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ACTIVE LABOUR MARKET POLICIES AND YOUTH UNEMPLOYMENT AMONG EUROPEAN COUNTRIES

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ABSTRACT

Youth unemployment in Europe has become a significant source of concern among European politicians and policymakers at the national level. Active labour market policies have emerged as one of the most important foundations of the European Union Council, and they are highly reccomended as a set of tools for improving employment and tackling unemployment. The aim of this thesis is to analyse to what extent is youth unemployment affected by active labour market policies among 27 European countries for the time span 2010-2019. In this thesis, the short-run relationship between expenditures of three active labour market measures and youth unemployment in Europe is examined. For this purpose, the fixed effects model is applied. The results suggest that there is a negative relationship between the expenditure on direct job creation and youth unemployment.

Keywords: Active labour market policies, youth unemployment, NEET, expenditures, fixed effects model, panel data

INTRODUCTION

A major feature of the severe social and economic inequalities is unemployment. Involuntary unemployment may be destructive and transformative at any age but its impact is especially disadvantageous for young people. (Fergusson, Yeates 2021) Despite periodic recessions and brief disruptions to continuous and compounding economic expansion, nearly every year more people work throughout the world to produce more products and services than ever before. Nonetheless, there are still people looking for a job, even in times of continuous economic recovery and expansion (Boland, Griffin 2021) Work can be viewed as uniquely human quality that is essential for material subsistence and, also for psychological needs and sociability. For a personal identity, the job plays a central role giving structure and purpose to the day. The workplace provides opportunities for socialisation and friendships, which often can be a core component of social capital. (Boardman, Rinaldi 2021)

Over the last two decades, the labour market has changed. For individuals and for young employees, in particular, new technologies have transformed the structure of labour markets. At the same time, a larger share of young people are better educated compared to decades ago. While new technologies necessitate a higher level of education, the employment situation for young employees remains bleak. As the relationship between labour, capital and skills shifts, the number of employees required to produce a unit of output decreases and young people are left jobless despite their higher education. (Chacaltana, Fasgupta 2021) Young people in Europe frequently experience labour market exclusion in terms of periods of unemployment and episodes of not working, studying, or training (NEET). Furthermore, even if young people do find work, they frequently suffer employment instability in the form of temporary positions. (Unt et al. 2021)

Young people belong to the most vulnerable groups in the labour market. It is necessary to address the problem and provide solutions through specific programs that are targeted at them to ensure that they have access to employment opportunities, thus reducing the youth unemployment. (Lambovska et al. 2021) Policy interventions can reduce the recognized detrimental effects of labour market exclusion on individuals' economic situations by buffering the impact of income

loss or low income associated with unemployment. One of the main measures against employment-related exclusion are active labour market policies (ALMPs). (Unt et al. 2021) ALMPs have been widely adopted and since the 1990s, those policies have evolved from a focus on human capital investment to a more limited view of flexicurity (Jongbloed, Giret 2021). Flexicurity combines a flexible labour market with high income security, reduced job protection with substantial benefits and a greater focus on ALMP, with the goal of safeguarding workers rather than jobs. (Bellia 2021) To avoid young people from feeling trapped in temporary unskilled jobs, unemployment and programs, effective and ALMPs targeted at the youth are required to enable a smooth transition between education and work. (Rotar 2021) Moreover, ALMPs have become one of the most significant foundations of the European Union (EU) Council and are highly recommended as a collection of instruments to improve employment and combat unemployment (Baião, Buligina 2021).

The aim of this thesis is to explore the relationship between ALMPs and youth unemployment.

There is scarce data on the quantitative effect on the use of various active labour market policies on youth unemployment across the Europe. This thesis adds to other studies by looking into the relationship between expenditures on different ALMPs and youth unemployment. The author opted to assess the quantitative effects of specific active labour market measures for youth unemployment using aggregate data, while adjusting for other institutional variables relevant to youth unemployment, due to the difficulties of obtaining a consistent data at the individual level.

The main question assessed is:
To what extent is youth unemployment affected by active labour market policies?

To answer the main question, the following hypotheses are tested:
H1: Youth unemployment and the expenditure on training are negatively related.
H2: Youth unemployment and the expenditure on direct job creation are negatively related.
H3: Youth unemployment and the expenditure on supported employment are negatively related.

To answer the research question and to test the hypotheses, the thesis is structured as following: There are four chapters: In the first chapter, the author gives an overview of youth unemployment. To have a deeper understanding of the topic, youth unemployment causes, and consequences are discussed.

In the second chapter, the author discusses active labour market policies, and gives an overview of previous studies. The data and methodology used are described in the third chapter. It provides an overview of the variables selected for the analysis, justification for their choice, the logic underlying the chosen sample and the model on which the analysis is based.

The fourth chapter explains the empirical part of the thesis. To perform the empirical analysis, the author uses unbalanced panel data for 27 European countries for the time span 2010-2019 and adopts a fixed effects model. The data is collected from the databases of Eurostat and Organization for Economic-Cooperation and Development (OECD). For the analysis, the statistical software RStudio is used. The results are presented and discussed and furthermore compared with the results from the previous literature.

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1. YOUTH UNEMPLOYMENT, ITS CAUSES AND CONSEQUENCES

In this chapter, the author will give an overview of the concept of youth unemployment, its causes and consequnces.

1.1. Youth unemployment

The efficiency in allocating peoples own time and skills is the subject of labour economics. The labour markets' goal is to balance supply and demand. In an ideal economy, labour supply reorganizes itself to meet the demand, shifting from one set of skills to another and from one area to another in order to clear the global labour market. In order to get inexpensive and appropriate labour supply, demand for labour may shift between nations and industries. Prices should drive the global process, as the price system brings supply where demand is plentiful and *vice versa*. There may be, however, instances where the pricing system fails to provide that goal, at least in the short and medium term, resulting in labour unemployment and capital underutilization. (Jagannathan 2021). Unemployment, according to human capital theory, is defined as a wasted opportunity in acquiring job-relevant skills and knowledge (Becker 1962). Researchers typically view youth unemployment to be a type of general unemployment rather than a discrete phenomenon of the labour market, thus youth unemployment may be approached as a problem of the labour market, with appropriate attention for its trends, phenomena, and peculiarities, but for a distinct demographic group such as the youth. (Abzhan et al. 2020)

Youth is a ambiguous concept that reflects the social construction of historical processes to some extent (Wallace, Bendit 2009). According to United Nations Educational, Scientific and Cultural Organization (UNESCO), youth is the period during which a person develops capabilities and social skills necessary to be prepared for the financial gain and responsibility that adulthood brings. As a result, youth may be seen as a period of life with distinct social, economic, psychological, and political features, rather than a set of age limits. (Tekindal 2016). The age range targeted for

youth and social policy intervention is extremely diverse across European countries. Austria, Belgium, Germany and Finland are among the countries that have a broad definition of age, spanning from birth to 25 or 30 years old. Ireland, the Netherlands and Luxembourg are among the countries having a youth definition extending from early elementary school to 25 years. France, Iceland, Norway and the United Kingdom have a limited definition of youth, ranging from 11-13 years to 25 years. Denmark, Spain, Greece, Portugal and Sweden have also a relatively limited definition of youth, defined as individuals between the end of lower secondary education and the age of 25 or 30. (Wallace, Bendit 2009)

The key variables on youth unemployment are the unemployment rates and unemployment ratios for persons aged 15-24. Unemployment ratios indicate the number of jobless 15-24 year olds as a percentage of the total population of that age group, whereas the unemployment rate is proportional to the size of the labour force (i.e the active population). (Speckesser et al. 2019) Unemployment rates are macroeconomic indicators for describing a country's economic health. The unemployment rates of different age groups in the active labour force can be distinguished and the unemployment rates of the younger generation might range significantly from those of the overall working population or older generations. (Oesingmann 2017) For much of the decade unemployment rates among under 25 rose more than 20 percent in the EU. Despite a long-term reduction in young peoples engagement in the labour market, high youth unemployment has persisted, owing it part to a long-term trend toward an increasing proportion of young people staying in edcuation for a longer period of time. (Russell, O'Connell 2001)

In the early aftermath of the Great Recession (2008–2009), youth unemployment in Europe surged, particularly in nations with severe financial difficulties. Youth in Southern Europe (Portugal, Spain and Italy), Ireland, and the Baltic states were particularly badly impacted. For other countries, this was not a recent issue. They had battled with the challenge of properly integrating young people into paid labour for decades before the crisis. (O'Reilly et al. 2019) As a result of the previous financial and economic crisis, young unemployment rate increased substantially and reached 24.4 percent in 2013, the highest percentage in the EU 27's history. (Tamesberger, Bacher 2020) The fact that youth unemployment peaked five years following a recession demonstrates the long-term impact of an economic downturn on the labour market for young people, as well as the need of swift and comprehensive policy responses at the national and supranational levels. (Bacher, Tamesberger 2021) Youth unemployment rates in the EU remained almost one percentage point higher in 2017 than they had been in pre-recession 2007, at 16.8 percent. Long-term

unemployment rates for young people was at 28.1 percent (2017), still higher than 2007. (O'Higgins, Pica 2020). Between 2019 and 2020, youth unemployment in the EU-27 grew from 4.7 to 5.1 million, representing an increase of roughly 400,000 young jobless persons (Bacher, Tamesberger 2021).

In 2020, followed by the COVID-19 crisis, the unemployment rate for 15-24 year-olds started to rise. The highest rates can be observed for some mediterranean countries: Spain, Greece, Italy and Croatia. These countries have also shown a longer adjustment in terms of youth unemployment rates since the last financial crisis (Appendix 2). In emerging and developing economies, youth unemployment is approximately twice as sensitive to demand circumstances as adult unemployment, emphasizing the necessity of timely countercyclical intervention. For each percentage point cyclical decline in real production, the youth unemployment gap in these economies rises by roughly a quarter of a percentage point. (Ahn 2019)

Several cultural developments, such as greater global competitiveness and national economic restructuring, have disproportionately impacted younger generations. Furthermore, youth transitions have grown not only significantly longer but also de-standardised in recent decades, prompting researchers to label them as "yo-yo" transitions. The latter implies that young people oscillate between several states, such as educational programs and employment and that changes in one area may be accompanied by setbacks in others. (Unt et al. 2021) Only a small percentage of school graduates and university graduates can obtain a secure and satisfying employment right away. The others endure unemployment or frequent work changes, as well as recurrent periods of unemployment. (Flek, Mysíková 2016)

Youth unemployment is a serious problem in most industrial countries, because young people are more likely than adults to be jobless, and their early career is a particularly tumultuous and unpredictable phase for them. This susceptibility is not limited to the acquisition of a first job, since many first occupations are insecure and for short-term. Despite these commonalities, there are significant variations in the risks of young people being unemployed and their chances of later escaping unemployment from country to country. (Russell, O'Connell 2001)

1.1.1. The concept of NEET

Concerned about the risk of a "lost generation" and seeking to better understand the complexities of youth disadvantage, researchers and government officials began to use the concept of NEETs

to estimate the prevalence of labour market vulnerability among young people (O'Reilly et al. 2019). The concept was founded in the late 1990s in the United Kingdom, where it addressed young people who were under the age of 18 and who were removed from the unemployment statistics. (Kleif 2021) The idea of the NEET has been more popular in the discussion over the diagnosis of labour market integration difficulties encountered by European young people and the measures to be adopted. This concept looks beyond the traditional unemployment statistic, concentrating on the vulnerabilities of young people transitioning from education to work. This broader emphasis would allow for better policy design that allocates resources to individuals who are the most vulnerable in terms of labour market integration. (Malo et al. 2021) Nowadays, NEET is a central indicator in order to monitor the labour market and social situation of the young adults within the European Union (Kleif 2021).

There is no worldwide standard for defining NEETs, according to the International Labour Organization (ILO). This term is commonly defined as a rate and mainly, as proportion of the population of a particular age who is unemployed and not pursuing additional education or training (Malo et al. 2021) The term "NEET" has long been challenged because it denotes an overly broad and fragmented group that fails to adequately describe the issues faced by young people transitioning to adulthood. Heterogeneity refers to the fact that this group may practically contain both young people who are unemployed and out of school but are actively looking for work, as well as individuals who are virtually secure in their position but are not making the necessary steps to improve their situation. While the acronym "NEET" may encompass young people at danger of marginalization in modern society in general, there is no agreed-upon practical definition for this notion. (Ripamonti, Barberis 2021) The NEET category expands on the narrow definition of youth unemployment to include a wide range of youth vulnerabilities, including the economically inactive – unemployed and discouraged workers – as well as those who appear to be completely inactive and are seen as occupying an unconstructive (and potentially dangerous) position in the social topography. This is especially important considering the extended transition to adulthood we have seen over the last 20 years, which has delayed many young people's move from school to employment and increased the complexity of life-course patterns. (Contini et al. 2019)

The NEET rate for 14-25 year-olds varies considerably throughout Europe (Jonsson *et al.* 2021). In 2010, the highest NEET rates were in North Macedonia (25.5 percent), Serbia (20.4 percent), Bulgaria (21.0 percent), Ireland (19.4) and Italy (19.0 percent), while the EU-27 average was 12.7 percent. The lowest rates in 2010 were in the Netherlands (4.8 percent), Switzerland (4.9 percent)

and Luxembourg (5.1 percent) (Appendix 3). According to the most recent Eurostat statistics, in 2020 the NEET rate for 14-25 year-olds ranges from approximately 4–10 percent in the Nordic nations, including Sweden, to about 15–20 percent in southern countries (Italy, Greece, Serbia). In the Baltic states, the rate ranges from 7-10 percent. (Appendix 3) The problems that this group of young people and specific sub-groups face, have grown more evident in light of the ongoing COVID-19 epidemic. (Jonsson et al. 2021)

Half of all young NEETs in Europe are classified as inactive, meaning they are not actively looking for employment or training. Inactive young people appear to be even further removed from the labour market, as they face various barriers that prevent them from actively looking for work or make them unsuitable for employment. (Assmann, Broschinski 2021) Inactive NEETs may not have a desire to obtain a job. Alternatively, they may encounter specific challenges in having a job due to other obligations or being disabled, and/or there may simply be (or be seen to be) no suitable employment available (O'Higgins 2019) Most idle young NEETs are not registered as unemployed, making it difficult for public agencies to reach them. As a result, applying labour market policy instruments typically used to tackle youth unemployment for the NEET group may be insufficient. (Assmann, Broschinski 2021) Education may not always have a beneficial impact. Vulnerability is caused not just by individual or familial traits, but also by educational and labour-market institutions that fail to provide possibilities for significant groups of young people. (Buheji 2019)

1.3. Causes of youth unemployment

The health of the economy as a whole is one of the most important factors of youth employment. When the overall level of economic activity and the level of adult employment are both high, youth employment is likewise high. Quantitatively, youth employment appears to be one of the most highly sensitive variables in the labour market, rising significantly during periods of high economic activity and dropping significantly during periods of low activity. (Freeman, Wise 2007)

The link between unemployment and gross domestic product (GDP) growth can be described from a demand side perspective in economic theory, which states that changes in aggregate demand drive enterprises to adjust their own production goals. This will have an effect on labour demand

and, as a result, on the unemployment rate. According to this theory, a negative GDP shock reduces labour demand and, as a result, raises unemployment. (Hutengs, Stadtmann 2014). Apart from fluctuations in GDP, the level of GDP itself is significant since it represents the state of development of a country and serves as a proxy for average pay levels. If GDP per capita is believed to represent a proxy for average labour costs proportionate to those of young and adult groups, it is likely to stay positively associated with youth (and adult) unemployment. High labour costs may deter businesses from expanding their workforce and stimulate rationalization-oriented initiatives, such as boosting staff productivity. As a result, businesses will be hesitant to hire young individuals who lack relevant job experience. (Bal-Domańska 2021)

The overrepresentation of young individuals in unemployment is a common prediction of the conventional search and matching model. When employees initially enter the labour force and are looking for suitable matches, labour market frictions result in a slower transition into employment and increased job turnover, which is especially noticeable among young people. (Hernanz, Jimeno 2017) Information asymmetry, disparities in the characteristics of job searchers and available jobs, search expenses and mismatch are all examples of frictions in the labour market that explain why employment matches may not occur immediately when unemployed and vacant positions meet (Pissarides 2000). Mismatch in the search and matching theory incorporates and describes heterogeneities between the characteristics of unemployed and vacancies in the labour market, which can arise, for example, due to differences in skills of the unemployed and the skill requirements of vacant positions (Pissarides 2011).

Information asymmetry leads employers to count on signals that evaluate the individual's expected productivity (Ayllón et al. 2021). Workers may have the necessary talents but communicating them to potential employers might be challenging. The most prevalent indicator of a person's employability is whether he/she has had a job or holds a certificate from a school or training institution. The former is particularly difficult for young individuals who are just starting out in the workforce and, the latter is a difficulty for impoverished youth, who are more likely to drop out of school and may lack the financial means to get a diploma. (Cunningham et al. 2010)

Unemployment sends a negative signal which may lead the employers to believe that while an individual is without a job, his/her human capital declines or assuming that the unemployed individual is less productive or less motivated (Ayllón et al. 2021). This may result in stigmatization that makes employers hesitant to hire an individual who has had repeated periods

of unemployment or who has been unemployed for a long period (Solga 2002). From the perspective of an employer, the negative signal of unemployment may play a significant role in regarding to young workers since their level of human capital tends to be lower and they lack the positive signal of employment. During economic upswing, this negative signal may intensify. (Ayllón et al. 2021)

One of the major factors affecting the social composition and the rate of youth unemployment is education (Fergusson, Yeates 2021). Education credentials provide differential rewards on the labour market in terms of risk of unemployment, training, earnings, and job options. Education may act as a defensive component against unemployment and during economic recessions. (Scandurra et al. 2021). Increased formal education levels, on the other hand, frequently can produce a wider separation between schooling and labour. They have the potential to widen the gap between what employers need and what vocational education provides, thus creating a mismatch in the labour market. While college graduates have a better percentage of employability, obtaining a university degree does not always guarantee a clear path to work. (Carter 2019) Early in the careers of younger employees, less favourable outcomes such as overeducation may have a detrimental influence on future labour market performance (McGuinness et al. 2018). Young people lack informal and non-formal human capital, which comes from work experience and specific professional and vocation training. As a result, young people constitute a low-productivity workforce, and they have a particularly tough time obtaining a job. This transition is frequently marked by a series of movements between unemployment, employment, and inactivity, resulting in high rates of young unemployment. (Refrigeri, Aleandri 2013)

Countries that provide little or no unemployment protection for under 25-year-olds find that youth unemployment tends to be lower amongst those with little or no education and higher amongst better educated (Fergusson, Yeates 2021). The key factor is the availability of the family support to young people unable to secure or maintain a job. Historically, in lower and middle-income countries, graduates have relied on the support of their families that maintain them during the periods of prolonged initial job search. At the same time, young people without any education or qualifications are being vulnerably employed workers within the family or if the opportunity rises, a causal worker. (Godfrey 2003)

Policies and institutions are particularly important since they account for about two-thirds of non-cyclical unemployment fluctuations across time. ALMPs together with labour taxes,

unemployment benefits, unionization and collective bargaining have an impact on the overall level of youth unemployment. (Dvouletý et al. 2020) Youth unemployment is also influenced by employment protection laws (EPL). During the 1980s, Europe's economy was plagued by high unemployment rates and, as a result, policymakers implemented a slew of changes. EPL for temporary (fixed-term) contracts has been loosened, but EPL for permanent contracts has remained unaltered. During economic upturns, these changes have helped to increase employment, but many of the new positions have been transitory. (Görlich et al. 2013)

While reforms have provided additional entry options into the labour market, particularly for young people in many European countries, there is strong evidence that these policies have resulted in a highly fragmented labour market with a secondary segment of jobs characterized by high labour turnover and few opportunities for a successful career (Eichhorst, Rinne 2015). Youth unemployment is predicted to be greater in nations where credit and labour markets and company practices are more regulated. More regulation, in general, causes greater company expenses and less incentives to recruit new workers, particularly young people. (Tomić 2018) Another factor impacting young people's incorporation into the labour market is minimum wages. Research shows that a high minimum wage has negative employment consequences for young people. (Eichhorst, Rinne 2015)

Demographic transitions, such as changes in the population's age structure, fertility and child mortality are widely recognized to have an impact on the status of youth labour markets. A rise in the number of young people in the workforce, for example, would have a negative influence on the youth unemployment rate. This is because, in terms of endowments and qualifications, younger employees may complement adult workers. (Ebaidalla 2016) Although population expansion may be a driving force for economic growth, if large groups of young people attempt to enter the labour market in tough economic conditions or with slow demand, job creation will be constrained. Thus, the job market's capacity to absorb these young individuals is limited. And if there are not enough permanent or formal positions, there will be a higher pressure to develop flexible or informal work. (Zimmermann et al. 2013)

Unemployment is a frictional experience for some young people, for others, long-term exposure because of family heritage. This legacy is the outcome of demographic shifts, higher education expansion and structural economic adjustment in the late 1970s and 1980s, which resulted in widespread job displacement in the conventional manufacturing sector. Through the transmission

of resources and cultural capital, parents of today's children influence children's chances. Depending on where they reside and how the economy has altered in recent decades, parental unemployment might become a “unintended” legacy for their children. (O'Reilly 2015) Social capital is an essential asset that separates older and younger job candidates. This is the total of a person's relational resources, which includes the size, strength and quality of their social network. Individuals looking for work may locate job openings through these connections, and those in the network can vouch for the talents, personal characteristics, and fit-for-job critera. In certain nations, these personal ties are the sole ways to obtain employment. As a result of their lack of experience and connections to organizational insiders, young people's social capital is restricted. While young people's networks include family and school ties, these are rarely the decision-makers when it comes to employment. (Carter 2019)

1.4. Consequences of youth unemployment

Young people, despite being better educated than previous generations, being a "digital generation," and having lived through one of the most prosperous periods in recent history in terms of economic growth and poverty reduction, have also witnessed major events with global implications. Each incident has had and continues to have enormous economic and social ramifications. Despite progress on many fronts, today's youth are likely to be poorer than their parents, in some cases. (Dasgupta et al. 2021) Paid labour serves a variety of purposes for human health and well-being. Employment is the most important source of income, particularly for young people. Income is required to meet physical needs and provides a sense of control over one's life, as well as the ability to make private goals for the future. Furthermore, employment provides individuals with a schedule, social connections, opportunity to acquire skills as well as a sense of social status and identity. Being denied these advantages can be especially detrimental to young people, because achieving economic stability and self-sufficiency are essential markers of the transition to maturity in the early stages of life. (Unt et al. 2021)

The high number of NEETs in the EU wastes the potential of an entire generation, and the economic cost is considerable (Rautner et al. 2019). According to Eurofound, the cost of youth unemployment in the EU in 2011 was € 153 billion, 34 billion euros or 28% more than 2008 (Mascherini et al. 2012). In 2015, the European economies have lost an estimated €142 billion due

to the high number of NEETs (YIT 2021). These costs consist of necessary social benefits, but above all lost tax revenues because of high youth unemployment. Although this is given as an estimate, it is relatively conservative as negative social follow-up costs of youth unemployment are not included, such as the higher risk of slipping into crime or drug addiction. (Rautner et al. 2019)

Young people who have spent longer periods of time unemployed will earn less and are likely to be further unemployed. This builds up additional costs for the future, dragging the wider economy since the career trajectories of young people will, more likely, reflect their lower productivity than it would have been expected without the time spending out of the labour market (Impetus 2020). But the economic cost is only part of the price that societies will pay unless all young people have good education and employment opportunities. The absence of opportunities among young people is eroding social cohesion. NEET young people generally have less social and political commitment and less trust in state institutions. This is especially true for young people in Central Europe, but also in Eastern Europe and the English-speaking Member States. This shows that NEET young people are generally not only disconnected from the labour market, but also politically and socially disconnected from the society as a whole. (Rautner et al. 2019)

According to Okun's law, the rate of employment rises in tandem with the growth of the economy. As a result, an expanding economy will generate job opportunities (Solow 2000). In times of recession, on the other hand, the younger population is badly impacted. (Bayrak, Tatli 2018) When the economy is in recession, the likelihood of young people becoming unemployed rises and being unemployed limits their ability to accumulate human capital. For job searchers, it may be also difficult to preserve their existing knowledge. Young people who are unemployed miss out on both the opportunity to develop generic abilities that are valuable in the labour market as a whole and the potential to develop firm-specific human capital. As a result, young people who enter the labour market during an economic downturn are more likely to acquire positions that require less training, or employment in fields for which they have not been prepared, or jobs that pay less. (Sjögren et al. 2021). Being unemployed at the start of the career may lead to having lower cognitive skills such as the ability to process information and to learn. This is likely to affect the adaptability and productivity of a young person and thus their likely pay level or the ability to work in a suitable job later in life. Predictor of a greater likelihood of unemployment is having no or few qualifications. Youth unemployment may also be a cause for reduced non-cognitive skills

such as self-discipline, inter-personal skills, communication, consistency, and dependability which many of those may be linked to work experience. (McQuaid 2015)

Young people are usually working in positions that are distinctly different to other age groups. They are spending more time on education but are engaged in elementary professions. They are more likely to be employees, rather than self-employed. Typical working professions are in service industry roles where the work is usually routine and manual. (Impetus 2020) Young people are usually employed in temporary jobs since they are unable to find permanent positions (Papoutsaki et al. 2019). This results in experiencing greater instability, fewer employment benefits and poorer conditions at workplace than the previous generations, thus having inevitable consequences on long term prospects (Impetus 2020)

A huge pool of unemployed young people would produce considerable discontent if the labour market cannot absorb a rapid rise in job searchers. Large youth cohorts may be a feature that decreases recruiting costs by providing a plentiful supply of rebel labour at a low opportunity cost, thereby increasing the likelihood of violent conflict. If young people have no other option than to work and live in poverty, they are more inclined to find other means of earning an income. (Azeng, Yogo 2015) In 2016, more than three out of every four young people in the world worked in an informal employment. Despite its prevalence, informal work is rarely a viable option. Informality is, in most circumstances, a necessity resulting from a lack of possibilities in the formal sector and poor social safety systems. Many young people struggle to make the shift from informal to formal arrangements. (ILO 2020)

Unemployment can have negative impact on overall happiness and health, as well as their job-seeking attitude. Young people's motivation to apply for jobs may decline, making it more difficult to break into the labour market, or even causing them to give up looking for work altogether. (Sjögren et al. 2021) Young unemployed people regularly may lower their life aspirations and cope with financial instability by using whatever resources are available to them. Working multiple odd jobs, living with family or friends, and living on the bare least amount of money feasible. Unemployed people have higher health risks, including a shorter life expectancy (Kilhoffer et al. 2018)

2. ACTIVE LABOUR MARKET POLICIES AND LITERATURE OVERVIEW

In this chapter, the author gives an overview of active labour market policies. Moreover, an overview of previous studies and their results is presented.

2.1. Active labour market policies

Individuals' economic success in the labour market is determined by their investments in human capital. There are, however, disadvantaged people in both developed and developing countries who require assistance to upgrade their abilities (Ibarrarán et al. 2015). In the late 1980s and 1990s, as post industrialisation and globalisation generated new forms of work, active labour market policies (ALMP) grew in popularity across Europe (Kalleberg 2009). Labour market training, job search assistance and monitoring, wage subsidies, and public sector employment programs are the four types of programs that are most often used (Caliendo, Schmidl 2016).

With increased labour supply, the focus of labour demand shifted away from permanent long-term occupations and toward more flexible employment relationships with low overheads and simple hiring and firing protocols, allowing businesses to better adapt to market conditions (Standing 2009). To ensure worker lives in this new environment, European institutions drew inspiration from Denmark's and the Netherlands' flexicurity models, which used a variety of ALMPs to rehire promptly and cost-effectively the unemployed. (Bonoli 2013) Flexicurity is a concept that combines flexibility with security, implying that a flexible ALMP offers job security for both employers and employees, resulting in favourable employer-employee relations. Effective matching may be measured by the number of new job placements made in the present labour demand–supply relationship, which is defined as labour market tightness. In other words, given the current labour market tightness, improved matching efficiency equals more job placements than projected. (Kantová, Arltová 2020) Flexicurity-type activation programs have transformed the social policy environment for workers and job seekers by giving "flexibility for businesses and

stability for employees." (Bonoli 2013) Active labour market policies (ALMP) which are one of the component of the flexicurity concept, were founded as part of the European Employment Strategy (EES) with the aim to create new and better jobs (Kantová, Arltová 2020). For decades, they have played a significant part in the portfolios of economic policymakers in many nations.

ALMPs are viewed as a way to reduce cyclical and structural unemployment while also fostering job creation. Following the Great Recession, there has been increased attention in the possibility for ALMPs to assist and alleviate a variety of labour market issues, including youth unemployment. (Eichhorst, Konle-Seidl 2016) The primary goal of ALMPs is to improve program members' individual employment prospects. ALMPs might also aim to boost job creation, better match supply-demand in the labour market, improve participant (and social) welfare, and reduce government expenses. (Kluve, Rani 2016) Active labour market interventions are categorised according to their kind of action, which relates to how they act to achieve their goals. The categories identified for each form of intervention are listed in table 1, with descriptions of each category following.

Table 1. Classification of interventions by type of action

Type of action	**Specification**
Labour market services	All services and activities that help unemployed integrate into the labour market or aid companies in recruiting and selecting employees.
Training	Includes public-sector-funded initiatives aimed at improving the employability of target groups via training.
Job rotation and sharing	Covers policies that make it easier for an unemployed individual or someone from a different target group to gain a job by replacing hours worked by a current employee.
Employment incentives	Covers measures that make it easier to attract unemployed and other target groups, as well as those that help to keep those who are at danger of losing their jobs.
Supported employment	Covers initiatives aimed at promoting the integration of people with decreased working ability into the labour market through assisted employment and rehabilitation.
Direct job creation	Covers measures that create additional jobs, usually of community benefit or socially useful, to find employment for the long-term unemployed or persons otherwise difficult to place.
Start-up incentives	Includes policies that encourage the unemployed to develop their own businesses or become self-employed.

Source: European Commision (2006), composed by the author

The OECD and European Commission's Social Expenditure (SOCX) indicators such as public employment services, training, employment incentives, and direct job creation are examples of ALMPs that may aid youngsters transition from school to work and unemployment to employment. Education and training policies invest in human capital, which can be used to ease the transition from school to work. Skills training programs are the most commonly utilized labour market intervention for young people throughout the world, and they are increasingly being given in addition to other labour market interventions (Kluve et al. 2017). If an educational mismatch is at the base of the unemployment problem, training programs help unemployed youth align their skills with labour demand (Palíšková 2014). The job creation policy provides temporary employment to long-term unemployed youth, as well as work experience that can be transferred to future jobs. (Dinan 2019)

The goal of job assistance and monitoring is to make participant's job search process more productive and efficient. Public employment services offer the majority of job search help, which includes counseling and monitoring of job search activities. (Butschek, Walter 2014) Such programs can assist job seekers by providing career counseling and talent assessments, as well as assistance with creating job application packets, interview preparation, and discovering relevant job opportunities. Job search help is accessible at all times during an unemployment period, and intensity frequently rises as the period progresses. (Cottier et al. 2018) All methods aiming at providing incentives that change employer and worker behaviour towards private sector employment are referred to as private sector incentive programs. Wage subsidies are the most well-known scheme in this category. (Kluve 2010) Their major objective is to decrease the cost of hiring individuals of the target demographic to encourage businesses to do so. Wage subsidies are seen as a way to increase the demand for young employees in the context of youth employment. (O'Higgins 2017). Second, wage subsidies might affect specific jobs or vocations by providing chances for young people to obtain work experience, allowing them to target more appropriate options in their later job search (Bordos et al. 2015).

The European Union has prioritized young unemployment (and inactivity) by launching a variety of programs and initiatives. The Youth Guarantee, and the Youth Employment Initiative are just a few examples (European Commision, 2013). Despite the fact that these policy initiatives are more recent, they are mostly based on a variety of active labour market policies that were in place years before the latest financial crisis. As a result, the initiatives are a series of coordinated ALMPs that

necessitate significant cooperation of the school system and employment services, rather than a new form of measure. (Malo 2018). However, various studies have cast doubt on their effectiveness (for example, Kluve, 2006; Card et al. 2015; Caliendo and Schmidl, 2016). The European Commission's Europe 2020 plan lays forth a vision for Europe's social market economy in the twenty-first century. Youth unemployment rates will be targeted via a range of policies, including proposals aimed at education and training institutions, or measures to create a (work) environment conducive to higher activity rates and higher labor productivity, as part of the flagship initiatives, An agenda for new skills and jobs and Youth on the move. (European Commision 2020).

The efficiency of ALMPs is determined on their design. Focused targeting of actions can decrease negative indirect effects while increasing good ones, nevertheless, it must avoid stigmatizing people and imposing costly monitoring or bureaucratic procedures, which will discourage employer take-up (Brown, Koettl 2015). ALMPs must include the interconnections, complementarities, and ramifications of other active and passive labour market policies (Martin 2014). ALMPs can be effective in practice if treatments target particular employability difficulties. For job searchers with serious skill gaps, search and matching services are unlikely to lead to employment. Training programs, on the other hand, are likely to be ineffective if job seekers already have in-demand abilities and merely need guidance or better knowledge about potential possibilities. To maximize the efficiency of ALMPs, it is critical to ensure that the correct type of ALMP is detected. (Bird 2020). Understanding which groups in need of assistance are not using public employment services (or other relevant institutions) and why, as well as the labour market challenges they encounter and how effectively the ALMPs offered to these groups meet their requirements, is critical to improve employment support to the most vulnerable groups. (OECD 2021b)

Before the COVID-19 epidemic, the financial resources available for ALMPs varied greatly between nations. In many nations, both ALMP measures and employment programs are funded at a low level (particularly in Cyprus, Greece, Latvia and Romania). As a result, their ALMP systems' capability may be limited, and their support for job searchers and employers may be inadequate. (Lauringson, Lüske 2021) Governments adopted wide steps to offer support to companies and employees during the early phases of the COVID19 crisis in order to retain solvency and avert unemployment. In 2020 and 2021, several nations increased their resources for labour market services and active labour market measures, as well as making substantial changes to resource

allocation and operational methods. For example, France established new recruiting incentives for young people, which were open for application until early 2021, and allowed them to be hired on fixed-term or permanent contracts. Between May and August 2020, a salary subsidy was available in Hungary, supporting the employment of 39 000 long-term jobless and young job searchers under the age of 25. Over the course of two years, Ireland's JobsPlus plan included extra incentives for the employment of registered jobless under the age of 30. Kickstart is a new initiative in the United Kingdom that will establish six-month work assignments for benefit users aged 16 to 24 who are at danger of long-term unemployment. Slovenia has expanded the coverage of its current employment incentive program Employ.me to include jobless people over the age of 30 who have lost their jobs as a result of the COVID19 crisis. (OECD 2021a)

2.2. Literature overview

Three phases make up the optimum evaluation procedure of ALMPs. First, the program's influence on the particular participant should be calculated. Second, it should be determined if the effects are significant enough to result in net societal benefits. Finally, the question of whether this is the best result possible for the money invested should be addressed. (Fay 1996) Evaluations, according to Gertler et al. (2016), can give strong and trustworthy data on performance and, most significantly, whether a specific program has accomplished its objectives. This information is also critical for decision-makers who must determine whether a given program should be continued or canceled. It is critical not just for decision-makers but also for citizens to know if public funds have been used properly.

To analyze the relationship between ALMPs and labour market outcomes, micro- and macroeconomic studies have been used (Martin 2014). There is a substantial empirical literature that assesses ALMPs from a microeconomic viewpoint, calculating how certain programs impact participants' unemployment-exit and employment-entry probability based on individual-level administrative data. (Goulas, Zervoyianni 2018) The primary question in microeconometric assessments is whether participation in an ALMP program affects the interesting outcome variable for an individual. After that, the direct benefit may be compared to the related expenditures, and the program's effectiveness can be determined. Microeconomic approach should be viewed as a first step toward a full assessment since it is partial-analytic. (Hujer 2006) The findings from

microeconomic studies are sometimes ambiguous or give mixed results, implying a neutral, weak, or even negative influence (Cvecic, Sokolic 2018).

Macroeconomic studies examine outcomes such as aggregate employment and unemployment among young people, as well as the functioning of the labour market, such as whether the match between jobless individuals and vacant positions improves because of ALMP adoption (Carreras et al. 2015). The macroeconomic estimation of active labour market policy on various labour market parameters is usually done using a panel data econometric technique (Martin 2014). It is critical to emphasize how limited the ability to aggregately analyse and evaluate the effects of active labour market policies, particularly on youth unemployment is. Nonetheless, detailed metrics and methodologies for evaluating policy efficacy and long-term benefits to the European and national economies are required. (Cvecic, Skolic 2018)

Some evidence of macroeconomic effects of active labour market policies have been suggesting that these effects are small, unclear, and only partial, and mainly involve aggregate unemployment and job matching (Calmfors, 1994; Speckesser, 2004; Dauth et al. 2010). Hujer et al. (2009) found no statistically significant effects of ALMPs on the matching process in West Germany using a dynamic panel data model. Furthermore, the study discovered that employment creation programs had a detrimental impact on job seeking activity. Rosholm and Svarer (2012) concluded that, despite the decline in unemployment rates due to some active employment measures, increased government spending and congestion on the labour market can reduce welfare.

Wapler et al. (2014), on the other hand, investigated the effectiveness of ALMPs in job matching at the regional level in Germany, finding that on-the-job training programs and pay subsidies had beneficial impacts depending on local labour market conditions. Long-term vocational training and salary subsidies had a large and favourable impact on employment transitions. Using regional data, Dauth et al. (2016) discovered benefits of several ALMPs in Austria. According to the study, not-for-profit work programs, salary subsidies, and the growth of apprenticeships all considerably enhance regional job matching. The study by Kluve et al. (2016) reviewed the possible effect on youth unemployment programs on labour market outcomes. The random effects model's overall findings demonstrate that youth employment interventions have a positive and statistically significant effect, although this does not apply to all sub-groups of interventions. No convincing evidence that particular types of programs, or combinations of programs, outperform others in a systematic way was found. The study by Speckesser et al. (2019) indicates that allowing young

people to obtain work experience is the key strategy for improving labour market outcomes, especially when combined with the negligible impacts of job search help or training. In contrast to many of the findings for adult ALMP, the study by Speckesser et al. (2019) indicates that public sector job creation provides an effective method for gaining meaningful work experience for young people

Jackman et al. (1990) utilized the unemployment equation approach to calculate Beveridge curves for several OECD nations. The study discovered that the amount of money spent per unemployed worker had a significant positive effect on the unemployment rate. According to some of research, active labour market policies expenditure decreases unemployment in general and long-term unemployment such as Nickell and Layard (1999) who examined data from 20 OECD nations over two time periods, 1983-1988 and 1989-1994. According to Russell and O'Connell (2001), the amount of money spent on active labour market policies has a significant beneficial impact on the likelihood of unemployed young people finding work. Some researchers investigated the effectiveness of ALMPs including training and employment incentives such as Van Ours (2004) who used macroeconomic ALMP research to analyse data from 20 OECD nations for 1985-1999 to understand the link between unemployment and ALMP expenditures across countries. Their findings show that on-the-job training is the most effective approach for lowering unemployment.

The study by Chourdry et al. (2013) investigated the determinants of youth unemployment rates during the period of 1980-2009 for a sample of high-income OECD countries and applying fixed effect model. According to the study, active labour market policies appear to reduce unemployment, particularly among the youth. Cvecic and Skolic (2018) estimated the effects of labour market policies on total, youth unemployment and the NEET rates using the data of European countries for the period of 2005-2014. The findings from the study imply that expenditure on active labour market policy reduces the rate of unemployed youth, particularly in the case of NEET.

According to Hur (2019), active labour market policies are effective in reducing unemployment rates. Higher expenditure on ALMPs resulted in significantly higher recovery of unemployment rates while mitigating the previous global recession's negative effects. For a time-series from 1999 to 2012, Speckesser et al. (2019) created a macroeconomic database with repeated observations for all European member states, to calculate quantitative estimations of the effect of active labour market policies on the youth labour market. The study's findings show that job incentives have a

significant influence on lowering young unemployment. Furthermore, direct job creation initiatives had significant benefits, suggesting that programs outside the commercial sector are effective in accomplishing their goals and reducing youth unemployment.

Carr (2020) analysed data from 28 European Union member states, including the United Kingdom, from 2000 to 2016. The study's findings indicate that as expenditure on training scheme rises throughout the European Union, the youth unemployment declines. When it comes to the NEET rates, the study finds considerable outcomes in training schemes, with job incentives having only a little impact when political ideology and wealth disparity are taken into consideration. Direct job creation, on the other hand, has a detrimental impact on NEET rate.

3. DATA AND METHODOLOGY

In this chapter, data and methodology used in this thesis to estimate the relationship between ALMPs and youth unemployment among European countries. The first subchapter gives an overview of the data used in the empirical analysis. The second subchapter explains the methodology used in this thesis.

3.1 Data and descriptive statistics

In orded to determine the impact of ALMPs on youth unemployment, various independent and dependent variables are used. The data used for the empirical analysis for 27 European Union countries was derived from Ameco, EUROSTAT and OECD databases. The countries chosen were: Austria, Belgium, Bulgaria, Croatia, Cyprous, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden.

The unemployment variable, which is measured by the unemployment rate and counts unemployed people aged 15–24 as a proportion of the labour force, is considered as dependent variable. Given the lower and more variable size of the youth labour force, it has been argued that the unemployment rate may not be as meaningful and is skewed indicator of unemployment (Banerji et al. 2015). As an alternative, NEET rate may be used, allowing to provide a more comprehensive picture of youth unemployment (Carr 2020). Thus, in this thesis, both the unemployment and NEET rate are used. For comparison purposes, total unemployment rate as dependent variable is used.

Independent variables include the expenditure as a percentage of GDP on training, supported employment and direct job creation, GDP, inflation, employment protection legislation, expenditure on education and investment.

According to some of research, active labour market policies expenditure decreases unemployment in general and long-term unemployment in particular such as Nickell and Layard (1999) who examined data from 20 OECD nations over two time periods, 1983-1988 and 1989-1994 and found that ALMPs impact long-term and short-term unemployment. Blanchard and Wolfers (2000) indicate that higher ALMPs expenditure can minimize the sensitivity of unemployment to negative shocks by using fixed effects and time-invariance of nations on labour market institutions for 20 OECD countries. Some researches looked into the effectiveness of ALMPs including training and employment incentives such as Van Ours (2004) who used macroeconomic ALMP research to analyse data from 20 OECD nations for 1985-1999 in order to understand the link between unemployment and ALMP expenditures across countries. Their findings show that on-the-job training is the most effective approach for lowering unemployment. ALMP expenditure on employment incentives, according to Murtin et al. (2012, 2014), decreases unemployment and increases employment.

Due to the expectation that the more economically developed nations will have larger social expenditure and a broader protection system, GDP per capita is also included as a macroeconomic variable (Van Vliet, Koster 2011). As ALMP expenditure is assessed as a proportion of GDP, a negative relationship between GDP per capita and ALMP expenditure is predicted. When ALMPs decrease, GDP rises, implying that ALMPs are implemented in a counter-cyclical way.

As shown by Barro (2013), inflation (whether high or low) has a negative and considerable influence on economic growth. According to this viewpoint, an increase in inflation (even at low levels) will have negative consequences for the economy because pricing distortions will reduce the efficacy of market allocations. Feldmann (2010) also discovered that high inflation is linked to a low overall unemployment rate, particularly among the youth. The business cycle has a significant impact on the unemployment rate. Even if minimal resources are allocated to labour market policy while the economy is thriving, the unemployment rate tends to be low. Moreover, even if labour market reforms are implemented more aggressively during a recession, the unemployment rate is likely to remain high.

Employment protection legislation (EPL) is a labour market measure that shows how much labour regulation influences employees' and employers' economic freedom (Feldmann 2009). Its goal, according to Bartokova and Gontkovicova (2014) is to safeguard employees against unfair activities by their employers. Feldmann (2009) looked at the effects of labour regulation on

unemployment using data from 73 economies from 2000 to 2003 and came to the conclusion that tighter regulation seemed to increase unemployment. Union density is included to manage insider influence in pay negotiations, which can push wages upward, resulting in greater employment costs, particularly for groups with more elastic labour supply (e.g. low-skilled workers) (Layard et al. 2009). Since education has an substantial effect on youth unemployment, the expenditures on educations are included as independent variable.

The final included variable is gross capital formation (investment) as percentage of GDP. Several research used macroeconomic data to investigate the link between unemployment and investment. In a research of the European Union for the 1970s and 1980s, Karanassou et al. (2003, 2004) suggested that the rise in the unemployment rate was primarily attributable to persistent shocks (in particular the rise of the working-age population and the decline of capital formation). Furthermore, Karanassou et al. (2008) revealed that capital accumulation is a major factor in influencing unemployment activities for Nordic countries. Appendix 5 provides an overview of the definition and measures of the variables. Table 2 provides an overview of the descriptive statistics, including the mean, median, maximum and lowest values, standard deviation, and number of observations for each variable. R Studio software was used to compute the values of the variables in 27 European nations between 2010 and 2019.

Table 2. Descriptive statistics

Statistic	N	Mean	St. Dev.	Min	Max
Trade_un	183	28.603	20.265	4.500	71.400
EPL	215	1.785	0.779	0.630	3.750
Exp_train	266	0.133	0.136	0.000	0.506
Exp_ei	267	0.117	0.125	0.006	0.638
Exp_supemp	188	0.140	0.226	0.000	0.967
Exp_direct	183	0.088	0.125	0.000	0.741
Total_unemp	260	9.077	4.872	2.000	27.500
Educ	280	5.051	0.938	2.800	7.100
GDP	270	25,397.300	16,753.170	5,080.000	85,030.000
Invest	270	20.803	4.060	10.600	53.600
Youth_unemp	270	21.768	10.934	5.600	58.300
NEET	270	11.449	4.468	4.000	22.200
Infl	270	1.617	1.623	-1.600	11.200

Source: Eurostat (2021), OECD (2021), author's calculations in R software.

As seen from the table 2, there is a big difference between the maximum and the minimum in the trade union, total unemployment, investment, youth unemployment, GDP, NEET rate and inflation variables, which means that these factors are quite variable over the countries and time periods under review.

Figure 1 represents the total unemployment, youth unemployment and NEET rates among 27 European countries. As of 2011, the unemployment rates in Europe increased, but started to drop around 2013. The unemployment rates among youth have decreased below 2010 levels by 2019, indicating that young people were less likely to be unemployed. Although the last years have shown significant decline in unemployment rates, it is well evident that young people are more likely to be unemployed than their adult counterparts, and this stays true throughout the period of 2010-2019. The highest total unemployment rates in the period of 2010-2019 may be seen in Spain, Cyprus, Greece, Portugal, Estonia, Latvia and Lithuania (Appendix 6). In Baltic countries, the total unemployment rate has significantly declined since 2010. In Cyprus and Greece, the total unemployment rates were still higher in 2019 as in 2010.

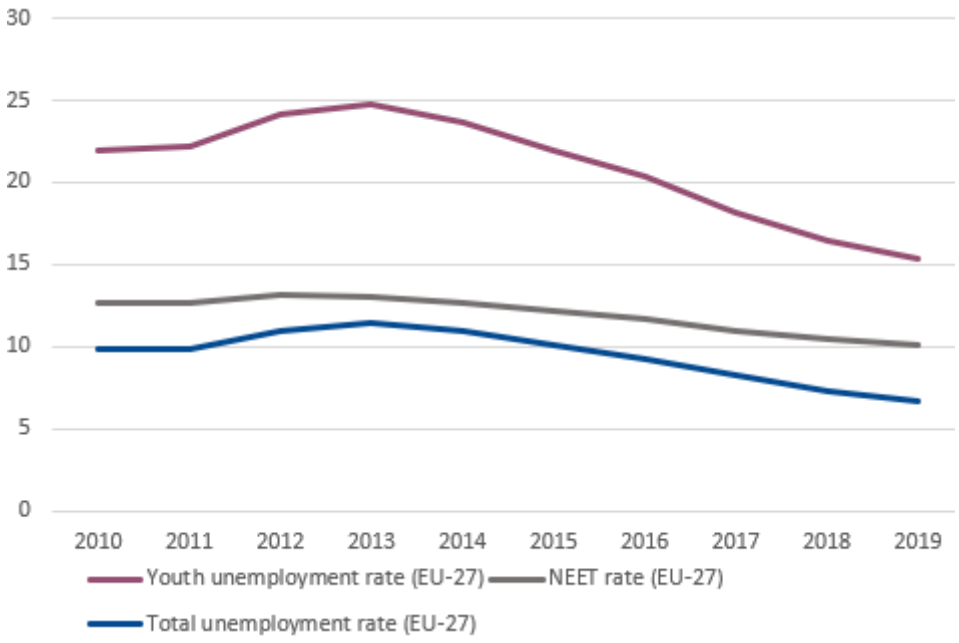

Figure 1. Unemployment trends

Source: Eurostat (2021), composed by the author.

The highest youth unemployment rates between 2010 and 2019 were seen in Croatia, Cyprus, Estonia, Latvia, Lithuania, Italy, Portugal and Spain (Appendix 7). In southern European countries, the youth unemployment rated peaked around 2013, whereas in the Baltic countries, the

unemployment rate among youth has steadily decreased since 2010. The countries with the lowest youth unemployment rates between 2010 and 2019 were Austria, Germany, Malta and Netherlands. Between 2010 and 2019, the highest NEET rates were in Bulgaria, Croatia, Cyprus, Ireland, Greece and Spain (Appendix 8). In 2019, the NEET rate in Cyprus was still higher than in 2010. The lowest NEET rates were in Germany, Luxembourg, Austria and Sweden.

The trends in the development of expenditures on various active labour market policies in percentage of GDP over the period of 2010-2019 are shown in figure 2. The results indicate that the expenditures on training, employment incentives, supported employment and direct job creation vary greatly between European nations.

On average, expenditures on supported employment were the highest in Denmark, France and Sweden. Austria, Denmark, Finland, Ireland and Portugal have been spending more on training as the other European countries. The highest expenditures on direct job creation are seen in Hungary, whereas most of the other countries have spent on this measure rather a smaller percentage of GDP. The lowest expenditures on employment incentives are in Austria, Bulgaria, Cyprus and Romania. On average, the highest expenditures on employment incentives are seen in Sweden and Denmark.

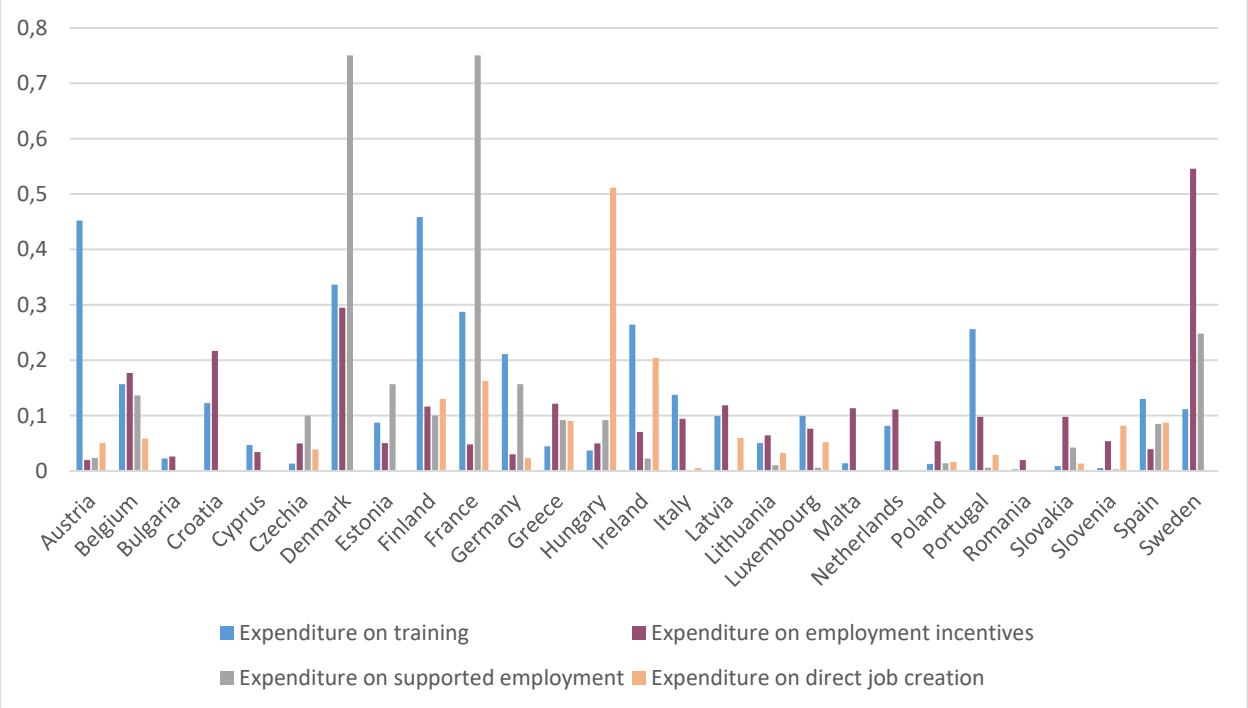

Figure 2. Average expenditures on active labour market policies (2010-2019)

Source: Eurostat (2021), composed by the author.

As shown in table 3, there is a strong correlation between some of the independent variables selected in the model. The variable trade union correlates with GDP and the expenditure on training. Also, there is a correlation between EPL and expenditures on employment incentives. When a regression model incorporates numerous variables that are substantially linked not only with the dependent variable but also with each other, multicollinearity arises (Young 2017). Multicollinearity can lead to wider confidence intervals, less certain likelihood estimates for predictors, skewed or misleading results. That instance, the results of a multicollinear model could not be reliable. (Shrestha 2020) There is also a strong correlation between the dependent variables total unemployment, youth unemployment and NEET rate. Thus, these variables will not be used together in the same model. Also, the highly correlated independent variables trade union and expenditure on employment incentives will be removed to improve the model.

Table 3. Correlation matrix

	Trade_un	EPL	Exp_train	Exp_ei	Exp_supemp	Exp_direct	Total_unemp	Educ	GDP	Invest	Youth_unemp	NEET	Infl
Trade_un	1	-0.107	0.525	0.358	-0.189	-0.031	0.064	0.277	0.660	-0.050	0.119	-0.043	0.020
EPL	-0.107	1	-0.277	0.655	0.169	-0.274	0.082	0.118	0.230	-0.398	0.225	-0.230	0.132
Exp_train	0.525	-0.277	1	-0.158	0.103	0.105	0.019	0.411	0.455	0.092	-0.167	-0.094	0.061
Exp_ei	0.358	0.655	-0.158	1	-0.239	-0.089	0.014	0.115	0.432	-0.357	0.206	-0.254	0.108
Exp_supemp	-0.189	0.169	0.103	-0.239	1	0.188	-0.035	0.271	-0.002	0.144	-0.018	0.029	0.012
Exp_direct	-0.031	-0.274	0.105	-0.089	0.188	1	0.021	0.042	-0.013	0.093	0.035	0.163	-0.085
Total_unemp	0.064	0.082	0.019	0.014	-0.035	0.021	1	-0.072	-0.221	-0.435	0.919	0.789	-0.078
Educ	0.277	0.118	0.411	0.115	0.271	0.042	-0.072	1	0.010	0.070	-0.062	-0.144	0.147
GDP	0.660	0.230	0.455	0.432	-0.002	-0.013	-0.221	0.010	1	0.062	-0.195	-0.417	0.039
Invest	-0.050	-0.398	0.092	-0.357	0.144	0.093	-0.435	0.070	0.062	1	-0.465	-0.227	0.165
Youth_unemp	0.119	0.225	-0.167	0.206	-0.018	0.035	0.919	-0.062	-0.195	-0.465	1	0.767	-0.043
NEET	-0.043	-0.230	-0.094	-0.254	0.029	0.163	0.789	-0.144	-0.417	-0.227	0.767	1	-0.087
Infl	0.020	0.132	0.061	0.108	0.012	-0.085	-0.078	0.147	0.039	0.165	-0.043	-0.087	1

Source: Eurostat (2021), OECD (2021); author calculations in R software.

3.3 Methodology

Different nations that have applied a range of labour market policies over years may be used to measure the impact of ALMPs on youth unemployment (Nie, Sturby 2011). The macroeconomic estimation of ALMPs on various labour market parameters is usually done using a panel data econometric technique (Martin 2014). Panel data has several advantages in applied research; for example, it gives a high number of observations, which improves the efficiency of econometric

estimations. Another advantage is the ability to conduct in-depth examination of complicated economic hypotheses while adjusting for individual and time heterogeneities. (Raj, Baltagi 2012) Panel regressions, in particular, can reveal the link between the core variables of interest and the factors that may have an impact on those variables. (Nie, Sturby 2011)

In macroeconomic research, there are certain general methodological issues. Because the number of data that may be employed in econometric analysis is generally modest, exact estimates of effects may be difficult to achieve. Two-way causality is another issue. ALMPs may not only have an impact on unemployment, but changes in the labour market may also prompt political choices to modify the volume of ALMPs. (Calmfors et al. 2002) The resources devoted to a program grow in proportion to its effectiveness. Some active programs, on the other hand, may have explicit goals to meet. In these circumstances, a loss of efficacy in design and implementation might lead to an increase in overall cost in order to accomplish program goals. A rising public budget can also result in more spending, whereas budget cuts might result in lower spending. (OECD 1993) Another issue is that the influence of ALMPs on unemployment may be skewed since some participants of ALMPs are not counted among the unemployed figures (Scarpetta, 1996). Since the policy position is endogenous, it's difficult to separate the influence of policy on the labour market from the effect of policy on the labour market since governments respond to growing unemployment or other labour market problems with more policy effort. Cross-country disparities in active labour market expenditure, or changes in spending, may reflect as much as they impact differences in labor market performance. (OECD 1993)

Fixed effects (FE) model suggests that individual differences (cross section) may be addressed by varied intercepts. Compared to standard OLS models, the fundamental advantage of fixed effects estimations is that the possible sources of bias in the estimations are reduced. A link between any unobserved variable and the outcome or treatment variable of interest leads to a skewed estimate of the treatment impact in OLS models. Fixed effect models, on the other hand, limit the sources of bias to time-varying factors that are related to both the treatment and the result across time. (Collischon, Eberl 2020) Fixed effect models do have disadvantages. In FE estimates, classical (i.e. random) measurement error might be more troublesome than in other models (Angrist, Pischke 2009). In practice, this implies that FE models offer cautious coefficient estimates and may miss effects that actually exist (Collischon, Eberl 2020). Reverse causality is another issue that FE calculations are prone to, and this issue might be prevalent (Vaisey, Miles 2017). We may know that variables vary over time, but we are uncertain which variable may be responsible for

the effect. External validity, or the generalizability of the estimation findings, is a problem for fixed effect models. It's vital to remember that FE models only identify effects based on within-individual changes in this setting. (Bell, Jones 2015)

In essence, the random effect (RE) model differs from the fixed effect models in that it does not employ the ordinary least square principle, instead opting for the maximum probability or general least square principle. Explanatory factors have constant associations with the response variable across all observations in a random-effects model, but these fixed effects may change from one observation to the next. (Zulifikar 2019) The country-specific effect in random effect models is assumed to be a random variable that is uncorrelated with the explanatory factors in the model, which may result in omitted variable bias (Setzer 2006). The RE model has the advantage of eliminating heteroscedasticity. Another advantages are that the number of parameters remains constant as the sample size grows, it enables the development of efficient estimators that take into account both intra- and inter-group variance and it permits the influence of time-invariant factors to be estimated. (Hsiao 2007)

Heteroskedasticity is a prevalent problem in panel data models, and it is important to focus on it in order to make reliable inferences. In the presence of heteroskedasticity, standard techniques for panel data model estimations, such as OLS, do not yield to efficient estimate and reliable inference. (Saeed et al. 2018) As the conventional linear regression model, where the unobserved disturbance vector is assumed to be regulary distributed, normality may be the most prevalent assumption when peforming statistical processes. It is commonly recognized that deviations from normality may lead to significantly inaccurate findings in economic model analysis. As a result, regression analysis should include a normality test. (Thadewald, Büning 2007)

In this thesis, the relationship between ALMPs, total unemployment, youth unemployment and the NEET rate, as well as other factors, such as macroeconomic, institutional and cyclical are examined using the fixed effect or random effect regression model (proper statistic test is performed). In order to deal with the possible problems that may encounter when using ordinary least-squares (OLS) estimation, Hausman and F-test will be carried out in order to accept either random effects or fixed effects model. The F-test has a null hypothesis that the random effect model is appropriate and meaningful hypothesis that a fixed effect model is appropriate. The null hypothesis of the Hausman test is that the random effect model is appropriate and a meaningful hypothesis that a fixed effect model is appropriate. (Brooks 2019)

For all models, the author peforms heteroskedasticity and normal distribution tests. The author utilizes the Wald test to check for heteroskedasticity and the Jarque-Bera test to check for normal distribution. If heteroskedasticity is present in the models, the author uses custom standard errors. Lagged explanatory variables are commonly utilized in social research to account for endogeneity difficulties, according to Bellemare et al. (2017). Thus, when using annual data, independent variables may be delayed by one or multiple periods, assuming that the dependent variable evolves slowly over time and is dependent on the values of independent variables from prior time periods.

The regression analysis will be estimated as in Equation 1:

$$Y_{it} = \beta_1\ EPL_{it-1} + \beta_2\ GDP_{it-1} + \beta_3\ Inflation_{it-1} + \beta_4\ Investment_{it-1} + \beta_5\ Exptrain_{it-1} + \beta_6\ Expsupemp_{it-1} + \beta_7\ Expdirect_{it-1} + \beta_8\ Education_{it-1} + \mu_i + e_t + \varepsilon_{it} \quad (1)$$

where

Y_{it}= outcome of interest: total unemployment, youth unemployment or NEET rate for country i at time t

β_1= dependent variable parameter

EPL_{it-1} = one year lag of Employment protection legislation

GDP_{it-1} = one year lag Gross domestic product

$Inflation_{it-1}$ = one year lag of Inflation

$Investment_{it-1}$ = one year lag of Investment

$Exptrain_{it-1}$ = one year lag of Expenditure on training

$Expsupemp_{it-1}$ = one year lag of Expenditure on supported employment

$Expdirect_{it-1}$= one year lag of Expenditure on direct job creation

$Education_{it-1}$ = one year lag of Expenditure on education

μ_i = fixed country effects

e_t = fixed time effects

ε_{it} = error term

4. EMPIRICAL RESULTS AND DISCUSSION

In this chapter, the author will present a summary of the empirical analysis results utilizing the data, model and methodology introduced in the previous chapter. These findings will be compared to those found in previous studies. The author will respond to the empirical question and reach a conclusion. In addition, the author will make recommendations for further empirical research.

4.1. Empirical results

The author evaluated three models, with the dependent variables as total unemployment, youth unemployment and the NEET rate. The Hausman and F-tests were carried out to verify the suitability of either random or fixed effects model. The results of these tests concluded that fixed effects model is appropriate. Heteroskedasticity and normal distribution testing of residual members were also performed. Residual members showed heteroskedasticity and therefore, the author used adjusted standard errors. After evaluating the normal distribution of the variables utilized in the estimation, it was apparent that some of the variables were skewed, thus a logarithmic form was taken from the GDP, investment, total unemployment, youth unemployment and NEET rate, which removed the skewness and improved the results. The results for the test are in appendix 4.

The highly correlated independent variables trade union and expenditure on employment incentives were removed to improve the model. Because the dependent variable is thought to change slowly over time and is dependent on the values of independent variables in earlier time periods, independent variables were delayed by one year when utilizing yearly data. The results for the fixed effects model may be seen in table 4.

In the model 4.1, the statistically significant variables are the EPL, GDP, expenditures on direct job creation, training and supported employment. In the model 4.2, the statistically significant variables are the EPL, GDP, expenditures on direct job creation, training and supported

employment. In the model 4.3, the statistically significant variables are the expenditure on education, expenditures on direct job creation, training and supported employment.

Table 4. Results from the fixed effects model

	Total Unemployment	Youth Unemployment	NEET
Indices	(4.1)	(4.2)	(4.3)
EPL	-0.605***	-0.509***	-0.016
	(0.113)	(0.117)	(0.078)
GDP	-1.488*	-1.379*	-0.468
	(0.842)	(0.719)	(0.344)
Inflation	0.009	0.002	-0.002
	(0.016)	(0.014)	(0.010)
Investment	-0.479	-0.384	-0.160
	(0.504)	(0.427)	(0.213)
Education	-0.122	-0.111	-0.075*
	(0.124)	(0.111)	(0.051)
Exp.direct	-0.872***	-0.928***	-0.260***
	(0.164)	(0.164)	(0.078)
Exp.supemp	0.927***	0.745***	0.527***
	(0.321)	(0.275)	(0.150)
Exp.train	1.590*	0.871*	1.292***
	(0.883)	(0.675)	(0.272)
Observations	132	132	132
Adjusted R^2	0.668	0.684	0.650

Source: Eurostat, OECD; author's calculations in R software

Notes: - Significance levels are: ***p<0.01; **p<0.05; *p<0.1;
- EPL (employment protection legislation), GDP (gross domestic product), Exp.direct (expenditure on direct job creation), Exp.ei (expenditure on employment incentives), Exp.supemp (expenditure on supported employment), Exp.train (expenditure on training).

In terms of institutional factor, EPL has a negative and significant association with the total unemployment and youth unemployment rate at 0.01 confidence level. These findings appear to be in line with Baker et al. (2005) and Amable et al. (2007), who found that the more stringent the employment protection, the lower the unemployment rate. The overall purpose of EPL, according to Bartóková and Gontkovicová (2014), is to safeguard employees against unfair activities by their employers. Expenditure on education is negatively correlated and statistically significant only with the NEET rate at 0.1 confidence level.

In terms of macroeconomic factors, GDP has a negative and statistically significant effect on the total and youth unemployment rate at 0.1 confidence level. This finding is in line with studies by Ball et al. (2013) and Moreno-Galbis (2012). Inflation is positively correlated, although not

statistically significant with the total and youth unemployment rate. This is in line with Cioran (2004) who demostrated that inflation negatively affects unemployment in European Union. Investment appears to have a negative, although not statistically significant relationship with the total unemployment, youth unemployment and NEET rate. This finding is in line with Bande and Karanassou (2014) The effective demand, which affects unemployment, is determined by investment. Capital accumulation plays a vital role in determining unemployment activities to the extent that it enhances the economy's activity, resulting in a decrease in the unemployment rate. (Shanoun, Abdennadher 2018)

The expenditure on direct job creation has a negative and statistically significant association with the total unemployment, youth unemployment and the NEET rate at 0.01 confidence level. The findings indicate that for every one percent increase in the direct job creation schemes, one may expect a decline in the total unemployment, youth unemployment and the NEET rates. This finding is in line with Speckesser et al. (2019) but differs from that of Carr (2020).

The expenditure on training has a positive and statistically significant association with the total and youth unemployment rate at 0.1 confidence level. The NEET rate and the expenditure on training are positively linked and statistically significant at 0.01 confidence level. This is in line with Martin and Grubb (2001), but differs from that of Carr (2020). The expenditure on supported employment is positively linked and statistically significant at 0.01 confidence level with the total unemployment, youth unemployment and the NEET rate. This finding is in line with Burke-Miller at al. (2012)

The models specifications are moderate. According to the adjusted R^2, 66.8 percent of the data match the regression analysis in the model 4.1, 68.4 percent of the data match the regression analsysis in the model 4.2 and 65 percent of the data match the regression analysis in the model 4.3.

4.2. Robustness check

In orded to check whether the baseline results are confirmed, the author decided to performe a robustness check for the models using total, youth unemployment and the NEET rate as dependent variables. The author re-esitmated the models by making changes in the data. The tax wedge as a

independent variable was included to illustrate employees' entire tax burden. Greater wage taxes may result in higher unemployment rates, fewer levels of employment and reduced labour market involvement. According to studies by Belot et al. (2002), Nickell et al. (2002), Bertola et. al (2001) high labour taxes tend to raise unemployment rates. A higher tax wedge has a positive relationship with the overall cost of the standard labour contract, and is likely making young workers less attractive to employers, since their average productivity is lower due to their lower work experience (Jimeno, Rodriguez-Palenzuela 2002).

In addition, the author reduced the number of European countries that were used in the emperical analysis. The removed countries were: Finland, Poland and Spain. The chosen countries were removed randomly. Time span remained the same (2010-2019) and the dataset was unbalanced. The Hausman and F-tests were used to determine if a random or fixed effects model was suitable. According to the findings of these experiments, the fixed effects model is adequate. The residual members were tested for heteroskedasticity and normal distribution. As residual members showed heteroskedasticity, the author used adjusted standard errors. After evaluating the normal distribution of the variables used in the estimation, it became clear that some of the variables were skewed, so the GDP, investment, total unemployment, youth unemployment, and NEET rate were transformed into a logarithmic form, which removed the skewness and improved the results. The results for the tests are in appendix 4 and the results from the robustness check are in table 5.

The results from the robustness check indicate that the variables which were statistically significant in the baseline model, remained statistically significant after adding an additional variable and removing some countries from the dataset.

The GDP was statistically significant at 0.1 confidence level and negatively correlated with the total and youth unemployment rates. The relationship between GDP and the NEET rate was not statistically significant as in the baseline model. The coefficients of expenditure on direct job creation were a bit higher than in the baseline model but still indicated a negative relationship with the total, youth unemployment and the NEET rate. The expenditure on direct job creation was statistically significant at 0.01 confidence level, indicating that as more is spent on direct job creation schemes as a percentage of GDP, the total unemployment, youth unemployment and NEET rates are expected to decline.

The expenditure on supported employment was positively linked and statistically significant at 0.1 confidence level with the total and youth unemployment rates. Expenditure on training remained statistically significant with the total, youth unemployment and the NEET rates, indicating a positive relationship. Expenditure on education was statistically significant at 0.01 confidence level, indicating that as more is spent on education as a percentage of GDP, the NEET rate may be expected to decline. Expenditure on education, although not statistically significant, was negatively linked to the total and youth unemployment rates.

Table 5. Results from the robustness check

	Total Unemployment	Youth Unemployment	NEET
Indices	(5.1)	(5.2)	(5.3)
Tax wedge	-1.170	-1.420	-0.524
	(1.209)	(0.810)	(0.500)
EPL	-0.590***	-0.477***	-0.044
	(0.119)	(0.107)	(0.062)
GDP	-0.803*	-0.855*	-0.238
	(0.859)	(0.740)	(0.252)
Inflation	0.011	0.005	-0.023*
	(0.031)	(0.026)	(0.013)
Investment	-0.038	-0.040	-0.013
	(0.473)	(0.423)	(0.189)
Education	-0.096	-0.121	-0.075***
	(0.109)	(0.101)	(0.027)
Exp.direct	-1.086***	-1.057***	-0.348***
	(0.167)	(0.150)	(0.061)
Exp.supemp	0.679*	0.510*	0.453***
	(0.367)	(0.309)	(0.169)
Exp.train	1.543**	0.927*	1.279***
	(0.670)	(0.530)	(0.151)
Observations	105	105	105
Adjusted R^2	0.682	0.693	0.665

Source: Eurostat (2021), OECD (2021); author's calculations in R software

Notes: - Significance levels are: ***p<0.01; **p<0.05; *p<0.1;
- EPL (employment protection legislation), GDP (gross domestic product), Exp.direct (expenditure on direct job creation), Exp.supemp (expenditure on supported employment), Exp.train (expenditure on training).

Tax wedge, although not statistically significant, is negatively linked with the total, youth unemployment and the NEET rate. This result is not in line with the studies by Belot et al. (2002), Nickell et al. (2002) and Bertola et al. (2001). Large tax wedge should discourage employees from looking for job, partly due to substantial payments to the government and low net salaries, and

partly due to payments they get while unemployed. This is especially true for low-income workers, who have a small salary gap compared to unemployment benefits. A high tax wedge also raises labour expenses, discouraging firms from hiring more employees. (Shanoun, Abdennadher 2018)

The institutional factor EPL, remained statistically significant at 0.01 confidence level for total and youth unemployment, indicating that for one percent rise in EPL, one may expect a decline in total and youth unemployment rates. The relationship between EPL and the NEET rate was not statistically significant as in the baseline model.

The models specifications are moderate. According to the adjusted R^2, 68.2 percent of the data match the regression analysis in the model 5.1, 69.3 percent of the data match the regression analsysis in the model 5.2 and 66.5 percent of the data match the regression analysis in the model 5.3.

4.3. Discussion and suggestions

The results from the empirical part imply that there is a negative and statistically significant relationship between the expenditure on direct job creation and youth unemployment. Similar statistically significant and negative relationship was seen with the total unemployment and the NEET rate. These results are in line with Speckesser et al. (2019), who found that job incentives have a significant influence on lowering youth unemployment. Furthermore, direct job creation initiatives had significant benefits, suggesting that programs outside the commercial sector are effective in accomplishing their goals and reducing young unemployment. These results may be expected since the goal of the direct job creation schemes is to compensate for shortages in the labour market, as well as to permit the employment of those who would otherwise be jobless due to a lack of personal or professional credentials (Sommer, Rosenthal 2012). With direct job creation initiatives, the government normally covers most the firms' labour expenses (Gagel 2009). This allows those to be employed who otherwise would not be because of high labour costs.

The expenditure on training has a positive and statistically significant association with the youth unemployment and the NEET rate. These results are in line with Martin and Grubb (2001) and De Koning (2005). According to Becherman et al. (2004), training for youth participants, generally

gives less favorable outcomes. The results differ from that of Carr (2020), who found that increased expenditure in training schemes reduces youth unemployment and the NEET rates. The expenditure on supported employment was positively linked and statistically significant with the youth unemployment and the NEET rates, at 0.01 confidence level. This finding is in line with Burke-Miller at al. (2012) who found that youth are steered towards education, rather than jobs through supported employment programs. According to Card et al. (2015) and Kluve et al. (2016), most ALMP schemes that are especially focused at young unemployed, tend to be less effective than larger schemes targeted at the unemployed in general.

Dar and Tzannatos (1999) point out that using ALMPs to solve large-scale unemployment issues is problematic since these programs may only work for selected populations in specific conditions. Programs that may be effective for one group in one nation, may not be effective for another group in another country. Kluve et al. (2018) found that youth employment programs in middle- and low-income nations are more successful. One interpretation is that these programs are newer and may have benefitted from design and execution advancements and when variations in program and evaluation design of interventions done in low-income countries were taken into consideration, the conclusion remains the same.

As this thesis used the data from 27 European countries and did not subgroup them based on geographical, cultural or economic characteristic, this may be another explanation for the received results regarding the positive relationships that the expenditures on training and supported employment schemes have with youth unemployment and the NEET rates. Expenditures on supported employment and training may necessiate a longer evaluation period, especially if they are considered as an investment in human capital. In the short run, training may lead to further training and hence may give modest payoff. (Fay 1996) According to Card et al. (2010), the efficacy of training programs is highly dependent on the quality of the training provided and the abilities of the jobless. In the medium and long term (after two years), they are usually more effective than in the short term. Since the empirical analysis was conducted with fixed effects model where only short-term relationships can be estimated, it may be reasonable to believe that the long-term effect of expenditures on supported employment and training schemes on youth unemployment was not captured.

Moreover, there are several general methodological challenges in macroeconomic research. Exact estimates of effects may be difficult to produce since the quantity of data that was used used in

this thesis was limited. Another problem is two-way causality. ALMPs may have an influence on youth unemployment, but changes in the labour market may also inspire governmental decisions to reduce or increase the number of active labour market policies available. (Calmfors, 2002) Thus, youth unemployment itself might impact the expenditures of active labour market policies.

This thesis finds that there is a relationship between active labour market policies and youth unemployment. The empirical results suggest that there is a negative and significant relationship between the expenditures on direct job creation and youth unemployment. A rise in the expenditure of direct job schemes, is expected to decline the youth unemployment. These findings are robust, even if adding an additional variable to the model and decreasing the sample size by removing countries.

Microeconomic modeling, in addition to macro-estimations, may be used to see the effects of active labour market policies in greater detail. As this thesis did not include all the European countries and the time period was rather short, the author recommends for future research to include more countries and to expand the time span. Also, grouping countries with similar characteristics may improve the results. Regarding models, the author suggest to consider using Two-Stage Least Squares, Generalized Method of Moments or Meta Analysis. In order to get the full spectrum of the indicators that may impact the youth unemployment and the NEET rate, more economic, social or cultural variables should be included in the model. Furthermore, more studies are needed to assess the adequacy of certain public policy instruments, or at least those that spend a significant amount of public money to give a path out of unemployment for young people.

CONCLUSION

Over the last decade, there have been rising rates of youth unemployment, prompting the formation of plans and initiatives to address the problem. Countries who are seeking for a solution to reduce unemployment and bring individuals back into the workforce, frequently turn to policy initiatives that combine active and passive labour market strategies. According to previous research, active labour market policies have been successful in lowering unemployment. While most earlier studies of ALMP effectiveness and impact on unemployment have focused on the microeconomic level, or country approach, this thesis took a macroeconomic approach.

The aim of the thesis was to explore the relationship between active labour market policies and youth unemployment. For that, a panel data for 27 European Union countries for the period of 2010-2019 and fixed effects model was used. The dependent variables were the total unemployment, youth unemployment and NEET rate. Independent variables were the employment protection legislation, expenditures on training, supported employment and direct job schemes, expenditure on education, GDP, inflation, and investment. The data used was selected upon availability for 27 European Union countries and was retrieved from the Eurostat and OECD databases. Because the dependent variable is thought to change slowly over time and is dependent on the values of independent variables in earlier time periods, independent variables were delayed by one year when utilizing yearly data.

Based on the hypotheses, this thesis sought answers to the question to what extent is youth unemployment affected by active labour market policies. The results of the empirical analysis show that one out of three hypotheses were confirmed. The first hypothesis, which argues that the expenditure on training is negatively related to youth unemployment was not confirmed by the confidence level. The empirical results suggest that the expenditure on training has a positive association with the youth unemployment and the NEET rate. In addition, the hypothesis, which argues that the expenditure on supported employment is negatively related to youth unemployment was not confirmed by the confidence level. The empirical results suggest that the expenditure on

supported employment is positively linked with the youth unemployment and the NEET rate. Expenditures both on training and supported employment may require a longer reference period. Given that the empirical analysis was performed using a fixed effects model, where only short-term relationships can be estimated, this may explain the positive relationship between these expenditures and youth unemployment and NEET rates.

However, the hypothesis which argues that the expenditure on direct job creation is negatively related to youth unemployment was confirmed by the confidence level. The results from the empirical analysis state that there is a negative relationship between the expenditure on direct job creation schemes and the youth unemployment and the NEET rates. A rise in the expenditure on direct job creation, is expected to decline the youth unemployment and the NEET rates. The results are robust and are in line with previous literature. This outcome may be expected, given that the purpose of direct job creation programs is to compensate for labour market shortages while also allowing persons who would otherwise be jobless due to a lack of personal or professional qualifications to work.

According to the author, the aim of this thesis was achieved by finding the relationship between active labour market policies and youth unemployment. It is important to assess the active labour market policies and their impact on youth unemployment since they represent one of the most vulnerable groups in labour market. To see what works and helps to combat with youth unemployment, more studies are needed to assess if certain active public policy instruments, at least those that require significant expenditure of public funds, are designed well enough and are reaching those groups who need the assistance the most. Through theoretical and empirical analysis, the author answered the hypotheses and the research question. In conclusion, there is a negative relationship with the expenditure on direct job creation and the youth unemployment and NEET rates.

KOKKUVÕTE

AKTIIVNE TÖÖTURUPOLIITIKA JA NOORTE TÖÖTUS EUROOPA RIIKIDE NÄITEL

Heli Jõgeva

Viimase kümnendi jooksul on noorte töötuse määr kasvanud, mis on ajendanud koostama plaane ja looma algatusi probleemi lahendamiseks. Riigid, kes otsivad lahendust tööpuuduse vähendamiseks ja inimeste tööjõuturule tagasi toomiseks, pöörduvad sageli aktiivseid ja passiivseid tööturustrateegiaid ühendavate poliitiliste algatuste poole.

Varasemate uuringute kohaselt on aktiivne tööturupoliitika olnud edukas tööpuuduse vähendamisel. Kui enamik varasemaid tööturupoliitika uuringuid on keskendunud mikromajanduslikule tasemele, siis käesolev lõputöö kasutas makromajanduslikku lähenemist. Lõputöö eesmärgiks oli uurida seoseid aktiivse tööturupoliitika ja noorte tööpuuduse vahel. Selleks kasutati 27 Euroopa Liidu riigi paneelandmeid perioodi 2010-2019 kohta ja fikseeritud efektiga mudelit. Sõltuvateks muutujateks olid töötuse, noorte töötuse ja NEET määr. Sõltumatud muutujad olid töökaitsealased õigusaktid, kulutused tööturukoolitusele, rehabilitatsioonile ja otseste töökohtade loomisele, kulutused haridusele, SKT, inflatsioon ja investeeringud. Kasutatud andmed valiti kättesaadavuse alusel 27 Euroopa Liidu riigi kohta ning need saadi Eurostati ja OECD andmebaasidest.

Magistritöös otsiti algselt püsitatud hüpoteesidele põhinedes vastust uurimusküsimusele, kuidas on seotud aktiivne tööturupoliitika ja noorte töötus. Magistritöö empiirilise analüüsi tulemused näitavad, et kolmest hüpoteesist leidis kinnitust üks. Kinnitust ei leidnud esimene hüpotees, mis väidab, et kulutused tööturukoolitustele on negatiivselt seotud noorte töötusega. Empiirilised tulemused viitavad sellele, et koolitusele tehtavatel kulutustel on positiivne seos noorte töötuse ja NEET määraga. Lisaks ei leidnud usaldusnivool kinnitust hüpotees, mis väidab, et kulutused

rehabilitatsioonile on negatiivselt seotud noorte töötusega. Empiirilised tulemused viitavad sellele, et kulutused rehabilitatsioonile on positiivselt seotud noorte töötuse ja NEET määraga. Kulutused nii tööturukoolitustele, kui ka rehabilitatsioonile võivad vajada pikemat vaatlusperioodi. Kuna empiiriline analüüs viidi läbi fikseeritud efektiga mudelit kasutades, kus saab hinnata vaid lühiajalisi suhteid, siis võib see selgitada antud kulutuste positiivset seos noorte töötuse ja NEET määraga.

Kinnitust leidis hüpotees, mis väidab, et otsestele töökohtade loomisele tehtavate kulutuste ning noorte töötuse ja NEET määrade vahel on negatiivne seos. Otseste töökohtade loomisele tehtud kulutuste kasv vähendab eeldatavasti noorte töötuse ja NEET määra. See tulemus võib olla ootuspärane, arvestades, et otseste töökohtade loomise programmide eesmärk on kompenseerida tööturu puudujääke, võimaldades samas töötada ka isikutel, kes muidu jääksid töötuks isikliku või kutsealase kvalifikatsiooni puudumise tõttu.

Käesoleva magistritöö püstitatud eesmärk sai autori arvates täidetud, leides seose aktiivse tööturupoliitika ja noorte töötuse vahel. Oluline on hinnata aktiivset tööturupoliitikat noorte töötusele, kuna nad on tööturul üks haavatavamaid rühmi. Et näha, mis toimib ja aitab võidelda noorte töötusega, on vaja rohkem uuringuid. Seda hindamaks, kas teatud aktiivsed meetmed, vähemalt need, mis nõuavad märkimisväärseid riiklikke vahendeid, on piisavalt hästi kavandatud ja jõuavad kõige enam abi vajavate rühmadeni.

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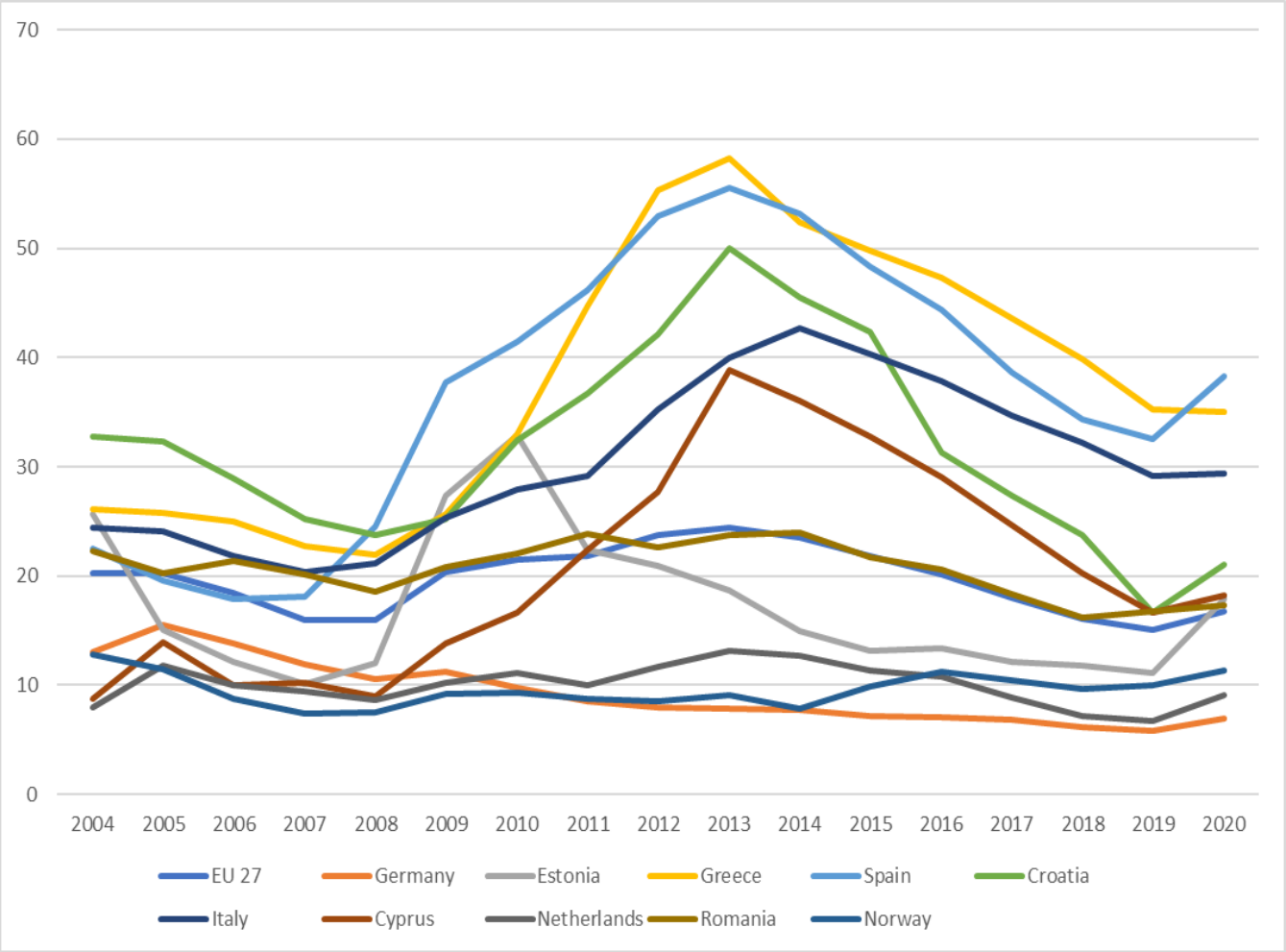
APPENDICES

Appendix 1. Youth unemployment rates in Europe, 15–24-year-olds

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
EU 27	20,3	20,2	18,4	16,0	16,0	20,4	21,5	21,8	23,7	24,4	23,5	21,8	20,1	18,0	16,1	15,1	16,8
Belgium	17,5	21,5	20,5	18,8	18,0	21,9	22,4	18,7	19,8	23,7	23,2	22,1	20,1	19,3	15,8	14,2	15,3
Bulgaria	24,5	22,3	19,5	15,1	12,7	16,2	21,9	25,0	28,1	28,4	23,8	21,6	17,2	12,9	12,7	8,9	14,2
Czechia	19,9	19,2	17,5	10,7	9,9	16,6	18,3	18,1	19,5	19,0	15,9	12,6	10,5	7,9	6,7	5,6	8,0
Denmark	7,8	8,6	7,7	7,5	9,5	13,5	15,6	16,4	15,8	14,8	14,2	12,2	12,2	12,4	10,5	10,1	11,6
Germany	13,0	15,5	13,8	11,9	10,6	11,2	9,8	8,5	8,0	7,8	7,7	7,2	7,1	6,8	6,2	5,8	7,0
Estonia	25,7	15,1	12,1	10,1	12,0	27,4	32,9	22,4	20,9	18,7	15,0	13,1	13,4	12,1	11,8	11,1	17,9
Ireland	8,3	8,6	8,6	9,2	13,5	24,5	28,1	29,6	30,8	26,7	23,4	20,2	16,8	14,4	13,8	12,5	15,3
Greece	26,1	25,8	25,0	22,7	21,9	25,7	33,0	44,7	55,3	58,3	52,4	49,8	47,3	43,6	39,9	35,2	35,0
Spain	22,5	19,6	17,9	18,1	24,5	37,7	41,5	46,2	52,9	55,5	53,2	48,3	44,4	38,6	34,3	32,5	38,3
France	19,8	20,3	21,3	18,8	18,3	22,9	22,5	21,9	23,7	24,1	24,2	24,7	24,5	22,1	20,8	19,5	20,2
Croatia	32,8	32,3	28,9	25,2	23,7	25,2	32,4	36,7	42,1	50,0	45,5	42,3	31,3	27,4	23,7	16,6	21,1
Italy	24,4	24,1	21,8	20,4	21,2	25,3	27,9	29,2	35,3	40,0	42,7	40,3	37,8	34,7	32,2	29,2	29,4
Cyprus	8,7	13,9	10,0	10,2	9,0	13,8	16,6	22,4	27,7	38,9	36,0	32,8	29,1	24,7	20,2	16,6	18,2
Latvia	21,8	15,1	13,6	10,6	13,6	33,3	36,2	31,0	28,5	23,2	19,6	16,3	17,3	17,0	12,2	12,4	14,9
Lithuania	20,3	15,8	10,0	8,4	13,3	29,6	35,7	32,6	26,7	21,9	19,3	16,3	14,5	13,3	11,1	11,9	19,6
Luxembourg	16,9	13,7	16,2	15,2	17,9	17,2	14,2	16,8	18,8	15,5	22,6	17,3	18,9	15,4	14,2	17,0	23,2
Hungary	14,4	19,4	19,1	18,0	19,5	26,4	26,4	26,0	28,2	26,6	20,4	17,3	12,9	10,7	10,2	11,4	12,8
Malta	18,3	16,1	15,5	13,5	11,7	14,5	13,2	13,3	13,8	12,7	11,7	11,6	10,7	10,6	9,1	9,3	10,9
Netherlands	8,0	11,8	10,0	9,4	8,6	10,2	11,1	10,0	11,7	13,2	12,7	11,3	10,8	8,9	7,2	6,7	9,1
Austria	12,1	11,0	9,8	9,4	8,5	10,7	9,5	8,9	9,4	9,7	10,3	10,6	11,2	9,8	9,4	8,5	10,5
Poland	40,1	36,9	29,8	21,7	17,3	20,6	23,7	25,8	26,5	27,3	23,9	20,8	17,7	14,8	11,7	9,9	10,8
Portugal	14,1	16,2	16,5	16,7	16,7	20,3	22,8	30,3	37,9	38,1	34,8	32,0	28,0	23,9	20,3	18,3	22,6
Romania	22,3	20,2	21,4	20,1	18,6	20,8	22,1	23,9	22,6	23,7	24,0	21,7	20,6	18,3	16,2	16,8	17,3
Slovenia	14,0	15,9	13,9	10,1	10,4	13,6	14,7	15,7	20,6	21,6	20,2	16,3	15,2	11,2	8,8	8,1	14,2
Slovakia	32,8	30,1	26,6	20,3	19,0	27,3	33,6	33,4	34,0	33,7	29,7	26,5	22,2	18,9	14,9	16,1	19,3
Finland	27,5	20,1	18,7	16,5	16,5	21,5	21,4	20,1	19,0	19,9	20,5	22,4	20,1	20,1	17,0	17,2	21,4
Sweden	18,5	22,8	21,5	19,3	20,2	25,0	24,8	22,8	23,6	23,5	22,9	20,4	18,9	17,9	17,4	20,1	23,9
Iceland	12,1	7,4	8,3	7,0	8,2	15,9	16,2	14,4	13,5	10,6	9,8	8,8	6,5	7,9	6,1	8,7	10,0
Norway	12,8	11,5	8,7	7,4	7,5	9,2	9,3	8,7	8,5	9,1	7,9	9,9	11,2	10,4	9,7	10,0	11,3
Switzerland	7,7	8,8	7,7	7,1	7,0	8,5	8,2	7,7	8,3	8,7	8,6	8,8	8,6	8,1	7,9	8,0	8,6
United King	10,7	12,7	13,9	14,3	15,0	19,1	19,9	21,3	21,2	20,7	17,0	14,6	13,0	12,1	11,3	11,2	:
Montenegro	:	:	:	:	:	:	:	36,6	42,2	40,5	35,8	37,6	35,9	31,7	29,4	25,2	36,0
North Mace	:	:	59,7	57,7	56,4	55,1	53,7	55,3	53,9	51,9	53,1	47,3	48,2	46,7	45,4	35,6	35,7
Serbia	:	:	:	:	:	:	46,3	50,9	51,2	49,4	47,3	43,2	34,9	31,9	29,7	27,5	26,6
Turkey	:	:	16,4	17,2	18,5	22,8	19,7	16,7	15,7	16,9	17,8	18,5	19,5	20,5	20,2	25,2	25,1

Source: Eurostat (2021), composed by the author

Appendix 2. Youth unemployment rates in Europe for selected countries and 15-24-year-olds, %



Source: Eurostat (2021), composed by the author

Appendix 3. Young people neither in employment nor in education and training (NEET) in Europe, 15-24-year-olds, %

GEO/TIME	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
EU 27	13,0	12,9	11,7	10,9	10,7	12,3	12,7	12,7	13,1	13,0	12,6	12,2	11,7	11,0	10,5	10,1	11,1
Belgium	15,4	13,0	11,2	11,2	10,1	11,1	10,9	11,8	12,3	12,7	12,0	12,2	9,9	9,3	9,2	9,3	9,2
Bulgaria	26,4	25,1	22,2	19,1	17,4	19,5	21,0	21,8	21,5	21,6	20,2	19,3	18,2	15,3	15,0	13,7	14,4
Czechia	13,7	13,3	9,2	6,9	6,7	8,5	8,8	8,3	8,9	9,1	8,1	7,5	7,0	6,3	5,6	5,7	6,6
Denmark	5,1	4,3	3,6	4,3	5,2	6,5	6,9	7,2	7,3	6,6	6,4	7,0	6,7	7,6	7,7	7,7	7,4
Germany (until 1	10,1	10,9	9,6	8,9	8,4	8,8	8,3	7,5	7,1	6,3	6,4	6,2	6,7	6,3	5,9	5,7	7,3
Estonia	12,5	10,6	8,8	8,9	8,7	14,5	14,0	11,6	12,2	11,3	11,7	10,8	9,1	9,4	9,8	6,9	8,9
Ireland	11,9	10,9	9,7	9,5	13,9	18,3	19,4	19,1	19,2	16,4	15,3	14,3	12,6	10,9	10,1	10,1	12,0
Greece	16,6	15,9	12,0	11,3	11,4	12,4	14,8	17,4	20,2	20,4	19,1	17,2	15,8	15,3	14,1	12,5	13,2
Spain	12,5	13,0	11,8	12,0	14,3	18,1	17,8	18,2	18,6	18,6	17,1	15,6	14,6	13,3	12,4	12,1	13,9
France	10,9	11,2	11,3	10,7	10,5	12,7	12,7	12,3	12,5	11,2	11,2	12,0	11,9	11,4	11,1	10,6	11,4
Croatia	17,1	16,7	14,2	12,9	11,6	13,4	15,7	16,2	16,6	19,6	19,3	18,1	16,9	15,4	13,6	11,8	12,2
Italy	16,8	17,1	16,8	16,1	16,6	17,6	19,0	19,7	21,0	22,2	22,1	21,4	19,9	20,1	19,2	18,1	19,0
Cyprus	9,4	19,5	10,7	9,0	9,7	9,9	11,7	14,6	16,0	18,7	17,0	15,3	16,0	16,1	13,2	13,7	14,4
Latvia	12,4	10,6	11,5	11,9	11,8	17,5	17,8	16,0	14,9	13,0	12,0	10,5	11,2	10,3	7,8	7,9	7,1
Lithuania	10,6	8,8	8,3	7,1	8,8	12,1	13,2	11,8	11,2	11,1	9,9	9,2	9,4	9,1	8,0	8,6	10,8
Luxembourg	6,3	5,5	6,7	5,7	6,2	5,8	5,1	4,7	5,9	5,0	6,3	6,2	5,4	5,9	5,3	5,6	6,6
Hungary	12,7	12,9	12,4	11,5	11,5	13,6	12,6	13,2	14,8	15,5	13,6	11,6	11,0	11,0	10,7	11,0	11,7
Malta	13,1	11,9	10,3	11,5	8,3	9,9	9,5	10,2	10,8	9,9	10,3	10,5	8,8	8,6	7,3	8,6	9,2
Netherlands	5,3	6,4	4,9	4,3	3,9	5,0	4,8	4,3	4,9	5,6	5,5	4,7	4,6	4,0	4,2	4,3	4,5
Austria	9,1	8,6	7,8	7,4	7,4	8,2	7,4	7,3	6,8	7,3	7,7	7,5	7,7	6,5	6,8	7,1	8,0
Poland	15,0	13,9	12,6	10,6	9,0	10,1	10,8	11,5	11,8	12,2	12,0	11,0	10,5	9,5	8,7	8,1	8,6
Portugal	11,2	11,1	10,6	11,2	10,2	11,2	11,4	12,6	13,9	14,1	12,3	11,3	10,6	9,3	8,4	8,0	9,1
Romania	19,8	16,8	14,8	13,3	11,6	13,9	16,6	17,5	16,8	17,0	17,0	18,1	17,4	15,2	14,5	14,7	14,8
Slovenia	7,5	8,9	8,5	6,7	6,5	7,5	7,1	7,1	9,3	9,2	9,4	9,5	8,0	6,5	6,6	7,0	7,7
Slovakia	17,9	15,8	14,4	12,5	11,1	12,5	14,1	13,8	13,8	13,7	12,8	13,7	12,3	12,1	10,2	10,3	10,7
Finland	9,1	7,8	7,7	7,0	7,8	9,9	9,0	8,4	8,6	9,3	10,2	10,6	9,9	9,4	8,5	8,2	9,3
Sweden	7,6	10,5	9,3	7,5	7,8	9,6	7,7	7,5	7,8	7,5	7,2	6,7	6,5	6,2	6,0	5,5	6,5
Iceland	5,5	4,6	4,7	4,0	4,5	7,7	7,4	6,7	5,9	5,5	5,7	4,6	4,1	3,9	4,9	4,7	6,1
Norway	8,6	8,3	4,6	4,4	4,1	5,0	4,9	5,0	5,2	5,6	5,5	5,0	5,4	4,6	4,9	4,8	4,9
Switzerland	6,6	7,2	7,2	6,2	6,3	8,1	6,8	6,8	6,8	7,3	7,4	7,4	7,0	6,5	6,0	6,2	6,4
United Kingdom	8,4	8,4	8,6	11,9	12,1	13,2	13,6	14,2	13,9	13,2	11,9	11,1	10,9	10,3	10,4	10,5	:
Montenegro	:	:	:	:	:	:	:	18,3	17,8	18,5	17,7	19,1	18,4	16,7	16,2	17,3	21,1
North Macedonia	:	:	41,3	33,1	30,7	27,7	25,5	25,2	24,8	24,2	25,2	24,7	24,3	24,9	24,1	18,1	19,6
Albania	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
Serbia	:	:	:	:	:	:	20,4	21,3	21,6	19,5	20,6	20,1	17,7	17,2	16,5	15,3	15,9
Turkey	:	:	38,6	39,2	37,0	34,9	32,3	29,6	28,7	25,5	24,8	23,9	23,9	24,2	24,4	26,0	28,3

Source: Eurostat (2021), composed by the author

Appendix 4. Tests

	(4.1)	(4.2)	(4.3)	(5.1)	(5.2)	(5.3)
F-test	p-value < 2.2e-16	p-value < 2.2e-16	p-value < 2.2e-16	p-value < 2.2e-16	p-value < 2.2e-16	p-value < 2.2e-16
Wald	p-value < 2.2e-16	p-value < 2.2e-16	p-value < 2.2e-16	p-value < 2.2e-16	p-value < 2.2e-16	p-value = 4.926e-16
Hausman	p-value = 6.369e-12	p-value < 2.2e-16	p-value = 3.226e-1	p-value = 4.487e-09	p-value < 2.2e-16	p-value = 2.201e-06
Jarque-Bera	p-value = 0.8135	p-value = 0.5252	p-value = 0.3612	p-value = 0.04176	p-value = 0.3016	p-value = 0.07004

Source: Author's calculations in R software.

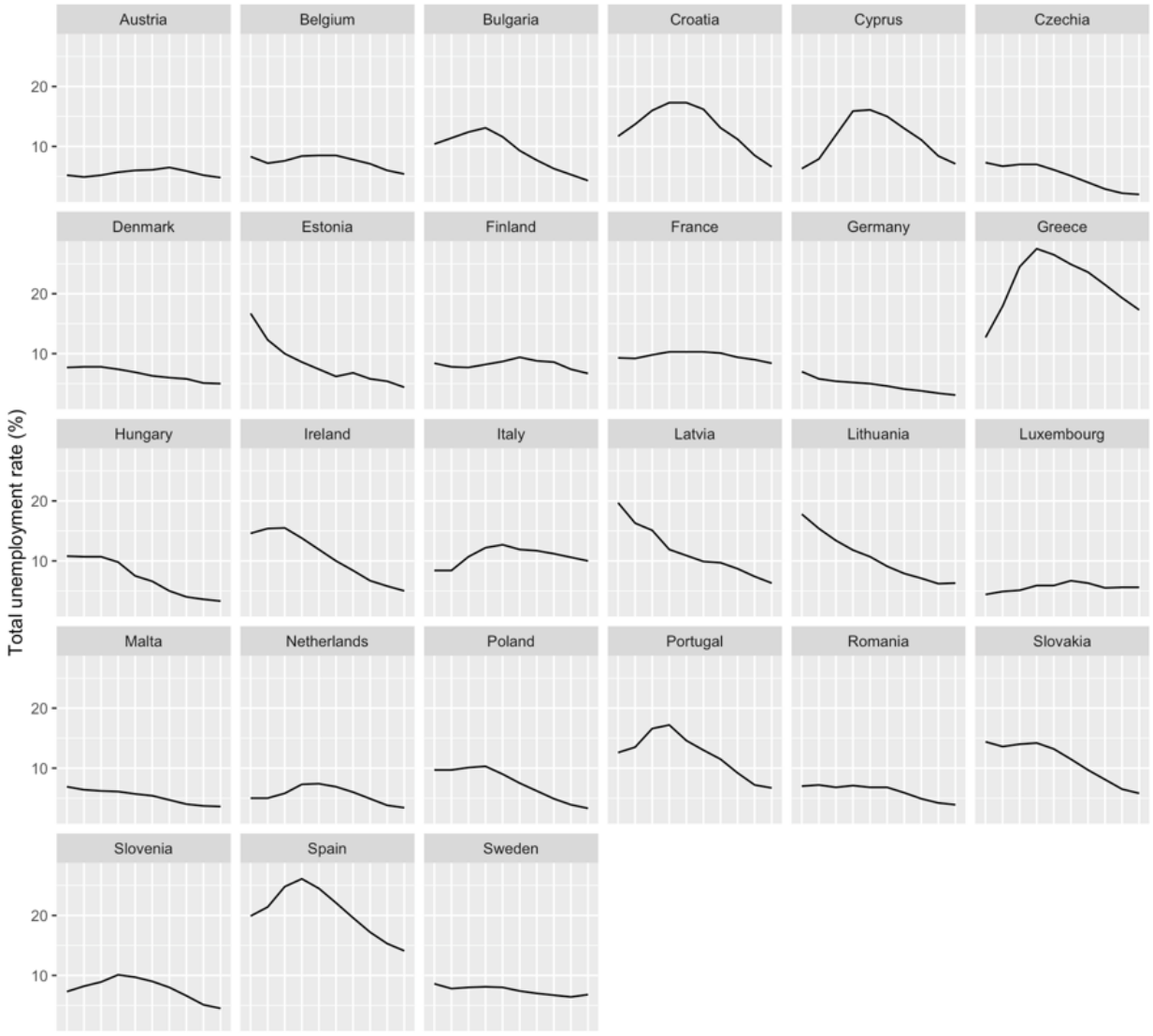
Appendix 5. Variables

Variables	Definition and measure	Source
Dependent		
Total Unemployment	Percentage of population in the labour force.	Eurostat
Youth Unemployment	Unemployment rate among 15-to 24-year-olds as a percentage of the total work force in that age group	Eurostat
NEET	The percentage of young people who are unemployed and not pursuing additional education or training.	Eurostat
Independent		
Education	Expenditure on education, percentage of GDP.	Eurostat
Tax Wedge	The tax wedge estimates how much tax on labour income discourages people from working.The ratio between the amount of taxes paid by an average single worker (a single individual at 100% of average wages) without children and the comparable total labour cost for the employer.	OECD
Employment Protection Legislation (EPL)	Strictness of employment protection, temporary contracts.	OECD
ALMP	All investment (other than schooling) intended at improving the recipients' prospects of finding meaningful work or otherwise increasing their earning capacity is included in labour market	Eurostat

	programs. Percentage of GDP.	
Training	Training methods aimed at improving the employability of ALMP target groups. Percentage of GDP	Eurostat
Supported Employment	Measures aimed at promoting the integration of people with limited working capability into the labour market. Percentage of GDP	Eurostat
Labour Market Services	Services aimed at improving the employability of ALMP target groups. Percentage of GDP	Eurostat
Employment Incentives	Subsidies for open market jobs that may or not may not exist without the public subsidy. Percentage of GDP	Eurostat
GDP	Indicator of a country's economic health. It relflects the entire value of products and services produced minus the value of goods and services consumed in the production process. Measure at *per capita* in PPS.	Eurostat
Inflation	An rise in the general price level that is assessed by a consumer price index.	Eurostat
Investment	Investment consists of resident producers´ aquisitions, less disposals, of fixed tangible or intangible assets. Percentage of GDP	Eurostat
Trade Union	The goal of a trade union is to defend and advance the interests of its members at work.	OECD

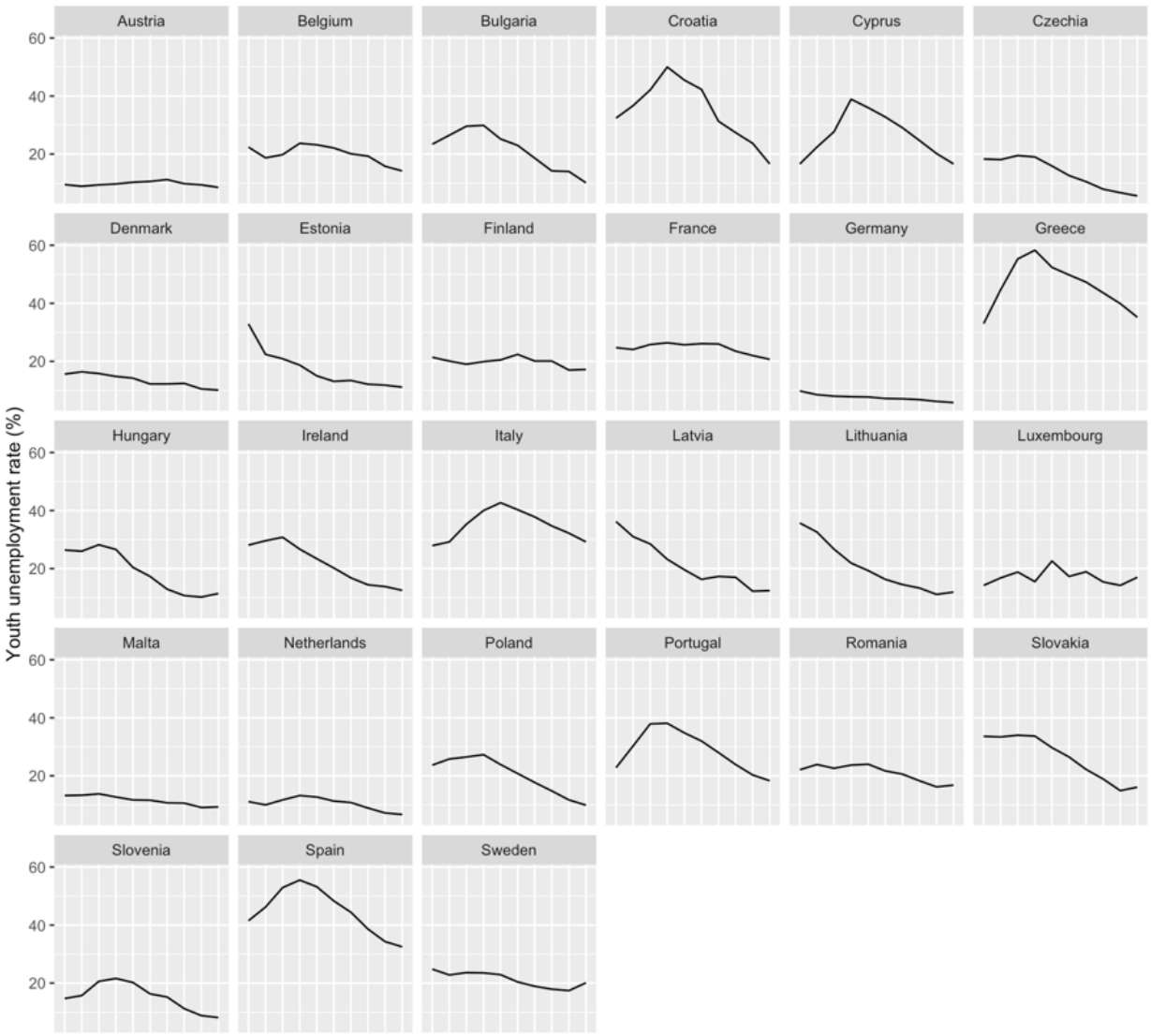
Source: Eurostat (2021), OECD (2021); composed by the author.

Appendix 6. Total unemployment rate in EU-27 between 2010-2019



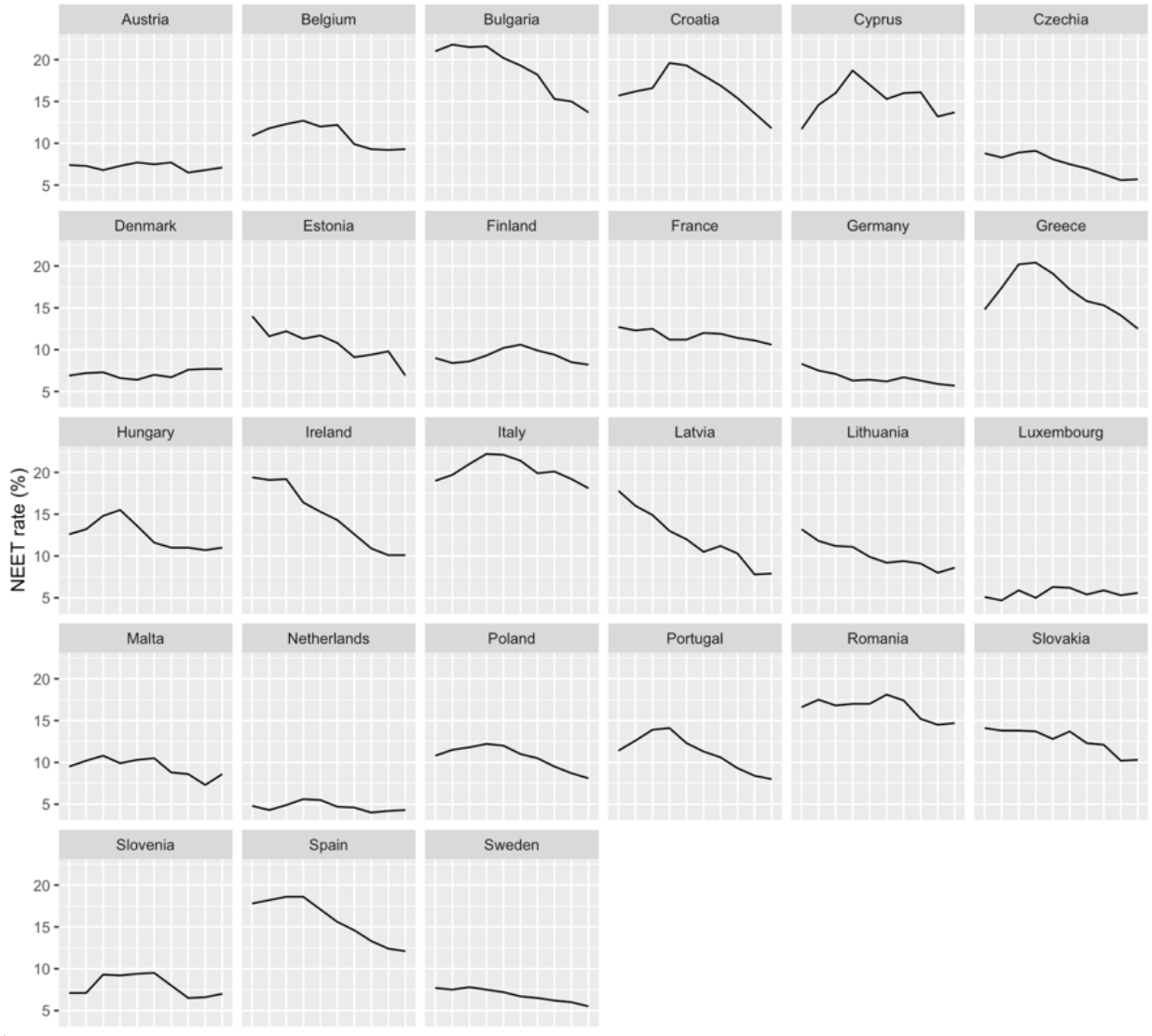
Source: Eurostat (2021), composed by the author in R software.

Appendix 7. Youth unemployment rate in EU-27 between 2010-2019



Source: Eurostat (2021), composed by the author in R software.

Appendix 8. NEET rate in EU-27 between 2010-2019



Source: Eurostat (2021), composed by the author in R software.

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