

**YOUTH UNEMPLOYMENT IN DEVELOPING AND DEVELOPED  
EUROPEAN COUNTRIES**

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# **YOUTH UNEMPLOYMENT IN DEVELOPING AND DEVELOPED EUROPEAN COUNTRIES**

## **ABSTRACT**

*The aim of this study is to define youth unemployment in Europe in both developing countries and developed ones. Youth unemployment itself is a complex macroeconomic factor, because it is indicated by several other factors. To study youth unemployment complexity there are taken into consideration variables like Consumer Price Index (CPI), Interest Rate (INT), and Industrial Production Index (IPI). The data are obtained by the official site of EUROSTAT and International Monetary Fund (IMF) for a period of 2000-2015. According to previous studies and literature it was expected a significant impact through youth unemployment rate and variables we have taken into consideration in our study. Autoregressive Distributive Lag (ARDL) is the econometric model conducted in order to study the impact that independent variables and their first lags have on total youth unemployment, female and male youth unemployment, too.*

**Keywords:** *Youth unemployment, Developing European countries, Developed European countries, Industrial Production Index, Interest Rate and Consumer Price Index.*

# YOUTH UNEMPLOYMENT IN DEVELOPING AND DEVELOPED EUROPEAN COUNTRIES

## ABSTRAKT

*Qellimi i ketij studimi eshte precaktimi i papunesise se te rinjve ne Evrope, si ne vendet ne zhvillim dhe ne vendet e zhvilluara. Papunesia e te rinjve ne vetvete eshte nje faktor makroekonomik shume dimensional, sepse ndikojne shume faktore te tjere ekonomike. Per te studiuar kompleksitetin e papunesise se te rinjve kemi marre ne shqyrtim faktore makroekonomik si inflacioni, norma e interesit dhe indeksin e prodhimit industrial. Te dhenat jane marre nga faqja zyrtare e EUROSTAT dhe Fondi Monetar Nderkombetar (FMN) per nje periudhe nga viti 2000 deri ne 2015. Duke u bazuar ne studimet e mepareshme dhe nga literatura te tjera pritet qe faktoret e pavarur qe kemi marr ne shqyrtim ne lidhje me papunesine e te rinjve te jene te vlefshem. Modeli ekonometrik qe kemi perdorur ne studimin tone ne lidhje me papunesine e te rinjve ne Evrope dhe faktore te tjere te pavarur eshte Autoregressive Distributive Lag (ARDL). Ky model merr ne konsiderate gjithashtu vlerat e vitit paraardhes te faktoreve qe ne marrim ne studim.*

**Fjalet Kyçe:** *Papunesia e te rinjve, Vendet ne zhvillim te Evropes, Vendet e zhvilluara te Evropes, Indeksi i prodhimit industrial, Inflacioni, Norma e interesit.*

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Also, I must express my very profound gratitude to my parents and to my sister who provided me with continuous encouragement and patience through all my academic years and during the period of writing my thesis. Without their collaboration nothing would have been possible.

Thank You!

## **DECLARATION STATEMENT**

I hereby declare that this master thesis titled “Youth Unemployment in Developing and Developed European Countries” is based on my original work, except quotations and citations which have been duly acknowledged. I also declare that this thesis has not been previously or currently submitted for the award of any degree, at Epoka University, any other University or Institution.

Eni Durri

.....June 2016

## **TABLE OF CONTENTS**

<b>APPROVAL PAGE</b>	<b>I</b>
<b>EXAM BOARD OF THESIS</b>	<b>II</b>
<b>ABSTRACT</b>	<b>III</b>
<b>ABSTRAKT</b>	<b>IV</b>
<b>ACKNOWLEDGEMENTS</b>	<b>V</b>
<b>DECLARATION STATEMENT</b>	<b>VI</b>
<b>TABLE OF CONTENT</b>	<b>VII</b>
<b>LIST OF TABLES</b>	<b>VIII</b>
<b>LIST OF FIGURES</b>	<b>IX</b>
<b>LIST OF ABBREVIATIONS</b>	<b>XI</b>

## **CHAPTERS**

### **1 INTRODUCTION**

1.1 Focus of the study	1
1.2 Economies of developing and developed European countries	3
1.3 Youth unemployment in developed countries	7
1.4 Youth unemployment in developing countries	8
1.5 Research objectives	8
1.6 Motivation of the study	9
1.7 Significance of the study	9
1.8 Research model	10
1.9 Theoretical framework	10



<b>2 LITERATURE REVIEW</b>	
2.1 Literature Review	12
<b>3 DATA AND METODOLOGY</b>	
3.1 Data	20
3.2 Methodology	22
3.2.1 Graphical Analysis	22
3.2.2 ARDL Model	24
<b>4 EMPIRICAL FINDINGS</b>	
4.1 Unit Root Test Result	27
4.2 ARDL Model Result	28
<b>5 CONCLUSIONS</b>	
5.1 Overall Conclusion	33
5.2 Implications	34
5.3 Limitations	34
5.4 Further Studies	34
<b>REFERENCES</b>	35

## LIST OF TABLES

TABLE 3.1 Youth unemployment rate in developing and developed European countries.	22
TABLE 4.1 Unit root test result table for developing European countries.	27
TABLE 4.2 Unit root test result table for developed countries.	27
TABLE 4.3 ARDL model result for Unemployment in developing European countries.	28
TABLE 4.4 ARDL model result for Male Unemployment in developing European countries.	29
TABLE 4.5 ARDL model result for Female Unemployment in developing European countries.	30
TABLE 4.6 ARDL model result for Unemployment in developed European countries.	30
TABLE 4.7 ARDL model result for Female Unemployment in developed European countries.	31
TABLE 4.8 ARDL model result for Male Unemployment in developed European countries.	32

## LIST OF FIGURES

FIGURE 2.1 Youth unemployment rate for some European countries	13
FIGURE 2.2 Components of labor cost	15
FIGURE 2.3 Average labor cost per hour for European countries	16
FIGURE 2.4 Minimum wages in European countries divided in 3 groups	17
FIGURE 3.1 Average youth unemployment rate in developing European Countries	23
FIGURE 3.2 Average youth unemployment rate in developed European Countries	24

## **LIST OF ABBREVIATIONS**

ALMPs	: Active Labor Market Policies
IMF	: International Monetary Fund
EU-LFS	: European Union- Labor Force Survey
EIB	: European Investment Bank
OECD	: Organization for Economic Co-Operation and Development
CPI	: Consumer Price Index
IPI	: Industrial Production Index
INT	: Interest rate
ARDL	: Autoregressive Distributive Lag
MUN	: Male Unemployment
FUN	: Female Unemployment

# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 Focus of the study**

The danger of a “lost generation” is becoming one of the biggest threats for the society. Youth unemployment is a widespread phenomenon all around the world. The phenomenon of youth unemployment should be studied in its complexity by taking into consideration the facts that causes huge rates of unemployment in young people below 25 years and the consequences of youth unemployment, mentioning here economical consequences and social ones. It is very important to emphasize that almost 50% of the youth unemployed are long-term unemployed, which means they are unemployed for a period more than 12 months. Youth unemployment has begun to rise more and more since the beginning of the crisis in 2008. Even though most of the European developed countries have begun to recover from the global crisis that began in 2008, this recovery seems to be very slow. In fact the rate of youth unemployment varies from country to country, but in general there are some specific factors that indicate in youth unemployment as a whole. Here we can mention the decrease of economic activity as a result of the global crisis. Young people have a tendency to be hired mostly in part- time jobs or in cyclically sensitive sectors of the economy. So it means that young people are the first people fired from work positions in recession times, where the economic activity level falls dramatically. Another reason that can explain high rates of youth unemployment is the output gap and the labor market factors. It is very important to be emphasized that here is taken into consideration the labor costs especially for low-skilled labor, the opportunity cost of working and also the spending on active labor market policies (ALMPs).

ALMPs consist in different programs that interfere in the market to detect unemployment. Youth unemployment rate depends also from extensive labor market duality and insufficient professional trainings. Numerous institutional factors, such as lack of seniority or lack of labor market experience contribute more and more in the uncertainty of youth employment. Being in those circumstances young people gather little experience in job positions where they may be temporarily working and as a consequence they do not create a clear picture of what kind of job they are searching for and also what income they will be aiming for in the future.

In addition young people are supposed to have fewer resources than adult workers, which means that they have lower probabilities to get hired compared to adult workers. The age from 15 to 30 years old is a critical time of transition in life, but people who have long-term occupational objectives are supposed to have greater prosperity and possibilities, but on the other hand the vulnerable part of the society who is involved in short-term contracts has fewer opportunities for education and vocational training. Some of youth unemployed are discouraged and have given up seeking for work, others that have had the opportunity to receive education do not coordinate their professional background with the needs of labor market or on the other hand quite often young people are overqualified for their job positions. So, because of the labor market mismatches high youth unemployment is often followed by difficulties in filling vacant job positions.

Governmental institutions are doing big efforts in order to especially address the youth unemployment. Generally each European country should take 3 key steps in order to lower youth unemployment rate:

1. Identifying long-term youth unemployed by encouraging them to be registered as long-term unemployed ones.
2. Each registered unemployed should be provided with an individual assessment in order to identify their potential and needs after 18 months of unemployment.
3. After 18 months of unemployment government should offer to every young people, who are declared as long-term unemployed, a job integration agreement. Job integration agreement consists of a concrete plan such as

further training or education needed to bring unemployed youth back to work.

Above we have mentioned three general steps that every government must follow in order to smooth the rate of youth unemployment, but it is important to emphasize that youth unemployment rate differs from country to country, so every government should take specific country based policies to address youth unemployment. In the introduction part of our study we just gave a general picture of youth unemployment, but later on, in the following chapters we will analyze in details this phenomenon and give solutions to it.

## **1.2 Economies of developing and developed European countries**

### **Developing European countries**

*Czech Republic* is one of the most developed countries in Central and Eastern European countries; also it has the most stable economy from all the pos-communist states in Europe. In 2015 economic growth of Czech Republic was estimated to be 4.2%, which is considered to be the most rapid growing economy in the European Union.

*Estonian* economy development was considered to be stable, but in the beginning of 2008 the economic situation turned down. The economic crisis reached its peak in autumn 2008. The availability of credit money was worsened, export capacities were collapsed and insecurity of households and companies was altered. Finally, after the second quarter of 2010 the value of economic growth was positive.

*Hungary* is part of the OECD countries and is considered to have a high-income mixed economy. According to IMF Hungarian economy is the 57-th economy in the world. Also, it is very important to mention that Hungary has an economy highly oriented on foreign trade.

**Poland** has the largest economy in the Central Europe and according to the World Bank is considered as high-income economy. In 2015 Poland economic growth was estimated to be 3.7%.

**Slovenia** was the first country from the EU entrants who adopted euro in Central and Southeastern Europe. The transition of changing the currency from the national one to euro was stable.

**Slovakia** is situated in the heart of Central Europe and has a favorable geographical position for the development of the country. Slovakia entered EU in 2004 and euro zone in 2009.

### **Developed European countries**

**Belgium** is considered to be a high developed country with relatively high percentage of growth rate and GDP (Gross Domestic Product). Belgium is an important member of OECD, which is an organization that shows the economic status of the most industrialized countries. Belgium's economy depends more on industries like: coal, heavy machineries, petroleum, transportation etc.

**Denmark** is considered to be a high income county with a mixed economy. Danish people use their own currency, which is Danish krone. Sectors which have a significant contribution in the Danish economy are: services, which are the main sector, continuing with the industry sector and in the end agriculture.

**Germany** is the largest economy in Europe; also it is ranked the fourth in the world according to the nominal GDP. The main sector that occupies an important place in the total GDP of the country is the service sector, then comes industry and the last is agriculture. Exports are estimated to be 41% of the total national output; here we can mention: vehicles, electronic products, pharmaceuticals, basic metals etc.

**Ireland** is characterized by high economic growth rates for long periods of time, but after 2007 Irish economy came across through a technical recession for a period of



two years. In 2010 Irish began to improve and in 2015 economic growth rate of Ireland was 6%.

*Greece* is classified as a developed European country. Greek economy is mostly based on service sector. Industrial sector and agriculture contribute less in Greek economy. From the year 2008 till 2013 Greek economy faced a tremendous downturn with negative values of real GDP. In 2014 it reached a positive value of real GDP of 0.7%, but in 2015 Greece fell back in recession.

*Spain* is ranked the fifth largest economy in the EU and the fourth largest economy in the Euro zone taking into consideration nominal GDP. Spanish economy faced difficulties during the period of 2008-2013, but in the following years its economy improved; specifically Spanish GDP grew by 3.2%.

*France* is considered as a well-developed European country and it is ranked as the third largest economy in Europe. France, as most of the European countries experienced economic difficulties from 2008-2011. Despite of this fact, economy of France faced a constant growth after 2012.

*Italy* is listed as the fourth largest economy in Europe taking in consideration nominal GDP. Despite of this fact, Italian economy nowadays has several problems. Almost the last 20 years the average growth rate of Italy has resulted to be below the average growth rate of Europe.

*Luxembourg* is considered to be one of the most industrialized countries not only in Europe, but in the world, too. It is highly focused on the banking sector, industrial sectors and steel. The government of Luxembourg in 2009 declared a budget deficit, which was estimated to be 5%. This deficit resulted in order to recovery the economy, especially the banking sector, from the world crisis 2008.

*Netherlands* economy is considered to be an opened one that mostly is based on foreign trade. This European country has a stable economy, but it is important to mention that during 2001 to 20005 economic growth declined as a consequence of

economic slowdown all over the world. Then the economy of Netherlands began to slowly recover.

*Austria* is a well-developed country, with high standards of living also. It was considered as the fourth richest country in EU. Economic growth has been stable through years with small fluctuations in the years of global crisis.

*The Portuguese* economy has been rising with constant terms through years. Also, it is very important to mention that continuous economic growth is followed by the decrease of unemployment rate. Despite of these positive facts, during the financial crisis of 2008 Portuguese economy was encountered with several economic problems such as the increase of unemployment rate and public deficit.

*Finland* is a high income developed country. The main sector that contributes in the development of the economy in Finland is the service sector and then followed by manufacturing. It is interesting the fact that from all the Nordic countries, only Finland has entered in the Eurozone, while countries like: Sweden and Denmark use their own national currencies.

*Sweden* is mostly oriented in foreign trade, because is highly dependent on exports. The most important sectors in which the Swedish economy is based on are engineering sector, automotive industry, pharmaceutical industry and telecommunication.

*United Kingdom* is ranked as the second largest economy depending on nominal GDP in European Union. United Kingdom has been the country with the most rapid economic growth for a long period of time. The sector which contributes mostly in the economy of United Kingdom is the service sector, covering 78% of the total GDP. In the same time the financial industry plays an important role in the GDP of the country. In the period of global financial crisis United Kingdom experienced a period of recession, but from 2013 economy of UK has improved.

*Iceland* is a country characterized by a small economy with continuous fluctuations. The global financial crisis of 2008 had its consequences on Iceland, too. During this

period unemployment rate increased, while GDP rate was increased. Inflation rates rose immediately and public deficit, also. In these conditions, Iceland was obligated to acquire emergency funds from IMF.

*Norway* is considered to be a high income country. The strategic areas of the economy are owned by state. Even though, Norwegian economy is sensitive due to the business cycles, it has shown great improvements. Norway is characterized by high standards of living comparing with other countries in Europe. Continuous development of the economy of Norway is absolutely affected by natural resources.

### **1.3 Youth unemployment in developed European countries**

In Europe youth unemployment is sharply increased since the beginning of the economic crisis in 2008. Countries like Germany, Denmark, Norway, Switzerland, Austria etc, which are considered to be developed countries have lower unemployment rates than other countries in Europe, which are developing countries. Germany is considered to be the country with the lowest youth unemployment rate in Europe. Germany and other developed countries that we mentioned above are not accidentally countries that have not as high youth unemployment rates as other European Countries. Germany has implemented dual vocational training systems, which means this country aims to employ full-time youngsters by arranging simultaneously school and work. Young people after finishing the lower secondary school that is mandatory, they are able to sign a vocational training contract with different private companies. Dual vocational training lasts for a period of 2-3 years. In a week 3-4 days youngsters spend in the work place gaining work experience and 1-2 days in vocational school. It is very important to mention that German effectiveness of the dual vocational system is absolutely depended by its social, cultural, economic conditions and well-functioning institutional structures. Government and private companies continuously collaborate with each-other to share costs and improving the system.

## **1.4 Youth unemployment in developing European countries**

Southern Europe countries suffer from high youth unemployment rates. The youth unemployment rate in these countries went approximately the same as in the American Great Depression. The main reason of youth unemployment rates in these countries is inflexible labor market conditions. In an inflexible labor market employers hesitate to hire risky young employees, because of high hiring costs or different difficulties in firing. Inflexibility of the labor market can come as a result of high rates of unionization or as a result of universal statutory severance payments. The World Bank came up with a way in order to assess the inflexibility or rigidity of labor market. The higher the scores of “rigidity employment index”, the more inflexible the labor market is. Southern European countries resulted to have considerable high “rigidity employment indexes”. It is very important to highlight that high youth unemployment rate should not be attributed only to the crisis which began in 2008. A considerable role in the high rates of youth unemployment plays the labor market conditions in these countries. In order to solve or at least to decrease somehow youth unemployment rates in developing European countries must implement new reforms in educational system and in the same time they must encourage young people by organizing professional trainings. The transition from school to work will be facilitated if these useful steps will be taken by developing European countries and as a consequence youth unemployment rate will be lower.

## **1.5 Research objectives**

In order to have a deep analyze of youth unemployment in Europe and to give useful solutions in the same time to this concern we should take into consideration to formulate some constructive research objectives. Here I am listing some of the most important research objectives of my study:

1. To identify the most important factors that affect in youth unemployment.
2. To analyze youth unemployment in developed and developing countries in Europe.
3. To identify some possible solutions and recommendations to decrease youth unemployment rate in Europe.

4. To examine youth unemployment between genders in European countries and to indentify the main reasons for these differences.

### **1.6 Motivation of the study**

The main important reason I have chosen to study youth unemployment in Europe is the fact that it is a phenomenon that affects to all the society and recently rates of youth unemployment are at alarming levels in European countries. Secondly, the fear of a “lost generation”, which is transmitted in all the society, is another strong reason to study youth unemployment. Youngsters after seeking for a job position and do not get it for a period of time they end up being discouraged and feel themselves that they are not wanted by the society. As a consequence a large percentage of young unemployed people decide to withdraw from the labor market at all or in the worst case they commit suicide. Thirdly, another reason that motivates me study youth unemployment are the economical consequences that this phenomenon leaves by preventing economical growth and development of the European countries. Youth unemployment is a critical development concern that requires urgent attention and sustainable solutions by all the policymakers.

### **1.7 Significance of the study**

It is very important to emphasize that hardly passes a day without mentioning the catastrophic situation of youth unemployment that dominates in all European countries, so for this reason the topic of youth unemployment takes a considerable significance. In many European countries youth unemployment is two times higher than the average unemployment rate. In countries like Greece and Italy youth unemployment rates are 2.5 times and 3 times high as average respectively. Our study takes a great significance also for the fact that young generation is the future of every country and if someone does not give them the possibility to experiment in different jobs they remain for a long period as unemployed and as a consequence they end up losing their talents and skills they have been developing before during the academic years.

## **1.8 Research model**

Our research model is mostly based on primary data taken by the official page of EUROSTAT. Data are available on monthly, quarterly and annual basis. The fundamental source in which the data are taken is European Union-Labor Force Survey (EU-LFS). Data are gathered by interviewing the sampled people directly. The chosen sample approximately represents all the population. The data for rest of unemployed who are registered as unemployed ones are collected from administrative sources. We are interested to study youth unemployment in different European countries and also to see how youth unemployment rate differs by gender in each country. By using a simple regression analysis we will see the proportions of unemployment of females compared to unemployed males under 25 years old and then we will try to find different reasons that affect to youth unemployment by gender.

## **1.9 Theoretical framework**

The aim of European's leaders is to guarantee youth unemployed to have a job or apprenticeship in higher education or at least having a job within four months after leaving formal education and be declared as unemployed. It is very difficult to achieve this objective in short-run, but European Investment Bank (EIB) helps small businesses in order to train and employ as much as they can young people in countries which suffer more from youth unemployment. Also EU'S Erasmus scheme contributes to increase youth employment by encouraging many young people to study abroad. One of the recent studies supports temporary movement of young people in order to gain work experience abroad. Even though different organizations are making such attempts Europe now is too timid to afford considerable labor force movements across different countries. In May 2013 between Spain and Germany was achieved an agreement for approximately 5000 young Spaniards to come to Germany until 2017 for training and employment purposes. Of course, this is a good incentive, but compared to the total number of youth unemployed it is too little in quantitative terms. It is necessary to highlight the existence of "frictional unemployment" which is due to the mismatch that exists in the world of work between the demands of companies and the skills and experience young people have to offer, in particular

those who are entering the labor market for the first time, who, more than others, influence unemployment rates and who represent on average circa 60% of the total of unemployed (Caroleo & Pastore, 2000) Young people that are considered as new entrants in the labor market are part of too many critical discussions in Europe and all over the world.

## **CHAPTER 2**

### **LITERATURE REVIEW**

According to (International Labour Organization, 2013) youth unemployment worldwide peaked in 2009 at the highest level ever recorded and is nearing that peak again in 2013. The position of young people generally responds more markedly and quickly to cyclic fluctuations in the economy than the position of the total labor force (Borghans & Wolbers, 2003). Youth unemployment increases more rapidly than total unemployment in economic down times or recession periods, on average, but in the same time it declines quickly in better times. Labor market entry in times of high unemployment is problematic for two major reasons (Fouarge, 2009). The first reason is that the average period for attaining a first job is longer under conditions of high as opposed to low unemployment. This longer search duration obviously hinders the acquisition of human capital (Berman, 1998)

The second reason for labor market entry being particularly problematic in times of high unemployment is that school leavers may be forced to lower their reservation wages in periods of high unemployment (Mortensen, 1977). As time passes and school leavers have not yet managed to obtain a job at their actual level of qualification, they will adjust their preferences and goals and —as a result — be willing to work below their level of qualification rather than stay unemployed. This results in over-qualification and displacement on the labor market. (Gesthuizen & Wolbers, 2010)



“Scarring” effects of long-term youth joblessness leaves a legacy that reduces lifetime earnings, increases the risk of future periods of unemployment, augments the likelihood of precarious employment, and results in poorer health, well-being, and reduced job satisfaction more than 20 years later (Bell & Blanchflower, 2011)

Alarming evidences of youth unemployment are noticed by EUROSTAT. There are only five European countries out of 27 that are taken into consideration which have youth unemployment rates under 10%, mentioning here Norway (8.5%), Austria (8.7%), Switzerland (8.4%), Netherlands (9.5%) and Germany (8.1%). The average youth unemployment rate in EU in 2012 was 23%. Considerable high youth unemployment rates are observed in countries like Slovakia (34%), Portugal (approximately 38%), Italy (more than 35%), Croatia (43%) and the former Yugoslavia (for a long period of time 54% and more). Also in countries, which suffer a lot from crisis of 2008, as Spain and Greece have very high rates of youth unemployment, respectively 53% and more than 55%. The graph below represents youth unemployment rate of the countries which are more and less affected by youth unemployment.

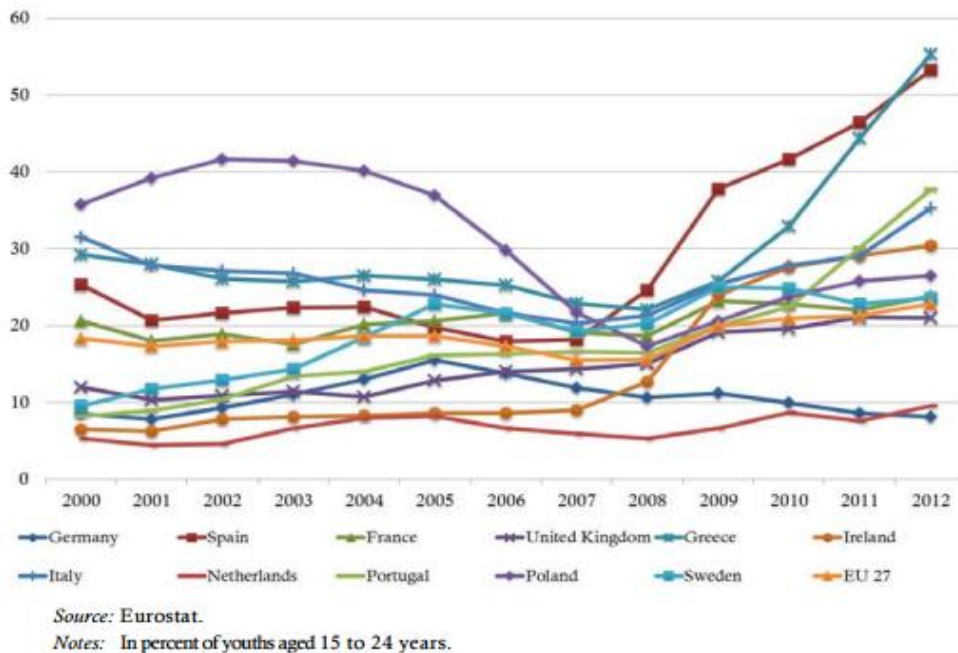


FIGURE 2.1 Youth unemployment rate for some European countries

As it is seen from the graph above youth unemployment rates have began to rise immediately after the crisis of 2008 and there is little evidence that youth unemployment rates will decrease in the short-run. An interesting fact that must be mentioned is differentiation by gender in youth unemployment rates. From the statistics of EUROSTAT result slight differences between female and male unemployment rate in the early years of working career.

(John Martin, November, 2012), former director for Employment, Labor and Social Affairs at the Organization for Economic Co-Operation and Development (OECD), states that what distinguishes youth unemployment today from that of the 1980s is the evidence of a growth in long-term unemployment for certain categories of youth, especially among those whose parents had experienced unemployment in previous recessions; this “inheritance” perpetuates and exacerbates pockets of generational disadvantage for some young people. According to the European Commission there are 5 important characteristics that high rates of youth unemployment in the latest years can be explained compared to the levels of youth unemployment in earlier periods of time. Here we can mention flexibility, education, migration, family legacies and EU policy. European Commission states that labor market flexibility hampers permanent employment of young people. Flexibility of labor market is related also to labor costs. From the point of view of different companies’ labor is considered a cost that must be paid to workers. It is very important to understand that labor costs do not include only wages or salaries paid to the employees, but also non-wage costs, which include the social contributions paid by the employer and other costs such as training costs, taxes, recruitment costs etc. Components of labor cost will be explained better by the scheme below.

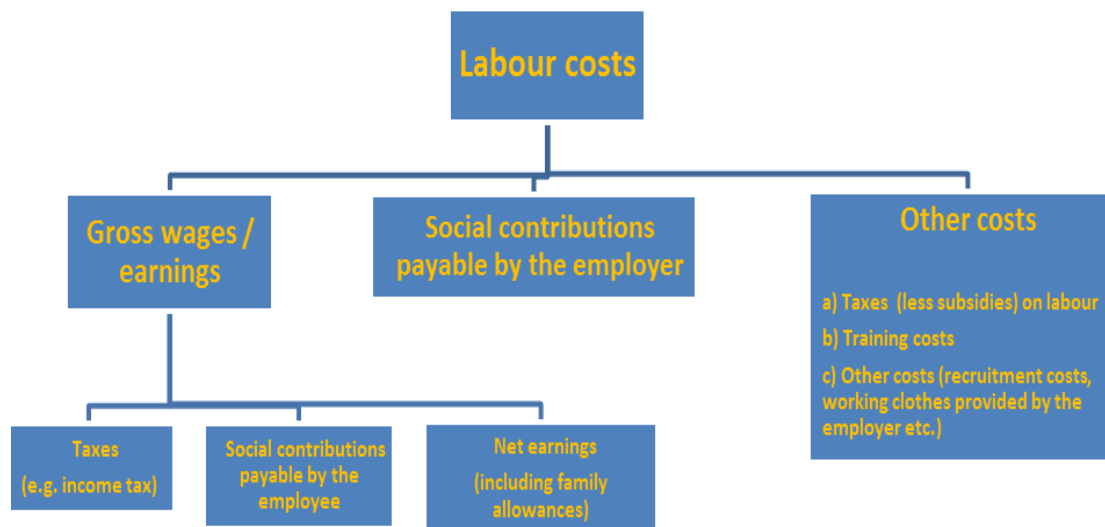
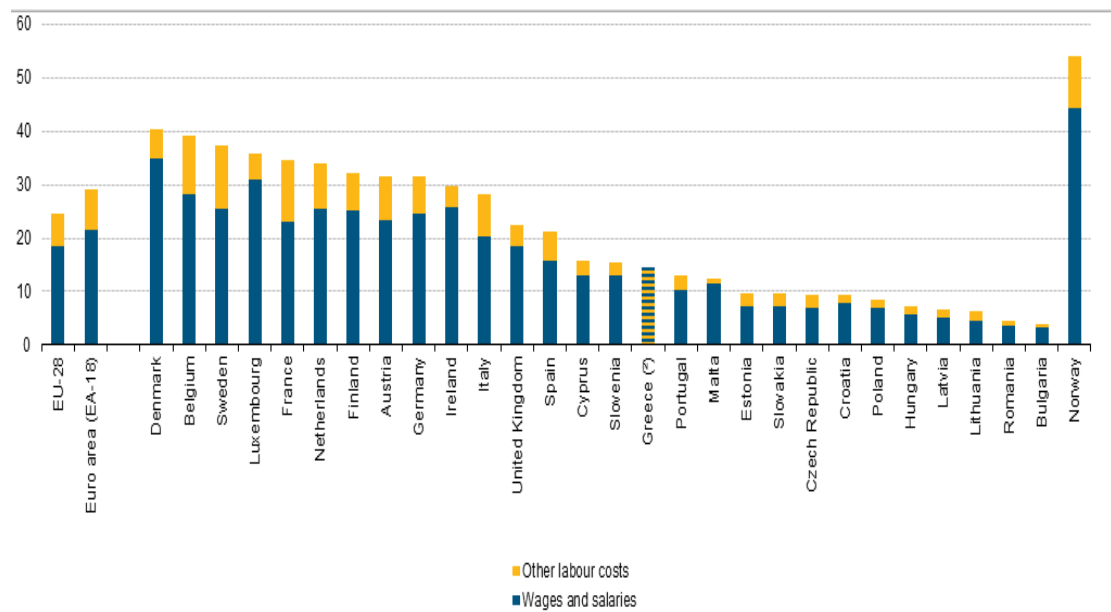


FIGURE 2.2 Components of labor cost

The higher the labor costs that a company must pay to the employees, the less will be the number of the employees in a company. So, if the labor costs are too high the companies will decrease the number of the employees and this directly affects in the increase of unemployment rate. Generally, in these cases young workers tend to be fired more easily compared to the adult ones because of the lack of the experience. According to EUROSTAT statistics the average of labor cost per hour in EU-28 is approximately 24.60 EURO and euro area it is estimate to be nearly 29.20 EURO. Despite of this fact, there are huge differences in average labor cost per hour in EU member countries, varying from 3.80 EURO to 40.30 Euro per hour. The graph below will show in a more detailed way the average labor cost per hour for each European country.



(\*) Enterprises with 10 or more employees. NACE Rev. 2 Sections B to S excluding O. Provisional data.

(†) Only the total labour cost is available.

Source: Eurostat (online data code: lc\_lci\_lev)

FIGURE 2.3 Average labor cost per hour for European countries

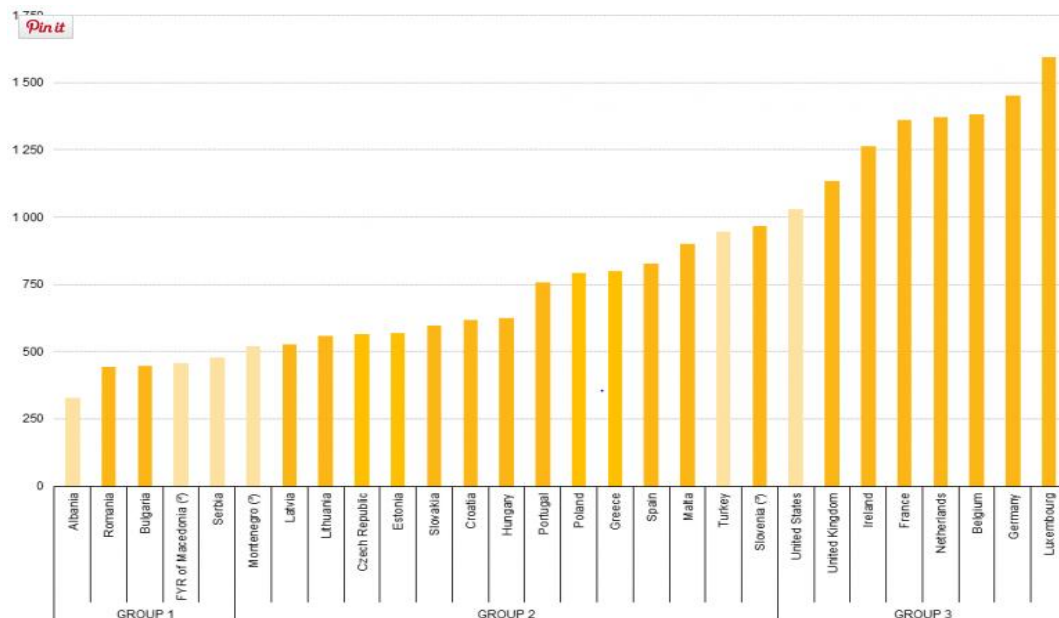
On the other hand the mismatch of skills and qualifications shows that education has been poorly coordinated with skills and qualifications required by employers. The third reason that European Commission emphasizes about the increase of youth unemployment rate recent years is the mobility of labor force across Europe. Quite often happens that young people, despite of their background and qualifications get hired in low-skilled and low-payment job positions with minimum wages. The lasting effect of high initial unemployment is that those young people who experienced unemployment at labor market entry accumulated less working experience during the course of their careers and, for this reason tend to end up in lower-level occupational positions (with lower earnings) than those who did not experience unemployment at the start of their careers (Ellwood, 1982).

In January 2016, 22 out of 28 European Union Member States had a national minimum wage. The countries which were excluded are: Denmark, Italy, Cyprus, Sweden, Finland and Austria. For the EU candidate countries like: Albania, Serbia, Turkey, Montenegro and the Former Yugoslav Republic of Macedonia there is also a national minimum wage. According to the graph that we will see below the 28 European countries are divided into 3 large groups in terms of their minimum wages.

In the first group take place all the countries which their national minimum wage is under 500 EURO per month. This group includes countries which are candidate of EU like Albania, Macedonia, Serbia and the Former Yugoslav Republic of Macedonia and in the same time other EU countries as Bulgaria, Romania, Hungary, Lithuania, Latvia, Slovakia, Croatia, Estonia, Poland and the Czech Republic. It is very important to highlight that in countries which national minimum wage is lower generally unemployment rate tends to be higher and as a consequence youth unemployment rate will be higher, too.

Second group is composed by countries which their minimum wage varies from 500-1000 EURO per month. Here can be included Portugal, Greece, Malta, Spain, Slovenia and Turkey.

Finally, in the third group of national minimum wage are included most developed EU countries like France, Belgium, Germany, Netherlands, Ireland, Luxembourg and United Kingdom, where the minimum wage is higher than 1000 EURO. It is logical that countries in the third group have lower youth unemployment rate compared to the first and second group, but still youth unemployment is inevitable in these countries, too.



(\*) Estimates. Denmark, Italy, Cyprus, Austria, Finland and Sweden: no national minimum wage.  
 (\*) January 2015  
 (\*) July 2015.  
 Source: Eurostat (online data code: earn\_mw\_cur)

FIGURE 2.4 Minimum wages in European countries divided in 3 groups.

Family legacy also is an important factor that contributes to youth unemployment level. We know from earlier research that parental unemployment can become an “unintended” legacy for their own children, depending on where they live and how the economy around them has changed in recent decades (Ekhaugen, 2009); (Headey & Verick, 2006) (MacDonald, Shildrick & Furlong, 2013) (Macmillan, 2014)The last, but not the least characteristic that European Commission emphasizes is the European dimension. (Knijn, 2012)examine policy initiatives for youth prior to the financial crisis in relation to different policy paradigms linked to the social investment state (Morel, 2012)transitional labor markets (Schmid, 2012)and an individual life-course paradigm (Bovenberg, 2007); (Bruckner & Mayer, 2005)Knijn and Smith argue that policies encompassed by these different paradigms can be distinguished between those emphasizing investing in, facilitating and individualizing new social risks.

According to a study made in the recent years the policy of earlier retirement in order to create excess demand for youth employment is not an appropriate solution to decrease youth unemployment rate. There are not any applicable competition young workers and old ones, but on the contrary they complete each other during work (Eichhorst, 2014)It is very important to improve youth employment, but in the same time to keep older workers in work. The best solution for European countries, to engage youth in job practices is to develop dual vocational training as Germany and some other countries like Denmark, Switzerland etc do. Dual vocational training system links needs of labor market at specific times and in the same time allows youngsters to get first job experience and appropriate knowledge in the training company. Overall, vocational training serves as a “safety net” in terms of avoiding unemployment and gaining access to skilled positions (Arum & Shavit, 1995)This is particularly true in spaces such as Germany, where vocational education is specific rather than general (Shavit & Muller, 2000); Brauns et al., 2003).Recent studies show that several European countries like Spain have begun to apply dual vocational training systems, but it is yet too early to get feedback from. The study also recommends France to take steps for an establishment of a dual apprenticeship system (Cahuc, 2014). Firstly the dual system should be applied to in a regional base, collaborating closely with some specific companies. In this way it is easier to assess the feasibility of dual vocational trainings. In fact dual vocational system functions

well if between all parties involved in the system; e.g. government of a particular country, companies and social partners exists an effective collaboration. European countries like Spain need time to see if dual vocational system will help to lower youth unemployment rate.

## **CHAPTER 3**

### **DATA AND METHODOLOGY**

#### **3.1 Data**

To study youth unemployment in European countries generally are used secondary data taken by the official site of EUROSTAT, which is the statistical office of European Union and IMF (International Monetary Fund). Data in the official page of Eurostat for youth unemployment rate are available in monthly, quarterly and yearly basis, but we want to analyze them for a long period of time, so we have taken into consideration the yearly basis data of youth unemployment rates. Youth unemployment rate as a definition is the number of people unemployed from 15 to 25 years old expressed in percentage of the labor force.

Labor force itself is defined as total number of people who are able to work including here employed and unemployed ones; too. Our reference areas for our study are some of the European countries. We have classified these countries into European developing countries and European developed countries according to the IMF World Economic Outlook Report of April 2015. Data for Cyprus refer only to the areas of Cyprus controlled by the Government of the Republic of Cyprus. Annual data about youth unemployment in the European countries, which we mentioned before are conducted due to the European Union-Labor Force Survey (EU-LFS). The most important thing to mention about data gathered by EU-LFS is that these data are highly reliable, but because of the randomly selected sample, results taken by the survey will be subject of usual errors.



Labor Force Survey usually is concentrated to a significant sample of individuals and households. Mostly the size of the sample depends on the level of the estimated details required in the survey. Sometimes non-sampling errors may contribute to the results of survey; here we can include factors like unavailability of people to answer the questionnaire, mistakes that interviewers can make while filling documents etc. We have taken from the IMF official page also data related to Industrial Production Price (CPI), Consumer Price Index (CPI) and Interest rates for developing and developed European countries. These data are selected in annual basis for a period of time from 2000 to 2015.

There are several advantages by using the survey method. Firstly, this survey gives the opportunity to gain significant information from all the sectors of the economy on labor market aspects. Secondly, labor force survey also gives the possibility to define labor market characteristics that would not be available in other statistical sources. So, by defining unemployment rates, unemployment can be conceptualized in terms of aspects such as job search and availability for work. An aspect that is considered of highly importance is the fact that definitions used for this purpose are the same for each country, so a comparable base is available between European countries estimations. Despite of the numerous advantages that labor force survey has, it also has disadvantages, too. This method is considered to be highly costly and as a consequence it limits the sample size.

**IPI:** Growth rate of industrial production index

**INT:** Growth rate of interest rate

**CPI:** Growth rate of consumer price index

**UNEM:** Growth rate of youth unemployment

**MUN:** Growth rate of male youth unemployment

**FUN:** Growth rate of female youth unemployment

## 3.2 Methodology

### 3.2.1 Graphical analysis

We have classified European countries in developing and developed ones in order to analyze better youth unemployment and to see better the differences between these two large groups. According to the IMF World Economic Outlook Report of April 2015 in the group of developing countries are included these European countries: Bulgaria, Czech Republic, Estonia, Croatia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Romania, Slovenia and Slovakia. In the group of developed countries according to IMF there are included countries like: Belgium, Denmark, Germany, Ireland, Greece, Spain, France, Italy, Luxembourg, Netherlands, Austria, Portugal, Finland, Sweden, United Kingdom, Iceland and Norway. We have calculated an average youth unemployment rate for each of two groups from year 2000 to 2015. Average youth unemployment rates are calculated by dividing the sum of youth unemployment rate of each country divided by the number of countries for each group. In the table below there are shown the average youth unemployment rates for developing and developed European countries specifically.

TABLE 3.1 Youth unemployment rate in developing and developed European countries

<b>Years</b>	<b>Developing countries</b>	<b>Developed countries</b>
2000	23.44	14.70
2001	24.84	14.43
2002	23.21	15.10
2003	22.70	15.36
2004	22.70	16.15
2005	20.76	16.29
2006	18.14	15.57
2007	14.80	14.58
2008	14.54	15.26
2009	21.82	19.68
2010	25.23	20.91

2011	25.12	21.54
2012	26.11	23.73
2013	26.60	24.23
2014	23.46	23.41
2015	21.55	21.11

After calculating average youth unemployment rates we have plotted data in graphs to see more clearly the differences between developing and developed European countries. It is logical that we expect lower average youth unemployment rates in developed countries than in developing ones, but it is interesting the fact that after year 2008 youth unemployment rates have a dramatically increase in both, developing and developed countries. The reason for this tremendous increase is because of the global crisis that began in 2008.

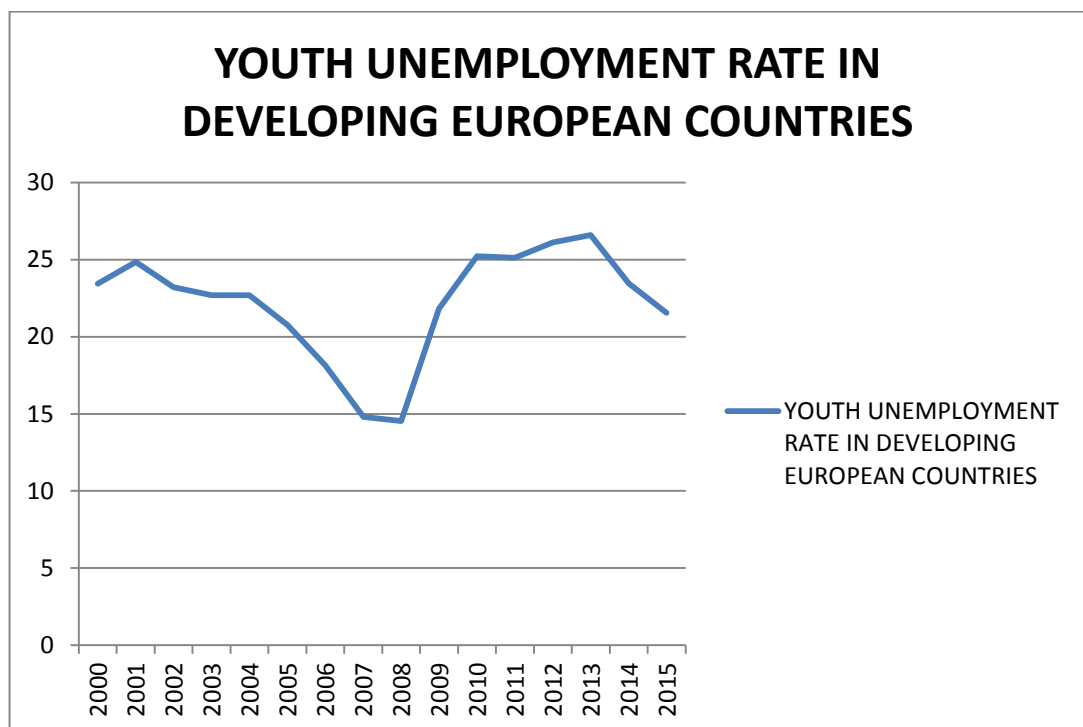


FIGURE 3.1 Average youth unemployment rate in developing European countries.

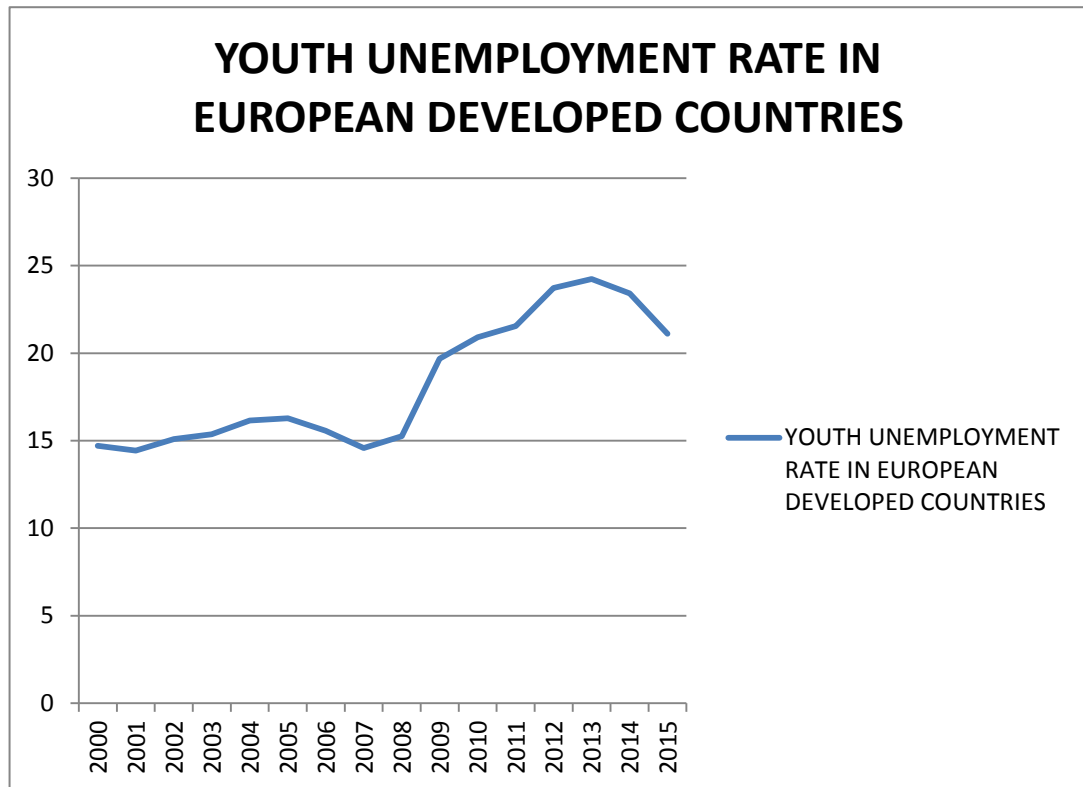


FIGURE 3.2 Average youth unemployment rate in developed European countries.

### 3.2.2 ARDL model

In time-series econometric modeling a dynamic regression will usually include both lagged dependent and independent variables as regressors. The dependent variable might be correlated with its lags. It means that lags of the dependent variable should be included in the regression model. In this model the dependent variable depends on the lags of itself and the explanatory variables as well as lags of the explanatory variables.

The model described above is called the autoregressive distributed-lag model, abbreviated as ARDL ( $p$ ;  $k$ ). This model also includes deterministic trend ( $t$ ). Since the model includes  $p$  lags of  $y$  and  $q$  lags of  $x$ , we can write it as ARDL ( $p$ ;  $q$ ). In order to perform this model, series should have stationarity properties; either they both are stationary or both have a unit root.

The values of  $p$  and  $k$ (lags numbers of  $y$  and  $x$  used) are chosen:

- i. On the basis of the statistical significance of the lagged variables, and

- ii. So that the resulting model is well specified (e.g. it does not suffer from serial correlation).

How can we interpret the coefficients in ARDL model?

The most common way is through the concept of a multiplier. It is common to focus on the long run or total multiplier. It is assumed the  $x$  and  $y$  are in an equilibrium or steady state (not changing over time). When  $x$  changes one unit, it is affecting  $y$ , which starts to change, eventually settling down in the long run to a new equilibrium value. The difference between the old and new equilibrium values for  $y$  can be interpreted as the long run effect of  $x$  on  $y$  and is the *long run multiplier*. This multiplier is often of great interest for policymakers who want to know the eventual effects of their policy changes in various areas.

The long run multiplier measures the effect of a permanent change in  $x$ .  $X$  changes permanently to a new level one unit higher than the original value. The long run multiplier measures the effect of this sort of change. The long run multiplier does not measure the effect of this type of change. The “marginal effect” interpretation of regression coefficients can be used for such temporary changes.

Autoregressive Distributed Lag (ARDL) model is a model used in econometrics or statistics for time series data by which a regression equation predicts current values of a dependent variable used in the equation taking into consideration current and lagged values of an independent variable. So, in order to study youth unemployment we have conducted this statistical model especially used in econometrics. This method tries to find a significant relationship between the dependent variable ( $y$ ) and the independent variables ( $x$ ). In our case the dependent variable is youth unemployment and independent variables are  $IPI$ ,  $CPI$  and  $INT$ . The equation that will show this relationship will look like:

$$UNEMP_t = \alpha + \beta_1 IPI_t + \beta_2 CPI_t + \beta_3 INT_t + \beta_4 IPI_{t-1} + \beta_5 CPI_{t-1} + \beta_6 INT_{t-1} + \beta_7 UNEM_{t-1} \quad (3.1)$$

$$MUNEMP_t = \alpha + \beta_1 IPI_t + \beta_2 CPI_t + \beta_3 INT_t + \beta_4 IPI_{t-1} + \beta_5 CPI_{t-1} + \beta_6 INT_{t-1} + \beta_7 MUNEM_{t-1} \quad (3.2)$$

$$FUNEMP_t = \alpha + \beta_1 IPI_t + \beta_2 CPI_t + \beta_3 INT_t + \beta_4 IPI_{t-1} + \beta_5 CPI_{t-1} + \beta_6 INT_{t-1} + \beta_7 FUNEM_{t-1} \quad (3.3)$$

## CHAPTER 4

### EMPIRICAL FINDINGS

#### 4.1 Unit Root Test Result

TABLE 4.1 Unit root test result table for developing European countries

<b>Variables</b>	<b>ADF-level</b>	<b>PP-level</b>
CPI	12.3288	22.2127
INT	13.282	29.3458
IPI	41.5719	50.2491
UNEM	25.8381	20.5363
MUN		
FUN	24.8305	17.8548

Unit root test result reported in Table 4.1 and 4.2 indicate that all the macroeconomic variables used in this study are stationary in level.

TABLE 4.2 Unit root test result table for developed European countries

<b>Variables</b>	<b>ADF-level</b>	<b>PP-level</b>
CPI	59.5463	77.3834
INT	51.8613	69.4198
IPI	88.2685	159.312
UNEM	69.1755	94.6848
MUN	86.9782	96.8361
FUN	74.115	69.725

## 4.2 ARDL Model Results

TABLE 4.3 ARDL model result for Unemployment in developing European countries

Dependent variable: UNEM				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
IPI	-1.00481	0.315983	-3.17995	0.0022*
INT	0.12062	0.108958	1.107032	0.2723
CPI	-2.19078	1.12243	-1.95182	0.0552***
C	6.726744	4.903137	1.371927	0.1747
UNEM (-1)	0.316315	0.11737	2.695011	0.0089*
IPI (-1)	-0.7616	0.361939	-2.10423	0.0392**
INT (-1)	0.232074	0.113507	2.044572	0.0449**
CPI (-1)	2.835098	1.049396	2.701648	0.0088*

Note: \* denotes significant at 1% significance level, \*\* denotes significant at 5% significance level, \*\*\* denotes significant at 10% significance level

ARDL model result for total Unemployment in developing European countries is reported in Table 4.3. Regression model produces interesting and useful information related to youth unemployment. According to p-values only Industrial Production Index (IPI) and Consumer Price Index have significant impact on youth unemployment in level. And, Unemployment, IPI, INT and CPI have significant impact on youth unemployment in first lag.

ARDL model result for Male Unemployment in developing European countries is reported in Table 4.4. According to p-values that obtained from the regression model, IPI and CPI have significant impact on male youth unemployment, because their p-values are smaller than 0.05. Also IPI, INT and CPI are significant in the first lag, because their p-values are respectively 0.0241, 0.0344 and 0.0087, which means they fit to the rule that  $p \leq 0.05$ .



TABLE 4.4 ARDL result for Male Unemployment in developing European countries

Dependent variable: MUN				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
IPI	-0.79442	0.390585	-2.03391	0.0465**
INT	0.092757	0.13979	0.663546	0.5096
CPI	-3.20688	1.46671	-2.18644	0.0328**
C	8.234905	6.543355	1.258514	0.2132
MUN (-1)	0.106809	0.124482	0.858026	0.3944
IPI (-1)	-1.06764	0.460856	-2.31665	0.0241**
INT (-1)	0.315977	0.145854	2.166393	0.0344**
CPI (-1)	4.057172	1.493992	2.715658	0.0087*

Note: \* denotes significant at 1% significance level, \*\* denotes significant at 5% significance level.

ARDL model result for Female Unemployment in developing European countries is reported in Table 4.5. Results show that IPI and CPI, and first lags of IPI, INT and CPI are significant, because their p-values are smaller than 0.05. Variables like INT, C, and first lag of males youth unemployment rate do not have a significant impact related to males youth unemployment dependent variable. Also, from the third table we can conclude that variables like IPI, first lags of IPI and CPI have a significant impact to females youth unemployment in European developing countries. P-values are smaller than 0.05 respectively 0.0423, 0.0323 and 0.0264. Variables like INT, CPI, C, first lags of females youth unemployment rate and INT are insignificant compared to FUN of developing European countries.

TABLE 4.5 ARDL result for Female Unemployment in developing European countries

Dependent variable: FUN				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
IPI	-0.74432	0.358393	-2.07682	0.0423**
INT	0.104904	0.123028	0.852685	0.3973
CPI	-0.57035	1.312441	-0.43457	0.6655
C	0.34266	5.747294	0.059621	0.9527
FUN (-1)	0.260628	0.13865	1.879756	0.0652***
IPI (-1)	-0.84858	0.386955	-2.19297	0.0323**
INT (-1)	0.148674	0.129284	1.149979	0.2549
CPI (-1)	3.028338	1.329009	2.278644	0.0264**

Note: \*\* denotes significant at 5% significance level, \*\*\* denotes significant at 10% significance level

TABLE 4.6 ARDL model results for Unemployment in developed European countries

Dependent variable: UNEM				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
IPI	-0.63271	0.202247	-3.12839	0.002*
INT	-0.01208	0.049679	-0.24312	0.8082
CPI	0.246948	0.882185	0.279927	0.7798
C	-2.99187	2.051272	-1.45854	0.1462
UNEM (-1)	0.254422	0.064791	3.926793	0.0001*
IPI (-1)	-0.01044	0.194407	-0.05369	0.9572
INT (-1)	0.073637	0.05994	1.228507	0.2206
CPI (-1)	2.783923	0.836397	3.328472	0.001*

Note: \* denotes significant at 1% significance level.

Table 4.6 shows ARDL model results for Unemployment in developed European countries. Results indicate that variables like IPI, first lag youth unemployment rate and also first lag of CPI are considered to be significant because their p-values are smaller than 0.05. Their p-values are respectively: 0.002, 0.0001 and 0.001. On the other hand variables like INT, CPI, C and first lags of IPI and INT do not have any significant effect on the dependent variable of youth unemployment rate in European developed countries. ARDL model result for female unemployment in developed European countries is reported in Table 4.7. Result shows that only the first lag of IPI is significant related to female youth unemployment in developed countries of Europe.

TABLE 4.7 ARDL model results for Female Unemployment in developed European countries

Dependent variable: FUN				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
IPI	0.09378	1.060047	0.088468	0.9296
INT	-0.09641	0.265318	-0.36338	0.7167
CPI	4.698561	4.686834	1.002502	0.3174
C	-5.81726	11.04671	-0.52661	0.5991
FUN (-1)	-0.07821	0.07177	-1.08966	0.2773
IPI (-1)	-2.81632	1.003025	-2.80782	0.0055*
INT (-1)	-0.14355	0.320919	-0.4473	0.6552
CPI (-1)	2.397444	4.404923	0.544265	0.5869

Note: \* denotes significant at 1% significance level.

ARDL model results for Male Unemployment in developed European countries reports in Table 4.8. Result indicates that all the other variables except of first lag of IPI, that we mentioned above are insignificant due to FUN. It is clearly seen that p-values of these variables are smaller than 0.05. So, it means that these independent variables do not have important impact in female youth unemployment in developed European countries.

TABLE 4.8 ARDL model results for Male Unemployment in developed European countries

Dependent variable: DMUN				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
IPI	-1.05222	0.243737	-4.31704	0*
INT	-0.02215	0.059825	-0.37023	0.7116
CPI	0.590785	1.063209	0.555663	0.5791
C	-3.89663	2.480656	-1.57081	0.1179
MUN (-1)	0.216161	0.072179	2.994771	0.0031*
IPI (-1)	-0.01149	0.243888	-0.04709	0.9625
INT (-1)	0.052862	0.071801	0.736236	0.4625
DCPI (-1)	3.389785	1.025079	3.306852	0.0011*

Note: \* denotes significant at 1% significance level.

## **CHAPTER 5**

### **CONCLUSION**

#### **5.1 Overall Conclusion**

To sum up all the facts mentioned during our study it is very important to mention that youth unemployment as a phenomenon still remains one of the biggest concerns for all the society as a whole. It is clearly understood that youth unemployment reached in tremendous highly levels after the global crisis of 2008. Also this fact is perfectly observed by the graphs of average youth unemployment rates in developing and developed European countries. Developed European countries have relatively lower youth unemployment rates compared to developing countries, but still they remain high.

As a conclusion, studying youth unemployment by using ARDL model has proved a relationship between dependent variables, which are total youth unemployment, female youth unemployment and male youth unemployment, and independent variables that are INT, CPI, and IPI. In some cases, independent variables had a significant impact on youth unemployment, which means that youth unemployment is highly affected by these variables.

## **5.2 Implications**

This study has implication to the policymakers who are responsible for the healthy and stable economic development. Interest rate can be used to decrease unemployment in the short- run. This study has also implications to literature by filling gap in the research in southeastern European countries.

## **5.3 Limitation of the study**

There are some limitations in our study that are listed below:

1. During the collection of the data from IMF official site we encountered with lack of data especially for developing European countries. As a consequence, maybe it is not provided a more clear view of the youth unemployment situation in developing countries as in developed ones. In our regression model are taken into consideration only 5 of the developing countries in Europe, meanwhile in developed countries are included 17 European countries.
2. Youth unemployment is a complex macroeconomic factor that needs to be explained by several variables. Limitations in the inclusion of the variables in order to study youth unemployment decrease the accuracy of youth unemployment. In our model there are included only 3 independent variables to explain youth unemployment in Europe.

## **5.4 Further Studies**

In our research model youth unemployment was studied based on independent variables like Industrial Production Index (IPI), Interest rate (INT) and Consumer Price Index (CPI). Results of ARDL model showed that these variables had a significant impact on youth unemployment. Further studies in order to have a complete analysis of youth unemployment should be done. Youth unemployment can be studied in terms of the level of education and work experience. Normally, it is expected a negative relationship between these variables and youth unemployment, but further studies should be done to understand the real correlation between youth unemployment, level of education and work experience.

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