Job Protection Laws and Jobs: Evidence from a natural experiment ¹ July 1998

Jimmy Royer CRÉFA and Economics Department Pavillon J-A DeSève Laval University Sainte-Foy (Québec) CANADA G1K 7P4 telephone number: (418)656-5122 jroy@ecn.ulaval.ca Marc Van Audenrode CRÉFA and Economics Department Pavillon J-A DeSève Laval University Sainte-Foy (Québec) CANADA G1K 7P4 telephone number: (418)656-3125 mvand@ecn.ulaval.ca

¹Very Preliminary. Cite at your own risk.

1 Introduction

Belgian has long been considered by many as exemplifying the economic problem known as Eurosclerosis. Indeed, Belgium did have (and to some extend still has) almost all of the negative institutional characteristics often associated with poor economic performance: high job protections, rigid wages and generous unemployment insurance compensation.

Job protection laws have probably been everybody's favorite scapegoat in explaining high European unemployment. Countless studies have tried to find a link between employment protection laws and employment performance ([6], [8], [4], [9], [10], [1], [5], [11], [2], among many others). their results have at best been mixed. Several explanations can justify this lack of clear-cut results.

First is the difficulty of isolating one specific institutional feature of an economy. The estimation of the impact of such EPL on labor market adjustments is often made by international comparisons, and countries differ in many respects. [1] and [11] have shown, for example, that the negative impact on an economy's ability to adjust employment arising from strict employment protection laws (EPL) is often offset by generous short time unemployment compensation schemes. This does not mean that EPL do not hinder labor adjustment, but rather than measuring their magnitude isn't trivial task.

Second, is the problem of endogeneity of institutions and laws. Institutions appear to fulfill social needs and laws change them because of a perception that these institutions fail to fulfill their role and as lawmakers respond to requests and demand from their constituents. The implication of this that it is quite difficult to study the impact of EPL within countries, since such a study requires almost always a change in the legal environment at some point in time, change which can be endogenous.

Finally, the theoretical implications of EPL are not clear cut ([5]). While

it is clear that the potential for costs if the need to dismiss a worker is ever felt can hinder ex-ante job creation and hiring, these very same costs can ex-post slow down the process of job destruction and firing. This is why the impact of EPL on total employment is theoretically unclear. Several authors ([2], [7]) have argued that the negative impact of EPL on labor markets might be more due to the fact that they slow down employment adjustment-and therefore threaten long term growth, rather than to the fact that they destroy jobs in the short run.

We propose here a test on the impact of employment protection laws on the Belgian labor market, which we will argue is free of the problems we have just listed. It will be based on a within country experiment, based on what will argue to be an exogenous change in the legal environment. Also, the data we will use will allow us to consider separately the impact of the legal change on both hirings and separations rather than on total employment.

In section 2, we will present the legal environment and describe the nature of EPL in Belgium and the legal change that will be the basis of our natural experiment. Section 3 will present the data and the empirical strategy. The results will be presented in section 4 before offering a few concluding remarks.

2 Job Protection Laws

Belgian workers have always afforded stable, highly protected jobs, although this is more true for white collars than for blue collars, despite the fact that Belgian recognizes the basic principle of employment at will². Indeed, Belgian law guarantees workers long notice periods and in some cases generous mandatory severance payments. Notice for blue collars are relatively short:

 $^{^{2}}$ Only in a few cases (union representatives, pregnant women, workers in parental leave, for example) does an employer have to have a just cause to justify the dismissal of an employee.

4 and 8 weeks for workers with less than 20 years of service and those with more than 20 years, respectively. White collars are given much longer period of notice. Low wage³ white collars are given 3 months of notice plus 3 months per completed five years of seniority. For high wage white collars, these are lower bounds. The actual period of notice has to be set in agreement between the employer and the employee. When no accord can be reached, the length of notice is set by the Labor Courts. [3] estimates that precedents tend to show that the length of notice Courts grant to these high paid employees is a function of age, specialization, tenure and wage. They can go as high as 36 months. Of course, all these restrictions do not apply during trial periods (generally 2 weeks for blue collar, but up to six months for white collars). In addition to notice, Belgian workers (blue and white collars) are given large severance payments in case of plant closing. These payments amount to roughly one-month salary per year of seniority, plus some additional compensation for high wage and older workers. In case of mass layoffs, some severance - although much less generous - are due too.

Up until 1985, the threshold between low and high wage white collars was set at 250,000 BF/year. White collar workers paid below that level of annual earning were given a three months notice plus 3 months per 5 years seniority, those above were given much longer notices. This amount of 250,000 BF had been set in 1978, and, between 1978 and 1984, the government forgot to index it. By 1985, the threshold had become meaningless as a result of a decade of high wage inflation. Most white collar workers earned wages above that threshold. In 1985, the Government decided to react and raised the threshold from 250,000 to 650,000 BF, a raise in excess of $160\%^4$. Many workers whose wages were between these two levels saw their level of job

³The threshold between low and high wage is set be decree and is indexed.

⁴As an indicator of suddenness of that decision, we can point to the fact that the change was enacted by a royal decree published on December 14, 1984, effective January 1, 1985.

protection decline, sometimes dramatically.

Industrial relation scholars in Belgium have computed tables that appear to summarize legal precedents set by different Labor Courts. As all precedents, these are a good indication of what the Court's general practices have been. Figure 1 shows the changes in length of notice for a 35-years-old employee with 5 years of tenure in a firm, as estimated in [3]. As this figure shows, the length of notice was considerably reduced for some workers (particularly for those with wages between 600 and 800 thousands Belgian Francs) as a result of the legal change.

Another way, perhaps more rigorous, way of seeing the impact of this legal change on the level of job protections is to look at the legally mandated levels of severance payments due to the workers in case of plant closing. Figure 2 shows the amounts of severance owed to the same 35-years-old worker with 5 years seniority measured in monthly wages. As the figure shows, some workers lost up to the 4 months of salary in potential severance pay as a result of the legal change.

We argue that this legal change created a natural experiment that is as close as these natural experiment can get to controlled experiments. It happened within country; was, arguably, completely exogenous; and provided us with a perfect control group, as blue collars were not affected by the change.

3 Data

We use the social security records of the population of workers employed in Belgium at any point in 1984 or 1985⁵. These data provide us information on wages, days worked, days of (compensated) unemployment, in addition to some information on the worker (age, sex and occupation).

⁵With exception of the tenured employees of the federal government.

The data provide one record per employer/employee match per year. The fact that we access the population of workers allows us to rebuilt from these records the employment history and transitions for all of them. While we will only be using transitions and employment patterns happening in 84 and 85, our dataset covers the entire 1978-1985 period allowing us to constructs a censored measure of tenure.

We specifically want to look at accessions and separations in 84 and 85 to look for change in behavioral patterns that could be linked to the changes in legal environment. To do so, we have extracted two samples from our dataset. The first one will allow us to look at separations, the second at new hires.

Since we don't know the reasons for separations, we can't distinguish between quits and fires. It is customary in these types of datasets to label quits transitions that do not involve any spell of unemployment in between jobs. As the possibility of switching job without going through a spell of unemployment is highly correlated with the length of notice, such a practice would be unsuitable here. Furthermore, if the reduction in job protection for some workers results in higher turnover, an increase in voluntary quits might result from the legal change. In this exercise, we believe it is entirely justified to look at all workers separations, without distinguishing quits from fires. We have therefore built a sample of white collar workers, aged 25 to 50 years who had been employed at the same firm for at least one full year in 1984 or 1985 and looked whether these workers would separate from that job at any point during that period. These restrictions are designed to avoid spurious measures arising from early retirement and from workers on probationary periods 6 .

To look at new hires, we built a sample of workers who were unemployed

 $^{^{6}}$ At this point, because of computational constraints, we use a 20% random subsample of that sample.

at some point in 1984 or 1985 with a previous employment history. While such a restriction prevents us to look a new entrants, it provides us with a measure of past wages which allows us to quantify the impact of the legal changes for these workers.

4 Results

4.1 Separations

We first look at the impact of legal changes on separations. Two strategies are used to look at these. First, we look at the impact of the different levels of protection on the probability of separating separately for each year, without taking advantage of the longitudinal nature of our data. Second, we will use a model that will make use of that longitudinal nature. For simplicity of exposure, we will exclude new entrants⁷ from the analysis of 1985, to allows us to use the exact same sample in the first and second strategies⁸.

Table 1 presents the descriptives statistics of the sample. As the table shows, our sample is made of relatively older, high tenured workers predominantly male. The table shows that approximately 8% of them will separate in 1984, and 9.3% of those left separate in 1985. It also shows how meaningless the 250,000 BF threshold had become since only one percent of the sample was below it.

Table 2 presents a simple logit analysis of the probability that the workers in our sample will separate from their current employer by the end of the year, separately for 1984 and 1985. The table indicates that in this sample, the probability of separating slightly increase with age, but strongly decrease with tenure. Everything else equal, workers with higher wages tend to sep-

 $^{^{7}}$ I.e. workers who actually entered the firm in 1984, but were exclude from our 1984 sample because of our rule excluding all workers with less than a year tenure.

⁸No significant differences in results can be found if new entrants are included.

arate less. Sex has a very different impact depending on the year. Finally, the result on the implicit measure of job protection indicates the possibility of the legal changes having some impacts. In 1984, workers whose yearly wages were between 250 and 650 KFB had probabilities of leaving half way between those below and above them, a result exactly in line with the respective levels of protection of these different categories. In 1985, this has change dramatically, as workers in that very same category have a probability of separation identical to those below them who are now given the exact same level of protection as they are.

Of course, the data variation, which allows the identification of these variables, is tiny, as daily wages are also included in the equation. In addition, the 1985 sample used here suffers from sample selection, as only those who did not quit 84 are left. This is why we turned to joint estimation methods.

In tables 3 and 4, we fully use the longitudinal nature of our dataset by estimating a nested logit model of the probability of separation. Workers can separate in 1984; if they don't they can separate again in 1985. Coefficients on observables are constrained to be identical in both years, except for the intercept (year dummy) and for the coefficients on the level of wages. This introduces variations in the level of job protection within observationsproviding a much more solid ground for identification and solving the problem of sample selection.

Here the results are even clearer. As the tables shows, in 1984, the workers paid between 250 and 650 KBF had a probability of leaving very close to that of those workers above that threshold, as they benefited from a comparable level of protection. In 1985, this completely changes, as their level of protection becomes identical to that of those workers below 250 KBF, so does their probability of separation.

To account for the possibility that wages in 1985 reacted to the legal change, we performed the same estimation with the 1985 wages instrumented.

We used as an instrument the gap between the 650,000 BF threshold and the 1984 annual wage. Our idea was that the incentive to adjust wages in respond to the legal change must have been stronger where marginal adjustments could lead to major changes in protections. This gap variable (650,000 - 1984 annual wages) appears to be strongly significant in the first stage equation (not shown here). However, the introduction of an instrumented wage measure for 1985 does not qualitatively affect our results.

4.2 Hirings

We tried to measure whether the legal change had had any impact on the relative probability for some workers to be rehired. Table 5 presents the characteristics of the workers with previous employment experience who experienced some unemployment during 84 or 85. As the table shows, these workers are mostly women. Approximately half of them are rehired each year. Five to six percent of them are actually below the 250,000 BF threshold.

Tables 6 and 7 present several specifications of the probability for these workers to be rehired. It shows that the probability for workers to be rehired increase until approximately age 35, and then starts declining. Men and high wage workers are overwhelmingly more likely to be rehired. Also the introduction of past employment history (long spells of unemployment, or short spell of employment in the previous years) appears to significantly affect the probability of being rehired.

The results on protection, after controlling for past wages are not as clear cut as in the case of separations. They seem to indicate some movement compatible with the reduction in protection for the workers between 250 and 650 KBF wages that took place between 84 and 85. In 84, workers in this wage bracket were always less likely to be rehired than those below, and never significantly more likely to be rehired than those above. In 85, they become significantly more likely to be rehired than those workers with higher incomes.

Table 8 presents the results of estimation for both years pooled. In this case, there is no longitudinal aspect in the data to be exploited (half of the unemployment leave unemployment each year). However, the pooling of the data provides variation in the protection measure. In this table the results are clearer. While in 1984, workers in this category were less likely to be rehired than those in higher wage brackets, they become significantly more likely to be rehired in 1985.

5 Conclusion

In this paper, we have presented some evidence pointing towards the fact that the reduction in job protection for some workers that took place in January 1985 in Belgium result in changes in hirings and separations which are in accordance with theory. Workers who lost protection were more likely to lose their jobs after that decline in protection, but those in that category who were unemployed saw their probability of finding a new job increase. In future work, we will compare these results with those for Blue Collar-who weren't affected by these changes-using them as a control group to ensure that these effects are not due to spurious correlation.

Some remarks can however be drawn. First, as expected, the global impact of the legal change on total employment must be tiny. As a result of the decrease in protection, separations increase, but so do hirings. The impact of EPL on our labor market is in accordance with theory: small impacts on total employment, but relatively large impact on the labor reallocation process. Second, however, although these results are often statistically significant, they are relatively small. We do not find that these legal changes implied major changes in labor flows. This is quite surprising since this change only affected one category of workers. We would have expected to see relatively large movements of reallocation of labor, since the relative "cost" of very close substitutes (white collars vs. blue collars or white collars vs. slightly higher paid white collars) was changed. This probably tells us that the global level of protections afforded to workers in some country has relatively little impact on labor market flows, since they affect the relative cost of labor with a much less substitutable input (at least in the short term): capital.

References

- Abraham, K. and Susan Houseman (1994), "Does Employment Protection Inhibit Labor Market Flexibility? Lessons from Germany, France and Belgium," In Rebeca M. Blank, ed., "Social Protection versus Economic Flexibility: is There a Trade Off?", NBER Research Comparative Labor Market Series, University of Chicago Press.
- [2] Bentolila, S. and Giuseppe Bertola (1990), "Firing Costs and Labour Demand: How Bad is Eurosclerosis?," *Review of Economic Studies*, 57, No. 8, pp. 381-402.
- Blanpain, R. (1984), "Principes de Droit du Travail Belge," La Charte, Bruges(Belgium).
- [4] Jackman, R.; Layard, R. and Stephen Nickell (1997), "Combating Unemployment: is Flexibility Enough?," *CEPR*, discussion paper No. 293.
- [5] Hamermesh, D. (1993), "Employment Protection: Theoretical Implications and Some US Evidence.," In Buechtememann, C. ed. "Employment Security and Labor Market Behavior: Interdisciplinary Approaches and International Evidence," Ithaca, NY: ILR press.
- [6] Lazear, E. (1990), "Job Security Provisions and Employment," Quarterly Journal of Economics, 105, No. 3, pp. 669-726.
- [7] Leonard, J. and Marc Van Audenrode (1993): "Corporatism Run Amok: Industrial Policy and Unemployment in Belgium," *Economic Policy*, 17, pp. 355-389.
- [8] Saint-Paul, G. (1996), "Employment Protection, International Specialization and Innovation," *CEPR*, discussion paper No. 1338.

- [9] Salvanes, K. (1997), "Market Rigidities and Labour Market Flexibility: An International Comparison," *Scandinavian Journal of Economics*, 99 No. 2, pp. 315-333.
- [10] Schettkat, R. (1997), "Employment Protection and Labour Mobility in Europe: An Empirical Analysis Using the EU's Labour Force Survey," *International Review of Applied Economics*, 11, No. 1, pp. 105-118.
- [11] Van Audenrode, M. (1994), "Short-Time Compensation: Job Security, and Employment Contracts: Evidence from Selected OECD Countries," *Journal of Political Economy*, 102 No. 1, pp. 76-102.

Figure 1: Months of Notice due to a Worker

35 years old worker with 5 years seniority



Figure 2: Months of Severance Due to a Worker

35 years old worker with 5 years seniority - Plant Closing



B Tables

1984(N=154,276)	Mean	Std.Dev.
Age	36.020	6.503
Tenure (years)	5.890	1.671
Male	0.560	0.496
Daily Wage 1984 (BF)	$2,\!659$	1,428
Yearly Wage below 250,000	0.012	0.111
Yearly Wage between $250,000$ and $650,000$	0.335	0.472
Proportion separating in 1984	0.079	0.270
1985(N=142,018)		
Daily Wage 1985 (BF)	2,772	1,574
Yearly Wage below 250,000	0.009	0.096
Yearly Wage between 250,000 and 650,000	0.304	0.460
Proportion separating in 1985	0.094	0.291

Table 1: Descriptive Statistics-Separations:

Table 2: Probability of Separation

Logit analysis of the probability of separation, separately for 1984 and 1985.

	1984	1985
Age	-0.673 (0.016)	-0.318(0.017)
Age Squared	$0.010\ (0.000)$	$0.004 \ (0.000)$
Tenure	-0.311 (0.066)	$0.093\ (0.065)$
Tenure Squared	$0.017\ (0.008)$	-0.012(0.008)
Tenure Censored	-0.415(0.073)	-0.268(0.065)
Male	$0.205\ (0.023)$	-0.333(0.021)
Log(Daily Wage)	-0.147(0.034)	-0.430(0.036)
Yearly Wage below 250,000	1.359(0.081)	$0.027\ (0.094)$
Yearly Wage between 250,000 and 650,000	$0.529\ (0.031)$	$0.134\ (0.028)$
Pseudo R Squared	0.089	0.055
Ν	154,276	142,012

Dependant variable = 1 if worker separates from employer before the end of the given year.

Table 3: Probability of Separation

Logit analysis of the probability of separation jointly for 1984 and 1985.

	1984	1985
Constant	10.975(0.262)	11.116 (0.262)
Age	-0.617 (0.010)	
Age Squared	$0.009 \ (0.000)$	
Tenure	-0.154(0.044)	
Tenure Squared	0.008 (0.005)	
Tenure Censored	-0.379 (0.047)	
Male	-0.091 (0.015)	
Log(Daily Wage)	-0.295 (0.021)	
Yearly Wage below 250,000	0.917(0.066)	0.317(0.079)
Yearly Wage between 250,000 and 650,000	0.142(0.025)	$0.440 \ (0.022)$

Dependant variable = 1 if worker separates from employer before the end of the given year.

Table 4: Probability of Separation

Dependant variable = 1 if worker separates from employer before the end of the given year. Wage in 1985 is instrumented.

Constant	9.841 (0.280)	9.980(0.281)
Age	-0.616 (0.010)	
Age Squared	0.009 (0.000)	
Tenure	-0.156 (0.044)	
Tenure Squared	0.009 (0.006)	
Tenure Censored	-0.383 (0.047)	
Male	-0.113(0.015)	
Log(Daily Wage)	-0.151 (0.025)	
Yearly Wage below 250,000	1.151(0.070)	$0.561 \ (0.082)$
Yearly Wage between 250,000 and 650,000	0.224 (0.027)	$0.522 \ (0.024)$

1984(N=131682)	Mean	Std.Dev.
Age	36.97	6.46
Male	0.430	0.490
Daily Wage Previous Year (BF)	1,783	898
Yearly Wage below 250,000	0.056	
Yearly Wage between $250,000$ and $650,000$	0.700	
Proportion Hired in 1984	0.490	
1985(N=145,682)		
Age	31.93	6.41
Male	0.410	0.490
Daily Wage Previous Year (BF)	1,849	$1,\!031$
Yearly Wage below 250,000	0.061	
Yearly Wage between 250,000 and 650,000	0.660	
Proportion Hired in 1985	0.490	

Table 5: Descriptive Statistics-Hiring:

Table 6: Probability of Rehiring

Logit analysis of the probability of hiring, separately for 1984 and 1985.

		1984	
Age	0.159(0.010)	$0.160\ (0.010)$	$0.125\ (0.010)$
Age Squared	-0.002 (0.000)	-0.002 (0.000)	-0.002 (0.000)
Male	$0.869\ (0.012)$	$0.854\ (0.012)$	$0.744\ (0.013)$
Log(Daily Wage)			
Previous Year	$0.906\ (0.026)$	-4.624(0.324)	-4.883(0.341)
Log(Daily Wage)			
Previous Year Squared		$0.381 \ (0.022)$	$0.380\ (0.023)$
Yearly Wage below 250,000	$0.385\ (0.047)$	$0.217\ (0.048)$	$0.248\ (0.052)$
Yearly Wage Between			
250,000 and 650,000	-0.152(0.021)	-0.017(0.022)	$0.013\ (0.023)$
Days Unemployment			
Previous Year			-0.820 (0.010)
Days of Work			
Previous Year			$0.049\ (0.007)$
Pseudo R Squared	0.075	0.078	0.151
Ν	$131,\!682$	131,682	131,682

Dependant variable = 1 if worker hired before the end of the given year

Table 7: Probability of Rehiring

Logit analysis of the probability of hiring, separately for 1984 and 1985.

		1985	
Age	$0.107\ (0.010)$	$0.106\ (0.009)$	0.089(0.010)
Age Squared	-0.001 (0.000)	-0.001 (0.000)	-0.001 (0.000)
Male	$0.971\ (0.012)$	$0.958\ (0.012)$	$0.824\ (0.012)$
Log(Daily wage)			
Previous Year	$0.939\ (0.026)$	-5.491(0.342)	-6.548(0.369)
Log(Daily wage)			
Previous Year Squared		$0.438\ (0.023)$	$0.487\ (0.025)$
Yearly Wage below 250,000	0.402(0.044)	$0.138\ (0.047)$	$0.151 \ (0.050)$
Yearly Wage between			
250,000 and 650,000	-0.042(0.019)	$0.072\ (0.020)$	$0.039\ (0.021)$
Days Unemployment			
Previous Year			-0.868(0.009)
Days of Work			
Previous Year			-0.038(0.007)
Pseudo R Squared	0.084	0.086	0.154
N	145,832	145,832	145,832

Dependant variable = 1 if worker hired before the end of the given year

Table 8: Probability of Rehiring

Logit analysis of the probability of hiring jointly for 1984 and 1985.

Dependant variable – 1 if worker lined before the end of the given year			
Age	$0.132 \ (0.007)$	$0.132 \ (0.007)$	$0.106 \ (0.007)$
Age Squared	-0.002 (0.000)	-0.002 (0.000)	-0.002 (0.000)
Male	$0.923 \ (0.009)$	$0.909 \ (0.009)$	$0.786\ (0.009)$
Log(Daily Wage)			
Previous Year	$0.924\ (0.018)$	-5.042 (0.235)	-5.649 (0.252
Log(Daily Wage)			
Previous Year Squared		$0.409\ (0.016)$	$0.429\ (0.017$
Days Unemployed			
Previous Year			-0.845 (0.007)
Days of Work			
Previous Year			$0.004 \ (0.005)$
Year=1985	$-0.117 \ (0.016)$	-0.123 (0.017)	-0.008 (0.007)
1984			
Yearly Wage below 250,000	$0.435\ (0.038)$	$0.194\ (0.040)$	$0.158\ (0.043)$
Yearly Wage Between			
250,000 and $650,000$	-0.127 (0.018)	-0.007 (0.018)	$0.006\ (0.019)$
1985			
Yearly Wage below 250,000	$0.360\ (0.036)$	$0.165\ (0.038)$	$0.246\ (0.040)$
Yearly Wage between			
250,000 and $650,000$	-0.062 (0.016)	$0.064 \ (0.017)$	$0.047 \ (0.018)$
Pseudo R Squared	0.080	0.082	0.152
N	277,514	277,514	277,514

Dependent variable = 1 if worker hired before the end of the given year