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The Effects of Employment Protection in Europe and the USA[1]

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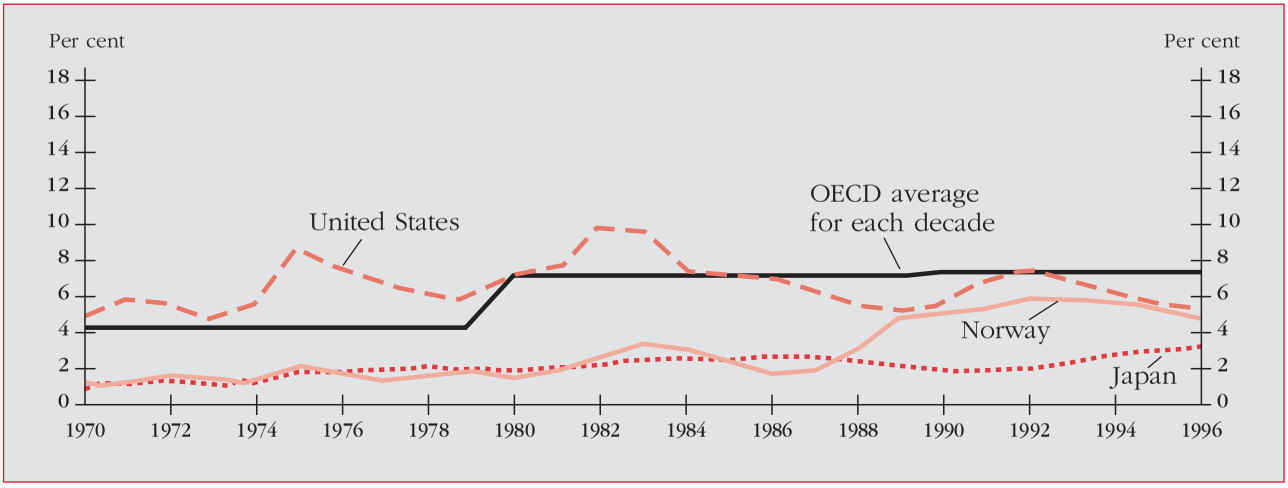
1. Introduction

Unemployment today is much higher in Europe than in the USA. This, however, was not always the case. From the 1960s until the first half of the 1970s, unemployment in continental Europe was lower than in the USA. This was the time of the vaunted "unemployment miracle" in Europe.[2] These circumstances changed starting in the second half of the 1970s. Unemployment in continental Europe rose steadily from 1975 and through the 1980s, eventually surpassing the US unemployment rate, and remained persistently high during the 1990s (see Figures 1 and 2).[3] Only recently has unemployment in continental Europe started to ease somewhat, though it still remains higher than in the USA (see Figure 3).[4]

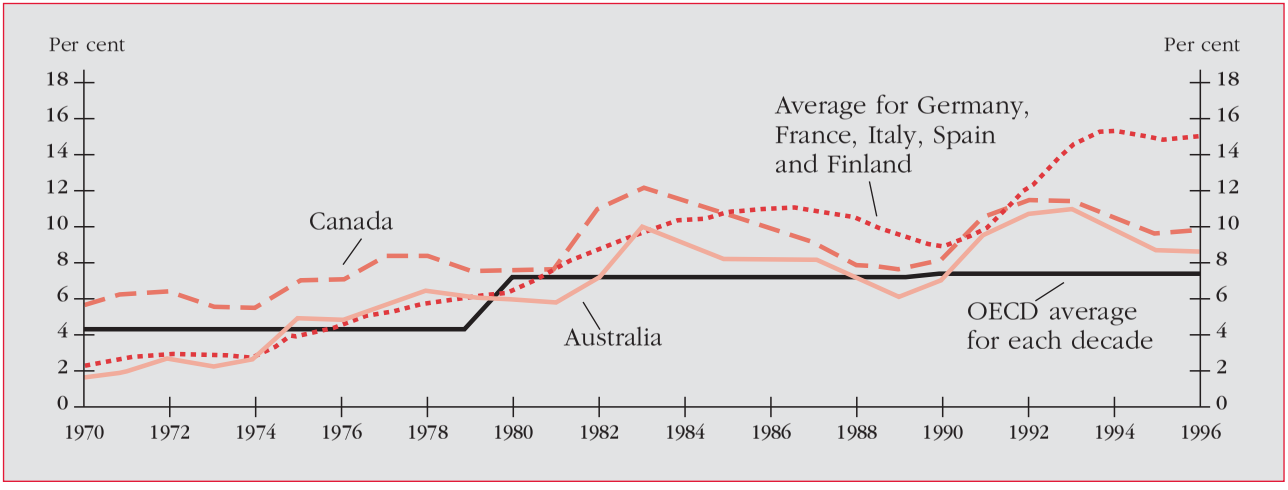
Many have blamed continental Europe's persistently high unemployment (compared to the USA) on rigid labor markets, arguing that rigid labor markets hinder firms and employees from adapting to a rapidly changing environment. In fact, labor markets in Europe have come to be characterized as immobile or, as economists say, "sclerotic".[5] Immobile labor markets imply little movement of both workers and firms even when faced with new economic conditions.

Figure 1.
Comparative OECD Unemployment Rates, United States, Norway and Japan, 1970-1996



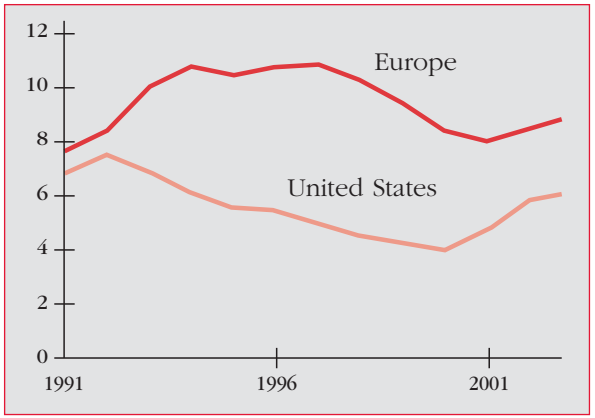
Source: OECD (1994b), Jobs Study: Jobs, Analysis, Strategies. Paris: OECD.

Figure 2.
Comparative OECD Unemployment Rates, Major European Countries, Australia, and Canada, 1970-1996



Source: OECD (1994b), Jobs Study: Jobs, Analysis, Strategies. Paris: OECD.

Figure 3.
Comparative OECD Unemployment Rates, Europe and the USA, 1991-2003



Source: OECD (2004), Employment Outlook. Paris: OECD.

Workers face constraints when trying to move from industries that are contracting to those that are expanding. Similarly, firms face constraints in terms of downsizing or absorbing new workers in response to market shocks. The result is that the flow of workers into and out of unemployment is substantially reduced.

The inability of both workers and firms to move is believed to have contributed to the increase in unemployment in continental Europe.[6] International comparisons of worker flows into and out of unemployment have found that continental Europe has substantially lower flows than the US.[7] This means that while workers in continental Europe are much less likely than American workers to be displaced from their jobs, they are also less likely to find new jobs if they do become unemployed. Thus, while employed workers in Europe enjoy much more job security, this comes at a rather heavy price: lower mobility

makes it harder for displaced workers to find new jobs and for new entrants into the labor market to find a job for the first time.

What are the causes of Europe's rigid or sclerotic labor markets? Through research in the 1980s, it became widely believed that labor regulations – and employment protection regulations, in particular – were the main cause for low worker and job mobility and, possibly, for high unemployment in continental Europe. By the 1990s policymakers began to take notice, and started echoing this analysis. Strict labor market regulations (and, in particular, employment protection laws) became seen as the main explanation for high unemployment in continental Europe. In the widely cited OECD Jobs Study of 1994, one of the main recommendations was to "reform employment security provisions that inhibit the expansion of employment in the private sector."[8] Following the Jobs Study, the business community in Europe advised the OECD that "in many OECD member countries, the current difficulties of the labor market are linked to, among other things, overly strict job protection...and that more jobs would be created in the private sector if there were fewer barriers to adapting employment to companies' economic circumstances."[9] Similarly, political entities such as the European Commission recently recommended member states "to review...and reform overly restrictive elements of employment legislation."[10] More recently, the OECD continues to emphasize the role of employment protection regulation in causing unemployment, and underscores the importance of balancing between firms' need to adapt to changing market conditions and workers' desire to have employment security.[11] It is perhaps not surprising that so much attention has been devoted to employment protection as a potential explanation for sclerotic labor markets and high

unemployment in continental Europe. According to various studies, continental European countries with low worker mobility and high unemployment are consistently found to also have strict employment protection laws. By comparison, a country like the USA, with high mobility and low unemployment, consistently gets the lowest ranking in terms of employment protection (see Table 1).

Yet, the relation between mobility and unemployment, on the one hand, and strict employment protection, on the other, is not as clear-cut as it may first appear. Is this relation indeed causal, as has been believed until recently, or is it driven by other forces - or even simply coincidental?

This *Opuscle* summarizes some recent research, which seeks to disentangle the complex forces at work that cause persistently high unemployment in Europe.

Earlier Research

Much of the earlier research on the impact of employment protection was based on evidence from developed countries for the three decades between the 1970s and the 1990s. These studies were very important in trying to assess the relevance of employment protection legislation in explaining unemployment. Nevertheless, they faced a number of shortcomings. For the most part, the extensive array of labor regulations in continental Europe was introduced prior to the 1970s. Over time, these rules were modified - but only slightly. The 1980s witnessed governments engaging in mild and limited reforms, which attempted simply to allow new forms of employment contracts (e.g., temporary or fixed-term contracts, and contracting through temporary help agencies), but did not get

Table 1

Rankings of Countries according to Employment Protection Regulations

	OECD (1999) Late 1980s	Lazear (1990) 1956-84	Bertola (1990) 1985
Austria	12	8	6
Belgium	7	10	4
Denmark	13	6	8
Finland	11	-	-
France	10	5	5
Germany	6	9	8
Greece	4	4	3
Ireland	15	15	8
Italy	2	1	1
Netherlands	9	11	10
Norway	8	2	-
Portugal	1	7	2
Spain	3	3	1
Sweden	5	14	7
Switzerland	14	12	-
United Kingdom	16	13	9
United States	17	15	11

Notes: All rankings increase with the laxness of employment protection legislation. The OECD (1999) study ranks countries according to an overall measure of employment protection legislation for regular employment, temporary employment and collective dismissals. The study by Lazear (1990) ranks countries based on a combination of legal notice period and severance pay, averaged for the period from 1956 to 1984. The Bertola (1990) study uses a compilation of rankings from other studies, but only includes 12 countries compared to the OECD (1999) and Lazear (1990) studies which include more than 16 countries.

rid of the high levels of employment protection for regular or permanent contracts.[12] However, using the introduction of these new types of contracts, in parallel to regular contracts, does not necessarily provide an understanding of what would have happened to the labor market if restrictions on dismissals had been reduced on permanent contracts. Moreover, the lack of large changes in the strictness of employment protection over the period considered by these studies means that, for the most part, these analyses have relied on differences in employment protection over time

due to the introduction of temporary contracts or on differences in employment protection on permanent contracts across countries.[13] However, this makes it difficult to distinguish whether employment protection legislation is responsible for the observed differences in unemployment across countries or whether other factors are driving these differences in unemployment. For example, countries that have strict employment protection legislation also tend to have other regulations in place, such as generous unemployment insurance or high minimum wages and taxes, which are likely to affect employment. In addition, countries with strict labor market regulations and high unemployment may differ in terms of macroeconomic conditions.

The main findings from these earlier studies are somewhat inconclusive. First, these studies find an inverse (but in most cases insignificant) relationship between employment protection and worker and job flows. Second, the evidence on the relation between employment protection and employment and unemployment is quite mixed. On the other hand, there is clear evidence that employment protection is associated with lower youth and female employment and higher temporary employment. Also, while cross-country studies find a positive relation between indices of economic freedom (which correlate negatively with employment protection indices) and GDP, there is no clear-cut relationship between employment protection and productivity at the cross-country level. Finally, cross-country studies suggest greater effects of employment protection legislation when countries are subject to adverse shocks and when there are rigid wage-setting institutions in place. However, there is no evidence from the cross-country data that product market regulations weaken or strengthen the effects of employment protection.

Recent Approaches

Given the shortcomings and inconclusiveness of earlier studies, recent country studies for Italy, Spain, Germany, France and the USA have instead exploited changes in employment protection within a country over time. In 1990, Italy increased dismissal costs on permanent contracts for small but not for large firms. In 1997, Spain reduced dismissal costs on permanent contracts for young and older workers but not for middle-aged workers. In 2004, the German government exempted firms between 5 and 10 employees from employment protection legislation, which followed two previous amendments: one by Chancellor Kohl which increased the threshold at which firms were subject to employment protection legislation from 5 to 10 employees, and another by Chancellor Schröder in 1999 reversing the previous change and lowering the threshold again to firms with 5 employees. The changes introduced in France during the late 1980s also relaxed employment protection legislation by facilitating hiring of certain types of workers (such as the young) on temporary contracts, which were subject to substantially less stringent employment protection. By contrast, many US states increased employment protection over the 1980s. Starting in the late 1970s and throughout the 1980s and early 1990s, US states introduced exceptions to the employment-at-will doctrine which essentially had allowed US employers to dismiss workers for good cause, bad cause or no cause at all. These exceptions introduced limits on the ability of employers to dismiss workers by imposing legal costs (including the cost of legal services and compensatory and/or tort damages) if employees were to take the cases to court. While employment protection is still much less strict in the USA than in European countries, the change

was drastic because employers went from facing no costs at all to facing non-trivial dismissal costs.

These different episodes provide "natural experiments", which allow comparing groups of workers targeted by the policy change to groups of workers not directly affected by the policy before and after the change in policy, but who face otherwise similar macroeconomic conditions and regulatory environments. These country studies can thus shed light on the causal impact of employment protection, by holding constant the macroeconomic and regulatory environments. A second advantage of these studies is that, with the exception of the French case, the reforms changed the extent of employment protection on permanent contracts as opposed to having added more regulations for alternative types of contracts.[14]

The main conclusions from these more recent studies are easily summarized. First, increasing the strictness of employment protection reduces worker and job flows. Second, evidence on the impact of employment protection on employment levels generally points to a negative relation between employment protection and employment. Third, evidence for Europe and the USA suggests that when employment protection regulations are tightened, the composition of employment is swayed against young and female workers, and towards temporary workers. The little evidence to date also suggests that stricter employment protection sways employers towards using more capital. Fourth, there is some limited evidence indicating that employment protection reduces productivity, probably because employers are forced to retain unproductive workers and because employees have less incentive to work hard. Finally, the existing evidence suggests that the effects of employment protection are

exacerbated in more volatile environments and when product market regulations are less stringent.

2. Theoretical Considerations

Stricter employment protection imposes monetary costs on employers who want to lay off workers, and this should reduce employment fluctuations.[15] On the one hand, higher costs of laying off workers will reduce the incentives for employers to dismiss. On the other hand, anticipating future dismissal costs, employers faced with stricter employment protection will also hire less workers as these may turn out to be inadequate or may no longer be needed if economic conditions turn to the worse.[16] Employment protection legislation should, thus, unambiguously reduce worker flows by reducing movements from employment to unemployment and from unemployment to employment. Employment protection should also reduce job flows by reducing the creation and destruction of jobs in continuing firms. Likewise, stricter employment protection should reduce the creation of jobs by newly entering firms. On the other hand, if firms can avoid paying dismissal costs when they declare bankruptcy, then substantial employment protection may end up increasing the destruction of jobs through firm exits.[17]

In spite of the widespread belief that employment protection regulations are likely one of the main causes behind European unemployment, theoretical predictions on the effects of employment protection on employment and unemployment are not clear-cut. As pointed out above, stricter employment protection should reduce hiring and flows out of unemployment

and this should contribute to increasing unemployment. At the same time, stricter employment protection should reduce dismissals and flows into unemployment and this should contribute to reducing unemployment. The net effect on employment and unemployment will, thus, depend on whether hirings or layoffs are affected more by employment protection. Employment protection will increase unemployment when regulations restrict hirings more than dismissals. However, regulations will reduce unemployment if fewer people get dismissed than hired as a result of employment protection.

Moreover, not only is the level of employment but also its composition likely to be affected by the presence of employment protection. Employment protection affects the composition of employment because those already employed are likely to remain in their jobs, while new entrants or re-entrants into the labor force (e.g., young individuals and women) are less likely to be hired. In this sense, the composition of employment is likely to shift towards middle-aged men and against young and female workers.[18]

In addition, employers may find it worthwhile to rely on alternative ways of contracting workers in order to avoid employment protection regulations. For example, employers may rely on the use of intermediaries, such as temporary help agencies, or use fixed-term or temporary contracts, that do not bind them to long-term relationships subject to employment protection legislation.[19] By the same token, given strict employment protection, employers may decide to avoid dismissal costs altogether by relying less on labor and more on machinery, energy and materials for the production process. For example, one may expect for employers to

increasingly use equipment that can substitute for employees (e.g., automatic teller machines, automatic payment systems) and which can save employers the potential costs in the event of dismissals. Thus, employment protection regulations can generate the unintended effect of increasing investment in machinery and equipment and, in turn, of increasing labor productivity as each continuing employee will work with more equipment.

Finally, overall productivity may be affected by employment protection. The inability of businesses to adjust to changing conditions by moving from contracting to expanding sectors may hinder total factor productivity (which nets out the contribution of inputs to total output).[20] In addition, employment protection may lower productivity by reducing the adoption of innovations or the introduction of new products, which may require substantial employment adjustments. Moreover, restrictions on dismissals may imply that employers get stock with unproductive workers they would not otherwise retain if it were not for the regulations. Also, if employers perceive their jobs as being guaranteed-for-life due to the regulations, they may not work too hard since they know that no matter what they do their employers will be forced to retain them.[21] All of these mechanisms imply that employment protection regulations should lower productivity.

At the same time, employment protection may increase productivity through a couple of channels. First, given high dismissal costs, employers may be more demanding if they do decide to hire and hire only exceptionally good employees.[22] In addition, Wasmer (2006) and others have argued that, by fostering long-term relationships, employment protection may

encourage investments on on-the-job training, that may also increase measured productivity. Contrary to the mechanisms mentioned before, these last two factors may instead imply that employment protection legislation could, in fact, increase productivity. The expected effect of employment protection on productivity should thus be ambiguous and can only be determined by looking at the evidence.

3. Employment Protection and Worker and Job Flows

In spite of the clear-cut predictions of employment protection on worker and job flows, earlier studies examining the impact of employment protection legislation on employment adjustments were relatively limited. This is perhaps because earlier studies looking at the impact of employment protection relied mostly on cross-country analyses and getting comparable information on worker and job flows across countries is not always easy.

One of the earlier studies looking at the impact of employment protection on worker and job flows was the OECD's Employment Outlook (1999). This study established an inverse relationship between the strictness of employment protection legislation and worker and job turnover, but it found that only the negative relation between employment protection and the flow into unemployment was significant. The OECD's Employment Outlook (2004) improved on this analysis by controlling for other differences in regulations across countries (e.g., active labor market programs, unemployment benefits and others) and found a negative and significant relation between employment protection legislation and worker flows (both

flows into and out of unemployment). However, like the earlier OECD (1999) study, Nickell and Nunziata (2000) found no evidence of a relation between employment protection and job turnover (i.e., the sum of job creation and job destruction), though they warned about the lack of comparability of the data across countries. Blanchard and Portugal (2001) found that when more comparable data is obtained for Portugal and the USA, the differences in worker and job flows between the two countries become more consistent with their respective levels of strictness of employment protection.

While Blanchard and Portugal (2001) and the OECD (2004) study attempt to use more comparable data and the latter study also attempts to control for differences in other labor regulations, these studies do not account for differences in product market regulations or for the possibility that differences in flows may had influenced the adoption of stricter regulations rather than the other way around. In this sense, studies which focus on unexpected policy changes which affect various groups of workers differently within a country are likely to provide more reliable evidence on the causal effect of employment protection on worker and job flows. This is the approach I took in my work on the 1990 Italian Labor Market Reform with Giovanni Pica (Kugler and Pica, 2005, 2006); in my work on the 1997 Spanish Labor Market Reform with Juan Jimeno and Virginia Hernanz (Kugler et al., 2003); and in my work for the USA with Gilles Saint-Paul (Kugler and Saint-Paul, 2004) and with David Autor and William Kerr (Autor et al., 2006).[23]

As described above, the Italian Labor Market Reform of 1990 increased dismissal costs for firms with less than 15 employees relative to firms with

more than 15 employees. Up until 1990, small Italian firms with less than 15 employees were exempt from employment protection regulations. However, in 1990, Law No. 108 introduced costs for unfair dismissals of between 2.5 and 6 months of pay in firms with less than 15 employees, while leaving unchanged the previous requirements for firms with more than 15 employees. A "natural experiment" approach consists, in this case, of comparing the affected group of small firms to the control group of large firms before and after 1990. Figures 4 and 5 show a larger reduction in new hires and separations around 1990 in small than in large firms. Similarly, Figure 6 shows a sharper reduction in entry in small than in large firms. On the other hand, Figure 7 shows an increase in

Figure 4.
Hires in Small and Large Firms in Italy, 1986-1995

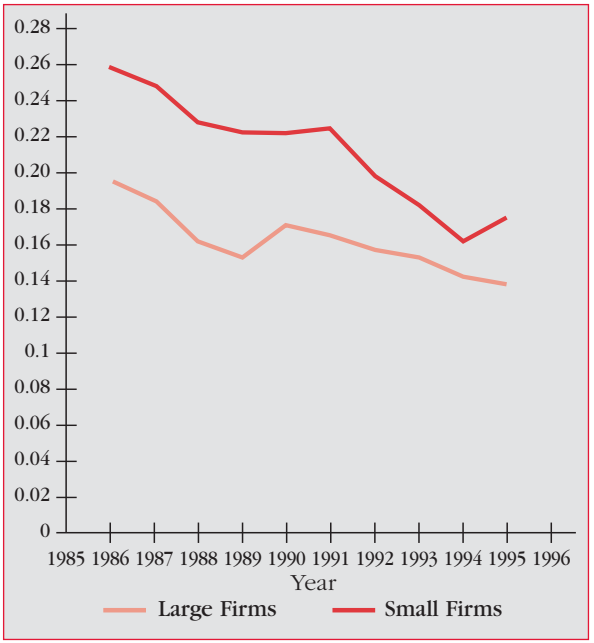
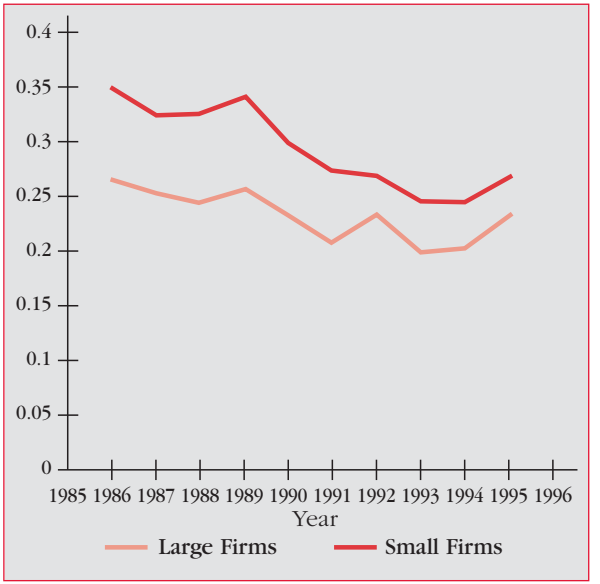


Figure 5.
Separations in Small and Large Firms in Italy, 1986-1995



exits in small relative to large firms. Table 2 reports differential hires, separations, employment changes, entry and exit in small relative to large firms following the reform, after controlling for other factors that may had affected worker and job turnover during this period such as sectoral composition, location, productivity, and cyclical effects affecting small and large firms differentially. Calculations based on the table's estimates show that hires and separations decreased by close to 5% and 10% for men, and by close to 12% and 15% for women.[24] Entry rates decreased by close to 25% and exit rates increased by close to 50% in small relative to large firms, and the willingness of small firms to adjust employment relative to large firms dropped by 15% after employment protection was tightened.[25]

Figure 6.
Entry rates in Small and Large Firms in Italy, 1986-1995

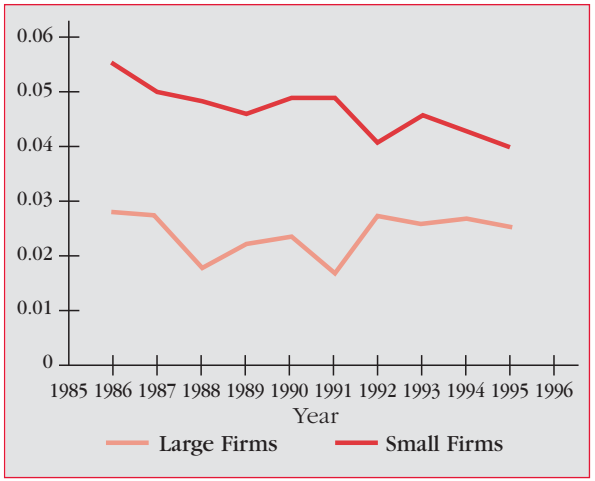
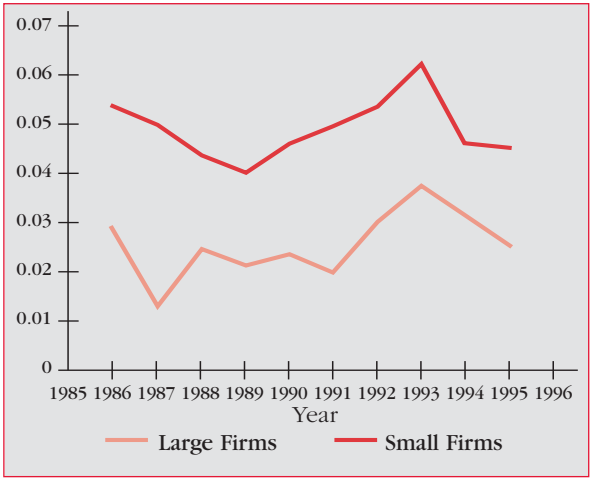


Figure 7.
Exit Rates in Small and Large Firms in Italy, 1986-1995



The Spanish reform also provides evidence of the negative relation between the strictness of employment protection and worker flows. In May 1997, the Spanish government introduced an important labor market reform as an attempt to address concerns with segmentation between unstable low-paying jobs and stable high-paying jobs following an earlier reform which liberalized the use of temporary contracts in 1984. The 1997 reform increased the incentives for firms to hire young and older workers by reducing unfair dismissal costs by 25% and payroll taxes by between 40% and 60% for those with newly signed permanent contracts in these age groups.[26] This meant that, after the second quarter of 1997, labor costs for young and older workers decreased relative to labor costs for middle-aged workers. The "natural experiment" approach here thus consists of comparing the affected groups of young and older workers to the control group of

Table 2
Effects of 1990 Reform on Worker and Job Flows in Small Firms in Italy

A. Effects on Worker Flows	Men		Women	
	Hires	Separations	Hires	Separations
Effects on Workers in Small Firms Relative to those in Large Firms after the Labor Market Reform of 1990	-0.010 (0.004)	-0.031 (0.002)	-0.026 (0.007)	-0.047 (0.002)

B. Effects on Job Flows	Employment Change	Entry	Exit
Effects on Small Relative to Large Firms after the Labor Market Reform of 1990	-0.029 (0.011)	-0.012 (0.006)	0.027 (0.006)

Notes: The table reports marginal effects from logits of hires, separations and firm entry and exit dummies and from a regression of the absolute employment change on a small firm dummy, a post-1990 dummy and the interaction term between the two, which is the coefficient reported in the table and captures the effect of the reform on these outcomes. All regressions control for sector and region fixed effects, sectoral productivity measures, a sector-specific trend, the GDP growth rate and an interaction term of the small firm dummy with GDP growth. In addition, the employment change, and firm entry and exit regressions also include firm-fixed effects. Robust standard errors are in parentheses.

middle-aged workers before and after the second quarter of 1997. Figures 8 and 9 show the number of new regular permanent contracts for men and women (not subject to the 1997 legislation), respectively, and the number of new permanent contracts for young (under 30 years of age) and older (over 45 years of age) men and women for every quarter from 1995 to 2000 reported by the Spanish Ministry of Labor. These figures illustrate the jump in the number of new permanent contracts for young and older workers after the second quarter of 1997. Table 3 reports the differential hires and separations for young and older workers relative to middle-aged workers after 1997, after controlling for education, experience, marital status, location, sector, and cyclical effects affecting young and older workers and middle-aged workers differentially. Similar calculations to those discussed above based on the table's estimates show an increase in hires of 40% and 20% for young and older men relative to middle-aged men after the reform. For separations, the results suggest an increase of about 6% for both young and older men relative to middle-aged men after the reform. By contrast, the reform in Spain did not have any effect on either hires or separations of women.

In contrast to the results described above based on the Italian and Spanish reforms, which directly affected the cost of hiring workers under regular contracts, the French reforms introduced over the 1980s and 1990s and analyzed by Blanchard and Landier (2002) facilitated the use of fixed-term or temporary contracts. These contracts were first introduced in France in 1979, but their scope was reduced in 1982. Then, in 1986 and 1990 the use of fixed-term contracts was extended and during the 1990s special temporary contracts were introduced for targeted groups, such as young workers. Blanchard and Landier

Table 3

Effects of 1997 Reform on Worker Flows of Young and Older Workers in Spain

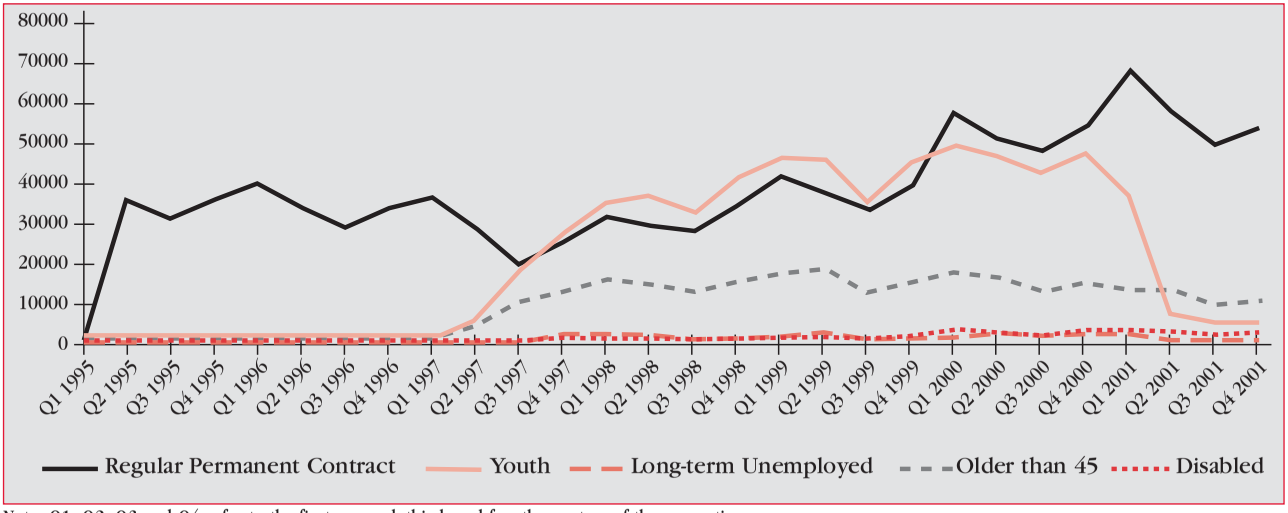
	Men		Women	
	Hires	Separations	Hires	Separations
Effects on Young Relative to Middle-age Workers after the Labor Market Reform of 1997	0.040 (0.017)	0.002 (0.001)	0.003 (0.006)	0.003 (0.003)
Effects on Older Relative to Middle-age Workers after the Labor Market Reform of 1997	0.055 (0.023)	0.002 (0.001)	0.006 (0.010)	-0.001 (0.001)

Notes: The table reports marginal effects from logits of hires, and separations on an under age 30 dummy, an over age 45 dummy, post-1997 dummy, and interaction terms of the post-1997 dummy with the under 30 and over 45 age dummies, which are the coefficients reported in the table and should capture the effects of the reforms on these outcomes. All regressions control for age, head of household and marital status dummies, education, tenure, occupation, and sector, province and quarter effects, the GDP growth rate and interaction terms GDP growth with the under 30 and over 45 age dummies. Robust standard errors are in parentheses.

(2002) find that the flows from unemployment to fixed-term contracts increased and the flows from unemployment and fixed-term contracts to regular contracts decreased for young workers (i.e., between 20-24 years of age). These results provide some evidence that lower employment protection on fixed-term contracts increase flows into this type of employment. However, this analysis is less reliable than the previous two studies for Italy and Spain, because it does a before and after comparison and does not use information on a comparison group, so that it is difficult to control for other institutional changes occurring in the labor market during this period.

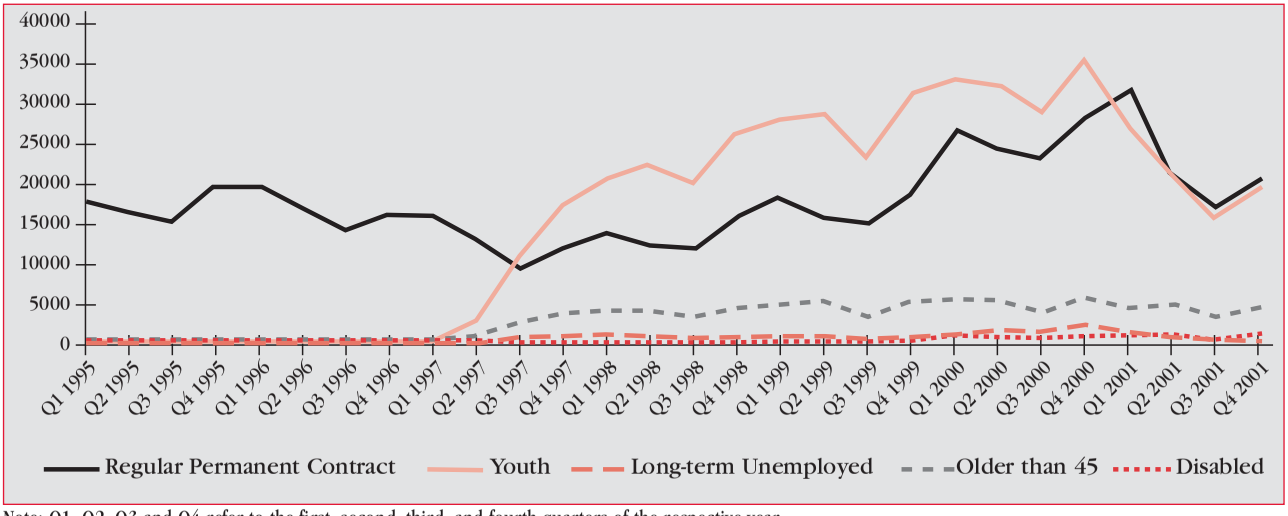
While many European countries changed regulations in the direction of relaxing employment protection, over the period from 1972 to 1992, court ruling in most US states introduced exceptions to the employment-at-will doctrine, which had until then allowed employers

Figure 8.
Number of Newly Signed Permanent Contracts for Men in Population Groups affected by 1997 Spanish Reform



Note: Q1, Q2, Q3 and Q4 refer to the first, second, third, and fourth quarters of the respective year.

Figure 9.
Number of Newly Signed Permanent Contracts for Women in Population Groups affected by 1997 Spanish Reform



Note: Q1, Q2, Q3 and Q4 refer to the first, second, third, and fourth quarters of the respective year.

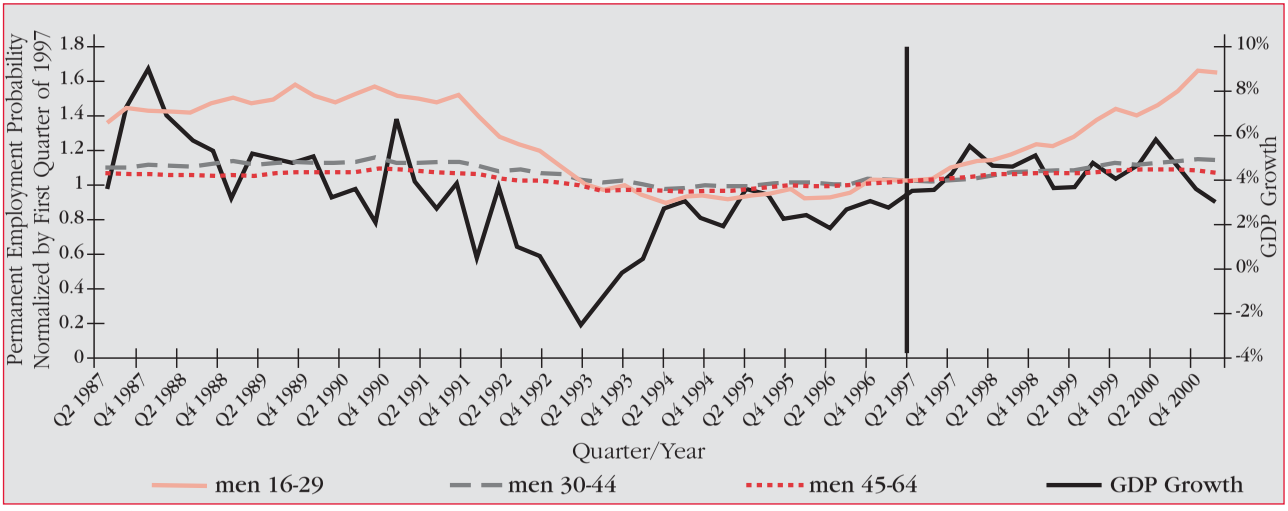
to dismiss workers for any cause. In my work with Gilles Saint-Paul (Kugler and Saint-Paul, 2004), we find that increased strictness of employment protection in those states that introduced these exceptions reduced the flows from unemployment into employment relative to employment-to-employment flows. More recently, in my work with David Autor and William Kerr (Autor, Kerr, and Kugler, 2006), we also find evidence that some of these exceptions reduced job flows by between 5% and 15% for all plants and by about 5% for continuing plants. Moreover, we find that employment protection exceptions reduced entry of new plants by close to 8%, while leaving exit unaffected. This evidence is in line with the findings for Italy, which also show that increased strictness in employment protection regulations reduce worker and job turnover as well as entry of new businesses.

4. Employment Protection and the Level and Composition of Employment

By contrast with the shortage of evidence on the impact of employment protection on worker and job flows, there is abundant evidence on the impact of these regulations on employment and unemployment. Perhaps there has been more interest in studying these effects because, in principle, the impacts of these regulations on the levels of employment and unemployment are ambiguous. Moreover, unlike measures of flows, employment and unemployment are more comparable across countries. As for the analyses on flows, the earlier analyses on employment and unemployment focused on cross-country analysis. Unfortunately, evidence from these earlier cross-country studies was mixed. An early OECD study by Grubb and Wells (1993) used limited information for 11 countries in 1989 and found employment protection to be negatively correlated with employment. Lazear's (1990) more thorough analysis, which used data for 20 countries for the period 1956-1984 and controlled for other factors, that could affect labor market outcomes in different countries, found negative effects of employment protection regulations on employment but not on unemployment. At the same time, in a subsequent analysis, the OECD (1999) used data on 19 countries for the more recent period from 1982-97 and found no effect of employment protection on employment and unemployment. Addison, Grosso and Texeira (2000) used Lazear's data and found no effect of regulations on employment when controlling for additional factors. However, like Lazear (1990), more recent studies use information on additional countries for a more recent period and find negative effects on employment, though less evidence of an effect on unemployment.[27] While these studies offer some evidence that employment protection reduced employment, some of them warn that these results may partly be capturing trends in labor participation or other factors affecting countries with strict employment protection regulations.

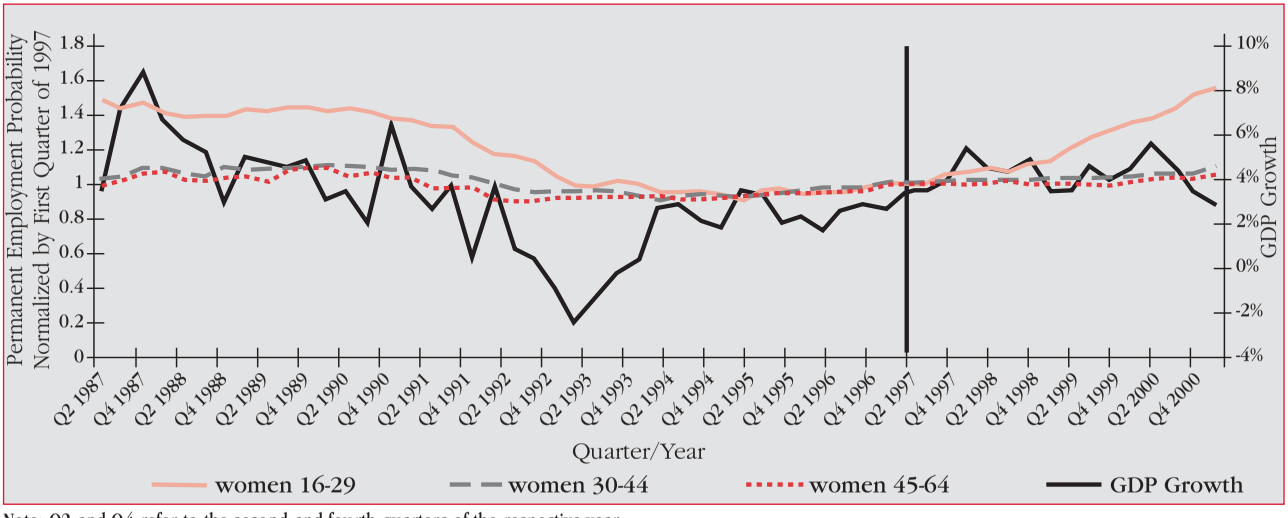
At the same time, country studies which help control for other macroeconomic and institutional factors also tend to support the view that stricter regulations lower employment. For example, Figures 10 and 11 show that the employment of young and older workers increased after the introduction of the 1997 Spanish labor market reform. Table 4 reports the differential employment of young and older workers relative to middle-aged workers after 1997 in Spain, after controlling for individual characteristics and cyclical effects specific to each age group, and shows an increase of about 2% in the permanent employment of young and older workers. In

Figure 10.
Permanent Employment for Young, Older and Middle-age Men Relative to First Quarter of 1997



Note: Q2 and Q4 refer to the second and fourth quarters of the respective year.

Figure 11.
Permanent Employment for Young, Older and Middle-age Women Relative to First Quarter of 1997



Note: Q2 and Q4 refer to the second and fourth quarters of the respective year.

addition, evidence for Italy and Germany shows reduced employment growth for the affected firms after employment protection regulations were tightened in these countries.[28] Similarly, Autor, Donohue and Schwab (2005) show that some of the employment protection doctrines introduced in the USA over the 1970s and 1980s reduced state employment rates by around 1%.[29]

Aside from affecting the level of employment, employment protection regulations have also been shown to affect the composition of employment. In particular, employment protection regulations improve the chances for employed workers to stay in their jobs, but reduce the chances for those without jobs to find employment. In this sense, new entrants into the labor market and women, who exit and re-enter the labor market more frequently, may be particularly hurt by the lower hiring due to strict employment protection regulations. Several cross-country studies indeed find that while employment protection regulations have no effect on the employment of prime-age males, effects are large on youth and female employment.[30] Similarly, evidence from country studies show redistributive effects against young workers and women. For example, my studies on Italy (Kugler and Pica, 2005, 2006) show a greater negative effect on the flows of women compared to men following increased dismissal restrictions, while my study for Spain showed a greater effect on young compared to older workers following the deregulation in 1997. Autor, Donohue and Schwab (2006) also find that the short-term impact of the USA exceptions was greatest for younger and female workers. Greater effects on certain groups of workers indicate that, in addition to affecting efficiency, employment protection regulations may have important redistributive consequences.

Table 4

Effects of 1997 Reform on the Employment of Young and Older Workers in Spain

	Men	Women
Employment of Young Relative to Middle-age Workers after the Labor Market Reform of 1997	0.015 (0.008)	-0.011 (0.010)
Employment of Older Relative to Middle-age Workers after the Labor Market Reform of 1997	0.017 (0.007)	0.001 (0.006)

Notes: The table reports marginal effects of logits of employment on an under age 30 dummy, an over age 45 dummy, post-1997 dummy, and interaction terms of the post-1997 dummy with the under 30 and over 45 age dummies, which are the coefficients reported in the table and should capture the effects of the reforms on these outcomes. All regressions control for age, head of household and marital status dummies, education, tenure, occupation, and sector, province and quarter effects, the GDP growth rate and interaction terms GDP growth with the under 30 and over 45 age dummies. Robust standard errors are in parentheses.

In addition to shifting employment away from young and female workers, employment protection may also shift employment away from permanent employment and towards other forms of employment not subject to these regulations. Both cross-country evidence and country studies show that stricter employment protection regulations increase temporary employment. Cross-country studies have shown that the share of workers on temporary contracts increases with the strictness of employment protection regulations.[31] For the USA, Autor (2003) shows that the introduction of exceptions to the employment-at-will doctrine can explain about 20% of the growth in the temporary help services employment. Moreover, the deregulation of temporary contracts in France and Spain over the 1980s has also been shown to contribute to increased hiring under fixed-term contracts and an increase in the share of temporary employment.[32] The rise in temporary

employment has also raised distributional concerns as it is argued that some workers are stuck in low-paying/low-stability jobs while others are secured with high-paying/high-stability jobs.

5. Employment Protection and Productivity

By reducing worker and job turnover as documented above, employment protection may also hinder productivity. The inability of firms to adjust to changing conditions and to reallocate from declining to dynamic sectors may reduce productivity. In addition, employment protection may deter businesses from producing new goods or investing in more complicated production processes, that may have higher added value but face more volatile demand and thus require greater adjustments. Finally, given the high costs of dismissals in countries with strict employment protection, employers may now be forced to retain unproductive workers they would have otherwise fired. Also, given the expectation of a job-for-life, employees may now have less incentive to work hard in their jobs, thus lowering their productivity.

On the other hand, employment protection may raise productivity. Employment protection raises the costs to employers, so that businesses may raise the quality of workers they are willing to hire and consequently their productivity. Moreover, the expectation of a long-term relationship may increase investments in training specific to a sector or firm, which neither the employer nor the worker would be willing to incur if the relationship was short-term. Finally, businesses may sway away from hiring workers and use mechanized technologies to replace workers, which would raise productivity for remaining workers.

Despite the obvious interest in shedding light on the consequences of employment protection regulations on productivity, the evidence on this topic is very limited. A study by Freeman (2002) finds that general indices of economic freedom, which are highly and negatively correlated with employment protection regulations, are associated with higher GDP per capita and GDP per worker.[33] By contrast, Nickell and Layard (1999) disaggregate various measures of labor market regulations and find that employment protection raises labor productivity as well as total factor productivity, which measures differences in production when using the same amount of inputs. However, the impact of employment protection on productivity disappears when controlling for initial differences in productivity across countries, indicating that countries initially lagging behind in productivity and with stricter employment protection regulations may simply be catching up in terms of productivity. Studies using sectoral data across countries, and which can control for other differences across countries, find evidence that stricter employment protection reduces productivity growth in countries where wages do not offset the high firing costs (Scarpetta and Tressel 2002). Country studies on the impact of employment protection on productivity are also scarce. In my recent work with David Autor and William Kerr (Autor et al. 2006), we find that, consistent with the view that greater labor costs may induce businesses to shift away from hiring labor and towards using capital, employment protection regulations raised investments in equipment and structures and consequently increased labor productivity. On the other hand, we find some evidence that the introduction of employment protection in the USA reduced total factor productivity.[34] Consistent with our findings, Bird and Knopf (2005) analyze the effect of employment protection on the profitability and

efficiency of the US banking sector from 1980 to 1990 and find evidence that employment protection lowered profits and productivity in this sector. Unfortunately, no studies of this sort exist for other countries. The study by Ichino and Riphahn (2005), however, hints at the negative relation between employment protection and productivity, as it establishes that increased job security raises absenteeism in the Italian banking sector. Thus, although still inconclusive, the evidence seems to point towards a detrimental impact of employment protection regulations on productivity.

6. Interactions of Employment Protection, Shocks and Other Regulations

Employment protection regulations appear to reduce mobility, employment and possibly productivity and to generate redistribution in the labor market. At the same time, both the cross-country evidence and country studies show that these effects are likely to differ depending on the context in which employment protection regulations are introduced. For example, the effects of employment protection are greater in more volatile environments and differ depending on whether other regulations are also present.

A number of cross-country studies find greater and longer effects of employment protection regulations on unemployment when countries are subject to adverse shocks. While employment protection and adverse shocks can explain the upward trend in unemployment over the last decades, the greater effects of employment protection regulations when there are adverse shocks is crucial in explaining why unemployment rose so much more in some countries than in others (Blanchard and Wolfers, 2000; and Bertola et al., 2002). Consistent with the idea that the effect of employment protection may be greater in turbulent environments, in my study with Giovanni Pica (Kugler and Pica, 2006) we find that small firms operating in more volatile environments responded more by reducing worker and job flows to the tightening of employment protection regulations in Italy.

There is also reason to expect that the effects of employment protection may vary with differences in other regulations in place. For instance, Bertola and Rogerson (1997) have argued that the effects of employment protection on unemployment should be higher when wages cannot fully adjust down in response to adverse economic conditions. In countries with decentralized wage bargaining, wages adjust a lot because workers will moderate their wage demands so as to not risk losing their jobs. Similarly, in countries with highly centralized wage bargaining, wages also adjust because workers moderate their wage demands in order to avoid raising inflation which may result in contractionary monetary policy and increased unemployment. By contrast, intermediate levels of coordination in wage bargaining are likely to lead to less moderation in wage demands and a greater response of firms to adverse shocks through reduced employment rather than lower wages.[35] Empirical evidence based on cross-country data indeed finds that the negative effects of employment protection regulations on employment are greater in countries with intermediate levels of coordination of wage bargaining, and under which, wages are least likely to adjust to labor market slack.[36]

There is also reason to believe that the effects of employment protection may differ depending

on the strictness of product market regulations. Krueger and Pischke (1998) have argued that restrictions on startup companies or product market regulations may reduce the responsiveness of labor demand with respect to labor costs. In the same spirit, Kugler and Pica (2005) show that as entry costs increase, hiring is likely to respond less to changes in dismissal costs. These analyses thus suggest that the effectiveness of a reform that removes or relaxes employment protection regulation will be smaller in a country with heavy administrative burdens on firms or larger in a country with less restrictions on firm entry. There is some evidence from cross-country studies that employment protection and entry costs are indeed complementary. Nicoletti and Scarpetta (2005) find that the effects of employment protection on employment become greater the less onerous are product market regulations. However, the differences in the effects of employment protection regulations on employment are not significant at high, medium and low levels of product market regulations. It is not surprising, though, that it is difficult to examine the joint effect of the two types of regulations using cross-country data, given that countries with restrictive employment protection regulations also tend to face restrictive product market regulations and vice-versa.[37] Table 5 presents rankings of countries according to administrative regulations constructed by the OECD, which include administrative burdens on startups and burdens generated by the licensing and permit systems. As is evident from comparing Tables 1 and 5, countries that rank high in terms of employment protection also tend to rank high in terms of administrative regulations (e.g., Italy, Greece, Portugal, France and Spain), while countries that rank low in terms of employment protection also tend to rank low in administrative regulations (e.g., the USA and the UK).[38]

Table 5

Rankings of Countries according to Administrative Regulations

	Overall Index of Administrative Regulation	Administrative Burdens on Startups	Licensing and Permit Requirements
Australia	12	12	11
Austria	8	5	16
Belgium	2	10	2
Canada	13	11	17
Denmark	12	6	5
Finland	6	9	7
France	1	2	4
Germany	3	4	6
Greece	4	6	10
Ireland	15	15	8
Italy	2	1	15
Japan	3	8	1
Netherlands	9	10	12
Norway	10	10	13
New Zealand	9	13	8
Portugal	9	9	14
Spain	5	3	13
Sweden	7	14	2
Switzerland	4	7	3
United Kingdom	14	14	18
United States	11	15	9

Notes: All rankings increase with the laxness of administrative regulations. The rankings in this table are generated from the indices constructed by Nicoletti, Scarpetta and Boylaud (2000) using data on administrative procedures and other economic regulations collected by the OECD. The first column reports the ranking according to administrative regulation, which aggregates administrative burdens faced by startups and burdens generated by the licensing and permit system. The second and third columns show the rankings of countries according to burdens faced by startups and according to licensing and permit requirements, respectively. There are a number of tied ranks. Tied ranks imply that countries with an equal ranking have the same level of strictness in terms of administrative regulations.

In this regard, country studies which can exploit differences in employment protection and product market regulations across groups or sectors are more promising. Table 5 shows that Italy ranks second after France and Spain ranks fifth in terms of overall administrative burdens; and that Italy ranks first and Spain third in terms

of administrative burdens on startups. This coincides with detailed information on administrative burdens on startups conducted by Djankov et al. (2002), which reports that an entrepreneur has to follow 16 different procedures in Italy and 11 in Spain and wait at least 62 days to acquire the necessary permits to start a business in Italy and 82 days in Spain. Thus, given the strictness of entry regulations in Italy and Spain, one may expect that labor market reforms are less effective in these countries. At the same time, product market regulations are not uniform across sectors. Thus, we may expect labor market reforms to be especially ineffective in those sectors with stricter product market regulations. The natural experiment approach allows this question to be answered by comparing small to large firms before and after the 1990 reform in more and less regulated sectors in Italy (Kugler and Pica, 2006). Similarly, here I compare young and older workers to middle-aged workers before and after the 1997 reform in more and less regulated sectors in Spain. Sectors are split into more and less regulated following Nicoletti (2000), who uses the OECD international regulation database to construct measures of industry-level regulations and then ranks industries in various countries as very restrictive, restrictive, liberal and very liberal according to whether the summary indicator exceeds by more or less than one standard deviation the average value for the industry in the 28 OECD countries included in the sample.

Tables 6 and 7 present differential effects of the 1990 and 1997 reforms in more and less regulated sectors (i.e., those which are either very restrictive or restrictive and those that are either very liberal or liberal according to Nicoletti's rankings) on hiring in Italy and Spain,

Table 6

Effects of 1990 Reform on Hiring in More and Less Regulated Sectors in Small Firms in Italy

	Men	Women
Hires of Workers in Small Relative to Large Firms in Less Regulated Sectors after the Labor Market Reform of 1990	-0.016 (0.006)	-0.056 (0.019)
Hires of Workers in Small Relative to Large Firms in More Regulated Sectors after the Labor Market Reform of 1990	0.003 (0.009)	0.083 (0.022)

Notes: The table reports marginal effects from logits of hires on a small firm dummy, a post-1990 dummy, an interaction of the small firm dummy and the post-1990 dummy, and an interaction of the small firms dummy, the post-1990 dummy and the regulated dummy. The table reports the coefficients of the interaction terms and captures the differential effects of the reform on more and less regulated sectors. All regressions control for sector and region fixed effects, sectoral productivity measures, a sector-specific trend, the GDP growth rate and an interaction term of the small firm dummy with GDP growth. Robust standard errors are in parentheses.

respectively. Table 6 shows no differential effect of the reform in more and less regulated sectors for men, but it shows a smaller reduction in hires in more relative to less regulated sectors for women in Italy. The results for women are, thus, consistent with smaller effects of the reform in terms of reducing hiring in sectors facing higher entry costs. The results in Table 7 for both men and women show a smaller increase in hires following the 1997 Spanish reform in more compared to less regulated sectors, though only the results for older men are significant. Like the results for Italy, these results are generally consistent with the idea that labor market deregulation is likely to be less effective in generating new jobs if product markets have not been liberalized.

Table 7

Effects of 1997 Reform on Hiring of Young and Older Workers in More and Less Regulated Sectors in Spain

	Men	Women
Hires of Young Relative Middle-age Workers in Less Regulated Sectors after the Labor Market Reform of 1990	0.017 (0.008)	0.010 (0.008)
Hires of Young Relative Middle-age Workers in More Regulated Sectors after the Labor Market Reform of 1990	-0.004 (0.016)	-0.008 (0.007)
Hires of Older Relative Middle-age Workers in Less Regulated Sectors after the Labor Market Reform of 1990	0.092 (0.020)	0.039 (0.033)
Hires of Older Relative Middle-age Workers in More Regulated Sectors after the Labor Market Reform of 1990	-0.070 (0.035)	-0.043 (0.034)

Notes: The table reports marginal effects from logits of hires on an under age 30 dummy, an over age 45 dummy, a post-1997 dummy, interaction terms of the post-1997 dummy with the under 30 and over 45 age dummies, and interaction terms of the post-1997 dummy with the under 30 and over 40 age dummies and a regulated sector dummy. The table reports the coefficients of the interaction terms which capture the differential effects of the reforms on more and less regulated sectors. All regressions control for age, head of household and marital status dummies, education, tenure, occupation, and sector, province and quarter effects, the GDP growth rate and interaction terms GDP growth with the under 30 and over 45 age dummies. Robust standard errors are in parentheses.

7. Summary and Conclusions

While some advocate reducing labor market regulations as a way to deal with the problem of unemployment, others argue that eliminating such regulations would leave workers vulnerable to high turnover. Both arguments may have their merit. The first emphasizes the costs of regulations while the latter focuses on the potential benefits of regulation. Up till now, however, the bulk of work in this area has emphasized the costs of regulations.

This article surveys the earlier and recent evidence on the role of one important type of regulation in the labor market, i.e., employment protection regulations, in Europe and the USA. The evidence shows that employment protection reduces worker and job flows and also employment. In addition, there is some evidence suggesting that employment protection regulations may reduce productivity. Opponents of this type of regulation focus precisely on the efficiency costs resulting from employment protection, which have been documented here.

At the same time, it is clear from the evidence on flows that employed workers would be much more vulnerable if regulations were eliminated. On the other hand, the unemployed could even end up better off as they would be more likely to be hired, so that it is not clear that if employment protection were eliminated, higher turnover would leave all workers worse off. In fact, employment protection generates redistribution from unemployed towards employed, and from younger and female workers to middle-age and male workers, and possibly from unskilled toward skilled workers and capitalists by inducing investment into labor-saving technologies. Eliminating employment protection is, thus, likely to provide better opportunities for young, female and unskilled workers in the labor market. This means that the elimination of employment protection regulations may not only be desirable from an efficiency point of view but also from the point of view of generating redistribution towards less protected groups.

If these regulations are generally undesirable on efficiency as well as redistributive grounds, then why do these regulations exist in the first place? Some have argued that employment protection regulations may play a positive role by

insuring workers who are not able to insure against the risk of becoming unemployed through private markets. Others have argued instead that employment protection creates long-term relationships which are necessary to invest in training specific to a sector or firm and on which those engaged in short-term employment relationships would not invest.[39] These arguments point to potential benefits of employment protection. Unfortunately, the potential benefits have not been explored empirically so far to provide a full assessment of the effects of employment protection on total welfare. This is an area, which needs to be studied further in order to provide a more balanced view of the role of employment protection.

In addition, it is important to note that employment protection regulations do not seem to be equally adverse in all environments, and, by the same token, deregulation of employment protection does not appear to have equally positive effects under all institutional environments. In particular, the evidence has shown that deregulation in employment protection would work best if wage bargaining moved in the direction of allowing greater wage flexibility and if product markets were also deregulated. This analysis, thus, suggests that regulations are complementary and that piece-meal reform in the labor market may not be effective in lowering unemployment and getting rid of the so-called sclerosis in Europe, but that instead wider reforms may be needed to achieve these goals.

Notes

(1) I am grateful to Jaume Ventura, Ignacio Donoso, Bernardo Kugler and an anonymous referee for very useful comments. E-mail for correspondence: adkugler@ub.edu

(2) See, e.g., Blanchard (2004).

(3) According to the OECD Jobs Study (1994b), the average unemployment rate in 1973 was 3.8% in Europe and 5.2% in the USA. By 1993, the average unemployment rate was 10.6% in Europe and 6.7% in the USA. Note that the evolution in the European unemployment rate masks some differences in unemployment rates across Europe. However, as shown in Figure 2, the evolution of the average unemployment rate in Europe largely captures the evolution of unemployment in the four large continental European countries of France, Germany, Spain and Italy. By contrast, unemployment in the UK has followed US unemployment trends much more closely. This is why we refer throughout the Opuscle *to continental Europe.*

(4) The most recent unemployment figures for December 2005 show the European unemployment rate at 8.5% compared to a US unemployment rate of 4.8% (Eurostat Website, http://epp.eurostat.cec.eu.int/portal/page?_pageid=0,1136184,0_45572592&_dad=portal&_schema=PORTAL; and Bureau of Labor Statistics website, http://www.bls.gov/news.release/empsit.t07.htm).

(5) The term "Eurosclerotic" was first introduced by Giersch (1985) in reference to rigid labor markets as a result of overly generous benefits provided by European welfare states. The term sclerotic labor markets has continued to be used by many economists, including Bentolila and Bertola (1990) and Blanchard and Portugal (2001) among others.

(6) In practice, though, unemployment should only increase if the reduction in hiring as a result of rigidities is greater than the reduction in displacements.

(7) Yearly gross worker flows as a percentage of the total number of workers in the 1980s were 76.0 in the USA, 67.0 in Italy, 43.8 in Germany and 59.5 in France (see Contini and Revelli, 1997).

(8) OECD (1994a).

(9) BIAC (1998).

(10) European Commission (2003).

(11) OECD (2004).

(12) For example, the OECD (2004) reports that while there has been some convergence across countries in terms of employment protection regulation, this has been mainly the result of changes in the regulation of temporary employment in highly regulated countries.

(13) For example, the OECD finds that their measures of employment protection for the late 1980s and 2003 are highly correlated (with a correlation coefficient of 0.91) (OECD, 2004).

(14) A potential downside of natural experiments is that they may fail to account for the possibility that lowering the costs of dismissal for one group increases employment for that group but reduces it for the other group. If substitution of this sort takes place, this would overstate the effect of reducing employment protections across the board. One way of avoiding this sort of problem with natural experiments is to compare the group targeted by the reform with a group not directly affected by the reform but sufficiently different from the target group. Another potential problem with the natural experiment approach is that firms and workers may anticipate the policy changes and change their behavior in response to them. However, the policy shifts mentioned above were largely unexpected so that the before and after comparisons are relevant.

(15) The seminal work by Lazear (1990) showed that employment protections reduce employment adjustments when workers cannot compensate employers with side payments for the higher dismissal costs they face.

(16) See, e.g., Mortensen and Pissarides (1994) and Kugler et al. (2003).

(17) Bentolila and Bertola (1990) consider the case of continuing firms. Hopenhayn and Rogerson (1990) allow for free entry so that entry and exit are also affected by employment protection regulations. However, the latter study does not allow for the possibility that firms may default on severance payments if they declare bankruptcy, which is the case in various countries.

(18) OECD (2004).

(19) Nunziata and Staffolani (2002) describe how lower dismissal costs of temporary relative to permanent contracts increase the share of temporary hires.

(20) See, e.g., Hopenhayn and Rogerson (1990) for this type of argument.

(21) Ichino and Riphahn (2005).

(22) Kugler, Jimeno and Hernanz (2003) show that higher dismissal costs increase the quality of new hires and reduces the quality of retained workers.

(23) Similar studies by Verick (2004) and Bauer, Bender and Bonin (2004) for Germany and by Blanchard and Landier (2002) for France also exploit changes in employment protection legislation in recent decades.

(24) The percent changes are calculated using the marginal effects reported in Table 2 and using the mean hiring and separation rates for men and women in small firms before 1990. The mean hiring and separation rates for men in small firms before the reform were 0.23 and 0.32, respectively. The mean hiring and separation rates for women in small firms before the reform were 0.22 and 0.32, respectively. Thus, a decrease in hiring of men of 0.010 reported in Table 2 relative to 0.23 represents a decline of about 5%, while a decline in separations of men of 0.031 reported in Table 2 relative to 0.32 represents a decline of about 10%. Similarly, other percent changes reported below are calculated relative to the mean values in small firms prior to the reform in the case of Italy and relative to the mean values for young and older workers prior to the reform in the case of Spain, and relative to the mean values in states introducing exceptions prior to their introduction in the case of the USA.

(25) By contrast, the study for Germany by Bauer, Bender and Bonin (2004), which exploits the changes in the establishment size thresholds at which employment protection legislation becomes binding (from 5 to 10 employees in 1996 and from 10 to 5 again in 1999), finds no effects of changes in employment protection on hirings and separations. However, this analysis examines the effects only a few months after the implementation of each of these changes and it examines effects on all employees as opposed to effects on permanent workers, who are the ones who were directly affected by the reform. Moreover, unlike our study for Italy, this study fails to control for specific responses of small firms over the business cycle, which is important given that the introduction of the reforms coincided with a period of high growth in Germany.

(26) Note that while the reduction in unfair dismissal costs was permanent, the reduction in payroll taxes lasted for only two years from 1997-1999.

(27) See, e.g., Nickell (1997); Nickell and Layard (1999); Di Tella and MacCulloch (2005), Heckman and Pages (2000, 2004).

(28) See Garibaldi, Pacelli and Borgarello (2004) and Verick (2004).

(29) By contrast, Autor, Kerr and Kugler (2006) find a positive effect of employment protection exceptions on non-production employment at the plant level. However, this increase in employment appears to precede the change in employment regulations probably indicating that some other factor may be behind the increase in employment in these states.

(30) See, e.g., Nickell (1997), OECD (2004), Heckman and Pages (2000, 2004).

(31) See, e.g., Grubb and Wells (1993), Nunziata and Staffolani (2001).

(32) Blanchard and Landier (2002) and Dolado et al. (2002).

(33) These associations become insignificant in the overall sample when controlling for country fixed effects. By contrast, the associations are significant both with and without country fixed effects in the sample of less-developed countries.

(34) However, we are cautious about these results because somewhat lower productivity seems to have preceded the introduction of wrongful discharge provisions.

(35) See Calmfors and Driffill (1988) for more on the taxonomy of different countries by level of wage bargaining coordination, and on the effects of different systems on wage moderation.

(36) See, e.g., Elmeskov et al. (1998), OECD (2004), Boeri et al. (2000), and Nicoletti and Scarpetta (2005).

(37) Nicoletti and Scarpetta (2005) report that the cross-country correlation between employment protection measures and the index of product market regulation is 0.72.

(38) See Nicolettiet al. (2000) for a detailed description of the data collected to construct the OECD rankings and the construction of the rankings themselves. The OECD rankings coincide with rankings based on detailed information on administrative burdens on startups collected by Djankov et al. (2002).

(39) See Bertola (2004) on the insurance benefits and Wasmer (2006) on the investment benefits of employment protection.

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