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Labour Market Flexibility and Long-Run Growth in Developed Economies

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ABSTRACT

We examine the relationship between labour market flexibility, as measured by employment protection legislation (EPL), and long-term economic growth in developed economies from 1995 to 2022. We consider conflicting viewpoints on whether rigid labour market regulations hinder or promote economic growth. Employing a cross-country regression model, controlling for factors including initial GDP per capita, capital formation, human capital, research and development, and indicators of macroeconomic performance, we find that only initial income level and capital formation significantly influence long-run growth in real per capita GDP. EPL has no significant impact in the long run, challenging the pre-2000 advocacy of labour market deregulation by major international organisations. We conclude that policy should focus on supporting the investment decisions of the private sector without distorting market mechanisms.

KEYWORDS

Economic Growth; Labour Market Flexibility; Employment Protection Legislation; Developed Economies

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1. Introduction

It has been argued (Nickell, 1997; Hall & Jones, 1999; Freeman, 2007) that regulation of the labour market plays an important role in explaining differences in macroeconomic outcomes across countries. However, the impact of labour market regulation is a contested topic (Eichhorst et al., 2010). On the one hand, some argue that interference with the flexibility of the labour market can hamper the efficient allocation of resources; for example, regulations on minimum wage, job protection, and working conditions may increase labour costs, reduce international competitiveness, and potentially lead to job losses (Besley & Burgess, 2004). On the other hand, it is argued that the purpose of regulation is to correct market imperfections by reducing transaction costs, improving efficiency, and boosting productivity (Storm & Naastepad, 2009; Freeman, 2010; Lee & McCann, 2011).

Labour market regulation refers to job security rules, which are regulations related to initiating and terminating employment. The policy rationale for implementing these regulations is to provide workers with more job security and improve employers' commitment by meeting social responsibility requirements. They are considered necessary to facilitate the employment relationship, coordinate the allocation of risks, and address information asymmetries in the labour market. Employment protection legislation includes rules concerning dismissal procedures and the amount of compensation for unfair dismissal (Betcherman, 2013). In most European countries, there is a distinction between redundancy through economic reasons or reduced sales and dismissals for disciplinary reasons such as poor performance, absenteeism or negligence (Sá, 2011). In the case of redundancies, a severance payment is usually granted, whereas, in the case of disciplinary dismissals, the worker can take the matter to the labour authority if the dismissal is considered unfair. In the event a satisfactory outcome is not found, the employee can take the matter to court to reach an agreement, usually in the form of a severance payment (Sá, 2011).

Employment protection regulations differ between countries, varying from protective to unregulated or rigid to flexible. More protective legislation may include that non-permanent employment contracts are restricted, dismissal rights are limited, compulsory severance payment is high and administrative requirements for layoffs are substantial. Less rigid legislation may include that the cost of layoffs is not substantial, employer dismissal rights are not limited, and rules for non-permanent employment are minimal (Betcherman, 2013). Higher costs to dismiss an employee influence employment decisions across businesses, slowing down the rate at which employees are laid off. Higher costs can also influence hiring decisions during periods of expansion (OECD, 2004).

Empirical findings suggest a complex picture. The impact of labour market regulation on economic outcomes is found to be in either direction and often only with modest effect (Betcherman, 2013; Storm & Capaldo, 2019). Two distinct positions are supported: one, that elastic adjustment of wages and employment to economic shocks, consistent with less stringent employment protection, provides the best conditions for economic growth and productivity; two, at the firm level, labour regulation can improve job stability and reduce labour turnover costs, thereby increasing productivity and innovation. Therefore, labour regulations provide benefits not only for the workers but also for the firms and, ultimately, the economy. This economic benefit of a labour market with rigid regulations is supported by evidence that labour productivity growth is higher in countries with more rigid labour regulations (Allard & Lindert, 2006a; Skedinger, 2010, 2011; Egert, 2017). Until the year 2000, the necessity of deregulating the labour market was promoted by leading international organisations (IMF, 2003; OECD, 2006; World Bank, 2006). However, these institutions have now abandoned the idea that deregulating the labour market will necessarily boost economic growth. The World Bank revised its earlier position that “laws created to protect workers often hurt them” (World Bank, 2007, p.19) to “employment regulations are unquestionably necessary” and “benefit both workers and firms” (World Bank, 2014, p.231). Furthermore, it has been argued that labour regulation laws may harm growth and competitiveness not only when they are excessive but also when they are insufficient (World Bank, 2014). Consequently, labour market regulations are highly debated in public policy, as their impacts

can affect social stability and economic growth. Policymakers are, therefore, searching for which labour market framework would be the most growth-enhancing, especially in periods of crisis to pursue structural reforms to support recovery.

This paper aims to contribute to this important discussion by providing up to date insights into the relationship between labour market flexibility, as measured by employment protection legislation (EPL) and long-run economic growth in a sample of developed countries for which comparable data are available over the period 1995 to 2022. The paper is structured as follows: section 2 briefly summarises the literature on empirical studies of the impact of labour market regulation on economic growth. Section 3 presents the data and outlines the model used in our study. The results are presented in section 4, and section 5 contains concluding remarks.

2. Literature review

North (1989, p. 1321) defines institutions as, "the rules, enforcement characteristics of rules, and norms of behaviours that structure repeated human interaction". By adopting this definition and applying it more specifically to our topic, labour market institutions are considered man-made devices to determine constraints in the labour market and are embodied in laws and regulations. Henrekson (2020) argues that labour market institutions can improve economic growth if they do not impose stringent regulations on the economic system, arguing that inputs will flow more rapidly to their best use if the labour market is lightly regulated. Flexible labour market regulations help firms adjust more readily to market fluctuations and create the ideal condition for high-risk entrepreneurial firms to be born and to evolve. Empirical results on this claim are mixed. Bertola (1991) and Young (1989) both conclude that stronger employment rigidity is associated with negative growth performance; however, Belot et al. (2007) find a positive relationship between EPL and growth of real GDP, at least below a certain threshold. Allard and Lindert (2006b) divide countries into two groups based on their level of wage coordination, and they find that more stringent EPL reduces economic growth but only in countries with a high level of wage coordination. In an R&D endogenous growth model, Afonso (2016) finds that the lack of flexibility in the labour market slows economic growth in a country operating below its potential. Turrini et al. (2015) assess the pattern of reforms in the European Union in the 2000s and find no significant relation between growth of GDP per capita and the direction of the reform in the labour market. The same results are found by Brancaccio et al. (2018) in their OLS regressions to assess the effects of changes in employment protection on the growth rate of GDP. Based on balanced panel data for 23 countries from 1991 to 2013, their findings show that a reduction in EPL has no statistical impact on economic growth.

In recent years, there have been multiple attempts to develop EPL indicators based on variables related to market outcomes, variables that measure job satisfaction, the tax wedge variable, and variables that codify labour market laws and regulations (Bertola, 1990; Grubb & Wells, 1993; Heckman & Pagés, 2000; Allard 2005; Di Tella & MacCulloch, 2005). However, qualitative aspects of some labour market regulations are hard to quantify; whilst union density and minimum wages are easily expressed with a numerical value, collective bargaining systems and mandated benefits pose quite a challenge. Across countries, EPL varies from relatively protective (rigid) to relatively unregulated (flexible). Rigid regulation encompasses rules such as restriction of non-permanent employment contracts, limited dismissal rights, and generous compulsory severance payments. In contrast, flexible regulation allows lower layoff costs, stronger employer dismissal rights, and minimal rules for non-permanent employment (Betcherman, 2013). Some European countries have been found to have the most stringent regulations regarding the dismissal of permanent workers in contrast to anglophone countries like New Zealand, the USA, or Canada (OECD, 2013).

A number of indices suitable for use in cross-country empirical analysis have been developed. The most widely used is the OECD index measuring the strictness of EPL. This composite index measures the strictness of protection

of permanent workers against individual dismissal, collective dismissal obligations, and regulation on temporary forms of employment. It covers all OECD countries annually from 1985 onwards (OECD, 2004); the coverage of this indicator has been also extended from 2013 to include several non-OECD countries. Four annual time series have been published so far, and the latest version, version 4, was implemented in 2019. For availability and comparability of the data, in this study, version 1 is used. In 2008 other variables were added to cover the rights and obligations for temporary employees. In 2013 a new approach to coding the regulations was introduced and a shift from the analysis of the aggregate scores to the analysis of the single sub-indices was adopted. As the index aims to measure how restricted an employer is in dismissing an employee unilaterally, some criticism regarding this approach has emerged (Allard, 2005b; Berg & Cazes, 2008; Aleksynska & Cazes, 2016); as the OECD data are weighted based on the importance firms give to decisions related to hiring and firing workers, higher weights are assigned to some components that are perceived economically important from the employers' point of view. The aggregate score is calculated by considering four categories of regulation: procedural requirements, notice and severance pay, regulatory framework for unfair dismissals and enforcements of unfair dismissal regulation. The score of the indicators is determined as the averages of the score of the four categories. The final score of the index is between 0 to 6 where the lowest score means low employment protection (OECD, 2020a).

3. Model and data

3.1. Model

In developing a model to explain the growth rate of real GDP per capita, although our variable of interest is employment protection legislation, we need to include potentially relevant control variables. In the vast literature on estimating cross-country growth regressions, numerous candidate explanatory variables have been used. The work of Robert Barro is famous in this area and dates to Barro (1991) and includes Sala-i-Martin and Barro (1995), Barro (2000), Lee and Barro (2001), and Barro (2003). Also prominent in the literature is the work of Ross Levine, with Levine and Renelt (1992) and Levine and Zervos (1993) being particularly influential in noting the fragility of the empirical evidence, apart from a robust correlation of investment with economic growth. Nevertheless, in the interests of not dismissing the role of other variables *a priori*, we propose equation (1) as the starting point for our analysis. It includes variables to capture the convergence hypothesis (Quah, 1996; Rivas & Villarroya, 2017), investment (both in the form of physical and human capital, as well as research and development), macroeconomic controls (for inflation, unemployment, and labour force participation) and the size of government. As per previous studies (Boskin & Lau, 1990; Lucas, 2002; Acemoglu, 2009), the ratio of domestic investment to GDP is used as a proxy for capital formation. R&D intensity is incorporated into the model to measure technological progress (Landau, 1986; Barro, 1991; Acemoglu, 2009). As in Barro's (1991) model, human capital is measured as years of schooling. All those variables are expected to have a positive impact on economic growth. According to economic literature, unemployment and inflation rates are included in the model as important determinants of economic growth. Various theoretical frameworks and empirical studies provide insights into the impact of unemployment on economic growth. Human capital theory suggests that unemployment can lead to a deterioration of workers' skills and capabilities. Prolonged unemployment may result in a loss of human capital, as individuals may become less productive due to skill depreciation. This can have long-term consequences for economic growth (Becker et al., 1990; Becker, 2009). High unemployment rates can also lead to decreased consumer spending, as unemployed individuals have lower incomes, thus reducing overall demand in the economy. Additionally, high unemployment can decrease potential output, as firms may invest less in capital and innovation due to uncertain economic conditions. The full definitions and sources of data on these variables are set out in Table 1.

$$gdppcgr_i = a_0 + a_1 gdppc95_i + a_2 capform_i + a_3 rands_i + a_4 yrsch_i + a_5 infl_i + a_6 unempl_i + a_7 lfpr_i + a_8 gov_i + a_9 epl_i + e_i \quad (1)$$

3.2. Data

Descriptive statistics relating to the variables in Table 1 are set out in Tables 2 and 3.

The sample consists of 27 developed countries with data from 1995-2022. The starting date of 1995 is driven by the re-emergence of some of these countries as independent nations in the early 1990s. Table 2 shows the countries along with their annual growth rates of real GDP per capita over the period 1995-2022 based on the compound growth rate calculated from the difference in real GDP from the beginning to the end of that period, as well as their average EPL scores.

Table 1. Variable definitions and sources.

Variable	Definition	Source
gdppcgr	Annual percentage growth rate of real GDP per capita (constant prices, PPP, USD) calculated from 1995 GDP per capita to 2022 GDP per capita	OECD (2024b)
gdppc1995	GDP per capita in 1995 (constant prices, PPP, USD)	OECD (2024a)
capform	Gross capital formation as % of GDP - Gross capital formation (formerly gross domestic investment) consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories	World Bank (2024b)
randd	Research and development expenditure (% of GDP)	World Bank (2024d)
yrsch	Average years of schooling in the population aged 25 years and older	Feenstra, Inklaar, and Timmer (2015)
infl	Percentage change in CPI from previous year	OECD (2024c)
unempl	Unemployment rate: % of the labour force (modelled ILO estimate)	World Bank (2024e)
lfpr	Labour force participation rate, total (% of total population ages 15+) (modelled ILO estimate)	World Bank (2024c)
gov	General Government final consumption expenditure (% of GDP)	World Bank (2024a)
epl	Employment protection legislation: a measure of the procedures and the costs involved in dismissing individuals or groups of workers (regular contract) – Individual and collective dismissals (regular contracts Version 1 (1985-2019)	OECD (2020b)

Table 2. Countries in sample: average real per capita growth rate and EPL index over 1995-2022.

Country	gdpgrpc	epl
AUSTRALIA	1.61	1.50
AUSTRIA	1.20	2.40
BELGIUM	1.28	1.78
CANADA	1.22	0.59
SWITZERLAND	1.12	1.43
CZECH REPUBLIC	2.20	3.46
GERMANY	1.16	2.60
DENMARK	1.23	1.49
SPAIN	1.23	2.23
FINLAND	1.67	2.11
FRANCE	0.96	2.57
UK	1.35	1.44
GREECE	0.84	2.83
HUNGARY	2.82	1.88
IRELAND	4.70	1.21
ITALY	0.47	2.92
JAPAN	0.68	1.52
KOREA	3.47	2.48
NETHERLANDS	1.51	3.31
NORWAY	1.15	2.33
NEW ZEALAND	1.70	1.70
POLAND	4.07	2.33
PORTUGAL	1.30	4.05
SLOVAKIA	3.42	2.83
SLOVENIA	2.43	2.35
SWEDEN	1.80	2.46
USA	1.58	0.09

Table 3 sets out the cross-country mean, median, maximum, minimum, and standard deviation of all the variables in equation (1) and GDP per capita in 2022. There is considerable variability in all of them, with both very weak and very strong growth within the sample, and important differences in physical and human capital, macroeconomic variables, as well as the measure of employment protection. There is a surprising range even in years of schooling, labour force participation rates and size of government. The mean of our variable of interest, epl, ranges from 0.09 (extremely flexible rules) to 4.05.

Table 3. Variable averages across countries.

Variable	Mean	Median	Maximum	Minimum	SD
gdpgrpc	1.78	1.35	4.70	0.47	1.05
gdppc95	30647	33007	51947	12120	9803
gdppc22	48447	44746	108591	29616	15670
capform	23.51	23.11	32.05	17.69	3.13
randd	1.92	1.89	3.34	0.70	0.81
yrsch	11.60	11.82	13.24	7.00	1.47
infl	2.16	1.87	6.34	0.18	1.21
unemp	7.63	7.25	16.44	3.69	3.36
lfpr	60.19	60.34	67.83	48.78	5.06
gov	19.50	19.28	25.42	11.36	3.19
epl	2.14	2.33	4.05	0.09	0.86

4. Results

The results from estimating equation (1) by OLS are shown in the column headed FULL in Table 4. The Breusch-Pagan test for heteroscedasticity in that model indicates that there is sufficient evidence (p=0.0358) to reject the null hypothesis of constant variance in the full model. The column headed FULLROB shows the p-values after the standard errors have been corrected for heteroscedasticity. The only statistically significant coefficient (p=0.008) in the full model is the initial (1995) level of real per capita GDP. Consistent with the convergence hypothesis, this coefficient is negative, indicating that initially, richer countries have, on average, experienced slower rates of growth than initially poorer countries. The adjusted R2 of 0.4166 is relatively high despite the lack of significance of most of the coefficients, which may indicate an issue with multicollinearity. However, the variance inflation factors, with an average of only 2.32, suggest that multicollinearity is not in fact a serious problem. The Ramsey RESET test indicates that there is also no serious omitted variables problem, in accordance with the use of many control variables suggested in the growth literature.

As discussed above, the previous literature very strongly suggests that capital formation is the one factor that has been found to be robustly associated with economic growth. In the light of this, we estimate a much simpler model with only two explanatory variables, namely the initial level of GDP per capita and the average level of gross capital formation as a percentage of GDP. The results of this model are presented in the column headed SIMPLE. The coefficients of both explanatory variables are statistically significant, with p-values of 0.001 and 0.025, respectively. The adjusted R2 is higher than in the full model; the Breusch-Pagan test suggests no problem with heteroscedasticity, the VIFs have no issue with multicollinearity, and the RESET test finds no evidence of omitted variables. Moreover, a likelihood ratio test of whether the full model adds anything of significance to the basic model finds insufficient evidence that it does (p=0.3634).

We conclude that in the long run, the main factors affecting GDP per capita growth in this sample of developed economies are their initial levels of income and the share of output that they devote to capital accumulation. For every additional $10,000 of GDP per capita in 1995, the annual growth rate of real GDP per capita declines by about

0.6 percentage points, ceteris paribus. A one percentage point increase in capital formation as a percentage of GDP is associated with a 0.1182 percentage point increase in the growth rate of real GDP per capita; or, expressed differently, a 5 percentage point increase in capital formation is consistent with an increase in growth rate of about 0.6 percentage points, ceteris paribus.

In section 3.1 above, we explained our expectations, based on some of the previous literature, concerning the coefficients of the control variables. However, to reiterate, variations in the other control variables, including the measure of employment protection legislation, have no effect on economic growth in the long run. This is perhaps not surprising as it is in line with the seminal work of Levine and Renelt (1992) that many of the variables used in the study of economic growth are very fragile to the choice both of sample and estimation method.

Table 4. Dependent variable: Real GDP pc growth rate calculated over 1995-2022.

Variable	FULL	FULLROB	SIMPLE
gdppc95	-.00005838	-.00005838	-.00005999
	0.038	0.008	0.001
capform	.07477243	.07477243	.1181536
	0.287	0.396	0.025
randd	.03212174	.03212174	
	0.925	0.935	
yrsch	-.06988815	-.06988815	
	0.649	0.693	
infl	.24995304	.24995304	
	0.306	0.364	
unemp	.00180838	.00180838	
	0.981	0.978	
lfpr	.05153372	.05153372	
	0.280	0.127	
gov	-.03452709	-.03452709	
	0.576	0.319	
epl	-.22090171	-.22090171	
	0.386	0.570	
_cons	.05649637	.05649637	.84507662
	0.989	0.986	0.531
Adjusted R^2	0.4166	0.4166	0.4512
Breusch-Pagan	$\chi^2(1) = 4.35$	$\chi^2(1) = 4.35$	$\chi^2(1) = 1.66$
H_0:Constant var	0.0358	0.0358	0.1982
Mean VIF	2.32	2.32	1.02
Ramsay RESET	F(3,14) = 1.51	F(3,14) = 1.51	F(3,21) = 1.19
H_0: No omitted vars	0.2551	0.2551	0.3380
LR test			$\chi^2(7)= 7.66$
H_0: FULL adds nothing of significance to BASIC			0.3634

Note: p-values are shown below estimates/test statistics.

5. Conclusion

Although the focus of our study is to re-examine whether, in the context of advanced market economies, the rigidity of employment protection legislation constitutes an impediment to long-run economic growth in the last three decades or so, we also control for a wide range of possible influences on growth that have been suggested in the literature. We find that the coefficient of the variable capturing employment rigidity is indeed negative but that it is not statistically significant at any conventional level. We conclude that the emphasis of major international organisations, including the IMF, the OECD, and the World Bank, on the necessity of deregulating the labour market prior to the turn of the century was indeed misguided, confirming that they have been correct in abandoning such

advice. Moreover, our results indicate that focusing on the role of government as in any way affecting long-term growth performance is also misplaced, whether that concerns the promotion of research and development or policy attempts to address inflation and unemployment. Inter-country differences in employment protection legislation, like much of a country's underlying institutional framework, are the result of long-run historical processes. Therefore, it is perhaps not surprising that basing policy advice on the emulation of policy that apparently worked well in one jurisdiction has had little impact when put into practice elsewhere.

In accordance with the growth literature of the 1990s, we find that the evolution of long-run growth of income per capita over the last three decades can be explained by two factors: the initial income of a country and the proportion of income devoted to investment. The first of these factors is a given, not subject to policy intervention. The second factor is the sum of private sector decisions, and the best that government can do in this respect is to avoid policy that might distort such decisions.

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Conflict of interest

All the authors claim that the manuscript is completely original. The authors also declare no conflict of interest.

Author contributions

Conceptualization: Raffaella Belloni; Investigation: Raffaella Belloni; Methodology: Raffaella Belloni, W. Robert J. Alexander, Sajid Anwar; Formal analysis: W. Robert J. Alexander Writing – original draft: Raffaella Belloni; Writing – review & editing: Raffaella Belloni, W. Robert J. Alexander, Sajid Anwar.

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