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## Labour market institutions – the problem of definition and measurement

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### Abstract

**Motivation:** Despite a wealth of research the role of labour market institutions (LMIs) remains controversial. The problem is on the increase lately because of socio-economic transformation affecting the functioning of labour markets. One of the explanations of the problem might be the lack of precise definitions and proper measures of LMIs, especially informal ones, that could be used in econometric research.

**Aim:** The aim of the paper is twofold. First, to follow the evolution of the concept of LMI measures in economic literature, both in the theoretical context and in empirical application. Second, to compare different measures of employment protection legislation (EPL) and assess their effectiveness in capturing the quality of workers' protection. The analysis takes an institutional perspective which assumes that LMIs are a means to solve the problem of market inefficiencies rather than a source thereof.

**Results:** The paper identifies inadequacies in the way LMIs are measured and used in empirical research.

**Keywords:** labour market policies, employment protection, institutional economics

**JEL:** J08; J83; E02



## 1. Introduction

Economists are analysing labour market institutions (LMIs) at least since the turn of the 19<sup>th</sup> and the 20<sup>th</sup> century (Kaufman, 1993). Regulations of the labour market can be regarded from an ‘institutional’ or ‘distortion’ perspective (Betcherman, 2015). The first view considers LMIs a way to lower transaction costs, improve efficiency, reduce inequalities and promote social justice; in the second, regulations in fact create inefficiencies and worsen the functioning of the labour market, lowering welfare. Institutional economists tend to focus on the qualitative analysis while the mainstream uses econometric techniques to quantify the impact of regulations on employment, unemployment, wages, productivity, etc. Despite huge and growing literature the effects of LMIs are still controversial and any firm consensus seems far from emerging. The problem merits special attention in the present context of globalization, technological revolution, and the processes in the labour market that change not only the nature of employment relationship, but the concept of work itself. Better understanding of LMIs and their consequences is of paramount importance if economists are to offer meaningful policy advice in difficult times. The crucial factor in today’s dynamic labour markets – the need to combine elasticity with economic security – demands proper protective regulations. Adequate assessment of LMIs requires (1) precise definitions of regulations and norms, (2) good understanding of the mechanisms through which they impact the labour market behaviour and outcomes, and (3) good measures for empirical research.

The paper identifies several possible explanations of unsatisfactory results of empirical research on LMIs so far: imprecise definitions, weak theoretical foundations, faulty measures and biased reporting. The focus of the analysis is defining and measuring of LMIs. The paper does not strive to describe all existing measures – those commonly used are selected along with less known but potentially useful ones. Nor does it try to present detailed discussion on the effects of LMIs – rather, to show the evolution of ideas, the interplay between theoretical and empirical research and the potential for the improvement of both. The theoretical aspects of LMIs require a separate investigation and remain beyond the scope of the paper.

## 2. Literature review

The problem of labour market segmentation and wage differentials was studied since the beginning of economics (A. Smith, A. Marshall). The deviations from competitive model were subscribed to market imperfections, mainly the weaker bargaining position of workers. The postulate to actually cor-

rect this imbalance and protect workers' rights came with the expansion of institutional economics in the 1920s and 30s (J.B. Clark, J.R. Commons, D.D. Lescohier, S.H. Slichter). In later years theories of segmented labour market tried to explain divergent situation of different worker cohorts (C. Kerr, J.T. Dunlop, P. Doeringer, M. Piore). With the emergence of the theories of human capital (T.W. Schultz, G. Becker) 'institutional' problems of labour markets started to filter into mainstream economics. The lingering effects of oil shocks of the 1970s highlighted possible interactions between institutions and shocks, instigating the pressure to deregulate labour markets and bring them closer to the competitive ideal (OECD, 1994; IMF, 2003).

Recent decades witnessed a flourishing of papers on the role of LMIs (individually or in some combinations) in the labour market and in the macroeconomy (to name just a few of the meta-studies: (Freeman, 2007; Howell, Baker, Glyn, & Schmitt, 2007; Eichhorst, Feil, & Braun, 2008; Holmlund, 2013; Heimberger, 2021)). The research seems to peter out, however, after 2010 or so and to become more enmeshed with details of LMIs and the technical aspects of the analysis. The focus apparently changed from general impact analyses to more in-depth empirical studies of a certain institutional feature in a defined country-period setting (for an up-to-date review see (Giotis, 2024)).

The paradox of most of the available research is analyzing an institutional problem from a mainstream economic perspective. In other words, there is an incongruity between an institutional phenomenon and orthodox tools used to study it. For institutional economists LMIs are a (more or less adequate) reaction to unavoidable market failures; for the proponents of efficient competitive markets it is the institutional intervention that creates or exacerbates the frictions. This perception influences most of the research on LMIs and possibly explains a lot of the observed inconsistencies.

## 2.1. Definition of LMIs

Institutional economics maintains a careful distinction between (1) institutions and organizations, (2) institutions and policies, (3) formal and informal institutions (North, 1990). None of those are evident in definitions of LMIs commonly used in most of the literature.

Probably the closest to the institutional understanding is the definition proposed by Weller (2009, p. 23): 'Labour-market institutions are mechanisms with differing degrees of formality that establish the rules of behaviour for participants in the labour market'. Among examples, however, Weller lists active labour market policies that differ from institutions *sensu stricto* in their discretionary character. Ochel (2005, p. 40) provides a more general definition: LMIs are 'generally known rules that are designed to give structure to the recurring interactions in the labor market'. He makes no distinction between



formal and informal institutions because both types can provide a behavioral directive. A more common approach to LMIs is to include all forms of government intervention in the labor market: a ‘mix of regulations, taxes, and subsidies affecting the relation between workers and employers’ (IMF, 2003, p. 131). Some of the authors stress the expected effects of LMIs, defining them as ‘the system of laws, programs, and conventions that can impinge on labor market behavior and *cause the labor market to function differently from a spot market*’ (Blau & Kahn, 1999, p. 1400). Others take a clear normative position: LMIs are ‘policy interventions or collective organizations that *interfere* with wage and employment determination’ (Holmlund, 2013, p. 1), but also they ‘refer to various rules, organizations, and structures that regulate the labor market and *aim to improve its efficiency*’ (Giotis, 2024, p. 274). The common feature of all the above is the impact on labour market behavior in a way that differs from the purely competitive model. The lack of precision may explain why many authors choose to skip the definition altogether and simply list the regulations, policies, and organizations relevant for a given model. It has important implications for the validity of the results (including or not informal norms or discretionary policies) and for comparability of different studies. A simple way to limit the confusion would be to distinguish between institutions in the strict sense (i.e., formal and informal rules of conduct in the labour market) and a looser understanding of LMIs (institutions *sensu largo*) that could also encompass other forms of intervention in the labour market, such as collective action or active and passive policies.

The most often analyzed LMIs include collective bargaining and contracts, unemployment insurance (benefits), taxes and other non-wage labor costs, minimum wages, employment protection legislation (EPL), passive and active labor market policies, sometimes also regulations of product markets and other markets. Some additional aspects are discussed in the micro scale but rarely operationalized in macroeconomic models – informal institutions (social and cultural norms: fairness, reciprocity, equity, etc.), other bodies of law affecting labour market behavior (social security systems, health and safety regulations), compliance and enforcement of all the above, underlying market imperfections, limited rationality.

## 2.2. Theoretical aspects of LMIs in the labour market

The literature on the impact of LMIs on labour market and other macroeconomic variables is too vast to attempt to summarize it here. Therefore, this part narrows down the focus to EPL as one of the institutions that get the most attention but also one of the most difficult to measure. Definitions of EPL show a similar lack of precision as the definitions of LMIs in general. Saint Paul (2002) defines EPL simply as a tax on layoffs, Addison and Teixeira (2001, p. 2) as ‘restrictions placed on the ability of the employer to utilize

labor'. The first definition covers only one form of EPL, a transfer to a third party (the state), while the second includes all protective measures, with collective and individual employment contracts, labour court rulings, even social norms against mistreatment of workers. Most definitions are contained between these extremes, accentuating legal protection of workers against arbitrary dismissal and limits imposed on non-standard forms of employment (Berg & Cazes, 2008; Betcherman, 2015; Adams, et al., 2018; Arestis, Ferreira, & Gomez, 2020).

In the strict sense EPL includes restrictions on firing (hiring), notice, severance pay, layoff procedures, restrictions on fixed-term and civil contracts in employment and restrictions on temporary work agencies. Three distinct strands are evident in the theoretical and empirical literature on EPL (see table 1 in the Appendix).

1. *EPL increases unemployment and reduces the efficiency of resource use.* The main reasons are increased labor costs that lead to lower labor demand; distortions in the distribution of resources; and obstacles to quick and efficient reaction to shocks.
2. *EPL has no definite impact on labour market variables or the impact is insignificant.* As long as the conditions of the Coase Theorem hold, all the costs of EPL can be efficiently bargained away. Regulatory provisions can affect the division of the surplus but not the surplus itself. Only a transfer to a third party (a tax on layoffs) can lower output at equilibrium. Labour market dynamics will be affected by restrictions on firing and hiring but not necessarily the stocks.
3. *EPL increases efficiency and welfare* through higher investment in human capital (especially firm- or job-specific), better incentives for both workers and employers, more friendly working environment.

The least controversial empirical findings are that EPL lowers flows between employment and unemployment with unclear effect on these variables, although some groups of workers can be negatively affected (youth, women, migrants, low-skilled workers suffer from labour market segmentation). EPL might also hinder reaction to shocks, including technology and organizational changes, and reduce the efficiency of resource allocation, but at the same time it increases productivity and encourages cooperation. Negative effects might be stronger in the short term while the benefits materialize over the medium horizon (Deakin, Malmberg, & Sakar, 2014; Betcherman, 2019). There are, however, some serious problems with empirical results so far:

- most of the research focuses on high-income countries while the same measures can have divergent effects in emerging economies (Heckman & Pages Serra, 2004);
- the level of EPL may be systematically undervalued (protective measures included in individual or collective employment contracts are considered part of compensation rather than EPL);

- the level of compliance and enforcement is usually not considered (Deakin, Lele, & Siems, 2007; Lee & McCann, 2008; Ronconi & Raphael, 2024);
- subjective (biased) selection of variables, models and results distorts the view of EPL in the literature (Blanchard & Wolfers, 2000; Howell, Baker, Glyn, & Schmitt, 2007; Doucouliagos & Stanely, 2009; Heimberger, 2021).

Empirical research on EPL also suffers from the problem of omitted variables, most notably other institutions (of labour market and other markets) and policies that come in interaction with the included variables, thus affecting the results. For example, EPL is often positively correlated with collective bargaining coverage and minimum wages and negatively correlated with unemployment benefits (Addison & Teixeira, 2001). Unemployment compensation affects the probability of separation and does it differently for different worker cohorts, at a given EPL stringency. Active and passive labour market policies also play a role, affecting both stocks and flows in labour markets. Better theory seems necessary to untangle these relationships and provide a more stable basis for modelling.

### 2.3. Measuring of LMIs

Most of the institutions are not directly measurable and require a proxy indicator. An indicator is valid when its value is directly linked to the value of the unknown/unmeasurable variable and changes parallelly to the variations of the variable (Lee & McCann, 2008). There are three general approaches to the measurement of LMIs: leximetric measures based on the provisions of relevant laws; survey results; complex measures – indices or rankings of various construction. Measuring EPL is particularly challenging because of its qualitative nature and multi-dimensionality (Betcherman, 2019).

Leximetric coding means a translation of a legal text into a numerical form (Deakin, 2018; Billa, Bishop, Deakin, Pourkermani, & Shroff, 2023). Freyens and Verkerke (2017) stress that most measures simplify complex institutions into a single index while the regulatory system is multi-dimensional and many of the elements are of different ontological nature. Some of the aspects of regulations are quite easy to express in numerical terms (i.e., severance pay), others require more or less arbitrary procedures (Myant & Brandhuber, 2017). One of the first efforts in this vein was the paper by Lazear (1990) who studied the impact of severance pay on employment and unemployment. The measure of severance pay was calculated as the amount due to a blue-collar worker with 10-year tenure fired for reasons not connected with her own behavior. Lazear concluded that this measure of EPL was negatively correlated with activity rates and employment. It was also positively associated with unemployment but the statistical significance



disappeared after country fixed effects were included in the model. Grubb and Wells (1993) extended the measure with restrictions on individual lay-offs, atypical employment contracts and working hours. The calculation of dismissal costs added three different tenures, costs of procedural requirements and limits on 'fair' dismissal. Individual scorings on these variables were then used to calculate country rankings. OECD (1994; 1999; 2004) created a measure that set the field for many years to come: a compound index covering EPL for different types of employment contract. Distinct forms of employment are analyzed separately because changes in each of the scores affect labour markets in a different way (OECD, 2013). The OECD index comprises 21 measures grouped into three indicators: protection against an individual dismissal (EPR), protection against collective dismissal (EPC), protection against temporary employment (EPT), further aggregated into one indicator (EPRC). EPR covers costs of notice and severance pay, provisions on justified causes of separation, as well as procedural inconveniences associated with firing an individual worker. EPC measures any additional costs associated with collective dismissal that employers incur over the EPR. EPT includes regulation of fixed-term contracts and on temporary work agencies. Information comes from national laws, collective agreements, court decisions and expert opinions.

Emerson (1988) constructed a ranking of countries based on the stringency of EPL. He included the details of regulation (rules on individual and collective dismissal, regulation on atypical contracts) as well as measures of the impact of EPL (employment duration and turnover rates) and surveys of employers' behavior (if and how regulations influence firing decisions). Comprehensive composite indices include the World Bank's Employing Workers index (World Bank, 2011), the Economic Freedom of the World index (Gwartney, Lawson, Hall, & Murphy, 2018), etc. They cover a set of variables on employment elasticity and working conditions, partly based on quantitative data, partly on surveys.

Leximetric indicators usually focus on the actual or potential costs resulting from the regulations for employers. Bentolila and Bertola (1990) constructed the first measure of EPL costs, including the cost of notice, payment in case of wrongful dismissal, probability of dismissal being contested, probability of the court ruling in favor of the employee, and legal costs. The attempt to assess the costs of enforcement is an important aspect of this measure. In contrast, Cambridge University Labour Regulation Index (CBRLRI) tries to quantify the normative effect of a given set of legal rules, not the costs of compliance (Adams, Bastani, Bishop, & Deakin, 2017). The index covers 117 countries for the period 1970–2022 (Deakin, Armour, & Siems, 2023). A similar premise is followed by ILO EPLex (ILO, 2012). Both indices code information drawn from legal sources but also control for breach by using data on labor and human rights violations (Deakin, 2018).



A different approach to measuring LMIs is based on surveys of labour market participants or experts. The construction of a measure makes no use of legal provisions and is based solely on assessment of the strictness of regulations (Feldmann, 2013). In the World Competitiveness Report managers are asked about numerous aspects affecting competitiveness, including the elasticity in adjusting the labour input; several other measures follow a similar methodology – Fraser Institute, Heritage Foundation, Freedom House (Freeman, 2002). Chor and Freeman (2005) used a questionnaire to gather opinions about LMIs, including informal ones. Their Global Labour Survey covers general economic situation, labour market situation, freedom of association and collective bargaining, labor disputes, employment regulations and working conditions, employee benefits. The main problem with GLS is the fact that it does not include opinions of workers themselves. This perspective was adopted by Freeman, Kruse and Blasi (2007) who surveyed workers employed in a multinational corporation. Their research confirmed significant differences between countries in terms of working conditions, rules and norms. Drawing general conclusions from survey data is problematic. Economic conditions facing each country (firm) in the sample may differ, affecting the perception of the EPL stringency. Aggregating across questions poses similar problems as aggregating leximetric indices (Addison & Teixeira, 2001).

### 3. Methods

The paper employs an extensive literature analysis in search for measures of LMIs used in empirical research with the accent on their construction and efficiency. Theoretical and empirical economic literature is included, as well as legal-theoretic texts. The first goal is to classify the types of LMI measures, their construction and scope (see above). The second aim is to find problematic areas and suggest improvements.

Full investigation of the efficiency of different LMI measures is beyond the scope of the paper (for a fairly recent meta-study see (Heimberger, 2021)). Simple bivariate analyses are performed to provide empirical illustration exemplified again by EPL (see table 2 in the Appendix). The EPL strictness is measured by (1) the OECD index (composite measure including leximetric analyses and expert opinions); (2) World Economic Freedom index (Area 5: Regulations, B. Labour market regulations, (ii) Hiring and firing regulations) provided by the Fraser Institute and based on surveys; and (3) CBR-LRI (subindex C: Regulations of dismissal, variables 16–24), a purely leximetric measure. Since the WEF awards higher scores for more ‘freedom’ (less stringent regulation), the values were multiplied by – 1 before computing correlations. All the EPL data are for 2019 and cover 42 countries, both determined



by the availability of the OECD index. Labour market variables include total unemployment rate (% of the labor force), youth unemployment (% of total labor force aged 15–24), employment-to-population rate, the share of self-employment in total employment and Gini coefficient (if not available for 2019, the most recent value of Gini is included). The World Bank's WDI database was used for comparability.

#### 4. Results

The analysis of existing research revealed several weaknesses of the LMI measures used in practice.

1. Many measures are too simplistic, focusing on narrowly defined aspects of the regulatory system. Informal institutions are ignored in leximetric indices and in some compound measures.
2. The construction of most indices suffers from innate subjectivity. It involves selecting relevant laws, assessing the consequences of a given law, calculating its costs in different circumstances, subscribing weights, etc.
3. Answers to survey questions contain subjective elements as well.
4. LMIs only matter as far as they are employed in practice. Measures that ignore the level of compliance and enforcement are misleading at best.
5. LMIs are not simply additive. For example, the effects of EPL are likely to differ with and without minimum wages or unemployment benefits. Collective bargaining can substitute for EPL, at least to some degree.
6. Surprisingly, considering the origin of protective measures, the benefits for workers or the economy are almost universally overlooked, with the sole focus on costs or potential inefficiencies.

A simple numerical exercise permits to evaluate the merits of EPL measures of different construction. The values of the OECD index and CBR-LRI are strongly correlated (0,731), but the correlations between the OECD measure and CBR-LRI against WEF index are much weaker (0,163 and 0,293, respectively). Comparing the indices with labor market variables shows mixed results (table 2). The OECD index seems to have no connection with either unemployment rate or youth unemployment. The correlation with the three other variables is stronger but shows a rather surprising negative sign with the share of self-employment and the Gini coefficient. The WEF index gives the strongest results by far with all variables and keeps the expected signs. Higher absolute values of the index (i.e., more freedom in hiring and firing) are accompanied by lower total and youth unemployment, higher employment with lower share of self-employment. The correlations of CBR-LRI with outcome variables are all weak, with only the coefficient on Gini exceeding 0,25 in absolute value. This results, however preliminary, underscore the value of surveys in formulating measures of EPL for practical use.



Mixed indices have a potential to present a fuller view of labor market institutions than pure leximetric data. First of all, respondents describe the regulatory burden as perceived in practice, reflecting not only the stringency of regulations, but also a given level of compliance and enforcement. The information can be gathered for emerging economies, for which formal leximetric data is chequered at best, thus allowing researchers to expand the sample for empirical purposes. Second, it is possible to include informal norms as behavioral directives, if and when they are relevant. Third, numerous practitioners limit the problem of arbitrary and possibly faulty interpretation of any law provision that could occur in leximetric analysis. Fourth, it is possible to ask for positive effects of regulations, not just their costs. For a survey to be useful, it should be addressed to employers, employees and experts to provide different perspectives and more balanced views of LMIs.

## 5. Conclusion

The fact that LMIs are prevalent in most labour markets proves that they are perceived as welfare-improving by most voters (Holmlund, 2013). As pointed out by Betcherman (2015, p. 128), ‘institutions themselves are not exogenous variables but reflect the legal and cultural fabric of the societies in which they have evolved’. Many studies show positive effects of institutions in terms of lower employment fluctuations, improved income distribution and less inequalities, higher accumulation of physical and human capital, more innovation, while attempts at deregulation seem to bring opposite results (Arestis, Ferreiro, & Gómez, 2021). This contrasts strongly with most measures of LMIs that concentrate on the costs imposed on employers and the pressure to deregulate in order to avoid efficiency losses. Piasna and Myant (2017) list important dangers stemming from casual employment: psychological costs of insecurity, emigration of skilled workers, too low investment in human capital, restricted access to credit, inadequate savings. None of those are included in research on the consequences of LMIs.

There is no reason to assume that reduced regulation of regular jobs would encourage employers to offer better jobs to hitherto disadvantaged groups – on the contrary, it is likely to increase competition in the secondary sector from displaced primary sector workers, exacerbating the problem of segmentation. Nor is it likely to solve the problem of increasing inequalities, both within and among countries. The main reason of inequality and segmentation is the stratification of the labor force along many lines (education, social standing, family status, age, ethnicity, etc.); proper regulations should address this issues effectively. In turn, well informed and precise economic research is needed to define and promote adequate regulations and policies.



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## Appendix

Table 1. The effects of EPL on labour market variables in theoretical and empirical studies

Expected results	Confirmed	Disproved	Unclear/insignificant
Lower employment or higher unemployment	(Lazear, 1990), (OECD, 1994), (IMF, 2003), (Martinez-Matute & Urtasun, 2022), Sahnoun & Abdennadher, 2022)	(Bertola, 1992), (Blau & Kahn, 1999), (Addison & Teixeira, 2001), (Adams, et al., 2018)	(Howell, Baker, Glyn, & Schmitt, 2007), (Heimberger, 2021), (Arestis, Ferreiro, & Gomez, 2023)
Less flows and more pronounced market segmentation	(Bertola, 1999), (Feldmann, 2003), (Boeri, 2011), (Piasna & Myant, 2017), (Betcherman, 2019)		(Nickell, Nunziata, & Ochel, 2005), (Liotti, 2022), (Van Doorn & Van Vliet, 2022), (Ronconi & Raphael, 2024)
Impaired productivity/efficiency	(Grubb & Wells, 1993), (Boeri, 1999), (Saint-Paul, 2002), (Autor, Kerr, & Kugler, 2007)	(Freeman, 2007), (Acharya, Baghai, & Subramanian, 2013), (Aleksynska & Eberlein, 2016), (Sharpe & Fard, 2022)	(Martin & Scarpetta, 2012)
Loss of welfare	(Hopenhayn & Rogerson, 1993)	(Agell, 2002), (Aleksynska & Cazes, 2016), (Adams, et al., 2018), (Arestis, Ferreiro, & Gómez, 2021)	(Betcherman, 2015), (Szczepaniak & Szulc-Obloza, 2019), (Inanc & Kalleberg, 2022)

Some papers document more than one effect (lack thereof).

Source: Own preparation.

Table 2. Correlations between measures of EPL strictness and labour market results

Labour market variable	OECD EPL Index	WEF Index (inverted)	CBR-LRI
Unemployment rate	0,078	0,351	-0,149
Youth unemployment rate	-0,003	0,441	-0,156
Employment to population ratio	-0,376	-0,324	-0,146
Share of self-employment	-0,111	0,517	0,015
Gini coefficient	-0,271	0,306	-0,253

Data for EPL measures and for labour market variables are for 2019; Gini coefficient is 2019 or the most recent available.

Source: Own preparation based on data from the OECD ([https://data-explorer.oecd.org/vis?df\[ds\]=DisseminateFinalDMZ&df\[id\]=DSD\\_EPL%40DF\\_EPL&df\[ag\]=OECD.ELS.JAI&dq=A..EPL\\_OV.VERSION4&pd=2000%2C&to\[TIME\\_PERIOD\]=false&vw=tb](https://data-explorer.oecd.org/vis?df[ds]=DisseminateFinalDMZ&df[id]=DSD_EPL%40DF_EPL&df[ag]=OECD.ELS.JAI&dq=A..EPL_OV.VERSION4&pd=2000%2C&to[TIME_PERIOD]=false&vw=tb)), Fraser Institute (<https://www.fraserinstitute.org/resource-file?nid=14251&fid=16575>), Cambridge University (<https://www.repository.cam.ac.uk/items/938d5a0d-3799-4c5a-8103-8a7355628ef3>), World Bank (<https://databank.worldbank.org/source/world-development-indicators>).