

The impact of labour market policies on outcomes in OECD countries: An empirical analysis

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Abstract. Labour market policies are a topic of debate in all countries that has become increasingly relevant during the recent crises. This study aims to assess the impact of labour market policies on labour market outcomes. The empirical analysis is based on a panel data model with fixed effects for the studied OECD countries. The analysis indicates that higher levels of public spending on labour market policy are associated with improved labour market outcomes. The results also suggest that higher unionisation among employees promotes job-seeking and engagement in the workforce. Based on the results for disaggregated active labour market policies, it can be supposed that training and employment incentives show the most beneficial results, both in terms of reducing unemployment and increasing employment and participation. Thus, our results suggest that labour market policies play an important role in terms of labour market outcomes in OECD countries.

Keywords: labour market, labour market policy, OECD countries

JEL Classification: J08, J88

Received:
June, 2023
1st Revision:
March, 2024
Accepted:
June, 2024

DOI:
10.14254/2071-
8330.2024/17-2/2

1. INTRODUCTION

Labour market policy is one of the most significant policy areas because of the effects that it has on employees, employers and states (Vishnevskaya, 2022). The COVID-19 pandemic resulted in renewed interest in the use of different public spending and management programmes to address the worsening conditions and deepening inequalities within labour markets (Ernst et al., 2022). Another reason why the significance of labour market policies increased during the COVID-19 pandemic was the fact that employees and employers anticipated support from the state (Costa Dias et al., 2020). Additionally, a radical change has occurred in the dominant policy discourse in response to the COVID-19 pandemic and current economic crisis. It has marked growing efforts to alleviate budgetary constraints. Therefore, it is becoming increasingly important to enhance our knowledge of how public spending and transfer programmes affect the labour market (Ernst et al., 2022).

The functioning of labour markets has been a constant preoccupation of OECD policy-makers and the main part of the OECD Jobs Strategy (OECD, 2022). In today's advanced working world, many jobs can be done from anywhere in the world thanks to digitalisation and new technologies. In particular, the COVID-19 pandemic has resulted in the development of many new forms of work, especially telework and work from home (Karacsony et al., 2021). Recent studies also indicate that the impact of the labour market on environmental protection is also an urgent problem at the international level. Consequently, states should increase efforts to correlate labour productivity with a sustainable level of greenhouse gas emissions (Simionescu et al., 2021). On the other hand, labour market policy remains the main factor shaping labour market outcomes in the context of contemporary challenges. In particular, the latest studies indicate that start-up incentives and work interventions have the most effective impact on employment (Wiśniewski, 2022). Although active labour market policies were treated as the main tools for improving employment prospects in the era of COVID-19, studies show that such active instruments do not always support reduction in unemployment, especially in terms of young people (Rotar, 2022) or during times of crisis (Ernst et al., 2022). Thus, the study aims to assess the impact of labour market policies on labour market outcomes, including the employment rate, the unemployment rate and the labour force participation rate.

First of all, our paper contributes to the debate on labour market policy through an extended, pooled cross-country and time series database for OECD countries during the period 2007–2022. In particular, we created a novel panel database that includes data labour market policies and labour market outcomes in OECD countries in the years 2007-2022. Firstly, we assessed and compared labour market outcomes in the OECD countries in the years 2007-2022. Next, we investigated the impact of labour market policies based on an aggregate and disaggregated level (as a robustness checks) on labour market outcomes. Additionally, we incorporated important control variables into our empirical analysis, specifically accounting for differences in business cycles and the structure of national labour markets. Finally, the study is focuses on crucial socio-economic phenomena – labour market policy and its impact on labour market outcomes – which, in turn, influences economic development in a given country.

Our results suggest that a higher level of public spending on labour market policy is associated with improving labour market outcomes. The findings also indicate that higher unionisation among employees promotes job-seeking and engagement in the workforce. Furthermore, we found that the instruments of active labour market policies play an important role in explaining the differences in labour market outcomes in OECD countries. In particular, the findings demonstrate the significant impact of labour market training and employment incentives in enhancing labour market performances. The results also indicate that skilled human beings have more opportunities to find employment and to be active in the labour market. All in all, the labour market policy plays an important role in terms of labour market outcomes in OECD countries, which is consistent with the previous studies.

The paper is organised as follows. The paper starts with an Introduction. The second section presents a review of the literature on the impact of labour market policy on labour market outcomes. The third section includes the methodology for the empirical research. The fourth section involves the results of the empirical analysis. The last section is the Conclusion.

2. LABOUR MARKET POLICY AND OUTCOMES: A REVIEW OF THE LITERATURE

Generally, based on four models of social policy (the Nordic, the Continental, the Anglo-Saxon, the Mediterranean), Boeri (2002) claims that all of them aim to reduce poverty and income inequalities, to insure against labour market risks, and to increase the rewards from labour market participation. However, in developed countries, efforts aimed at increasing the rewards from labour market participation are particularly relevant, considering the challenges in those labour markets (Boeri, 2002). Additionally, Sapir (2006) assesses that an effective model is one that ensures sufficient incentives to work and, as a result, produces a relatively high employment rate. Regardless of the type of labour market policy instrument and whether a country is developed or not, there are important conditions which should be met: proper identification of target groups and ensuring their participation; establishing the correct quality of service and strong relations between income support and active labour market policies, as well as adequate institutional and financial capacity (Asenjo et al., 2024). Furthermore, a frequently cited paper by Nickell (1997) predicts that high unemployment is associated with the following traits: generous unemployment benefits; high levels of unionisation and a lack of coordination between trade unions and employers' associations in wage bargaining; high labour taxes; and poor educational standards at the lower end of the labour market. The analysis by Bassanini and Duval (2006) shows that changes in labour market policies and institutions explain approximately 2/3 of the non-cyclical unemployment changes over the past two decades. Additionally, they state that the impact of high unemployment benefits on unemployment changes is mitigated by higher public spending on ALMP (Bassanini & Duval, 2006). What is more, the effectiveness of labour market policies, especially active ones, is higher in countries that have higher institutional quality in the process of reducing unemployment (Sahnoun & Abdennadher, 2023).

Moreover, it is commonly alleged that an active labour market policy is an important factor in terms of increasing employment and in terms of reducing unemployment (both at the aggregate and disaggregated one). In particular, the positive impact of an active labour market policy is more effective in enhancing the labour market outcomes of the low skilled (Antonucci et al, 2024; Escudero, 2018). The impact of labour market reforms, especially on employment, also depends on overall business cycle conditions. Increases in public spending on active labour market policies have higher effects during slack periods (Duval & Furceri, 2018). It is also true to say that the interaction between an active labour market policy and a passive one generates beneficial effects in terms of unemployment, employment and labour force participation. Therefore, the greater the spending in one policy type, the more effective the other policy becomes (Pignatti & Van Belle, 2018). Additionally, the most recent studies also state that the start-up incentives and intervention programs are the most effective among active labour market policy instruments for enhancing employment. Similarly, vocational training courses and placements have a positive impact on employment. However, placements are more attractive for employers than interventions programs because they are cheaper from their point of view (Wiśniewski, 2022). What is more, recent studies also highlight the growing role of digitalisation in the process of creating active labour market instruments. In particular, instruments of active labour market policies such as career guidance, profiling, and job-matching tools are sensitive to digitalisation (Scarano & Colfer, 2022). Furthermore, it is frequently asserted that there is a negative relationship between the strictness of EPL and the level of unemployment. The analyses conducted so far indicate that countries with more flexible labour markets achieve higher employment rates and higher labour

market participation rates (Kryńska, 2004; Di Tella & MacCulloch, 2005), as well as safety of employment (Grabowska, 2012). While recent studies suggest that the flexibility of labour markets may not definitively impact unemployment and employment, expansionary economic policies combined with reforms that increase employment protection for employees in countries with the lowest levels of such protection are significant factors leading to improvements in employment and unemployment rates. However, it should be noted that these results are characteristic of EU countries, especially those with low levels of employment protection legislation (EPL). Additionally, as the authors stated, the obtained results depend on the analysed period and the choice of explanatory variable measures to economic activity (Ferreiro & Gomez, 2020). Similarly, based on data coming from the European Labour Force Survey in continental Europe, it has been pointed out that unbalanced active and passive labour market policies have a negative effect on the labour market and lead to a negative trend in permanent employment (Barbieri & Cututli, 2015). However, these results are different in terms of the population who are unemployed and not receiving education or training. For instance, Van Vugt and Levels (2022) show that employment protection does not hamper youth labour market integration. Regardless of the methodology used, the adopted approach, and the analysed countries, it is generally held that properly enacted labour market policies can have an effect on improving the labour market situation by increasing the benefits of labour market participation, encouraging unemployed people to accept job offers, and simultaneously maintaining adequate insurance against labour market risks (Bruno & Rovelli, 2010; Hohlova & Rivza, 2022; Antonucci et al, 2024).

However, there is still no consensus on the effectiveness of active labour market policies. On the one hand, some researchers state that active labour market policies are necessary because they lead to lower unemployment and allow for the protection of employees. In contrast, many argue that active labour market policies lead to a waste of public money and result in, relatively high opportunity costs for other potential social programmes (Bruno & Rovelli, 2010; Martin, 2015). What is more, labour market policy has evolved over time in the context of both theoretical understanding of the links between benefit systems and labour market institutions, as well as different countries' experiences (Martin, 2015). Thus, the purpose of the study is to assess the impact of labour market policies on labour market outcomes.

3. DATA, HYPOTHESES, AND METHODOLOGY

The research methodology consists of six steps. Firstly, the research thesis and research hypotheses were formulated. The study will test the following research thesis: the factors that measure labour market spending and labour market institutions play an important role in explaining labour market outcomes in OECD countries. To falsify the thesis it is necessary to test the following hypotheses:

H1: A higher level of public spending on active and passive labour market policies reduces the unemployment rate;

H2: A higher level of public spending on active and passive labour market policies increases the labour force participation rate and the employment rate;

H3: A higher level of unionization among employees correlates with a decrease in the unemployment rate;

H4: The high degree of unionization of employees is associated with an increase in the labour force participation rate and the employment rate;

H5: A higher level of employment protection legislation is associated with a lower unemployment rate;

H6: Strictness of employment protection legislation has a positive and significant impact on the labour force participation rate and the employment rate.

Next, we collected the data and created a novel panel database that includes data labour market policies and labour market outcomes in OECD countries in the years 2007-2022. The data come from OECD

database. The description of the analysed variables and their sources are presented in Table 1. We have chosen OECD countries because of the fact that these countries differ in terms of the role of labour market policy in general, and the role government plays in it.

The starting point of the analysis is 2007, when the financial crisis broke out, and, as a result, the debate over hiring and firing regulations became more urgent (Scarpetta, 2014). We also think that the analysis of the situation on the labour markets in OECD countries during the financial crisis may be helpful for the analysis of labour markets in post-covid realities. Consequently, trends of labour market policy which were present during the financial crisis may be similar to those during post-COVID realities.

Table 1

The description and sources of the variables

Variable	Description	Source
Dependent variables		
Unemployment	Unemployment rate (% of labour force).	OECD. (2023h)
Employment	Employment rate (% of working age population).	OECD. (2023c)
Labour	Labour force participation rate (% of the 15-64 year-olds population).	OECD. (2023d)
Explantatory variables used in the main models		
LMP	Public spending on labour market (% of GDP).	OECD. (2023f)
ALMP	Public spending on active labour market (% of GDP).	OECD. (2023f)
PLMP	Public spending on passive labour market (% of GDP).	OECD. (2023f)
Trade_union	Trade union density (% of employees).	OECD.Stat. (2023c)
Strictness_regular	Strictness of employment protection – individual dismissals (regular contracts).	OECD.Stat. (2023d)
Strictness_temporary	Strictness of employment protection – temporary contracts.	OECD.Stat. (2023e)
Net_replacement	Net replacement rate in unemployment.	OECD.Stat. (2023b)
Explantatory variables used in the robustness checks		
Training	Institutional, workplace, integrated training and special support for apprenticeship (% of GDP).	OECD. (2023f)
Employment_incentives	Recruitment incentives, employment maintenance incentives, job sharing and job rotation (% of GDP).	
Start-up	The performance incentives to start a start-up (% of GDP).	
Vulnerable_policy	The public employment services and administration which involves placement services and benefit administration; sheltered and supported employment and direct job creation (% of GDP).	
Control variables		
Skilled_pop	The 25-64 year-olds population with tertiary education (% of 25-64 year-olds population).	(OECD. 2023a)
Inflation	Inflation rate (Consumer price indices).	OECD.Stat. (2023a)

Note: The OECD currently includes 38 countries, however, due to insufficient data the econometric analysis does not include Latvia, that joined this organisation on 5th of July 2018, Colombia, that joined the OECD on 28th April 2020 and Costa Rica, that joined the OECD on 25th May 2021 (OECD, 2023c). Additionally, due to insufficient data, the following countries were excluded from the empirical analysis: Chile, Iceland, Israel, Lithuania, Mexico, Turkey and the United Kingdom. The single missing values of the variables were replaced by the average value of the given variable in the analysed period.

Source: own elaboration.

After that, the impact of labour market policies and labour market institutions on labour market outcomes in OECD countries was assessed by estimating econometric models. To measure the performance of labour markets in OECD countries and to assess the effectiveness of labour market policies, the following dependent variables were employed: the unemployment rate (the variable *Unemployment*), the employment rate (the variable *Employment*) and the labour force participation rate (the variable *Labour*). As independent variables, in order to measure labour market policy, we used variables at the aggregated and disaggregated levels. The following variables at the aggregate level were employed: the level of public expenditure on labour market policy (overall) (the variable *LMP*), the level of public expenditure on active labour market policy (the variable *ALMP*) and the level of public expenditure on passive labour market policy (the variable *PLMP*). Additionally, in the robustness checks, the following variables at the disaggregated levels were used: training which refers to institutional, workplace, integrated training and special support for apprenticeship (the variable *training*); employment incentives which involves recruitment incentives, employment maintenance incentives, job sharing and job rotation (the variable *Employment_incentives*); start-up incentives which refers to performance incentives to start a start-up (the variable *Start-up*); public employment services and administration which involves placement services and benefit administration; sheltered and supported employment and direct job creation. However, according to Escudero (2018), we grouped the last three variables in one policy cluster because these three variables targeted especially at the most vulnerable groups (the variable *Vulnerable_policy*). Furthermore, as independent variables that measure other labour market institutions, the following measures were included in the analysis: trade union density, strictness of employment protection – individual dismissals (regular contracts), and strictness of employment protection – temporary contracts [the variable tax wedge was excluded from the econometric analysis due to the high correlation with other variables]. Trade union density was used to control for inside power in wage bargaining, which can result in upward pressure on wages but simultaneously lead to decreased employment (Layard et al., 2005). Employment protection legislation as one of the key institutions in the labour market (Kwiatkowski, 2013) was used to control a set of rules regarding the employment and dismissal of employees (Muravyev, 2014; Scarpetta, 2014). According to the OECD's recommendations, version 3 of the indicator of employment protection was applied (OECD.Stat, 2023b, 2023c). In order to include the structure of national labour markets, as controls, the concentration of the skilled population was employed. This makes it possible to include the effectiveness of labour market policy due to the fact that skilled human beings have more opportunities to find employment (Escudero, 2018), especially under the new conditions of Industry 4.0 (Habánik, Grenčíková, & Krajčo, 2021). Additionally, based on previous studies, we also include the inflation rate measured at the country level to control for differences in business cycles (Bruno & Rovelli, 2010).

In order to verify the adopted hypotheses, a panel model with fixed effects was used. Due to the problem of autocorrelation and heteroscedasticity, as well as taking into consideration the time period and geographical scope of our empirical analysis, the robust estimator HAC that was suggested by Arellano (2003) was employed.

The general form of the panel model with fixed effects can be written as follows:

$$y_{it} = \beta_0 + X_{it}\beta' + \alpha_i + \varepsilon_{it}, \quad (1)$$

Where:

y_{it} – the lagged dependent variable; in our analysis: the unemployment rate (M_1_1, M_1_2, M_1_3 models); the labour force participation rate (M_2_1, M_2_2, M_2_3 models); the employment rate (M_3_1, M_3_2, M_3_3 models);

X – the vector of explanatory variables;

α_i – the individual effect;

ϵ_i – pure random error.

Consequently, in the fixed effects model, the correlation between the individual effect α_i and the vector of independent variables is allowed, whereas the random effects model assumes that there is no correlation between them. Taking into consideration that this correlation exists in secondary data, the use of fixed effects models seems to be reasonable. Additionally, one of the major advantages of fixed effects models is the fact that they manage the sources of the endogeneity problem, i.e., the omitted variable problem, due to the fact that they include the impact of all other factors that are not involved in the model (Woodbridge, 2010).

4. LABOUR MARKET POLICIES, INSTITUTIONS, AND OUTCOMES IN THE OECD COUNTRIES: EMPIRICAL RESULTS

In this section, the results of the empirical analysis are presented. Firstly, we analysed and compared labour market outcomes in the OECD countries in the years 2007-2022. Next, we estimated and discussed the several regression models for the unemployment rates, labour force participation rates and employment rates. Finally, we conducted robustness checks.

4.1. Labour market outcomes in the OECD countries – insights

Table 2 presents labour market outcomes in OECD countries from 2007 to 2022. In most countries, a decrease in the unemployment rate was observed. Generally, the unemployment rate in OECD countries decreased by 12.8% in 2022 compared to the beginning of the financial crisis. However, Spain, Greece, Lithuania, and Italy are particularly worrying, as unemployment levels increased significantly during the period and remained relatively high in 2022 in Spain and Greece. A significant increase in the unemployment rate was also observed in Estonia, Norway, and Denmark; however, the unemployment rate in these countries did not exceed 6% in 2022, which should be considered a relatively low value.

From 2007 to 2022, the employment rate increased by 7.4% in OECD countries. The highest increases in the employment rate occurred in Hungary (30.3%), Poland (25%), the Slovak Republic (17.5%), and Israel (17.4%). A decrease in the employment rate was observed in some countries, namely Spain (-2.1%), the USA (-0.7%), Denmark, and Greece (-0.3% each). However, these decreases were slight, and except for Greece, the employment rate in these countries fluctuated around 70%, which is a positive aspect. The percentage of the population that is either working or looking for work has increased in all OECD countries in 2022 compared to 2007. The average labour force participation rate amounted to 82.5% in OECD countries in 2022. These results suggest that a larger proportion of the population is actively engaged in the labour market. Interestingly, Hungary, Poland, and Lithuania show the largest increases.

To sum up, unemployment trends suggest a general decrease in the unemployment rate across OECD countries from 2007 to 2022, indicating overall improvement in labour market conditions. Nevertheless, countries such as Spain and Greece have struggled with double-digit unemployment rates, posing challenges for their respective labour markets, which can be addressed through labour market policy instruments. Additionally, there was an increase in the employment rate in most OECD countries during the years 2007-2022, with notable rises seen in Hungary, Poland, the Slovak Republic, and Israel. Although some countries experienced slight decreases in employment, these rates remained above 70% in most OECD countries.

Furthermore, the results highlight that across all OECD countries, a greater proportion of the population is actively participating in the labour market. Nevertheless, the overall trends are positive,

regional variations exist, with certain countries showing more pronounced improvements or facing greater challenges compared to others. These insights highlight the importance of targeted labour market policies to promote employment growth, address unemployment challenges and encourage greater labour force participation across OECD countries. Overall, the analysis of labour market outcomes in OECD countries provides significant insights into the dynamics of labour market outcomes and highlights the need for continued monitoring labour market policies to ensure improvements in labour market performance.

Table 2

Labour market outcomes in OECD countries in 2007-2022

	Unemp. 2007	Unemp. 2022	Unemp. Δ	Emp. 2007	Emp. 2022	Emp. Δ	Part. 2007	Part. 2022	Part. Δ
Australia	4.4	3.7	-15.4	72.8	77.3	6.2	76.2	82.3	8.0
Austria	5.2	4.7	-9.1	69.9	74.0	5.9	73.5	81.4	10.8
Belgium	7.5	5.6	-25.7	62.0	66.5	7.3	67.1	79.1	17.9
Canada	6.1	5.3	-12.6	73.3	75.6	3.1	78.1	83.0	6.3
Chile	7.1	7.9	10.9	56.3	61.9	9.9	63.0	76.5	21.3
Denmark	3.8	4.4	18.2	77.0	76.8	-0.3	80.0	84.5	5.6
Estonia	4.6	5.6	21.1	69.7	76.4	9.6	73.0	87.6	20.0
Finland	6.9	6.7	-2.2	70.3	74.3	5.7	75.7	85.2	12.6
France	8.0	7.3	-8.8	64.7	68.1	5.2	69.4	81.0	16.8
Germany	8.5	3.1	-63.3	69.0	76.9	11.5	75.6	84.2	11.3
Greece	8.4	12.4	47.8	60.9	60.7	-0.3	66.5	78.0	17.2
Hungary	7.4	3.6	-51.2	57.0	74.3	30.3	61.6	86.0	39.5
Ireland	5.0	4.5	-10.4	71.7	73.2	2.1	75.5	82.2	8.8
Israel	7.3	3.8	-48.5	58.9	69.2	17.4	71.2	81.2	14.0
Italy	6.2	8.1	30.2	58.6	60.1	2.6	62.4	72.8	16.7
Japan	3.8	2.6	-32.3	70.8	78.5	10.9	73.6	86.6	17.6
Latvia	6.1	6.8	12.2	68.1	71.3	4.7	72.6	84.0	15.7
Lithuania	4.3	6.0	39.9	65.0	73.8	13.5	67.9	85.9	26.4
Luxembourg	4.2	4.6	10.1	64.2	70.1	9.3	66.9	81.2	21.4
Mexico	3.7	3.3	-12.0	61.0	62.5	2.5	63.4	71.7	13.1
New Zealand	3.6	3.3	-8.4	75.1	79.7	6.1	78.1	86.1	10.3
Norway	2.7	3.2	19.0	76.8	77.7	1.1	78.8	84.0	6.6
Poland	9.6	2.9	-69.8	57.0	71.3	25.0	63.2	80.8	27.9
Portugal	9.6	6.1	-36.0	67.6	71.4	5.6	73.9	85.4	15.6
Slovenia	4.9	4.0	-17.5	67.8	73.1	7.9	71.3	83.5	17.1
Spain	8.2	12.9	57.1	65.8	64.4	-2.1	72.8	81.9	12.5
Sweden	6.3	7.4	17.0	74.2	77.1	3.9	79.1	89.3	12.9
Switzerland	4.8	4.3	-10.5	78.6	79.5	1.2	81.6	86.4	5.9
the Czech Republic	5.3	2.3	-57.3	66.1	75.5	14.3	69.8	86.0	23.1
the Netherlands	5.3	3.5	-33.6	73.5	81.8	11.4	76.8	85.4	11.2
the Republic of Korea	3.3	2.9	-11.5	64.1	68.5	6.8	66.4	76.8	15.6
the Slovak Republic	11.2	6.1	-45.3	60.7	71.3	17.5	68.2	84.7	24.2
USA	4.6	3.7	-20.9	71.8	71.3	-0.7	75.3	78.1	3.7
OECD	6.0	5.2	-12.8	67.3	72.2	7.4	71.8	82.5	14.9

Note: Unemp. means unemployment rate; Emp. means employment rate; Part. means labour force participation rate. In Table 2 the value of Unemp. in Switzerland in 2007 was replaced by the value for 2010 due to insufficient data. OECD includes average values of the particular indicators.

Source: own elaboration based on: OECD (2024a; 2024b; 2024c).

4.2. The results of the regression models

In this section, we estimated and discussed several regression models for the impact of labour market policies and labour market institutions on labour market outcomes in OECD countries. Additionally, we conducted robustness checks. The results of the panel model with fixed effects estimation with regard to unemployment rate are presented in Table 3, while the results in terms of labour force participation rate and employment rate are shown in Table 4 and Table 5, respectively. The results obtained suggest that there is a negative relationship between labour market policy and unemployment rates. Thus, an increase in public spending on labour market policy leads to a decrease in the unemployment rate, which confirms our first hypothesis (H1) (M_1_1 model). An increase in public spending on active labour market policy triggers a decrease in the unemployment rate (M_1_2 model), which is consistent with the study by Escudero (2018). Similarly, an increase in public spending on passive labour market policies results in a decrease in the unemployment rate (M_1_3 model). Thus, the findings support the first hypothesis (H1) that a higher level of public spending on active and passive labour market policies reduces the unemployment rate in OECD countries. However, the impact of passive labour market policy is stronger than an active one in terms of shaping the unemployment rate (Table 3).

Table 3

Estimates of the panel model with fixed effects (dependent variable: *lunemployment_rate*)

Independent variables	The no. of model		
	M_1_1	M_1_2	M_1_3
Trade_union	-0.228 (0.139)	-0.358** (0.174)	-0.181 (0.132)
Strictness_regular	-3.746*** (0.983)	-4.270*** (1.158)	-3.508*** (0.975)
Strictness_temporary	0.614 (1.407)	0.711 (1.486)	0.723 (1.327)
Net_replacement	0.051 (0.049)	0.064 (0.050)	0.059 (0.523)
Inflation	-0.586*** (0.110)	-0.535*** (0.100)	-0.510*** (0.115)
Skilled_pop	0.126 (0.105)	0.086 (0.098)	0.114 (0.105)
cons	15.368 (7.142)	19.183 (7.862)	13.522 (6.893)
LMP	-0.941** (0.398)		
ALMP		-0.518** (0.244)	
PLMP			-1.658** (0.693)
R2	0.293	0.261	0.300
σ_{ε}^2	2.124	2.172	2.115
No. of observations	277	277	277

Note: Standard errors are in parentheses. Significance levels are the following: *significant at 10%; **significant at 5%; ***significant at 1%. The analysis involves a lagged dependent variable, denoted as *lunemployment_rate*, to account for the time delay in the effect of the explanatory variables on the dependent variable.

Source: own elaboration.

Although the current paradigm supports active labour market policies and promotes increased investment in them, while suggesting reduced investment in passive labour market policies; this approach is not well suited during times of economic crises. The main reason for this is the lack of aggregate demand, as companies with low demand for their products and services, are unlikely to create new job openings or

expand their hiring. Consequently, active labour market policies are not a panacea, especially during slack economic periods (Ernst et al., 2022).

The results indicate that there is a negative relationship between inflation rates and unemployment rates, which is consistent with the previous research (e.g. Duval & Furceri, 2018). Additionally, in OECD countries, characterised by higher levels of strict employment protection legislation for regular contracts, unemployment rate was lower which confirms the fifth hypothesis (H5). Our results suggest that the higher trade union density, the lower the unemployment rate. However, the relationship between trade union density and the unemployment rate is only statistically significant in the M_1_2 model, including the impact of active labour market policies. Therefore, the results allow partial support of the third hypothesis (H3).

Table 4

Estimates of the panel model with fixed effects (dependent variable: labour force participation rate)

Independent variables	The no. of model		
	M_2_1	M_2_2	M_2_3
Trade_union	0.186*** (0.062)	0.264*** (0.063)	0.128 (0.078)
Strictness_regular	-0.408 (1.359)	-0.182 (1.364)	-0.436 (1.428)
Strictness_temporary	0.950 (0.668)	0.809 (0.691)	1.055 (0.740)
Net_replacement	-0.015 (0.072)	-0.018 (0.070)	-0.020 (0.073)
Inflation	0.018 (0.094)	-0.033 (0.089)	0.052 (0.104)
Skilled_pop	0.464*** (0.056)	0.493*** (0.055)	0.460*** (0.058)
cons	51.927 (5.292)	49.846 (5.562)	53.384 (5.328)
LMP	0.723** (0.307)		
ALMP		0.254 (0.297)	
PLMP			1.564*** (0.535)
R2	0.480	0.464	0.497
σ_{ϵ}^2	1.945	1.974	1.911
No. of observations	385	385	385

Note: Standard errors are in parentheses. Significance levels are the following: *significant at 10%; **significant at 5%; ***significant at 1%.

Source: own elaboration.

The results suggest that countries with higher public spending on labour market policy (both overall and passive) were characterised by a higher participation rate. These results confirm the second hypothesis (H2). The analysis also indicates that in OECD countries with a higher share of skilled population there are more people active in the labour market. What is more, the analysis indicates that there is a positive relationship between trade union density and the labour force participation rate which confirms the fourth hypothesis (H4). This means that the relatively high degree of unionisation of employees (e.g. in: Denmark, Switzerland, Sweden) encourages them to take up and search for a job. Additionally, it can be supposed that in OECD countries with higher levels of trade union density, the level of institutions' effectiveness is higher as well. Additionally, in OECD countries with higher trade union density, there is also greater bargaining power within wage negotiations (M_2_1 and M_2_2 models).

Finally, the results indicate that the impact of the public spending on labour market policy (both overall and passive) is statistically significant and has a positive effect on employment rates (M_3_1 and M_3_3 models). The impact of active labour market policies is also positive on employment rates. These findings confirm the second hypothesis (H2). The results obtained also indicate that there is a positive relationship between strictness of employment protection – individual dismissals and employment rates which is consistent with the sixth hypothesis (H6). In addition, in OECD countries displaying higher inflation rates, employment rates were also higher. It could be concluded that the difference in labour market outcomes can be explained by the differences in public spending on labour market policy, trade union density, employment protection legislation, the business cycle (measured as the inflation rate), and the number of working-age individuals with tertiary education.

Table 5

Estimates of the panel model with fixed effects (dependent variable: L.employment_rate)

Independent variables	The no. of model		
	M_3_1	M_3_2	M_3_3
Trade_union	0.165 (0.138)	0.269 (0.200)	0.004 (0.141)
Strictness_regular	2.717 (1.604)	4.371*** (1.509)	2.795** (1.167)
Strictness_temporary	0.055 (0.970)	-0.365 (0.961)	-0.555 (0.739)
Net_replacement	0.006 (0.057)	0.009 (0.068)	0.019 (0.066)
Inflation	0.592*** (0.098)	0.351** (0.143)	0.484*** (0.165)
Skilled_pop	0.062 (0.095)	-0.097 (0.105)	-0.143 (0.091)
cons	52.335 (5.598)	54.067 (8.008)	63.800 (6.961)
LMP	0.915** (0.346)		
ALMP		0.514 (0.283)	
PLMP			2.194*** (0.428)
R2	0.225	0.145	0.240
σ_ε^2	1.997	2.027	1.911
No. of observations	277	250	250

Note: Standard errors are in parentheses. Significance levels are the following: *significant at 10%; **significant at 5%; ***significant at 1%. The analysis involves a lagged dependent variable, denoted as L.employment rate, to account for the time delay in the effect of the explanatory variables on the dependent variable.

Source: own elaboration.

5. ROBUSTNESS CHECKS

As we mentioned earlier, most previous studies have concentrated on the impact of active labour market policies on labour markets. Additionally, disaggregating the data on public spending on labour market policy can provide additional insights into cross-country differences in policy impact (Ernst et al., 2022). Due to these circumstances, as a robustness check, the disaggregated instruments of active labour market policies were employed in the model.

According to Escudero (2018), the six different instruments of active labour market policies were grouped into four policy clusters: the first one includes training; the second one involves employment incentives; the third one is start-up incentives; and the last policy cluster includes three items: public employment services and administration, sheltered and supported employment and rehabilitation, and direct job creation (the variable *Vulnerable_policy*). The last cluster policy refers to policies targeted especially at the most vulnerable groups (Escudero, 2018).

Table 6

Estimates of the panel model with fixed effects for the instruments of active labour market policies

Independent variables	Dependent variable					
	unemployment rate		employment rate		labour force participation rate	
Training	-19.261** (7.932)	-14.045** (7.031)	19.573*** (6.414)	19.448*** (5.808)	4.227 (2.731)	9.600*** (2.922)
Employment_incentives	-0.066 (0.184)	-0.628*** (0.224)	0.270 (0.164)	0.369*** (0.178)	0.266*** (0.107)	-0.167 (0.115)
Start-up	48.553 (55.091)	-31.407 (52.843)	29.285 (39.096)	22.261 (41.007)	-4.218 (13.526)	5.641 (14.455)
Vulnerable_policy	4.133 (4.885)	3.415 (5.374)	-5.466 (4.614)	-3.883 (4.870)	-2.097 (2.487)	-2.064 (2.760)
Inflation		-0.320 (0.256)		0.390** (0.192)		0.138** (0.071)
Skilled_pop		0.274** (0.099)		-0.030 (0.082)		0.207*** (0.045)
cons	10.186 (1.664)	0.003 (5.240)	65.604 (1.777)	65.784 (4.073)	73.181 (0.923)	64.515 (1.651)
R2	0.145	0.227	0.204	0.235	0.051	0.314
σ_ϵ^2	2.378	2.227	1.941	1.916	1.164	0.890
No. of observations	-19.261** (7.932)	-14.045** (7.031)	19.573*** (6.414)	19.448*** (5.808)	4.227 (2.731)	9.600*** (2.922)

Note: Standard errors are in parentheses. Significance levels are as following: *significant at 10%; **significant at 5%; ***significant at 1%.

Source: own elaboration.

We found that the instruments of active labour market policies play an important role in explaining the differences in labour market outcomes in OECD countries (Table 6). In particular, the findings demonstrate the significant impact of labour market training on outcomes, including the unemployment rate, the employment rate, and the labour force participation rate. In addition, our results also confirm the important role of employment incentives in enhancing labour market performance. Our analysis states that the most important instrument of an active labour market policy is training, which indicates that states should pay special attention to this instrument. Our findings also indicate that skilled individuals have more opportunities to find employment and to be active in the labour market. These results are consistent with the previous research (e.g., Escudero, 2018; Wiśniewski, 2022). All in all, it is true to say that the instruments of an active labour market policy have a significant impact on labour market performances in OECD countries.

6. CONCLUSION AND DISCUSSION

This paper contributes to the debate on labour market policy through an extended, pooled cross-country and time series database for OECD countries during the period 2007–2022. First of all, based on the panel data estimation, our results suggest that a higher level of public spending on labour market policy is associated with improving labour market outcomes. Thirdly, our results also suggest that higher

unionisation among employees promotes job-seeking and engagement in the workforce. Thus, it can be inferred that OECD countries with a higher level of trade union density also exhibit a higher level of institutional effectiveness.

Furthermore, in OECD countries with higher trade union density, employees have a greater wage bargaining power. Fourthly, our findings indicate that active labour market policies also matter, primarily at the disaggregate level. Training and employment incentives show the most beneficial results, both in terms of reducing unemployment, as well as in terms of increasing employment and participation. Finally, it should be noted, though, that we are able to cautiously point to one important conclusion: our empirical results seem to indicate that labour market policy plays an important role in terms of labour market outcomes in OECD countries, which is consistent with the previous studies.

Similar to other econometric analyses, our study also exhibits certain limitations. One of the limitations is the fact that our research is limited by the countries included and by the timeframe applied. Secondly, our approach is based on an aggregate cross-country analysis, and the results that have been obtained are based on a panel data model with fixed effects. Thirdly, our study focuses on public spending on labour market policies at the aggregate level. However, it should be noted, that the econometric models include all three types of these policies, i.e. overall, active and passive. Additionally, as a robustness check, we performed a deeper econometric analysis including disaggregated active labour market policies. As a part of future research, the type of empirical analysis could be extended to other policies, such as minimum wages, unemployment benefits and hiring subsidies.

ACKNOWLEDGEMENT

The authors are thankful to the Poznań University of Economics and Business for financial support to carry out this research.

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