Cambridge Journal of Economics 2013, **37**, 1335–1348
doi:10.1093/cje/bes093
Advance Access publication 30 May 2013

Does an employment protection law lead to unemployment? A panel data analysis of OECD countries, 1990–2008

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This article examines the unemployment consequences of an employment protection law (EPL) on the basis of OECD EPL indicators for 23 OECD countries over the period 1990–2008. Using the alternative dynamic panel data models and panel causality tests, it examines the validity of the neo-liberal argument that strictness of employment protection hurts labour through increased long-term and youth unemployment rates. Although it finds little empirical basis for this orthodox standpoint, the article observes that the unemployment problem dampens aggregate production, which in turn aggravates the long-term unemployment problem. The policy prescription suggested is employment generation by other means than neo-liberal 'hire and fire' labour regulations.

Key words: Labour law, Regular job protection, Temporary job protection, Unemployment rate, Long-term unemployment, Youth unemployment
JEL classifications: K31, J08, J50, J60, J83

1. Introduction

The regulation of the labour market to protect the interest of labour is often taken as an exogenous interference with market relations causing a rise in unemployment and poverty. During the era of Reaganomics and Thatcherism in the 1980s, the United States and the United Kingdom underwent a process of labour market de-regulation (along with other things), and subsequently it has become the essential part of the Washington Consensus: the International Monetary Fund (IMF)–World Bank policy package prescribed to the crisis-stricken less developed countries.

In the late 1990s, La Porta and collaborators (La Porta et al., 1997, 1998, 2000; La Porta, Lopez-de-Silanes and Shleifer, 1999, 2006, 2008; Djankov et al., 2003, 2008; Glaeser and Shleifer, 2002, 2003; Beck, Demirgüc-Kunt and Levine, 2003a, 2003b; Botero et al., 2004) set in motion a series of systematic analyses of the relationships between legal and economic variables. Legal variables ('leximetric' data) are by and large binary variables (0, 1) used to quantify the quality of various types of laws that exist in different countries to protect the interests of stakeholders such as shareholders,

Manuscript received 11 December 2011; final version received 5 October 2012.
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*Jadavpur University. I am grateful to the editors of the journal and two anonymous referees for various suggestions to improve the quality of the article. The usual disclaimer applies.

creditors and labourers. The countries are classified according to their legal origin: English common law and civil law are two broad categories. Through various cross-section regression studies of these leximetric data, it is argued that English common-law systems are more market-friendly; they provide higher levels of shareholder and creditor protection to promote financial development. It is also pointed out that the civil-law countries interfere more in the labour market and their pro-labour policies exert a negative influence on their employment and productivity.

In this perspective, I study one crucial aspect of labour law—an employment protection law (EPL) and its unemployment consequence on the basis of the Organisation for Economic Co-operation and Development (OECD) data on EPL indicators available over the time span 1990–2008. In the next section I briefly discuss the cases for and against labour regulations, especially from the perspective of unemployment consequences. In Section 3 I discuss the short-term and long-term relationship between various aspects of labour regulation and unemployment through dynamic panel data modelling and causality tests. Section 4 provides a summary and conclusion.

2. The cases for and against labour regulation: a brief overview

From the standpoint of social democracy, state interventions in the labour market facilitate better or fairer income distribution and improve the quality of life of the working class. Instead of having a regime of classical antagonistic capitalism riddled with class struggles, the social democracy calls for a co-operative capitalism, which is expected to mitigate the potential destabilising force of class struggles and social unrest (communist insurgencies). In 'structuralist'/neo-Kaleckian macro-models (see, e.g., Dutt, 1984), it is even shown that better income distribution in favour of the working class solves the problem of 'realisation crisis' of capitalism (pinpointed by Karl Marx) because it increases effective demand and profitability of production, thereby promoting investment and growth. These models, however, over-emphasised the forces of realisation and overlooked the other force (also pinpointed by Marx), namely, 'profit squeeze': better income distribution and higher real wages may reduce profitability and dampen investment and growth (see Bhaduri and Margin, 1990; Sarkar 1992, 1993).

Whatever the ambiguity in the relationship between growth and distribution, the policy of social democracy and welfare states dominated in most of the industrialised countries during the first three decades after World War II. Accepting labour market 'distortions' due to labour regulations and trade union activities as hard realities, the governments pursued a Keynesian full employment policy—namely, fiscal stimulus to inject extra demand into the economic system.

In the face of oil price hike in the mid-1970s, the industrialised countries faced the problem of stagflation (simultaneous occurrence of recession and inflation); continuation of a 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 favour of a neo-liberal era of Reaganomics/Thatcherism that found its place in the subsequent IMF–World Bank policy prescriptions, known as the Washington Consensus. This is actually an old wine in a new bottle—the resurrection of old laissez-faire philosophy and the 'invisible hand' theorised in college textbooks of neo-classical economics as a self-equilibrating market solution to all economic problems, including unemployment. The collapse of the Berlin Wall and the

demise of the Soviet Union gave further impetus to this neo-liberal ideology in the absence of a credible threat from communism.

In essence the policies shifted towards deregulations of markets (including labour markets) to pave the way for free market forces. It is argued that firms would respond to stringent labour regulation by substituting capital for labour; there would be 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 labour regulation (Fallon and Lucas, 1993; Botero et al., 2004; Heckman and Pagés, 2004). In the words of Besley and Burgess (2004, p. 101), 'labor regulation will typically create adjustment costs in hiring and firing labor'.

The orthodox neo-liberal arguments for labour market deregulations were rejected by many sensible scholars; they strongly argue in favour of labour regulations (see, e.g., Freeman, 1992, 2005).

The strong case in favour of labour regulations comes from the perspective of fair income distribution, social justice, social security and so on. These are often brushed aside by the proponents of economics as 'science' that precludes value judgement and interpersonal utility comparisons. From the structuralist/neo-Kaleckian macro-economic model one can get a 'positive' argument in favour of labour regulations promoting fair income distribution and higher rate of profit and growth, as discussed in the beginning of this section.

There are some other arguments:

- the laws setting basic labour 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 co-invest 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 more other arguments and references, see Deakin and Sarkar (2008, 2011).

There are different studies to examine the economic consequences of labour regulation. In the context of OECD countries, some studies tried to prove that employment protection led to unemployment. For details of these studies and their strong critique, see Baker et al. (2004, 2005), Howell (2005), Howell et al. (2007) and Rubery (2011).

In the context of India, an influential study was conducted by Besley and Burgess (2004). Their analysis was based on an index of changes in state-level (i.e., provincial-level) labour laws in India; it showed that that Indian provinces that enacted pro-labour regulation experienced lowered output, employment, investment and productivity in registered or formal manufacturing. Bhattacharjea (2006) strongly refuted their arguments. One very important point was raised by Bhattacharjea (2006): the 'license raj' (regime of licenses) dominated the period of study (1958–92) of Besley and Burgess (2004); discriminatory allocation of industrial licenses across the states by the central government was a significant determinant of industrial location during that period.

Another influential work was conducted by Botero et al. (2004); it was partly funded by the World Bank. Botero and colleagues based their analysis on an index of labour regulation consisting of around 60 individual indicators, covering a full range of labour law rules, including laws on the employment relationship, collective labour relations and social security. Their index covered 85 countries and coded for their laws as they stood in the late 1990s. Their econometric analysis (Botero et al. 2004) found that

higher scores on the labour index were correlated with lower male employment, higher youth unemployment and a larger informal sector.

In this perspective, a team of legal scholars at the Centre for Business Research (CBR, University of Cambridge) generated a detailed data set for six OECD countries (United Kingdom, United States, France, Germany, Sweden and Japan) and India over a long time span (see Deakin, Lele and Siems, 2007). Using this data set, Deakin and Sarkar (2008, 2011) examined various aspects of labour regulations of these countries and their economic consequences.[1] They observed that the United States is the only country where an inverse relationship exists between labour regulation and employment growth; this is because of the changes in the US regulation of dismissal—the only area in which there was a significant change in US law over the period of this study.

The present study seeks to carry these analyses further. Because the CBR data cover only seven countries, I use the OECD indicators of employment protection law (EPL) available for the OECD countries over the time span 1990–2008. These EPL indicators seek to measure the procedures and costs involved in dismissing individuals or groups of workers and the procedures involved in hiring workers on fixed-term or temporary work contracts. There are various limitations of these data, as pointed out by various scholars (see, e.g., Heckman and Pagés, 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 article to go into the details of leximetrics. I 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 labour employment protection through dynamic panel data modelling. This will be supplemented by panel causality tests.

3. The present study: estimates of short-run and long-run relationships

The OECD data on EPL indices are available for OECD countries and some non-OECD countries. Due to non-availability of the relevant data for all the years between 1990 and 2008, I consider only 23 OECD countries (among the new members, only South Korea is included). I considered regulations concerning both regular and temporary employment protection series (REGLAB and TEMPOLAB, respectively).

For unemployment rate I used three alternative series:

(i) Rate of unemployment as percentage of civilian labour force (TU);
(ii) Long-term unemployment rate (LU) defined as persons unemployed for 12 months or more as a percentage of total unemployed;
(iii) Youth unemployment rate (YU) defined as total youth unemployment as percentage of total labour force aged 15 to 24.

My objective is to examine the effect of the employment protection index on the incidence of unemployment as measured by the different indicators of unemployment just listed. To control for the level of economic activity of a country, I consider (log of) gross domestic product (GDP) in purchasing power parity dollars (LPPPY). This is expected to net out the country-specific effects of time trends and cyclical fluctuations in the level of economic activities (as measured by log of GDP in purchasing power parity dollar) on

[1] Deakin and Sarkar (2008) worked with labour regulations of four OECD countries because CBR data for Japan and Sweden were not available at that time.

Table 1. *Short-run and long-run relationships between labour regulation index and unemployment, 1990–2008: dynamic panel data models*

Part No.	Models[a]	PMG	MG	DFE
	Impact of strictness of employment protection: regular employment (REGLAB), Z on			
I.A	Rate of unemployment (as percentage of civilian labour force), TU (X)			
	Long-term relationship			
	Y (LPPPY)	-5.879**	-7.983*	-3.947**
	Z (REGLAB)	-0.471	10.158	2.272
	Short-term relationship			
	θ	-0.251**	-0.353**	-0.188**
	ΔX_{t-1}	0.369**	0.369**	0.452**
	ΔY_t	-11.911**	-10.173**	-11.139**
	$\mathbf{\Delta Z_t}$	-0.58	-2.325	-0.747
	μ	11.622**	3.305	5.613**
	Chosen model[b]			DFE
I.B	Long-term unemployment (more than 1 year) as percentage of total unemployment, LU (X)			
	Long-term relationship			
	Y (LPPPY)	-17.584**	-18.603	-13.467**
	Z (REGLAB)	-10.229**	-47.153	-2.648
	Short-term relationship			
	θ	-0.372**	-0.657**	-0.274**
	ΔX_{t-1}	0.19**	0.232**	0.187**
	ΔY_t	13.062	12.081	9.556
	$\mathbf{\Delta Z_t}$	3.654	11.447	-1.829
	μ	56.142**	96.873	32.124**
	Chosen model[b]			DFE
I.C	Youth unemployment as percentage of total labour force in the age group 15–24, YU (X)			
	Long-term relationship			
	Y (LPPPY)	-7.88**	-11.239	-4.468**
	Z (REGLAB)	-0.909	23.875	2.951

Table 1. *Continued*

Part No.	Models[a]	PMG	MG	DFE
	Short-term relationship			
	θ	-0.259**	-0.446**	-0.222**
	ΔX_{t-1}	0.227**	0.278**	0.302**
	ΔY_t	-26.527**	-22.582**	-25.222**
	$\mathbf{\Delta Z_t}$	-8.456	-10.463	-1.409
	μ	17.753**	7.229	9.36**
	Chosen model[b]			DFE
	Impact of strictness of employment protection: temporary employment (TEMPOLAB), Z on			
II.A	Rate of unemployment (as percentage of civilian labour force), TU (X)			
	Long-term relationship			
	Y (LPPPCY)	-6.319**	-1.782	-3.794**
	Z (TEMPOLAB)	0.121	0.317	0.549
	Short-term relationship			
	θ	-0.268**	-0.378**	-0.188**
	ΔX_{t-1}	0.345**	0.319**	0.466**
	ΔX_{t-2}	0.08	0.051	-0.021
	ΔY_t	-12.691**	-11.632**	-11.158**
	$\mathbf{\Delta Z_t}$	0.279	-1.054*	-0.467**
	μ	12.831**	5.619	6.095**
	Chosen model[b]			DFE
II.B	Long-term unemployment (more than 1 year) as percentage of total unemployment, LU (X)			
	Long-term relationship			
	Y (LPPPCY)	-15.784**	-10.961**	-14.884**
	Z (TEMPOLAB)	0.377	-1.374	-2.464*
	Short-term relationship			
	θ	-0.381**	-0.669**	-0.287**
	ΔX_{t-1}	0.209**	0.254**	0.188**
	ΔY_t	11.267	18.752**	9.221

Table 1. *Continued*

Part No.	Models[a]	PMG	MG	DFE
	ΔZ_t	-2.813	-2.242	-0.166
	μ	46.555**	56.832**	36.168**
	Chosen model[b]			DFE
II.C	Youth unemployment as percentage of total labour force in the age group 15–24, YU (X)			
	Long-term relationship			
	Y (LPPPCY)	-9.819**	2.235	-5.229**
	Z (TEMPOLAB)	1.164**	-24.643	1.203
	Short-term relationship			
	θ	-0.215**	-0.347**	-0.213**
	ΔX_{t-2}	0.094*	0.109**	0.106*
	ΔX_{t-3}	-0.042	-0.002	.014
	ΔY_t	-33.663**	-28.24**	-27.365**
	ΔZ_t	-1.007*	-2.457**	-1.127**
	μ	18.17**	9.649	10.908**
	Chosen model[b]			DFE

Notes: Data Sources: REGLAB, TEMPOLAB, TU, LU and LPPPY are from OECD iLibrary, available at http://stats.oecd.org/Index.aspx?DatasetCode=ALFS_SUMTAB (last accessed 28 April 2013). YU is collected from World Development Indicators compiled by the World Bank, available at http://data.worldbank.org/data-catalog/world-development-indicators (last accessed 28 April 2013).

[a]The regressors are estimated from the following long-term relationship (equation (1)) and its error correction form (equation (2)).

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

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

unemployment.[2] Excepting youth unemployment data (available from the World Bank, see Table 1 for details), all data are available from the OECD iLibrary (see Table 1 for details).

I followed the dynamic panel data methodology (described later), which takes into account a short-term relationship and a time path leading to a long-term relationship. This helps me ascertain whether there exists a short-term relationship between employment protection and unemployment and whether there exists a stable adjustment path leading to a long-term relationship. The conventional regression study assumes that the relationship between the dependent and independent variables is instantaneous—this is what I capture in the long-run relationship. To get a meaningful long-run relationship, one should analyse a short-term relationship (if any) and examine whether there exists 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. I have here sufficiently long (1990–2008) panel data for 23 countries to remove this lacuna of the existing literature.

3.1 Alternative dynamic panel data models

For a large time dimension of panel data (as I have here), Pesaran and Smith (1995) showed that the traditional procedures for estimation of pooled models, such as the fixed effects, instrumental variables and generalised method of moments 'can produce inconsistent, and potentially very misleading estimates of the average values of the parameters in dynamic panel data models' (Pesaran *et al.*, 1999, p. 622). Therefore, to ascertain the nature of the relationships between employment protection regulation and unemployment I use the Pesaran-Shin-Smith (1999) dynamic panel data analysis.

I start with a postulate of long-run relationship involving X (the unemployment rate, TU, LU or YU), Y (GDP in purchasing power parity dollar, in natural log, LPPPCY) and Z (employment protection index, REGLAB or TEMPOLAB):

$$X_{it} = \psi_i Y_{it} + \pi_i Z_{it} + \eta_{it} \tag{1}$$

where i (= 1,2,3,4, . . 23) stands for countries, t (= 1,2, . . . T) stands for time periods (years), ψ_i and π_i are the long-run parameters and η_{it} is the error term.

I am interested to know whether there exist long-term and short-term effects of Z (employment protection regulation) along with Y (GDP measuring economic activities) on X (unemployment rate) and whether there exists a stable adjustment path from the short-term relationship (if any) to the long-run relationship.

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

$$\Delta X_{it} = \theta_i(\eta_{it-1}) + \sum_{j=1}^{p-1} \lambda_{ij} \Delta X_{i,t-j} + \sum_{k=0}^{q-1} \psi_{ik} \Delta Y_{i,t-k} + \sum_{1=0}^{r-1} \pi_{il} \Delta Z_{i,t-1} + \mu_i + \phi_{it} \tag{2}$$

where Δ is the difference operator; θ_i is the group-specific error-correcting speed of adjustment term; λ_{ij}, ψ_{ik} and π_{ij} are the coefficients of the lagged variables; μ_i is the

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

country fixed effect and ϕ_{it} is the disturbances term. The existence of a meaningful long-run relationship with a stable adjustment dynamics requires $\theta_i < 0$.

Under this general structure, we can have three alternative models. On one extreme, we can have dynamic fixed-effect estimators (DFEs), where intercepts are allowed to vary across the countries and all other parameters and error variances are constrained to be the same. At the other extreme, one can estimate a separate equation for each group and calculate the mean of the estimates to get a glimpse of the overall picture. This is called mean group (MG) estimator. Pesaran and Smith (1995) showed that MG gives consistent estimates of the averages of parameters. The intermediate alternative is pooled mean group (PMG) estimator, suggested by Pesaran *et al.* (1999). It allows intercepts, short-run coefficients and error variances to differ freely across the countries, but the long-run coefficients are constrained to be the same; that is, $\psi_i = \psi$ and $\pi_i = \pi$ for all i in equation (1) and θ_i, λ_{ij} and so on of equation (2) may differ from country to country.

Using the STATA ado developed by Blackburne and Frank (2007), I estimated all three alternative models, MG, PMG and DFE (Table 1). Based on lag exclusion Wald test for each variable separately, I determined the lag structure (p, q, r).

A series of Hausman tests—PMG versus MG, PMG versus DFE and DFE versus MG—confirms appropriateness of the DFE model. This implies that the OECD countries covered in the study differ only in the fixed effect (determined by the time-invariant explanatory variables not included in the study)—they do not differ in short-term or long-term relationships between unemployment and employment protection regulations and the time path connecting the two relationships.

To supplement the analysis of dynamic panel data models, I conducted the VEC (vector error correction) Granger causality/block exogeneity Wald tests (based on the DFE model) to ascertain the direction of causality.[3] To determine the order of the test I used a number of criteria[4] and chose the maximum order of the VAR (vector autoregression) model and subtracted 1 from that to arrive at the order of the VEC model. Estimates are reported in Table 2.

Combining the estimates of Tables 1 and 2, we can make the following observations:

(1) *Relationship between employment protection regulations and total unemployment rate*: Our panel causality tests show only one causality running from REGLAB to TU (Table 2, Parts I.A and II.A). None of the dynamic panel data models, however, found a significant long-run relationship between TU and REGLAB or TEMPOLAB (Table 1, Parts I.A and II.A).[5] Hence the nature of the causal relationship cannot be ascertained.[6] This casts doubt on the contention that strictness of employment protection contributes towards the general unemployment problem.

(2) *Relationship between employment protection regulations and long-term unemployment rate*: I observe no causal relationship between LU and REGLAB or TEMPOLAB. In conformity with this result, the panel data models show that neither REGLAB

[3] For these tests I used Eviews 6 Programme.

[4] The criteria are LR (sequential modified LR test statistic), FPE (final prediction error), AIC (Akaike information criterion), SC (Schwarz information criterion) and HQ (Hannan-Quinn information criterion). For further details of VEC Granger causality tests, see Table 2 notes.

[5] There is no short-run relationship between TU and REGLAB. In two models (MG and DFE), however, I observe that the short-run relationship between TEMPOLAB and TU is negative—not even a loose support to the orthodox standpoint!

[6] If I could find a long-run (statistically significant) positive influence of REGLAB on TU, then the panel causality test result could provide a strong support to the neo-liberal contention.

Table 2. *Labour regulation, unemployment and GDP in 23 OECD countries, 1990–2008:VEC causality analysis*

Part No.	Dependent variable	Excluded independent variable	Chi-square	Degree of freedom	Probability
I.A					
	TU				
		LPPPY	9.747219	7	0.2034
		REGLAB	17.90540*	7	0.0124
	LPPPY				
		TU	23.24136*	7	0.0015
		REGLAB	5.329991	7	0.6198
	REGLAB				
		TU	7.111341	7	0.4174
		LPPPY	7.979373	7	0.3344
I.B					
	LU				
		LPPPY	36.72932*	7	0.0000
		REGLAB	5.156955	7	0.6408
	LPPPY				
		LU	25.67149*	7	0.0006
		REGLAB	6.203194	7	0.5162
	REGLAB				
		LU	4.277353	7	0.7473
		LPPPY	3.163608	7	0.8695
I.C					
	YU				
		LPPPY	8.753818	7	0.2708
		REGLAB	6.639573	7	0.4673
	LPPPY				
		YU	15.29253*	7	0.0324
		REGLAB	4.700915	7	0.6964
	REGLAB				
		YU	8.676888	7	0.2767
		LPPPY	9.116684	7	0.2444
II.A					
	TU				
		LPPPY	7.009315	5	0.2199
		TEMPOLAB	10.80637	5	0.0554
	LPPPY				
		TU	19.16606*	5	0.0018
		TEMPOLAB	9.973051	5	0.0760
	TEMPOLAB				
		TU	8.792223	5	0.1176
		LPPPY	3.032552	5	0.6950
II.B					
	LU				
		LPPPY	38.98773*	5	0.0000
		TEMPOLAB	1.376023	5	0.9269
	LPPPY				
		LU	18.05062*	5	0.0029
		TEMPOLAB	7.095796	5	0.2136
	TEMPOLAB				
		LU	4.571372	5	0.4704
		LPPPY	6.444890	5	0.2653

Table 2. *Continued*

Part No.	Dependent variable	Excluded independent variable	Chi-square	Degree of freedom	Probability
II.C					
	YU				
		LPPPY	7.270453	5	0.2013
		TEMPOLAB	6.495216	5	0.2610
	LPPPY				
		YU	12.45790*	5	0.0290
		TEMPOLAB	7.418688	5	0.1913
	TEMPOLAB				
		YU	6.100480	5	0.2966
		LPPPY	4.209166	5	0.5197

Notes: The VEC (vector error correction)–Granger panel causality tests are done with the aid of Eviews 6 statistical programme. Data sources: see Table 1.

*Significant at the 5% level: the null hypothesis of no causality is rejected.

nor TEMPOLAB has a short-run relationship with LU. Regarding the long-run relationships, the PMG model shows a negative relationship between REGLAB and LU and the DFE model shows a similar relationship between TEMPOLAB and LU (Tables 1 and 2, Parts I.B and II.B). So the contention that strictness of employment protection aggravates the long-term unemployment problem cannot be supported by our causality test and panel data modelling.

(3) *Relationship between employment protection regulations and youth unemployment rate*: None of the panel data models found a short-term or long-term relationship between YU and REGLAB. Only the PMG model shows a significant long-term positive relationship between YU and TEMPOLAB, whereas all the models show a short-term negative relationship (Table 1, Parts I.C and II.C). As there is no causal relationship between YU and REGLAB or TEMPOLAB (Table 2, Parts I.C and II.C), we can conclude that neither regular nor temporary employment protection regulations can be blamed for the youth unemployment problem.

(4) *Relationship between GDP and unemployment rate*: The causality tests show a causal relationship running from unemployment (each of the three measures, TU, LU and YU) to aggregate production as measured by GDP (LPPPY). All the DFE models show a negative long-term relationship in each case and other models largely corroborate this type of relationship. In the case of LU and GDP we get mutual causation: higher rate of long-term unemployment reduces production, which in turn aggravates the long-term unemployment problem. The usual orthodox neoclassical interpretation would be in terms of Okun's law: less employment (more unemployment) reduces output through the production function. There is no place for the 'realisation crisis'/effective demand problem in this orthodox theory: additional production due to more employment will be absorbed through wage-price flexibility as the economy moves towards the full-employment equilibrium. The more sensible explanation can be found in the 'stagnationist'/neo-Kaleckian literature (see Steindl, 1952, 1979; Taylor, 1983, 1991; Dutt, 1984) higher unemployment and lower wage income reduces aggregate demand and production (see Deakin and Sarkar, 2011, for a similar conclusion in the Indian context).

4. Summary and conclusion

From the perspective of the dominant orthodox standpoint against state intervention to protect the interest of labour, this article examines the unemployment consequences of EPL on the basis of the controversial OECD EPL indicators for 23 OECD countries over the time span 1990–2008. It uses three alternative dynamic panel data models—DFE, MG and PMG models and examines the short-term as well as long-term effects of employment protection on various measures of unemployment rate: overall unemployment rate, long-term unemployment rate and youth unemployment rate. To supplement the dynamic panel data modelling, it also uses VEC Granger causality. It finds only one causal relationship following from regular employment protection to total unemployment rate, but the nature of the causal influence cannot be ascertained from dynamic panel data models. Only one dynamic panel model (PMG) shows a significant long-term positive relationship between youth unemployment and temporary employment protection regulation. But the causality test cannot ascertain the direction of causality. There is no causal relationship between long-run unemployment rate and EPLs. The panel data models find no short-term or long-term positive relationship between long-run unemployment and employment protection.

Thus, this study casts serious doubt on the orthodox standpoint that strictness of employment protection hurts labour through increased unemployment. As a by-product of this study I find a clear dampening impact of rising unemployment (which is not found to follow from strict labour regulations) on aggregate production, which in turn aggravates the long-term unemployment problem. The policy prescription should be employment generation by other means (perhaps Keynesian policy of fiscal stimulus rather than neoliberal 'hire and fire' labour regulations) to tide over sluggish demand and production.

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