Effectiveness of Active Labour Market Policies in the EU Countries for the Young Unemployed People and Implications for the Post-pandemic Period

Laura Juznik Rotar

Faculty of Economics and Informatics, University of Novo mesto
Na Loko 2, 8000 Novo mesto, Slovenia
E-mail. laura.juznik-rotar@uni-nm.si

The Covid-19 pandemic has exposed vulnerability of young people in the labour market. Young people are faced with risks and an uncertain future, as well as changing the nature of labour markets. Active labour market policies are addressed as the main instrument to improve employment possibilities of young people in the light of the Covid-19 pandemic situation and its aftermath. This paper analyses the effectiveness of active labour market policies in reducing youth unemployment for the EU-26 Member States using aggregate data. Based on dynamic generalised methods of moments-GMM panel data approach, we find that active labour market policies do not support reduction of youth unemployment. Moreover, unfavourable prospects in the formal sector push young people into the informal sector. Considering the multiple shocks with which young people are being faced with, and the long-term pandemic impact, it suggests the scarring effect for young people. The analysis of the effectiveness of active labour market policy in reducing youth unemployment is of particular policy relevance, as the negative effects of the pandemic COVID-19 crisis are imminent, and the labour market situation is expected to worsen due to the fall in economic activity. Different measures of success would bring societal benefits not only from the public health perspective, but also from the perspective of well-being of young people. Moreover, OECD & European Commission (2022), in their joint policy brief, argue that investing in the growth sectors such as the circular economy, digital economy and the green economy would have the potential to employ young job seekers.

Keywords: *Young People, Youth Unemployment, Active Labour Market Policies, Effectiveness, Dynamic Panel Analysis, Covid-19*

Introduction

According to the data by Eurostat, the unemployment rate for young people under the age of 25 for the EU-27 Member States for 2020 is 17 %. Whereas unemployment rate for the adults is 7 %. Globally, youth employment fell by 8.7 % in 2020 compared to 3.7 % for adults (ILO, 2021). In the attempts to find employment, young people are also hindered by the current Covid-19 pandemic situation. Annual growth of gross domestic product for 2020 in the EU-27 Member States is estimated to fall by 6.4 %. The latest International Monetary Fund (IMF) estimates confirm the contraction in global gross domestic product (GDP) in 2020 by 3.3 %. Stefanik *et al.* (2020) argue that due to the fall in economic activity following the Covid-19 crisis, a rise in youth unemployment is expected. Indeed, youth employment is more sensitive to economic shocks than adult employment. Following the International Labour Organization (ILO) estimates, the 10 percentage point decrease in GDP converts on average into the 8.1 percentage point decrease in youth employment in comparison to the 6.3 percentage point decrease for adults. Given that young people are mostly represented in contractual arrangements featuring the so-called gig economy, which is characterised by unstable, flexible, temporary or freelance jobs, it makes them more vulnerable in the modern labour markets (Petreski *et al.,* 2021). Not only do such contractual arrangements play a noticeable role in defining the employment status of a worker, but also in many cases their active labour market policy eligibility (Romero & Kuddo,

2019). There are not only economic barriers young unemployed people face in the labour market, but also social barriers such as social exclusion, poverty, discrimination, and poor mental health (Puig-Barrachina *et al.,* 2020).

An additional problem is long-term unemployment of young people under the age of 25, remaining as the legacy of financial crisis the EU faced during the Great Recession (Eurofound, 2020). Long-term unemployment among young people has a scarring effect on their employment perspectives and well-being (Arulampalam *et al.,* 2001; Rodrigues, 2020; Szekely & Karver, 2021). Schmillen & Umkehrer (2017) have confirmed that the scarring effect of future unemployment is stronger for those young people who are faced with long-term and repeat spells of unemployment. The same conclusion can be found in a study by Shi *et al.* (2018) reporting heterogeneity of scarring effects of unemployment and a need to take into consideration how well an applicant's profile matches the requirements of the job to be filled. The authors suggest that studies of scarring effects due to unemployment should be conducted with respect to prior education, employment experience and job characteristics. Furthermore, Miyamoto & Suphaphiphat (2020) point out that the Covid-19 pandemic crisis could further increase long-term unemployment, and consequently long-term unemployment among young people.

Barslund & Gros (2017) argue that youth unemployment, like unemployment in all age groups, imposes costs on the individual and society and that this lost wealth should be estimated. There were attempts to estimate such costs.

Godfrey *et al.* (2002) and Coles *et al.* (2010) estimated the cost of not being in education, employment or training (NEET) between age 16-18, revealing high resource and public finance costs. Eurofound estimates (2012) were based on the same methodological framework as it was used by the aforementioned authors. Following the Eurofound research, total NEET costs estimated for the EU-26 Member States, comprising of total public finance cost and total resource cost, represented on average 1.3 % of the EU-26 gross domestic product.

In dealing with youth unemployment, which remains high on a contemporary worldwide policy agenda, active labour market policies (ALMPs) play an important role in helping to increase employment and reduce unemployment. Given the large resources earmarked for active labour market policy and challenges faced by economies (e.g. budget constraints, population ageing, changing nature of labour markets) complemented with the Covid-19 pandemic crisis, the question of effectiveness is pertinent (Juznik Rotar, 2021). Studies dealing with ALMPs effects can be conducted on a micro (individual) and macro (aggregate) level (Blazevic Buric & Mrnjavac, 2017). The analysis of the effectiveness of ALMPs at the micro level is based on the comparison of individual outcomes in cases of participating in employment programmes and in cases of not participating in employment programmes (counterfactual). Contrarily, the analysis of the effectiveness of ALMPs at the macro level considers aggregate impact analysis to explain the effects of ALMPs on macroeconomic variables such as youth unemployment (Hujer & Caliendo, 2000; Altavilla & Caroleo, 2006; Loi & Rodrigues, 2012; Brown & Koettl, 2015). Such evaluations contribute to evidence-based policy making and provide evidence for what works and for whom. Additionally, public funds are effectively distributed and contribute to improvements in engagement of labour in productive economic activity (Romero & Kuddo, 2019).

The aim of this research is to analyse the effectiveness of active labour market policies (ALMPs) in reducing youth unemployment for the EU-26 Member States. The main novelty of this research and its original scientific contributions comprise the following five main directions. First, the analysis of the effectiveness of active labour market policy in reducing youth unemployment is of particular policy relevance as the negative effects of the pandemic Covid-19 crisis are imminent and the labour market situation is expected to worsen due to the fall in economic activity. Second, given the lack of evidence-based policy making, it is imperative to research the effectiveness of active labour market policy to achieve effective allocation of public resources and well-being of the underprivileged group of young people in the labour market. Third, since ALMPs expenditures may affect youth unemployment rates and they in turn may affect ALMPs spending, the potential problem of endogeneity may arise. Furthermore, youth unemployment rates are dynamic over time. Following this, the dynamic GMM panel data approach is applied. Speckesser *et al.* (2015) provide overview of different studies focusing on the effectiveness of ALMPs for young people. In addition, Card *et al.* (2018) and Vooren *et al.* (2019) provide meta-analysis. There are mixed effects of whether ALMPs are effective and there is no common consensus. In our research we, therefore, test whether active labour market policy is effective in reducing youth unemployment in the EU-26 Member States. Fourth, the Covid-19 pandemic crisis has exposed the vulnerability of young people in the labour market, being faced with risks and an uncertain future especially in the informal economy. Considering multiple shocks young people are being faced with and the long-term pandemic impact, it suggests a scarring effect for young people. The global demand and supply disruption, triggered by the pandemic, not only disrupts the economy and labour markets, but also disrupts education and training, affecting the health and well-being of young people. The paper highlights the importance of the effectiveness of ALMPs for young unemployed people, facing changing nature of labour markets, and provides new recommendations for policy making in the post-pandemic period. The Covid-19 pandemic situation and its aftermath suggest the consideration of different measures of success in evaluating the effectiveness of ALMPs. Such measures are oriented towards health and social measures, besides taking into account traditionally economic oriented measures. The paper adds to this academic debate. Finally, in this paper we contribute towards widening the empirical debate on the importance of evaluating the effectiveness of ALMPs in reducing youth unemployment. This is done by applying quantitative approaches to provide an estimate of the effect of the active labour market policy variable and other control variables relevant to youth unemployment.

The remainder of this paper is organised as follows. The next section presents the literature review. The third section demonstrates the methodology. In the fourth section the results are presented and explained, whilst the fifth section discusses their importance and policy implications for the post-pandemic period. The final section derives a conclusion.

Literature Review

O'Higgins (2001) emphasizes aggregate demand, youth wages and the size of the youth labour force as the key determinants of youth unemployment. A decline in aggregate demand leads to a decline in general labour demand, and consequently to an increase in youth unemployment. Youth unemployment is often more sensitive to business cycles than adult unemployment rates (e.g. Mikalauskiene *et al.,* 2013). Macroeconomic conditions and business cycles are also considered when explaining the sensitivity of youth unemployment (Tomić, 2018; Bayrak & Tatli, 2018). It is cheaper for an employer to lay off young employees than older ones. Young people have less work experience, fewer skills and have received less investment in training and learning. Consequently, employers face less loss by making young people redundant in comparison to older workers. Eurofound (2020) confirms that young people are less likely to fall under employment protection legislation, which usually requires a waiting period before one can claim benefits. Typically, unemployment benefits increase with work experience. As a result, recently hired workers are also more likely to be laid off.

Alternatively, generous unemployment benefit systems do not bring satisfactory results. Bassanini & Duval (2007) argue that unemployment benefits may raise unemployment via two mechanisms: i) benefits can weaken the job matching process by reducing job search intensity and willingness to

accept job offers, ii) benefits may add pressure to their reservation wage and reduce vacancies by lowering the economic cost of unemployment. Wages tend to have a negative effect on youth employment, because when relative wages of young workers are higher than those of adults, there are greater incentives to hire adult workers instead of young workers. Following Layard and Nickell's model (Layard *et al.,* 2005), this would also lower the costs of employers, and consequently they no longer have to offer high wages to attract employees (Vooren *et al.,* 2019). The former argument is based on the assumption that young and adult workers are close substitutes. Whereas, if adult workers are better qualified, the wages of young workers should have no relative impact on the wages of adult workers. In such cases, both respective wages have a negative effect.

The larger the labour force cohort of young people, the more jobs are needed to meet the needs of that cohort (Caroleo *et al.,* 2018). The size of the youth labour force determines the labour supply for youth. Korenman & Neumark (1997) emphasise "cohort crowding" where larger youth cohorts face fewer employment opportunities due to imperfect substitutability between workers of different ages and wage rigidities. Bad economic conditions or low aggregate demand impact young workers more severely as they are more present amongst temporary jobs (e.g. Bessant *et al.,* 2017), more present in cyclically sensitive industries, and employers prefer to lay off recently hired workers, including young workers.

Caroleo *et al.* (2017) present a study for OECD countries for the period 1985–2012 that examines the impact of labour market and educational institutions on youth labour market performance. The authors found that the tax wedge, changes in union density, minimum wage, educational attainment, and the level of economic activity are the most important determinants of youth employability. Participation in vocational education and training also matters, although only in the short-term. Educational institutions are important, including the quality of the education system and the effective transition from school to work. According to Wozniak-Jechorek & Pilc (2020), the best solution to increase labour utilisation is skills formation and skills increase through education and training, as well as improving the utilisation of these skills.

In addition to demographic and cyclical patterns, educational institutions, labour market functioning and labour market regulation should also be considered when analysing the determinants of youth labour market performance. Based on a study by Nickell (1997) and Blanchard & Wolfers (2000), the rigidity of labour market institutions plays an important role in determining labour market performance, especially in the long run. According to the authors, labour market institutions include the unemployment benefit system, the extent of active labour market policies, the wage setting system (union density, degree of coordination), the tax wedge, employment protection legislation, and legislation strictness regarding the use of temporary contracts.

Fredriksson (2021) argues that active labour market policies (ALMPs) are the main instruments to improve employment prospects for unemployed people. This broadly corresponds to matching (public employment services),

supply-side measures (training) and demand-side measures (subsidised employment and job creation). Romero & Kuddo (2019) emphasise that ALMPs today have two interrelated and overarching objectives: i) an economic objective: to empower unemployed people to find jobs by working to increase productivity and earnings, and ii) a social objective: to achieve greater inclusion and increase participation in meaningful employment. Speckesser *et al.* (2019) provide a comparative study of ALMPs impact on both adult and young populations. There seems to be an agreement that job search and training programmes are more likely to be effective for adult populations, whereas there is no such agreement for young populations. Employment chances of young people may be affected by other mechanisms as they do not usually have sufficient work experience. Owing to this, they are therefore prevented from competing for jobs when there are sufficient adults with similar skills and experience (e.g. Michaelides *et al.,* 2021). The authors report that there are few studies that focus specifically on youth employment programmes, and they report ambiguous results.

Methodology

Data

To empirically test whether active labour market policy is effective in reducing youth unemployment in the EU-26 Member States, the data used is the macroeconomic panel data. The latter is focused on the period 2008–2018 for EU-26 Member States (Croatia and United Kingdom are not included due to randomly missing data over longer periods of time). Average youth unemployment rate in the period 2008–2018 was the highest in Spain (43.4 %), Greece (42.9 %), Italy (33.3 %), Portugal (27.7 %) and Slovakia (26.7 %). The data used for empirical research is panel data and there are several options for the estimators to be used in such research. These can include: fixed effects (FE), random effects (RE) and generalised methods of moments (GMM). According to Verbeek (2005), one of the greatest advantages of panel data is the ability to model individual dynamics. This ability is unique to panel data. To estimate the impact of public spending on active labour market policies and other control variables on youth unemployment, dynamic panel analysis is suitable since youth unemployment is persistent over time and dependent upon past youth unemployment (Caporale & Gil-Alana, 2012). To examine the persistence of youth unemployment upon past youth unemployment, the lagged dependent variable of youth unemployment rate is included on the right-hand side of the equation. Alternatively, public expenditures for ALMPs are expected to be influenced by the level of unemployment in each country and vice versa. Therefore, dynamic GMM approach is appropriate to cope with the endogeneity issue (Roodman, 2009). Based on the theoretical foundations, besides the impact of the policy variable public expenditures for active labour market policies (ALMP) on youth unemployment (URYOUNG), other control variables are included to test the effectiveness of active labour market policy. These are namely: youth population (POPYOUNG), population density (POPDEN), labour force with tertiary education (EDUTER), annual percentage growth rate of gross domestic product (GDP),

government intervention in wage bargaining (GOVINT), employment rate (EMPLOYTOTAL), temporary employed young people (TEMPYOUNG), long-term unemployment rate (LTUR), trade union density (TUD) and size of the shadow economy (INFOR). Detailed explanations of variables included in the research and the indication of data sources are presented in *Table 1*.

Table 1

Variable Description and Data Source

Variable name	Variable description	Data source
ALMP	Expenditures for active labour market policies measured as % of GDP	Directorate-General for Employment, Social Affairs and Inclusion (DG EMPL) [lmp_expsumm]
URYOUNG	Unemployment from 15 to 24 years as a percentage of active population	Eurostat [UNE_RT_A]
INFOR	MIMIC index measure of the size of the shadow economy	Medina and Schneider (2019)
GOVINT	Government intervention in wage bargaining measured on a five-point scale from 1-liberal to 5-centralised	Visser (2019) ICTWSS Database
POPYOUNG	Population from 15 to 24 years as a percentage of total population	Eurostat [DEMO_PJANGROUP]
POPDEN	Population density is midyear population divided by land area in square kilometres. Population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship.	World Bank World Development Indicators
EDUTER	The percentage of working age population with an advanced/tertiary level of education who are in the labour force.	World Bank World Development Indicators
GDP	Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2010 U.S. dollars.	World Bank National accounts data
EMPLOYTOTAL	Employment rate of people aged 15 to 64 in employment as a percentage of total population in the same age group.	Eurostat [TESEM010]
TEMPYOUNG	Temporary employed young people from 15 to 24 years in thousand persons.	Eurostat [LFSA_ETGAED]
LTUR	Long-term unemployment rate as a percentage of active population.	Eurostat [TESEM130]
TUD	Trade union density is the ratio of wage and salary earners that are trade union members to the total number of wage and salary earners in the economy.	OECD

Source: Authors' collected data.

Youth unemployment is expected to be influenced in part by aggregate demand which is operationalized by the growth rate of gross domestic product. Theoretically, higher aggregate demand is expected to have a negative effect on youth unemployment, although this effect could be delayed. General macroeconomic conditions are also being operationalized by the employment rate and long-term unemployment rate. According to Card (2001), the probability of being unemployed tends to be associated with different educational attainment. People with higher educational attainment tend to have lower unemployment rates than people with lower educational attainment (Riddell & Song, 2011). To account for labour market flexibility and wage bargaining system variables, temporary employed young people and government intervention in wage bargaining is included in the specification to capture the legal and administrative structure of the labour market (Griffith *et al.,* 2007; Stockhammer & Klar, 2011; Flaig & Rottmann, 2013). Labour markets with lower flexibility tend to prevent job creation and increase labour market rigidity. Inflexible labour market institutions have been shown to be correlated with higher unemployment rates (e.g. Caroleo *et al.,* 2018). Consequently, the expected sign of temporary youth employment is negative (higher labour market flexibility should lower youth unemployment rates), whereas the expected sign of government intervention in wage bargaining is positive (more centralised wage bargaining systems are expected to increase youth unemployment rates). To account for political factors in explaining youth unemployment, trade union density variables are included in the specification. Ineffective institutions cause unemployment. Montgomery (1989) suggests that trade union density unfavourably affectsunemployment rates, whereas Addison (2020) argues that evidence of a trade union effect is mixed. The variable size of the shadow economy is based on the MIMIC (multiple indicator and multiple cause) estimation procedure and is expected to have negative signs. Authors report that higher rates of unemployment could lead to employment in the informal economy, because unemployed people who cannot find a job in the formal sector may look for jobs in the informal sector and vice versa (Goel & Saunoris, 2017; Berdiev *et al.,* 2020; Zitkiene *et al.,* 2016). Due to potential reverse causality, the variable size of the shadow economy is treated as endogenous. In order to control potential demographic factors on youth unemployment, the specification includes youth population and population density as suggested by Cvecic & Sokolic (2018), although the expected sign of these variables is ambiguous (Biagi & Lucifora, 2008). Descriptive statistics of variables included in the specification are presented in *Table 2.*

Table 2

Descriptive Statistics

Variable name	Obs.	Mean	Std.dev.	Min	Max
URYOUNG	286	21.183	10.183	6.200	58.300
ALMP	283	0.422	0.304	0.019	1.427
POPYOUNG	286	11.937	1.431	9.052	16.192
POPDEN	286	177.663	259.345	17.484	1514.469
EDUTER	286	78.948	3.475	72.597	85.859
GDP	286	1.450	3.773	-14.838	25.162
GOVINT	282	1.992	1.106	1.000	5.000
EMPLOYTOTAL	286	65.348	6.042	48.800	77.900
TEMPYOUNG	286	271.375	474.060	2.300	2419.100
LTUR	286	4.030	3.146	0.500	19.500
TUD	205	27.693	20.620	4.300	71.100
INFOR	260	16.754	5.820	6.400	27.400

Source: Authors' calculations.

Methods

Since the aim of the research is to analyse the effects of ALMPs on youth unemployment rates, it is unlikely that the assumptions of strict exogeneity of ALMP policy variable and the absence of autocorrelation in the error term hold. The problem of unemployment and other labour market problems are accompanied by a stronger policy response; thus being a challenge to identify the impact of policy on the labour market. ALMP spending can affect unemployment rates, but the unemployment rates can also affect ALMP spending. Therefore, the potential problem of endogeneity may arise. On the other hand, youth unemployment rates are dynamic over time, with the level in the previous year most likely to be similar to the level in the current year. Including lags of the dependent variable in the model which would capture the dynamic process (Speckesser *et al.,* 2019). Therefore, the selection of estimation procedure is based on overcoming the mentioned problems. The choice of estimator is the difference of the GMM dynamic panel data estimator suggested by Arellano & Bond (1991), Arellano and Bover (1995), and Blundell & Bond (1998).

To analyse the effects of ALMP on youth unemployment rates, we estimate the following equation:

$$y_{it} = \alpha y_{i,t-1} + \beta x'_{it} + u_{it}$$

with $i = 1, \ldots, N$ and $t = 1, \ldots, T$. In the specified equation y_{it} represents dependent variable youth unemployment rates, $y_{i,t-1}$ represents lagged dependent variable, x'_{it} is a vector of explanatory policy and control variables (expenditures for ALMPs, youth population, population density, labour force with tertiary education, annual percentage growth rate of GDP, government intervention in wage bargaining, employment rates, temporarily employed young people, long-term unemployment rates, trade union density and size of the shadow economy), u_{it} is a composite error $u_{it} = u_i + v_{it}$

consisting of the time invariant fixed effects $u_i \sim iid\ (0, \sigma^2_u)$ and unobserved heterogeneity $v_{it} \sim iid\ (0, \sigma^2_v)$, α and β are parameters to be estimated.

In the case of samples that have shorter time periods (*T*) compared to the number of groups (*N*), Roodman (2009) suggests that the GMM estimator is a suitable methodological approach. Whereas the number of groups lower than 20 would present issues of concern. The data used for this research is unbalanced panel data for the period 2008-2018 for the EU-26 Member States. Therefore, the time dimension (*T*) is 10 years, and the number of groups (*N*) is 26 countries. Despite some advantages of the system GMM estimator found in Arellano & Bover (1995), Blundell & Bond (1998) and Roodman (2009), this estimator was not considered feasible for this empirical research. This was because it uses a higher number of instruments compared to the number of countries. Consequently, as the difference GMM estimator uses fewer instruments, it is being used in this research besides one-step robust standard errors with small sample correction. Additional tests are being implemented to check the robustness of the obtained results. First, we reduce the baseline model to the parsimonious form; these consist exclusively of variables with statistically significant coefficients. Secondly, a pooled ordinary least squares (POLS) estimator with robust standard errors is also being used. In terms of robustness checks, both approaches in the general report identically estimate the sign and significance of variables (*Table 3*). The number of lags is limited to 2 for the baseline and for the reduced model.

Results

The estimated results for the baseline model (GMM), the reduced model (GMM) and POLS model are presented in *Table 3*.

Table 3

Estimation Results

Dependent variable: URYOUNG			
Variable	**Baseline model (GMM)**	**Reduced model (GMM)**	**POLS**
URYOUNG$_{t-1}$	0.150* (0.201)	0.281* (0,151)	-
ALMP	11.939* (5.983)	6.167 (7.064)	5.257*** (0.855)
POPYOUNG	-0.624 (0.643)	-	-0.947*** (0.204)
POPDEN	0.067 (0.207)	-	-0.007*** (0.001)
EDUTER	0.437* (0.247)	0.501** (0.243)	0.751*** (0.085)
GDP	-0.285** (0.091)	-0.242** (0.099)	-0.320*** (0.075)
GOVINT	0.411 (0.373)	-	-0.608** (0.257)
EMPLOYTOTAL	-1.174** (0.333)	-1.391*** (0.244)	-0.988*** (0.079)
TEMPYOUNG	-0.013* (0.007)	-0.016* (0.009)	0.001 (0.004)
LTUR	1.505 (0.983)	-	1.916*** (0.176)
TUD	-0.190** (0.064)	-0.386** (0.160)	0.088*** (0.016)
INFOR	-0.562* (0.300)	-0.331 (0.309)	-0.224*** (0.065)
AR(1) (*p*-value)	0.291	0.185	-
AR(2) (*p*-value)	0.645	0.284	-
Sargan test	0.999	0.680	-
Difference-in-Hansen test	0.981	0.781	-
Nr. of observations	142	142	188
Nr. of instruments	24	21	-
Countries	26	26	26

Notes: ***Significance level at 1 %, **Significance level at 5 %, *Significance level at 1 %. Robust standard errors in parentheses. *Source:* Authors' calculations.

The F-test for all three models is reported. The *p*-value of zero shows that null hypothesis (all of the slope parameters are jointly zero) should be rejected for all three models (baseline model (GMM): F=63.63, p-value=0.000; reduced model (GMM): F=63.31, p-value=0.000; POLS: F=144.72, p-value=0.000). The Arellano-Bond test for the serial correlation AR(1) tests the null hypothesis of no first order autocorrelation in the first differences equation. The hypothesis is not rejected. The Arellano-Bond test for the autocorrelation AR(2) tests the null hypothesis of no second order autocorrelation in the first differences equation. The hypothesis is not rejected. The Sargan test has a null hypothesis expressed as the instruments as a group are exogenous. The hypothesis is not rejected. Finally, the difference-in-Hansen test tests the exogeneity of instrument subset. The null hypothesis is not rejected.

The results in *Table 3* suggest that the lagged youth unemployment rate is statistically significant and positive, which confirms persistence in youth unemployment, examined also in literature (e.g. Caporale & Gil-Alana, 2012). The variable of interest ALMP is statistically significant and positive, which indicates ineffectiveness of active labour market policy in reducing youth unemployment in the EU-26 Member States. To control potential demographic factors in youth unemployment, youth population and population density were included in the model, but were proven not significant. Tertiary educated labour force is statistically significantly, and positively related to youth unemployment rates. As expected, growth rates of GDP are statistically significant and negative, indicating that the higher the growth rate of GDP, the lower the youth unemployment rate. Variables of government intervention in wage bargaining and long-term unemployment rates are not found significant, whereas employment rates are statistically significant and negative, indicating that the higher the employment rate, the lower the youth unemployment rate. Negative and statistically significant variables of temporarily employed young people reflects higher labour market flexibility, therefore reducing youth unemployment rates. Variable trade union density is statistically significant and negative, which may be the result of trade unionisation decline, especially amongst

young people and trade unions striving to recruit, organize and represent young people. Finally, the negative and statistically significant variable size of the shadow economy reflects that young people tend to search for jobs in informal sectors if they are not able to find a job in the formal sector.

Discussion and Implications for the Post-Pandemic Period

Youth unemployment remains high on the contemporary worldwide policy agenda. Active labour market policies are seen as the main measures to improve employment possibilities for young unemployed people. Results suggest that active labour market policy is not effective in reducing youth unemployment in the EU-26 Member States. Similar conclusions can be found in Larsson (2003), Kluve (2010), Hardoy (2005). It is therefore appropriate to consider a careful design of youth employment interventions aiming to improve employment prospects for young unemployed people, to provide incentives for participation of youth, as well as to provide relevant profiling mechanisms and strategies to stimulate service providers to act effectively (Caliendo & Schmidl, 2016). Additionally, there seems to be disproportionate emphasis between supply and demand-side interventions to assist youth in the labour market. Romero & Kuddo (2019) report the absence of demand-side interventions that support firms to expand and increase labour demand either by creating jobs or supporting the creation of new firms. The challenge of reducing youth unemployment is more related to strengthening economic growth, structural reforms and improving business environments. Namely, it has become evident that generous social protection systems make employment policies inefficient (Juznik Rotar, 2021).

Consequently, Puig-Barrachina *et al.* (2020) argue that contextual factors matter. This includes models of activation that refer to policy strategies to reduce unemployment and social protection systems for the unemployed. As part of a work-first model, individuals are encouraged to seek for a job first and are offered quick information and matching services. Work-first models promote individuals to be active and accept any job offered. On the other hand, universal models are based on more generous social protection for unemployed people and it is not imperative that individuals accept any job they are offered. Following labour market institutional factors, research results also suggest that the rigidity of the labour market institutions are a significant factor in explaining youth unemployment. In addition, recovery from the pandemic Covid-19 crisis is expected to be faster in countries that follow a more liberal welfare regime (OECD, 2021). Moreover, Van der Klaauw & Ziegler (2019) suggest temporary work to improve chances of finding regular work in the short run, whereas in the long run such work is not seen as being progressive towards regular employment.

In the context of educational institutions, the quality of education system is also important, as is the effective transition from school to work. These systems should be more oriented toward the needs of the labour market and provide high quality education. In terms of avoiding the status of being unemployed, young people often enter tertiary education. The share of tertiary education is increasing in many countries, yet there is a problem of labour market mismatches resulting from mismatches between employee qualifications and job requirements or not making use of employee qualifications at work (Sloane & Mavromaras, 2020). Evidence suggests that earnings of overeducated individuals are lower than those who work in a well-matched job (da Silva Marioni, 2021), and that there are cross-country variations in youth overeducation rates (Delaney *et al.,* 2020). Moreover, if overeducation is detected as being persistent, governments should strive to reform educational programmes (Sánchez-Sánchez & Fernández Puente, 2020). In addition, the Covid-19 pandemic crisis has rapidly initiated the transition from school-based learning to online learning. The ILO projects that the total market for online education will reach $350 billion by 2025. New technologies have unprecedented potential, and the pandemic provides an opportunity to develop more flexible learning solutions that accelerate the acquisition of digital skills. The growing trend of transforming jobs into digital jobs is evident, as is the growing interest in digital jobs. The digital economy requires different digital skills, and lifelong learning is critical in today's changing world. Education plays a prominent role in developing greater resilience in skills (e.g. Gudanowska *et al.,* 2020). The education and labour markets should evolve at the same pace to meet the demands of changing economic conditions, environment and social change. This facilitates the transformation of educational institutions to offer more flexible learning solutions relevant to youth in the form of online courses and micro-master's degree programmes.

In contrast, unfavourable employment prospects in the formal sector push young people into the informal sector, reducing youth unemployment, as shown by the results of this study. Tax systems in combination with social protection systems should be effectively addressed. The above systems interact directly with the distribution and redistribution of income and wealth through taxes and transfers. To avoid erosion of tax revenues, the two aforementioned systems should work together to achieve sustainable goals. The ILO estimates that about 1.6 billion workers in the informal economy are affected by the Covid-19 pandemic crisis. Among them, young people are particularly affected as they are overrepresented in the informal sector that requires contact (e.g. commerce, restaurants) and are therefore exposed to occupational health and safety risks. A new trend towards e-formality is emerging, using digital technologies to support the design and implementation of e-formalisation activities. The pandemic crisis has pushed digitalization to a rapid pace towards e-government, which refers to the digitalization of public services supporting the transition to formality. According to ILO, there are several directions towards formality: i) creating productive employment, ii) formalising informal workers and enterprises, and iii) preventing informalization of the labour market, which can be achieved by increasing productivity, better standards and regulations, incentive schemes, etc. Formalisation of the labour market has emerged as a new issue for which the role of social partners and tripartite social dialogue is of paramount importance and needs to be implemented in an

integrated approach and people-centred recovery from the Covid-19 pandemic crisis (ILO, 2021a).

Moreover, the material and psychological distress caused by unemployment has a significant impact in the post-pandemic period. Especially in the second quarter of 2020, the pandemic crisis affected economies around the world due to the economic shock, which had a significant impact on labour markets. Countries responded to the lockdown and other containment measures on a global scale with fiscal stimulus packages and other policy measures. In addition to already strained health systems and job losses, ALMPs should alleviate the negative effects of unemployment. It is therefore important that policy makers include health and well-being as a measure of success in evaluating the effectiveness of ALMPs (Sage, 2015; Ivanov *et al.,* 2020). Such an approach brings societal benefits from the perspective of public health and other public policies, as well as from the perspective of labour productivity and promoting effective use of public resources (e.g. Barro, 2013). In terms of health and well-being, researchers argue that ALMPs should mitigate the negative effects of unemployment through various psychosocial mechanisms and thus improve health and quality of life (e.g. Puig-Barrachina *et al.,* 2020). One of the most influential theories is Jahoda's latent deprivation theory, according to which employment fulfils various psychological needs (Jahoda, 1982). Employment not only fulfils material needs that are met by income, but also 'latent functions' that are side effects of employment, namely time structure, social contacts, collective goals, social identity/status and activity. Consequently, the psychological effects of unemployment are destructive in terms of uncertainty about the future work situation, risky health behaviours and poorer health. Fryer (1986) posits the alternative theory of an increasing sense of control (such as empowerment, self-esteem, self-confidence) that may be associated with improved health.

In fact, the pandemic Covid-19 crisis actually facilitated the transformation of labour markets. Socio-economic disruptors such as technological advances, economic integration, social and demographic changes (e.g. Romero & Kuddo, 2019) are affecting jobs and skills required for the work to be done, leading to a departure from traditional contractual arrangements. This is especially true for young people who have experienced various economic and social shocks so far in their lifespan. The pandemic crisis has led businesses and consumers to rapidly adopt new behaviours that are likely to persist. It has encouraged rapid digitalization, which requires people to retrain and upskill. Grigorescu *et al.* (2021) confirm that in the CEE countries the digitization of the economy and the developed human capital will ultimately lead to the increase of population's welfare. The constant evolution of technical skills requires young people to continually develop soft and social skills. Given the increased risk and uncertainty of the transitions that all young people go through, it is appropriate to ask how young people plan their careers and what their expectations for their lives are. Chacaltana *et al.* (2019) argue that the first job appears to have an impact on how individuals plan their lives. The digital and green transformation and circular economy offer potential to young people (OECD & European Commission; Chateau & Mavroeidi, 2020; Masenya, 2021), while the changing nature of labour markets requires a resilient ALMP system that is able to design and implement labour market policies to prevent negative welfare effects. The summary of discussed aspects denoting dimension and associated terms is presented in *Table 4*.

Table 4

Discussed Aspects Denoting Dimension and Associated Terms

Dimension	Associated terms
Economics dimension	Trade unionisation, trade unions, active, labour market policy, strengthening of economic growth
Business-management-entrepreneurial dimension	Structural reforms of improving business environments
Social dimension	Social protection for unemployed people, educational institutions/education systems, the distribution and redistribution of income and wealth through taxes and transfers
Technology dimension	New technologies of unprecedented positive potential of growing interest in digital jobs
Environmental dimension	Circular economy, 5 Rs management including refuse, reduce, reuse, repurpose and recycle focusing on the prospects of young workers' active participation in such actions of managerial and environmental impact
Pandemic-healthcare policies dimensions	Pandemic crisis affected economies around the world, health and well-being measures, green transformation challenges

Source: Authors'.

Conclusion

In this research, the macroeconomic panel data for the EU-26 Member States was used to analyse the effectiveness of active labour market policies in reducing youth unemployment. A dynamic GMM panel data approach was applied. The variable of interest ALMP is statistically significant and positive, which indicates ineffectiveness of active labour market policy in reducing youth unemployment in the EU-26 Member States.

Evaluations of employment programmes and interventions in many cases do not allow policy-makers to draw evidence-based conclusions regarding their effectiveness and efficiency. Accordingly, the European Commission

encourages Member States to increase their efforts to develop credible evidence on the impact of interventions, which is also the global trend. The paper makes a unique contribution to theory and development by strengthening the quality of impact evaluations towards applied quantitative methodologies, to enable evidence-based policy decisions and develop reliable evidence of added value for the underprivileged group of young people in the labour market. In addition, the research addresses the need to focus on young people in the labour market and ALMPs as the main instrument to improve employment possibilities of young people, especially in the light of the current Covid-19 pandemic situation and its aftermath. A resilient ALMP system, which is able to design and implement a labour market policy to prevent negative welfare effects, is therefore necessary.

All in all, countercyclical fiscal policies with strongly evolving labour market policies should continue to help young people gain work experience and recover from the short- and long-term effects of the pandemic. The emerging trend towards e-formality can provide some optimism to young people who are overrepresented in the informal economy. Moreover, digitalization makes public institutions more accessible, transparent, effective, and sensitive to people's needs. In terms of evidence-based policy making and effective use of public funds, it is recommended that the measures of success for evaluating the effectiveness of active labour market interventions are expanded to include the impact on health and well-being, which is of paramount importance in the post-pandemic period. The recommendation for policy is to invest in growth sectors, such as the circular economy, digital economy and the green economy that have the potential to engage young jobseekers in the post-pandemic period, which should be complemented by education policies that focus on quality education, changing labour market needs and developing more flexible learning solutions. The research is limited by the timeframe and by the included countries. Grouping countries in terms of the labour market situation by cluster analysis and including labour market policy expenditures by type of intervention is seen as orientation for future research.

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Authors' Biographies

Laura Južnik Rotar is an Associate Professor of Economics at the Faculty of Economics and Informatics University of Novo mesto. She received her PhD degree from the Faculty of Economics, University of Ljubljana. She has published in refereed journals, such as Panoeconomicus, Eastern European Economics, Economic Research. She has been involved in several research projects on national and European level. Research field: labour economics, effectiveness of ALMP, youth unemployment, SME, decision models.