Chapter 2
Does an Employment Protection Law Matter? A Panel Data Analysis of Selected OECD Countries, 1985–2012

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2.1 Introduction

The debate centering on labor market regulation erupted with the rise of the neoliberal school of thought in the mid-1970s. In the early post-Second World War period, Keynesianism and social democratic policies dominated the developed capitalist world. The basic purpose of the labor law was to be "a means to ensure a just share of the fruits of progress to all," as the International Labour Organization's (ILO) Philadelphia Declaration put it in 1944 (Supiot 2012). The neoliberal critique of this standpoint can be summed up in the words of the World Bank (World Bank 2007, p. 19): "laws created to protect workers often hurt them." Their argument is based on the assumption that "the labor market is in a unique equilibrium prior to the law's 'intervention,' which must therefore be understood as upsetting the competitive process and distorting market outcomes" (Deakin et al. 2014, p. 3).

The contribution of this chapter to this debate is an empirical one. It uses the Organisation for Economic Co-operation and Development (OECD) indicators of employment protection law (EPL) which measure the procedures and costs involved in dismissing workers and the procedures involved in hiring workers on fixed-term or temporary work agency contracts. It analyzes the impact of labor law on the labor market using dynamic panel data techniques which can distinguish between short-run and long-run effects of legal change and take into account dynamic interactions between legal and economic variables. These techniques mark an advance on the more static cross-sectional and time invariant analyses which have mostly been used to analyze the effects of labor laws.

To supplement this dynamic panel data analysis, it uses panel causality tests. It shows that EPL for regular and temporary employment has no clear long-term or short-term effects on unemployment. Then it looks at the impact of EPL on union density and labor's share in national income and finds no impact on these variables.

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Section 2.2 below briefly overviews the existing literature. Section 2.3 presents the results of the econometric analysis and Sect. 2.4 concludes.

2.2 Debate on the Impact of Labor Regulation: A Brief Overview

There is an increasing interest among social scientists and policy makers regarding the effects of labor law on unemployment and distribution. There remains, however, a lack of a clear consensus on the effects of labor laws.

During the heydays of Keynesianism in the 1950s and 1960s, the policy of social democracy and welfare states dominated in many industrialized countries. State interventions in the labor market were thought to facilitate better or fairer income distribution and improve the quality of life of the working class. It was expected that better income distribution in favor of the working class would increase effective demand and profitability of production, thereby promoting investment, growth, and employment.

In the face of the oil price hike in the mid-1970s, the industrialized countries faced the problem of stagflation; continuation of Keynesian fiscal stimulus policy aggravated the problem of inflation without making any dent on the problem of unemployment and recession. This marked the demise of Keynesianism in favor of a "neoliberal" era of Reaganomics/Thatcherism that found its place in the subsequent IMF/World Bank policy prescriptions, known as the Washington Consensus (Sarkar 2013).

In essence, the policies shifted towards deregulation of markets (including labor markets) to pave the way for free market forces. In the 1990s, the OECD's Jobs Study (Organisation for Economic Cooperation and Development 1994) made the argument for liberalizing labor laws as part of a strategy for enhancing labor market flexibility and thereby boosting job creation. During the 2000s, similar arguments have been made by the World Bank through its Doing Business initiatives (see, e.g., World Bank 2007).

It is argued that firms would respond to stringent labor regulation by substituting capital for labor; there would be even a shift in production from the formal sector to unregulated areas of the economy and/or flight of capital and relocation of production in a country with more market-friendly labor regulation (Fallon and Lucas 1993; Heckman and Pagés 2004; Botero et al. 2004). In the words of Besley and Burgess (2004, p. 101), "labor regulation will typically create adjustment costs in hiring and firing labor."

The strong case in favor of labor regulations comes from the perspective of fair income distribution, social justice, social security, etc. These are often brushed aside by the proponents of economics as "science" that precludes value judgment and interpersonal utility comparisons (Sarkar 2013). From the "structuralist"/neo-Kaleckian macroeconomic model one can get a "positive" argument in favor of labor regulations promoting fair income distribution and higher rate of profit and

growth (see, e.g., Dutt 1984 and for a critique of this "structuralist" model see Bhaduri and Margin 1990; Sarkar 1992, 1993).

There are some other arguments:

- The laws setting basic labor standards in the areas of pay and working time and providing employees with protection against arbitrary discipline or dismissal may encourage firms and workers to coinvest in firm-specific skills and complementary productive assets (Sengenberger and Campbell 1994).
- Legislation mandating collective employee representation in the workplace can help raise worker commitment and morale (Rogers and Streeck 1995).
- For other arguments and references, see Deakin and Sarkar (2008, 2011).

There are different studies to examine the economic consequences of labor regulation. One influential work was conducted by Botero et al. (2004), partly funded by the World Bank. Botero et al. (2004) based their analysis on an index of labor regulation consisting of around 60 individual indicators, covering a full range of labor law rules, including laws on the employment relationship, collective labor relations, and social security. Their index covered 85 countries and coded for their laws as they stood in the late 1990s. The econometric analysis carried out by Botero et al. (2004) found that higher scores on the labor index were correlated with lower male employment, higher youth unemployment, and a larger informal sector.

On the contrary, a number of studies suggest that the supposed negative effects of labor laws may be either very small or simply nonexistent (Baker et al. 2004, 2005), and that such laws could, in fact, have beneficial effects on productivity and innovation (Acharya et al. 2012).

In light of this evidence, some scholars have called for a reappraisal of the assumptions underlying equilibrium-based models of the labor market (Freeman 1992, 2005).

In this perspective, a team of legal scholars at Centre for Business Research (CBR), University of Cambridge, UK, generated a detailed dataset for six OECD countries (UK, USA, France, Germany, Sweden, and Japan) over a long time span (see Deakin et al. 2007). Using this dataset, Deakin et al. (2014) showed that worker-protective labor laws in general have no consistent relationship to unemployment but are positively correlated with equality. Laws relating to working time and employee representation are found to have beneficial impacts on both efficiency and distribution.

The present study seeks to carry these analyses further. Since the CBR data cover only six OECD countries, the present study uses the OECD indicators of EPL available for the OECD countries over the time span, 1985–2013. There are various limitations of these data as pointed out by various scholars (see, e.g., Heckman and Pages 2004; Deakin and Sarkar 2008). For details of index construction and OECD response to the various criticisms, see Venn (2009). It is beyond the scope of the present chapter to go into the details of leximetrics. The study will take the OECD EPL indicators at their face values (in the absence of better data available for a large number of countries over a long time span) and examine the unemployment consequences of strictness of regular and temporary labor employment protection through dynamic panel data modeling. This will be supplemented by the panel causality tests.

2.3 The Present Study

The following two OECD series on EPL are considered in this chapter:

(i) Strictness of employment protection—individual and collective dismissals (regular contracts), REGEPL
(ii) Strictness of employment protection—temporary contracts, TEMPOEPL

There is another series: strictness of employment protection—individual dismissals (regular contracts); it was used in an earlier study (Sarkar 2013).

For unemployment rate, this chapter uses three alternative series available in the OECD iLibrary:

(i) Unemployment as percentage of civilian labor force (TOTALU)
(ii) Long-term (1 year and above) unemployment as percentage of total labor force (LONGU)
(iii) Long-term (1 year and above) youth unemployment as percentage of total labor force in the age group 15–24 (LONGYU)

For measuring distributional consequence of EPL, the chapter uses OECD iLibrary data on labor share, LABSHRE. The annual labor income share is calculated for this database as total labor costs (labor income adjusted for the self-employed) divided by nominal output.

Finally, to examine the impact of EPL on trade union penetration, it uses the variable, trade union density (UNION). Trade union density corresponds to the ratio of wage and salary earners that are trade union members, divided by the total number of wage and salary earners (OECD Labor Force Statistics).

The objective is to examine the effect of the employment protection index on unemployment, income distribution, and union density. To control for the level of economic activity of a country, the (log of) gross domestic product (GDP) in purchasing power parity dollars (LPPPY) is used.[1] This is expected to net out the country-specific effects of time-trend and cyclical fluctuations in the level of economic activities. The period of this study is 1985–2012. It covers 26 OECD countries[2] for which the relevant data are available. Due to lack of data, the study cannot be based on a perfectly balanced panel: for countries such as the Czech Republic and the Slovak Republic, the starting year is 1993; for Hungary, New Zealand, Poland, and Turkey, the starting year is 1990. For the study on labor share, a shorter time span (1985–2010) is used due to nonavailable data; here also the coverage of time span is not uniform across the countries.

This chapter uses the dynamic panel data methodology recommended by Pesaran et al. (1999) for panels with a sizable time dimension. This methodology takes

[1] GDP figures are very high; so log-scale is needed to bring parity with other variables.

[2] The countries covered in these studies are: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Netherland, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland, Turkey, UK, and USA.

into account a short-term relationship and a time path leading to a long-term relationship. This helps us to ascertain whether there exists a short-term impact of EPL and whether there exists a stable adjustment path leading to a long-term effect. The conventional regression study assumes that the relationship between the dependent and independent variables is instantaneous. To get a meaningful long-run relationship, one should analyze a short-term relationship (if any) and examine whether there exist a stable adjustment process leading to the long-run relationship (if any). A panel regression based on a short-term time series has the constraint of studying only the instantaneous relationship, which may not be meaningful; rather it may be spurious. The present study covers a sufficiently long (1985–2010/2012) panel data for 26 countries to remove this lacuna of the existing literature.

Start by postulating a long-run relationship involving the dependent or outcome variable X (the unemployment rate, labor share, or union density), the control variable Y (GDP in natural log), and the independent or causal variable Z (labor regulation as measured by the OECD EPL indicators) as follows:

$$X_{it} = \psi_i Y_{it} + \pi_i Z_{it} + \eta_{it}, \tag{2.1}$$

where i (= 1, 2, 3,.. 26) stands for countries, t (= 1, 2,…) stands for time periods (years), ψ_i and π_i are the long-run parameters, and η_{it} is the error term.

The questions are: whether there are long-term and short-term effects of Z (employment protection) along with Y (GDP measuring economic activities) on X (unemployment rate, labor share, or union density) and whether there is a stable adjustment path from the short-term relationship (if any) to the long-run relationship (if any).

Following Pesaran et al. (1999), this panel data analysis is based on the following error correction representation:

$$X_{it} = \theta_i(\eta_{it-1}) + \sum_{j=1}^{p-1} \lambda_{ij} \Delta X_{i,t-j} + \sum_{k=0}^{q-1} \psi_{ik} \Delta Y_{i,t-k} + \sum_{l=0}^{r-1} \pi_{il} \Delta Z_{i,t-l} + \mu_i + \phi_{it}, \tag{2.2}$$

where Δ is the difference operator, θ_i is the country-specific error-correcting speed of adjustment term, λ_{ij}, ψ_{ik}, and π_{il} are the coefficients of the lagged variables, μ_i is the country-specific effect, and ϕ_{it} is the disturbance term. The existence of a meaningful long-run relationship with a stable adjustment dynamics requires $\theta_i < 0$.

Within this general structure, three alternative models can be postulated:

(i) Dynamic fixed effect (DFE) model where intercepts are assumed to vary across the countries but all other parameters and error variances are constrained to be the same.
(ii) Mean group (MG) model, where separate equation is estimated for each country and the mean of the estimates is calculated to get a glimpse of the overall picture.

(iii) Pooled mean group (PMG) estimator is the intermediate alternative suggested by Pesaran et al. (1999). This model assumes that intercepts, short-run coefficients, and error variances are different across the countries, but the long run coefficients are the same.

Using the STATA-based software developed by Blackburne and Frank (2007), this study estimates each of the three alternative models, MG, PMG, and DFE. The Lag Exclusion Wald Test is used for each variable separately to determine the lag structure of the regression. The Hausman test is used to select the appropriate model, comparing two at a time (PMG vs. MG, MG vs. DFE, and so on). This test is based on the null hypothesis: the difference between the estimated coefficients is not systematic. If the null hypothesis is accepted, implying no systematic difference between the two estimates, the choice of the appropriate model is based on the efficiency property of the estimated coefficients. If the null hypothesis is rejected, implying systematic difference between the two estimates, the choice of the appropriate model is based on the consistency property of the estimated coefficients. All the estimates are reported in Table 2.1.

To supplement the analysis of dynamic panel data models, the vector error correction (VEC) Granger causality/block exogeneity Wald tests (based on DFE model) are used to ascertain the direction of causality.[3] These are reported in Table 2.2.

On the basis of the estimates of Tables 2.1 and 2.2, the following observations can be made:

1. In none of the three dynamic panel data models (MG, PMG, and DFE), the legal variable REGEPL (strictness of employment protection—individual and collective dismissals in regular contracts) has a long-term or short-term rising effect on unemployment as measured by TOTALU, LONGU, and LONGYU. For LONGU and LONGYU, however, PMG model finds a negative (!) long-term relationship with REGEPL. The causality test finds no causal relationship and the Hausman test supports the DFE model. So the conclusion that can be derived here is that REGEPL has no unemployment consequence, irrespective of whether one considers total, long-term total, or long-term youth unemployment.[4]
2. In the PMG model, TEMPOEPL has long-term rising relationships with two measures of unemployment: TOTALU and LONGU. The DFE model supports the same type of relationship between TEMPOEPL and LONGYU. The causality tests, however, find no causal relationship between TEMPOEPL and various measures of unemployment. So the unemployment consequence of TEMPOEPL cannot be ascertained.

[3] For these tests we have used the Eviews 6 program.

[4] We find a causal influence of REGEPL on TOTALU, but none of the dynamic panel data models ascertain a relationship that is worth reporting.

Table 2.1 Short-run and long-run impact of the employment protection law on unemployment, labor share, and union density, 1985–2012: dynamic panel data models

Part no		PMG	MG[a]	DFE
	I. Impact of strictness of employment protection-regular employment, REGEPL (Z)			
	On			
I.A	Rate of unemployment (as percentage of civilian labor force), TOTALU (X)			
	Long-term relationship			
	Y (LPPPY)	−9.057**	−14.304**	−6.806**
	Z (REGEPL)	1.812	−17.951	−1.276
	Short-term relationship			
	θ	−0.126**	−0.204**	−0.115**
	ΔX_t^{-1}	0.242**	0.218**	0.387**
	ΔY_t	−27.018**	−26.601**	−25.704**
	ΔY_t^{-1}	−8.581**	−11.105**	−2.979
	ΔZ_t	−0.798	0.356	−0.154
	μ	24.273**	32.162**	17.526**
	Chosen model[b]			DFE
I.B	Long-term (1 year and above) unemployment as percentage of total labor force, LONGU (X)			
	Long-term Relationship			
	Y (LPPPCY)	−28.45**	−35.239	−17.437**
	Z (TEMPOEPL)	−13.077**	−40.426	−2.451
	Short-term relationship			
	θ	−0.302**	−0.444**	−0.17**
	ΔX_t^{-2}	0.053	0.08*	0.0817
	ΔY_t	62.892**	73.639**	40.093**
	ΔY_t^{-1}	−68.26**	−53.435**	−75.019**
	ΔZ_t	1.022	1.676	−0.997
	μ	187.494**	197.86**	67.235**
	Chosen model[b]			DFE
I.C	Long-term (1 year and above) youth unemployment as percentage of total labor force in the age group 15–24, LONGYU (X)			
	Long-term relationship			
	Y (LPPPY)	−24.437**	−28.609**	−17.706**
	Z (REGEPL)	−12.31**	1.359	3.407
	Short-term relationship			
	θ	−0.272**	−0.404**	−0.179**
	ΔY_t	16.1	22.511*	12.538*
	ΔY_t^{-1}	−61.5**	−53.078**	−59.801**
	ΔZ_t	0.849	0.494	−1.412

Table 2.1 (continued)

Part no		PMG	MG[a]	DFE
	μ	144.16**	234.34**	67.6**
	Chosen model[b]			DFE
I.D	Labor share, LABSHRE (X)			
	Y (LPPPY)	−0.214**	−0.132*	−0.163**
	Z (REGEPL)	0.021	0.033	0.027
	Short-term relationship			
	θ	−0.22**	−0.461**	−0.219**
	ΔY_t	−0.408**	−0.419**	−0.304**
	ΔY_t^{-1}	0.304**	0.181	0.286**
	ΔZ_t	0.019	0.018	0.017
	μ	1.074**	1.563**	0.819**
	Chosen model[b]			DFE
I.E	Union density, UNION (X)			
	Long-term relationship			
	Y (LPPPY)	−2.474*	−19.43**	−17.052**
	Z (REGEPL)	0.073	−7.94	0.223
	Short-term relationship			
	θ	−0.119**	−0.319**	−0.188**
	ΔX_t^{-2}	−0.001	0.021	0.152**
	ΔY_t	−8.458*	−4.277	−6.019**
	ΔZ_t	−0.044	1.06	0.587
	μ	7.942**	121.519**	70.276**
	Chosen model[b]			DFE
	II. Impact of strictness of employment protection-temporary employment, TEMPOEPL (Z)			
	On			
II.A	Rate of unemployment (as percentage of civilian labor force), TOTALU (X)			
	Long-term relationship			
	Y (LPPPCY)	−8.844**	−9.076*	−7.402**
	Z (TEMPOEPL)	0.933**	−0.201	0.072
	Short-term relationship			
	θ	−0.157**	−0.211**	−0.122**
	ΔX_t^{-1}	0.259**	0.204**	0.402**
	ΔX_t^{-2}	−0.007	0.002	−0.012
	ΔY_t	−26.292**	−25.839**	−25.655**
	ΔY_t^{-1}	−9.941**	−13.682**	−3.924*
	ΔZ_t	−0.062	0.033	−0.17
	μ	29.657**	41.317**	19.712**
	Chosen model[2]			DFE

Table 2.1 (continued)

Part no		PMG	MG[a]	DFE
II.B	Long-term unemployment (more than 1 year) as percentage of total unemployment, LONGU (X)			
	Long-term relationship			
	Y (LPPPCY)	−22.798**	−23.152**	−17.259**
	Z (TEMPOEPL)	2.684**	1.662	−0.321
	Short-term relationship			
	θ	−0.317**	−0.502**	−0.169**
	ΔX^{t-2}	0.069	0.098*	0.083*
	ΔY_t	63.133**	73.392**	39.735**
	ΔY_t^{-2}	−71.664	−56.837**	−75.265**
	ΔZ_t	−1.998	−1.772	−0.656
	μ	152.002	204.683	65.439**
	Chosen model[b]			DFE
II.C	Long-run (1 year and above) youth unemployment as percentage of total labor force in the age group 15–24, LONGYU (X)			
	Long-term relationship			
	Y (LPPPCY)	−12.371**	−10.809	−16.213**
	Z (TEMPOEPL)	0.84	−11.577	2.753*
	Short-term relationship			
	θ	−0.257**	−0.408**	−0.184**
	ΔY_t	17.43	21.024*	12.417*
	ΔY_t^{-1}	−64.129**	−59.103**	−60.098**
	ΔZ_t	−0.198	−0.99	−0.723
	μ	68.351**	173.247**	64.314**
	Chosen model[2]	PMG		
II.D	Labor share, LABSHRE (X)			
	Long-term relationship			
	Y (LPPPY)	−0.211**	−0.096	−0.163**
	Z (TEMPOEPL)	0.001	−0.019	0.006
	Short-term relationship			
	θ	−0.238**	−0.486**	−0.222**
	ΔY_t	−0.418**	−0.416**	−0.303**
	ΔY_t^{-1}	0.314**	0.217*	0.284**
	ΔZ_t	0.01	0.011	0.003
	μ	1.134**	1.6**	0.845**
	Chosen model[b]			DFE
II.E	Union density, UNION (X)			
	Long-term relationship			
	Y (LPPPY)	−2.188	−11.774	−16.383**
	Z (TEMPOEPL)	−0.163	−2.073	0.856

Table 2.1 (continued)

Part no		PMG	MG[a]	DFE
	Short-term relationship			
	θ	−0.117*	−0.311*	−0.189**
	ΔX_t^{-2}	−0.007	0.001	0.144**
	ΔY_t	−8.346*	−4.969	−6.068**
	ΔZ_t	0.101	0.214	−0.06
	μ	7.017*	114.429**	67.874**
	Chosen model[b]			DFE

*Significant at 5% level; **Significant at 1% level.

[a] The regressors are estimated from the following long-term relationship and its error correction form

Long-run Relationship:

$X_{it} = \psi_i Y_{it} + \pi_i Z_{it} + \eta_{it}$,

where i (=1,2,3,..26) represents countries, t (=1,2,… T) represents periods (years), ψ_i and π_i are the long-run parameters and η_{it} is the error term

Its Error Correction Form:

$$\Delta X_{it} = \theta_i \left(\eta_{it-1} \right) + \sum_{j=1}^{p-1} \lambda_{ij} \Delta X_{i,\, t-j} + \sum_{k=0}^{q-1} \psi_{ik} \Delta Y_{i,\, t-k} + \sum_{l=0}^{r-1} \pi_{il} \Delta z_{i,\, t-1} + \mu_i + \phi_{it},$$

where Δ is the difference operator, θ_i is the group-specific error-correcting speed of adjustment term, λ_{ij}, ψ_{ik} and π_{il} are the coefficients of the lagged variables, μ_i is the country fixed effect and ϕ_{it} is the disturbance term. The existence of a meaningful long-run relationship with a stable adjustment dynamics requires $\theta_i < 0$

[b] An appropriate model is chosen on the basis of a series of Hausman tests

Data Source: OECD iLibrary

Table 2.2 Causal relationship among labor regulation, unemployment, union density, labor share, and GDP in 26 OECD countries, 1985–2012: VEC causality analysis[a]

Part no	Dependent variable	Excluded independent variable	Chi-square	Degree of freedom	Probability
I.A					
	TOTALU				
		LPPPY	31.96594**	5	0.0000
		REGEPL	13.38359*	5	0.0200
	LPPPY				
		TOTALU	2.851068	5	0.7229
		REGEPL	7.660077	5	0.1760
	REGEPL				
		TOTALU	7.748744	5	0.1706
		LPPPY	5.499612	5	0.3580
I.B					
	LONGU				
		LPPPY	145.8818**	5	0.0000
		REGEPL	4.205010	5	0.5203
	LPPPY				
		LONGU	7.914072	5	0.1610

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