

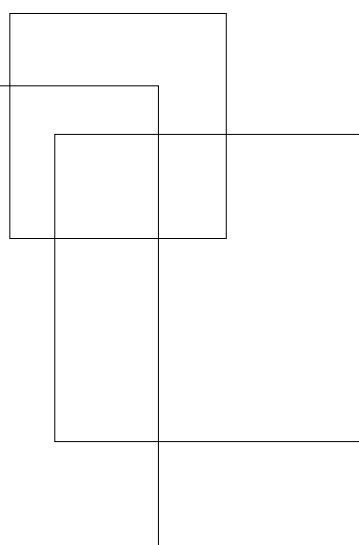


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Better together: Active and passive labour market policies in developed and developing economies

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**Better together:
Active and passive labour market policies in
developed and developing economies**

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Abstract

We investigate the macroeconomic impact of public expenditure in active and passive labour market policies on main employment indicators (i.e. unemployment, employment and labour force participation) for a panel database of 121 countries (36 developed, 64 emerging and 21 developing economies). Following previous contributions, we implement an instrumental variable strategy to take into account the possible reverse causality between labour market outcomes and spending in labour market policies. Compared to previous studies, (i) we include for the first time evidence from non-OECD countries; and (ii) we examine the possible presence of complementarities between active and passive policies. We find that the interaction between interventions is crucial as the effect of spending in either of the two policies is more favourable the more is spent on the other. In particular, we find that even spending in passive policies can have positive labour market effects (i.e. reduction in unemployment and increase in employment rates) on the condition that sufficient amounts are spent in active interventions. This complementarity is driven by the interaction between all types of active policies and unemployment insurance (but not assistance). However, this positive complementarity is in place only in developed economies while it becomes negative in emerging and developing economies.

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1. Introduction

The rise in unemployment in developed economies during the 1980s led governments to increasingly use the coordination of passive and active labour market policies to offer social protection, while at the same time enhancing the transition from unemployment to employment (Estevão 2003; ILO 2014). This policy trend regained a central stage since the eruption of the global financial crisis, which reinforced the need for governments to channel spending towards interventions that could at the same time protect workers' income and raise their employability (Martin 2014). While active labour market policies (ALMPs) have a long history in OECD countries, at the beginning, the potential linkages between the generosity of the unemployment benefits, the size and composition of ALMPs and the degree to which unemployment benefits' eligibility was determined by participation in ALMPs were largely ignored (Martin 2014). Indeed, it was believed that in order to activate the unemployed, public spending needed to shift from passive labour market policies (PLMPs) to active interventions (OECD, 1994). However, evidence showed that countries implementing this strategy did not automatically improve their labour market performance, suggesting that active and passive policies should be seen as two essential components of a broader social protection system (ILO 2012).

In emerging and developing economies, social protection systems were originally implemented as short-term interventions in response to crises and structural adjustments (Barrientos 2010; McCord 2012; Sabates-Wheeler and Devereux 2011). However, rising poverty and stagnating productivity following the 1980s 'lost decade' in Latin America, the financial crises in Asia in the 1990s and rapid economic transformation in transition economies demonstrated the need for strong and stable labour market institutions concerned with poverty reduction and employment promotion (Barrientos 2010; McCord 2012). This led to two parallel developments. On the one hand, there has been a marked increase in conditional cash transfers and public works programs aiming to tackle basic income security (Barrientos and Hulme 2009).¹ On the other hand, social protection is increasingly linked to other complementary measures (i.e. skills programs). These social protection systems serve not only the present basic income security role, but also aim to increase the opportunities to improve capabilities and break the poverty cycle (DFID 2011). At the same time, ALMPs in emerging economies are rarely promoted as independent interventions (i.e. without a connection with income support programs) (ILO 2016).

Despite this increased policy interest, very few studies have taken a macroeconomic approach to the assessment of active and passive interventions (and their possible complementarity) – especially in emerging and developing economies.² This research gap relates to general problems of econometric identification in cross-country analyses as well as the lack of adequate information on spending in passive and active policies beyond OECD economies. Existing studies have mostly looked at the

¹ In line with the horizontal dimension of the ILO recommendation on social protection (ILO 2012), i.e. the implementation of a social protection floor.

² The microeconomic literature is instead more developed, with some impact evaluations looking at the effects of policies that combine active and passive support in both developed (see for instance Bolhaar, Ketel, and van der Klaauw 2016; Cockx and Van Belle 2016; Crépon, Ferracci, and Fougère 2012; Gravensen and van Ours 2008; Markussen and Røed 2016) and developing and emerging economies (examples include Macours, Schady, and Vakis 2012; Martinez, Puentes, and Ruiz-Tagle 2015). However, the findings are still inconclusive – with some policies having a positive effect (maybe after an initial lock-in period) and other interventions having null or even negative effects. Moreover, these microeconomic studies cannot address critical questions such as the presence of general equilibrium effects.

effectiveness of spending in active and passive labour market policies in developed economies, sometimes controlling for the level of unemployment benefits. Escudero (2018) examines the effect of spending in ALMPs in OECD countries and finds that they can improve employment outcomes (especially for low-skilled individual). Gal and Theising (2015) look both at unemployment insurance (UI) benefit replacement rates and spending in ALMPs and find that both lower UI replacement rates and a higher spending in ALMPs increase employment. A similar conclusion is reached by Estevão (2003); while Hujer, Rodrigues and Wolf (2009) find no effect of ALMPs on the matching process in West-Germany. A second strand of literature looks at the macroeconomic effects of labour market institutions and reforms – of which both ALMPs and UI are important components. The studies by Blanchard and Wolfers (2000), Murtin and de Serres (2014) and Murtin and Robin (2016) confirm that additional spending in ALMPs increases employment, while a higher UI replacement rate has the opposite effect. Some of these studies have also explored the possible interaction between active and passive interventions. For instance, Bassanini and Duval (2006; 2009) find that the adverse impact of the generosity of UI is lower in countries that spend more in ALMPs. Boone and van Ours (2004) estimate the same interaction but with specific types of ALMPs and find that spending in training is more effective for countries with a more generous UI. Elmeskov, Martin, and Scarpetta (1998) find an inverted U-shape relationship between the detrimental effects of UI and spending in ALMPs (i.e. with the negative effects of UI being the lowest in countries with an average amount of spending in ALMPs).

The current study complements the existing macroeconomic literature in two important ways. Firstly, we expand the analysis – compared to the OECD countries focus of previous contributions – by including data from a number of emerging and developing economies. In particular, we look at data from 121 countries – of which 85 are not classified as developed economies.³ Given differences in the functioning of labour markets as well as differences in the way in which labour market policies are implemented between developed on the one hand, and emerging and developing economies on the other, results from previous studies cannot be easily generalised to non-developed economies. For instance, the general concern over the possible presence of disincentive effects generated by passive policies (i.e. reduce incentives to take-up jobs) might not equally apply in the context of developing economies – where the risk of out-of-work poverty is particularly high. At the same time, active and passive labour market policies operate in largely informal labour markets in emerging and developing economies and they often do not adequately interact with other types of public interventions (e.g. education systems) – potentially limiting their reach and effectiveness. The second contribution of this paper is to explicitly take the interaction between active and passive labour market policies into account and test for its effect on labour market outcomes.⁴ Indeed and as discussed above, active and passive policies are often co-ordinated (if not jointly implemented) and therefore specifications that do not take this interaction into account might suffer from omitted variable bias. At the same time, previous studies examining this complementarity have mostly done so in order to explore whether the potentially detrimental effects of PLMPs (e.g. reduced job-search efforts) might be alleviated through higher spending in ALMPs. We approach the debate from a more agnostic point of view, with the aim of understanding whether both active and passive policies can be more or less effective if the other type

³ The paper follows the World Bank classification between developed, emerging and developing economies as of 2017.

⁴ While we cannot directly examine the effectiveness of the joint implementation of active and passive interventions at the level of the single policy initiative, we look at whether overall active and passive labour market policies generate more beneficial effects at the macroeconomic level when enough is spent in the other type of intervention.

of intervention is adequately financed. This shift in the approach is particularly important given the new set of countries at the centre of the analysis. Indeed and while ALMPs often include an income support component in emerging and developing economies, the explicit coordination of active and passive policies is more frequent in developed economies.

The results reveal that ALMPs increase job-search efforts (i.e. reduce unemployment rates) and PLMPs have the anticipated disincentive effects (i.e. reduce employment rates). However, when also taking the interaction between active and passive policies into consideration, a different picture emerges. In particular, each type of (active or passive) intervention is more effective if spending in the other type increases. As a result, even the negative effect of PLMPs disappears (and eventually becomes positive) for a given level of spending in ALMPs. However, the interaction between active and passive policies has positive effects only in developed economies. When looking in more detail at the type of intervention our results reveal that employment incentives and training programmes are the most effective types of active policies – as they reduce the unemployment rate significantly. Turning to passive policies, both unemployment insurance and unemployment assistance have the anticipated disincentive effects (i.e. increase unemployment and lower employment). Nevertheless, increased spending in unemployment insurance appears to incentivize individuals to remain in the labour force, while spending in unemployment assistance has the opposite effect. The globally positive interaction effects between ALMPs and PLMPs seem to be driven by a positive interaction between spending in the different types of active interventions and spending in unemployment insurance – but not unemployment assistance. This can be reconciled by the fact that ALMPs are often designed and implemented in combination with contributory unemployment benefit schemes (e.g. participation in ALMPs is compulsory for the receipt of unemployment insurance), but not necessarily with non-contributory programmes.

The rest of the paper is structured as follows. Section 2 gives an overview of the data sources and some insights into the data gathering process. The main trends in spending in active and passive labour market policies (overall and by component) across regions are presented in Section 3. Section 4 describes the empirical strategy adopted, while Section 5 reports the main results and the robustness tests for the overall analysis (i.e. on total spending in active and passive policies). Section 6 looks at the detailed results by type of active and passive intervention. Finally, Section 7 concludes with some take-away messages and policy recommendations.

2. Data sources and descriptive statistics

The aim of the paper is to capture the effects of labour market policies on main employment dynamics. Following previous studies, we look at the three main indicators of the unemployment rate, the employment-to-population ratio and the labour force participation rate. All this information is gathered from the ILO World Economic and Social Outlook (WESO) database, which produces harmonized series for 189 countries from 1991.⁵

The main regressors of interest in our model are the variables capturing the intensity of active and passive labour market policies. While different options are available, we look at spending in active and passive labour market policies as a percentage of GDP. As Estevão (2003) argues, using this measure may downward bias the results as aggregate output shocks change unemployment in the same direction as spending in labour market policies as a share of GDP. Therefore, the final estimates should be interpreted as a lower bound for the true effect of labour market policies on employment outcomes. Other studies alternatively use the spending per unemployed individual (Escudero 2018; Gal and Theising 2015; Murtin and de Serres 2014; Murtin and Robin 2016), as this might be seen as more representative of the true policy stance (Escudero 2018). Nevertheless, the level of spending per unemployed individual is also an imperfect measure of policy intensity; especially when the policy is targeted towards individuals who already have a job or those outside of the labour market (e.g. labour market services, unemployment assistance).

The OECD defines expenditure in ALMPs as all expenditure aimed at improving the beneficiaries' prospect of finding gainful employment. This includes spending in (i) public employment services and administration; (ii) training; (iii) employment incentives; (iv) sheltered and supported employment; (v) direct job creation; and (vi) start-up incentives. Of course, the structure and content of ALMPs differs between developed and emerging and developing economies; with such a clear categorization not often applying in the latter group where ALMPs tend to combine different components (ILO 2016). Spending in PLMPs on the other hand consist of spending in (i) unemployment insurance; (ii) unemployment assistance; and (iii) programs for early retirement (OECD 2007). Even in this case, such a clear-cut differentiation does not often apply in emerging and developing economies; where income support programs tend to target the most vulnerable groups in the population without a strict labour market conditionality.

Given the broad geographical coverage of the present study, data on public expenditure in active and passive labour market policies is necessarily collected from different sources. Firstly, data for OECD countries comes from the OECD Labour Market Programs database. This database contains information on spending in ALMPs and PLMPs for 34 countries from 1985 to 2015 with the exception of some (mainly Eastern-European) countries – for which the information is available for a more limited time period. Secondly, data for EU member states who are not part of the OECD is collected from the Eurostat Labour Market Policy database. This gives us information for an additional five countries from 1985 to 2015, with some exceptions. Data from Eurostat and the OECD are fully comparable (i.e. we can compare the information for EU countries in the OECD from the two databases) and therefore the

⁵ While we tried to cover additional dimensions of employment quality (e.g. working poverty, informality), in practice this data is not available for the large majority of the countries in our sample. In this context, we give priority to covering relatively more countries along dimensions that have already been explored.

use of different data sources does not generate any inconsistency. Thirdly, we obtained access to detailed data on spending in active and passive labour market programs in 55 emerging and developing economies from the World Bank ASPIRE Database. This data source overlaps with data from the OECD and Eurostat for a number of countries.⁶ Unfortunately, the information is not fully comparable and for those countries we use OECD data since it reports a longer time series. Fourthly and finally, data from 27 Asian countries was collected from the Social Protection Index (SPI) database from the Asian Development Bank (ADB). Data is mainly available for countries in Central, East and South-East Asia from 2008 till 2015. In contrast with the other data sources, the data on PLMPs is limited to spending in unemployment insurance. Even in this case, data from ADB overlaps for two countries (Japan and Korea) with the OECD database and we opt for the latter source for the longer and more complete information. The lack of comparability between the data collected from different sources could be due to a number of factors. First, the data reported in the World Bank ASPIRE Database only takes central government expenditures into account. Secondly, definitions of active and passive policies are also different across data sources. For example, while the OECD and ASPIRE data on PLMPs includes spending in early retirement benefits, this is not the case for the ADB data. Table 1 in the Appendix gives an overview of the available data and their respective sources.

For the purpose of the estimation strategy, we also extract information on GDP growth rates (from the ILO WESO database), on employment by skills' group (i.e. low, medium and high skilled – also from the ILO WESO) and on the governments' primary balance (from the World Economic Outlook database of the IMF). Table 1 gives the descriptive statistics for the outcome variables, the main regressors and the control variables in Panel A, Panel B and Panel C respectively. The descriptive statistics are provided both for the entire sample and by development status. Here and in the rest of the analysis, we pool together developing and emerging economies in order to have a balanced sample with respect to labour market policies. It is important to note that the length of the time series is different across countries (i.e. with longer series available for developed economies), so that the descriptive statistics are not directly comparable. However, we focus the descriptive statistics only to those countries and years that will enter in the baseline specification. A first interesting observation is that the unemployment rate is higher in developing and emerging economies. This can be explained by the fact that the time availability for the two groups of countries is strongly different, with most observations for emerging and developing economies being available after the eruption of the financial crisis. At the same time, the employment and labour force participation rates are also higher in emerging and developing economies. Moreover, from the observations in Panel B of Table 2 it is clear that emerging and developing economies spend far lesser parts of their GDP in both active and passive labour market policies. However, we have to bear in mind that the expenditure data sourced from different databases is not fully comparable – and the empirical analysis will take care of this inconsistency. Lastly, Panel C gives the descriptive statistics for the control variables. In particular, the output gap seems to be more favourable for emerging and developing economies and the primary balance is more negative in developed economies – but all groups of countries report on average a budget deficit. Finally, employment is relatively more concentrated in high skills occupations in developed economies compared to emerging and developing economies.

⁶ Bulgaria, Chile, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Mexico, Poland, Romania, Slovakia and Slovenia.

Table 1: Descriptive statistics

	Overall		Emerging and developing economies		Advanced economies	
	N	Mean	N	Mean	N	Mean
A. Outcome variables						
Unemployment rate	803	.0829232	190	.0985993	613	.0780644
Employment rate	803	.5559861	190	.5583198	613	.5552628
Labour force participation rate	803	.6050477	190	.6164786	613	.6015047
B. Main regressors						
Spending in ALMPs (% GDP)	803	.4832737	190	.1215296	613	.5953967
Spending in PLMPs (% GDP)	803	.8125800	190	.1605833	613	1.014667
C. Control variables						
Primary balance	803	-.1702076	190	-.0803421	613	-.1980615
GDP growth gap	803	.0285983	190	.042415	613	.0243159
Share in low-skill employment	803	.1090905	190	.1654415	613	.0916244
Share in medium-skill employment	803	.5491634	190	.6195879	613	.5273353
Share in high-skill employment	803	.3417461	190	.2149706	613	.3810403

Note. The variables are defined as described in Section 2. The number of observations and means are calculated for the entire period of 1985 - 2015, where the data is available.

3. Labour market policies across regions

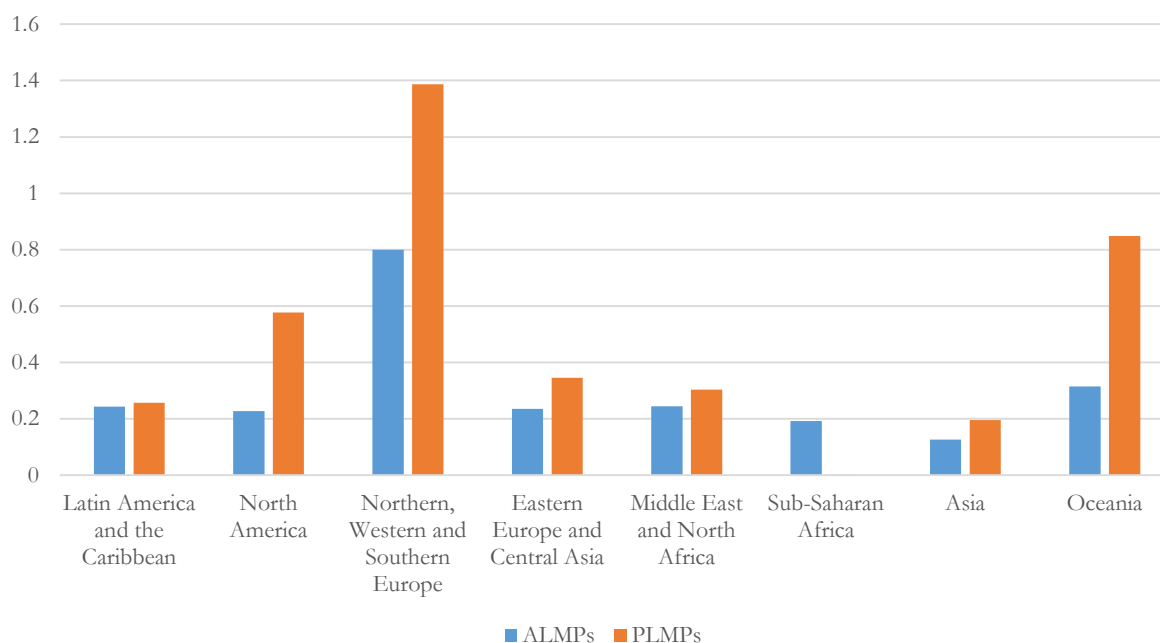
This section will examine in more details trends in spending in ALMPs and PLMPs across geographical regions – irrespective of the development classification of the country – with the aim of providing descriptive evidence of policy trends.⁷ Before looking at the data, some caveats need to be kept in mind. First and as mentioned above, data come from different sources (even within the same region) so that they are not necessarily comparable. While the econometric analysis will deal with this, in the descriptive statistics this has not be taken into account. Secondly, data availability across countries changes significantly over time (with most developing and emerging economies having data points only after 2000). Even in this case, the main econometric analysis will (try to) solve this issue empirically while the descriptive trends will largely ignore it.

With this in mind, Figure 1 presents the average spending in ALMPs and PLMPs across regions. The pattern that emerges is that spending in both active and passive policies is substantially higher in Northern, Western and Southern European countries than in any other geographical regions – with average spending values equal to 0.8 per cent of GDP for ALMPs and 1.4 per cent of GDP for PLMPs. Other regions present instead more limited and diversified spending patterns. In particular, spending in ALMPs as a share of GDP is comparable in Latin America and the Caribbean, North America, Eastern Europe and Middle East and North Africa (around 0.24 of GDP in all these regions) while is slightly lower in Sub-Saharan Africa and Asia and the Pacific (around 0.19 per cent of GDP). At the same time, spending in PLMPs is higher in North America (around 0.6 per cent of GDP) followed by Asia and the Pacific (0.5 per cent of GDP, with an important role made by developed economies in the region). Spending in PLMPs is then lower in Latin America and the Caribbean, Eastern Europe and Central Asia and Middle East and North Africa (between 0.35 and 0.25 per cent of GDP) and almost non-existent in Sub-Saharan countries.

Spending in PLMPs is very often higher than spending in ALMPs. This is generally due to both higher coverage and cost of PLMP. However, the balance between active and passive spending varies substantially across regions. In particular, spending in PLMPs represents more than 70 per cent of total spending in labour market policies in Northern America and Asia and the Pacific. This share decreases to around 60 per cent in Northern, Western and Southern European countries as well as countries in Eastern Europe and Central Asia, in Latin America and the Caribbean and in Middle East and North Africa. Finally, in Sub-Saharan countries spending in ALMPs is substantially higher than spending in PLMPs – which is almost non-existent. Looking at specific country examples, some Asian countries (e.g. Papua New Guinea, the Philippines, Mongolia, China, Viet Nam, Korea), Scandinavian countries (i.e. Sweden and Norway) and some Latin American countries (i.e. Argentina, Colombia, Mexico) all spend a larger share of their GDP in ALMPs than they spend in PLMPs.

⁷ A more comprehensive coverage of trends in ALMPs across regions can be consulted in Auer et al. (2008). For detailed trends in Latin America and the Caribbean please refer to ILO (2016).

Figure 1: Average spending in ALMPs and PLMPs across regions



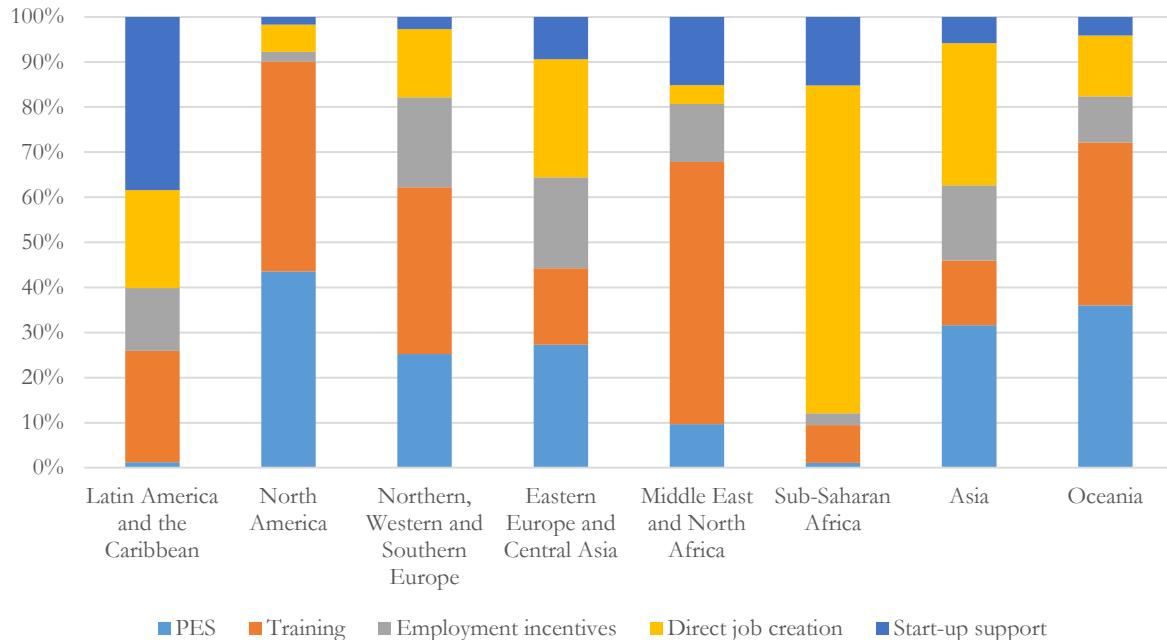
Note: Authors' calculations based on different data sources as reported in Section 2.

Another dimension to be explored relates to the composition of spending across policies (i.e. for a given level of spending in ALMPs or PLMPs, how this is distributed across interventions). Indeed, different types of active and passive interventions exist (as reviewed above) and the adequate policy mix will vary according to the structure of the economy and its development status. Figures 2 and 3 present the spending distribution in the different regions across the multiple types of active and passive interventions. The picture that emerges is that the spending composition varies largely across geographical regions. Starting with ALMPs, countries in North America and Northern, Western and Southern Europe spend mostly in training programmes (more than 30 per cent of total spending in ALMPs) followed by public employment services and administration. This is consistent with the use of ALMPs in developed economies, where these interventions are mostly used to correct labour market imperfections – such as a sub-optimal investment in human capital or information asymmetries in the labour market. At the same time, spending in ALMPs is more equally distributed across interventions in Latin America and the Caribbean, Eastern Europe and Central Asia and Asia and the Pacific. Finally, Sub-Saharan countries invest largely in direct job creation schemes (that often are used as social safety nets of last resorts, especially during crises) while spending is concentrated on training measures in countries in Middle East and North Africa.

Similarly, we look at the distribution of spending in PLMPs between unemployment insurance and assistance across geographical regions. The picture that emerges is that countries in Latin America and the Caribbean and North America almost entirely rely on unemployment insurance to provide income support to unemployed individuals – although the coverage of these programmes is often very low, especially in Latin American countries. Countries in Northern, Western and Southern Europe as well as in Eastern Europe and Central Asia have instead mostly contributory schemes (unemployment insurance accounts for around 70 per cent of the spending) which are topped-up with non-contributory unemployment assistance (accounting for the remaining 30 per cent of spending in PLMPs). Finally, the picture is reversed in Middle East and North Africa, Sub-Saharan Africa and Asia and the Pacific –

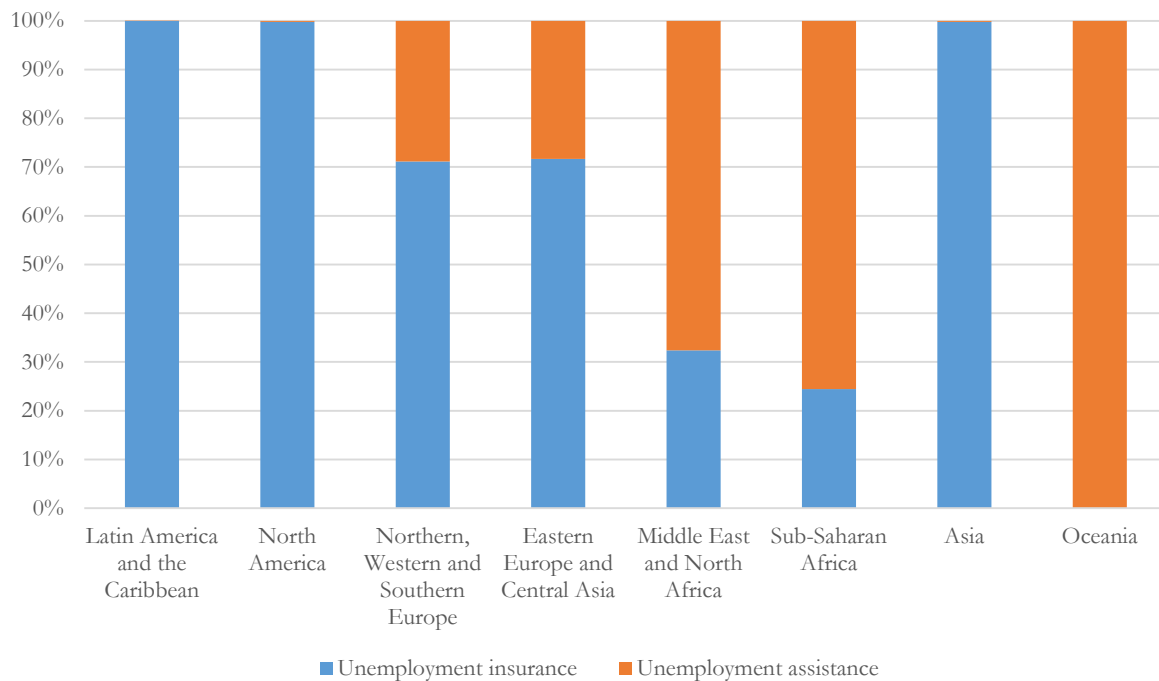
where unemployment assistance plays a far greater role than unemployment insurance in terms of providing income support to unemployed individuals. This also reflects the largely informal nature of labour markets in these regions, where purely contributory schemes risk otherwise having limited coverage.

Figure 2: Distribution of spending in ALMPs by type of intervention



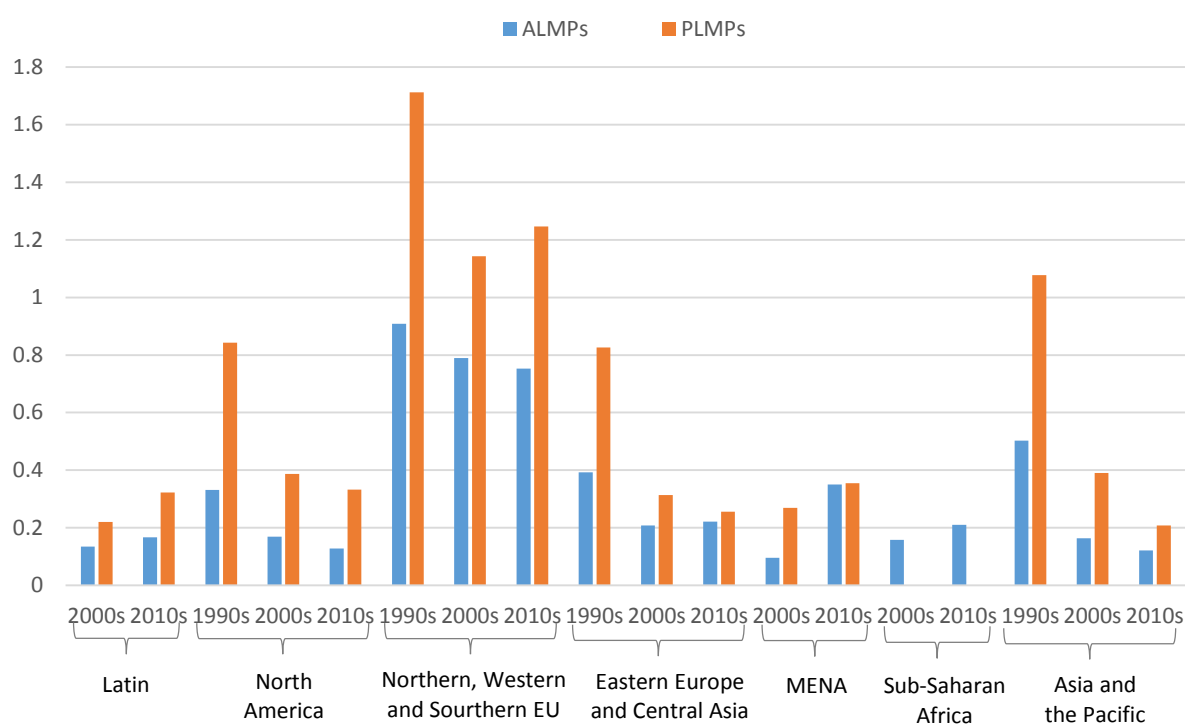
Note: Authors' calculations based on different data sources as reported in Section 2.

Figure 3: Distribution of spending in PLMPs by type of intervention



Finally, we look at the evolution of spending levels across regions over time. For ease of exposition, we look at average over decades (rather than yearly) since the 1990s – if observations are available in that specific region/decade. The latest decade includes values until 2017. The overall picture that emerges is that spending in labour market policies has decreased from initially high levels in developed economies; while it has increased from initially low levels in emerging and developing regions. In particular, spending in active and (particularly) passive policies has decreased between the 1990s and the 2010s in North America, Northern, Western and Southern Europe, Eastern Europe and Central Asia and also Asia and the Pacific (driven mostly by developed economies in the region). Generally speaking, the decrease in spending was higher from the 1990s to the 2000s than from the 2000s to the 2010s – as the eruption of the financial crisis and the increase in unemployment rates have increased government spending in labour market interventions. At the same time, spending in both ALMPs and PLMPs has increased over time (in this case the series starts in the 2000s) in Latin America and the Caribbean, countries in Middle East and North Africa and in Sub-Saharan countries. As a result, the gaps in total spending across regions (as described above) still exist but are now substantially reduced compared to the earlier decades.

Figure 4: Spending in ALMPs and PLMPs over regions and decades



Note: Authors' calculations based on different data sources as reported in Section 2.

4. Empirical strategy

The purpose of the analysis is to investigate the causal effect of spending in active and passive labour market policies (and their interactions) on aggregate employment performances in a panel analysis at the country level. Following previous contributions (Escudero 2018; Estevão 2003), we estimate the subsequent model:

$$Y_{i,t} = c + \beta_1 LMP_{i,t} + \beta_2 X_{i,t} + \beta_3 T_t + \beta_4 C_t + \varepsilon_{i,t}$$

where $Y_{i,t}$ represents the outcome of interest (unemployment, employment and labour force participation rates) in country i and year t ; c is a constant; $LMP_{i,t}$ is the (vector of) spending in labour market policies; $X_{i,t}$ is the vector of control variables; T_t are year fixed effects; C_t are country fixed effects; and $\varepsilon_{i,t}$ is the error term.

Apart from the intensity of active and passive policies, labour market outcomes are obviously determined by a number of other factors. While we control for some aspects, we are fairly limited by data availability – especially for the emerging and developing economies in our sample. In general, the literature has defined four groups of factors possibly influencing labour market outcomes. A first set of factors constitute demand conditions. In this sense, we include the difference between the GDP growth rate and its five-year average to capture cyclical fluctuations.⁸ While Escudero (2018) controls for the terms of trade, this data is not available for our entire sample. In order to partially accommodate for this, we include year fixed effects to control for time variant shocks that affect all countries in the same way. A second set of factors deals with the structure of the labour market. For instance, Escudero (2018) controls for this by including the share of the population on a certain skill level. We follow this contribution by including the share of employment in low and medium skills occupations (with high skills occupations acting as the reference category) — as obtained by the ILO WESO database. Thirdly, labour market outcomes are likely determined by institutional factors. In particular, previous studies have controlled for union density and employment protection legislation (EPL) (Bassanini and Duval 2006; 2009; Boone and van Ours 2004; Elmeskov, Martin, and Scarpetta 1998; Escudero 2018; Estevão 2003; Gal and Theising 2015), the prevalence of a minimum wage (Bassanini and Duval 2006; 2009; Elmeskov, Martin, and Scarpetta 1998; Gal and Theising 2015), the tax wedge (Boone and van Ours 2004; Elmeskov, Martin, and Scarpetta 1998; Estevão 2003; Gal and Theising 2015) and whether or not a country was part of the European Union (Escudero 2018). Most of these variables are however less informative in our setting, as labour market institutions are often less binding in emerging economies due to lower compliance with labour law. In any case, data on institutional factors are often very scant and including these variables would require to substantially restrict the sample.⁹ In order to partially account for these (generally constant) institutional characteristics, we follow previous contributions and include country fixed effects that capture any time-invariant difference at the country level. A fourth and final set of determinants are fiscal measures. In line with Gal and Theising (2015), we include the governments' primary balance to make sure that the measured effects of active and

⁸ Ideally, we would include the output gap as is done by Gal and Theising (2015) and Elmeskov, Martin, and Scarpetta (1998) but this data is not available for all countries in our sample.

⁹ Data on the EPL is available for a large subset of our sample, therefore we control for this institution in a robustness check. Additionally, we also test whether our results are robust to the inclusion of a dummy variable for EU membership, as this is closely related to the degree of labour mobility. For both types of tests, the results of the regressors of interest do not significantly change in either magnitude or significance. For ease of exposition, these tests are not reported in the paper but are available upon request.

passive policies do not result from an overall fiscal stimulus. Estevão (2003) and Gal and Theising (2015) control in addition for the level of government employment, data which is nevertheless not available for our sample.

After having discussed the inclusion of covariates, the other main step concerns the choice of the empirical model. In particular, different econometric problems could affect simple OLS estimates in the present context. First, panel data are likely to be plagued by serial correlation in the idiosyncratic error term (Escudero 2018; Lusinyan and Bonato 2007). Although this does not necessarily affect identification, it would definitely influence inference (i.e. estimated coefficients would be consistent but not efficient). In order to test for this autocorrelation, we use the Arellano-Bond post-estimation technique (Roodman 2009). Given that this test confirms the presence of first order autocorrelation (AR(1)), we estimate the model using feasible generalized least squares (FGLS) as proposed in Escudero (2018). FGLS is a viable alternative to OLS as it allows for the presence of AR(1) autocorrelation within panels and cross-sectional correlation and heteroskedasticity across panels (Escudero 2018).

The second main econometric problem relates to endogeneity due to omitted variable bias or reverse causality, which would directly affect consistency of the estimated parameters (i.e. OLS results might be biased). While the choice of the covariates (as presented above) aims to alleviate the risk of omitted variable bias, it is impossible to rule out the risk that we are omitting variables that at the same time influence the outcome and the regressors of interest. This is particularly the case given the relatively large sample of countries included, for many of which we lack detailed information on labour market and institutional characteristics (as discussed above). With respect to the possible risk of reverse causality, it can be expected that when unemployment is high governments decide to increase spending in ALMPs in order to increase enrolment.¹⁰ This reverse causality might be even more important for PLMPs, as in this case the level of spending (almost) mechanically increases with the unemployment rate (at least in most developed economies where this adjustment is in place). In order to control for these sources of bias, we follow previous contributions and estimate the panel models described above by instrumenting the expenditure in active and passive labour market policies (or their interactions) with their one-year lagged values (Escudero 2018; Estevão 2003; Hujer, Rodrigues, and Wolf 2009).

The rationale behind this instrumental variable strategy is that spending in active and passive labour market policies might vary over time in ways that do not necessarily reflect labour market dynamics. In this way, previous spending is correlated with current spending (first stage relationship) without being otherwise correlated with the outcome of interest (exclusion restriction). In particular, we might think about two main sources of exogenous variation in spending levels that could be exploited in the present context. First, there could be policy changes concerning the eligibility, duration or coverage of labour market policies from one period to the other. These policy changes would generate variations in spending levels across years that are not (necessarily) entirely associated with changes in the state of the labour market. For instance, during the years of the economic crisis between 2008 and 2015 there have been 801 legislative changes in the area of ALMPs reported in European countries (LABREF Database). Similarly, spending in active and passive policies might vary over years in ways that do not necessarily reflect the state of the labour market due to hysteresis effects. In particular, spending in PLMPs might decrease after the peak of the recession (despite the unemployment rate remaining high)

¹⁰ For instance, the opportunity cost of enrolling in a training program is lower during times of crises due to the reduced job opportunities.

as the bulk of the unemployment becomes long-term and the replacement rates gradually decrease. Of course, a main threat to the identification assumption is represented by concurrent time persistence in both labour market dynamics (e.g. current unemployment levels being determined by the previous unemployment levels) and spending in labour market policies. In that case, the lagged value of spending is a strong function of both current spending and current labour market outcomes. Although there is no conclusive solution to this problem, the robustness tests will check how much the results are sensitive to violations of the exclusion restriction.

5. Overall impact of active and passive labour market policies

This section will present the main results of the macroeconomic analysis on the impact of overall spending in active and passive labour market policies (i.e. without differentiating by type of intervention) on labour market indicators. In particular, Section 4.1 will present the results of our preferred specification (both for the overall sample and splitting the countries according to their development status); while Section 4.2 reports a large set of robustness tests aimed at exploring the extent to which our results are sensitive to slight changes in the identification strategy.

5.1 Main results

As mentioned above, following previous contributions our preferred specification estimates equation (1) above with a 2SLS model using the previous levels of spending (in active and passive policies) as an instrument for the current spending values. The results of this estimation are reported in Table 2 below for the unemployment rate, the employment rate and the labour force participation rate. For each outcome of interest, we present two different specifications; first with spending in active and passive policies and then adding also their interaction.

At first glance, we find that additional spending in ALMPs decreases the unemployment rate, while additional spending in PLMPs increases unemployment. This result is expected from a theoretical point of view, as ALMPs are intended to activate the unemployed and help them attain gainful employment (OECD 2007). PLMPs on the other hand reduce the cost associated with unemployment and increase the reservation wage (Estevão 2003; Gal and Theising 2015). In Column 2, we also add the interaction between spending in active and passive labour market policies. The results reveal that in the complete specification spending in ALMPs and PLMPs both increase the unemployment rate, while the interaction between the policies significantly decreases it. In terms of magnitude, for any given value of spending in PLMPs (ALMPs) x , the effect of an additional unit (here, one percent of GDP) spent in ALMPs (PLMPs) is equal to $3.29-3.68x$ ($8.48-3.68x$). In other words, while both spending in ALMPs and PLMPs increase the unemployment rate if the spending in the other policy is equal to zero, the point estimate decreases gradually when the spending in the other type of intervention increases – and it turns negative at a certain point. Figure 5 shows this more clearly for the three labour market outcomes. Panel A plots the equations quantified here above. The figure confirms that spending in both ALMPs and PLMPs increases the unemployment rate when spending on the other policy package is zero. For the effect of spending in ALMPs (the dashed line) the effect turns quickly negative when spending in PLMPs increases (it reaches zero for a level of spending in PLMPs just below 1 per cent of GDP). A similar pattern is visible for the effect of spending in PLMPs (the full line) albeit that the initial positive effect is larger and more persistent (it reaches zero for a level of spending in ALMPs around 2.3 per cent of GDP). As a matter of comparison, the median value of spending in ALMPs (PLMPs) in 2014

was equal to 0.16 per cent (0.34 per cent) of GDP. This means that spending in ALMPs is beneficial for all those countries above the 75 percentile of the distribution of spending in PLMPs (e.g. France, Portugal, Spain and the Netherlands); while there is no country that currently reaches the threshold level of spending in ALMPs for making spending in PLMPs beneficial to unemployment reduction (Denmark had in 2014 a value of spending in ALMPs just above 2 per cent of GDP).

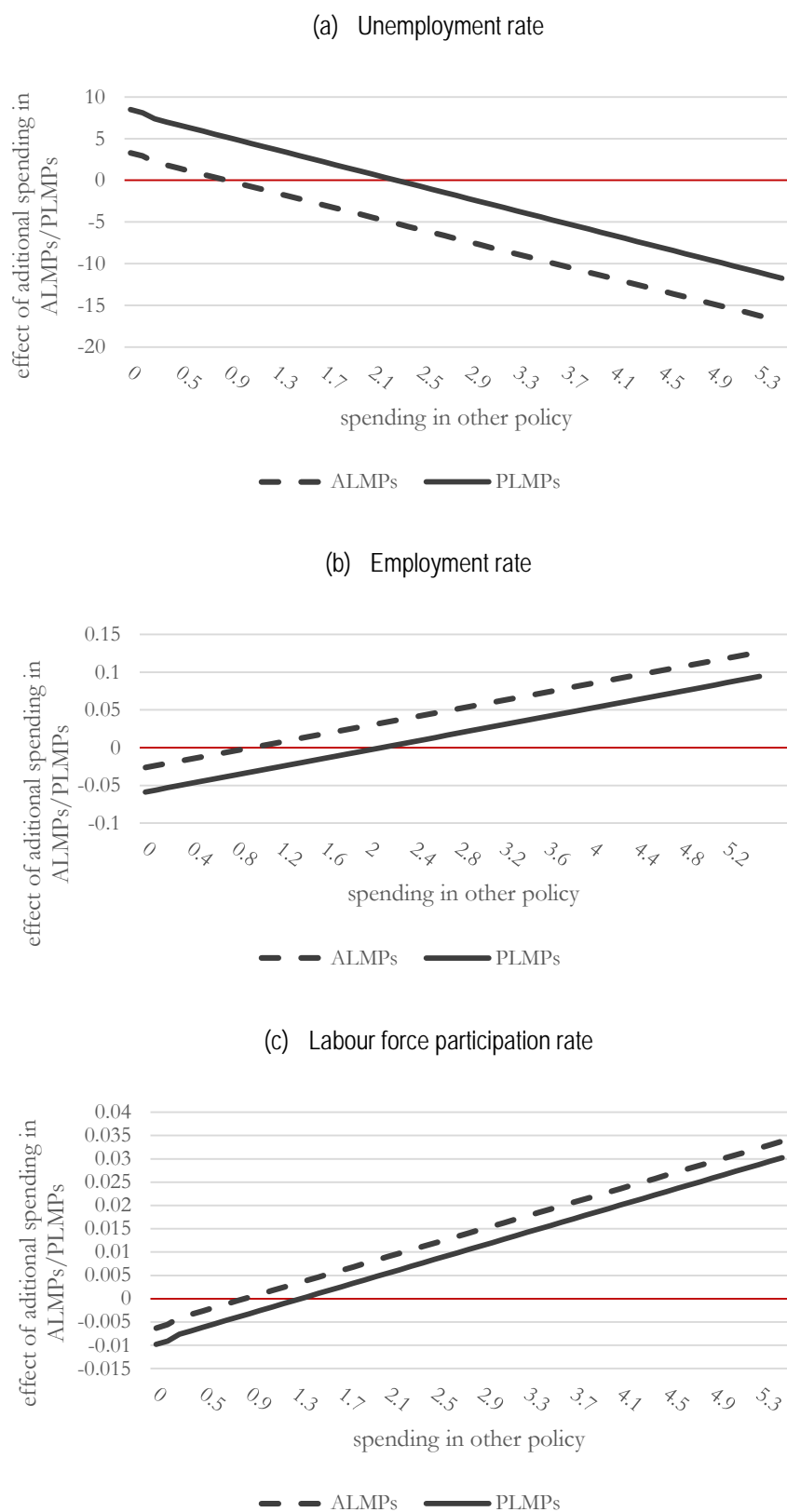
The results for the employment-to-population ratio and the labour force participation rate are in line with the findings just discussed for the unemployment rate. In particular, additional spending in ALMPs has only a marginal (positive) impact on employment and labour force participation rates; while additional spending in PLMPs has a negative effect on the employment rate (but no effect on the labour force participation rate). These results are in line with the economic theory, as ALMPs aim to activate individuals that would otherwise remain outside the labour market (i.e. these individuals will enter both employment and unemployment) while PLMPs might generate disincentive effects for those that are already in the labour market (i.e. these forms of supports do not generally cover inactive individuals). As above, the inclusion of the interaction term reveals how ALMPs and PLMPs might have detrimental effect if implemented in isolation. In particular, both ALMPs and PLMPs have a negative effect on the employment rate; while PLMPs have also a negative (although smaller) effect on the labour force participation rates. However, the interaction between active and passive interventions is positive and statistically significant for both the labour force participation rate and the employment rate – meaning that both types of interventions can have a positive labour market effect provided that enough is spent in the other type of policy. For the labour force participation rate, the critical threshold of spending is lower than for the case of the unemployment rate. In particular, spending in ALMPs (PLMPs) increases labour force participation provided that around 0.8 per cent (1.3 per cent) of GDP is spent in PLMPs (ALMPs).

Table 2: Results for the unemployment rate, employment-to-population ratio and labour force participation rate estimated with 2SLS

	(1)	(2)	(3)	(4)	(5)	(6)
	Unemployment rate		Employment rate		Labour force participation rate	
Spending in ALMPs (% GDP)	-0.016** (0.008)	0.033*** (0.010)	0.011 (0.008)	-0.026*** (0.010)	0.003 (0.005)	-0.006 (0.006)
Spending in PLMPs (% GDP)	0.044*** (0.005)	0.085*** (0.007)	-0.028*** (0.004)	-0.059*** (0.006)	-0.002 (0.003)	-0.010** (0.005)
Interaction		-0.037*** (0.005)		0.028*** (0.005)		0.007** (0.003)
Constant	0.131*** (0.022)	0.077*** (0.024)	0.621*** (0.024)	0.663*** (0.026)	0.703*** (0.019)	0.714*** (0.020)
Controls	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	803	803	803	803	803	803
R-squared	0.872	0.882	0.941	0.943	0.945	0.945

Note. The presented statistics are coefficient estimates and robust standard errors in parentheses for the panel model outlined in Section 3. The spending in ALMPs and spending in PLMPs variables are instrumented by its lagged values. ***(**)(*) indicates significance at the 1%(5%)(10%) significance level.

Figure 5: The effect of one additional unit spending on ALMPs (PLMPs) given spending on PLMPs



Note. Interaction effects as described in Section 4. The presented statistics are coefficient estimates for the panel mode outlined in Section 3.

The results discussed above are generally in line with previous studies as reviewed in the introduction. However, one of the main contributions of the present study is to include for the first time evidence from non-OECD countries. In this sense, it is crucial to understand whether the effects discussed above apply equally between developed and emerging and developing economies. In order to better investigate this hypothesis, we split the sample between developed and emerging and developing economies. The results of this exercise are presented in Table 3 below. Looking at the most complete specifications for all outcomes of interest, the results for the sample of developed economies are very much in line with those discussed above for the overall sample – of which they constitute the majority of the data points. Looking at developing and emerging economies, we find instead that ALMPs and PLMPs work relatively better than in developed economies when they are implemented in isolation (i.e. spending in the other type of policy is equal to zero). In particular, we find that ALMPs have a positive labour market impact (i.e. lower unemployment and increase employment) and PLMPs do not have any negative effect (e.g. increase in unemployment or decrease in employment) – provided that nothing is spent in the other type of intervention. However, for developing and emerging economies the effect of the interaction changes sign for all outcomes of interest. In particular, the interaction between active and passive policies increases the unemployment rate and decreases the employment and labour force participation rates. While this result might seem puzzling, it needs to be kept in mind (i) the limited sample size for emerging and developing economies (mostly focused on the years since the eruption of the global financial crisis) and (ii) the fact that in developing and emerging economies ALMPs often already provide some form of income support (as reviewed above) – so that any precise differentiation risks being difficult. At the same time, the result might be explained by the lack of explicit policy coordination between active and passive labour market policies in emerging and developing economies – while these interventions are often jointly conceived and implemented in developed economies.

Table 3: Results for the heterogeneity analysis by development status estimated using 2SLS

	(1)	(2)	(3)	(4)	(5)	(6)
	Unemployment rate		Employment rate		Labour force participation rate	
	<i>Developed</i>	<i>Developing</i>	<i>Developed</i>	<i>Developing</i>	<i>Developed</i>	<i>Developing</i>
Spending in ALMPs (% GDP)	0.037*** (0.008)	-0.099** (0.049)	-0.032*** (0.010)	0.054* (0.028)	-0.010 (0.007)	-0.003 (0.023)
Spending in PLMPs (% GDP)	0.085*** (0.007)	0.050 (0.033)	-0.062*** (0.006)	0.004 (0.021)	-0.013*** (0.005)	0.029 (0.024)
Interaction	-0.038*** (0.005)	0.552*** (0.198)	0.031*** (0.005)	-0.440*** (0.117)	0.010*** (0.003)	-0.145* (0.083)
Constant	0.059*** (0.021)	-0.072 (0.113)	0.688*** (0.027)	0.466*** (0.071)	0.728*** (0.022)	0.409*** (0.091)
Controls	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	613	190	613	190	613	190
R-squared	0.807	0.958	0.915	0.987	0.932	0.976

Note. The presented statistics are coefficient estimates and robust standard errors in parentheses for the panel model outlined in Section 3. The spending in ALMPs and spending in PLMPs variables are instrumented by its lagged values. ***(**)(*) indicates significance at the 1%(5%)(10%) significance level.

5.2 Robustness tests

This section presents the different tests conducted in order to verify the soundness of the methodological approach adopted in the paper. First, we have used alternative econometric models. In particular, we re-estimated equation (1) above by means of OLS, Arellano-Bond and FGLS. The results are available in the Appendix (Table 2 in the Appendix, presenting only the most complete specification for the three outcomes of interest) and – given that they are mostly in line with those discussed above – we proceed in the rest of the analysis with the 2SLS model. The main issue with the instrumental variable approach as presented above concerns the plausibility of the exclusion restriction (i.e. lagged values of spending do not directly affect current labour market performances). Given possible time persistence in both the regressors of interest and the dependent variable, this condition could be violated. Although there is no conclusive solution to this problem, we might get a measure of the extent to which this constitutes a threat to the current estimation strategy by using previous lags of spending levels (i.e. going back in time). Although this will reduce the available sample size for the estimation (and the strength of the instrument), it should probably weaken concerns over the plausibility of the exclusion restriction.¹¹ The results of the exercise are available in Table 4, where for ease of exposition we presented only the full specification for the unemployment (i.e. corresponding to column 2 in Table 2 above). Moving from the left to the right of the Table, each column uses a different lagged value of the instrument (i.e. from the first to the tenth lag). Of course, the sample size also varies and therefore the results are not directly comparable. However, the regressors of interest remain remarkably constant across the different specifications both in terms of magnitude and statistical significance (with the possible exceptions of the coefficient for ALMPs, which is more volatile across specifications). This suggests that using longer lags – for which the exclusion restriction is more likely to hold – should not necessarily change the validity of the results discussed above. Since previous lags are also available for identification purposes, the model presented above can be over-identified (i.e. using more instruments than endogenous regressors). In that case, a GMM specification could be preferred to 2SLS. In order to check the robustness to changes in the model, we therefore run equation (1) above with a GMM model that uses as instruments all the lags up to four years.¹² The results are available in Table 3 in the Appendix and they largely confirm those obtained before in the just-identified case.

¹¹ Additionally, the sample size becomes increasingly biased towards advanced economies for which we have longer time series.

¹² A different choice of the length of the lag would not substantially change the results.

Table 4: Results for the robustness test using different lags of spending as instruments

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Unemployment rate									
Spending in ALMPs (% GDP)	0.033*** (0.007)	0.026 (0.017)	0.024 (0.018)	0.014 (0.026)	-0.044 (0.035)	-0.083 (0.059)	-0.035 (0.108)	0.106 (0.117)	0.126* (0.067)	0.177*** (0.066)
Spending in PLMPs (% GDP)	0.085*** (0.005)	0.105*** (0.008)	0.121*** (0.010)	0.129*** (0.016)	0.109*** (0.028)	0.082* (0.043)	0.061 (0.051)	0.031 (0.047)	0.094** (0.040)	0.194*** (0.070)
Interaction	-0.037*** (0.004)	-0.047*** (0.007)	-0.056*** (0.008)	-0.062*** (0.013)	-0.045** (0.020)	-0.033 (0.025)	-0.040 (0.030)	-0.025 (0.034)	-0.067** (0.030)	-0.149** (0.062)
Constant	0.077*** (0.021)	0.063** (0.028)	0.039 (0.029)	0.028 (0.037)	0.074 (0.048)	0.141*** (0.052)	0.159** (0.063)	0.061 (0.098)	-0.004 (0.074)	-0.055 (0.070)
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	803	752	691	637	580	528	478	431	392	351
R-squared	0.882	0.871	0.859	0.855	0.853	0.840	0.866	0.792	0.854	0.787

Note. The presented statistics are coefficient estimates and robust standard errors in parentheses for the robustness analysis outlined in Section 4.2. The spending on ALMPs and spending on PLMPs variables are instrumented by its lagged values. *** (**) (*) indicates significance at the 1% (5%) ((10%)) significance level.

After having discussed the validity of the instrument, another set of robustness tests concerns introducing slight changes to the preferred specification introduced above. The first point of concern is the unbalanced nature of our data, especially the fact that we have longer time series for developed than for emerging and developing economies. In order to make sure that what we are estimating is not an effect that is only present for OECD countries we restrict our sample from 2005 onwards, for which we have a more comparable number of observation. These results (estimated with 2SLS, using one-year lag as an instrument) are reported in Table 5 below (left panel, only the full specifications for the three outcomes of interest are reported). They confirm the findings obtained for the overall sample with the exception of regressions using labour force participation as the outcome of interest, when the coefficients of the regressors of interest become smaller in magnitude and statistically non-significant. As an additional test, we re-estimate the baseline equation using the same methodology as before (2SLS with lagged values as instruments) but without additional covariates (i.e. apart from the year and country fixed effects). Indeed, it could be that the inclusion of those covariates (i.e. difference between the GDP growth rate and its five-year average to capture cyclical fluctuations, government primary balance and employment shares in different skills' groups) is spuriously driving the results for active and passive labour market policies. The issue is particularly important for the primary balance, since controlling for that means that we are considering variations in spending in labour market policies that are somehow compensated by reductions in spending in other items of the public budget. In that case, one may wonder whether the effect that we identify is truly associated with the change in spending in ALMPs or PLMPs – rather than with the reduction in some other type of spending. Table 5 below (right panel, only full specifications reported) presents the result of this new exercise, which provides reassuring evidence that the results discussed above are not sensitive to slight modifications in the baseline specification.

Table 5: Results for the robustness test using only observations after 2005 and without covariates

	(1) Unemp. rate	(2) Emp. rate	(3) LF part. rate	(4) Unemp. rate	(5) Emp. rate	(6) LF part. rate
	(a) Only since 2005			(b) No covariates		
Spending in ALMPs (% GDP)	0.095*** (0.019)	-0.058*** (0.021)	-0.002 (0.014)	0.036*** (0.009)	-0.021** (0.009)	0.001 (0.006)
Spending in PLMPs (% GDP)	0.150*** (0.014)	-0.097*** (0.011)	-0.010* (0.006)	0.085*** (0.006)	-0.055*** (0.005)	-0.006 (0.004)
Interaction	-0.098*** (0.017)	0.057*** (0.015)	-0.001 (0.008)	-0.038*** (0.005)	0.025*** (0.004)	0.004 (0.003)
Constant	-0.039 (0.030)	0.739*** (0.028)	0.722*** (0.020)	-0.007 (0.006)	0.653*** (0.006)	0.653*** (0.005)
Controls	YES	YES	YES	NO	NO	NO
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	532	532	532	853	853	853
R-squared	0.902	0.962	0.973	0.874	0.936	0.935

Note. The presented statistics are coefficient estimates and robust standard errors in parentheses for the robustness analysis outlined in Section 4.2. The spending on ALMPs and spending on PLMPs variables are instrumented by its lagged values. *** (**) (*) indicates significance at the 1% (5%) ((10%)) significance level

6. Effects by type of intervention

The section above has presented evidence on the overall effectiveness of active and passive labour market policies (i.e. globally conceived). However, from a policy perspective it is key to understand which specific types of interventions are more effective in improving labour market performances. Indeed, there is a wide range of both active and passive policies and therefore the simple result that active/passive policies work does not provide any concrete guidance on which types of investments should be prioritized. In order to investigate these questions, we re-estimate our preferred specification (as described above) and replace the aggregate spending variables by spending (as a % of GDP) in the specific labor market policy components. We split spending in ALMPs into the following five components: (i) PES and administration, (ii) training, (iii) employment incentives, (iv) direct job creation, and (v) start-up incentives.¹³ For the passive policies, we follow the classical distinction between unemployment insurance and unemployment assistance (i.e. contributory and non-contributory unemployment benefits).¹⁴ As discussed in Section 3, spending levels in the different types of active and passive policies differ substantially across geographical regions – partially reflecting differences in development status.

Table 6 (left panel) gives the results of the 2SLS regression with the individual components rather than the aggregate labour market spending variables. The results reveal how training programmes and employment incentives are the most effective types of ALMPs, since they reduce the unemployment rate by the most significant amount. However, employment incentives also slightly increase the employment rate while training programmes have a marginal negative effect on labour force participation. Public employment services, direct job creation and start-up subsidies all have the expected positive impact (i.e. reduce unemployment and increase employment and labour force participation), but the coefficients are smaller in magnitude and less precisely estimated. Turning to the effect of PLMPs by type of intervention, unemployment insurance and assistance operate in a very similar way as they both increase unemployment and reduce employment (as discussed in the overall analysis). However, unemployment insurance slightly increases labour force participation (possibly by increasing the premium of participating in the labour market) while unemployment assistance has the opposite effect (as the income support is provided independently from employment contributions). As one of the most important results of our main analysis was that the interaction between active and passive policies appears to be of vital importance, we repeat the exercise including all possible interactions between active and passive policies here. The results of this exercise are reported in Table 7 (right panel). In general, the interaction between active policies and unemployment insurance appears to have favourable labour market outcomes (i.e. decrease unemployment and increase employment and labour force participation), while the interaction with unemployment assistance has the opposite effect.

¹³ We have excluded the sixth category of “sheltered and supported employment” due to lack of available data. PES and administration refers to programs including (i) counselling and case management of jobseekers, (ii) open information services and (iii) referral to work, training or other assistance, as well as the budget of the institutions that manage unemployment benefits. Training includes both institutional and workplace training, as well as support for apprenticeships. Employment incentives refers both to recruitment- and employment maintenance incentives, usually in the form of subsidies or reduced social security contributions. Direct job creation creates additional jobs, usually for community benefits. The final category, start-up incentives, are programs promoting entrepreneurship. For the complete definitions of these active interventions, see OECD.org.

¹⁴ We do not include early retirement benefits here, as this information is only available for OECD countries.

This result can be explained by the presence of complementarities between ALMPs and income support programmes related to labour market participation (e.g. unemployment subsidy provided to participants of job-search programmes) – while this link does not emerge for other income support programmes provided irrespective of the status in the labour market.

Table 6: Results for the analysis by component estimated with 2SLS

	(1) Unemp. rate	(2) Emp. rate	(3) LF part. rate	(4) Unemp. rate	(5) Emp. rate	(6) LF part. rate
PES and administration	-0.043 (0.042)	0.045 (0.043)	0.026 (0.032)	0.112* (0.059)	0.054 (0.054)	0.134*** (0.035)
Training	-0.074*** (0.018)	0.016 (0.014)	-0.032*** (0.011)	0.078* (0.041)	-0.079* (0.048)	-0.037 (0.031)
Employment incentives	-0.066* (0.039)	0.057* (0.031)	0.021 (0.021)	0.008 (0.033)	0.015 (0.034)	0.023 (0.024)
Direct job creation	-0.008 (0.017)	0.030 (0.020)	0.029* (0.017)	0.032 (0.023)	0.021 (0.026)	0.045** (0.021)
Start-up support	-0.090 (0.113)	0.124 (0.106)	0.080 (0.0701)	-0.471*** (0.180)	-0.152 (0.146)	-0.457*** (0.102)
Unemployment insurance	0.078*** (0.013)	-0.032*** (0.011)	0.017** (0.007)	0.137*** (0.022)	-0.099*** (0.020)	-0.017 (0.011)
Unemployment assistance	0.078*** (0.006)	-0.059*** (0.006)	-0.013*** (0.004)	0.097*** (0.031)	-0.009 (0.024)	0.052*** (0.014)
PES*UI				-0.346*** (0.096)	0.273** (0.107)	0.071 (0.067)
Training*UI				-0.055 (0.049)	0.011 (0.057)	-0.024 (0.037)
Employment incentives*UI				-0.119*** (0.045)	0.209*** (0.044)	0.148*** (0.031)
Direct job creation*UI				-0.040 (0.046)	-0.002 (0.042)	-0.025 (0.026)
Start-up support*UI				-0.183 (0.182)	0.510*** (0.162)	0.439*** (0.112)
PES*UA				0.057 (0.077)	-0.302*** (0.075)	-0.283*** (0.053)
Training*UA				-0.037 (0.053)	0.054 (0.050)	0.035 (0.038)
Employment incentives*UA				-0.019 (0.131)	-0.472*** (0.121)	-0.519*** (0.098)
Direct job creation*UA				-0.162** (0.082)	0.125* (0.065)	0.027 (0.048)
Start-up support*UA				1.068*** (0.351)	-0.552 (0.346)	0.069 (0.241)
Constant	0.061* (0.031)	0.620*** (0.0356)	0.653*** (0.0247)	0.051 (0.0371)	0.620*** (0.0365)	0.646*** (0.0229)
Controls	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	438	438	438	438	438	438
R-squared	0.819	0.927	0.940	0.853	0.937	0.952

Note. The presented statistics are coefficient estimates and standard errors in parentheses for the panel model outlined in Section 3. *** (**) (*) indicates significance at the 1% (5%) ((10%)) significance level.

7. Conclusion

In this paper, we investigate the causal effect of spending in active and passive labour market policies on key labour market outcomes in both developed and emerging economies. We do this by means of a panel model using a rich database containing expenditure information on 121 countries, of which about two-third is non-developed. We follow the existing literature (Escudero 2018; Estevão 2003; Gal and Theising 2015; Murin and de Serres 2014; Murin and Robin 2016) and control for the likely presence of reverse causality between the labour market outcomes and the spending measures by estimating an instrumental variable model where the spending variables are instrumented by their lagged values.

We extend the existing literature in two important ways. Firstly, to the best of our knowledge, this is the first contributions that includes observations from non-OECD countries. Indeed, very little evidence exists to show that policies who work well in one labour market context can be easily translated to another context. Secondly, we explicitly take into account the possible presence of complementarities between active and passive labour market policies. This is particularly important given that active and passive policies are often co-ordinated (if not jointly implemented, especially in developed economies) and therefore specifications that do not take this interaction into account might suffer from omitted variable bias

We find that the interaction between active and passive labour market policies generate substantial beneficial effects in terms of both employment, unemployment and labour force participation. This means that the more is spent on one type of policy, the more the other policy becomes effective. As a result, even the disincentive effects of PLMPs disappear (and eventually become positive) provided that enough is spent in ALMPs. We further specify these findings by looking separately (i) at countries characterised by different levels of economic development; and (ii) at different types of (active and passive) labour market policies.

At the same time, some caveats of the present study need to be kept in mind. First, the analysis looks only at the short-term effects of active and passive labour market policies (i.e. the effect of spending in one year on labour market outcomes the following year). However, labour market policies (especially ALMPs) also have substantial medium- and long-term effects, which are not considered in the present analysis. Similarly, we might not capture the overall effect of active and passive labour market policies. Indeed, these interventions (especially in developing countries) often have objectives that go beyond the labour market domain (e.g. poverty reduction, social inclusion) that we nevertheless cannot analyse with the available data.

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Appendix

Table A.1: Data availability on spending in Active and Passive Labour Market Policies

Country	Time period covered	Source	Country	Time period covered	Source	Country	Time period covered	Source
Afghanistan	2008 – 2010 ⁱⁱ	ADB	Greece	1985 – 2010 /2013 – 2015 ⁱ	OECD	Panama	2007 – 2014 ⁱⁱ	ASPIRE
Albania	2000 – 2013	ASPIRE	Guatemala	2004 – 2013 ⁱⁱ	ASPIRE	Papua New Guinea	2008 – 2015 ⁱ	ADB
Argentina	2000 – 2015	ASPIRE	Honduras	2003 – 2014 ⁱⁱ	ASPIRE	Peru	2000 – 2015 ⁱⁱ	ASPIRE
Armenia	2008 – 2015	ADB	Hungary	1992 – 2016 ⁱ	OECD	Philippines	2008 – 2015 ⁱ	ADB
Australia	1985 – 2016	OECD	India	2008 – 2013 ⁱⁱ	ADB	Poland	1991 – 2016 ⁱ	OECD
Austria	1985 – 2016	OECD	Indonesia	2009 – 2014 ⁱⁱ	ADB	Portugal	1985 – 2016	OECD
Azerbaijan	2008 – 2015	ADB	Ireland	1985 – 2016	OECD	Romania	2005 – 2016	Eurostat
Bangladesh	2008 – 2015 ⁱⁱ	ADB	Israel	2004 – 2016 ⁱ	OECD	Rwanda	2004 – 2011 /2014 – 2015 ⁱⁱ	ASPIRE
Belgium	1985 – 2016	OECD	Italy	1990 – 2016 ⁱ	OECD	Saint Lucia	2000 – 2013 ⁱⁱ	ASPIRE
Benin	2005 – 2014 ⁱⁱ	ASPIRE	Japan	1985 – 2016 ⁱ	OECD	Sao Tome and Principe	2013 – 2014 ⁱⁱ	ASPIRE
Bhutan	2011 – 2015 ⁱⁱ	ADB	Kazakhstan	2005 – 2014	ASPIRE	Senegal	2005 – 2015 ⁱⁱ	ASPIRE
Bolivia	2008 – 2015 ⁱⁱ	ASPIRE	Kenya	2005 – 2016 ⁱⁱ	ASPIRE	Serbia	2000 – 2013 ⁱ	ASPIRE
Botswana	2004 – 2010 ⁱⁱ	ASPIRE	Korea	2000 – 2016	OECD	Sierra Leone	2010 – 2011 ⁱⁱ	Aspire
Brazil	2000 – 2015	ASPIRE	Kyrgyzstan	2008 – 2015	ADB	Slovak Republic	1991 – 2016	OECD
Bulgaria	2004 – 2016	Eurostat	Laos	2008 – 2015 ⁱⁱ	ADB	Slovenia	2003 – 2016 ⁱ	OECD
Burkina Faso	2005 – 2016 ⁱⁱ	ASPIRE	Latvia	2003 – 2016	OECD	Solomon Islands	2008 – 2015 ⁱ	ADB
Burundi	2010 – 2013 ⁱⁱ	ASPIRE	Lebanon	2009 – 2010 ⁱⁱ	ASPIRE	South Africa	2009 – 2012	ASPIRE
Cambodia	2008 – 2015 ⁱⁱ	ADB	Liberia	2008 – 2014 ⁱⁱ	ASPIRE	South Sudan	2011 – 2012 ⁱⁱ	ASPIRE
Cameroon	2011 – 2017 ⁱⁱ	ASPIRE	Lithuania	2003 – 2016	OECD	Spain	1985 – 2015	OECD
Canada	1985 – 2016	OECD	Luxemburg	1985 – 2016 ⁱ	OECD	Sri Lanka	2008 – 2015 ⁱⁱ	ADB
Central African Republic	2009 – 2010 /2014 – 2015 ⁱⁱ	ASPIRE	Macedonia	2000 – 2014 ⁱ	ASPIRE	Swaziland	2006 – 2010 ⁱⁱ	Aspire
Chile	2004 – 2016 ⁱ	OECD	Malawi	2008 – 2016 ⁱⁱ	ASPIRE	Sweden	1985 – 2016	OECD
China	2008 – 2015	ADB	Malaysia	2008 – 2013 ⁱ	ADB	Switzerland	1985 – 2016	OECD
Colombia	2000 – 2015 ⁱⁱ	ASPIRE	Maldives	2008 – 2011 ⁱⁱ	ADB	Tajikistan	2008 – 2015	ADB
Congo	2014 – 2016 ⁱⁱ	ASPIRE	Mali	2011 – 2016 ⁱⁱ	ASPIRE	Tanzania	2014 – 2016 ⁱⁱ	ASPIRE
Costa Rica	2007 – 2012 ⁱⁱ	ASPIRE	Malta	2006 – 2016	Eurostat	Thailand	2008 – 2015 ⁱ	ADB
Croatia	2012 – 2016	Eurostat	Mauritius	2005 – 2009	ASPIRE	Timor-Leste	2008 – 2014 ⁱⁱ	ADB
Cyprus	2006 – 2016	Eurostat	Mexico	1998 – 2016	OECD	Togo	2011 – 2012 ⁱⁱ	ASPIRE
Czech Republic	1991 – 2016	OECD	Moldova	2000 – 2014 ⁱⁱⁱ	ASPIRE	Tunisia	2000 – 2013 ⁱ	ASPIRE
Denmark	1986 – 2016	OECD	Mongolia	2008 – 2015	ADB	Turkey	2005 – 2013 ⁱⁱ	ASPIRE
Djibouti	2014 – 2015 ⁱⁱ	ASPIRE	Montenegro	2000 – 2013 ⁱⁱⁱ	ASPIRE	Uganda	2009 – 2016 ⁱⁱ	ASPIRE
Dominican Republic	2010 – 2012 ⁱⁱ	ASPIRE	Morocco	2007 – 2014 ⁱⁱ	ASPIRE	United Kingdom	1985 – 2011 ⁱ	OECD
Ecuador	2000 – 2011 ⁱ	ASPIRE	Mozambique	2012 – 2015 ⁱⁱ	ASPIRE	United States	1985 – 2016	OECD
El Salvador	2009 – 2014 ⁱⁱ	ASPIRE	Nepal	2008 – 2015 ⁱⁱ	ADB	Uruguay	2000 – 2015 ⁱ	ASPIRE
Estonia	2003 – 2016	OECD	Netherlands	1985 – 2016	OECD	Uzbekistan	2009 – 2015	ADB
Ethiopia	2009 – 2016 ⁱⁱ	ASPIRE	New Zealand	1985 – 2016	OECD	Vanuatu	2008 – 2015 ⁱⁱ	ADB
Fiji	2008 – 2015 ⁱⁱ	ADB	Nicaragua	2000 – 2013 ⁱⁱ	ASPIRE	Viet Nam	2008 – 2015 ⁱ	ADB
Finland	1985 – 2016	OECD	Niger	2004 – 2017 ⁱⁱ	ASPIRE	Zambia	2014 – 2016 ⁱⁱ	ASPIRE
France	1985 – 2015	OECD	Nigeria	2009 – 2012 ⁱⁱ	ASPIRE	Zimbabwe	2010 – 2015 ⁱⁱ	ASPIRE
Germany	1985 – 2016	OECD	Norway	1985 – 2016	OECD			
Ghana	2010 – 2016 ⁱⁱ	ASPIRE	Pakistan	2008 – 2015 ⁱⁱ	ADB			

Table A.2: Results for the robustness test using different specifications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Unemp. rate	Emp. rate	LF part. rate	Unemp. rate	Emp. rate	LF part. rate	Unemp. rate	Emp. rate	LF part. rate
	<i>OLS</i>			<i>Arellano-Bond</i>			<i>FGLS</i>		
Spending in ALMPs (% GDP)	0.028*** (0.006)	-0.022*** (0.006)	-0.006 (0.004)	0.015 (0.009)	-0.010 (0.007)	-0.002 (0.004)	0.021*** (0.003)	-0.013*** (0.003)	-0.002 (0.002)
Spending in PLMPs (% GDP)	0.062*** (0.005)	-0.041*** (0.004)	-0.005 (0.004)	0.047*** (0.008)	-0.031*** (0.005)	-0.005** (0.002)	0.049*** (0.003)	-0.032*** (0.003)	-0.004* (0.002)
Interaction	-0.024*** (0.003)	0.018*** (0.003)	0.005** (0.002)	-0.024*** (0.006)	0.0122*** (0.004)	0.0024 (0.002)	-0.016*** (0.002)	0.011*** (0.002)	0.003* (0.002)
Constant	0.091*** (0.025)	0.638*** (0.028)	0.697*** (0.023)	0.037* (0.022)	0.183*** (0.027)	0.113*** (0.035)	0.083*** (0.022)	0.603*** (0.020)	0.654*** (0.015)
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	871	871	871	777	777	777	870	870	870
R-squared	0.891	0.948	0.945	62	62	62	63	63	63

Note. The presented statistics are coefficient estimates and robust standard errors in parentheses for the robustness analysis outlined in Section 4.2. ***(**) (*) indicates significance at the 1% (5%) (10%) significance level.

Table A.3: Results for the over-identified model estimated using GMM

	(1)	(2)	(3)	(4)	(5)	(6)
	Unemployment rate		Employment rate		Labour force participation rate	
Spending in ALMPs (% GDP)	-0.022 (0.034)	0.006 (0.032)	0.024 (0.033)	-0.007 (0.031)	0.018 (0.021)	0.003 (0.021)
Spending in PLMPs (% GDP)	0.049*** (0.011)	0.073*** (0.018)	-0.022** (0.010)	-0.041** (0.017)	0.008 (0.007)	0.005 (0.012)
Interaction		-0.033** (0.016)		0.020 (0.015)		-0.001 (0.009)
Constant	-0.410 (0.453)	-0.106 (0.189)	0.958** (0.441)	0.913*** (0.171)	0.782** (0.324)	0.911*** (0.125)
Controls	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	623	623	623	623	623	623
R-squared		0.105		0.075	0.097	0.363

Note. The presented statistics are coefficient estimates and robust standard errors in parentheses for the robustness analysis outlined in Section 4.2. The spending on ALMPs and spending on PLMPs variables are instrumented by its lagged values. *** (**) (*) indicates significance at the 1% (5%) (10%) significance level.