Active Labour Market Policy Expenditure: What Affects It? Evidence from Nine OECD Countries[1]

Sanja BLAŽEVIĆ BURIĆ – Željko MRNJAVAC***

Abstract

The principal aim of this paper is to determine which inputs affect active labour market policy expenditure of nine OECD countries. After the theoretical insight, we have conducted an empirical analysis using data from 2000 to 2013 and applied the dynamic Arellano-Bond panel data model. We checked the robustness of our results by revising our dynamic Arellano-Bond model (by excluding correlated and non-significant variables) and comparing the results with the fixed-effects and random-effects data estimation model. Our results show that, from the practical standpoint, the expenditure on active labour market policy measures in the previous year has had the strongest impact on the expenditure in the following period. We have noticed a change in factors that influence the expenditure from the pre-crisis to the post-crisis period. General economic indicators (such as GDP) and labour market indicators play more important role in times of the economic crisis.

Keywords: *active labour market policy, unemployment, passive measures, OECD countries*

JEL Classification: J21, J38, J64

* Sanja BLAŽEVIĆ BURIĆ, Juraj Dobrila University of Pula, Faculty of Economics and Tourism "Dr. Mijo Mirković", Preradovićeva 1, 52100 Pula, Croatia; e-mail: sanja.blazevic@unipu.hr

** Željko MRNJAVAC, University of Split, Faculty of Economics, Cvite Fiskovića 5, 21000 Split, Croatia; e-mail: zeljko.mrnjavac@efst.hr

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Introduction

Employment rate is among the most important and most commonly used indicators of an economy's health and prosperity, while a growing unemployment rate is a signal of unfavourable events in the economy. A growing number of unemployed people indicates a depressed economy that is unable to provide a dignified life to its citizens. Although many experts (see Howell, 2005) suggest that unemployment rate is not an ideal indicator of labour market functioning, due to its methodological simplicity and tradition, it retains its solid position among the most relevant economic indicators. Longer unemployment results in economic problems (inability to achieve a desired quality of life caused by not having sufficient means), but also in psychological and social problems (social exclusion, feelings of discouragement, loss of skills, financial and psychological dependence).

Each government strives towards the natural unemployment rate although it is difficult to determine its level precisely since it depends on many factors specific to the economy. Natural rate is mainly defined as "the rate at which wage and price inflation are either stable or at acceptable levels" (Ehrenberg and Smith, 2012, p. 524). Another indicator taking into account the risk of rising inflation under the circumstances of low unemployment level is NAIRU or non--accelerating inflation rate of unemployment which shows us the unemployment in the situation where inflation does not rise. By comparing the, traditionally used, indicator of unemployment rate and NAIRU, an unemployment gap arises which can accentuate the economic cycle in the labour market.

Another important issue is finding out the causes of labour market heterogeneity among countries, as well as potential benefits of applying the positive examples of other countries to one's own economy. Which measures have been introduced so far that benefited vulnerable groups and who designs them?

Labour market policy (LMP) is a direct government intervention composed of passive and active measures. Passive measures consist of direct aid for the unemployed and the employed, which can reduce their motivation for entering the labour market (whether for work or for actively seeking employment opportunities). These include unemployment insurance, early retirement and other indirect policies (population policy/social policy measures like child support, for example). Active labour market policies (ALMP) on the other hand motivate the unemployed and inactive people capable of work to enter the labour market. Active measures include training, employment incentives, sheltered and supported employment and rehabilitation, direct job creation and start-up incentives. Passive measures include out-of-work income maintenance and support and early retirement (for details, see OECD, 2015).

Active measures have been recognized as a useful government tool for fighting unemployment and inflation in Sweden in the 1950s, but, over time, their popularity grew and their design was adapted to the economic and political conditions (more on ALMP history in Janoski, 1996; Bonoli, 2010; Armingeon, 2007). According to Calmfors and Skedinger (1995, pp. 3 – 4), ALMP has two functions: "The first is 'to keep the unemployed going' in general during recessions and to help them maintain or even increase their skills. (…) The second, and perhaps more traditional way of regarding ALMPs is as a means of overcoming structural imbalances in the labour market by adjusting the structure of labour supply to demand."

Since there is a large heterogeneity of programmes between different countries depending on different socio-economic and political factors, the main research question in this paper is which factors influence the expenditure on ALMP measures?

This paper is structured into four parts. After the introduction, the first part provides an insight into the theoretical discussion regarding factors that can influence active labour market policy design and evidence-based literature connected with its effectiveness. The second part is based on the descriptive analysis of nine OECD countries and factors that affect active labour market policy design for the chosen set of countries.

1. Active Labour Market Policy Effectiveness – Theoretical and Empirical Review

1.1. Determinants Affecting the Active Labour Market Policy Measures

Many factors can influence the design of active labour market policy. Janoski (1996, p. 702) suggested a cross-sectional institutional model of active labour market policy expenditure.

Janoski's model is based on the institutional perspective, as he recognized four types of institutions that have an impact on ALMP expenditure. These institutions are influenced by each other, which means that we should put bigger emphasis on some of them. Our modified macroeconomic model of factors influencing ALMP design is shown in Figure 2.

Three groups of factors can influence the design of ALMP: economic, social and political factors. We will not rank them in order of their importance because each country has its own specific conditions that determine the influencing factors, and it is hard to prioritize one chosen group, since they are interconnected.

Unemployment rate belongs to ***economic factors***, and in our model, we can implement the current unemployment rate and the lagged one, because labour market impulses from the past period affect the decision-making process in the current period. Logic behind ALMP programmes is that "the size of the labour market programmes is likely to be endogenously determined and affected by unemployment" (Calmfors and Skedinger, 1995). The same economic logic can be used for *GDP* as a variable. We can expect negative impulses to put a larger demand onto the ALMP role in terms of higher expenditure, but there can also be a reversed situation if poor economic conditions affect and reduce overall government expenditure, which can have the same spillover effect on ALMP measures. The *size of the unemployed and their structure* (by age, gender, occupation, education, unemployment duration) directly affects the design and implementation of measures. Regarding the *duration of unemployment*, Rosholm and Svarer (2008) for example point to the threat effect of ALMP measures and conclude "that an active labour market policy regime shortens unemployment duration, even if actual programme participation does not" (Rosholm and Svarer, 2008, p. 400). The *number of vacancies and their structure* also determines the tailoring process of ALMP measures (as a response to labour demand – matching process). In addition to the unemployment rate, *inactivity rate* can also be an important influencing factor. High rates of inactivity entail such a policy design that will encourage inactive people capable of work to register within employment service in order to be involved in a more active way in ALMP programmes. The *cost of labour* is an important factor that can be interpreted through tax wedge size or as a change of unit labour cost relative to productivity. A high tax wedge or tax burden on labour can be identified as "the difference between take-home pay for workers and the cost of labour for firms, divided by the wage" (Blanchard, 2006, p. 33). A high tax wedge can encourage the government to create programmes in a way that employer costs are reduced (through wage subsidies, for example), which will benefit workers in terms of employment and higher wages. *Public expenditure* affects ALMP design in a sense that higher public expenditure entails greater ALMP expenditure. *Private and public jobs ratio* affects strategic planning, overall economic structure, and even willingness to participate in ALMP programmes. In generating new value, it is desirable that private business entities play a stronger role in the economy. According to Algan et al. (see in Feldman, 2006, p. 453) "empirical evidence of 17 OECD countries suggests that, on average, the creation of 100 public sector jobs may have eliminated about 150 private sector jobs, slightly decreased labour force participation, and increased the number of unemployed workers by about 33".

Social factors or welfare regime factors consist of passive labour market policy expenditure, working poverty incidence and inequality levels. *Passive labour market programmes* can affect active ones in two ways (positive and negative direction), so it is necessary to analyse the expenditure ratio between passive and active measures, since successful countries can point out some specific positive patterns. *Working poverty incidence* refers to low-paid jobs, insecurity and low life quality of workers, which can, in combination with the passive measures, demotivate working individuals from continuing to work and discourage the unemployed to engage themselves actively in the process of seeking employment. *Inequality level* affects the design of ALMP in the same way as working poverty incidence. High levels of inequality suggest that there is a large portion of low-paid workers who may be discouraged or low-productive due to unfair labour market conditions.

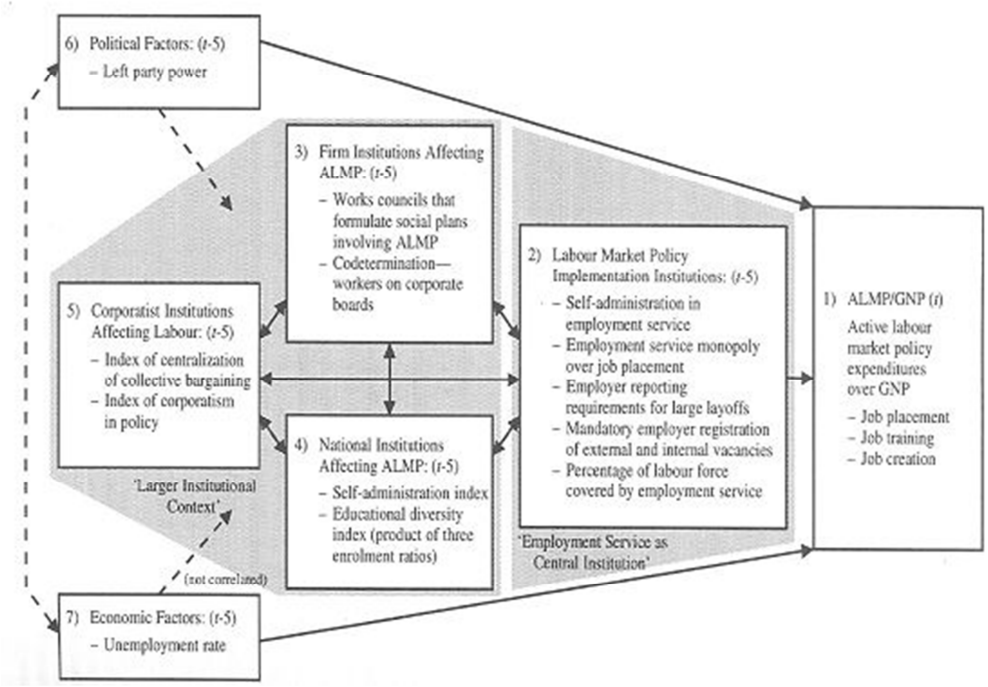
Discussion about labour market policy unfairly ignores ***political variables***. An important factor that can influence ALMP can be the *election year* or the approaching of the election year and the attempt to win over the electorate. Apart from the electoral year, *political orientation* of the party can also influence ALMP. As Rueda refers to political economics literature: "In much of the comparative politics literature, social democratic governments are assumed to defend the interests of labour and conservative ones to defend the interests of those which some authors have defined as the 'upscale group'" (Rueda, 2006, p. 386), but he accentuates that there is a difference between the group of "insiders" (those with secure employment) and "outsiders" (unemployed and vulnerable labour market groups). A political party can be keener to promote measures that can help insiders which are their main voting body. *International influence* relates to economic dependence (political or/and institutional) or the extent to which an international body which gives labour market guidance (ILO, EC, WB, UN) can influence the tailoring not only of ALMP, but also of national policy (for political determinants influencing ALMP, see Bonoli, 2010). The last listed political influence is the *influence of trade unions*, which can counteract to increased ALMP expenditure because that can put in danger their "voters", i.e. workers. *Employment protection index* should also be taken into account since it can have a strong impact on labour market and consequently on ALMP measures/expenditure. "Strict employment protection regulations are likely to raise equilibrium unemployment rates significantly, they appear to have stronger positive effects on youth and long-term unemployment. Likewise, the dynamic analysis points to a significant positive impact of these regulations on the persistence of unemployment" (Scarpetta, 1996, p. 71).

We can operationalize a concept of ALMP using different indicators. The most commonly used concept is ALMP effort or the expenditure on ALMP as a percentage of GDP, but Armingeon (2007, p. 915) presents arguments why this is a weak operationalization.

As he argues: "This operationalization does not take into account that, in general, spending for labour market policies increases with the level of unemployment. A sudden increase in ALMP spending, then, may simply be due to an increase in unemployment, rather than being a reflection of substantial policy change. In addition, this measure does not take into account the relative size difference in the number of passive policies (unemployment compensation, pensions for early retirement) compared to active policies." Another measure that can be used as ALMP concept operationalization is the share of ALMP participants in relation to the total number of unemployed or overall work force size. We can even take the share of a specific group of participants (youth, for example). We can relativize the measure in a way to express it per participant or per unemployed person. Another possibility is to analyse ALMP participants depending on their involvement in the public or private sector.

F i g u r e 1

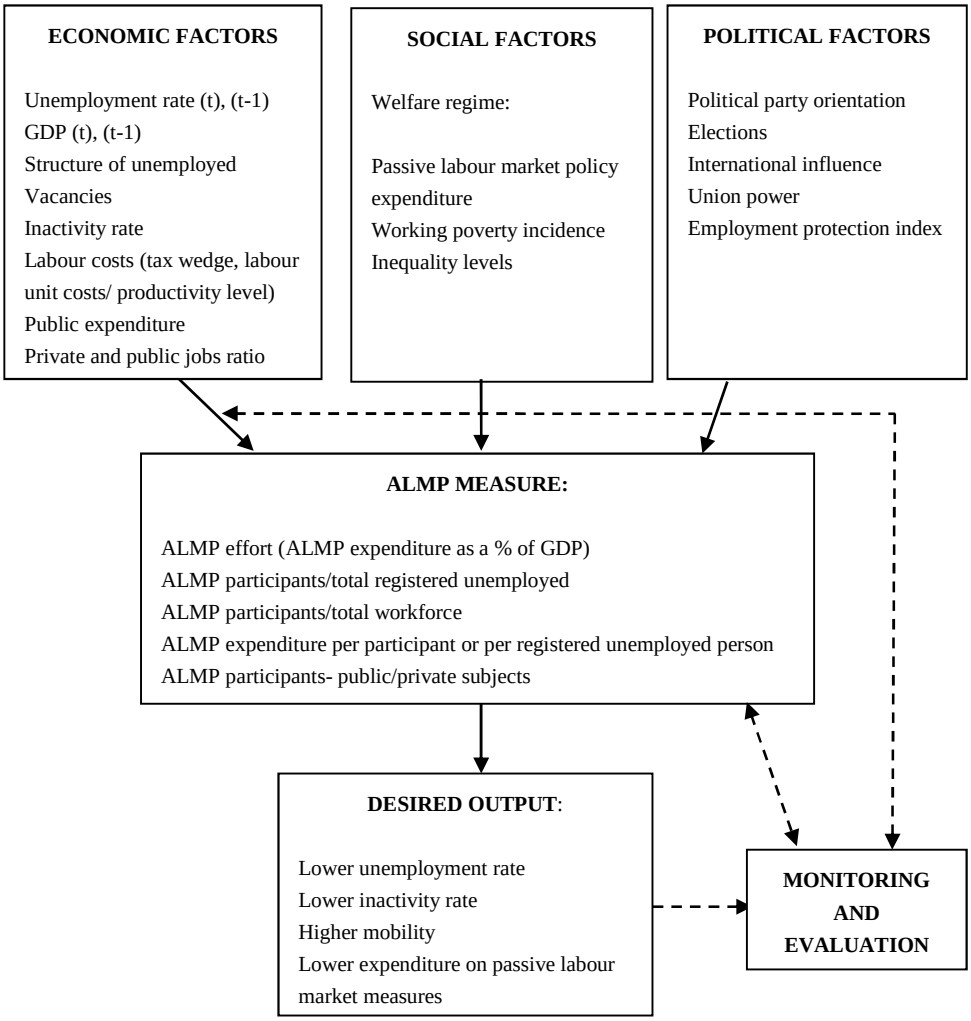
Janoski's Institutional Model of Active Labour Market Policy Expenditures



Source: Janoski (1996, p. 702).

F i g u r e 2

Active Labour Market Policy Process from Design to Implementation and Final Effects



Source: Authors.

1.2. The Impact of ALMP Instruments on the Labour Market

Many papers evaluated ALMP measures on the microeconomic or macroeconomic level, as they estimated the impact on reduced unemployment or inactivity level. As Rosholm and Svarer claim: "There is now ample evidence that in terms of increasing job-finding rates for the long-term unemployed, active labour market programmes have small and in some cases even adverse effect" (Rosholm and Svarer, 2008, p. 385).

They also assessed the influence on worker mobility, which can be determined as geographical, occupational or sectoral mobility. It is also possible to consider the influence on expenditure reduction for passive measures (lower unemployment assistance). In his study, Calmfors investigated the net effects of active labour market programmes and stressed that "it may sometimes be difficult to sign individual effects. It is impossible to infer the ***net*** impact of active labour market policy from theoretical reasoning only. Unfortunately, the empirical evidence on the overall macro effects is still scarce" (Calmfors, 1994, p. 25). He summarized the literature regarding ALMP effects in the Table 1.

T a b l e 1

Calmfors' Literature Review on ALMP Effects

Effect	Real wage	Regular employment as proportion of labour force	Regular employment as proportion of population	Effective labour force	Measured labour force
Matching	?	+ (?)	+ (?)	0	0
Labour force	–	– (0)	+	+	+
Competition for insiders	–	+	+	0	0
Substitution and deadweight loses	–	–	–	0	0
Reduced welfare loss	+	–	–	0	0
Productivity	+ (0)	? (+)	? (+)	0	0
Work test	0 (–)	0 (+)	0 (+)	0 (+)	–
Taxes	?	? (0)	? (0)	?	?
Other policies	?	?	?	? (+)	? (+)

Note: Parentheses indicate possible uncertain effects. The last columns do not take into account the secondary labour force effects that may occur because of the induced wage and employment changes according to the first three columns.

Source: Calmfors (1994, p. 25).

Studies that deal with ALMP effects can be conducted on a micro (individual) or macro (aggregate) level. On an individual level, "the main question is if the interesting outcome variable for an individual is affected by the participation in an ALMP programme" (Reinhard and Caliendo, 2000, p. 2). By using different procedures, one investigates whether participation in a chosen ALMP programme yields positive effects for the unemployed. On an aggregate level, researchers assess the aggregate net impact of ALMP measures (for measures and effects see Reinhard and Caliendo, 2000; Zeiss et al., 2002).

In 2015, Card, Kluve and Weber conducted a meta-analysis of 207 studies published between 1995 and 2007 and "provided 857 separate estimates of the effect of a specific program on a particular subgroup of participants at a given post-program time horizon" (Card, Kluve and Weber, 2015, p. 1).

They show that programmes differ in their period of appliance and that contradictory conclusions can be made depending on whether we opt for a long-term (large positive effects) or short-term period (relatively small effects) of analysis. One important issue is to differentiate between heterogeneous ALMP programmes in different time period perspective and analyse them separately since some programs show positive results in short run while other programs positive results in the long run.

Also, it should be noted that programs differ according to the profile of users (men, women, older unemployed, young unemployed). As Calmfors and Skedinger note: "… large favourable employment effects of active labour market programmes are weak. This need not be an argument against such policies, but it is certainly an argument against putting too much faith in them as the *deus ex machina* that will solve the European unemployment problem" (Calmfors and Skedinger, 1995, p. 23). The choice of variables also plays an important role (time in registered unemployment vs. employment or earnings). One possible cause of contradictory results is the application of a wide variety of evaluation methodologies, according to Reinhard and Caliendo (2000, p. 20).

In their paper, Heckman, LaLonde and Smith (1999, p. 9) confirm similar findings, stating that "different types of training often imply different economic models of training participation and impact and therefore different econometric estimation strategies. (…) This heterogeneity has important implications for the choice of econometric methods for evaluating active labour market policies". Most of the studies, while evaluating ALMP effectiveness, mainly focus on outputs that result from ALMP application. In our paper, we switched the research question and our main task is to evaluate what affects the ALMP expenditure on a macroeconomic level.

2. Comparative Study of Nine OECD Countries

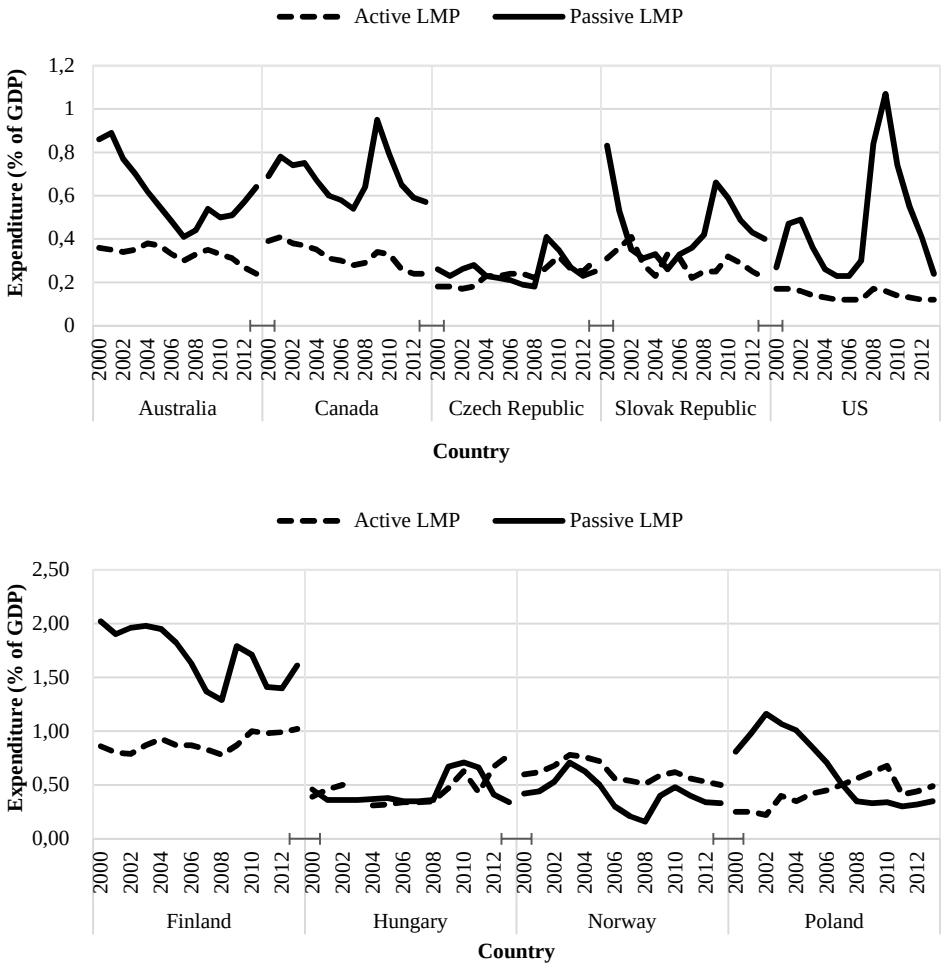
2.1. Cross-Country Differences – Graphical Analysis

For the analysis, we chose nine OECD countries that have a longer time-series sequence of data. We covered the period between 2000 and 2013 (annual, seasonally adjusted data). Countries that entered our analysis are: Australia, Canada, Czech Republic, Finland, Hungary, Norway, Poland, Slovak Republic and the United States. These countries represent different systems such as the Scandinavian, the Continental European and the Anglo-Saxon. Since " (i) there are significant differences in labour market institutions within Europe, and (ii) institutions, notably in Europe, are undergoing important reforms" (Boeri, 2011,

p. 1176), by taking different socio-economic systems, we can expect heterogeneous conclusions (see Martin and Grubb, 2001) that can yield an interesting future discussion on ALMP expenditure. Discovering the differences is essential for understanding the mechanism that drives, but also limits labour market functioning. The following figures show cross-country variations regarding active and passive labour market policy expenditure as a % of GDP (Figure 3), labour market indicators such as unemployment and inactivity rate and unemployment duration in months (Figure 4) and trends in GDP (Figure 5).

F i g u r e 3

Active and Passive Labour Market Policy Expenditure as a % of GDP in Nine OECD Countries from 2000 to 2013

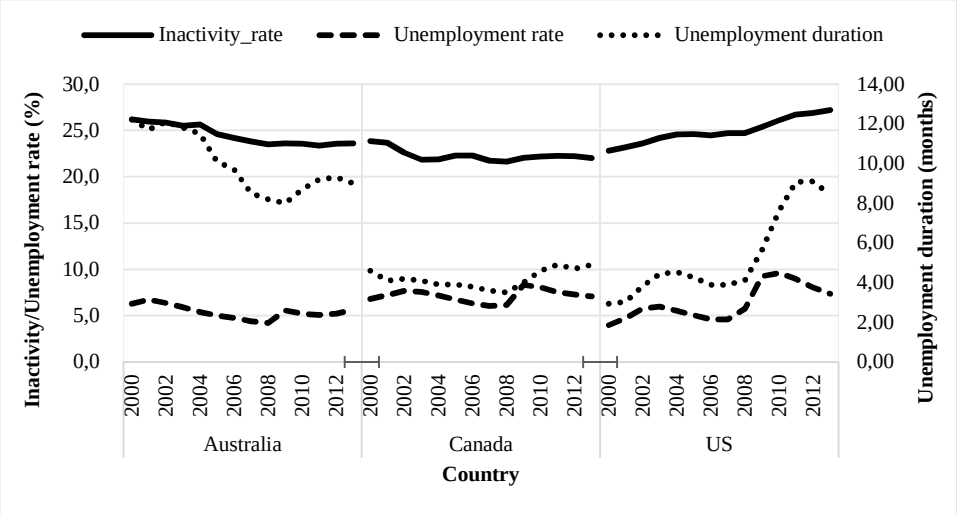


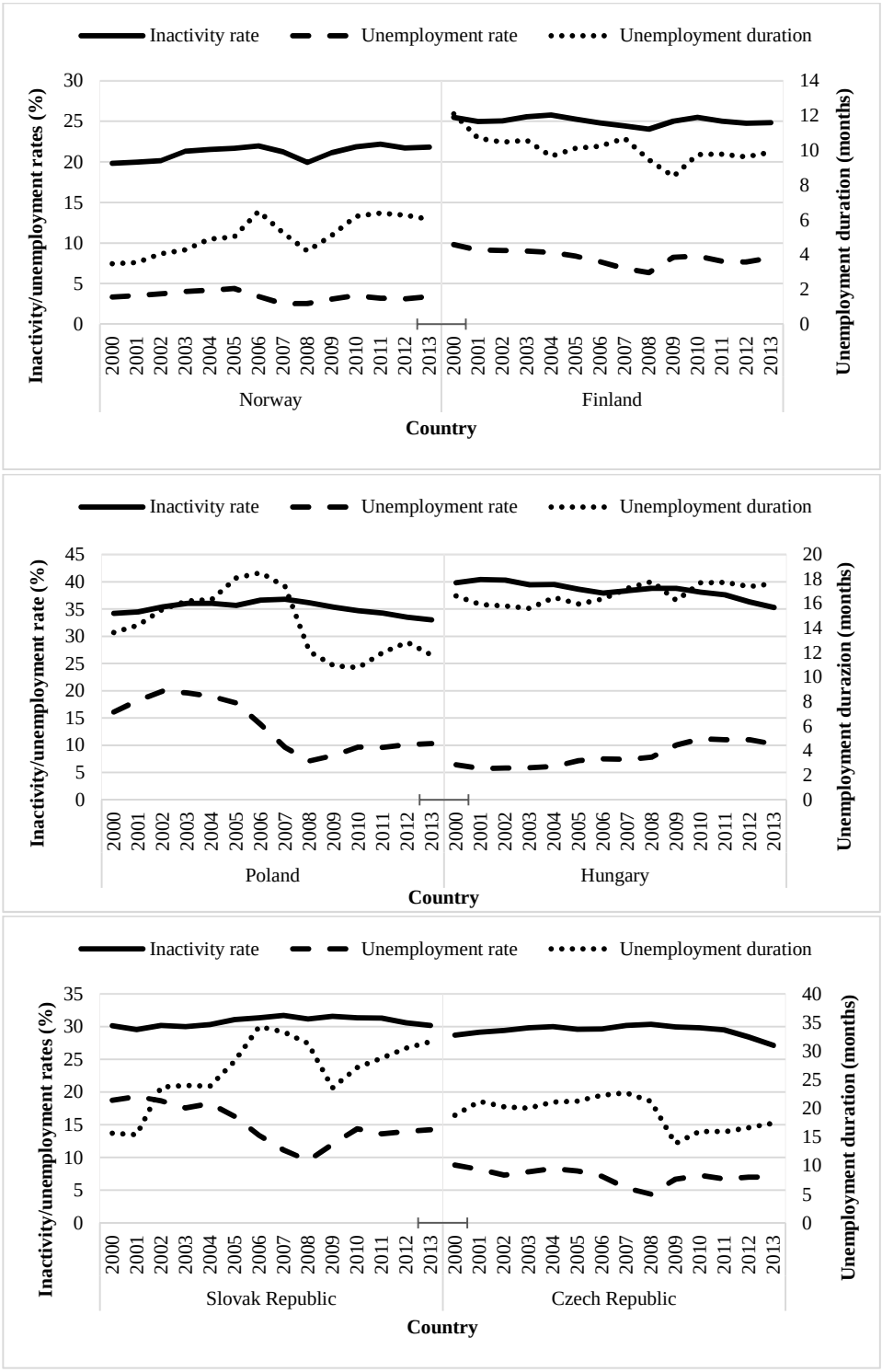
Source: Authors according to OECD database. Data downloaded in March 2017.

In most of the countries, except in Norway, expenditure on passive labour market policy programmes exceeds that on active labour market policy programmes for the entire observed period, which is sometimes seen as the cause of unemployment persistence (Calmfors, 1994, p. 2). Economic crisis struck labour market policy measures by increasing expenditure on passive programmes (except in Poland) while expenditure on active programmes remained heterogeneous. In Australia, Canada and the United States, the expenditure on active labour market programmes has had a downward slope since 2010. Finland is the only country in this chosen set of countries whose expenditure on passive labour market programmes exceeds 1.5% of its GDP (average expenditure for all countries is 0.63% of GDP), but the expenditure on active labour market policy is also among the highest and it shows an increasing trend, going above 1% of GDP. Norway is the only country that invests more in active labour market policy than in passive programmes, and one other fact is that this expenditure is higher than the average expenditure on active programmes for these nine OECD countries (0.41%). Versatile dynamics of both types of programmes is seen in and among all countries, which is one additional reason to investigate which factors can influence the expenditure on active labour market programmes and whether the relationship between these two types of policies is such that they affect each other.

F i g u r e 4

Inactivity Rate, Unemployment Rate and Unemployment Duration in Nine OECD Countries from 2000 to 2013



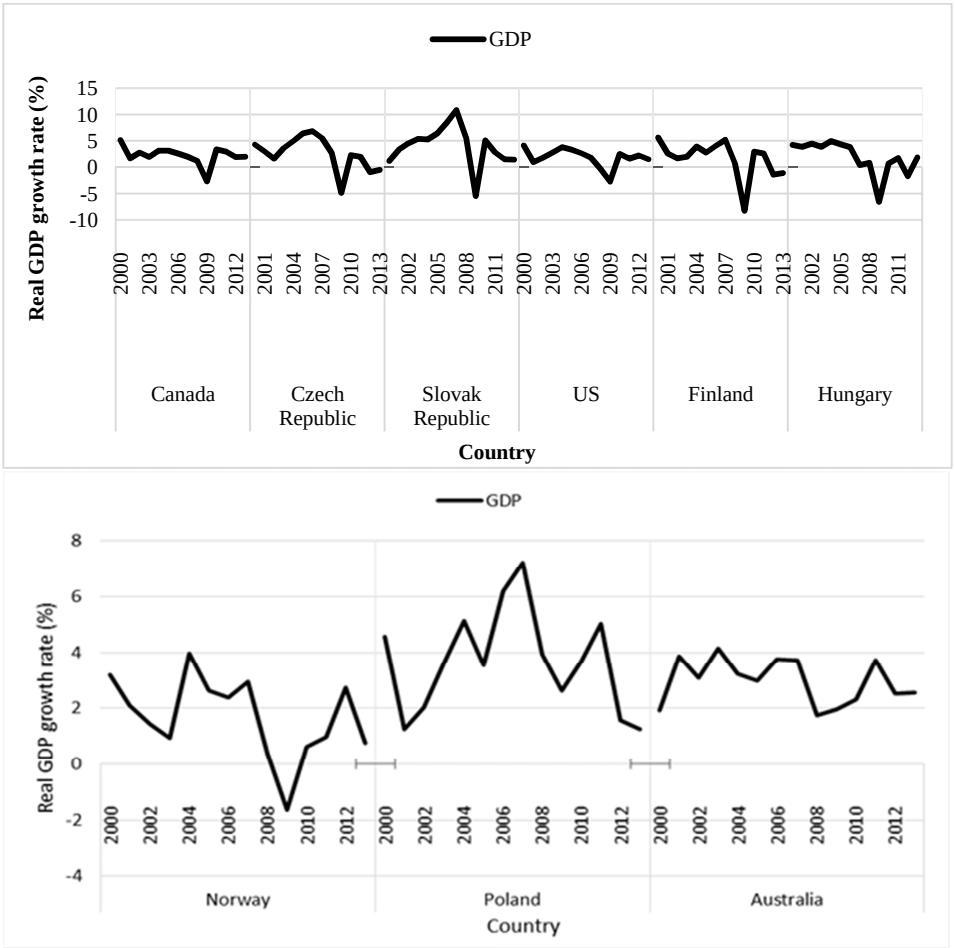


Source: Authors according to OECD database. Data downloaded in March 2017.

Countries are clustered according to similar trends in labour market indicators. Australia, Canada and the United States form a cluster of countries with positive labour market trends, with inactivity rates around 25%, unemployment rates under 10% and short-term unemployment duration, under 12 months, although in the United States we observe an upward trend in all indicators. Norway and Finland have similar characteristics as the previous cluster with unemployment rates under 10% (in Norway under 5%), similar inactivity level and short-term unemployment duration. Poland and Hungary as another cluster with similar indicators have higher inactivity rates (around 35% with a downward trend in Hungary), unemployment rates around 10% in 2013 (an upward trend in Hungary), but long-term unemployment duration.

F i g u r e 5

Real GDP Growth Rate in Nine OECD Countries from 2000 to 2013



Source: Authors according to OECD database. Data downloaded in March 2017.

In Hungary, unemployment duration is rising with an average duration of 18 months in 2013, while in Poland we can observe a downward trend after 2006, showing more positive expectations in comparison to Hungary. The last cluster is composed of the Slovak and the Czech Republics, with the Czech Republic indicating a more positive labour environment. Although inactivity rates are somewhat high (between 27% and 30%), the unemployment rate in the Czech Republic was under 10% for the entire period, while in Slovakia, the unemployment rate increased after the crisis (15% in 2013). The most critical indicator refers to unemployment duration which was above 32 months on average in 2013 in Slovakia. In the Czech Republic, it was around 17 months on average in 2013, with an upward trend after the crisis in 2007/08. Crisis hit hard most of the observed countries (Figure 5) with prominent troughs in real GDP growth rates around the 2008 – 2010 period.

Australia is the only country here that has a relatively high level of stability. The strongest impact of crisis is seen in Slovakia, Finland, Hungary and Czech Republic, where the real GDP growth rates were around –5% and more (Finland) during crisis. Poland, although showing high variability, did not have negative real GDP growth rates during the observed period. The first cluster of countries comprises countries with a strong impact of crisis which still invest a lot of effort to reach real GDP growth rates from 2000.

2.2. Empirical Model

According to the suggested theoretical model of factors that can influence ALMP expenditure, we chose 17 explanatory variables for our analysis (Table 2).

T a b l e 2

Model Description

Time period	2000 – 2013
Frequency	Annual
Dependent variable	ALMP expenditure as % of GDP
Independent variables	Lagged ALMP expenditure as % of GDP [*actexp(–1)*] expenditure on passive labour market programs as % of GDP [*gdp*] real GDP growth rate [*gdp(–1)*] general unemployment rate [*unem*] lagged unemployment rate [*unem(–1)*] six specific unemployment rates according to age (15 – 24, 25 – 54 and 55 – 64 years of age) and gender (women and men) [*unem_gender_age*] average duration of unemployment in months [*unemdur*] inactivity rate [*ina_rate*] employment protection index [*epl*] union density [*tuden*] year of parliamentary election [*elec*] lagged year of parliamentary election [*elec(–1)*]
Data source	OECD Database

Source: Authors.

Variables are based on annual data and all of them are seasonally adjusted. We are aware that the minimum threshold is 30 observations but unfortunately, due to the limitations of data availability, our final sample has 14 annual observations for the chosen nine countries.

We conducted stationary tests (Levin-Lin-Chu and Im-Pesaran-Shin) for all explanatory variables (Table 3) and according to the given results, we used first differenced of non-stationary variables. Also, we tested explanatory variables for multicollinearity (Table 4). Before excluding correlated variables, we wanted to test the model after which it will be corrected and the level of robustness will be checked.

T a b l e 3

Stationary Tests' (Levin-Li-Chu and Im-Pesaran-Smith) Results

Variable	LLC test	IPS test	Final variable for the model
actexp	– (requires strongly balanced data)	I(1)	D.actexp
passexp	I(0)	I(0) at 10 % critical value	passexp
gdp	I(0)	I(0)	gdp
unem	I(0	I(1)	D.unem
unemdur	I(0	I(1)	D.unemdur
tuden	I(0	I(1)	D.tuden
ina_rate	I(0	I(1)	D.ina_rate
unem_rate_f_15 – 24	I(0	I(1)	D. unem_rate_f_15 – 24
unem_rate_m_15 – 24	I(0	I(1)	D. unem_rate_m_15 – 24
unem_rate_f_25 – 54	I(0	I(1)	D. unem_rate_f_25 – 54
unem_rate_m_25 – 54	I(0	I(1)	D. unem_rate_m_25 – 54
unem_rate_f_55 – 64	I(0	I(0) at 10 % critical value	unem_rate_f_55 – 64
unem_rate_m_55 – 64	I(0	I(1)	D. unem_rate_m_55 – 64

Note: For some of the variables, strongly balanced data was required. Stationary test were not conducted.

Source: Authors.

T a b l e 4a

Multicollinearity Test (1)

	passexp	gdp	unem	unemdur	epl	tuden	ina_rate
passexp	1.000						
gdp	–0.180	1.000					
unem	0.186	0.155	1.000				
unemdur	–0.193	0.314	**0.587**	1.000			
epl	–0.018	0.106	0.204	**0.552**	1.000		
tuden	**0.670**	–0.115	–0.218	–0.317	0.265	1.000	
ina_rate	–0.170	0.165	**0.511**	**0.658**	0.340	–0.475	1.000
unem_rate_f_15 – 24	0.165	0.119	**0.945**	**0.632**	0.354	–0.206	**0.618**
unem_rate_m_15 – 24	0.217	0.036	**0.971**	**0.590**	0.277	–0.154	**0.528**
unem_rate_f_25 – 54	0.080	0.211	**0.976**	**0.693**	0.311	–0.295	**0.574**
unem_rate_m_25 – 54	0.200	0.095	**0.984**	**0.536**	0.116	–0.224	**0.517**
unem_rate_f_55 – 64	0.217	0.145	**0.893**	**0.643**	0.193	–0.159	0.398
unem_rate_m_55 – 64	0.308	0.124	**0.924**	**0.511**	0.106	–0.113	0.392
elec	–0.071	0.121	–0.043	–0.054	–0.139	–0.097	–0.077

Source: Authors.

T a b l e 4b

Multicollinearity Test (2)

	unem_ rate_f_ 15 – 24	**unem_ rate_m_ 15 – 24**	**unem_ rate_f_ 25 – 54**	**unem_ rate_m_ 25 – 54**	**unem_ rate_f_ 55 – 64**	**unem_ rate_m_ 55 – 64**	**elec**
unem_rate_f_ 15 – 24	1.000						
unem_rate_m_ 15 – 24	**0.965**	1.000					
unem_rate_f_ 25 – 54	**0.951**	**0.944**	1.000				
unem_rate_m_ 25 – 54	**0.915**	**0.962**	**0.938**	1.000			
unem_rate_f_ 55 – 64	**0.827**	**0.870**	**0.892**	**0.868**	1.000		
unem_rate_m_ 55 – 64	**0.842**	**0.894**	**0.876**	**0.921**	**0.932**	1.000	
elec	–0.031	–0.047	–0.044	–0.048	–0.042	–0.039	1.000

Source: Authors.

Dynamic panel-data model was created under which we estimated the parameters of an Arellano-Bond model (with normal and robust standard errors), computed the Sargan over identification test and performed an Arellano-Bond serial correlation test to test the validity of our instruments.

We have tested the assumptions of the Arellano-Bond model and also the validity of its set of instruments using a Sargan over identification test (Prob = 0.2600). We could not reject the null hypothesis that our over identifying restrictions are valid, which suggests that our instrument set does satisfy the exogeneity condition. According to the serial correlation test (Table 6), we have rejected the hypothesis of no autocorrelation of order 1 and could not reject it at order 2.

Under significance level of 0.05 (with normal or robust standard errors), an unambiguous conclusion can be seen for few *lagged* regressors – active labour market policy expenditure, GDP, general unemployment rate and inconclusively (under the robust standard errors) for the lagged year of parliamentary election. All of these variables show significant negative relationship. Trade union density has a positive relationship with the expenditure on active labour market policy measures (coefficient is 0.023). If the expenditure on active labour market policy in the previous period was higher by 1 percentage point (pp) (of GDP), it would negatively affect the expenditure in the current year by –0.237 pp. GDP growth rate in the previous period negatively affects active labour market policy expenditure, but the practical relevance is also not relevant (–0.012). If the general unemployment rate increases by 1 pp, the expenditure on active labour market policy would decrease by 0.021 pp (share in GDP), and a somewhat smaller practical effect (–0.028) could be seen in terms of previous year of parliamentary election which negatively affects ALMP expenditure.

T a b l e 5

Arellano-Bond Dynamic Panel Data Estimation with Normal Standard Errors and Robust Standard Errors for Nine OECD Countries, 2000 – 2013 (dependent variable: ALMP expenditure as % of GDP)

Variable	**Coefficient**	**Std. error (Robust std. error)**	**p-value (p-value with robust std. error)**
D.actexp(–1)	–0.237	0.118 (0.077)	0.045 (0.002)
passexp	0.032	0.051 (0.026)	0.526 (0.209)
gdp	–0.005	0.004 (0.004)	0.279 (0.175)
gdp(–1)	–0.012	0.004 (0.004)	0.001 (0.004)
D.unem	–0.082	0.120 (0.137)	0.496 (0.552)
D.unem(–1)	–0.021	0.010 (0.008)	0.038 (0.007)
D.unemdur	0.005	0.005 (0.004)	0.312 (0.161)
epl	0.062	0.078 (0.098)	0.425 (0.161)
D.tuden	0.023	0.009 (0.006)	0.009 (0.000)
D.ina_rate	0.002	0.016 (0.013)	0.889 (0.869)
D.unem_rate_f_15 – 24	0.003	0.009 (0.010)	0.743 (0.772)
D.unem_rate_m_15 – 24	0.003	0.009 (0.010)	0.727 (0.733)
D.unem_rate_f_25 – 54	0.006	0.048 (0.055)	0.908 (0.919)
D.unem_rate_m_25 – 54	0.055	0.055 (0.066)	0.320 (0.407)
unem_rate_f_55 – 64	0.006	0.009 (0.006)	0.484 (0.299)
D.unem_rate_m_55 – 64	0.003	0.014 (0.013)	0.804 (0.801)
elec	–0.002	0.017 (0.013)	0.913 (0.883)
elec(–1)	–0.028	0.018 (0.014)	0.119 (0.049)

Notes: Significance level is 0.05. Term "D" means that the variable is first-differenced.

Source: Authors.

T a b l e 6

Arellano-Bond Test for Zero Autocorrelation in First-differenced Errors

Order	**z**	**Prob > z**
1	–2.259	0.0239
2	–0.9042	0.3659

Source: Authors.

In order to check the robustness of our results, we tested our model by excluding variables that show the high level of multicollinearity and that are not statistically significant (inactivity rate, unemployment duration and all specific unemployment rates according to gender and age). Under these new assumptions, we tested the parameters of a corrected Arellano-Bond model (with normal and robust standard errors), computed the Sargan over identification test and performed an Arellano-Bond serial correlation test to test the validity of our instruments.

T a b l e 7

Corrected Arellano-Bond Dynamic Panel Data Estimation with Normal Standard Errors and Robust Standard Errors for Nine OECD Countries, 2000 – 2013
(dependent variable: ALMP expenditure as % of GDP)

Variable	Coefficient	Std. error (Robust std. error)	p-value (p-value with robust std. error)
D.actexp(–1)	–0.274	0.100 (0.096)	0.006 (0.004)
passexp	0.060	0.042 (0.026)	0.152 (0.022)
gdp	–0.006	0.004 (0.003)	0.086 (0.021)
gdp(–1)	–0.014	0.003 (0.004)	0.000 (0.000)
D.unem	–0.015	0.009 (0.008)	0.087 (0.057)
D.unem(–1)	–0.016	0.008 (0.012)	0.035 (0.169)
epl	0.076	0.065 (0.088)	0.239 (0.386)
D.tuden	0.023	0.009 (0.005)	0.007 (0.000)
elec	–0.005	0.015 (0.013)	0.765 (0.720)
elec(–1)	–0.029	0.015 (0.018)	0.061 (0.117)

Notes: Significance level is 0.05. Term "D" means that the variable is first-differenced.

Source: Authors.

T a b l e 8

Arellano-Bond Test for Zero Autocorrelation in First-differenced Errors

Order	z	Prob > z
1	–2.3145	0.0206
2	–1.4881	0.1367

Source: Authors.

We have tested the assumptions of the Arellano-Bond model (with normal standard errors) by testing the validity of its set of instruments using a Sargan over identification test (Prob = 0.1649). We could not reject the null hypothesis that our over identifying restrictions are valid, which suggests that our instrument

set does satisfy the exogeneity condition. According to the serial correlation test (table 8), we have rejected the hypothesis of no autocorrelation of order 2.

Our revised model shows a high level of robustness. Same conclusions as those in previous Arellano-Bond model could be found for the causal relationship between the active labour market policy expenditure and its lagged value (–0.274), GDP in the previous period (–0.014) and trade union density (0.023). Inconclusive results are referred to the general unemployment rate (–0.015) and it's lagged value (–0.021) but also regarding the expenditure on passive labour market measures and GDP (–0.006). Still, these variables show small practical relevance according to the coefficient size. Year of parliamentary election as a political variable appears to be non-significant.

Additional robustness check is done by using fixed-effects and random--effects models that excluded the lagged value of active labour market policy expenditure as a regressor variable.

T a b l e 9

Fixed-effects and Random-effects Model with Standard Errors for Nine OECD Countries, 2000 – 2013 (dependent variable: ALMP expenditure as % of GDP)

Variable	**Fixed-effects model**	**Random-effects model**
	Coefficient (Std. Error) [p-value]	Coefficient (Std. Error) [p-value]
passexp	–0.048 (0.049) [0.333]	0.327 (0.035) [0.000]
gdp	–0.002 (0.004) [0.589]	–0.009 (0.008) [0.235]
gdp(–1)	–0.016 (0.004) [0.001]	–0.023 (0.008) [0.004]
D.unem	–0.012 (0.011) [0.295]	–0.043 (0.020) [0.030]
D.unem(–1)	–0.012 (0.010) [0.238]	–0.033 (0.018) [0.073]
epl	–0.036 (0.077) [0.636]	0.104 (0.019) [0.000]
D.tuden	0.005 (0.011) [0.641]	0.023 (0.018) [0.198]
elec	–0.010 (0.021) [0.628]	–0.033 (0.037) [0.379]
elec(–1)	–0.024 (0.021) [0.255]	–0.052 (0.037) [0.164]

Note: Significance level is 0.05.

Source: Authors.

Hausman test (chi-squared statistic = 0.0000) provides enough evidence to reject the null hypothesis that the difference in coefficient is not systematic so there is evidence to believe that the fixed-effect model is appropriate under which the only significant variable (dominant variable) is GDP which value is in accordance with the conclusion from (corrected) Arellano-Bond dynamic panel data estimation.

We also wanted to analyse the difference between the pre-crisis (2000 – 2006) and the (post)crisis (2007 – 2013) period in terms of variables affecting the expenditure on active labour market policy. Unambiguous conclusions arising from the Arellano-Bond panel data model with standard and robust standard errors for two different periods is shown in the table.

T a b l e 10

Statistically Significant Regressors under Normal and Robust Standard Errors

Period	Variable	Coefficient
2000 – 2006	tuden	0.009
	passexp	0.199
2007 – 2013	actexp(–1)	–0.317
	GDP(–1)	–0.016
	unem(–1)	–0.025
	tuden	0.031
	passexp	0.053

Source: Authors.

Before the crisis, the factors that affected the active labour market policy expenditure were passive labour policy expenditure (under the robust standard errors) and the trade union density with passive labour policy expenditure having the stronger effect on ALMP expenditure. After the economic crisis, we can observe that the influence of the expenditure on passive labour market policy decreased while the effect of trade union density is somewhat higher in comparison to the pre-crisis period. Labour market indicators such as unemployment rate in the previous period and the expenditure on ALMP in the previous period show significant results and negatively affect ALMP expenditure. The growth rate of GDP negatively affects the ALMP expenditure (since most of the observed countries were struck hard in 2007 in terms of a strong drop in real GDP growth rates), but the size is insignificant from a practical standpoint.

Conclusion

In this paper, we show that there is a considerable heterogeneity of labour market indicators among OECD countries. Our research objective was related to factors that influence the decisions regarding active labour market policy

expenditure. We tested our theoretical model using data for nine OECD countries. Although many political labour economists state that political variables play an important role, in this case study, we could not confirm that in terms of the parliamentary election year. Looking at the entire period, we can conclude that the most important labour and economic indicators from the previous period affect the decision regarding ALMP expenditure, among which the expenditure on said programmes in the previous year plays an important role, which can be attributed to the existence of a continuous and stable process of political decision-making. Recession plays an important role since it affects the decision-making process regarding public spending. In terms of its effect on ALMP measures, most of the factors that have influence on the expenditure exerted a stronger negative impact after the crisis such as GDP and unemployment rate. Monitoring and a constant evaluation process are indispensable in understanding how active and passive labour market measures affect labour market functioning and whether they eliminate labour market imperfections. "At the end of this tour, one may ask whether we know enough to give advice to policy makers about how to reduce unemployment. I believe we do – with the proper degree of humility" (Blanchard, 2006, p. 43).

We hope that this paper made a small contribution to the understanding of labour market policy design and efficiency, and the importance of scientific analysis, but also of political thinking about the whole process, from idea to evaluation.

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