests that the impact of EPL will vary depending on the monitoring technology of the firm. The better this technology, the stronger the effects of EPL on disciplinary versus economic layoffs. As small firms can better monitor the productivity of their workers than large firms, this provides an argument for the exemption of small units from the strictest EPL provisions (Boeri and Jimeno 2005).

Sources: Shapiro and Stiglitz (1984); Boeri and Jimeno (2005).

Other important design features of EPL concern, more than the level of protection, its unpredictability and the involvement of third parties. As discussed in this chapter, EPL consisting of a tax is always more distortional than EPL designed as a pure transfer. However, some payments to third parties are unavoidable because judges need to be involved in assessing the nature (economic, disciplinary, or discriminatory) of a dismissal. Because the involvement of jurisprudence is unavoidable, the costs of layoffs for employers and workers are highly uncertain. One way to reduce uncertainty about court rulings is to put some limits on the arbitrariness and the duration, and hence the costs, of judicial involvement. For instance, the Dutch dual system allows workers involved in layoffs to benefit from a quicker, more predictable, and higher severance payment. An increasing proportion of employers (from less than 10 percent in the late 1980s to more than 50 percent more recently) indeed prefer to opt for a quicker but more costly dismissal procedure than to wait for the authorization of a designated public authority (the Centre for Work and Income), which does not require any severance payment in case of a fair dismissal.

10.4.2 Whom Should EPL Be Protecting?

A question of the International Social Survey Programme (ISSP), a household survey carried out in the EU-15 since 1994, is particularly valuable in highlighting

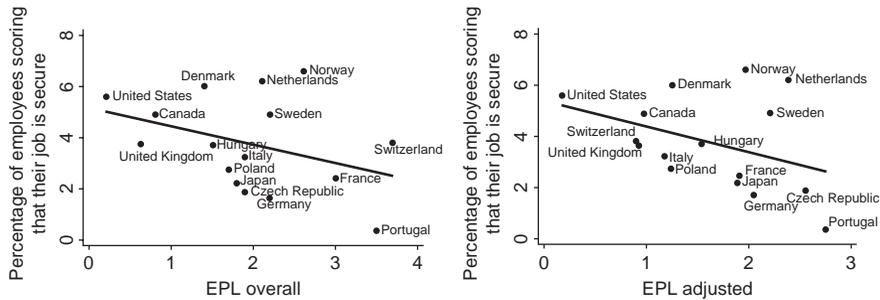


Figure 10.4 Perceptions of Job Security and Strictness of EPL

the coverage and extent of the protection offered by EPL. Employees with a permanent contract were asked how satisfied they were with their present job or business in terms of job security. As pointed out by Postel-Vinay and Clark (2005), the survey collected information on the respondent's perception of at least two different components of job security, (1) the probability of job loss and (2) the cost of job loss. Comparisons of the age and occupational profile of the answers suggest that the first factor dominates: it is indeed the persons less protected against the risk of job loss (e.g., workers in small firms or youngsters) who report lower degrees of satisfaction with their present job.

With this caveat in mind, the left panel of figure 10.4 measures, on the vertical axis, the fraction of employees in the 2005 ISSP stating that their job is secure in the various countries and, on the horizontal axis, the OECD index of strictness of EPL. Surprisingly enough, countries with the strictest EPL provisions (at least according to the OECD index, unadjusted by coverage), notably the southern European countries, have the largest fraction of workers who are deeply concerned about their job security. A possible interpretation of this result is that EPL is very selective in offering protection against the risk of job loss: this protection can only be offered to a limited subsegment of the workforce, concentrating the risk on those who are not covered. In other words, the high perceived risk may be a by-product of the fact that EPL protects only workers with permanent contracts and concentrates all risks on the others as a result of the dual-track reform strategies characterized in this chapter. However, even when we use the adjusted measure (by coverage) provided in table 10.2, the correlation between perceived security and EPL is negative (see figure 10.4, right panel). Another interpretation is that although individuals perceive a lower probability of job loss, they are aware that a job loss is more costly under strict EPL regimes because it involves longer unemployment spells. Yet another rather imaginative interpretation recently put forward by Wasmer (2006) is that under strict EPL employers use mobbing as a strategy to force their employees to leave the firm "voluntarily."

10.5 Why Does Employment Protection Legislation Exist?

Employment protection legislation is an institution that protects a limited segment of the workforce against unemployment risk. Because of the selectivity of the coverage offered by EPL, it is always better to complement measures of the strictness of regulations with information on the actual coverage of these norms. In some countries very strict EPL for regular contracts goes hand in hand with a large share of employment in the informal sector, in plants exempted from these norms, or in self-employment, while many workers are hired under temporary contracts. This may help explain why in countries with strict EPL, many workers do not feel at all less secure about their jobs.

For all these reasons, EPL is a strongly redistributive institution. It protects those who already have a job, notably a permanent contract in the formal sector. Unemployed individuals and workers with temporary contracts generally suffer in the presence of strict EPL rules for permanent contracts. The former tend to experience longer unemployment spells in the presence of strict EPL, while the latter may be caught in a sort of parallel secondary labor market of temporary contracts with limited access to the primary labor market of permanent contracts. Employers also suffer a loss in profits in the presence of employment protection, notably when they do not succeed in making workers pay (through lower wages) for the costs of providing this insurance.

From a political economy perspective, then, depending on the relative number and/or political power of (1) employees with permanent contracts, (2) the unemployed, (3) workers with temporary contracts, and (4) employers, we should have more or less stringent EPL. Another important factor affecting political support for EPL is the presence of other institutions, such as UBs, that can substitute for EPL in providing insurance against unemployment risk, as further discussed in chapter 13. Under stronger competition in product markets, a case can be made for protections against job loss that are more mobility friendly. UBs are one of these. Thus we should expect EPL to become less important over time as countries improve the coverage of their unemployment benefit systems.

10.6 Suggestions for Further Reading

The chapters on EPL in OECD (1999, 2004b) provide a good overview of the problems related to the measurement of this institution. Enforcement (and policy endogeneity) issues are discussed in some detail in Giuseppe Bertola, Tito Boeri, and Sandrine Cazes (2000). Tito Boeri, and Pietro Garibaldi (2007) analyze the honeymoon effect and offer a survey of the main findings of the literature on dual labor market regimes. Finally, Gilles Saint-Paul (1993) is a compulsory reference on the political economy of employment security.

10.7 Review Questions

1. What are the main drawbacks of available measures of the strictness of EPL?
2. Why is there a nonmonotonic relationship between EPL and unemployment?
3. Why many two-tier reforms of EPL transitorily increase employment?
4. What are the efficiency arguments in favor of employment protection?
5. When is EPL neutral with respect to labor market outcomes?
6. Why from an economic standpoint is it important to disentangle the transfer from the tax component of EPL?
7. Why, in your view, has empirical work failed to observe the negative relationship between EPL and job and labor turnover predicted by economic theory?
8. Why do workers in countries with strict EPL feel less secure than workers in flexible labor markets?
9. Why are third parties (e.g., judges) always involved in the enforcement of EPL?

10.8 Technical Annex: EPL in a Search-Matching Model

10.8.1 A Simple Dynamic Framework

A search-matching model originally developed by Boone and van Ours (2006) can be valuable in characterizing equilibriums in dynamic labor markets, as well as the role of labor market institutions. In a search-matching model unemployment arises because workers need time to find vacancies and employers need time to find unemployed workers to fill their vacancies. Labor is assumed to be homogeneous, and all jobs offer the same wage. If an unemployed worker and a vacancy are matched, they generate a constant productivity as long as the job is not destroyed by an exogenous shock. Individuals and firms are assumed to be risk neutral. The main elements of the baseline model are workers' behavior, matching of unemployed workers and vacancies, behavior of firms, wage bargaining, and labor market equilibrium flows.

10.8.2 Present Discounted and Flow Values

“I want it all and I want it now” are famous lyrics.¹ These lyrics represent an economist's way of thinking: maximize, and maximize preferably as soon as possible—better today than tomorrow. The *discount rate* is an indicator of this

¹ From Queen, “I Want It All,” *The Miracle* (Burbank, CA: Hollywood Records, 1992).

line of thinking. It is the time rate at which economic value depreciates. The net present value of a continuous flow of wages w is

$$V_w = \int_0^{\infty} w e^{-\rho t} dt = \frac{w}{\rho}, \quad (10.5)$$

where ρ is the discount rate. In other words, the flow value of having a wage forever equals the product of the discount rate and the net present value:

$$w = \rho V_w. \quad (10.6)$$

10.8.3 Behavior of Workers

All workers are assumed to be homogeneous so that they receive the same wage w net of taxes. Unemployed workers search at a cost (disutility), γ .

The flow value of being unemployed equals the difference between the cost of search and the expected benefits from finding a job:

$$\rho V_u = -\gamma + \mu (V_e - V_u), \quad (10.7)$$

where μ is the job-finding rate. The flow value of having a job is

$$\rho V_e = w + \delta (V_u - V_e), \quad (10.8)$$

where δ is the exogenous job separation rate.

10.8.4 Matching

Vacancies and unemployed workers are matched by a *matching function* that describes the efficiency of labor markets. The matching function, for any given flow of matches, is equivalent to the so-called Beveridge curve:

$$m(u, v) = A(u)^{1-\eta} v^\eta. \quad (10.9)$$

In numerical simulations it is customary to specify the matching process as a Cobb-Douglas function with constant returns to scale and A and η as relevant parameters. The matching function can then be simply rewritten in terms of the number of vacancies divided by the number of unemployed workers (market tightness):

$$\mu = \frac{m(u, v)}{u} = A\theta^\eta, \quad (10.10)$$

where θ denotes labor market tightness,

$$\theta = \frac{v}{u}. \quad (10.11)$$

10.8.5 Firms

Given that production y is sold at (numeraire) price 1, the flow value of a job is

$$\rho J_e = y - w + \delta(J_v - J_e). \quad (10.12)$$

The flow value of a vacancy is

$$\rho J_v = -c_v + \frac{\mu}{\theta}(J_e - J_v), \quad (10.13)$$

where $\frac{\mu}{\theta}$ is the rate at which vacancies are filled and c_v is the cost of an unfilled vacancy.

10.8.6 Wage Bargaining

To determine the wage, the Nash-bargaining solution (see technical annex 3.8) is used. Notice that here we are dealing with individual workers rather than a union. The bargaining power of the worker is denoted by $\beta \in [0,1]$ and the bargaining power of the employer by $(1 - \beta)$. Then the net wage w solves

$$\max_w (V_e - V_u)^\beta (J_e - J_v)^{1-\beta}, \quad (10.14)$$

or

$$\max_w \frac{w}{\rho + \delta} + \frac{\delta}{\rho + \delta} V_u - V_u^\beta \frac{y - w}{\rho + \delta} + \frac{\delta}{\rho + \delta} J_v - J_v^{(1-\beta)}. \quad (10.15)$$

The first-order condition for w can now be written as

$$(1 - \beta)(w - \rho V_u) = \beta(y - w), \quad (10.16)$$

or, equivalently,

$$w = (1 - \beta)\rho V_u + \beta y. \quad (10.17)$$

The higher the worker's bargaining power (the higher the β), the higher the share of the surplus y . In case workers have full bargaining power ($\beta = 1$), the wage is equal to the total surplus. In case employers have full bargaining power ($\beta = 0$), the wage is equal to the flow value of unemployment ($w = \rho V_u$). In the first case the worker gets the entire surplus. In the second case the employer extracts all the surplus, conditional on the worker having some incentive to work.

10.8.7 Introducing EPL

We introduce EPL through firing costs c_f that are assumed to be a pure tax or deadweight cost; that is, they impose costs on the employer in case of firing but

are not paid to the worker through severance payments. It can readily be shown that a pure transfer under our assumptions (risk-neutral workers) cancels out in wage bargaining. An EPL tax instead affects wage bargaining,

$$w = (1 - \beta)\rho V_u + \beta(y + c_f), \quad (10.18)$$

vacancy creation,

$$J_e = \theta \frac{c_v + c_f}{\mu}, \quad (10.19)$$

and the value of a job,

$$J_e = \frac{y - w + c_f}{\rho + \delta}. \quad (10.20)$$

The most intuitive channel via which EPL affects the equilibrium is the job destruction rate. To keep things simple, we will assume that the job destruction rate linearly decreases with employment protection:

$$\delta = \delta_0 - \delta_1 c_f. \quad (10.21)$$

10.8.8 Baseline Parameters

The model for simulation exercises (some results are displayed in figure 10.3) has 11 endogenous variables, γ , V_u , V_e , w , J_e , J_v , v , u , m , θ , and μ , and 8 parameters for which the following baseline values are used: discount rate $\rho = 0.025$, matching function $\eta = 0.5$, $A = 1.0$, wage negotiations $\beta = 0.5$, match productivity $y = 1$, vacancy costs $c_v = 2$, job destruction rate $\delta_0 = 0.04$, and $\delta_1 = 0.1$. Finally, since there is free entry in posting vacancies, $J_v = 0$.