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THE IMPACT OF SOCIAL TRANSFERS ON LABOR SUPPLY: A COMPARATIVE ANALYSIS OF TURKEY AND THE EU

DOKTORA TEZİ

FADİME İREM DOĞAN

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ONAY SAYFASI

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Name and Surname : Fadime İrem Doğan

Department : EU Economics

Thesis Supervisor : Prof. İ. Mahmut Tekçe

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ABSTRACT

THE IMPACT OF SOCIAL TRANSFERS ON LABOR SUPPLY: A COMPARATIVE ANALYSIS OF TURKEY AND THE EU

Social transfers define all forms of goods and services provided by the public authority to their citizens, who are below a certain social level, with the aim of contributing to individual conditions and further to social welfare. Most of the social transfers are under the category of giving an option to the households to choose between providing labor or receiving allowance, which can have significant impacts on labor supply.

This dissertation attempts to investigate the impact of the social transfers on labor supply in Turkey and the EU. Through time, various policies and reforms have been conducted both in Turkey and EU member states regarding the different types of social transfers. It can be assumed that all social transfers have effect on labor supply. Panel of Income and Living Conditions Survey (SILC and EU-SILC) data is taken from TurkStat and Eurostat to conduct the empirical analyses of monthly periods over 2006-2009 and 2011-2014. The estimation is conducted by applying Accelerated Failure Time (AFT) model. The empirical results demonstrate that in all five countries receiving unemployment benefits prolongs unemployment duration in both periods. In 2006 – 2009 period, social transfers, as a total is significant with negative sign saying that the more individuals receive social transfers, the shorter their unemployment duration in the Netherlands. Whereas, results of the rest of the countries indicate that social transfers as a whole prolong the unemployment spell. The findings regarding total social transfers show that probability of leaving unemployment is longer for the ones

who receive variety of transfers (education, disability, old age, survivors, etc.) for all countries in 2011 – 2014 period.

The findings may be validation for the job search theory and signaling for inefficient allocation of social transfer resources and suboptimal investment in areas like education. Especially, reallocation of investment in training toward old aged individuals may be the primary policy implication to be drawn.

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İsim ve Soyadı : Fadime İrem Doğan

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ÖZ

SOSYAL TRANSFERLERİN İŞ GÜCÜ ARZINA ETKİSİ: TÜRKİYE VE AVRUPA BİRLİĞİ'NİN KARŞILAŞTIRMALI ANALİZİ

Bireysel durumlara katkıda bulunmak ve sosyal refaha ulaşmak amacıyla, kamu kuruluşları tarafından belli bir sosyal seviyenin altındaki vatandaşlara sağlanan her türlü ürün ve servislere sosyal transferler adı verilir. Sosyal transferlerin birçoğu hane halklarına, iş gücü arzına önemli derecede etki eden iş gücüne katılma ya da yardım alma seçeneği sunar.

Bu tez; Türkiye ve AB'de sosyal transferlerin iş gücü arzına olan etkisini incelemeyi amaçlamaktadır. Zaman içerisinde hem Türkiye'de hem de AB'de farklı türde sosyal transferler için birçok politika ve reformlar uygulanmıştır. Ampirik analizler, 2006 – 2009 ve 2011 – 2014 periyodlarını içeren, TÜİK ve Eurostat'tan alınan Gelir ve Yaşam Koşulları Anketi (GYKA) aylık panel veri seti ile gerçekleştirilmiştir. Hızlandırılmış başarısızlık süresi (AFT) modeli kullanılarak regresyon tahminleri yapılmıştır. Seçilen beş ülke için elde edilen bulgular, her iki dönemde de işsizlik yardımı ödeneklerinin işsizlik süresini uzattığı yönündedir. İlk dönemde, toplam sosyal transferlerle yapılan analizler Hollanda'da toplu sosyal transferlerin işsizlik süresini azalttığını ama diğer ülkelerde uzattığını göstermektedir. Bunun yanında, ikinci periyodu içeren analiz sonuçların bulguları, toplu sosyal transferlerin (eğitim, maluliyet, yaşlılık ve ölüm, vb.) işsizlik süresini artırdığını ifade etmektedir.

Tezin bulguları, iş arama teorisinin bir doğrulaması niteliğinde değerlendirilebilir. Bununla birlikte, sosyal transfer kaynaklarının verimsiz dağıldığı ve eğitim önemli alanlarda verimsiz yatırımların yapıldığı sonucundadır. Özellikle yaşlı

çalışanlar için yatırımların kurslara ağırlık verilerek yeniden dağıtılması gerektiği çıkarılabilecek ilk politika önerileri arasındadır.

To my parents

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LIST OF ABBREVIATIONS

AFT	Accelerated Failure Time
AIC	Akaike Information Criterion
ALMP	Active Labor Market Policy
ASSD	Austrian Social Security Database
AUR	Austrian Unemployment Register
Bağ-Kur	Social Security of Craftsmen and self-employed
BES	Bireysel Emeklilik Sistemi (Individual Pension System)
CCT	Conditional Cash Transfer
CEEC	Central and Eastern European Countries
CEEC/CIS	Central and Eastern European and Confederation of Independent States
DADS	Déclaration Administrative de Données Sociales
DIE	Devlet İstatistik Enstitüsü (formerly)
EC	European Commission
ECHP	European Community Household Panel
ECM	Error Correction Model
EES	European Employment Strategy
ES	Emekli Sandığı (Retirement Fund)
ESF	European Social Fund
EU	European Union
Eurostat	Statistical Office of the European Union
EU-SILC	European Union Survey of Income and Living Conditions
FH	Fichier Historique
FOC	First Order Condition

GDP	Gross Domestic Product
GMM	Generalized Method of Moments
GSS	Genel Sağlık Sigortası (General Health Insurance)
GYKA	Gelir Yaşam Koşulları Anketi
HRS	Health and Retirement Study
ILO	International Labor Organization
INSEE	Institut National de la Statistique et des Études Économiques
IPEC	International Program on the Elimination of Child Labour
LFPR	Labor Force Participation Rate
LFS	Labor Force Survey
MBPF	Monthly Benefit for Poor Families with Children
MDG	Millennium Development Goals
MRS	Marginal Rate of Substitution
NGO	Non-profit Organization
NGO	Non-Government Organization
OECD	Organisation for Economic Co-operation and Development
OLG	Overlapping Generation
OLS	Ordinary Least Squares
OMC	Open Method of Coordination
PAYG	Pay-as-you-go
PCA	Principal Component Analysis
PIIGS	Portugal, Ireland, Italy, Greece, Spain
PPH	Parametric Proportional Hazard
RDD	Regression Discontinuity Design

RMI	Revenu Minimum d'insertion
SASF	Social Assistance and Solidarity Foundations
SGK	Sosyal Güvenlik Kurumu (Social Security Institution)
SHARE	Survey of Health, Ageing, and Retirement in Europe
SILC	Survey of Income and Living Conditions
SIS	State Institute of Statistics
SME	Small and Medium Enterprise
SNA	System of National Accounts
SSK	Sosyal Sigortalar Kurumu (Social Insurance Institution)
ST	Social Transfers
TUIK	Türkiye İstatistik Kurumu (Turkish Statistical Institute)
UB	Unemployment Benefit
UCS	Unemployment Compensation System
UI	Unemployment Insurance
VET	Vocational Education and Training
WAWS	Washington Alternative Work Search
WC	Workers' Compensation
WFC	Work-Family-Conflict

1. INTRODUCTION

Social transfers can be described as all forms of goods and services provided by a public authority to those citizens whose living conditions are assessed as being below a certain social level. They aim to help raise the standard of individuals' conditions and improve social welfare as a whole. According to the European Commission (2016), social transfers include old-age (retirement) and survivors' (widows' and widowers') pensions, unemployment benefits, family-related benefits, sickness and invalidity benefits, education-related benefits, housing allowances, social assistance, and other benefits. In practice, most social transfers give an option to households of choosing to fund expenditure through labor or through receiving allowances, and this choice can have significant impacts on labor supply. The category and the structure of the social transfers are determined by the economic welfare and the social perception of the public institutions. "The key components of the social transfer system are *'Eligibility conditions',* which detail what is required in order to qualify for benefits and how many persons are entitled to be covered by the program, '*principles for determining entitlement levels'*, which determine how much is paid, and for how long, and '*administration'*, which establishes which actors carry the costs and in what proportions." (Esser *et al.*, 2003). The purpose of this study is to investigate the functioning of these components and the various social transfer programs across occupational lines.

Both overall and youth labor force participation have fallen over the years in Turkey. It can be observed that a decrease in the youth labor force participation rate was seen in 2001 as a result of a crisis period for females (and total population). Males, on the other hand, show an increase in crisis periods. Overall labor force participation rate shows an increase for both males and females in 2001. Additionally, a large ratio of employment status of non-agricultural employees consists of regular employees. According to Gürsel *et al.* (2002), it is very natural for Turkey that regular employee share increases over time while own-account workers' decreases, as Turkey is a developing country. In non-agricultural employment for the period of 1988-2014, it can be seen that the share of regular employees increased from 60.3% to 81.3%, while the situation is adverse for own account workers and unpaid family workers (19.6% to

11.4% for own account workers and 4.4% to 2% for unpaid family workers). Total unemployment rate for 15-24 age group has increased from 17.5% in 1988 to 18.1% in 2016. This may be related to compulsory education policies. The pattern is the same for females (18.1% to 21.4%) but different for males (17.2% to 16.3%). We see that other age groups have shown an increasing trend, especially in 2009 with the global crisis. The option of working instead of being forced to work has changed over time. The labor force participation rate in Turkey was more than 50% (in 2016), 71.2% for males and 30.7% for females. People who are not in the labor force reached 28.8 million. (TurkStat, 2016).

From the very beginning with the Treaty of Rome, 1957, one of the main aims of the EU is enabling labor, goods, services, and capital to move freely. However, it has never been easy to reach and maintain that goal since every member state differs in terms of their labor market (Barslund et al., 2014). As part of the integration process, the EU has always focused on the harmonization and articulation of the labor markets of its member states. In the 1990s, the EU carried out programs and implementations in order to tackle labor market-related problems. By 2014, the labor force in the EU had reached a total of 242.3 million people, an increase of 0.8 million on 2013 (Eurostat, 2015). However, especially after the global financial crisis and during the sovereign debt crisis in Europe, high unemployment, low growth and low wages became a crucial concern for EU countries and their citizens. In order, therefore, to cope with the negative economic climate, social security reforms were introduced.

The association between social transfers and labor supply has been mostly investigated using the examples of the US and Europe. Studies of the macroeconomic variables of labor supply and social transfers started with the seminal works of Heckman (1974), Krueger and Pischke (1992), Siebert (1997), and Krueger, and Meyer (2002). Krueger and Meyer were among the first to point out that employees are more likely to spend time out of work if the unemployment insurance (UI) and workers' compensation (WC) insurance increase. In a similar vein, the impact of (insufficient) social transfers --either low level or no transfers at all-- on labor conditions has come under scrutiny recently as a crucial global topic (Bargain and Doorley, 2013; Tatsiramos and Jan Ours, 2014; Yıldırım and Dal, 2016; Filiz, 2017). The research concurs that

individuals' choices to work or stay out of the labor market are influenced by the social transfers.

This dissertation is motivated by the following gaps in the literature. Firstly, many studies have investigated the relationship between social transfers and other variables, whereas this study examines the impact of total social transfers on labor supply. Secondly, most of the literature employs unemployment benefits in the investigation. The analyses here, however, are conducted using all social transfers in total, and unemployment benefits on their impacts on labor supply. Thirdly, most of these studies either concern advanced or European countries, and were done in the late 1980s or 1990s. Regarding European-focused studies, they are usually done for one country, or compare two similar countries, i.e. Central and Eastern European countries. Furthermore, as well as adding to recent scholarship in this area, this dissertation researches the impact of social transfers on labor supply in two different labor markets by comparing Turkey and the EU. Lastly, this investigation focuses on the impacts across different periods by examining the probability of exit from unemployment to employment. The majority of the literature focuses on the effects of unemployment benefits on the unemployment duration. In the dissertation, Survival analysis is used for the period between 2006 to 2009 and 2011 to 2014 for Turkey and the EU.

For the purpose of the study, the analyses are conducted for Turkey, France, the Netherlands, Spain, and Poland (explained in detail in section 6). A panel of Income and Living Conditions Survey (SILC and EU-SILC) from TurkStat and Eurostat capturing two monthly periods (2006 – 2009 and 2011 – 2014) is used, and the Accelerated Failure Time (AFT) hazard model is employed. There is no doubt that receiving social transfers shapes people's decision on labor force participation. Therefore, a number of variables are used in the course of the analysis: leaving unemployment is used as a dependent variable; gender, age, marital status, education level, predicted wage, the number of earners in the household, unemployment rate, and occupation are included as independent variables. This micro data allows us to investigate the unemployment duration by calculating the unemployment spells. Individuals' current economic status helps us determine the "unemployed" individuals each month. The datasets of SILC and EU-SILC did not allow us to calculate the duration of the social transfers and

unemployment benefits received. Regarding unemployment benefits, since we could not reach that information, the amount of payment from *"Unemployment benefits received in income reference period (TL and EUR)"* is used in three categories as: low, middle, and high. Including these variables in the regression with other variables gave us the chance to interpret the elasticities of those variables in terms of the impact of different levels of unemployment benefits on the employment state of an individual.

The empirical results of the AFT hazard model demonstrate that in all five countries receiving unemployment benefits prolong the unemployment duration in both periods. In 2006 – 2009 period, social transfers as a total is significant. Although in the case of the Netherlands, the more individuals receive social transfers, the shorter their unemployment duration, the results for the rest of the countries indicate that social transfers as a whole prolong the unemployment spell. The findings regarding total social transfers show that the probability of leaving unemployment is longer for the ones who receive a variety of transfers (education, disability, old age, survivors, etc.) for all countries in 2011 – 2014 period.

This dissertation offers important policy implications for policy makers. The effect of social transfer durations seem to play a vital role in determining individuals' labor market participation. In addition, policies concerning education are especially important in Turkey (as well as the EU). That being said, reallocation of investment in training to old-aged individuals may be the primary policy implication to be drawn.

The dissertation is structured as follows. Related literature on macroeconomic variables and labor supply, social transfers and labor supply, and lastly social transfers and unemployment duration is presented in section 2. Section 3 explains the theoretical model. In section 4, basic labor market indicators in Turkey and the EU are explained, then the social transfer concept is put forward. Section 5 presents the empirical strategy used. Section 6 presents the data used for the analysis, and some basic descriptive statistics regarding the sample are calculated. In section 7, estimation results are presented. Lastly, section 8 gives the concluding remarks and policy recommendations.

2. LITERATURE SURVEY

As indicated in the introduction, the literature is categorized into three types of studies related to labor supply. The first type of studies, dominant in the literature, focuses on the macroeconomic variables and labor supply relationship. The second type analyzes the impact social transfers have on labor supply decisions. The last group of studies focuses on the effect of social transfers on the unemployment duration. This last aspect of social transfers has been scarcely discussed in the recent literature. This section briefly presents the basic findings belonging to all three types of studies[1].

Studies on macroeconomic variables and labor supply

İlkkaracan and Selim (2003) investigate the correlation between wages and regional unemployment rates in Turkey for 1994 by using the Labor Force Participation and Wage Structure Survey from the State Institute of Statistics (SIS) for three industries (manufacturing, mining and quarrying, and electricity, gas and water). Their correlation analysis shows that there is a statistically significant negative correlation between wages and regional unemployment rates; also, there is correlation between lower bargaining power and higher elasticity of pay. Prescott (2004) examines the role of taxes in accounting for the differences in labor supply across time and across countries. More specifically, he investigates the effect of the marginal tax rate on the labor income for the G-7 countries (France, Germany, Italy, the United Kingdom, Canada, Japan, and the United States) for the years 1970–74 and 1993–96, using the United Nations system of national accounts (SNA) statistics and the Organisation for Economic Co-operation and Development (OECD) labor market statistics and purchasing power Gross Domestic Product (GDP) numbers. He concludes that marginal tax rate accounts for the predominance of the differences at points in time and the large change in relative labor supply over time (Elasticity of labor supply is quite large). Using IZA/IAB Administrative Evaluation Dataset between 2001 and 2008 in Germany, Caliendo *et al.* (2016) find that marginal employment makes individuals find more stable jobs while depending on the individual's personal abilities and the conditions of the labor market.

[1] Table showing a list of related literature is given in the Appendix A.

Studies on social transfers and labor supply

In the past few decades, several studies have assessed the impact of social transfers on labor supply for different countries. Erosa et al. (2012) study the retirement decisions—in line with the social security, disability insurance, and taxation—of college and non-college educated men's labor supply for the US and European countries. The study uses the Survey of Health, Ageing, and Retirement in Europe and US Health and Retirement Study for 2004, 2006, 2008, and 2010. By applying the Generalized Method of Moments (GMM), they conclude that government policies can go a long way towards accounting for the low labor supply, late in the life cycle in the European countries relative to the United States, with social security rules accounting for the bulk of these effects. Dynarski and Scott-Clayton (2015), through describing the federal tax subsidies for education, their history, and their behavioral effects, argue that, at a minimum, a simpler system of education tax benefits would decrease the administrative and time costs of transferring funds to households with postsecondary expenses. At best, simplification would clarify incentives and increase investments in human capital.

Thévenon (2011) examines cross-country differences in state support to families using a principal component analysis (PCA) - correlation analysis in order to identify the most important discriminating characteristics of country policy packages for 28 OECD countries for the years 2005, 2006 and 2007. He comes to the conclusion that support to families with young children is lower in countries in the US, UK, Canada, New Zealand, Switzerland, Ireland, etc. but more comprehensive in countries like Sweden, Denmark, Norway, Iceland, Finland, Germany, etc. (Family support thus functions largely through means-tested and/or work-tested transfers, focusing on parents at risk of poverty and who are encouraged to enter the labor market.)

Aycan and Eskin (2005) investigate the role of three types of social support (i.e., spousal, childcare, and organizational support) in relation to work-family conflict (WFC) in dual-earner families with children aged 0–6 years. A total of 434 participants are drawn from four large banks in Turkey by applying Pearson's Correlation. Their results show that both men and women are allowed greater interference from work-to-

family than from family-to-work. The findings also show that women experienced more W-to-FC than men did. Using the model family method, Bradshaw (2012) draw comparisons between child benefit packages in the European Union on the one hand, and Central, Eastern European and Confederation of Independent States (CEE/CIS) countries on the other hand for the period of June 2009. He concludes that universal child benefits are dominant in the family benefit packages of European countries, which also exist in Canada and have recently been introduced in Japan.

Başlevent (2014) investigates the difficulties in determining the extent to which social transfers have an impact on income inequality in Turkey using a micro data set drawn from the SILC by TurkStat in 2013. By employing individual-level analysis and household-level analysis, he concludes that the contributions of retirement and unemployment benefits were positive, meaning that the correlation of these factors and total household income is positive. Dabalen *et al.* (2008) examine the separate effects of participation in income support program and the old-age pension program on objective and subjective measures of household poverty for Albania in 2002 and 2005. By doing panel and cross-section analyses and using propensity score matching methods, their results indicate that urban residents have lower per capita consumption and are more likely to be discontented with their lives. Moreover, the results showed that the receipt of old-age pension income transfers does not significantly impact the labor supply of prime-age individuals living in pension households.

Olsson and Thoursie (2015) study whether spousal labor supply responds to changes in public sickness insurance in Sweden between 1986 and 1991. Drawing on the Swedish National Insurance Board and deploying the difference-in-differences method, they come to the conclusion that sickness insurance reforms have no significant direct effect on labor supply. Krueger and Meyer (2002) carry out a review of the empirical work on unemployment insurance and workers' compensation insurance. They conclude that labor supply responses to WC and UI benefits occur mainly through decisions about weeks worked, and that labor supply responses of women mainly concern participation and weeks worked. Tatsiramos and Jan Ours (2014) conduct an overview of recent theoretical and empirical evidence on incentives influencing the

behavior of employed workers and UI recipients and discuss its implications for UI design. They argue that the behavior of unemployed workers is affected by the two main characteristics of UI systems in a similar way, despite the obvious differences between these systems and other differences in labor market institutions such as employment protection legislation, minimum wages and active labor market policies.

Hillebrand (2011) contribute to the discussion in the literature by analyzing the welfare effects of social security in a stylized overlapping generations (OLG) model with a focus on the role of labor supply. They come to the conclusion that any welfare analysis of social security should pay adequate attention to the role of labor supply and its dependence on the parameters of the social security system. The aim of Gassmann and Trindade's study (2015) is to estimate the potential labor disincentives of the Monthly Benefit for Poor Families with Children (MBPF) for adults with different household positions in Kyrgyz Republic in 2012. They use the Kyrgyz Integrated Household Survey by the National Statistics Committee of the Kyrgyz Republic employing the Quasi-experimental method. They suggest that, overall, beneficiaries have on average higher labor market participation rates when compared to non-beneficiaries, but that they are more exposed to seasonal effects.

Bagchi (2015) emphasizes that the quantitative importance of traditional roles depends on how the pension system distorts households' labor supply decision for the US. The method of general-equilibrium life-cycle consumption model, particularly overlapping-generations, model is used and his result underline that the distortionary effect of Social Security on households' labor supply decisions, both in terms of labor force participation and hours per week, can be large enough to erase much of its traditional welfare gains. Yıldırım and Dal's research (2016) investigate the link between labor force and social assistance program participation in Turkey, drawing on the 2011 household budget survey data and using bivariate probit model. Their research suggests that if individuals work more, they are less likely to participate in a (the) social transfer program. Ardington et al. (2009) want to see whether binding credit and childcare constraints limit the ability of households to send labor migrants, and whether the arrival of a large, stable source of income—here, the South African old-age

pension—helps households overcome these constraints. By applying ordinary least squares (OLS) they conclude that large cash transfers to the elderly, which occurs primarily through labor migration, lead to increased employment among prime-aged adults.

Saez (2002) examines the optimal income transfer problem at the low end of the income distribution in the US by doing simulations. His conclusions show that the optimal program provides a moderate guaranteed income, imposes low tax rates on very low annual earnings levels, and then starts phasing out benefits at substantial rates. Barrientos (2012) discuss what we know and what we need to know about the potential growth effects of social transfer programs in developing countries and find that social transfers can have measurable effects on the productive capacity of households in poverty, and on influencing micro-level growth. Alsasua *et al.* (2007) examines whether social protection benefits converged across the EU, and they conclude that there is convergence in eleven member-states in the period 1985-1999. Cornelisse and Goudswaard (2002) also do a convergence existence study and their findings also reveal convergence for the EU member states; they noted, moreover, that due to European integration, weak signs of the convergence could be observed.

Caminada *et al.* (2012) looks at whether social expenditures have an impact on poverty for OECD countries for the years 1985-2005, and they come to the conclusion that social expenditure and poverty have an inverse relationship through age and unemployment, which goes against what some scholars argue, namely that age and unemployment do not have an influence on social transfers and poverty. Moreover at the EU level, there is no doubt that the EU member states have different social and economic structures and control of the social transfers set up at national level. To see the impact of social transfers in the EU for member states, Heady *et al.* (2001) investigate the impact of cash social transfers on inequality and poverty using ECHP data. They conclude that even though member states have differences, social transfers have a positive effect on inequality and poverty in all member states.

Making comparison (with static simulation technique) using EU-SILC data for 2008 and 2013, Notten and Guio (2016) find that social transfers help decreasing income

poverty. By using an (the) error correction model (ECM), Paetzold and Van Vliet (2014) find that convergence is existed between unemployment benefits and public expenditures in 22 OECD countries from 1985 to 2009. Caminada *et al.*'s (2012) results also matches Paetzold and Van Vliet. Baldini et al. (2016) analyze the impact of social transfers on poverty in Europe using both EU-SILC cross-section and panel longitudinal data. The analysis using cross section data for 2014 shows that poor individuals are less likely to receive social transfers, while longitudinal data also shows the same results. Fabrizi *et al.*'s (2014) findings are in line with Baldini et al. Moreover, Fabrizi *et al.* states that the more social transfers a household receives the more they are likely to move away from poverty. Medgyesi and Pölöskei (2013) investigate whether being a native or mobile EU citizen makes a difference in terms of receiving different kinds of social transfers. Analyses for 18 EU member states with EU-SILC 2011 data shows that mobile EU citizens are less likely to receive family and child related benefits compared to natives. On the other hand, benefits like unemployment and education is not different for natives and mobile EU citizens. Similarly, Giulietti *et al.* (2013) demonstrates that receiving unemployment benefit does not affect migration flows in 19 EU member states through the period of 1993-2008.

According to Nakajima (2012), unemployment insurance benefits increase unemployment rate by 1.4 percentage points. Acemoğlu and Shimer (2000) find similar results. Dillender's research (2014) postulates that having a health insurance from an outside source increases one's wage rate. To see the link between unemployment benefits (UB) and the job situation of the labor market, Boeri and Macis (2010) investigated 27 UB systems existing in over 48 countries (21 of them had not introduce UB) between 1980 and 2002 using random and fixed effects. Their analyses show that more unemployment benefits lead to job destruction for about 1-2 percentage points (Mortensen and Pissarides, 1994; Acemoglu and Shimer, 1999, 2000; Marimon and Zilibotti, 1999).

On the other hand, other studies of Ehrenberg and Oaxaca (1976), Burgess and Kingston (1976), Holen (1977), Barron and Mellow (1979), and Maani (1993) emphasize a positive relationship between unemployment benefits and wages after

unemployment, while Classen (1977), Blau and Robins (1986), Kiefer and Neumann (1989), Addison and Blackburn (2000), and Belzil (2001) argue that this relationship was weak. In terms of unemployment benefit sanctions, Arni *et al.* (2013) and Van der Berg and Vikström (2014) find that there is a negative relationship between unemployment benefit sanctions and re-employment earnings. To see whether the labor market programs in Denmark affect unemployment duration and earnings, Sørensen (2016) use randomized controlled trial in Southern Jutland and Storstroem. Their study concludes that the labor market programs increases men's earnings in both counties. However, no similar effect is found for women. A study concerning CEE is done by Vodopivec *et al.* (2005). Their findings suggest that unemployment benefits helped lifting out of poverty provided that the scope of the benefits was large.

Studies on social transfers on unemployment duration

Bargain and Doorley (2013) examine the effect of the pre-2009 French social assistance program, the *revenu minimum d'insertion* (RMI), on labor supply. They draw on French Census Data (age—in days, employment, type of contract, work duration, marital status and household type) for 1999 from INSEE, and French Labor Force Survey (LFS) for wage estimations, along with regression discontinuity design (RDD) analysis and the structural model estimation. Their results show that eligibility for this program, which began at age 25 for single people, led to a drop of between 5 and 9% in the employment rate of young high school dropouts. Filiz (2017) examines the impact of unemployment insurance benefit generosity on benefit duration and labor market transitions in Turkey from 2002- 2012 by employing regression discontinuity approach, and the author concludes that unemployment duration is increased by approximately 0.7 weeks per additional week of UI benefit period.

Feldstein (1978) investigates the impact of unemployment insurance on temporary layoff unemployment for the US using Current Population Survey of 1971. He concludes that there is a positive correlation between unemployment insurance (UI) and temporary layoff unemployment. Not only does he state that positive relationship but he also empirically finds that an increase in UI raises the temporary layoff unemployment rate up by around 0.6 percentage points. Similarly, studies of Christofides and McKenna

(1996), Green and Riddell (1997), Baker and Rea (1998), Jurajda (2002) are in line with Feldstein. Gruber and Madrian (1997) concludes that when individuals have health insurance related to their previous jobs, they are more likely to take their time finding jobs; therefore, finding better-paid jobs will be resulted in earning higher wages. Weber *et al.* (2014) examines the subsidy generosity program and its outcomes for Oregon families using administrative data. To be able to see whether programs have affected the probability of employment, job situation, unemployment, etc., they used Cox regression model with 48-month data from October 2005 through September 2009. The analysis shows that longer subsidy spells are achieved with more generosity programs (Howes and Hamilton, 1992; Loeb *et al.*, 2004; Votruba-Drzal *et al.*, 2013; Michalopoulos *et al.*, 2010; Schexnayder and Schroeder, 2008; Witte and Queralt, 2005).

Many studies show that the motivation of individuals receiving unemployment benefits to find a job and/or improve the quality of a job is different from those who does not receive the benefits. Van Ours and Vodopivec (2008) study the quality of jobs once unemployment insurance law came into force in Slovenia. Their difference-in-difference estimation results show a positive link between unemployment benefits and unemployment duration spells, suggesting that more benefits lead to longer unemployed durations for individuals. However, they do not point to any effects on the quality of the job after unemployment.

Different analyses for different countries have been carried out regarding unemployment insurance and the transition from unemployment to employment. Lachowska *et al.* (2016) does the research for the US using Washington Alternative Work Search (WAWS) experiment and come to the conclusion that unemployment insurance work test decreases the probability of unemployment to employment. Centeno *et al.* (2009) evaluates the labor market programs for young and old cohorts and its impact on unemployment durations in Portugal. They come to the conclusion that the program for old people decreases the unemployment duration while the young cohorts' program extends it. They also state that women are less likely to benefit from the program for young people. Hägglund and Bächmann (2017) investigate women and men's transition from unemployment to employment in Germany for the period of

1993- 2010. The analyses show that being male has a positive effect on unemployment to employment. They also focus on the Hartz reforms to see the unemployment and re-employment transitions with the benefit system. The Cox proportional hazard estimates show that the type and duration of benefit affect transition from unemployment to employment. Moreover, the probability of that transition depends on the education level and past job experience. In a previous study, Graversen and Van Ours (2008) also investigate the effect of Denmark's mandatory activation program's effect on unemployed people. However, they do not separate the analysis on gender basis. They arrive at the conclusion that activation program shortens the unemployment duration of people who are exposed to comparing to those who are not. In addition, with the activation program, people are more likely to find jobs.

Hartley *et al.* (2011) finds that unemployment receivers are more likely to stay unemployed in Chile. Similar results are presented for the Japanese labor market (Kohara *et al.*, 2013). Lubyova and Van Ours (1997) investigate the effect of unemployment benefits on unemployment dynamics in Slovakia. By using public employment office data from 1992 to 1995 with proportional hazard model, they conclude that when unemployment benefit system is stronger, the duration of unemployment is shorter in Slovakia. Lalive and Zweimüller (2004) examine whether unemployment benefits extend the unemployment duration in Austria. They use two sets of data: the Austrian social security database and the Austrian unemployment register between 1986 and 1995. By applying dif-and-dif-and-dif and Cox Proportional Hazard models, their results show that the transition to employment has reduced by around 17% with the benefit programs.

Kettunen (1997) aims to see the impact of the education level on reemployment of individuals in Finland by using the Finnish dataset. His application of Weibull model states that individuals are more likely to be reemployed if they completed 13-14 years of education. According to Boeri (1999), temporary employment decreases the unemployed individuals' chances of job finding in some of the OECD countries. Gabriel *et al.* (2017) study the duration of unemployment in Botoşani County, Romania with administrative data from 2012 to 2015. Cox regression model of them concludes

that the unemployment duration of individuals is affected by unemployment benefits as well as the residence those individuals lived in. According to Terracol (2009), the RMI, which is an income program in France, has negative impact on the unemployment hazard only after six months of the 1994 – 2000 period. By using the Austrian social security database (ASSD) and the Austrian unemployment register (AUR) with 1986-1987 and 1989-1991 periods, Lalive (2008) investigates if additional unemployment benefit increases the duration of unemployment. His empirical analysis of the RDD model concludes that the spell of unemployed women in Austria rises with additional unemployment benefit.

Using the Cox proportional hazard model, Dănăcică and Mazilescu (2014) examine the reemployment probability of males in Hungary and Romania between 2008 and 2010, and they state that the Hungarian males' probability of reemployment decreases when their duration of unemployment increases (up to 2 years of long unemployment) as well as their age. By applying the Box-Cox quantile regression with the IABS data from 1975 to 2001, Fitzenberger and Wilke (2010) investigate the effect of unemployment benefits on the duration of unemployment in Germany. They come to the conclusion that benefits affect the duration if the individual receives it for more than 12 months. Kyyrä, Parrotta and Rosholm (2013) finds that married female individuals are more likely to stay unemployed whereas young individuals' unemployment duration is shorter compared to others in Denmark. They work with the administrative data in 1999 – 2006 by applying the mixed proportional hazard model. Le Barbanchon (2016) examines what happens if the unemployment benefits duration increases in France. He uses *Fichier Historique* (FH) and the *Déclarations Administratives de Données Sociales* (DADS) datasets by applying the regression discontinuity design. According to his findings, extended benefits have a positive impact on unemployment. Carlinga *et al.* (1996) and Rebollo-Sanz (2012) suggest that individuals are more likely to find jobs after their unemployment benefits were exhausted. Other studies concerning unemployment benefits conclude that unemployment benefits receivers are less likely to be affected by the duration and amount of unemployment benefit changes, since they are also eligible for other types of schemes (Pellizzari, 2006).

3. THE THEORETICAL BACKGROUND

Decision of participating labor force is affected by certain factors. By trying to maximize their utility, this decision is shaped. And individuals' behavior to work, choose to work or choose not to work is influenced by their utility. The utility function to each individual—*U (C, H)*— shows the trade-off between consumption and leisure, where *C* is the consumption of goods, and *H* is the consumption of leisure. There are various models explaining the utility function in the literature. Individuals' decisions to participate in labor force or not depends on their willingness to work more/leisure less or work less/leisure more. According to Nicholson and Snyder (2011), the working time plus leisure time must be equal to 24 hours a day in order to reach utility. Let the working time be L, leisure time H, consumption C, and per hour wage w, then

$$\mathrm{L} + \mathrm{H} = 24$$

$$\mathrm{C} = \mathrm{wL} \text{ since we know } L = 24 - H$$

$$\mathrm{C} = w\,(24 - H) \text{ or } 24w = C + wH$$

The utility function of an individual concerning his/her budget constraint is in a general form of
$\mathcal{L} = U(C, H) + \lambda(24w - C - wH)$ following the First Order Condition (FOC):

$$\frac{\partial \mathcal{L}}{\partial C} = \frac{\partial U}{\partial C} - \lambda = 0$$

$$\frac{\partial \mathcal{L}}{\partial H} = \frac{\partial U}{\partial H} - w\lambda = 0$$

From these two equations

$\frac{\partial U/}{\partial U/_{\partial C}} = w$, which is also called Marginal Rate of Substitution of leisure (MRS_H).

Meaning that individuals must work so that the MRS_H is equal to w in order to maximize his/her utility.

Becker's (1965) approach explains that households are not only consumers but

also producers. Individuals choose to divide time according to the trade-off between leisure and work. Work means production and thus leads to income. In his theory, social transfers give individuals the choice to decrease working hours and increase leisure, since there is a payment coming. The traditional utility function is simply in the form of:

$$U = U(\, y_{1,} y_{2,}, y_3, \dots, y_n)$$

where y_i is the goods that the individual i has purchased on the market. It is assumed that each individual is subject to facing a resource constraint

$$\Sigma p_i' y_i = I = W + V$$

where p_i' is the price of the goods that each y_i costs, I is the money income, W is the earnings, and V is the other income. According to Becker (1965), each individual has time to work, produce goods, or time for leisure. Therefore, it is assumed that they either use their time to produce market goods or occupy themselves with more basic commodities, which are going out, theatre, or sleep. The input of these activities and the individual's time go directly to the utility function of that individual. These kinds of commodities are represented by Z_i and

$$Z_i = f_i(x_i, T_i)$$

where x_i is the vector of market goods and T_i is the vector of time inputs that the individual produced. In that sense an individual's utility function can be written in a form of

$$\text{U} = \text{U}\,(Z_i, \dots., Z_m) \equiv \text{U}\,(f_1, \dots., f_m) \equiv \text{U}\,(x_1, \dots., x_m;\ T_1, \dots., T_m)$$

This utility function is now subject to the individual's budget constraint

$$\text{g}\,(Z_i, \dots., Z_m) = Z$$

where the expenditure function is represented with g.

What Becker (1965) suggests is that households, which are usually on the consumption

part of the equation, are producers as well. Concerning the integration of production and consumption, there is a tendency to separate them. Firms do the production side while households do the consumption. However, Becker stresses that households join the production by combining their own time with producing basic commodities depending on the costs of allocation of work and consumption activities.

In a different approach, Mortensen (1977) looks into individuals' preferences using a dynamic search model, which essentially gives the basic idea of a utility function where the individual's expected utility is a function of work (income) and leisure. Individuals' choices to participate in the labor market can be shaped by unemployment benefits, amongst other factors. According to Mortensen an individual's utility function is

$$U_j = \frac{1}{1+rh}\left[hu(y_j, l_j) + U_{j+h}\right]$$

where j is the date that a good y_j is purchased at per period, l_j represents the interval given to leisure and r is the sum of time preference and probability of retiring. u(y_j, l_j) gives the choice of the individual. For example, if the individual prefers not to participate in the labor market then (y_j, l_j)=(0,1) and vice versa. In addition, Mortensen considers the unemployment compensation of an individual, since it affects their utility function and the related work/leisure decision. However, since those benefits are given to certain people for a certain amount of time, Mortensen takes into account the effect of unemployment insurance as well. $U_t = V(\,t, b, U_t)$ represents the expected utility of an individual if they become unemployed and receives unemployment benefit for a duration t.

Moffitt and Nicholson (1982) explain a version of static labor-leisure model of individual choice. By looking at the impact of the duration of UI, they assume that individuals face relatively long periods of unemployment. Therefore, this long-time unemployment drives individuals to make a decision on how to spend their time. The trade-off between staying unemployed one more week after receiving the last UI payment and the level of income received through participating in the labor market determines the utility maximization of an individual. This trade-off is represented in the

budget constraint of that individual.

$$Y = W\ (T - U) + \ N + BU\ \text{, if } U < U^*$$
$$Y = W\ (T - U) + \ N + BU^*\ \text{, if } U \geq U^*$$

where Y is the total income, W is after tax weekly wage, T is the period of time, N is the nonwage income, B is the weekly unemployment insurance payment, and U^* is the potential benefit duration. Their findings are in line with the labor-leisure model saying that more unemployment benefit payment lead individuals to stay in unemployment longer.

Individuals either choose unemployment, because of the leisure it brings, or income. They can be employed at any time, and (yet) they are willing to choose income and unemployment when they lose their jobs because of their budget constraint (Meyer, 1990). Social transfers, on the other hand, define all forms of goods and services provided by the public authority to their citizens, who are below a certain social level, with the aim of contributing to individual conditions and further to social welfare as a whole. Most social transfers are under the category of giving an option to households to choose between providing labor or receiving allowance, which can have significant impacts on labor supply: people may choose to receive social transfers and not to work. To investigate the labor force participation and social transfers program participation decisions of individuals, one must search for the determinants that shape their decision. Every individual has a different environment, socio-economic background, education level, etc., and therefore the outcomes vary. Demographic factors, like age, gender, education level, marital status, occupation, and wage, affect the decision of participating in the labor force.

Changing the employment state from "unemployed" to "employed" is investigated in this study. When observing the probability of exit from unemployment to employment, hazard function is the right tool to use, since it handles censors, time-varying covariates and duration dependence (see Cox (1972); Ham and Rea (1987); Meyer (1990); Jenkins (1995) for more). The hazard model allows us to observe each individual, *i*, and their unemployment durations by simply looking at the unemployment spells, t. $\mathrm{t_i} = (\mathrm{t_i^c})$, where c is the number of the spell. The general form of the model is

$$h_i(t) = (\beta_0 + x_i\beta_x)t$$

where *i* represents each individual, β is the estimated coeffiecient of the model. X_i refers to covariates set of individuals. Further analysis is provided with the parametric model, more specifically the accelerated failure time (AFT) model. The parametric hazard model is represented in the form of

$$ln(t_i) = \beta_0 + x_i\beta_x + \epsilon_i$$

which is decomposed of the proportional hazard model written as

$$h(t|x_i) = h_0(t)\exp(\beta_0 + x_i\beta_x)$$

Cleves (2008) states that ln(t) includes the proportional hazard interpretation; therefore, parametric proportional hazard models are written in the form of

$$h_i(t) = h_0(t)\exp(\beta_0 + x_i\beta_x)$$

Parametric proportional hazard (PPH) models have similarities/parallels the with Cox PH models, since PPH is a parametric version of Cox PH. Besides the similarities, the main difference is the assumption of specific distribution of the baseline hazard function, whereas the data is omitted in the PPH model; the Cox PH model does not include that restriction. Moreover, in the PPH model, maximum likelihood estimates the coefficients, while it is done by partial likelihood in the Cox PH model (Qi, 2009). It is accepted that the probability distribution is limited in the PPH model; thus, AFT models are used in those cases. In addition to these, when proportional hazard assumptions are violated, the AFT model is the appropriate method to apply. That is why AFT models are used for further analyses in this study. Effects of the explanatory variables are reported as survival time in AFT models. AFT models are written in the form of

$$\ln(t_i) = x_i\beta_x + \epsilon_i$$

and the failure time t_i is assumed for

$$\tau_i = \exp(-x_i\beta_x)t_i$$

where $\exp(-x_i\beta_x)$ is accepted as an/the acceleration parameter. Since AFT models

report the survival time—instead of hazard ratios—the acceleration parameter if exp(-$x_i\beta_x$) > 1, then the expected event is more likely to happen earlier, whereas if exp(-$x_i\beta_x$) < 1, the expected event is more likely to happen later. So, if $\tau_i = \exp(-x_i\beta_x)t_i$, then $t_i = \exp(-x_i\beta_x)\ \tau_i$ resulting in

$$\ln(t_i) = x_i\beta_x + \ln(\tau_i)$$

There are five different distributions of the AFT models. As AFT models are represented as $\tau_i = \exp(-x_i\beta_x)t_i$, *exponential AFT model* assumes that distribution of τ_i is exponential and includes the mean of exp (β_0).

As AFT models are represented as $\tau_i = \exp(-x_i\beta_x)t_i$, *Weibull AFT model* assumes that the distribution of τ_i occurs as Weibull with parameters, which are (β_0, p) and includes cumulative distribution function

$F(\tau) = 1 - exp[-\{\exp(-\beta_0)\tau\}^p]$ and as we have written the notation of

$\ln(t_i) = x_i\beta_x + \ln(\tau_i)$ then $\ln(t_i) = \beta_0 + x_i\beta_x + u_i$

where u_i has the Gumbel distribution with *p* shape parameter. Its survival function is written as

$$S(\mathrm{t}_i|x_i) = exp[-\{\exp(-\beta_0 - x_i\beta_x)t_i\}^p]$$

As AFT models are represented as $\tau_i = \exp(-x_i\beta_x)t_i$, *Log-normal AFT model* assumes that the distribution of τ_i occurs as lognormal with parameters, which are (β_0, σ) and includes cumulative distribution function

$F(\tau) = \phi\left(\frac{ln\tau - \beta_0}{\sigma}\right)$ and $\phi()$ function has Gaussian distribution; therefore u_i in

$\ln(t_i) = x_i\beta_x + \ln(\tau_i)$ then $\ln(t_i) = \beta_0 + x_i\beta_x + u_i$
is normally distributed with 0 mean and σ standard deviation. And its survival function is written as

$$S(\mathrm{t}_i|x_i) = 1 - \phi\left\{\frac{ln\ t_i - (\beta_0 + x_i\beta_x)}{\sigma}\right\}$$

As AFT models are represented as $\tau_i = \exp(\text{-}x_i\beta_x)t_i$, *Loglogistic AFT model* assumes that distribution of τ_i occurs as loglogistic with parameters, which are (β_0, γ) and includes cumulative distribution function

$$F(\tau) = 1 - \left[1 + \{\exp(-\beta_0)\tau\}^{\frac{1}{\gamma}}\right]^{-1} \text{ and}$$

$\ln(t_i) = x_i\beta_x + \ln(\tau_i)$ then $\ln(t_i) = \beta_0 + x_i\beta_x + u_i$

where u_i has the logistic distribution with 0 mean and $\pi\gamma/\sqrt{3}$ standard deviation. And its survival function is written as

$$S(\mathrm{t}_i|x_i) = \left[1 + \{\exp(-\beta_0 - x_i\beta_x)t_i\}^{\frac{1}{\gamma}}\right]^{-1}$$

As AFT models are represented as $\tau_i = \exp(\text{-}x_i\beta_x)t_i$, *Gamma AFT model* assumes that the distribution of τ_i occurs as generalized gamma with parameters, which are $(\beta_0, \kappa, \sigma)$ and includes cumulative distribution function

$$F(\tau) = \begin{cases} \mathrm{I}(\gamma, \mathrm{u}), & \text{if } \kappa < 0 \\ \phi(z), & \text{if } \kappa = 0 \\ 1 - \mathrm{I}(\gamma, \mathrm{u}), & \text{if } \kappa > 0 \end{cases}$$

where $\phi()$ is the standard cumulative distribution function and $\mathrm{I}(\gamma, \mathrm{u})$ is the incomplete gamma function.

$\ln(t_i) = x_i\beta_x + \ln(\tau_i)$ then $\ln(t_i) = \beta_0 + x_i\beta_x + u_i$

And its survival function is written as

$$S(\mathrm{t}_i|x_i) = 1 - F^*(t_i)$$

If $\kappa = 1$, then it has Weibull distribution, $\kappa = \sigma = 1$, then expotential distribution, and if $\kappa = 0$ it has lognormal distribution, since generalized gamma models include expotential, Weibull, and lognormal as special cases[2].

[2] Please refer to Cox and Oakes (1984), Lawless (1982), Cleves (2008), Qi (2009), Collett (2003) for more about the AFT models.

4. A BACKGROUND ON LABOR MARKETS AND SOCIAL TRANSFERS OF TURKEY AND THE EU

Labor market dynamics consist of the aggregate labor force, which depends on developments in population and labor demand (Kepenek and Yentürk, 2005). To investigate the labor market, one of the most important indicators is population. Since the factors affecting labor supply are determined by the dynamics of demographics, population is closely related to the labor market as well as to fertility (Tansel, 2012; Şentürk, 2015). Law forms the basis for employment relations determined in the labor market. It is vital to understand the organization and operation of the labor market in order to understand and evaluate many social and economic problems, policies and programs. Through the labor market channel, labor force, which is the most important source of the economy, spreads to occupations, firms, and regions. Not only individuals are closely associated with how the labor market works but also society is.

Why is the labor market important? Many people's source of income depends on the labor and brain force that they present in exchange for wage in the labor market. A large part of the national income is created by the total wage in the general economy. Education increases value in labor market, and earnings are determined in labor market. That is why labor market is closely related to a significant part of the population. The organization, operation, and outcome of the labor market are major concerns for policy makers that build public policies about employment and wages. It is important for them to monitor labor market processes to understand the cause and effect of the socio-economic and demographic developments (Tansel, 2012).

The ones who work in the labor market present their work when employers demand that labor. In other words, individuals decide whether they enter the labor force, work, for how long they work, and when they retire. These decisions shape the individuals' labor supply. On the other hand, employers decide how many products they want produced and demand labor for producing them (Tansel, 2012). The neo-classical theory of labor supply simply says that the idea of having a paid job comes with deciding to have it first. Like others resources, the amount of time an individual has is scarce as well, so s/he chooses to divide this time between (paid) work and leisure.

Regarding the decision, wage is quite the factor in that process; however, it is not the only factor. Environment, work conditions, income, personal wealth, etc. should be considered. There is no doubt that this decision is not so easy, since trade-offs are much more complicated than doing assumptions. The costs and benefits of the household (making meals, raising children, and house repairs) depend on the supply of wage so that the laborer must think ahead and negotiate with his/her family. The family situation should be considered as well. Choose to consume more leisure or consume more goods? This is what the neo-classical theory of labor supply is based on. Principally, it can be said that when one's wage is low, labor supply rises and vice versa. The utility function for each individual, U (C, L), shows the trade-off between consumption and leisure, where C is consumption of goods and L is consumption of leisure. The period that an individual works, h, is equal to the total amount of time that an individual wastes, minus the leisure that an individual wishes to consume. Moreover, the (higher) the amount an individual consumes goods and leisure, the more utility s/he will get. Regarding maintaining utility, s/he can have the same utility with more work and less leisure, or less work and more leisure. The same level of utility is equal to the utility function that individual has, U (C, L), and it is known as the indifference curve (Cahuc and Zylberberg, 2004).

Business cycle fluctuations are affected by labor supply. Some agree, with that proposition while others do not. Lucas and Rapping (1969) drew attention to this topic in late 60s and it has been controversial ever since. Through labor supply responses, large business cycle fluctuations are generated (in employment) (Hall, 2008). Individual labor supply theory—including idiosyncratic shocks, trading frictions and incomplete markets makes people embody income and substitution effects. Why are the idiosyncratic shocks, trading frictions and incomplete markets included, one might ask? They are crucial in explaining why labor supply is important for economies. Idiosyncratic shocks account for the empirical part, while we try to find out the unemployed and non-participants using trading frictions and finally incomplete markets cause the employment insurance to fade away against idiosyncratic shocks, so that individuals can accumulate their own assets by themselves (Krusell *et al.*, 2012).

With the seminal works of Lucas and Rapping (1969), Lucas (1972), Kydland and Prescott (1982), Hansen (1985), and Auerbach and Kotlikoff (1987), there is now a vast amount of studies focusing on labor supply for business cycles, since its importance had been negligible for economies. In terms of social security, a fixed labor supply is not a good sign, since it says that pay-as-you-go system will not ever be a fully funded system. On the other hand, a non-fixed labor supply is better off for individuals, since a (the) fund transition can be made. However, the way and duration of that transition have been often brought into question (Prescott, 2004). Why is labor supply important for the economy? How does it affect individuals? What differences came with the labor supply decision? These types of questions have been often asked. Answers to these questions play an important role in understanding the structure of labor supply decision. First, with labor supply, we are allowed to do analyses in business cycles to see how one affects the other. Not only business cycles but also tax policies are affected by labor supply (Prescott and Wallenius, 2012). On the other hand, labor demand is determined by changes in real wage, capital and technology. With employees and employers, it is claimed that the labor market comes to equilibrium through the decisions they take in labor market firms, and employees try to maximize their utilities in that context. These aggregate decisions by individuals form the labor supply, while the decisions of firms form the labor demand of the economy. Where labor supply equals labor demand, there is full employment and no unemployment (Tansel, 2012).

4.1.Labor Market in Turkey

In Turkey, the first labor market law goes back to 1924, with the Ministry of Labor being established in 1945. Since the 1950s the labor force participation rate (LFPR) has been falling, even though its declivity has also levelled. The rural-urban migration to cities is considered an important and reliable piece of evidence for this decline.

From the 1970s to the 2000s, a great share of the total employment was comprised of the agricultural sector (almost 60% in 1975, over 46% in 1990, 34% in 2000). The Mediterranean, Aegean and Marmara regions were known as industrially active and therefore received a labor force from the Black Sea, the Eastern and Southern-Eastern regions. In that respect, households that migrated from rural to urban

areas were often be forced to rethink their labor force participation due to the changes in sectors and skill requirements, etc. Traditional labor models, such as the man of the house going out to work, the woman staying home and taking care of the children, also began to change. Further, changes in educational opportunities produced a decline in the labor participation rate, a response to a new law ratified in 1997 concerning Turkish education system (Law no. 4306) which enacted the extension of compulsory education from 5 to 8 years.

The 1980s saw a strong economic boom making the decade the corner stone of the Turkish economy. There had been a series of changes happening in the labor market. With the shift from agriculture to manufacturing, the migration from rural to urban regions left the Turkish labor market with no choice but to demand high productivity from high-skilled, well-educated labor force. As a result of that, the industry and the services' share of employment rose while that of agriculture's fell dramatically (Cilasun *et al.*, 2015).

The Post-1980 era in Turkey required an obligatory policy overhaul, with the neo-liberal perspective adopted by the 1990s coalition governments aiming to place priority on the enactment of employment protection (Tunalı, 2003). Governments that came to power in the 1990s supported the measures that were in line with the neo-liberal framework and instated employment policies that affected the socio-economic policies of post-1980s. Active labor force policies were used as a tool, thanks to the World Bank support and policy proposals after 1993 as most of the active labor force policies were implemented with the World Bank credits in the years between 1993-2000. An important part of these active labor force policies consisted of social support projects for individuals who had lost their jobs due to the privatization of state-owned enterprises and structural harmonization programs, and for those who were not in the labor force altogether.

Moreover, in the beginning of the 2000s, *Privatization Social Support Project* provided a marked development in terms of active labor force politics by covering areas such as education, temporary work and consultancy services. Those active labor force policies were introduced in order to support the relatively undeveloped regions of the country in 1998, and they continued to be implemented across the towns hit by the

Marmara earthquake in 1999 (Tunalı, 2003:93; Dertli, 2009: 611; Dertli, 2009: 613; Gün, 2017).

There have been several events in recent history that affected the Turkish economy adversely: the outbreak of the Gulf War in 1991, the Turkish lira losing almost 70% of its value against the US dollar in 1994, the effect of the Russian crisis and the earthquake in 1999, and lastly the 2001, the 2007 global financial crisis and the 2010 European sovereign debt crisis,. The 1990s were particularly rough for the economy due to high public deficits and inflation. Following the 2000s, the situation was relieved with stability and growth. Law no. 5018 (*Public Financial Administration and Controlling*) and Law no. 4734 (*Public Procurement*) were passed as well as social security and health care related reforms thanks to emerging stability and growth in Turkish economy. In order to capture a well-functioning fiscal and monetary environment, policy makers reached a consensus on understanding the importance of institutional governance. This led to more pressure being placed on institutional practices, such as labor market regulations, which were worse off before. Especially since the 2001 crisis, Turkey has shaped its economy with this view in mind (Yeldan, 2011). However, the 2007 global crisis did not show the same effect as the crisis negatively affected exports and foreign direct investment by slowing down the economy. The brunt of the global financial crisis on the labor market was conspicuous the most, since it influenced labor market activities through lowering the employment rate and increasing unemployment rate. In order to tackle this issue and breathe life again into the labor market, measures concerning the youth, women, disabled individuals, vocational education and training (VET), etc. had to be taken in 2008.

Regarding sectorial employment rates, the agricultural sector was hit the most, declining to 23% in 2007 (47% in 1990). However, one must be aware that the correlation between economic development and employment in the agricultural sector is inverse, meaning that more development means less agricultural employment (and more industrial sector employment), even though the effect of the crisis should not be neglected. The unemployment rate increased from 6.5% to 10.3% in the two years (following) the 2001 crisis, despite a boost in exports and rapid growth. A similar situation was seen in the 2008 crisis, with higher GDP but uncertainty in employment generation, unemployment, and labor participation, which brought about a low elasticity

of employment (Yeldan, 2011). According to Ercan and Tansel (2005), the Labor Act of 2003 hindered employment, since employers were unhappy about the provisions on job security. The Turkish labor market had never been as flexible as the western industrialized countries, and that new act aimed at giving more flexibility to the market on principle. Despite the fact that flexibility on wages was achieved, in practice the effort was not enough (Yeldan, 2011; Onaran, 2002).

In addition to all these challenges, the Turkish labor market has also had to deal with unregistered employment. Even though it decreased around 20% between 2004 and 2012, it is still a crucial structural problem of the labor market in Turkey. Low-qualified labor, itself a result of low education, is considered one of the main reasons of this structural problem. In addition to insufficient human capital, there is an observable dissension between labor quality and labor demand in Turkey. High unregistered employment and low employment rate, high unemployment rate, low women participation rate as well as financial and economic crises have all pushed policy makers to take measures to manage the labor market (Holmlund, 2014). There is a vast amount of reforms that have been taken in Turkey. In 2005 the Wage Guarantee Fund was attached to Unemployment Code No. 4447 to be able to protect employed individuals (Cilasun *et al.*, 2015; Ercan *et al.*, 2010). After the 2007 global financial crisis, the October package was announced in 2008, aiming to improve the social security system. In February 2009, with the goal of arranging the temporary working hours were cut, especially during the crisis, and a complementary package was launched. There have been more reforms taken in order to improve the labor market conditions (Cilasun *et al.*, 2015). Advances in technology and science have made globalization and development faster, thereby the need to pay more attention to human capital since the 1990s. The low skilled, less educated, elderly, disabled are more likely to be exposed to the adverse consequences of crises, labor market conditions, and unemployment. Therefore, countries prioritize their sources to take measures and adopt policies on the labor market to abolish unanticipated outcomes. Also, it is crucial to reach and maintain higher employment elasticity for an active and functioning labor market so that the Turkish labor market can cope with competition and outside market forces[3]. As it is stated in the

[3] Which is basically the economic criterion (a functioning market economy and the capacity to cope with

aims of the Ninth Development Plan as well as the National Employment Strategy and the Tenth Development Plan, measures need to be taken for a better labor market.

The Fordist production model supports stable labor market conditions with the high number of standard production and the stable employment for standard works. After the1970s, the Post-Fordist approach made the situation more flexible since having a positive structural change in the labor market comes with a *flexible* labor market environment that has a much more compact production and more qualified and heterogeneous labor. Improved and developed labor market conditions occur in the flexible labor market with the declining unemployment rate and make the market more competitive both internationally and at home. This may be defined as *flexicurity,* and it has been adopted by many EU states (Denmark and the Netherlands were to successfully adopt it in 2000). Flexicurity makes labor markets more flexible and secure (in terms of employment, job security, and income security). With a high number of unemployment rate, limited unemployment benefits, high unregistered labor, and inadequate employment policies, Turkey has been not very successful in applying flexicurity. After a sharp decrease at first, the development level accelerates, and the labor force participation of women increases.

However, the situation is quite different for Turkey, since women's labor force participation in urban areas has stayed at a very low level. Developments in education, labor market initiatives, and the gain in white-collar jobs have not been successful; it seems, in giving a boost (Tunalı and Başlevent, 2006). Regarding the low level of women labor force participation rate, a good deal of reasons can be given. Since they usually work in the agricultural sector, with the shift to the industrial sector, women who work unpaid choose to stay home and exit the labor force. Moreover, the job separation allows women to have less access compared to men, as men are employed with better-paid jobs and adequate social security. Among these, the educational level plays a crucial role in low women labor force participation and high unemployment rate. Nevertheless, flexible working hours have affected the unemployment duration (Tunalı, 2003).

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competition and market forces) of the Copenhagen Criteria for a country to satisfy in order to be a member of the European Union.

By the end of the 1990s, women's labor force participation had increased because of the stock and the direction it was taking: low-educated individuals in stock were replaced with well-educated ones, thereby increasing the share among the unemployed. Well-educated women's participation led the women's participation rate to increase compared to the 1980s. The gender composition of women shows us that there was about two percent decrease in women's employment in the total employment figures between 1988 and 1998. Even though a decline is observed, the share of women working in urban areas increased in terms of the total employment. Not only did the number of women working in urban areas increase but also their wages rose up as they began to be employed in white-collar jobs. However, despite the positivity of women's participation in urban areas, the Turkish labor market is not flexible enough (working hours, inadequate policies towards women, etc.) for women to reach the maximum capacity of participation. The case is different for rural areas, suggesting that the agricultural share of total employment for women has declined. It is firmly believed that migration to urban areas and education has a big impact (Tunalı, 2003).

And to sum up, the Turkish labor market has been changing over the years following different patterns. As from the late 1980s and 1990s, it can be observed that agricultural employment was high, and the number of paid employees was very low. Because of this, predictably, women's labor force participation was low. Low-educated employees brought about a low employment rate, followed by income problems. In the 2000s, we see a transformation. Low-educated people in stock and the elderly exited the labor force by taking advantage of early retirement. The relative impact of state is higher, as public employees also have an effect, with low unionization generating the wage level and causing low productivity. In the 2000s, the economic crisis appeared to cause low participation and employment in the labor force. In addition, as a result of compulsory education reform laws in 1997, the education levels of individuals entering the labor force is above average, and low-educated employees in stock are exiting the labor force; overall, the market's education level has been rising. This makes women's participation rate and the number of paid employees increase. On the other hand, since the number of public employees is constant, the ratio of public employees to paid employees has been declining. As the increase in education level makes women's

participation rate rise, we observe an increase in labor supply, and there is a normal rise in labor demand. However, this necessitates growth and makes unemployment go up.

Table 1 Labor Market Statistics in Turkey (%)

	1988-1993	1994-1999	2000-2005	2006-2011	2012	2013	2014	2015	2016	2017
Labor Force Participation Rate (%)										
15+ age										
Total	56.8	52.6	48.8	47.0	49.4	50.3	50.5	51.2	52.1	52.8
Male	79.2	75.7	74.0	69.5	70.3	70.9	71.2	71.6	71.9	72.1
Female	34.8	30.1	28.6	25.2	29	30.3	30.2	31.4	32.7	33.8
15-24 age										
Total	54.3	47.3	39.9	37.2	37.4	38.8	40.8	41.8	42.4	43.3
Male	69.4	62.0	54.6	50.4	49.8	51	53.9	54	54.3	55.2
Female	40.5	33.8	26.9	24.7	25.2	26.8	27.6	29.6	30.4	31.1
Employment Rate (%)										
15+ age										
Total	53.3	48.2	45.0	42.3	45.4	45.9	45.5	46	46.3	47.3
Male	75.3	70.1	60.8	62.8	65	65.2	64.8	65	65.1	65.8
Female	31.6	26.8	24.4	22.6	26.3	27.1	26.7	27.5	28	29.3
15-24 age										
Total	43.4	39.0	30.7	30.8	31.5	32.2	33.5	34.1	34.1	34.3
Male	56.1	51.2	41.3	41.6	42.5	43.1	45	45.1	44.8	45.4
Female	31.5	27.2	20.6	20.5	20.7	21.5	22	23	23.2	23
Unemployment Rate (%)										
15+ age										
Total	8.2	7.2	9.6	9.9	8.1	8.7	9.9	10.2	12.1	10.3
Male	8.2	7.3	9.7	9.7	7.6	7.9	9	9.2	10.2	8.8
Female	8.0	6.9	9.1	10.4	9.4	10.6	11.8	12.6	16.0	13.4
15-24 age										
Total	16.6	15.2	18.2	18.6	15.7	16.9	17.8	18.5	22.6	19.3
Male	18.2	16.4	18.8	18.2	14.6	15.5	16.6	16.5	19.2	16.2
Female	14.2	13.2	17.0	19.3	17.8	19.7	20.2	22.2	28.6	25.0
Non-Agricultural Unemployment (15+)	13.8	11.6	12.5	12.6	10.3	10.9	12	12.4	14.3	12.2

Source: World Bank, World Development Indicators, TurkStat

Progress in labor force participation shows that from the late 1980s economic developments in Turkey have affected the Turkish labor market substantially. Certain periods (like crisis periods, policies, and reforms) have made especially lasting impacts. We see that impact not only on men but also on women. Women wish to enter labor force just like men; they work, participate in the labor force by producing, and therefore employment is provided. However, it does not necessarily mean that women's employment opportunities are finite, and their economic activities are limited accordingly. Wealth maximization, which is a combination of education, wage, and opportunity cost, keeps women away from the labor force. The average educational level of women labor participation is remarkably low, and so is the wage level of low-educated women because of that. The extra revenue that comes to the household is smaller than the extra expenses of working outside, hence it is considered as "not worthy". Women exit labor force for good once they get married and/or have children; therefore, the impact of cultural factors is not negligible. It is no surprise that the economic crisis in 2001 had a dual effect on the female labor supply. The first one is working from home on chores due to unemployment and low wages and to prevent household income from declining to a certain level. Second, part of unemployed women exits the labor force for good or return to agricultural activities. As stated previously, a crucial determinant of female labor supply is income level. Wealth maximization behavior links women's labor participation to the income level by working a great deal. And income level is closely related to education level. Hence the education level is a fundamental element in non-agricultural women's labor force. Once low-educated women face a decision between working with low-wage job and staying at home, they are more likely to choose the second option. The low education level of women causes lower labor force participation compared to men.

Table 2 Labor Force Participation Rate in Turkey (%)

	1988-1993	1994-1999	2000-2005	2006-2011	2012-2016
Labor Force Participation Rate (%)					
15+ age					
Total	56.8	52.6	48.8	47.0	50.7
Male	79.2	75.7	74.0	69.5	71.2
Female	34.8	30.1	28.6	25.2	30.7
15-24 age					
Total	54.3	47.3	39.9	37.2	39.7
Male	69.4	62.0	54.6	50.4	52.2
Female	40.5	33.8	26.9	24.7	27.3
Education					
Total					
Illiterate	38.9	33.4	26.7	19.0	19.1
No Graduate	50.4	42.6	33.9	31.4	33.3
Primary School	62.5	58.4	50.7	49.0	50.8
Secondary School	45.2	44.0	52.5	62.7	53.1
High School	61.7	55.9	49.7	50.7	53.4
Vocational High School	71.5	69.0	65.1	65.0	65.2
College	87.2	82.2	78.6	78.0	79.6
Male					
Illiterate	65.8	59.7	48.7	37.3	32.5
No Graduate	72.4	65.1	49.9	52.7	56.8
Primary School	87.7	85.3	78.5	75.2	72.6
Secondary School	59.8	60.0	71.0	82.6	70.2
High School	75.7	71.2	66.0	67.4	70.5
Vocational High School	81.9	80.7	79.1	80.7	81.0
College	90.0	86.5	83.7	83.4	85.8
Female					
Illiterate	30.9	26.8	21.7	15.3	16.3
No Graduate	30.7	24.2	21.0	19.1	21.2
Primary School	33.2	30.7	24.1	23.2	28.9
Secondary School	18.5	16.0	18.8	23.3	23.6
High School	41.5	33.7	27.0	29.4	32.2
Vocational High School	49.9	45.3	39.1	38.2	39.9
College	80.9	74.3	70.2	70.1	71.5

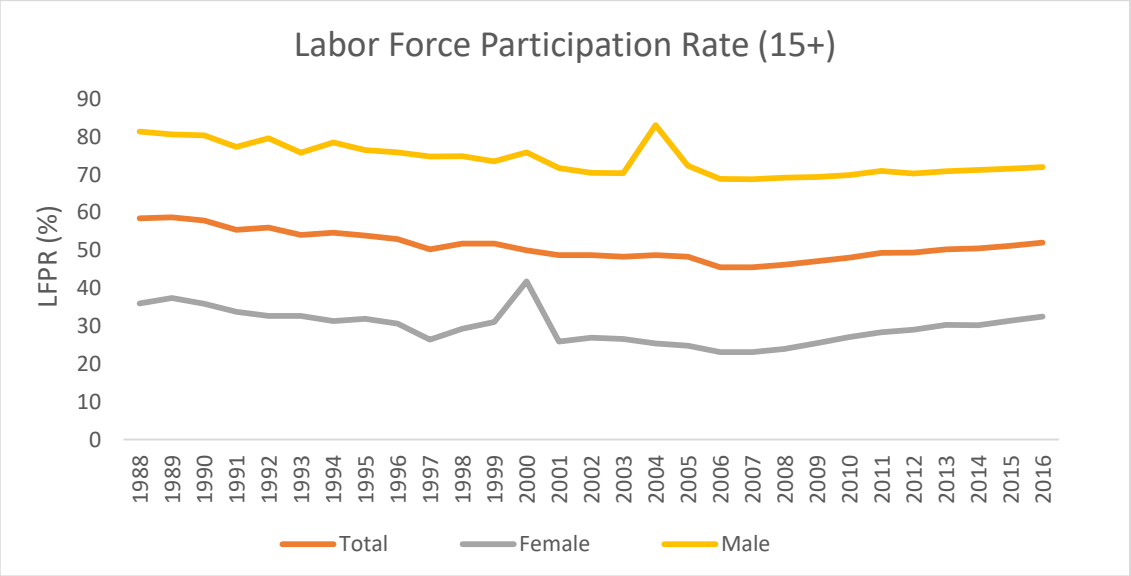
Table 2 (cont.)

	1988-1993	1994-1999	2000-2005	2006-2011	2012-2016
Age					
Total					
15-19	48.6	40.8	30.3	26.9	27.2
20-24	60.4	56.3	50.2	51.3	56.1
25-34	66.4	64.7	62.0	63.9	52.5
35-54	67.7	65.8	62.7	64.6	65.0
55+	35.5	34.6	28.3	23.7	26.3
Male					
15-19	59.5	50.3	38.9	36.1	36.5
20-24	86.4	79.8	71.2	71.9	73.3
25-34	97.8	96.8	92.8	93.6	93.1
35-54	90.6	88.0	83.6	84.1	87.3
55+	51.7	49.3	41.3	36.1	39.4
Female					
15-19	37.4	30.6	21.0	17.1	17.3
20-24	39.7	36.5	32.6	34.0	40.1
25-34	34.8	32.1	30.8	34.1	42.6
35-54	34.3	31.2	26.9	28.4	36.8
55+	19.6	21.0	16.4	12.6	14.0

Source: World Bank, World Development Indicators, TurkStat
Note: Youth Labor Force Participation rate ends in 2015 due to lack of data.

Both 15 years and over, and youth labor force show that participation has fallen over the years. It is observed that a decrease in the youth participation rate is seen in 2001 due to a crisis period for females (and total). Males, on the other hand, show an increase in crisis periods. Fifteen years old participation showed an increase for both male and female participation in 2001.

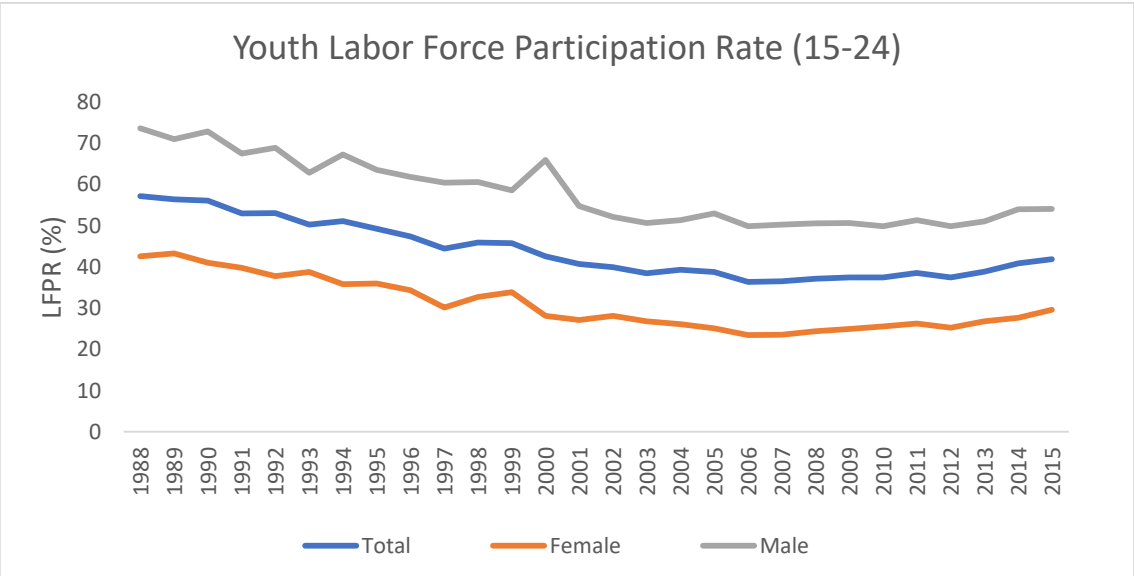
Figure 1 Labor Force Participation Rate in Turkey (%)
(15+ age)



Source: World Bank, World Development Indicators, TurkStat

The female participation rate is especially worth examining closely. High unemployment rate, low household and real income force females to switch their participation to their home. Also, they either stay unemployed or shift to agricultural activities.

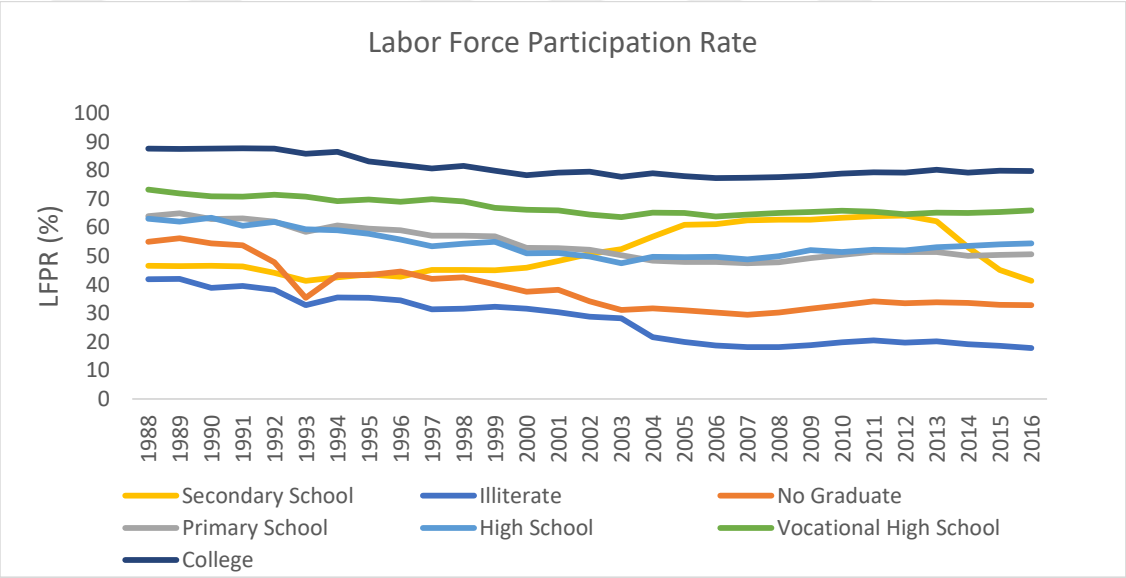
Figure 2 Youth Labor Force Participation Rate in Turkey (%)
(15-24 age)



Source: World Bank, World Development Indicators

Labor force participation with respect to education shows that college graduates have the highest labor participation followed by secondary school and vocational high school graduates. Even though the participation rate has been declining over the years for almost all types of educational levels, especially secondary school graduates, we see that college graduates' participation rate is always the highest as years go by (79.7% in 2016). Income level is one of the most important factors in labor supply, hence education level, which is closely related to income, is crucial.

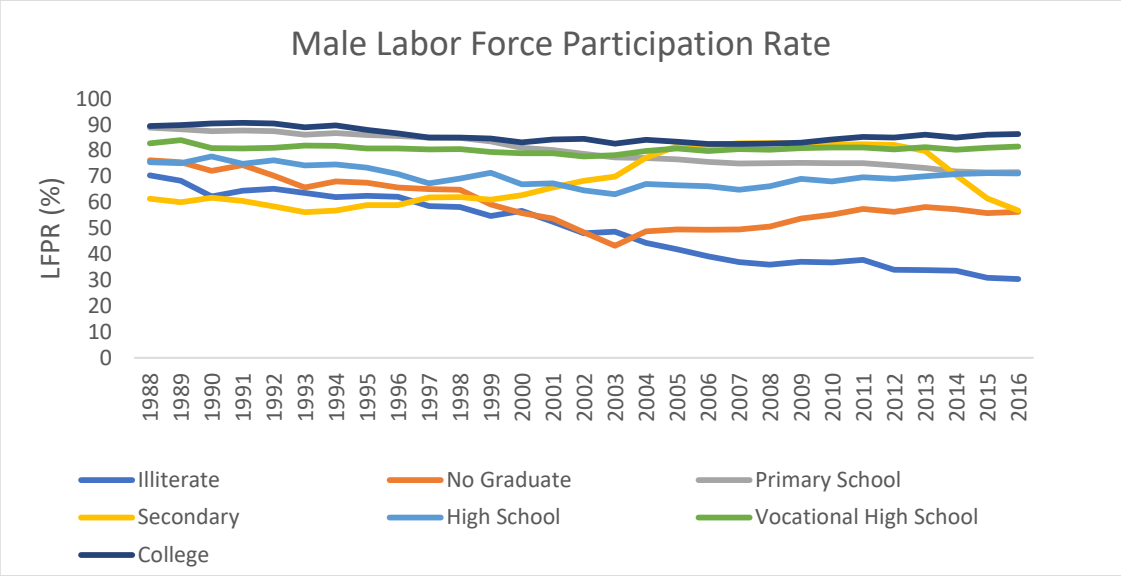
Figure 3 Education and Labor Force Participation in Turkey (Thousand persons, 15+ age)



Source: TurkStat

Male and female labor force participation rates show that secondary school graduates' labor force participation had been increasing until 2013. However, it is not the case for other educational levels. In particular, illiterate male individuals' participation falls dramatically while female college participation shows the same trend.

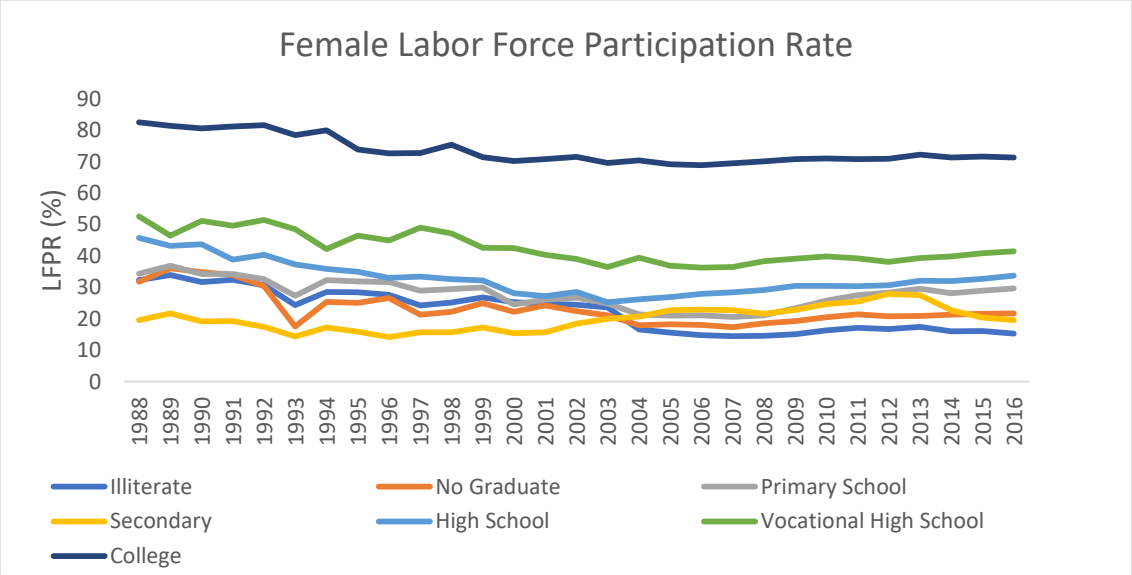
Figure 4 Education and Male Labor Force Participation in Turkey (Thousand persons, 15+ age)



Source: TurkStat

A comparison of male and female participation rates with respect to education shows that the boost in education level is considered an important factor of female labor participation. However, their participation rate is not as high as males due to low education.

Figure 5 Education and Female Labor Force Participation in Turkey (Thousand persons, 15+ age)



Source: TurkStat

In the 1980s and 1990s, the labor market consistency saw changes in wages but not employment. Decline in real wages is observed in that period of crisis; however, flexibility in employment was absent. On the other hand, the 2000s show us that consistency in labor market, which is brought about by risen employment because of the decreased inflation, was the result of successful stabilization programs. The 2001 financial crisis led to a sharp rise in unemployment even though the employment level went up. Similarly, the global financial crisis in 2009 affected the Turkish economy. This period reflects a dramatic increase in the unemployment rate and a decline in wages. However, the economy recovered in 2010 and the employment rate has been increasing since then. Historical experiences show that the share of agricultural employment over total employment regularly decreases during economic development processes. The reason for this global fact is that income elasticity of most of the agricultural products is smaller than one, meaning that the increase in demand in agricultural products is smaller than the increase in income.

From Table 3 it can be seen that a large ratio of employment status of non-agricultural employees consists of regular employees. According to Gürsel *et al.* (2002), it is hardly surprising for Turkey that the regular employee share has increased over time while own-account workers has decreased, as Turkey is a developing country. Non-agricultural employment for the period of 1988-2014 showed that the regular employees share increased from 60.3% to 81.3%, while the situation was adverse for own account workers and unpaid family workers (19.6% to 11.4% for own account workers and 4.4% to 2% for unpaid family workers).

Table 3 Employment in Turkey (%)

	1988-1993	1994-1999	2000-2005	2006-2011	2012-2016
Employment Rate (%)					
Agriculture					
Total	46.2	42.1	34.3	23.7	22.0
Male	33.9	31.5	25.2	17.3	16.8
Female	75.0	69.3	58.5	40.9	34.2
Industry					
Total	21.2	23.1	23.4	26.4	26.9
Male	26.1	27.9	27.0	30.4	31.6
Female	9.8	10.8	13.6	15.8	15.9
Service					
Total	32.6	34.9	42.3	50.0	51.2

Table 3 (cont.)

	1988-1993	1994-1999	2000-2005	2006-2011	2012-2016
Male	40.1	40.7	47.8	52.4	51.7
Female	15.2	20.0	27.9	43.4	49.9
Employment to Population Ratio (%)					
15+ age					
Total	53.3	48.2	45.0	42.3	45.8
Male	75.3	70.1	60.8	62.8	65.0
Female	31.6	26.8	24.4	22.6	27.1
15-24 age					
Total	43.4	39.0	30.7	30.8	33.9
Male	56.1	51.2	41.3	41.6	45.0
Female	31.5	27.2	20.6	20.5	22.7
Education					
Total					
Illiterate	37.4	32.6	25.5	17.9	18.1
No Graduate	47.7	40.8	31.5	27.7	29.6
Primary School	57.7	55.0	46.5	44.4	46.8
Secondary School	39.3	39.5	46.5	55.7	48.1
High School	50.3	47.5	43.1	43.2	46.8
Vocational High School	61.8	59.3	56.3	56.9	58.3
College	80.4	76.2	70.8	69.8	71.0
Male					
Illiterate	62.0	57.1	44.6	32.4	28.7
No Graduate	68.4	61.8	45.4	44.7	49.0
Primary School	80.9	79.8	71.4	67.7	66.9
Secondary School	53.1	54.6	63.3	74.0	64.4
High School	65.4	62.7	58.7	59.4	63.8
Vocational High School	72.7	71.5	70.3	72.6	74.6
College	84.5	81.2	77.0	76.7	79.1
Female					
Illiterate	30.1	26.4	21.2	15.0	15.9
No Graduate	29.2	23.6	20.2	18.0	19.7
Primary School	30.7	29.3	22.7	21.4	26.6
Secondary School	14.1	13.1	15.6	19.3	20.0
High School	28.6	25.5	21.3	22.6	25.8
Vocational High School	39.2	34.7	30.5	29.8	32.1
College	71.0	66.9	60.9	59.8	60.2
Age					
Total					
15-19	41.1	35.4	25.6	21.8	22.8

Table 3 (cont.)

	1988-1993	1994-1999	2000-2005	2006-2011	2012-2016
20-24	49.7	47.3	40.3	40.1	45.0
25-34	61.5	60.3	56.0	56.4	60.4
35-54	64.7	63.1	58.3	59.0	60.0
55+	34.5	34.0	27.6	22.7	25.0
Male					
15-19	49.5	43.2	32.6	29.1	30.8
20-24	70.7	66.3	56.7	57.0	60.5
25-34	91.3	90.5	84.0	83.3	84.5
35-54	94.2	93.8	88.0	87.1	84.4
55+	49.8	48.3	39.9	34.1	37.1
Female					
15-19	32.3	27.0	18.0	13.9	14.4
20-24	33.1	31.2	26.6	26.0	30.5
25-34	31.6	29.6	27.6	29.3	36.2
35-54	33.1	30.4	25.8	26.5	33.8
55+	19.4	20.9	16.3	12.4	13.7
Employment Status By Years (Thousand person, 15+ age)					
Total					
Total	18.743	21.235	20.884	21.723	25.180
Regular employee	6.195	7.407	9.481	13.151	16.163
Employer	527	1.186	167	1.209	1.178
Own account worker	4.807	5.151	5.048	4.488	4.742
Unpaid family worker	5.561	5.482	4.054	2.874	3.097
Non-Agriculture					
Total	10.250	12.443	13.993	16.413	19.348
Regular employee	6.076	7.318	9.305	12.673	15.626
Employer	480	1.110	318	1.117	1.106
Own account worker	1.891	1.954	2.171	2.180	2.195
Unpaid family worker	471	520	518	443	421

Source: World Bank, World Development Indicators, TurkStat
Note 1: Due to lack of data, Youth Employment to Population Ratio starts from 1990.
Note 2: Employment in agriculture, industry, and service data ends in 2015 due to data availability.
Note 3: Employment Status by Years data ends in 2014 due to data availability.

The education level of employment in Turkey is rather low. While the employment rate of below high school level was an average of 45.5% in 1988-1993, this rate decreased to 35.7% in 2012-2016. High school level has not changed much; however, vocational high school and college level has fallen considerably. When we look at genders, both male and female below high school level employment rate showed a

decrease. For males, it was an average of 66.1% and 26% for females in 1988-1993, while this share decreased to 52.2% and 20.6% in 2012-2016. The college graduates' share of employment has declined over time as well for both genders (84.5% to 79.1% for males, 71% to 60.2 for females).

Age structure of employment and change in this structure give us important information about the labor market. In table 3, the employment rate of age shows that the 15-24 age group's (can be explained as entrance to labor force (Tansel, 2012) employment rate has decreased over time. The 15-24 age group's share in the total employment rate declined from 45.4% in 1988-1993 to 33.9% in 2012-2016. This share shows the same pattern for males and females of 15-24 ages (60.1% in 1988-1993 to 45.7% in 2012-2016 for males, 32.7% in 1988-1993 to 22.4% in 2012-2016 for females). It is possible that this age group tend to stay in schools longer. Most of the population (for both genders as well) is employed for the 25-54 age groups.

Table 4 Economic activity by years in Turkey, NACE Rev.2[4]
(Thousand persons, 15+ ages)

	Thousand persons					Percentage (%)				
	Total	**Agriculture**	**Industry**	**Construction**	**Services**	**Total**	**Agriculture**	**Industry**	**Construction**	**Services**
2005	19.633	5.014	4.241	1.097	9.281	100	25.5	21.6	5.6	47.3
2006	19.933	4.653	4.362	1.192	9.726	100	23.3	21.9	6.0	48.8
2007	20.209	4.546	4.403	1.231	10.029	100	22.5	21.8	6.1	49.6
2008	20.604	4.621	4.537	1.238	10.208	100	22.4	22.0	6.0	49.5
2009	20.615	4.752	4.179	1.305	10.380	100	23.1	20.3	6.3	50.4
2010	21.858	5.084	4.615	1.434	10.725	100	23.3	21.1	6.6	49.1
2011	23.266	5.412	4.842	1.680	11.332	100	23.3	20.8	7.2	48.7
2012	23.937	5.301	4.903	1.717	12.016	100	22.1	20.5	7.2	50.2
2013	24.601	5.204	5.101	1.768	12.528	100	21.2	20.7	7.2	50.9
2014	25.933	5.470	5.316	1.912	13.235	100	21.1	20.5	7.4	51.0
2015	26.621	5.483	5.332	1.914	13.891	100	20.6	20.0	7.2	52.2
2016	27.205	5.305	5.296	1.987	14.617	100	19.5	19.5	7.3	53.7

Source: TurkStat

The most intense employment rate can be seen in the services sector, with 47.2% in 2005. Overtime this share has risen: 53.7% in 2016 as for construction sector (5.6%

[4] Switched to NACE Rev.2 after 2009.

to 7.3%). However, the industry sectors show the opposite pattern, as its shares have decreased over time (21.6% to 19.5%).

Informal employment refers to the non-registration and non-monitorization of economic activities. There are many reasons explaining the occurrence of informal employment in Turkey. One of the most significant reasons is the high tax on employment. In Turkey, formal employment is not well functioning and is inadequately designed, thereby leading individuals to informal employment, which further creates low productivity, and therefore low wages (Gürsel *et al.*, 2002). Informal employment occurs due to economic, social, and structural causes. Macroeconomic instabilities in the past, high inflation rates, high tax and premium rates on both employer and labor, as well as high unemployment rate shape the economic side, while small companies, the lack of information flow and co-operation, and corruption form the social and structural sides. In addition to these, education level is negatively correlated with informal employment. Highly educated people are more likely to be registered to a social security institution. The number of persons who are not registered to a social security institution has fluctuated over the years. Non-agricultural informal employment fluctuated between 25% and 34% in the period of 1988-2010, and 58% of the total employment was informal employment in 1988 while it decreased to 43% in 2010 (Tansel, 2012). The high ratio of the informal sector creates taxation problems, which lead to inadequate economic policy-making as well as crucial calculation difficulties for indicators especially relevant to employment and GDP. Hence, it is important for the fiscal policy-makers to deal with informal economy. The informal sector is defined as unregistered employment to any social security institution. Informality has been increasing since beginning of 1990s. On the one hand, informality creates a perfectly elastic sub-market, but on the other hand it has unfavorable consequences, like unfair competition, tax, and premium losses.

The unemployment insurance system came into force in 2001 in Turkey; however, the number of people who receive unemployment insurance payment is very low. Even though the unemployment rate is quite high, the number of unemployment benefit receivers is the opposite. Tansel (2012) attributes the low number of people

receiving unemployment benefits to the fact that those who are unemployed may not be picky about the jobs they find. In other words, individuals may take the job despite low wages and/or quality. That is why underemployment gives us significant information about the labor market. In order to be fully informed about labor market, it is crucial to evaluate the unemployment rate using underemployment rate. In accordance with the International Labor Organization's (ILO) definition, starting from 2009, TurkStat provides time-related underemployment and inadequate employment statistics, instead of underemployment rate.

Table 5 shows the underemployment rate and age, and it can be seen that for all age groups underemployment rate has fallen (even though it increased in 1999). The 25-34 age group shows that the decreasing rate of underemployment is the highest and lowest for 55+.

Table 5 Underemployment Rate in Turkey (%)
(Thousand persons, 15+ ages)

	1988-1992	1993-1997	1998-2002	2003-2008
Underemployment Rate (%, Thousand person, 15+ age)				
Age				
15-19	7.6	8.7	8.4	3.8
20-24	8.3	9.2	8.5	4.5
25-34	9.2	8.8	8.2	4.3
35-54	7.2	7.1	6.7	3.9
55+	2.6	3.0	2.1	1.3
Education				
Illiterate	4.8	4.8	4.3	2.3
No Graduate	6.9	7.1	6.5	3.6
Primary School	8.2	8.2	8.0	4.2
Secondary School	7.3	8.2	7.8	4.3
High School	6.1	6.3	5.5	3.3
Vocational High School	6.5	6.6	5.8	3.7
College	4.0	3.1	2.5	1.9

Source: TurkStat

The educational level shows that highest underemployment rate is seen in the primary and secondary school graduates. As was the case for age in 1999, there was a sharp increase except for illiterate people. College graduates' underemployment rate is the lowest compared to others.

Child labor constitutes an important part of employment in Turkey. ILO initiated the International Program on the Elimination of Child Labor (IPEC) and Turkey joined the program in 1992. According to TurkStat, children engaged in economic activity increased from 2006 to 2012 in Turkey. However, when we look at the urban areas, we see that this rise is quite sharp for both 6-14 and 15-17 age groups males as well as females. On the other hand, the situation is the opposite in 1994 and 1999 data (for gender, age groups, and rural area, economic activity was decreasing).

According to TurkStat and ILO, individuals who are 15 years of age and over, do not have a job, used at least one job search tool in the last 3 months, and are ready to begin work in 15 days[5] count as unemployed. However, different definitions of unemployment given by different official and other institutions have led to unmatched unemployment rates. It is worth mentioning, however, that the public's opinion about the concept of labor market has been misinterpreted. TurkStat (formerly DIE) made the first survey calculating unemployment in 1966 by asking about every member of the household's employment status. However, after 1968 and 1969, this survey was discontinued until 1980 and was not done regularly until 1989. Therefore, definitions and concepts differed in those years. After 1989, surveys were done in accordance with ILO (Gürsel *et al.*, 2002).

Not only the economy but also society reacts to unemployment, resulting in such consequences as the loss of production due to insufficient use of labor, an increase in transfer payments, significant welfare loss, more income inequality and poverty, socio-psychological problems in society, and politically unstable environment. With the financial crisis in 2001, low employment led to sharply increased unemployment. Similarly, the global financial crisis in 2009 affected the Turkish economy negatively. We see that in the dramatically increased unemployment rate and the decreased wages in 2009. Despite the adverse consequences of crises, in 2010 economy recovered and the unemployment rate decreased fractionally (14% in 2009, 11.9% in 2010, 9.8% in 2011). The same trend can be seen in non-agricultural and youth unemployment. Decremental employment rate started to increase in 2010. The employment rate

[5] ILO dropped "Ready to begin work in 15 days" from their unemployment definition in 2004.

increased to 43% in 2010 and 45% in 2011 (Tansel, 2012).

The unemployment problem is a product of change in transition from the agricultural to industrial and service economies in developing countries. Population increase, and agricultural labor migration require non-agricultural employment in high amounts, while employment requires investment. According to Gürsel *et al.* (2004), the unemployment problem in Turkey originates not only from transition economies' problems but also from labor market rigidities. The long-term tendency of the labor force does not constitute population increase. The transition from agriculture to non-agriculture also affects it. The expected labor force participation rate is higher for men while lower for women in almost every country. Since women's education level has been increasing, there is a linear relationship between women's labor force participation rate and education level. Gürsel *et al.* (2004) state that analyses done using manufacturing industry data shows that the wage determination process in Turkey includes certain elasticity.

Unemployment creates significant pressure on wages. In this regard, the Turkish labor market is relatively elastic. The real wage's inability to equalize demand and supply, like price in goods and services market, is considered one of the most significant challenges of economic theory in the labor market. If the labor market were to work as the other markets, there would not be any unemployment except frictional unemployment (keeping unemployment rate at 2-3%). There is a conceptual difference between nominal and real wages. Wage bargaining is usually done over nominal wage. Trying to make up the anticipated losses that happened in the past, which is related to different wage expectations of employees and firms and collective agreement periods, cause the equilibrium to be formed at a certain unemployment level in labor market.

In Turkey, the level of collective bargaining is done neither at the decentralized nor national level. This is not a desirable situation for employment. Studies show that job search channels and techniques are insufficient. This brings down the effectiveness of a job search, making that period longer and encouraging mismatches. Looking closely at the youth in Turkey, the job search channels should be functioning more efficiently. Harmony between quality that firms require and what our education system

produces are crucial regarding structural unemployment. The less harmony there is, the longer the job searches. In that respect, studies concerning Turkey show that the labor market is not in a good shape. Vocational high school and regular high school graduates are important indicators. Comparing these two, one might expect vocational high school graduates' unemployment rate to be lower; however, they are almost the same. This shows that the amount of vocational high schools is inadequate. Moreover, the education system has flaws. The 1997 education reform came into light in view of the urgency of this situation.

Significant differences can be seen when examining the labor market in Turkey vis-à-vis other countries' labor markets. The most important reasons listed are high agricultural employment, low productivity, low labor participation and employment (especially for women), and low education level of labor force. In addition to these, incentives and investments aimed to create employment are very poor. Unlike labor force participation, the employment rate has been decreasing dramatically since 2001 (53.1% in 1989 is followed by 45.6% in 2001 and 43.2% in 2003). Even though the share of agricultural employment over total employment has been declining over the years (47.4% in 1989, 33.9% in 2003), its contribution is not negligible. The unemployment rate has fluctuated around 7-8% over years; in 200, it increased at a great deal (reaching 10.5% in 2003) with the economic crisis. On the other hand, one third of employees work in the agricultural sector in Turkey; therefore, it is essential to look at the non-agricultural unemployment rate in the case of a country comparison. In the 1989-1994 periods non-agricultural unemployment rate was around 14%, while it was around 12% in 1995-1999, 9.3% in 2000, 12.7% in 2001, and 15% in 2003.

As per the definition of unemployment, family workers count as employed even if they work one hour; that is why in the agricultural sector the unemployment rate is lower. Empirical studies show that the layered structure of the labor force is effective on average income; in order words, income inequality is crucial in layered labor force. With regard to its causes, consequences, and operation, the informal economy is complex and multidimensional. Since wage is a major income source for most of the population and one of the most important parts of unit costs for employers, it is very

crucial in labor economics. One of the main problems concerning determining wages is wage elasticity. It is often believed that employee protective laws, unionization, and collective bargaining decrease this elasticity by interfering with the market mechanism. There is an ongoing dispute between employers and organized labor about elasticity. To be specific, the employer union and institutions support the idea of the lack of elasticity in determining labor costs; on the other hand, labor unions claim about the market being too elastic. According to the Neo-classical theory, labor productivity determines wage level and, indirectly, demand and supply dynamics. In that framework, the human capital theory dwells on education, age, experience (factors that regulate labor productivity). Different education and experience levels make demand and supply dynamics different as well, and there is assumed to be elasticity about the the way the wages are determined, thus equalizing demand to supply for all labor force. In that regard, the Neo-classical theory claims that, in the labor market, as long as there are no institutional contributions to equalize demand and supply, wages will pull down unemployment to a minimum. Although, this requires alternative models; such as the wage bargain, efficiency wage, and the insider-outsider. The wage bargain model argues that a bargain between employer and employees determines the wages. Therefore, wage levels are either low or high depending on the bargain. The balance of power on the bargain between the two parties is shaped by institutional (unionization and/or labor law) and market (unemployment rate and profit ratio) factors. This suggests that the high unemployment rate decreases the power of bargain for the employee while giving more power to the employer and placing a restrictive effect on wages. More profit, on the other hand, increases the employers' payment capacity and the employees' wage demands. According to the effective wage model, maximizing labor productivity is the main goal of employers; hence wage level is a motivation to boost productivity by employers, thus this payment is called "effective" wage. An increase in unemployment restrains the motivation for effective wage, since high unemployment rate escalates the cost of being unemployed and creates a discipline factor on employee (Shapiro and Stiglitz, 1984; Gürsel *et al.,* 2004). The insider-outsider model emphasizes that there is a cost for employers to replace active "insider" employee with an "outsider" who is looking for a job. Markets with low unemployment decrease the possibility of substituting new employees for the present employee, therefore causing the wage

demand of "insiders" to go up.

In Table 6 education and unemployment in Turkey is reported. It is seen that college graduates' unemployment rate rose between 1988-2016 (9.1% to 10.8%). Other education levels show a decrease at the end; however, when we look at the global financial crisis period (2009), we see that the unemployment rate has its peak for all education levels. The situation is the same for genders. In addition the females' unemployment rate is much higher than the males', especially after secondary school level.

Table 6 Unemployment Rate in Turkey (% of labor force)

	1988-1993	1994-1999	2000-2005	2006-2011	2012-2017
Unemployment Rate (%) 15+ age					
Total	8.2	7.2	9.6	9.9	9.7
Male	8.2	7.3	9.7	9.7	8.7
Female	8.0	6.9	9.1	10.4	11.9
15-24 age					
Total	16.6	15.2	18.2	18.6	18.1
Male	18.2	16.4	18.8	18.2	16.3
Female	14.2	13.2	17.0	19.3	21.4
Non-Agricultural Unemployment (15+)	13.8	11.6	12.5	12.6	11.5
Education					
Total					
Illiterate	3.8	2.4	4.6	5.8	5.2
No Graduate	5.4	4.3	7.4	11.8	11.0
Primary School	7.7	5.9	8.3	9.5	7.8
Secondary School	13.1	10.2	11.4	11.2	9.5
High School	18.4	14.9	13.4	14.8	12.3
Vocational High School	13.6	14.0	13.5	12.6	10.6
College	7.9	7.3	9.9	10.5	10.8
Male					
Illiterate	5.8	4.4	8.6	13.3	11.6
No Graduate	5.6	5.1	9.2	15.2	13.7
Primary School	7.8	6.4	9.2	10.1	7.8
Secondary School	11.2	9.0	10.7	10.4	8.3
High School	13.6	11.9	11.1	11.9	9.5
Vocational High School	11.3	11.3	11.2	10.0	7.9
College	6.1	6.1	8.1	8.1	7.7
Female					

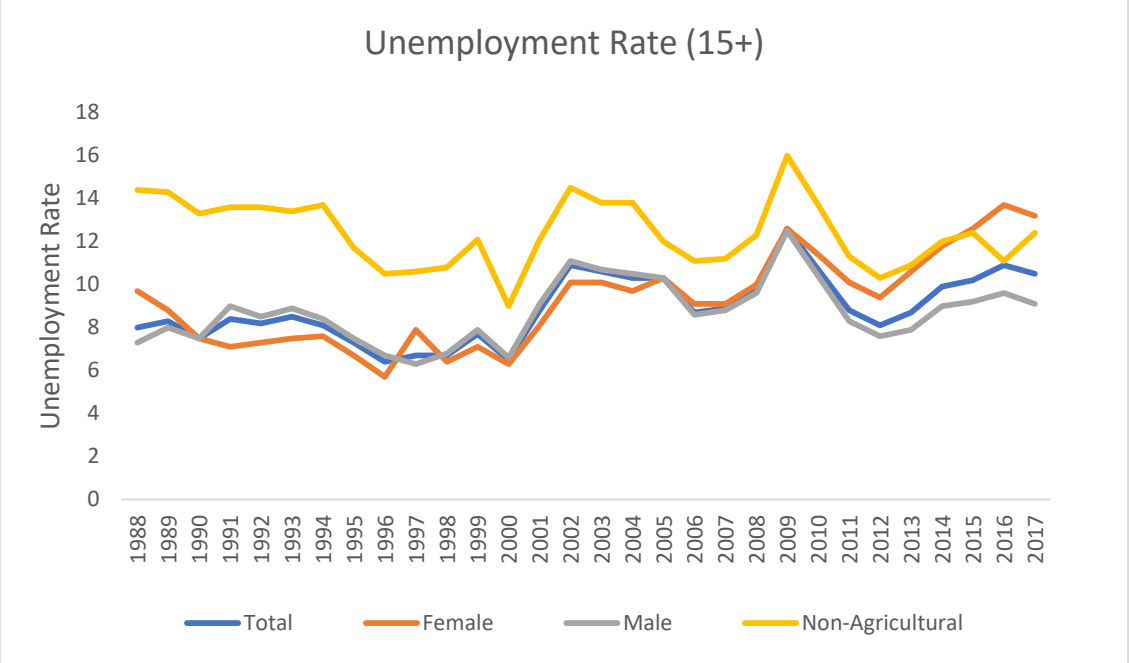
Table 6 (cont.)

	1988-1993	1994-1999	2000-2005	2006-2011	2012-2017
Illiterate	2.5	1.2	2.5	2.2	2.6
No Graduate	4.9	2.6	3.9	6.2	7.2
Primary School	7.6	4.4	5.8	7.8	7.7
Secondary School	24.1	17.9	16.7	17.2	15.4
High School	30.9	24.3	21.2	23.0	19.9
Vocational High School	21.5	23.4	22.0	21.8	19.6
College	12.3	9.9	13.4	14.8	15.7
Age					
Total					
15-19	15.4	13.2	16.0	19.2	16.0
20-24	17.7	16.1	19.7	21.8	19.8
25-34	7.4	6.9	9.7	11.9	11.1
35-54	4.1	3.7	6.1	7.9	7.4
55+	2.4	1.5	2.3	3.6	4.3
Male					
15-19	16.6	14.1	16.4	19.4	15.7
20-24	18.2	16.9	20.3	20.8	17.4
25-34	6.7	6.6	9.6	11.1	9.3
35-54	4.0	4.0	7.2	8.2	7.0
55+	3.1	2.0	3.0	4.6	5.2
Female					
15-19	13.4	11.8	15.0	18.6	16.8
20-24	16.7	14.5	18.5	23.6	23.9
25-34	9.3	7.8	10.3	13.9	14.9
35-54	3.3	2.4	4.0	6.5	7.8
55+	0.7	0.3	0.6	0.9	1.8

Source: World Bank, World Development Indicators, TurkStat
Note: Unemployment Rate (15+), Youth Unemployment Rate (15-24), and Non-Agricultural Unemployment (15+) Rate for 2017 refer to April 2017 according to data availability.

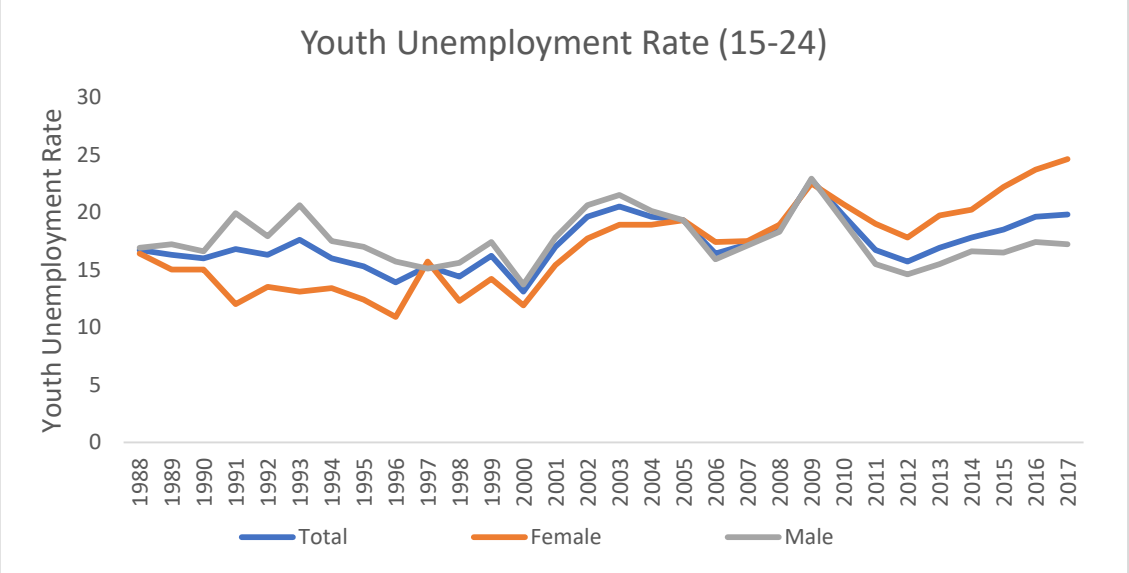
The total unemployment rate of 15-24 age group increased from 17.5% in 1988 to 18.1% in 2016. This may be related to compulsory education policies. The pattern is the same for females (18.1% to 21.4%); however, it is different for males (17.2% to 16.3%). We see that the other age groups show an increasing trend, especially in 2009 with the global crisis. During crises times (1989, 1994, and 2001 crises), the female unemployment rate is lower than that of the males'. Due to the fact that females are more likely to be employed with low wage, this creates added worker effect.

Figure 6 Unemployment Rate in Turkey
(%, 15+ age)



Source: World Bank, World Development Indicators, TurkStat

Figure 7 Youth Unemployment Rate in Turkey
(%, 15-24 age)



Source: World Bank, World Development Indicators, TurkStat

4.2.Labor Market in the European Union

The fluctuations that affect the labor market arise from inter-related global, regional, and national level policy and programs. The main reasons for changes in the labor market that emerge during globalization are the liberalization of international trade, the internationalization of capital, technological transition, and changes in macroeconomic policies. Regionalization also has a significant impact on implementation trends in the organization of the labor market, employment, and unemployment. Therefore, examining labor market policies along with the global institutions in regional blocks like the EU is crucial in determining how the latter implements its own policies.

There is no doubt that the EU is a symbol of regionalization. Within this regional block, there are certain determinants within the scope of enlargement which affect employment policies at the EU level. These determinants are the following: the transfer of employment and EU social policy legislation through member states and European Employment Strategy (EES) and the inclusion of member states in these employment policies, foreign direct investments from member states and other developed countries, improvement of trade relations, the Maastricht Treaty, which projected the single currency, and the Stability and Growth Pact (that puts pressure on the member states' governments regarding social expenditures) (Karaağaç, 2007; Kesici, 2011). As part of the integration process, the EU has always focused on harmonization and articulation of labor markets. In the 1990s, the EU carried out programs and implementations in order to tackle labor market-related problems. Nowadays, labor market regulations and employment policies are conducted in line with the national and union level. In that framework, the EU labor market's legal and decision-making process takes place in three ways: some issues require unanimity (social security, socially protection of labor, the representation of social parties at a collective level, voting power and the working conditions of third country citizens), other issues require qualified majority vote (working conditions, occupational health and safety, enlightenment and listening of labor, equal opportunity for genders and providing equality at work, a second chance to those who are left out of labor market, the improvement of the work environment in order to protect employees; health and security), and some issues are out of the EU's

rulemaking jurisdiction (wage, freedom of organization, issues concerning strike and lock-out rights) (Selamoğlu and Lordoğlu, 2006; Kesici, 2011). In order to create additional and better jobs across the EU, the EES came into force in 1997 (European Commission, 2017[6]). After the establishment of the EES, the EU tried to act operationally in areas concerning employment policies and implementations. However, because of the complex process of the labor market, those measures were not deemed to be enough to make changes (Kesici, 2011). The economic crisis in the beginning of the 1990s; the relatively weak growth rate that affected employment; competition; and the unplanned, divergent employment policies of third world countries— all shaped the structural problems of the European labor market.

6 Retrieved from European Commission website: http://ec.europa.eu/social/main.jsp?catId=101&langId=en

Table 7 Labor Market Statistics in Selected EU Member States (%)

	France			The Netherlands			Spain			Poland		
	2000-2005	**2006-2011**	**2012-2016**	**2000-2005**	**2006-2011**	**2012-2016**	**2000-2005**	**2006-2011**	**2012-2016**	**2000-2005**	**2006-2011**	**2012-2016**
Labor Force Participation Rate (%)												
15+ age												
Total	56.0	56.4	56.2	64.5	65.7	64.6	54.4	59.1	59.1	55.5	54.6	56.1
Male	62.7	61.9	60.9	73.2	71.7	70.1	67.5	67.1	64.7	62.3	63.8	64.7
Female	50.6	51.5	51.6	58.0	59.2	58.7	47.1	52.7	53.1	47.1	47.9	48.4
15-24 age												
Total	36.7	38.6	37.1	72.7	71.1	68.5	44.4	45.4	36.1	37.0	33.7	33.6
Male	41.3	41.8	40.1	72.9	69.7	67.3	50.8	44.5	36.1	39.1	38.2	39.0
Female	33.8	34.7	33.8	71.8	70.8	68.8	41.3	39.7	32.8	31.5	28.8	28.2
Employment Rate (%)												
15+ age												
Agriculture	3.9	3.0	2.8	3.0	2.6	2.1	5.6	4.2	4.2	18.0	13.4	11.4
Industry	24.5	22.5	20.4	19.4	16.6	15.1	30.4	24.5	19.7	29.3	30.8	30.7
Service	71.3	74.1	75.6	72.2	72.8	74.8	64.0	71.3	76.1	52.7	55.7	57.7
Unemployment Rate (%)												
15+ age												
Total	8.4	8.8	10.3	3.8	4.8	6.8	9.9	20.2	22.0	16.6	9.2	7.6
Male	7.7	8.7	10.6	3.5	4.6	6.4	7.4	19.7	20.8	15.9	8.6	7.3
Female	9.2	8.9	9.9	4.1	5.0	7.2	13.5	20.8	23.5	17.5	9.8	7.8
15-24 age												
Total	19.4	22.2	24.5	6.6	9.2	11.6	20.3	43.0	48.6	35.2	23.5	20.8
Male	18.6	22.3	25.4	6.4	9.5	11.7	17.1	44.0	48.7	34.0	21.8	20.3
Female	20.3	22.1	23.5	6.9	9.0	11.5	24.5	41.9	48.6	36.7	25.9	21.5

Source: World Bank, World Development Indicators, and ILO.

To be able to tackle the problems of the EU labor market, a vast amount of way outs have been tried. Reducing working hours, cost cutting with elasticity implications, employment protection, re-training with labor unions and employer institutions participation can be given as examples. That being said, the late 1990s represented the era of active labor market policies. It is believed that the three pillars of the EU employment policy were established in the second half of the 1990s. The Luxembourg European Council in 1997, which was based on the employment policy coordination of member states, was the first one, while Cardiff Summit in 1998 came second. As a result of the Cardiff Summit decisions, the structural regulation of goods and financial markets was liberalized. The third pillar was the Cologne European Summit in 1997, which was based on the coordination of budget, money, and income policies (Heise, 2002; Kesici, 2011). The European Commission (EC)'s '*White Paper on Growth, Competitiveness, and Employment (1993)'* aimed to tackle the structural issues of the labor market in Europe. The Essen European Council of 1994, established as a result of the White Paper, laid the groundwork for the European Employment Strategy. To tackle labor market problems, reach and maintain effective employment policies in the EU and the national level, the EES played a crucial role. Four pillars were built over the EES in the Luxembourg Summit: Employability (since long-term and youth unemployment is one of the fatal problems of the EU, labor market employability aims to tackle those besides training and the monitoring of both employers and employees, and the creation of more jobs), entrepreneurship (issues concerning businesses, small and medium size enterprises (SMEs), strategies for them to be able to have a well-functioning labor market), adaptability (more modern and flexible work environment and arrangements, to be able to have a functioning labor market; more effort in contracts, and combating fiscal barriers), and equal opportunities (trying to increase women's participation in the labor market by decreasing the gender gap, improve conditions in terms of parental leave, child care, etc.)[7].

To a considerable degree, member states have control of their own employment policies in order to achieve goals concerning social and employment policies, in addition to their

[7] For more, the relevant link is http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=LEGISSUM:c11318&from=EN

control over the definition and implementation of actions and circumstances via the Open Method of Coordination (OMC). When there is no consensus among the member states, the OMC is a helpful tool for complex areas, which creates a hard time for the union (Kesici, 2011). All things aside, the Lisbon Summit of 2000 and Stockholm Summit of 2001 were extremely important concerning the EES, since the Lisbon Summit included visible goals for employment, and the Stockholm Summit added a brand-new goal (to increase youth employment) to the Lisbon Summit. It is obvious that with the EES, the labor participation rate of women and older age group has increased. In 2009 the EU had to take some measurements in order to deal with adverse consequences of the financial crisis of 2008, especially in the labor market. The European Social Fund (ESF) is one of them and it is created with the aim of helping citizens with more and better jobs by providing them with unbiased opportunities.

Table 8 Labor Force Participation Rate in the EU (15+, %)

	Labor Force Participation Rate (15+)			**Labor Force Participation Rate (15+)**			**Labor Force Participation Rate (15+)**		
	Total			**Female**			**Male**		
	2000-2005	**2006-2011**	**2012-2016**	**2000-2005**	**2006-2011**	**2012-2016**	**2000-2005**	**2006-2011**	**2012-2016**
Austria	58.5	60.1	60.9	51.7	54.7	55.6	67.0	67.1	66.5
Belgium	51.8	53.5	53.3	45.4	47.4	47.9	60.7	60.2	58.9
Bulgaria	50.4	52.8	53.7	46.1	47.9	48.1	56.3	59.1	59.9
Croatia	50.4	51.7	51.7	43.8	45.3	46.1	58.8	58.9	58.6
Cyprus	62.2	64.0	62.9	54.4	57.4	57.4	73.3	71.3	68.0
Czech Republic	59.5	58.7	59.3	50.3	50.0	51.6	68.5	68.0	68.2
Denmark	65.6	65.2	62.7	60.5	59.3	58.6	71.3	68.8	67.0
Estonia	58.5	60.8	61.8	53.8	55.1	56.2	66.4	68.1	69.6
Finland	62.6	60.7	59.1	57.4	56.0	55.3	66.4	64.2	62.5
France	56.0	56.4	56.2	50.6	51.5	51.6	62.7	61.9	60.9
Germany	57.5	59.4	60.4	51.2	53.9	55.2	65.8	66.3	66.3
Greece	52.3	53.1	52.1	42.0	43.9	44.9	64.3	62.7	59.9
Hungary	49.5	50.3	53.6	42.8	44.5	47.7	58.3	58.6	63.1
Ireland	59.9	62.3	60.1	52.1	52.9	52.9	72.0	69.2	67.6
Italy	48.9	48.6	49.1	38.1	39.1	40.1	61.4	59.3	59.0
Latvia	57.1	59.7	59.8	52.1	53.9	54.6	66.5	66.6	67.0
Lithuania	58.6	56.2	58.8	51.4	52.9	55.1	63.7	62.8	65.3
Luxembourg	54.5	56.7	59.4	47.2	51.3	54.0	63.9	65.6	65.5
Malta	49.8	50.2	53.7	31.0	37.3	42.5	69.3	66.7	67.0
The Netherlands	64.5	65.7	64.6	58.0	59.2	58.7	73.2	71.7	70.1

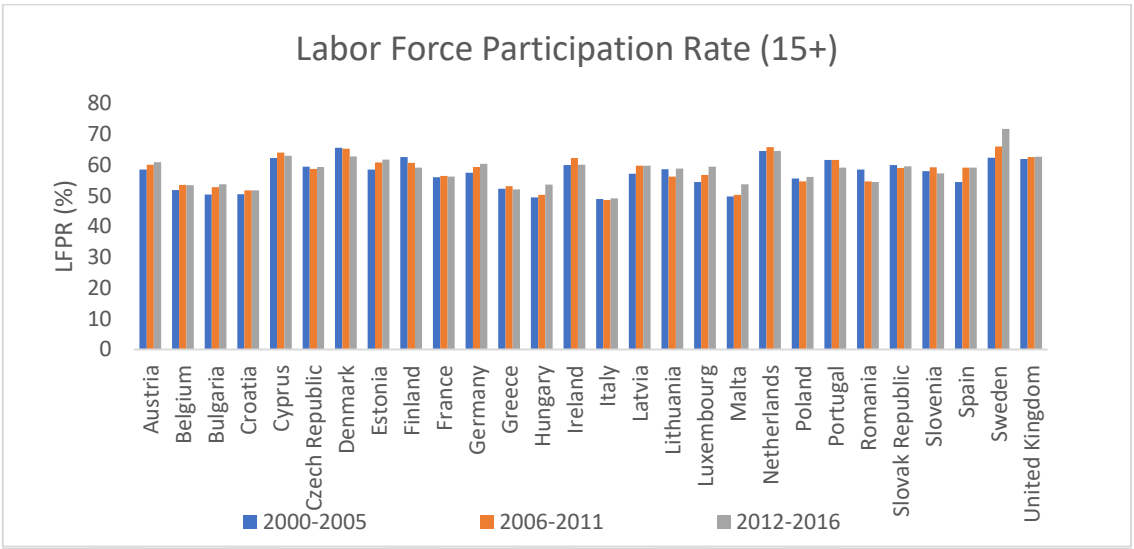
Table 8 (cont.)

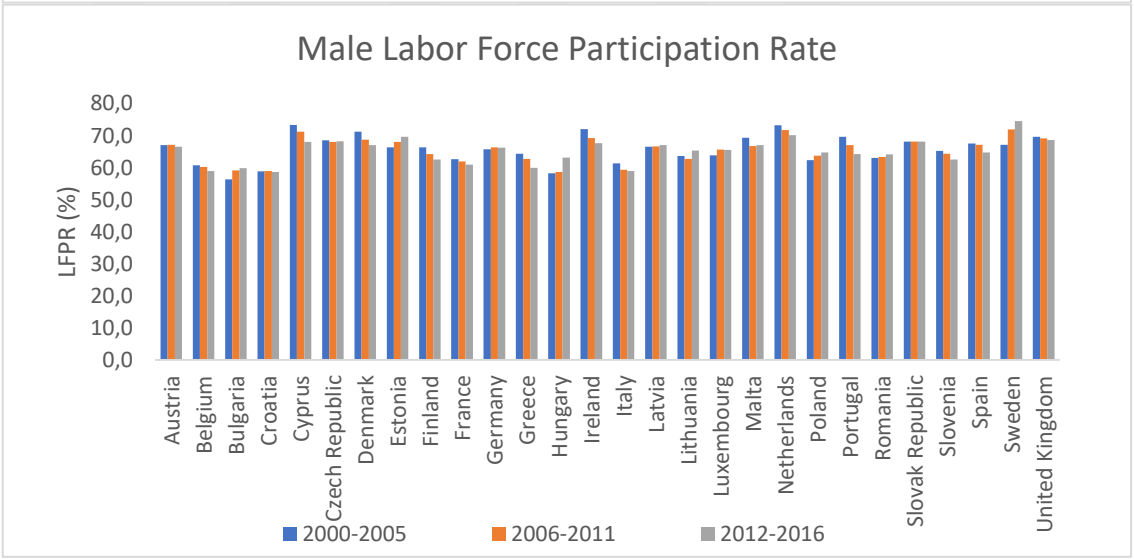
	Labor Force Participation Rate (15+)			Labor Force Participation Rate (15+)			Labor Force Participation Rate (15+)		
	Total			Female			Male		
	2000-2005	2006-2011	2012-2016	2000-2005	2006-2011	2012-2016	2000-2005	2006-2011	2012-2016
Poland	55.5	54.6	56.1	47.1	47.9	48.4	62.3	63.8	64.7
Portugal	61.6	61.6	59.1	55.3	54.8	53.6	69.6	67.1	64.2
Romania	58.5	54.6	54.4	47.8	46.2	44.8	63.0	63.3	64.1
Slovak Republic	59.9	59.0	59.5	51.5	50.7	52.3	68.1	68.1	68.1
Slovenia	58.0	59.2	57.3	52.7	52.5	51.9	65.2	64.4	62.5
Spain	54.4	59.1	59.1	47.1	52.7	53.1	67.5	67.1	64.7
Sweden	62.3	66.0	71.7	59.2	66.7	69.6	67.1	71.9	74.5
United Kingdom	61.9	62.5	62.7	55.4	56.4	57.4	69.6	69.1	68.6

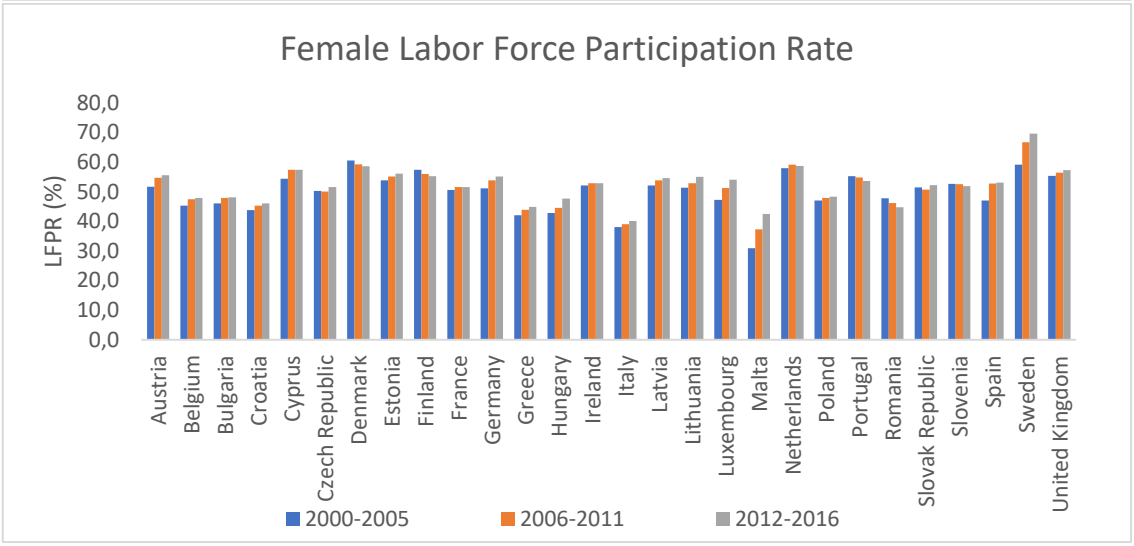
Source: World Bank, World Development Indicators, and ILO

15 years and over labor force show that participation has fluctuated over the years for all EU member states. It is observed that a decrease in the youth participation rate is seen especially in PIIGS countries due to the crisis period for both females and males (and total). On the other hand, for 15 years and over, females' participation shows an increase in the period 2012-2016 while a little decrease is observed for most of the countries for males.

Figure 8 Labor Force Participation Rate in the EU (15+, %)







Source: World Bank, World Development Indicators, and ILO

Fifteen years and over labor force participation rates according to education show that advanced-education graduates' labor force participation is higher compared to intermediate and basic education. Regarding advanced education, an increase is seen from pre to post-crisis. Cyprus, Latvia, Lithuania, Sweden, the UK have the highest advanced-education rates. When it comes to intermediate education, Estonia, the Netherlands, Sweden, and the UK are at the top, while Portugal, Spain, and the UK are leading for basic education.

Table 9 Youth Labor Force Participation Rate in the EU (15-24, %)

	Labor Force Participation Rate (15-24)			**Labor Force Participation Rate (15-24)**			**Labor Force Participation Rate (15-24)**		
	Total			**Female**			**Male**		
	2000-2005	**2006-2011**	**2012-2016**	**2000-2005**	**2006-2011**	**2012-2016**	**2000-2005**	**2006-2011**	**2012-2016**
Austria	55.8	59.0	58.2	52.7	55.3	54.7	61.2	62.9	60.6
Belgium	34.3	33.1	30.2	31.2	29.4	27.1	37.1	34.8	31.9
Bulgaria	30.6	29.7	27.4	26.1	25.4	21.1	32.5	34.5	30.0
Croatia	40.2	35.8	32.8	33.3	27.9	29.7	43.0	38.9	39.6
Cyprus	41.3	40.8	38.5	39.0	38.0	38.7	43.8	41.9	37.9
Czech Republic	37.9	31.5	31.9	30.6	25.6	26.5	38.7	36.3	37.6
Denmark	68.1	69.7	63.1	66.5	67.1	63.9	70.0	67.4	62.6
Estonia	36.9	38.6	41.0	30.4	36.2	38.4	43.1	43.1	44.4
Finland	60.1	51.5	52.0	56.0	51.6	53.0	57.1	50.8	51.3
France	36.7	38.6	37.1	33.8	34.7	33.8	41.3	41.8	40.1
Germany	49.6	51.6	49.9	46.9	49.0	47.4	52.5	53.9	51.1
Greece	36.2	30.5	27.2	30.9	26.6	24.4	37.5	32.6	28.0
Hungary	31.5	25.2	29.2	24.6	22.2	27.2	31.9	28.3	34.5
Ireland	50.3	49.7	38.5	48.0	43.2	35.8	55.7	45.9	39.1
Italy	35.8	29.7	27.1	29.0	23.8	22.5	38.8	32.9	30.5
Latvia	37.9	40.8	40.2	33.1	35.9	36.1	45.1	44.2	44.6
Lithuania	30.9	28.2	32.8	23.7	25.6	30.8	32.3	33.1	38.0
Luxembourg	31.7	27.5	29.0	26.7	24.8	29.4	32.0	29.6	32.1
Malta	58.8	52.4	51.9	52.7	48.6	50.1	59.3	54.8	53.5
The Netherlands	72.7	71.1	68.5	71.8	70.8	68.8	72.9	69.7	67.3
Poland	37.0	33.7	33.6	31.5	28.8	28.2	39.1	38.2	39.0
Portugal	44.7	39.5	34.6	39.1	35.7	32.7	47.3	39.6	34.7
Romania	36.6	30.7	29.9	28.5	25.3	23.6	38.0	35.7	35.2
Slovak Republic	41.5	32.5	31.3	34.2	24.6	24.4	42.1	37.2	38.7
Slovenia	37.2	40.6	34.2	34.2	33.4	30.9	43.0	42.4	37.5
Spain	44.4	45.4	36.1	41.3	39.7	32.8	50.8	44.5	36.1
Sweden	48.8	52.0	54.5	50.8	52.8	56.1	50.2	52.4	54.3
United Kingdom	62.1	60.1	58.4	59.0	56.6	56.9	64.6	61.4	59.6

Source: World Bank, World Development Indicators, and ILO

The labor force participation with respect to younger cohorts shows that Austria, Denmark, Sweden, the Netherlands, and the UK have the highest rates (58.2%, 63.1%, 54.5%, 68.5%, and 58.4%) in the 2012-2016 periods. Concerning gender participation rates, we see a similar pattern, suggesting that the countries listed above have the highest labor participation rates among the 28 EU member states.

Figure 9 Youth Labor Force Participation Rate in the EU (15-24, %)

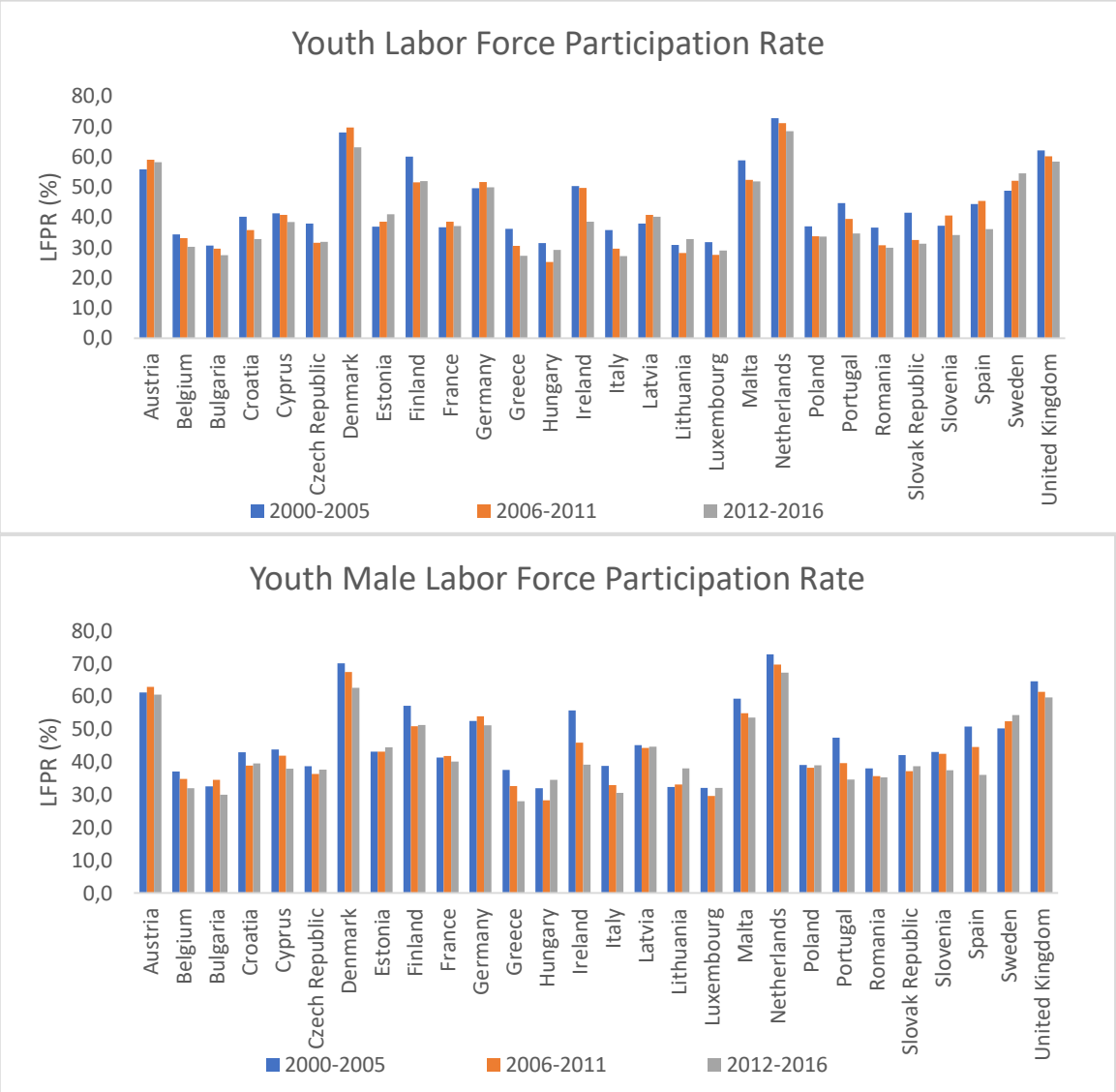
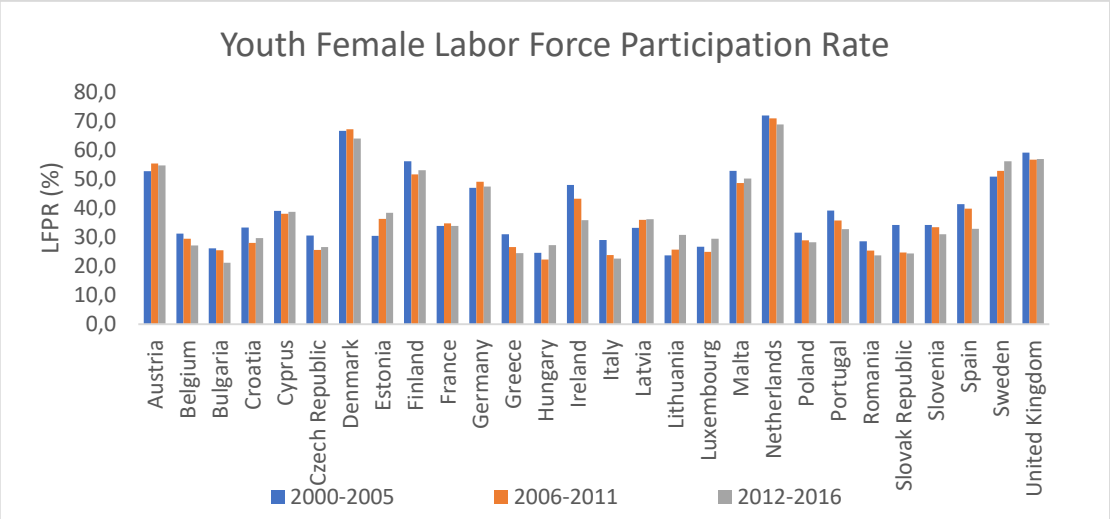


Figure 9 (cont.)



Source: World Bank, World Development Indicators, and ILO.

From the very beginning, with the Treaty of Rome in 1957, one of the main aims of the EU has always been making labor, goods and services, and capital move freely. However, it has never been that easy to reach and maintain that goal since not every member state has the same properties in terms of their labor market (Barslund *et al.*, 2014). It is believed that with labor mobility discrepancies related to unemployment would take place in mobility and not in wages. Not only the free movement of labor but also the monetary union is aimed to help the EU labor markets. When there is an asymmetric shock, the monetary union helps to absorb the adverse consequences of the shock. On the other hand, in case of a positive demand shock, the monetary union helps workers to find jobs easily by leaving unemployment, thus making the labor market grow faster (Arpaia *et al.*, 2016).

Employment activities have been rising across the EU since the recovery of the sovereign debt crisis. The increase in labor market participation is seen not only in Western Europe but also in Central Eastern Europe countries such as Slovenia, Slovakia, Finland, Cyprus, and Italy. However, some of the member states like Greece, Spain, Hungary, the Netherlands show a fall in economic activity due to a boost in retirement, and improvements in education and training. Moreover, it is worth mentioning that the migration outflow from new member states to Western Europe may

be associated with low working-age population and labor market participation. Decreasing the unemployment rate has led to a higher employment rate in almost all EU member states since 2013, given the measures and reforms that the EU policy makers have taken (EC, 2015).

Table 10 Employment in Population Ratio in the EU (%)

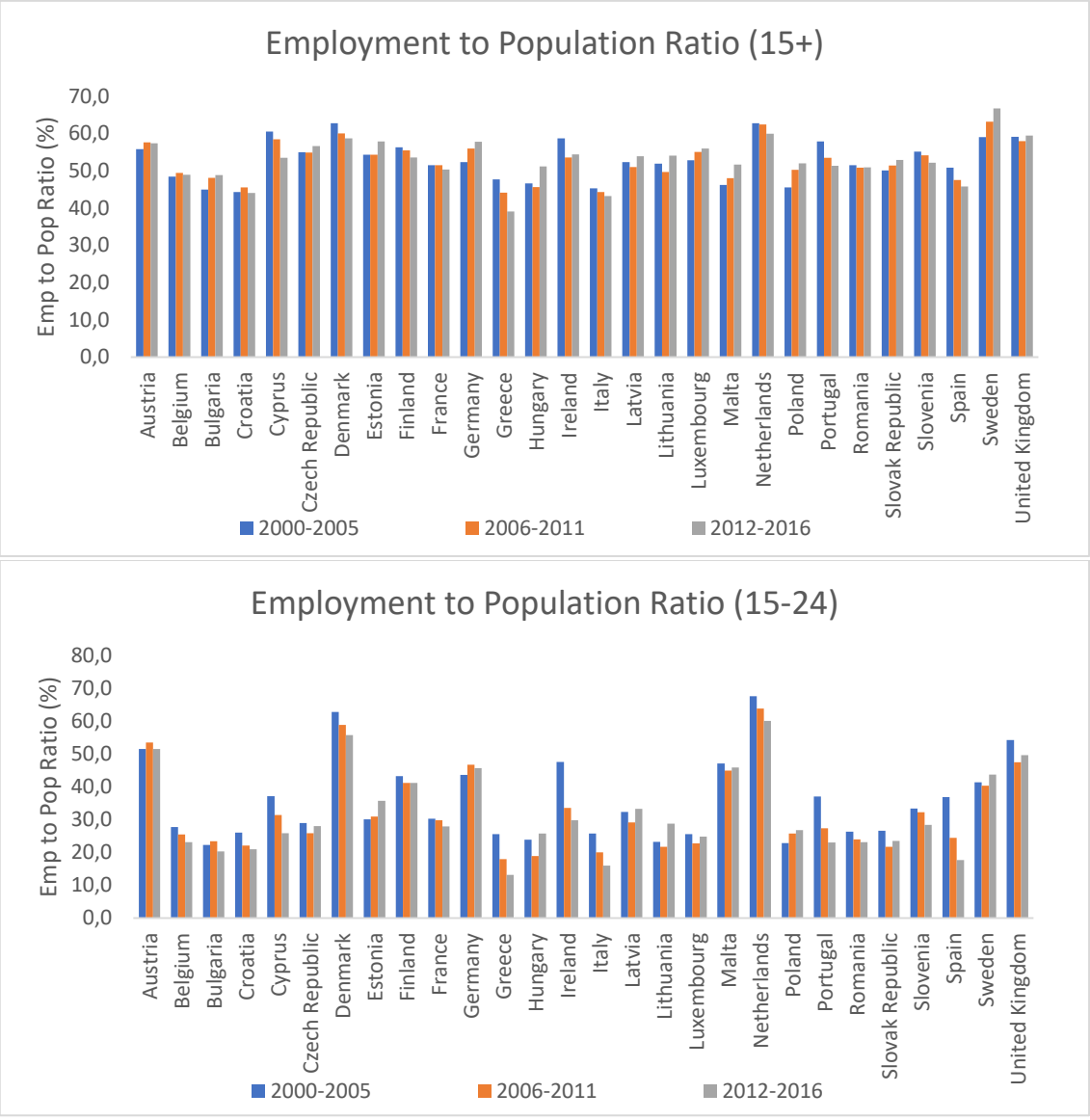
	Employment in Population Ratio (15+)			Employment in Population Ratio (15-24)		
	2000-2005	2006-2011	2012-2016	2000-2005	2006-2011	2012-2016
Austria	55.8	57.6	57.3	51.5	53.5	51.5
Belgium	48.4	49.4	48.9	27.7	25.5	23.1
Bulgaria	44.9	48.0	48.8	22.3	23.4	20.3
Croatia	44.3	45.5	44.0	26.0	22.0	21.0
Cyprus	60.5	58.4	53.5	37.2	31.4	25.8
Czech Republic	54.9	54.8	56.6	28.9	25.9	28.0
Denmark	62.7	60.0	58.7	62.8	58.9	55.8
Estonia	54.3	54.3	57.8	30.0	30.9	35.7
Finland	56.3	55.4	53.6	43.3	41.1	41.2
France	51.4	51.5	50.3	30.3	29.8	27.9
Germany	52.3	55.9	57.8	43.6	46.7	45.7
Greece	47.6	44.1	39.0	25.6	17.9	13.1
Hungary	46.6	45.6	51.2	23.9	18.9	25.8
Ireland	58.7	53.5	54.4	47.5	33.6	29.7
Italy	45.3	44.3	43.2	25.7	20.0	15.9
Latvia	52.3	51.0	53.9	32.3	29.1	33.3
Lithuania	51.9	49.6	54.0	23.2	21.7	28.7
Luxembourg	52.8	55.0	55.9	25.5	22.7	24.8
Malta	46.2	48.0	51.6	47.1	44.9	45.9
The Netherlands	62.7	62.4	59.9	67.5	63.8	60.1
Poland	45.5	50.2	52.0	22.8	25.7	26.7
Portugal	57.8	53.5	51.3	37.0	27.4	23.0
Romania	51.5	50.8	50.9	26.3	23.9	23.1
Slovak Republic	50.1	51.4	52.8	26.6	21.7	23.4
Slovenia	55.1	54.1	52.1	33.4	32.2	28.3
Spain	50.8	47.5	45.8	36.8	24.4	17.7
Sweden	59.0	63.2	66.7	41.4	40.3	43.7
United Kingdom	59.1	57.9	59.4	54.2	47.5	49.6

Source: World Bank, World Development Indicators, and ILO

In terms of education, EC (2015) states that since the crisis, people have been more likely to participate in formal education, and their duration has increased. PIIGS

countries show the highest development in this matter, indicating that especially Greece, Ireland, and Spain have the highest rates of participating in formal education since the crisis. The reason behind this is explained with the correlation between being a low-skilled person and employment prospects. Since the crisis hit these countries, the most low-skilled individuals had to leave school.

Figure 10 Employment to Population Ratio in the EU (15+, 15-24)



Source: World Bank, World Development Indicators, and ILO

The financial crisis of 2008 hit the young age groups the most. In particular, lower employment and participation rates and the high unemployment rates provide the

strongest evidence for that impacat. Compared to older age groups, the younger age groups' recovery process has been longer, leaving them outside the labor market. The increase in older cohorts' employment rates indicates that series of reforms (in terms of retirement) succeeded. Moreover, young cohorts' labor market outcome was significantly poorer compared to the older's during the crisis, since they have less experience and probability of finding a new job with an inadequate network. Choosing education over work should be taken into account as well since it affects not only youth employment but also their activity rates.

Table 11 Employment Rate in the EU (% of total employment)

	Employment in agriculture			Employment in industry			Employment in service		
	2000-2005	2006-2011	2012-2016	2000-2005	2006-2011	2012-2016	2000-2005	2006-2011	2012-2016
Austria	5.4	5.2	4.6	28.3	25.9	25.8	66.3	68.9	69.7
Belgium	1.9	1.5	1.3	25.1	23.5	21.5	73.1	75.1	77.3
Bulgaria	9.9	7.0	6.8	33.2	33.8	30.0	56.9	59.2	63.2
Croatia	16.1	13.3	9.3	29.6	29.0	27.1	54.3	57.7	63.5
Cyprus	4.9	3.8	3.8	23.3	21.5	16.8	71.8	74.7	79.4
Czech Republic	4.4	3.2	2.9	39.9	39.0	37.9	55.7	57.8	59.2
Denmark	3.3	2.6	2.5	23.8	21.0	19.1	72.8	76.3	78.0
Estonia	5.7	4.3	4.0	32.6	32.6	30.1	61.6	63.0	65.7
Finland	5.2	4.4	4.1	26.3	23.9	22.1	68.2	71.3	73.4
France	3.9	3.0	2.8	24.5	22.5	20.4	71.3	74.1	75.6
Germany	2.4	1.8	1.4	31.2	28.8	27.7	66.4	69.4	70.9
Greece	13.7	12.0	13.1	22.5	19.9	15.2	63.7	68.1	71.7
Hungary	5.4	4.7	4.8	33.3	31.2	30.2	61.3	64.1	64.8
Ireland	6.4	4.9	5.6	27.8	21.6	18.7	65.6	73.1	75.4
Italy	4.6	3.8	3.7	31.1	28.9	26.7	64.3	67.3	69.6
Latvia	13.8	8.8	7.8	26.6	25.3	23.9	59.6	65.9	68.3
Lithuania	16.5	9.1	8.7	28.0	27.0	25.1	55.4	63.9	66.2
Luxembourg	2.0	1.4	1.2	18.9	13.8	11.1	78.9	82.6	81.5
Malta	2.3	1.4	1.4	30.0	24.9	20.6	67.8	73.7	78.0
The Netherlands	3.0	2.6	2.1	19.4	16.6	15.1	72.2	72.8	74.8
Poland	18.0	13.4	11.4	29.3	30.8	30.7	52.7	55.7	57.7
Portugal	12.5	11.2	8.3	31.9	27.7	24.1	55.6	61.1	67.6
Romania	35.9	29.5	26.6	29.5	29.7	28.9	34.7	40.8	44.5
Slovak Republic	5.5	3.6	3.2	38.3	38.3	36.0	56.1	58.2	60.8
Slovenia	9.3	8.8	7.5	37.0	32.9	31.5	53.0	57.6	60.2
Spain	5.6	4.2	4.2	30.4	24.5	19.7	64.0	71.3	76.1
Sweden	2.5	2.1	2.0	22.6	20.4	18.5	74.8	77.1	79.0
United Kingdom	1.3	1.2	1.1	23.0	20.1	18.6	75.4	78.1	79.5

Source: World Bank, World Development Indicators, and ILO.

The integration process of the CEEC has changed countries' employment structure. Higher agricultural employment rates (relatively compared to Western European states) shifted the service sector and a dramatic decrease in employment in the industry sector has been seen in almost all CEECs. In addition to that, countries like Hungary, Slovenia, Slovakia, and Czech Republic show the highest decrease in agricultural employment. On the other hand, Bulgaria and Romania's agricultural employment has increased due to a decrease in the industrial sector, unlike other CEECs (Belke and Hebler, 2000).

Figure 11 Employment Rate in the EU (% of total employment)

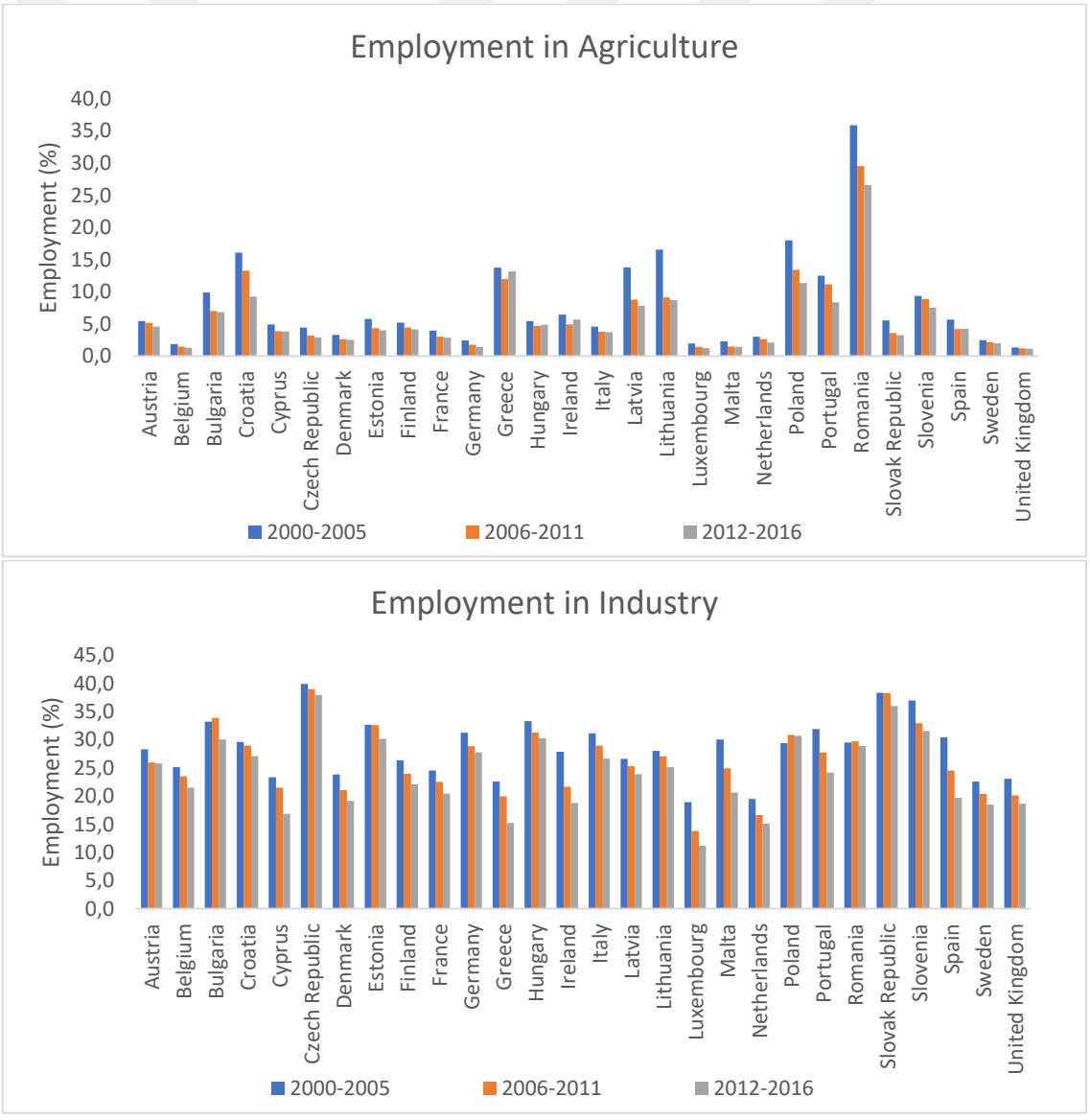
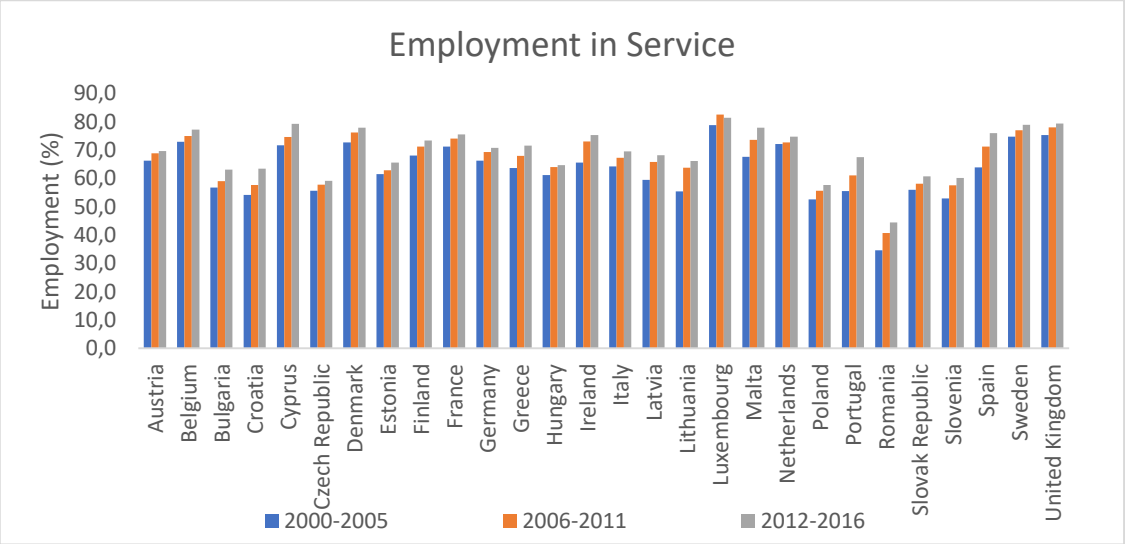


Figure 11 (cont.)



Source: World Bank, World Development Indicators, and ILO.

After the global financial crisis of 2008 and the European sovereign debt crisis of 2010, the EU countries have been trying to recover from the unbearable consequences. Dramatically increased unemployment rates (especially in PIIGS[8] countries) along with low employment and participation rates made the EU take some measures for the EU labor market. Even though the unemployment rate has not fallen too much, we see that the divergence across the EU labor market is likely to fade away. Yet again, the unemployment rate declined more than expected in 2014. Almost all of the EU member states' unemployment rate decreased in the last four years (Austria, Denmark, and Estonia show an increase in 2016). The decrease in the unemployment rate is seen as a result of lower *job separation rates.* According to EC (2015), job separation rates have been declining since 2012 while the unemployment rate showed an increase until 2013. Higher unemployment rates led to lower job finding rates and hence longer unemployment spells across the EU. EC (2015) adds that job finding rates started to improve in 2014. The problem of labor mismatch, which is formed through fewer vacancies and more unemployed, also started to recover from 2014. In the case of an adverse demand shock, like economic and financial crises, every country's reaction would be different, since they all have different economic structures. The labor market situation is one of them, and the unemployment rates of member states differ across the

[8] Portugal, Italy, Ireland, Greece, Spain.

EU. However, the idea of a monetary union aims to smoothen this process by providing a fairer and more efficient environment. From the mid-2013 to the present, the EU labor market conditions have been improving step by step. The decrease in the unemployment rate is linked to output recovery, more jobs in the market, and GDP growth across the EU and in the euro area. Just because the unemployment rate falls gradually, it does not necessarily mean that the long-term unemployment rate would fall too. It still remains at a high rate.

Table 12 Unemployment Rate in the EU (15+, %)

	Unemployment Rate (15+)			Unemployment Rate (15+)			Unemployment Rate (15+)		
	Total			Female			Male		
	2000-2005	2006-2011	2012-2016	2000-2005	2006-2011	2012-2016	2000-2005	2006-2011	2012-2016
Austria	5.2	4.8	5.8	5.3	4.8	5.4	5.2	4.9	6.1
Belgium	7.7	7.7	8.3	8.6	7.8	7.8	7.0	7.6	8.7
Bulgaria	11.6	9.9	9.4	11.4	9.1	8.6	11.8	10.5	10.1
Croatia	16.1	12.7	15.6	18.1	13.3	16.3	12.6	12.2	14.9
Cyprus	4.3	8.5	14.7	5.1	8.3	14.4	3.6	8.6	14.9
Czech Republic	7.2	6.5	5.1	8.9	7.7	6.1	5.9	5.6	4.2
Denmark	4.6	6.5	6.3	4.9	6.3	6.6	4.3	6.7	6.0
Estonia	8.3	11.1	6.8	7.4	9.7	6.3	9.3	12.5	7.2
Finland	9.0	7.8	8.9	9.1	7.3	8.5	9.0	8.3	9.4
France	8.4	8.8	10.3	9.2	8.9	9.9	7.7	8.7	10.6
Germany	9.8	6.4	4.6	9.6	6.2	4.2	10.1	6.7	4.9
Greece	9.5	16.6	25.0	14.6	20.4	29.0	6.0	13.9	21.7
Hungary	6.6	10.2	6.5	6.6	10.0	6.7	6.5	10.4	6.4
Ireland	4.4	12.4	9.5	4.0	9.2	7.8	4.7	15.0	10.9
Italy	7.8	9.0	12.1	10.2	10.3	13.1	6.1	8.1	11.4
Latvia	10.1	14.6	10.1	9.9	12.7	9.0	10.3	16.6	11.3
Lithuania	9.2	13.0	9.2	9.3	10.9	8.0	9.1	15.1	10.5
Luxembourg	4.1	5.1	6.3	5.4	6.0	6.6	3.2	4.4	6.0
Malta	7.0	6.5	5.3	8.5	7.0	5.2	6.3	6.2	5.3
The Netherlands	3.8	4.8	6.8	4.1	5.0	7.2	3.5	4.6	6.4
Poland	16.6	9.2	7.6	17.5	9.8	7.8	15.9	8.6	7.3
Portugal	6.7	12.0	12.5	7.8	12.6	12.8	5.7	11.5	12.2
Romania	7.3	6.8	6.5	6.3	5.9	5.6	8.0	7.5	7.2
Slovak Republic	15.9	13.0	11.5	16.7	13.5	12.4	15.2	12.5	10.6
Slovenia	5.9	7.4	8.9	6.6	7.7	9.7	5.4	7.2	8.2
Spain	9.9	20.2	22.0	13.5	20.8	23.5	7.4	19.7	20.8
Sweden	6.3	7.8	7.5	6.1	7.7	7.2	6.5	7.9	7.7
United Kingdom	5.0	7.4	5.4	4.5	6.7	5.2	5.4	8.0	5.6

Source: World Bank, World Development Indicators, and ILO.

The total unemployment rate of 15+ increased the most in PIIGS countries in the years 2012-2016. While countries like Germany and the UK have the lowest unemployment rates, The pattern is the same for both females and males. We see that females, however, have a higher unemployment rate compared to males in all EU member states. Moreover, due to the high unemployment rates, labor participation stays low in some countries, especially in France and Italy.

Figure 12 Unemployment Rate in the EU (15+, %)

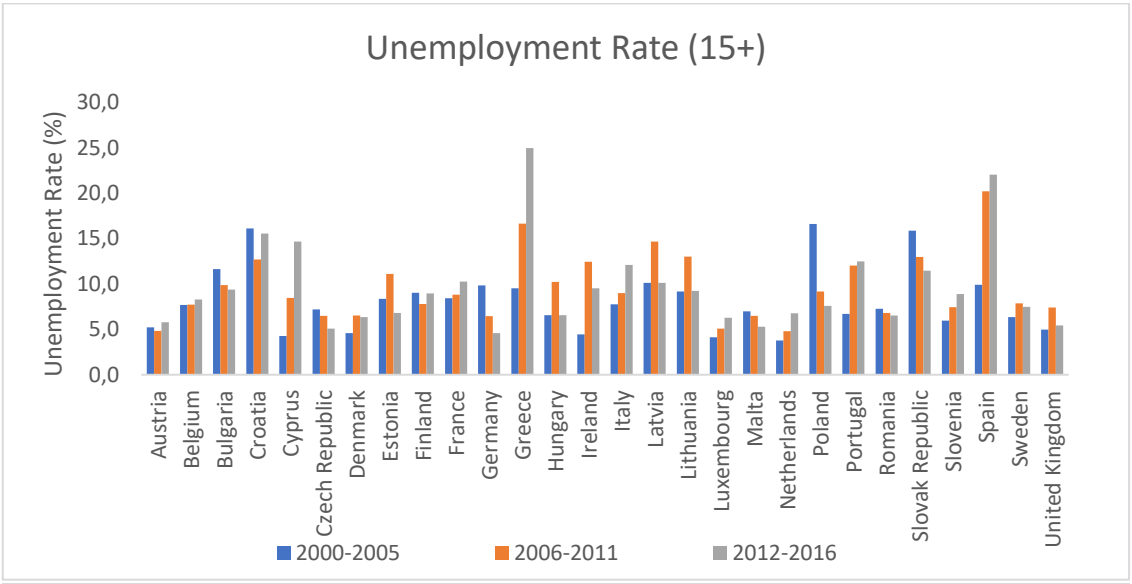
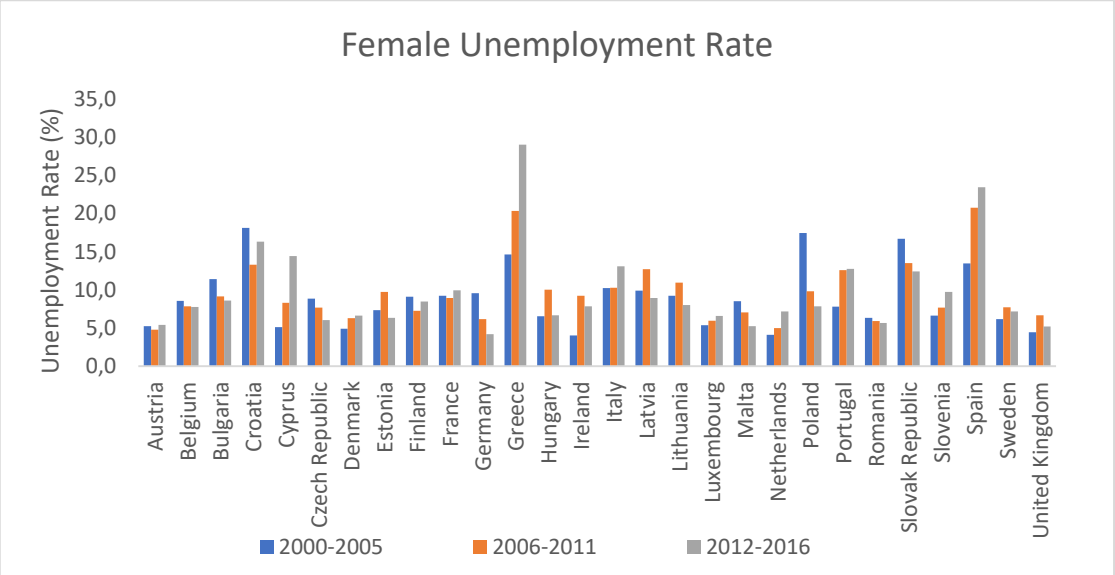


Figure 12 (cont.)



Source: World Bank, World Development Indicators, and ILO.

Not only the employment structure but also the unemployment structure underwent a change during the accession process of CEECs. Some of the countries reached a significantly high number of unemployment rates while others' fell. Hungary and Poland are perfect examples of lower to higher unemployment rates in the 1990s (13% in Hungary in 1993, 16.7% in Poland in 1994). However, we see a non-negligible decrease in the late 1990s. It is possible to associate higher unemployment rates with participation rates. The male participation rate in CEECs is as not high as the Western European states. However, it is not the case for the female participation rate (Belke and Hebler, 2000).

Table 13 Youth Unemployment Rate in the EU (15-24, %)

	Unemployment Rate (15-24)			**Unemployment Rate (15-24)**			**Unemployment Rate (15-24)**		
	Total			**Female**			**Male**		
	2000-2005	**2006-2011**	**2012-2016**	**2000-2005**	**2006-2011**	**2012-2016**	**2000-2005**	**2006-2011**	**2012-2016**
Austria	9.5	9.4	10.7	9.1	9.4	10.0	9.8	9.5	11.3
Belgium	18.8	20.7	21.8	19.6	20.6	20.2	18.1	20.9	23.2
Bulgaria	24.0	22.0	20.9	22.8	20.1	21.0	25.0	23.4	20.8
Croatia	31.9	35.3	39.9	35.0	36.4	40.7	29.5	34.2	39.3
Cyprus	9.9	21.4	32.6	10.2	20.9	32.5	9.6	21.9	32.6
Czech Republic	16.6	16.9	13.0	16.5	16.9	14.3	16.6	16.9	12.1

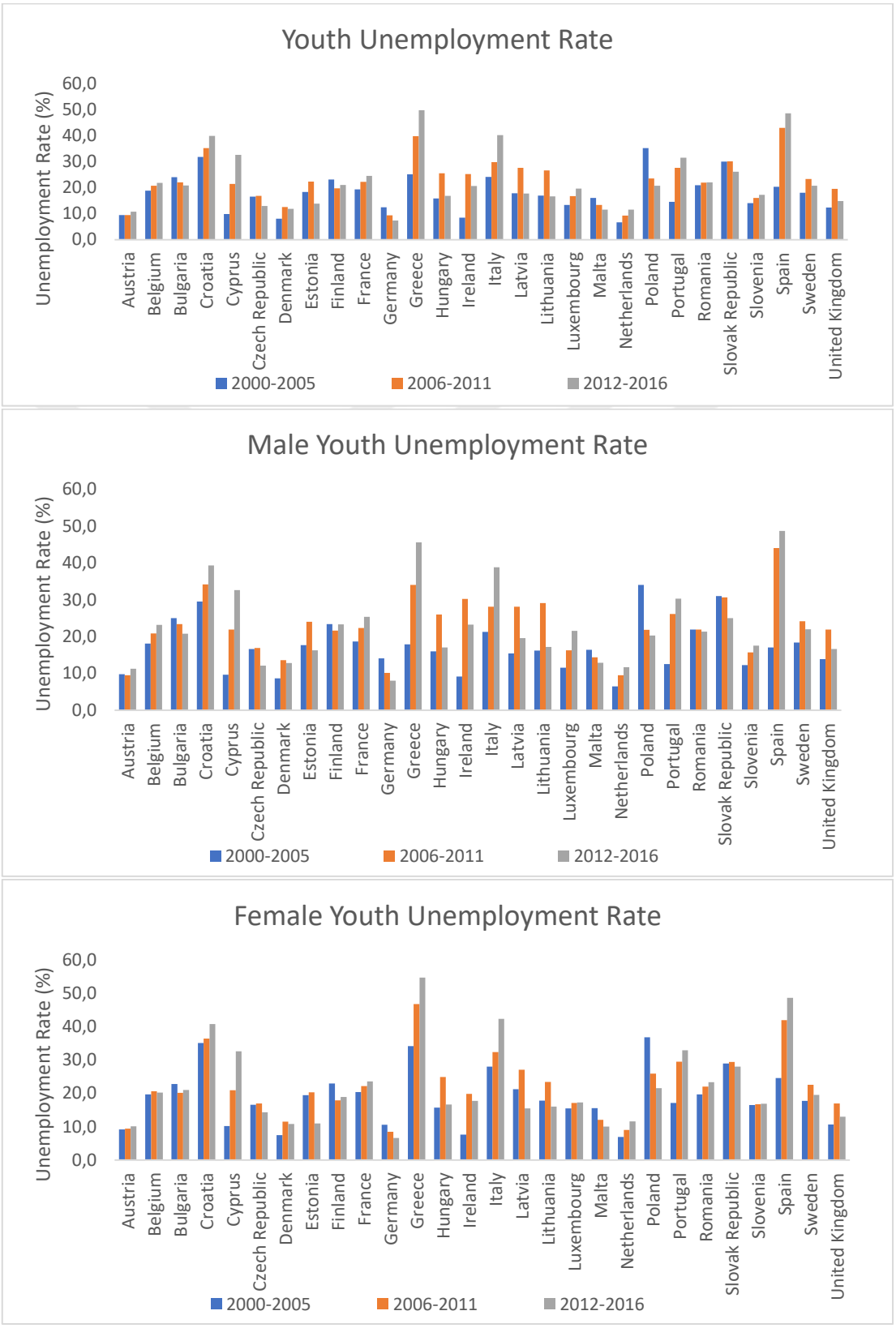
Table 13 (cont.)

	Unemployment Rate (15-24)			Unemployment Rate (15-24)			Unemployment Rate (15-24)		
	Total			Female			Male		
	2000-2005	2006-2011	2012-2016	2000-2005	2006-2011	2012-2016	2000-2005	2006-2011	2012-2016
Denmark	8.1	12.5	11.8	7.4	11.5	10.8	8.7	13.6	12.8
Estonia	18.4	22.4	13.8	19.4	20.2	10.9	17.7	24.0	16.3
Finland	23.1	19.7	21.1	22.9	17.9	18.9	23.4	21.6	23.3
France	19.4	22.2	24.5	20.3	22.1	23.5	18.6	22.3	25.4
Germany	12.4	9.3	7.4	10.5	8.5	6.5	14.1	10.1	8.0
Greece	25.1	39.8	49.8	34.1	46.7	54.6	17.9	34.1	45.6
Hungary	15.9	25.5	16.9	15.7	24.9	16.6	16.0	26.0	17.1
Ireland	8.4	25.2	20.7	7.5	19.8	17.7	9.1	30.3	23.2
Italy	24.1	29.8	40.3	27.9	32.3	42.3	21.3	28.1	38.9
Latvia	17.8	27.6	17.8	21.2	27.0	15.4	15.4	28.1	19.6
Lithuania	17.0	26.6	16.7	17.8	23.4	16.0	16.2	29.1	17.2
Luxembourg	13.3	16.7	19.6	15.4	17.1	17.3	11.6	16.3	21.5
Malta	16.0	13.3	11.5	15.6	12.1	10.0	16.4	14.4	12.9
The Netherlands	6.6	9.2	11.6	6.9	9.0	11.5	6.4	9.5	11.7
Poland	35.2	23.5	20.8	36.7	25.9	21.5	34.0	21.8	20.3
Portugal	14.6	27.7	31.6	17.1	29.4	32.9	12.5	26.1	30.3
Romania	21.0	21.9	22.1	19.7	22.0	23.3	21.9	21.9	21.4
Slovak Republic	30.1	30.2	26.1	28.9	29.4	28.0	31.0	30.7	25.0
Slovenia	14.0	16.1	17.2	16.4	16.7	16.8	12.2	15.7	17.5
Spain	20.3	43.0	48.6	24.5	41.9	48.6	17.1	44.0	48.7
Sweden	18.1	23.3	20.7	17.7	22.5	19.4	18.4	24.2	22.0
United Kingdom	12.3	19.5	14.9	10.6	16.9	12.9	13.9	21.9	16.6

Source: World Bank, World Development Indicators, and ILO.

Young people have been affected by the crisis as well since the youth unemployment rate is significantly responsive to the economic crisis. The period of 2012-2016 shows that youth unemployment rate reached 39.9% in Croatia, 49.8% in Greece, 40.3% in Italy, 31.6% in Portugal, 48.6% in Spain and remains above 20% in ten states.

Figure 13 Youth Unemployment Rate in the EU (15-24, %)



Source: World Bank, World Development Indicators, and ILO.

Although the youth unemployment rate was at its highest in the period 2012-2016, from mid-2013 it started to decrease. Especially countries like Greece, Portugal, Spain, and Croatia have shown a great deal of progress. Unlike these countries, Italy, named one of the badly affected member states, still has the highest youth unemployment rate with less progress.

4.3.Social Transfers

According to EC (2016), social transfers include old-age (retirement) and survivors' (widows' and widowers') pensions, unemployment benefits, family-related benefits, sickness and invalidity benefits, education-related benefits, housing allowances, social assistance, and other benefits. The risk of poverty in old age is inevitable for some of the elderly since some countries' old age security provisions are quite weak. As they grow older, they are not capable of work as much as they used to in their youth, and they may require support. This support may come from different sources. Some of them count on their family—children, relatives—while others use savings they have accumulated through years of working. Public old-age programs can be listed as another source. In many countries, private-sector workers are covered as well as public servants. Also, in some countries, self and rural employed people are covered in public old age programs as long as they meet the age criteria (Schwarz, 2003). Public sector old-age survivors' pensions were established prior to the private sector. On some occasions, workers in nationalized industries, teachers, policemen, and army forces receive special pensions due to their long service to the public/society. In the public sector, receiving a decent old age pension has been seen as the norm of being a lifetime employee. The world has been facing the challenge of aging populations; societies and older people (in those societies) are trying to safeguard the rights and wellbeing of older people. Aging populations can pose a serious challenge to major industrialized countries' social security system (Elveren, 2014). In the aging population framework, usually older people are faced with inequity and are not able to receive equal access to services as other people are. It is no surprise that the number of older people is growing faster than the younger people so that concerns have surged about the consequences of this situation. Since older people's participation in economic, social

and cultural life is not the same as the younger population, they are often seen as a burden to society—governments particularly (Arja, 2014).

Old-age people's affinity to the labor market is not high compared to prime-age working people. As people get older their participation and employment rates tend to decrease, adding to the reduction in labor supply, since low-skilled older workers' productivity is low due to rapid technological changes, and training compared with prime-age workers. As a result, older people decide to retire, although this decision depends on the old age pension programs/systems of the country: as long as the pension benefits are higher, and the comparison of standard and early age retirement benefits makes a difference (Duval, 2003).

Many of the old age pension systems cover public servants as well as self-employed and inactive people. There are different types of old age pension systems. In EU-15 and Turkey, the pay-as-you-go (PAYG) system is used from the very beginning. In countries like Denmark, Finland, the Netherlands, and Sweden, the flat-rate benefit system is used, which is based on the duration of the residence in the state, and it is integrated with earnings. In Ireland and the UK public flat-rate system is used (Monticone, 2008).

Survivors' benefits are another part of the system from which individuals seek to receive decent income. So, who are the entitled persons that can benefit? Surviving spouses (widows and widowers), children (child through birth, adopted children, and stepchildren) and older aged other relatives are included in this group. If a spouse is receiving alimony from his/her late spouse, s/he can get survivor's benefits. The system is also valid in some circumstances such as non-married and same-sex registered partners' spouses, i.e. in Denmark, Germany, Finland, the UK, Lithuania, Hungary, and Slovenia.

There is no doubt that the rules for receiving these benefits are very strict and, in some cases, the amounts get lower. People must meet some criteria in order to get paid. The duration of marriage, age (55 for France, 45-54 in the UK; age application for survivors differs in Belgium, Bulgaria, Finland, Poland, Portugal, Lithuania, Slovenia, the Czech Republic, and Slovakia), the degree of disability, and care for the deceased's

children are important measures that must be taken into account. In the case of not fulfilling the criteria, survivors may receive one-off payments or a temporary pension depending on the system of the country (Monticone, 2008).

The individual's incentive to search for work is shaped by unemployment benefits. It can be either positive or negative. If the search activities are costly or a person holds out for a better paid job, then it is negative. Otherwise, it positively affects one's incentive (Behar, 2009). The probability for an unemployed person to get a job offer and the probability of accepting this offer forms the probability to find a job for this individual. If the offered wage level is above a certain level, one is likely to accept the job offer (also called reservation wage). On the other hand, receiving a job offer depends on the labor market's condition and the job offer should be in accordance with the job seeker's effort. The more unemployment benefit received, the higher the reservation wage but the lower the search effort, thus lower probability of finding a job. When the country's economy is doing well and there are jobs in the labor market, unemployment insurance is effective; however, it is the opposite case in recessions (Şahin and Kızılırmak, 2007). According to the ILO, all individuals who are 15 and over and are not employed, and who used at least one search channel to find a job during the last 3 months and are available to start work within 15 days count as unemployed. Later, the ILO dropped the 'search for a job' requirement from the definition (Tansel and Taşçı, 2004).

Unemployment benefits play an important role as an automatic stabilizer over the business cycle, since it gives time to the unemployed individuals to find a new job and support their household's consumption during unemployment. According to Venn (2012), consumption (plus income and benefits coming from work) raises the individual's utility, while effort put into a job search reduces it. Unemployed people are enabled to receive unemployment benefits at a certain level and duration. People who have made a minimum contribution to the unemployment benefit system and have minimum employment record are entitled to be given benefits. If the person resigns from his/her job, s/he does not have the right to apply for the unemployment benefit. Moreover, complying with the requirements does not mean that the individuals will

receive the benefit. If one does not seek a job actively or does not accept a suitable job, again s/he does not receive the benefit, not to mention the sanctions.

However, there is a wide range of discussion whether the benefit increases the duration of unemployment and aggregate unemployment because individuals prefer to stay unemployed and receive the benefit (even more when the benefit is generous). Labor market models try to investigate the unemployment benefit framework. It complies with the unemployment duration, the labor market conditions, and the unemployment benefit system (Venn, 2012). Not only developing countries but also developed countries tackle unemployment problems. The economic, social, and cultural costs of unemployment are commonly debate issues in the literature. Both the social and individual aspects are taken into account, and the differences are inevitable and visible due to different labor market structures, legal systems, institutions, and unemployment benefits systems (Tansel and Taşçı, 2010). Public unemployment benefits are usually financed by the public insurance systems as income to people who are unemployed. A certain part of the income while an individual is employed is collected via social contribution or tax and given to the unemployed (Paskov and Koster, 2014).

As the structure of the family has been changing, spending on family benefits has been advancing as well. But convergence in family policies does not necessarily mean that all countries have the same system. Family cash benefits –child allowances, financial aid during parental leave—, childcare services, and health services differ across countries. Public spending on maternity leave on each birth as a % of GDP per capita, public spending on childcare service on each child who is under 3 years as a % of GDP, and public spending on each child who is under 18 in family cash benefits as a % of GDP can be listed as the public expenditures on family. Family policies regarding leave entitlements for childcare and services comprise the following: the total duration of paid leave for mothers, the total duration of paid leave for fathers, 0-2 years old childcare enrolment, and 3-5 years old pre-school enrolment for children. The second person (usually women) who brings in the money into the household is considered to be giving tax incentives and relative marginal tax rate.

Childcare Cash transfers to families can be defined as family cash benefits. Since raising a child is costly, support to the families is vital; however, this support is not taxable. It usually is calculated by the income and work situation of the household and may differ across countries. In countries where family benefits depend on the income of the household, it is given only when the family's income is below a certain level and it can be lower when the household's income rises. Besides, there are situations when families are not eligible to receive the benefits. For example, if a child has his/her income, is married, does not live with his/her parents, or exceeds the upper age limit, the household cannot receive the benefit.

Other than those benefits, families are entitled to receive child-related leave, maternity leave, paternity leave, parental leave, and homecare leave (Adema *et al.*, 2014). So, what are aims of the family-related benefits? Why should families receive those transfers? First, it reduces poverty and maintains the household's income if those are low-income families with children (Maître, Nolan, and Whelan 2005; Ritakallio and Bradshaw 2006; Thévenon, 2011). Second, it increases the family's living standard (even compared to families with no children) by reducing the economic costs of (having) children (Thévenon, 2009a; Thévenon, 2011). Third, it boosts employment and therefore develops economic growth (Esping-Andersen 2009; Luci 2009, Thévenon, 2011). By transferring the benefit to the family from the early stage of childhood, it supports the child's development as well as developing the gender equality (Lewis, 1992; Bettio and Plantenga, 2004; Hantrais, 2007, Thévenon, 2011). Finally, as one of the recent problems of the world ageing population, these kinds of benefits raise birth rates and since women can go back to work after giving birth, the labor force participation rate increases as well (Thévenon, 2011).

Individuals are entitled to be absent from work due to illness or an accident up to 1 year. Sickness benefit, which is up to 52 weeks, can be received for a fixed period and after sickness benefit; individuals are entitled to receive invalidity benefits. However, due to the high rates of sickness absence and invalidity benefits, these benefits have been intensely scrutinised investigated (Prins and de Graaf, 1986). Both sickness and invalidity benefits are paid weekly; however, invalidity benefits are paid at a higher rate

than sickness benefits. One may receive invalidity benefit after receiving sickness benefit for generally a period of 6 months (Moncrieff and Pomerleau, 2000).

Completing higher education is one of the most significant investments that an individual would make. Its economic benefit cannot be neglected as well, since a person's working life, earnings, and life standard depend on it. The benefit to society is highly generated by well-educated people. Education-related benefits are lined up as tax benefits for education, scholarships, reduced-fee enrollments or discounts and employment. Tax benefits for education may help middle-income countries since educational expenses play an important role in the household and in many cases can be a burden. It gives more incentive to families to invest more in education (Dynarski and Scott-Clayton, 2015). In almost all developed and many of developing countries, receiving a primary education is mandatory by the state and free. Education savings incentives and student-loan discounts may help families (and individuals) to save up to two decades before children (or individuals) are grown enough to be enrolled (Dynarski and Scott-Clayton, 2015).

As one of the basic need of every human being with the increasing cost of living, housing costs have dramatically gone up as well. The housing cost support is twofold: object (the construction of social housing) and personal (housing allowances). Subsidies for the construction of social housing have shifted to housing allowances according to the public and individual's needs. Housing allowance systems differ across countries and needs differ across households. It is no doubt that housing costs speak for most of the expenditures of the household's budget. Policy instruments of an ideal support for the housing costs include the supply and demand side of the subsidies. The supply side of the subsidies is basically the object (construction or building) of the costs, and mostly landlords are concerned with low taxes, low interest loans. On the other hand, the demand side is in the accommodation seeker's interest, so they can rent (or buy) at a reasonable cost. With housing allowances schemes, sufficient income is provided so that housing costs are partly covered (Ditch *et al.*, 2001).

Coming straight from state budget, individuals who are over 65 years old and disabled persons (even though they do not reach the age of 65 and over) are eligible for

old-age and disability benefits. Not only old-age and disability benefits but also in-kind transfers, family and children's benefits, and non-contributory health insurance are included in the social assistance to one in need. In-kind transfers aim to help the poor who does not receive any social security schemes. Assistance includes food, housing, educational scholarships, transportation aid for the disabled to school and comes from municipal and private foundations. By providing cash transfers to mothers (including pregnant women) and children, they receive educational and health support if they are not registered under other social programs. Persons who are not covered by any social security institution, and are therefore with no health insurance or income, are eligible for non-contributory health insurance. It aims to help families (and individuals) to receive medical care and access to health care facilities (Aran, 2008; SSI, 2008). There is not one way to define social assistance, since it has various meaning depending on people and countries. In some countries it covers immigrants, orphans, and elders while for some it has more services with cash benefits (Gough *et al.*, 1997). According to (Atkinson, 1989), a state has three mechanisms to designate services to individuals/households. The first one is given to all citizens of the state with a social category regardless of income or employment status; the second is a social insurance benefit related to employment or payment status: and third one is about a benefit where the right of entitlement for the benefit depends on the present or recent resources.

4.3.1. Social Transfers in Turkey[9]

The structure of the social services shows a country's development level in addition to social and economic features. As a developing country, Turkey provides social assistance to citizens who are in need. According to law no. 2828, social services can be defined as orderly presented services to help individuals/ households with social inadequacies to boost their living conditions. The social services system in Turkey has many components: social services for the elderly, the handicapped, for family and society, health, education, housing, unemployment, etc. (Işıkhan, 2008).

The Turkish social security system consists of two pillars. Three main institutions— the Social Insurance Institution (*Sosyal Sigortalar Kurumu, SSK*), the

[9] A table showing social transfers in Turkey is given in the Appendix A.

Social Security of Craftsmen and self-employed (*Bağ-Kur*), and the Retirement Fund (*Emekli Sandığı*, *ES*)— form the first pillar. In 2006 all these institutions were unified under the Social Security Institution (*Sosyal Güvenlik Kurumu, SGK*). The second pillar consists of the Individual Pension System (*Bireysel Emeklilik Sistemi*), which is managed by individuals privately. The first pillar covers 83% of the Turkish population while the second pillar covers about 5.7 % of the population. The employee does not pay all the contribution; employers pay around 11% of the total 20% of the contribution rate. Besides, the state pays a quarter of the premium, which is paid to SGK. Individuals have the right to retire when they reach the ages of 58 (women) and 60 (men); however, it is expected that this will increase to 65 for both women and men by 2048. The low retirement age, low earnings, using contributions ineffectively, and the highly paid rate of benefits payments created deficiencies in Turkish social security system since the 1990s. According to ILO (1995), this deficit will reach 10.1% of Turkey's GDP by 2050. This adverse course of events made policy makers bring in two major reforms in 1999 and 2006. The 1999 reform was implemented to restrain the deficit of social security funds. The second one, the 2006 reform, had four components: the launch of the General Health Insurance (*Genel Sağlık Sigortası*) aimed for everyone to receive basic health services, the consolidation of different disorderly benefits by different institutions, building a new retirement insurance program, and unifying all related institutions under SGK. However, these reforms did not solve the problems entirely (Elveren, 2015).

To increase the labor supply, growth, fiscal revenues and retirement age pension reforms play a significant role. The low generosity of pensions raises the individuals' duration of work; therefore their pension income becomes more and more adequate before they retire. Turkey also has a pension benefit system that came into force in 2007, which took the form of the PAYG. It has two major components: a minimum pension and a non-actuarial earnings-based supplementary pension, which is in the government's budget. With the reform, the minimum period is increased from 19.5 years to 25 years in order to qualify for a pension. If an individual decides to retire after 25 years, their pensions will amount to 50 % of his/her earnings, while this amount is 90 % for an individual who has worked for 45 or more years (Verbeken, 2007).

All employees are entitled to have social security in Turkey. To provide adequate social and health insurance, Law No. 5510 provides protects individuals in that respect. Individuals may apply to the Provincial Directorate of Social Security Institution to receive the pension (Çınar and Çınar Law Office, 2013). The unemployment Insurance System covers insured individuals through Law No. 5510, Social Security Law No. 506 (by law, the type of funds that insured people are entitled to is specified), and finally by granting working visas to foreign internationals (Turkish Employment Agency, 2016). The unemployment insurance law of Turkey was ratified in 1999 and came into force in 2000, followed by a first payment in 2002. In accordance with the unemployment insurance law No. 4447, individuals have the right to receive unemployment benefits as long as they have contributed to the system for at least 600 days in the last 3 years, and for the last 120 days prior to the unemployment period s/he must fulfill their contributions. According to the law, in order to qualify, losing the job must not be the individual's decision. Three parties pay the benefit: the state (2%), the employer (1%) and the employee (1%). Unemployment insurance covers the unemployment benefits, illness and maternity insurance premiums, finding a new job, professional development, and acquisition and cultivation training. The last four months of wage prior to unemployment is given as unemployment benefit, but it cannot exceed the monthly minimum wage. The duration of the benefit depends on the premium paid by the worker. It goes as 600, 900, 1080 days for 180, 240, 300 days respectively (Şahin and Kızılırmak, 2007). Forty percent of the daily average gross earnings are set for unemployment insurance payments. However, according to Article 39 of Labor Law No. 4857, unemployment insurance payments cannot exceed eighty percent of the gross monthly minimum wage for employees older than sixteen years of age.

The following are covered in the scope of unemployment insurance in Turkey:

- Insured individuals who work on a service contract by one or few employers according to Article 2 of the Social Security Law No. 506,
- Individuals included in the temporary Article No. 20 of Social Security Law No. 506 by not being public servants and contracted,
- Foreigner employees who are insured in Turkey,

- Guards employed under Protection of Plant Varieties & Farmers' Rights Law No. 4081,
- Paid and regular employees working in home services,
- Employees working in agriculture and forestry in the public sector,
- Paid and regular employees working in agriculture and forestry in the private sector,
- Employees working in art of agriculture, employees working in non-agricultural jobs in agricultural workplaces,
- Employees working in parks, gardens, plantations, etc., in non-agricultural workplaces.

Table 14 presents the amounts of unemployment benefit payments and minimum wage between 2013 and 2017 in Turkey. Regarding unemployment benefit payments, the minimum and maximum amounts are set but the individual's salary and paid premium shape the amount of payment. It is also seen that the maximum limit of unemployment benefit payment is close to the minimum wage.

Table 14 Unemployment Benefit Payments and Minimum Wage in Turkey

	Unemployment Benefit Payments		Minimum Wage
	Min	Max	
2013	405	811	803
2014	450	900	891
2015	509	1019	1000
2016	659	1318	1300
2017	710	1421	1404

Source: Ministry of Labour and Social Security
Payments are in TL

Statistics regarding the unemployment possibility of insured employees are given in Table 15. We see that there is a small decrease in 2013 for the ratio of unemployment benefit payment entitlement of an individual who was unemployed and who applied for a UB payment as 4.47%; however, it increased through time reaching 6.15% in 2015.

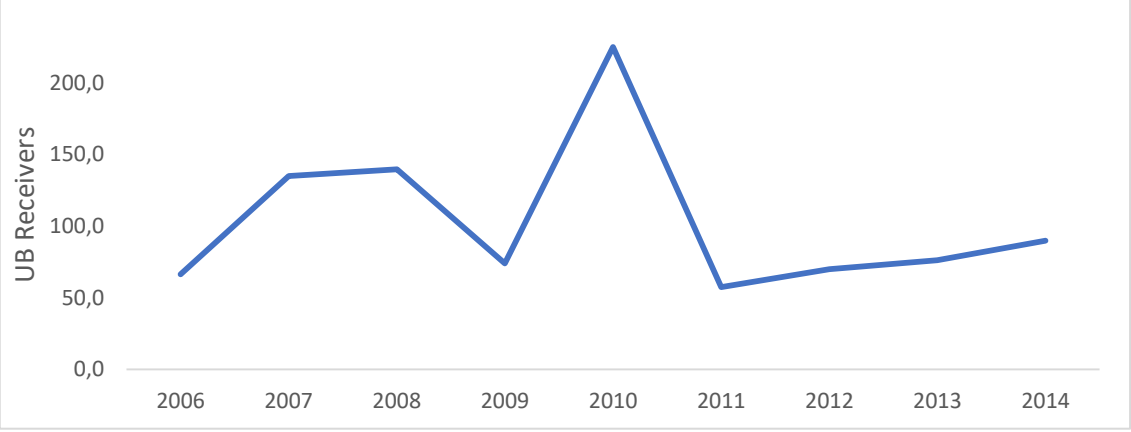
Table 15 Statistics Regarding the Possibility of Unemployment of an Insured Employee in Turkey

	Persons contributed to the system for at least 600 days in the last 3 years and for the last 120 days prior to unemployment period	Persons fulfilled the condition on the left column and left employment	4-a employees pay monthly premium	Persons applied for unemployment benefit payment and entitled to receive it	Ratio of UB payment entitlement of an individual unemployed and applied for UB payment
2011(December)	6.958.544	703.415	11.722.233	30.251	4.30%
2012(December)	7.611.854	808.108	12.707.249	36.383	4.50%
2013(December)	8.294.633	937.961	13.383.858	41.961	4.47%
2014(December)	8.816.364	970.217	14.173.583	51.977	5.36%
2015(December)	9.285.797	961.039	14.983.557	59.108	6.15%

Source: Turkish Employment Agency, Actuarial Balance Sheet Audit Reports

The rate of unemployment benefit receivers[10] shows that individuals receiving payment increased from 2006 to2008 but decreased in 2009. From 2009 to 2010, there was a sharp increase followed by a dramatic decrease in 2011, thereafter continuing in a steady pattern.

Figure 14 Unemployment Benefit Receivers in Turkey (Thousand persons, 16+)



Source: TurkStat, SILC

[10] Severance pay is included in unemployment benefit payments in SILC by TurkStat. Rate= UB receivers/unemployed persons ratio calculated by the author.

In terms of education, pre-primary, primary and secondary education is funded by the state national budget in Turkey (both public and private institutions). Not only the state but also non-profit organizations (NGOs) give funds to the education system (Zapata *et al.*, 2013).

Conditional cash transfers (CCT) are programs funded by the government that try to reduce poverty. The Social Assistance Directorate General coordinates the conditional cash transfers. Households who wish to receive CCT need to apply with their national ID card. An application file is created for the household and after the related data has been gathered, a visit to family is conducted, then a report is filled in accordingly. Regarding the family's economic situation, the Board of Trustees makes the decision. After the process is started, just before the households receive the payment, an online query form is given to them, so that the Social Assistance Directorate General can see if the family fulfills the necessary conditions. Lastly, payments may be withdrawn from any of the Post Office branches in Turkey (UNICEF, 2014).

The social Disability and Old Pensions system was established in 1976, and according to that system any individual who has not registered for any social security institution, and who is with no income-generating property, income source or any relative to depend on is eligible for the benefit.

The economic crisis of 2001 caused serious economic consequences resulting in a dramatic increase in unemployment in Turkey so significant that the World Bank gave provided an amount of social assistance. From 2001, the social assistance share has been on the decline in the national budget (Buğra and Keyder, 2005). Under the form of social assistance, financial and other benefits (nutrition, heating, etc.) are given to citizens by the Social Services and Child Protection Agency. For health services, a green card is given for older age and disabled individuals who are in need. The Social Assistance and Solidarity Foundations (SASFs) aim to supply food, health care, clothing, education, and heating for beneficiaries (İçağasıoğlu *et al.*, 2011).

4.3.2. Social Transfers in the European Union[11]

Since the establishment of the EU, European integration has been one of its major aims. However, it has not been always easy to achieve. Not having the same economic and social structure makes it harder for the EU to maintain its goal. Achieving this aim would also require some changes in terms of social transfers. Alsasua *et al.* (2007) classifies these changes into three parts. According to them, before accession of Southern and CEEC countries the EU had a more homogeneous *social protection system,* since those countries' welfare systems were not as well developed those of the other member states at the time of their accession. Moreover, having a monetary union has new implications for the European social system. Member states have the authority to shape their social protection systems, however. In other words, the social protection systems are in hands of member states, while economic policies are dealt with at EU level (Sharpf, 2002; Alsasua *et al.*, 2007). Member states are expected to take action regarding their social welfare systems according to their social, economic, and national structures. While giving the authority to member states, the EU has the duty of giving recommendations to states (European Council, 1992). These recommendations are presented to member states via the Lisbon Strategy, after the Lisbon Summit of European Council in 2000. In terms of social protection, the Lisbon Strategy presents OMC, which is aimed to give "*voluntary conciliation*" and provide policies accordingly to the member states. The economic structure of a country, basically its economic capacity, shapes the social benefits. Labor market dynamics (employment and unemployment situation) and financial capability set the amount of transfers to be put out by public authorities (Alsasua *et al.*, 2007).

Social protection, social legislation, social assistance, and social insurance lie under the social transfers umbrella. Each one of them has significant impacts on all societies in terms of providing individuals support and helping them survive in unexpected adverse circumstances by not only providing food security, but also education and health services. The EC is very active in terms of taking action on fighting poverty and hunger by trying to strengthen the food security. When it comes to

[11] A table showing social transfers in the EU is given in the Appendix A.

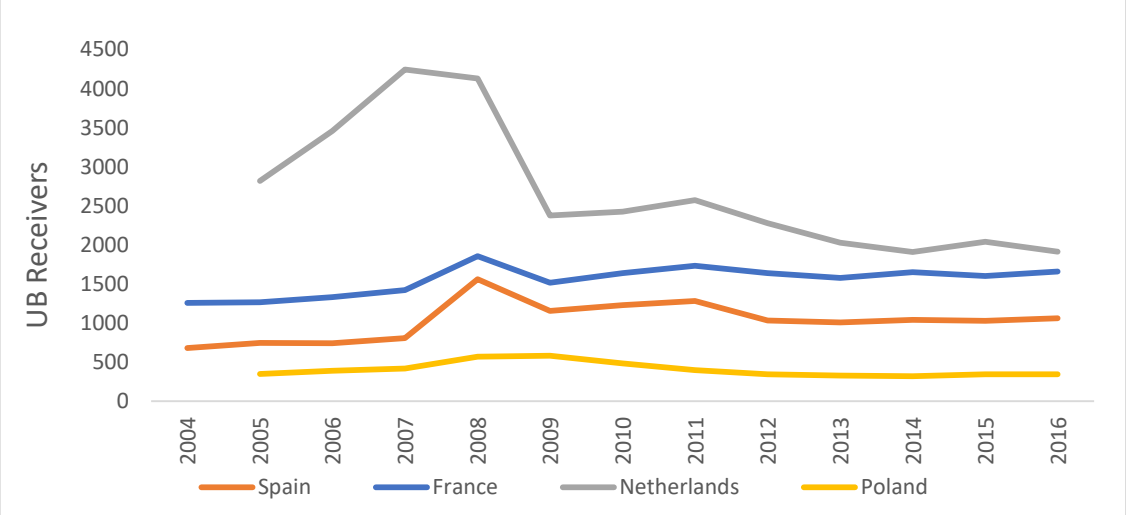
food, not only the supply of it but access to it is also related to hunger. Individuals should be able to have adequate amounts of decent quality food. Since it is commonly accepted that hunger is a crucial problem around the world, the EC has taken some significant initiatives, including trying to stabilize high food prices and providing social transfers to ones in need. Social transfers are intended to reach and maintain food security and minimize poverty. By distributing the public resources to the ones in need regardless of their nationality, ethnic group, religion, or social status, the aim is to decrease poverty and promote economic stability then growth. It is every public figure's duty to support citizens in need after all. In order to eliminate poverty and hunger, the Millennium Development Goals (MDG) was agreed with the support of the EC. The main motivation behind these goals was providing help to over 150 million people who earn and live on less than half a US dollar a day. Even if the MDG is achieved, poverty and hunger will not be abolished (Concept Note, 2010).

Regarding decreasing inequality and poverty, social transfers play a crucial role. Adequate amounts of social expenditures and welfare programs are closely related to social transfers, since the latter operate through social transfers. However, having a social transfer mechanism does not necessarily mean that inequality and poverty will be abolished. Croatia is a perfect example. Bejaković (2013) states that Croatia's social expenditures are not enough to eliminate inequality and poverty. However, having a mix of social protection system programs of old and new forces the Croatian government to take action in terms of providing more efficient social transfers with new reforms. It is worth mentioning that the accession process to the EU has pushed the country to reform its social programs.

Due to financial and economic crises and high unemployment rate, individuals have budgetary problems that require them to receive different kinds of social transfers. Not only the individuals but also governments suffer from the consequences of financial difficulties. In these situations, as in Croatia example, governments try to keep the citizens' existing social rights maintained while trying to prevent unemployment from increasing so that social benefits remain at an adequate amount. Bejaković (2013) divides social security schemes into two groups, *Contributory and Non-Contributory*

Schemes. Beneficiaries (either employees or/and self-employed) and their employers contribute to the system in order to receive the benefit in contributory schemes. On the other hand, non-contributory schemes aim to help the poor (including the elderly and children below a certain age), therefore the contribution from the beneficiaries is not needed, and it is financed through public revenues (i.e. tax). Some of the non-contributory schemes comprise of various programs and benefits, such as *non-conditional minimum income support schemes, conditional cash transfers, and employment guarantee schemes.*

Figure 15 Unemployment Benefit Receivers in Selected EU Member States[12] (Thousand persons, 16+)



Source: Eurostat, EU-SILC

The global financial and sovereign debt crises have made European labor market suffer on several occasions. The decline in labor market participation and employment rate, the increased unemployment rate and labor market exits forced the EU decision-making authorities to act. In order to tackle the unfavourable labor market situation, activation is accepted as an important concept. Since member states have different economic and labor market structures, it is believed that unemployment insurance systems try to help consolidating these different labor markets. Providing income to unemployed individuals, unemployment insurance systems ensures the continuity of consumption

[12] Rate= UB receivers/unemployed persons ratio calculated by author.

and keeps the unemployed active in labor market (Salais *et al.* 1986; Walters, 2000; Clasen and Clegg, 2006).

Harmonization of the social security system in Europe has been the problem of the EU since the beginning. The founding members of the EU (France, Italy, Germany, Belgium, Luxembourg, and the Netherlands) struggled with that problem before the Treaty of Rome (Bouget, 2003). There was a vast amount of proposals in order to tackle this coordination problem: the convergence of social protection objectives and policies, the "sixteenth state", the "European social snake", the "active social fund" (Pieters *et al.*, 1990; Dispersyn *et al.*, 1990, 1992; Chassard, 1992; Pochet *et al.*, 1998; Bouget, 2003).

5. EMPIRICAL METHODOLOGY

The AFT model is used for this study. The AFT model includes five different types of models: exponential, Weibull, lognormal, loglogistic, and gamma distributions. In AFT models

$$\ln(t_i) = x_i\beta_x + \epsilon_i$$

and the failure time t_i is assumed for

$$\tau_i = \exp(-x_i\beta_x)t_i$$

where $\exp(-x_i\beta_x)$ is accepted as acceleration parameter. Since there are five different models, the appropriate model is selected according to the Akaike information criterion (AIC)

$$AIC = -2l + 2(k + c)$$

where l represents the log likelihood, the number of covariates is shown by k, and c is the number of model-specific ancillary parameters. The lowest AIC leads us to the proper model, but one must be keep in mind that, as explained in chapter 3, generalized gamma models include exponential, Weibull, and lognormal as special cases; therefore, these models are nested in gamma[13] models. In the analyses concerning the impact of unemployment benefits on the duration of exiting the unemployment state, the amount and duration of the unemployment benefits depend on the individual's paid premium days as well as the gross monthly income of his/her last job. So, *"Unemployment benefits received in income reference period (TL and EUR)"* statement of the surveys determines the amount of benefits variables. There are three variables (low UB, middle UB, and high UB amounts) used according to the amount that benefit is received. Including these variables in the regression with other variables would give us the chance to interpret the elasticities of those variables in terms of the impact of different levels of unemployment benefits on the employment state of an individual.

Economic theory suggests that when people leave work at early age, this results

[13] That is why estimation results of Gamma distribution are not reported in section 7.

in low productivity. Those workers who have left work are more likely to re-enter the labor market after job loss. However, a significant amount of those workers either stay away from labor or have irregular working life afterwards (Contini and Quaranta, 2017). The transition from unemployment to employment (and vice versa) is affected not only by the labor market conditions but also by socioeconomic and demographic factors (Contini and Quaranta (2017); Yıldırım and Dal (2016)). Labor force participation decision is therefore affected by socioeconomic, macroeconomic and demographic factors, but also in order to be able to see the "isolated net effect of time out of work on the hazard of leaving unemployment", the set of independent variables is included in the analyses (Kupets, 2006). In accordance with previous studies, the theoretical background[14] and availability of the dataset are included as independent variables[15]. These comprise gender (female, male), age dummies of the individuals (young (15-29 years old), middle (30-49 years old), old (50+ years old)), marital status (married, otherwise), the education level attained dummies (lower, vocational, higher), the number of earners in the household, the unemployment rate[16] (according to the age groups of young, middle, and old[17]), occupation (managers, professionals, technicians, workers, elementary occupations), and the predicted wage of the individuals. While estimating the wage of the individual, this note utilizes the theoretical background of the Mincer earnings function of Mincer (1958). In his model Mincer (1958) simply forms the wage function as:

$$\ln wage = f\,(s,x) = lnwage_0 + \rho s + \beta_1 x + \beta_2 x^2$$

where wage is the income, s is the years of schooling, and x denoting years potential of labor market experience. Following Mincer's approach this note states the estimated wage as:

$$\ln(w) = f\,(gender, age, education, occupation, sector\ in\ occupation, region, year)$$

[14] See Devine and Kiefer (1991).

[15] A table showing the definition of variables is given in Appendix A.

[16] Since TurkStat SILC four-year panel data does not include region information, the unemployment rate is calculated according to age groups.

[17] Age is determined as 15-29=young, 30-49=middle, 50 and more=old.

$$\ln(w) = \beta_0 + \beta_1 gender + \beta_3 age + \beta_4 edu + \beta_5 occ + \beta_6 sector + \beta_7 region + \beta_8 year + u_i$$

where gender takes the value of 1 if female and 0 otherwise; age is the age of each individual; education comprises of six sets of dummy variables: not graduated, primary school graduates, secondary school graduates, high school graduates, vocational high school graduates[18]; occupation (ISCO-08) comprises of five sets of dummy variables: managers, professionals, technicians, workers, and elementary occupations; sectoral information (economic activity code)[19] comprises of different sets of dummy variables and is taken from Nace Rev.1 and Nace Rev.2 accordingly; region[20] comprises of several sets of dummy variables; and finally year is the yearly dummy variables.

Since individuals receive unemployment benefit payments in accordance with paid premiums and gross monthly income, the duration and amount of benefit payments need to be calculated. However, the datasets of SILC and EU-SILC do not allow us to calculate the duration of the UB received. Since we cannot reach that information, the amount of payment from *"Unemployment benefits received in income reference period (TL and EUR)"* determines these variables. Amounts are divided as low (lowUB), middle (middleUB) and high (highUB), according to the country and time period. Table 16 shows different levels of UB variables. A more detailed definition of the variables can be found in table 16.

[18] EU-SILC dataset of 2006 – 2009 does not cover information regarding vocational high school; therefore, it is not included for the EU countries in the 2006 – 2009 period.
[19] EU-SILC dataset does not cover sectoral information therefore; it is not included for the EU countries.
[20] Region variable is only included in the analyses concerning France, Spain, and Poland. The datasets do not cover region information for Turkey and the Netherlands.

Table 16 Different Levels of UB Variables

	2006 – 2009			*2011 - 2014*		
	LowUB	***MiddleUB***	***HighUB***	***LowUB***	***MiddleUB***	***HighUB***
Turkey	L<1500	1500≤M<4500	H≥4500	L<1800	1800≤M<5000	H≥5000
France	L<4500	4500≤M<7000	H≥7000	L<4000	4000≤M<8000	H≥8000
The Netherlands	L<5500	5500≤M<10000	H≥10000	L<8000	8000≤M<13000	H≥13000
Spain	L<2500	2500≤M<4300	H≥4300	L<4000	4000≤M<8000	H≥8000
Poland	L<1000	1000≤M<2300	H≥2300	L<750	750≤M<1700	H≥1700

Source: SILC by TurkStat, EU-SILC
Note: Amounts are in *TL* for Turkey and *EUR* for the EU countries. L: LowUB, M: MiddleUB, H: HighUB.

6. DATA AND DESCRIPTIVE STATISTICS

6.1.Data Description

In the analyses concerning Turkey, the SILC micro data, which has been carried out as a four-year panel by TurkStat and for the EU countries, the four-year panel of EU-SILC by Eurostat for the periods of 2006-2009 and 2011-2014 are used. TurkStat has accredited its studies with the EU. Therefore, the SILC dataset of TurkStat follows the Eurostat form since 2006. There are approximately more than 65,000 households in every four-year panel dataset and all observations are used for each period. Since individuals are legally allowed to work from 15 and usually retire at 65, 15-65 years old individuals are taken as participants in the sample. The statistics of income and living conditions give us the chance to follow these individuals for four years. Therefore, one is able to gain knowledge of the participants' employment status, living conditions, family structure, social exclusion, etc. Some of the participants may move, be unwilling to interview, or go on with a new family; therefore, there are four sub-samples, which are done annually on a rotational design.

The system of the survey goes like this: from one year to another one sub-sample leaves and a new one enters the sample frame, meaning that 75 percent of the sample stays in the frame while 25 percent of the new comers are welcomed. The sample is chosen to represent, as closely as possible, the target population, which is 13 years and older individuals. The impact of the social transfers on labor supply is analyzed in this note, so it is important to determine the individuals' employment status as well as their living standards. The impact of unemployment benefits on the labor supply and the impact of the total social transfers on labor supply are examined. Since the number of unemployment benefit payments receivers is greater than that of other social transfers receivers and since the transition from unemployment to employment is more related to unemployment benefits, the unemployment benefit analysis is separately conducted. Moreover, it is believed that it is more accurate to conduct the analysis using all social transfers because the number of social transfer recipients is smaller when taken separately; hence, their effect is better understood if they are considered in total.

Individuals who are unemployed[21] (response is taken from *"Self-defined current economic status"* question of the survey) and received social transfers (response is taken from *"Unemployment benefits received in income reference period (TL and EUR), Old-age benefits received in income reference period (TL and EUR), Survivors' benefits received in income reference period (TL and EUR), Sickness benefits received in income reference period (TL and EUR), Disability benefits (including ghazi and honor pensions) received in income reference period (TL and EUR), Education-related allowances received in income reference period (TL and EUR)"* questions of the survey) are used. Since the number of unemployment benefits receivers is considerably little and in order to calculate the unemployment spells appropriately, the observations of annual data (four years of annual data) is converted to monthly data (forty-eight months in total).

For the analyses concerning the EU, four EU countries are chosen: France, the Netherlands, Spain, and Poland. Our EU-SILC dataset does not cover Germany. France is the second largest populated country in the EU. Moreover, the degree of institutionalism is very high and visible in France. France has a "Continental European" type of labor market (Theodoropoulou, 2018). The French labor market is very rigid and was affected deeply by the Great Depression; however, it has managed to recover over time. Well-measured reforms have helped the labor market by increasing the employment rate, especially for females, decreasing the unemployment rate, providing more pensions for older individuals, etc. The labor market type of the Netherlands can be defined as "hybrid" (Theodoropoulou, 2018). The Netherlands may have a smaller population, but it has the second lowest unemployment rate in the EU after Germany. Moreover, the Dutch labor market has been liberalized in terms of its institutionalism.

On the other hand, Spain was one of the five EU member states badly affected by the 2010 European sovereign debt crisis. Unemployment rate reached more than 20 percent after the crisis. For the youth, the situation was much worse with more than 45 percent of the unemployment rate belonging to the youth. In addition to that, Turkey has been following in the steps of the Spanish labor market but twenty-five years behind.

[21] "Unemployed" answer is taken into account from the survey.

And finally, Poland has similar patterns to the labor market in Turkey in terms of both of them having agriculture-based labor market[22]. Registration with the social security system is obligatory to apply for unemployment benefits. In addition to that, to be eligible for the benefit, individuals must contribute to the system by paying premiums for a certain amount of days in total and prior to unemployment period. In Turkey, individuals must contribute to the system for at least 600 days in the last 3 years and for the last 120 days prior to the unemployment period. In France, individuals must contribute to the system for at least 122 days in the last 28 months[23]. In the Netherlands, individuals must contribute to the system for at least 26 weeks in the 36 weeks before they become unemployed[24]. In Spain, individuals must contribute to the system for at least 360 days in the 6 years before becoming unemployed,[25] and finally in Poland individuals must contribute to the system for at least 365 days in the last 18 months[26]. The beginning of a job search (meaning "being unemployed") and the end of a job search (meaning "being employed") gives us the unemployment spell of an individual. The length of the unemployment spell indicates the unemployment duration (Kupets, 2006).

6.2. Descriptive Statistics

Descriptive statistics are presented in table 17. In Turkey, Law no. 4447 states that individuals have the right to receive unemployment benefits as long as they contributed to the system for at least 600 days in the last three years and for the last 120 days prior to unemployment period. Duration of the benefit depends on the premium paid by the worker as paid premium of 600 days are eligible for six months, 900 days are eligible for eight months, and finally 1080 days are eligible for ten months. Paid premium days of the individuals are not extracted due to the availability data. Therefore, as mentioned above, instead of number of eligibility months, amount of unemployment

[22] Basic labor market statistics and the author's calculation of descriptive statistics are in line with the justification of EU member state selection. For a detailed information on basic labor market statistics and descriptive statistics please refer to section 4 and 6.
[23] The Duration of the payment is between 122 to 730 days.
[24] The Duration of the payment is the same number of months as the length of working history calculated in years and cannot be higher than months.
[25] The Duration of the payment is between 120 and 720 days depending on the premiums paid.
[26] The Duration of the payment depends on the unemployment rate of the area where individuals live. It is either 6 months or 12 months.

benefits[27] are taken into account. The sample is categorized as: all sample, unemployment benefit (UB) receivers, non-unemployment benefit receivers, total social transfer (ST) receivers, and non- total social transfer receivers. On average, the amount of unemployment benefits is 3000TL in 2006 – 2009 while it is 4884TL in 2011 – 2014. Amount of total social transfer payments go as: 2796TL and 5890TL. The data is converted to 48 months. The duration of unemployment on average is around 34 - 35 months in both periods. As expected, both UB and ST receivers' average unemployment duration (UB=37 and ST=36 months in 2006-2009 and 35 months in 2011-2014) are longer than the ones who do not receive benefit. In terms of the years of education, we see that average year that people attain is 8.5 years in 2006 period while it increases to 9.1 years in 2011 period. Also, total social transfer receivers and non-receivers' year of education differs almost two years, which could be explained with improvement in education related assistance. It is also observed that the average age of the sample belongs to middle age people. In both periods both UB and ST receivers are older than non-receivers. Regarding marital status variable, 15 % of the UB receivers and 47 % of non-receivers belong to married individuals in 2006. The second period we look into reveals an increase as: 74 % of the UB receivers and 43 % of non-receivers belong to married individuals. Occupation variables show that 40 % of the workers receive UB while it is 30 % for ST receivers in 2006 – 2009. We observe a slight increase in 2011 – 2014 by 42 % and 34 %.

As for the EU countries, as the structure of the labor market is different from Turkey the outcome different as well. In first period in France, the average unemployment duration is 32 months. It does not matter whether people receive UB – ST or not, duration of unemployment does not change at 32 months for all. In the second period, we see a 33-month of average unemployment duration while surprisingly the duration is shorter for the ones who do receive the benefit. In addition, the average of both UB and ST payments decrease from first to second period. Years of education shows that average schooling in France is 8.4 years in 2006 period while it increases to 11.5 years in 2011 period. Unlike in Turkey, total social transfer receivers and non-receivers' year of education does not differ. It is also observed that the average age of

[27] Data covers unemployment benefits plus severance payments.

the sample is 39 in both periods. In both periods age gap is quite visible for both UB and ST receivers and non-receivers. Regarding marital status variable, 45 % of the UB receivers and 24 % of non-receivers belong to married individuals in 2006. We see a decrease for UB receivers in the second period with 36 %. Occupation variables show that 15 % of the workers receive UB while it is 14 % for ST receivers in 2006 – 2009. However, in 2011 – 2014 we see a dramatic increase by 49 % for both UB and ST receivers. The average duration of unemployment in the Netherlands is 32 months between 2006 and 2009 while it increases to 34 months between 2011 and 2014. Both UB and ST receivers stay in unemployment 4 months shorter than non-receivers in the first period. However, in 2011 – 2014 benefits receivers' average unemployment duration is 2 months longer than non-receivers. Average schooling in the Netherlands is 12.7 years in 2006 period and 13.7 years in 2011 period. The Netherlands is the second EU member state of having lowest unemployment rate and high education is negatively correlated with low unemployment rate. Both UB and ST receivers' and non-receivers' year of education only differ one year. It is also observed that the average age of the sample is the highest in all five countries in both periods (48 – 49). In both periods average age of the UB and ST receivers belong to old age people. Regarding marital status variable, 41 % of the UB receivers and 35 % of ST receivers belong to married individuals in 2006. On the other hand, non-receivers comprise of 9 % and 8 % of married individuals. We see an increase for both UB and ST receivers in the second period with 47 % and 43 %, however the married non-receivers are still low with 11 %. The average unemployment duration in Poland increases from 31 to 34 when both periods are examined. Unemployment duration of benefit receivers is higher than non-receivers in 2006 however it is the same in 2011. Regarding the years of education, we see that average year that people attain is 8.4 years in 2006 period while it increases to 10.9 years in 2011 period. It is also observed that the average age of the sample belongs to middle age people but very close to old aged ones. In both periods both UB and ST receivers are older than non-receivers. Regarding marital status variable, 68 % of the UB receivers and 55 % of non-receivers belong to married individuals in 2006. The second period we look into reveal an increase as 72 % for the UB receivers but a decrease to 50 % of non-receivers belong to married individuals. Occupation variables show that 5 % of the workers receive UB and ST in 2006 – 2009. However, in 2011 –

2014 we see a dramatic increase by 64 % and 62 %. Of all countries examined above, Spain has the second highest average unemployment duration with 36 months after Turkey. As it is observed in Poland, the average duration of unemployment for benefit receivers is higher than non-receivers in 2006 however it is the same in 2011. Years of education shows that average schooling in Spain is 9.9 years in 2006 period while it is 10.9 years in 2011 period. It is also observed that the average age of the sample is 39.6 in the first period and 40 in the second. In both periods both UB and ST receivers are older than non-receivers. Marital status variable shows that 55 % of the UB receivers and 40 % of non-receivers are married individuals in 2006. We see that for UB receivers the second period is 56 % and 55 %. Like Poland and France workers in occupation variable show an increase as we move to second period by having 49 % of the sample in 2011 and 11 % in 2006 period.

Table 17 Descriptive Statistics

Countries/Variables	2006 - 2009					2011 - 2014				
	All Mean (Std.Dev)	UB Mean (Std.Dev)	Non-UB Mean (Std.Dev)	ST Mean (Std.Dev)	Non-ST Mean (Std.Dev)	All Mean (Std.Dev)	UB Mean (Std.Dev)	Non-UB Mean (Std.Dev)	ST Mean (Std.Dev)	Non-ST Mean (Std.Dev)
Turkey										
Unemployment duration	34.901 (10.13)	36.745 (9.39)	34.853 (10.14)	36.487 (9.46)	34.824 (10.15)	34.149 (10.10)	35.774 (9.58)	34.080 (10.12)	35.119 (9.66)	34.063 (10.14)
Transition from unemployment	0.002 (0.05)	0.000 (0.01)	0.003 (0.05)	0.001 (0.03)	0.003 (0.05)	0.002 (0.05)	0.00001 (0.003)	0.002 (0.05)	0.0002 (0.02)	0.002 (0.05)
Amount of UB payments (all)	3000.691 (5967.14)					4884.225 (8361.62)				
Low amount of UB payments	0.014 (0.12)	0.551 (0.50)		0.299 (0.46)		0.015 (0.12)	0.377 (0.48)		0.189 (0.39)	
Middle amount of UB payments	0.008 (0.09)	0.326 (0.47)		0.177 (0.38)		0.016 (0.13)	0.391 (0.49)		0.196 (0.40)	
High amount of UB payments	0.003 (0.06)	0.123 (0.33)		0.067 (0.25)		0.010 (0.10)	0.232 (0.42)		0.116 (0.32)	
Total social transfer payments	2796.316 (4934.40)						5890.811 (7140.47)			
Education	8.586 (3.74)	8.927 (4.00)	8.576 (3.73)	9.971 (4.41)	8.513 (3.69)	9.184 (3.86)	9.802 (4.21)	9.154 (3.84)	9.525 (4.19)	9.151 (3.83)
Age	30.149 (11.66)	34.216 (7.66)	30.046 (11.73)	32.548 (9.55)	30.035 (11.74)	30.254 (11.34)	36.373 (8.22)	29.992 (11.38)	38.898 (12.22)	29.483 (10.93)
Marital Status	0.467 (0.50)	0.156 (0.36)	0.475 (0.50)	0.352 (0.48)	0.472 (0.50)	0.448 (0.50)	0.743 (0.44)	0.436 (0.50)	0.637 (0.48)	0.432 (0.50)
Gender	0.151 (0.36)	0.159 (0.37)	0.151 (0.36)	0.319 (0.47)	0.143 (0.35)	0.164 (0.37)	0.198 (0.40)	0.162 (0.37)	0.262 (0.44)	0.155 (0.36)

Table 17 (cont.)

Countries/Variables	2006 - 2009					2011 - 2014				
	All	UB	Non-UB	ST	Non-ST	All	UB	Non-UB	ST	Non-ST
	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)
Wage	1092.544	1439.906	1083.718	999.871	1096.977	1636.27	2560.362	1596.796	2044.078	1599.93
	(2308.91)	(2627.73)	(2299.55)	(2172.49)	(2315.14)	(3683.97)	(5188.08)	(3600.50)	(5185.86)	(3516.88)
Number of earners in the household	2.327	1.735	2.342	1.806	2.351	1.462	1.396	1.465	1.170	1.488
	(1.27)	(1.00)	(1.27)	(1.12)	(1.27)	(1.17)	(0.92)	(1.18)	(0.92)	(1.19)
Unemployment rate	0.109					0.111				
	(0.05)					(0.04)				
Occupations										
Managers	0.017	0.016	0.017	0.010	0.017	0.006	0.022	0.006	0.016	0.005
	(0.13)	(0.12)	(0.13)	(0.10)	(0.13)	(0.08)	(0.15)	(0.07)	(0.13)	(0.07)
Professionals	0.014	0.005	0.014	0.009	0.014	0.022	0.011	0.023	0.020	0.022
	(0.12)	(0.07)	(0.12)	(0.10)	(0.12)	(0.15)	(0.10)	(0.15)	(0.14)	(0.15)
Technicians	0.020	0.064	0.020	0.040	0.020	0.016	0.049	0.014	0.036	0.014
	(0.14)	(0.24)	(0.14)	(0.20)	(0.14)	(0.12)	(0.22)	(0.12)	(0.19)	(0.12)
Workers	0.287	0.402	0.284	0.303	0.286	0.295	0.426	0.290	0.342	0.291
	(0.45)	(0.49)	(0.45)	(0.460)	(0.45)	(0.46)	(0.49)	(0.45)	(0.47)	(0.45)
Elementary occupations	0.149	0.123	0.149	0.097	0.151	0.145	0.125	0.146	0.118	0.148
	(0.36)	(0.33)	(0.36)	(0.30)	(0.36)	(0.35)	(0.33)	(0.35)	(0.32)	(0.36)
Observations	1127992	27950	1100042	51503	1076489	2006217	82187	1924030	164148	1842069
France										
Unemployment duration	31.944	31.963	31.911	32.032	31.770	32.876	32.445	33.646	32.458	33.710
	(11.32)	(11.24)	(11.45)	(11.24)	(11.47)	(11.12)	(11.12)	(11.10)	(11.13)	(11.07)
Transition from unemployment	0.004	0.002	0.006	0.002	0.007	0.003	0.002	0.006	0.002	0.006
	(0.06)	(0.05)	(0.079)	(0.05)	(0.08)	(0.06)	(0.04)	(0.08)	(0.04)	(0.08)

Table 17 (cont.)

Countries/Variables	2006 - 2009					2011 - 2014				
	All	UB	Non-UB	ST	Non-ST	All	UB	Non-UB	ST	Non-ST
	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)
Amount of UB payments (all)	7245.112 (7202.49)					7047.904 (5780.28)				
Low amount of UB payments	0.209 (0.41)	0.331 (0.47)		0.315 (0.46)		0.182 (0.39)	0.284 (0.45)		0.273 (0.45)	
Middle amount of UB payments	0.157 (0.36)	0.248 (0.43)		0.236 (0.42)		0.238 (0.43)	0.371 (0.48)		0.357 (0.48)	
High amount of UB payments	0.246 (0.43)	0.389 (0.49)		0.371 (0.48)		0.204 (0.40)	0.318 (0.47)		0.306 (0.46)	
Total social transfer payments	7966.726 (7852.96)					7606.836 (7165.14)				
Education	9.492 (2.82)	9.418 (2.99)	9.619 (2.51)	9.420 (2.97)	9.634 (2.50)	11.598 (2.80)	11.731 (2.76)	11.356 (2.87)	11.704 (2.78)	11.383 (2.84)
Age	39.592 (13.67)	43.001 (12.84)	33.742 (13.06)	42.861 (12.95)	33.146 (12.72)	39.178 (13.32)	41.822 (12.66)	34.441 (13.16)	41.711 (12.77)	34.116 (12.94)
Marital Status	0.374 (0.48)	0.450 (0.50)	0.244 (0.43)	0.442 (0.50)	0.240 (0.43)	0.320 (0.47)	0.360 (0.48)	0.247 (0.43)	0.351 (0.48)	0.257 (0.44)
Gender	0.493 (0.50)	0.508 (0.50)	0.466 (0.50)	0.514 (0.50)	0.452 (0.50)	0.491 (0.50)	0.479 (0.50)	0.514 (0.50)	0.476 (0.50)	0.521 (0.50)
Wage	7094.589 (8239.25)	7576.126 (7602.09)	5842.984 (9589.13)	7655.838 (7750.98)	5501.458 (9306.75)	7801.805 (9451.96)	7099.817 (6771.54)	9741.984 (14296.9)	7138.503 (6842.01)	9773.895 (14511.37)
Number of earners in the household	1.432 (0.65)	1.353 (0.56)	1.572 (0.77)	1.367 (0.58)	1.565 (0.75)	1.418 (0.63)	1.420 (0.62)	1.415 (0.65)	1.418 (0.62)	1.420 (0.65)

Table 17 (cont.)

Countries/Variables	2006 - 2009					2011 - 2014				
	All	UB	Non-UB	ST	Non-ST	All	UB	Non-UB	ST	Non-ST
	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)
Unemployment rate	0.108					0.167				
	(0.04)					(0.07)				
Occupations										
Managers	0.013	0.018	0.004	0.018	0.004	0.032	0.034	0.029	0.033	0.029
	(0.11)	(0.13)	(0.06)	(0.13)	(0.06)	(0.18)	(0.18)	(0.17)	(0.18)	(0.17)
Professionals	0.014	0.015	0.013	0.015	0.014	0.051	0.055	0.045	0.055	0.045
	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.22)	(0.23)	(0.21)	(0.23)	(0.21)
Technicians	0.035	0.040	0.028	0.039	0.028	0.110	0.124	0.084	0.127	0.075
	(0.18)	(0.19)	(0.16)	(0.19)	(0.16)	(0.31)	(0.33)	(0.28)	(0.33)	(0.26)
Workers	0.136	0.150	0.112	0.148	0.112	0.436	0.499	0.324	0.490	0.328
	(0.34)	(0.36)	(0.32)	(0.35)	(0.32)	(0.50)	(0.50)	(0.47)	(0.50)	(0.47)
Elementary	0.047	0.051	0.040	0.049	0.043	0.191	0.202	0.171	0.200	0.172
occupations	(0.21)	(0.22)	(0.20)	(0.22)	(0.20)	(0.39)	(0.40)	(0.38)	(0.40)	(0.38)
Observations	932256	589017	343239	618543	313713	1195035	766854	428181	796471	398564
The Netherlands										
Unemployment	31.624	29.308	33.205	30.348	33.035	33.624	34.365	32.825	34.058	32.954
duration	(10.24)	(9.97)	(10.12)	(10.49)	(9.77)	(10.31)	(10.20)	(10.37)	(10.27)	(10.34)
Transition from	0.001	0.00005	0.0001	0.0003	0.0009	0.001	0.0002	0.002	0.0003	0.002
unemployment	(0.02)	(0.01)	(0.03)	(0.02)	(0.03)	(0.03)	(0.01)	(0.05)	(0.02)	(0.05)
Amount of UB	14506.53					16917.29				
payments (all)	(10421.56)					(11144.97)				
Low amount of UB	0.087	0.213		0.165		0.126	0.242		0.207	
payments	(0.28)	(0.41)		(0.37)		(0.33)	(0.43)		(0.41)	

Table 17 (cont.)

Countries/Variables	2006 - 2009					2011 - 2014				
	All	UB	Non-UB	ST	Non-ST	All	UB	Non-UB	ST	Non-ST
	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)
Middle amount of UB payments	0.075 (0.26)	0.185 (0.39)		0.143 (0.35)		0.091 (0.29)	0.175 (0.38)		0.150 (0.36)	
High amount of UB payments	0.244 (0.43)	0.601 (0.49)		0.465 (0.50)		0.299 (0.46)	0.577 (0.49)		0.493 (0.50)	
Total social transfer payments	13897.5 (11500.95)						17583.64 (13452.51)			
Education	12.734 (2.91)	13.524 (2.45)	12.194 (3.07)	13.262 (2.67)	12.151 (3.05)	13.660 (2.62)	14.096 (2.42)	13.177 (2.75)	13.943 (2.55)	13.214 (2.67)
Age	48.978 (11.94)	52.087 (10.73)	46.855 (12.25)	51.762 (11.15)	45.901 (12.03)	49.351 (11.72)	50.844 (10.19)	47.742 (12.98)	51.314 (11.04)	46.326 (12.09)
Marital Status	0.226 (0.42)	0.412 (0.49)	0.098 (0.30)	0.350 (0.48)	0.088 (0.28)	0.305 (0.46)	0.479 (0.50)	0.117 (0.32)	0.431 (0.50)	0.111 (0.31)
Gender	0.611 (0.49)	0.531 (0.50)	0.666 (0.47)	0.548 (0.50)	0.682 (0.47)	0.531 (0.50)	0.440 (0.50)	0.628 (0.48)	0.476 (0.50)	0.614 (0.49)
Wage	8665.762 (11459.64)	10328.96 (12562.64)	5390.036 (7934.96)	9839.192 (12263.09)	5311.864 (7852.87)	12650.17 (18091.38)	14377.25 (19006.43)	6902.808 (13091.17)	14251.29 (18990.43)	5664.228 (11038.74)
Number of earners in the household	1.288 (0.49)	1.343 (0.52)	1.222 (0.45)	1.346 (0.52)	1.194 (0.44)	1.365 (0.56)	1.419 (0.56)	1.204 (0.52)	1.416 (0.56)	1.175 (0.51)
Unemployment rate	0.016 (0.001)					0.043 (0.01)				
Occupations										
Managers	0.014 (0.12)	0.031 (0.17)	0.002 (0.04)	0.025 (0.16)	0.001 (0.03)	0.042 (0.20)	0.051 (0.22)	0.034 (0.18)	0.045 (0.21)	0.039 (0.19)

Table 17 (cont.)

Countries/Variables	2006 - 2009					2011 - 2014				
	All	UB	Non-UB	ST	Non-ST	All	UB	Non-UB	ST	Non-ST
	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)
Professionals	0.030	0.058	0.011	0.050	0.009	0.121	0.168	0.071	0.159	0.063
	(0.17)	(0.23)	(0.11)	(0.22)	(0.09)	(0.33)	(0.37)	(0.26)	(0.37)	(0.24)
Technicians	0.033	0.061	0.014	0.047	0.018	0.106	0.132	0.077	0.127	0.073
	(0.18)	(0.24)	(0.12)	(0.21)	(0.13)	(0.31)	(0.34)	(0.27)	(0.33)	(0.26)
Workers	0.117	0.187	0.069	0.154	0.077	0.436	0.454	0.417	0.455	0.407
	(0.32)	(0.39)	(0.25)	(0.36)	(0.27)	(0.50)	(0.50)	(0.49)	(0.50)	(0.49)
Elementary	0.029	0.039	0.021	0.031	0.026	0.078	0.053	0.106	0.059	0.109
occupations	(0.17)	(0.19)	(0.14)	(0.17)	(0.16)	(0.27)	(0.22)	(0.31)	(0.24)	(0.31)
Observations	211797	85920	125877	111166	100631	402520	208737	193783	244075	158445
Spain										
Unemployment	34.917	36.106	34.084	35.887	34.108	34.149	34.025	34.270	33.977	34.336
duration	(10.15)	(9.79)	(10.32)	(9.83)	(10.35)	(9.92)	(10.03)	(9.80)	(10.04)	(9.783)
Transition from	0.004	0.002	0.005	0.002	0.005	0.007	0.004	0.010	0.004	0.010
unemployment	(0.06)	(0.04)	(0.07)	(0.04)	(0.07)	(0.08)	(0.06)	(0.10)	(0.07)	(0.01)
Amount of UB	4938.535					5527.239				
payments (all)	(4172.53)					(8216.32)				
Low amount of UB	0.091	0.220		0.199		0.192	0.389		0.369	
payments	(0.29)	(0.41)		(0.40)		(0.39)	(0.49)		(0.48)	
Middle amount of UB	0.099	0.240		0.218		0.190	0.384		0.364	
payments	(0.30)	(0.43)		(0.41)		(0.39)	(0.49)		(0.48)	
High amount of UB	0.209	0.507		0.459		0.079	0.160		0.152	
payments	(0.41)	(0.50)		(0.50)		(0.27)	(0.37)		(0.36)	

Table 17 (cont.)

Countries/Variables	2006 - 2009	2011 - 2014

	All	UB	Non-UB	ST	Non-ST	All	UB	Non-UB	ST	Non-ST
	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)
Total social transfer payments	5047.822 (4336.41)					5695.729 (8195.03)				
Education	9.919 (3.24)	9.965 (3.28)	9.887 (3.22)	9.897 (3.27)	9.938 (3.22)	10.934 (3.34)	10.950 (3.32)	10.919 (3.37)	10.912 (3.32)	10.959 (3.37)
Age	39.666 (13.37)	43.485 (12.52)	36.988 (13.30)	43.687 (12.86)	36.307 (12.85)	40.437 (12.46)	44.617 (11.22)	36.349 (12.25)	44.526 (11.41)	35.983 (12.02)
Marital Status	0.470 (0.50)	0.557 (0.50)	0.409 (0.49)	0.532 (0.50)	0.418 (0.49)	0.465 (0.50)	0.564 (0.50)	0.368 (0.48)	0.553 (0.50)	0.369 (0.48)
Gender	0.530 (0.50)	0.485 (0.50)	0.562 (0.50)	0.492 (0.50)	0.563 (0.50)	0.423 (0.49)	0.407 (0.49)	0.439 (0.50)	0.412 (0.49)	0.436 (0.50)
Wage	6284.272 (6187.43)	7358.932 (6856.26)	4971.417 (4948.96)	7244.606 (6789.80)	4989.131 (4982.05)	4268.3 (4988.21)	4814.816 (5181.89)	3175.831 (4376.58)	4780.464 (5160.76)	3167.65 (4398.16)
Number of earners in the household	1.514 (0.74)	1.467 (0.68)	1.551 (0.79)	1.464 (0.68)	1.558 (0.79)	1.367 (0.61)	1.352 (0.59)	1.382 (0.63)	1.348 (0.59)	1.387 (0.64)
Unemployment rate	0.141 (0.04)					0.244 (0.08)				
Occupations										
Managers	0.003 (0.06)	0.005 (0.07)	0.002 (0.05)	0.005 (0.07)	0.002 (0.05)	0.011 (0.10)	0.013 (0.11)	0.009 (0.09)	0.013 (0.11)	0.009 (0.09)
Professionals	0.016 (0.12)	0.019 (0.14)	0.014 (0.12)	0.017 (0.13)	0.015 (0.12)	0.041 (0.20)	0.046 (0.21)	0.035 (0.18)	0.045 (0.21)	0.036 (0.19)
Technicians	0.017 (0.13)	0.016 (0.12)	0.019 (0.14)	0.017 (0.13)	0.018 (0.13)	0.059 (0.23)	0.071 (0.26)	0.046 (0.21)	0.070 (0.26)	0.046 (0.21)

Table 17 (cont.)

Countries/Variables	2006 - 2009					2011 - 2014				
	All	UB	Non-UB	ST	Non-ST	All	UB	Non-UB	ST	Non-ST

	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)
Workers	0.113	0.135	0.098	0.128	0.101	0.499	0.571	0.429	0.560	0.432
	(0.32)	(0.34)	(0.30)	(0.33)	(0.30)	(0.50)	(0.49)	(0.49)	(0.50)	(0.50)
Elementary	0.061	0.067	0.056	0.069	0.054	0.194	0.221	0.169	0.2212	0.164
occupations	(0.24)	(0.25)	(0.23)	(0.25)	(0.23)	(0.40)	(0.41)	(0.37)	(0.42)	(0.37)
Observations	1481296	610534	870762	674207	807089	2584165	1277663	1306502	1347107	1237058
Poland										
Unemployment	30.548	33.585	29.920	33.498	29.871	33.861	33.958	33.844	33.955	33.843
duration	(11.29)	(10.21)	(11.40)	(10.38)	(11.38)	(10.12)	(10.19)	(10.11)	(10.23)	(10.10)
Transition from	0.004	0.001	0.005	0.001	0.005	0.004	0.001	0.004	0.002	0.004
unemployment	(0.07)	(0.03)	(0.07)	(0.03)	(0.07)	(0.06)	(0.04)	(0.07)	(0.04)	(0.07)
Amount of UB	1295.279					1394.817				
payments (all)	(2493.70)					(1521.50)				
Low amount of UB	0.091	0.530		0.487		0.038	0.262		0.233	
payments	(0.29)	(0.50)		(0.50)		(0.19)	(0.44)		(0.42)	
Middle amount of UB	0.064	0.373		0.343		0.061	0.423		0.376	
payments	(0.24)	(0.48)		(0.48)		(0.24)	(0.49)		(0.48)	
High amount of UB	0.015	0.086		0.079		0.043	0.298		0.265	
payments	(0.12)	(0.28)		(0.27)		(0.20)	(0.46)		(0.44)	
Total social transfer	1330.342					1425.16				
payments	(2439.03)					(1492.72)				
Education	8.440	8.688	8.388	8.763	8.366	10.942	11.375	10.869	11.397	10.853
	(2.49)	(2.49)	(2.48)	(2.61)	(2.45)	(2.60)	(2.50)	(2.61)	(2.48)	(2.61)

Table 17 (cont.)

Countries/Variables	2006 - 2009					2011 - 2014				
	All	UB	Non-UB	ST	Non-ST	All	UB	Non-UB	ST	Non-ST

	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)	Mean (Std.Dev)
Age	38.172	40.948	37.598	40.463	37.646	39.495	46.672	38.275	45.837	38.255
	(11.95)	(12.07)	(11.84)	(12.39)	(11.78)	(13.25)	(12.59)	(12.97)	(13.15)	(12.91)
Marital Status	0.577	0.686	0.554	0.655	0.559	0.538	0.720	0.507	0.686	0.509
	(0.49)	(0.46)	(0.50)	(0.48)	(0.50)	(0.50)	(0.45)	(0.50)	(0.46)	(0.50)
Gender	0.554	0.536	0.558	0.539	0.557	0.512	0.555	0.505	0.561	0.503
	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)
Wage	2175.853	2392.231	2089.721	2317.127	2113.738	1950.137	2058.475	1909.108	2023.689	1919.417
	(2265.43)	(2387.09)	(2209.26)	(2341.53)	(2228.32)	(1980.58)	(1860.98)	(2022.52)	(1832.22)	(2038.57)
Number of earners in	1.603	1.625	1.596	1.61	1.601	1.127	1.137	1.125	1.124	1.127
the household	(0.82)	(0.76)	(0.84)	(0.75)	(0.85)	(1.02)	(1.02)	(1.02)	(1.017)	(1.02)
Unemployment rate	0.132					0.136				
	(0.04)					(0.05)				
Occupations										
Managers	0.003	0.004	0.003	0.004	0.003	0.013	0.028	0.010	0.027	0.010
	(0.06)	(0.07)	(0.05)	(0.06)	(0.05)	(0.11)	(0.16)	(0.11)	(0.16)	(0.10)
Professionals	0.012	0.012	0.012	0.014	0.011	0.032	0.055	0.028	0.054	0.028
	(0.11)	(0.11)	(0.11)	(0.12)	(0.11)	(0.18)	(0.23)	(0.17)	(0.23)	(0.17)
Technicians	0.022	0.039	0.018	0.042	0.017	0.058	0.094	0.052	0.091	0.051
	(0.15)	(0.19)	(0.13)	(0.20)	(0.13)	(0.23)	(0.29)	(0.22)	(0.29)	(0.22)
Workers	0.050	0.051	0.050	0.05	0.050	0.552	0.645	0.537	0.620	0.539
	(0.22)	(0.22)	(0.22)	(0.22)	(0.22)	(0.50)	(0.48)	(0.50)	(0.49)	(0.50)
Elementary	0.169	0.278	0.147	0.272	0.145	0.160	0.163	0.156	0.172	0.158
occupations	(0.37)	(0.45)	(0.35)	(0.45)	(0.35)	(0.37)	(0.37)	(0.37)	(0.38)	(0.36)
Observations	1074611	184112	890499	200459	874152	1397177	203099	1194078	228589	1168588

Source: SILC by TurkStat, EU-SILC

Note: Amounts are in *TL* for Turkey and *EUR* for the EU countries.

Other than duration of unemployment, the probability of leaving unemployment is lower for those who receive benefits, even though it is less than one-percentage point in all countries for both periods. Smoothed hazard estimates that show the average probability of exiting unemployment is presented in figure 16 for each country. The average probability of leaving unemployment for all samples is 0.002 in both periods in Turkey. Results concerning the EU countries show that it is 0.004 in the first period and 0.003 in the second in France. In the Netherlands the average is 0.001 in both periods. And Spain and Poland show that it is was 0.004 in 2006 – 2009 period. It is 0.007 for Spain and 0.004 for Poland in 2011 – 2014.

Figure 16 Smoothed Hazard Estimates

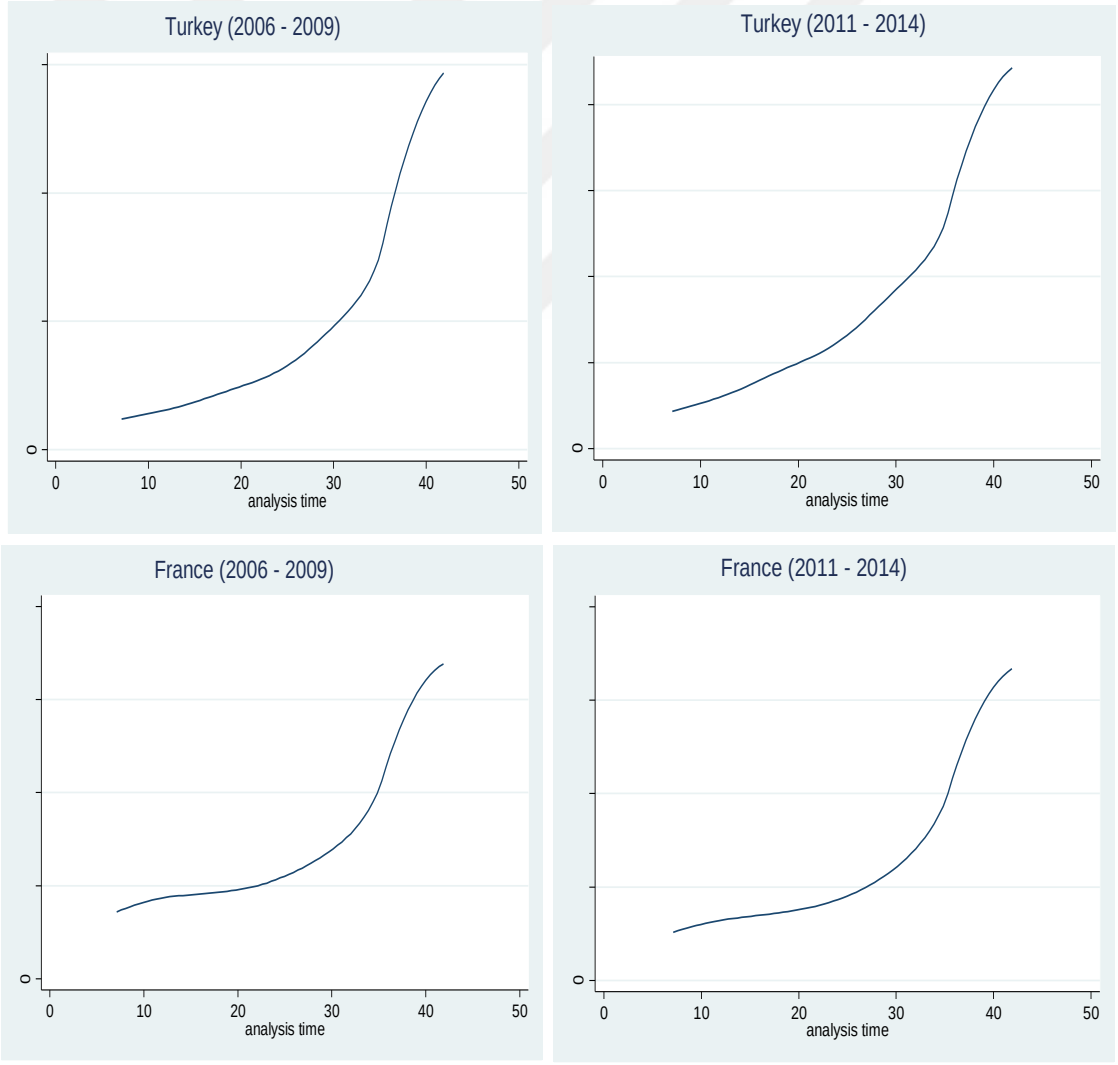
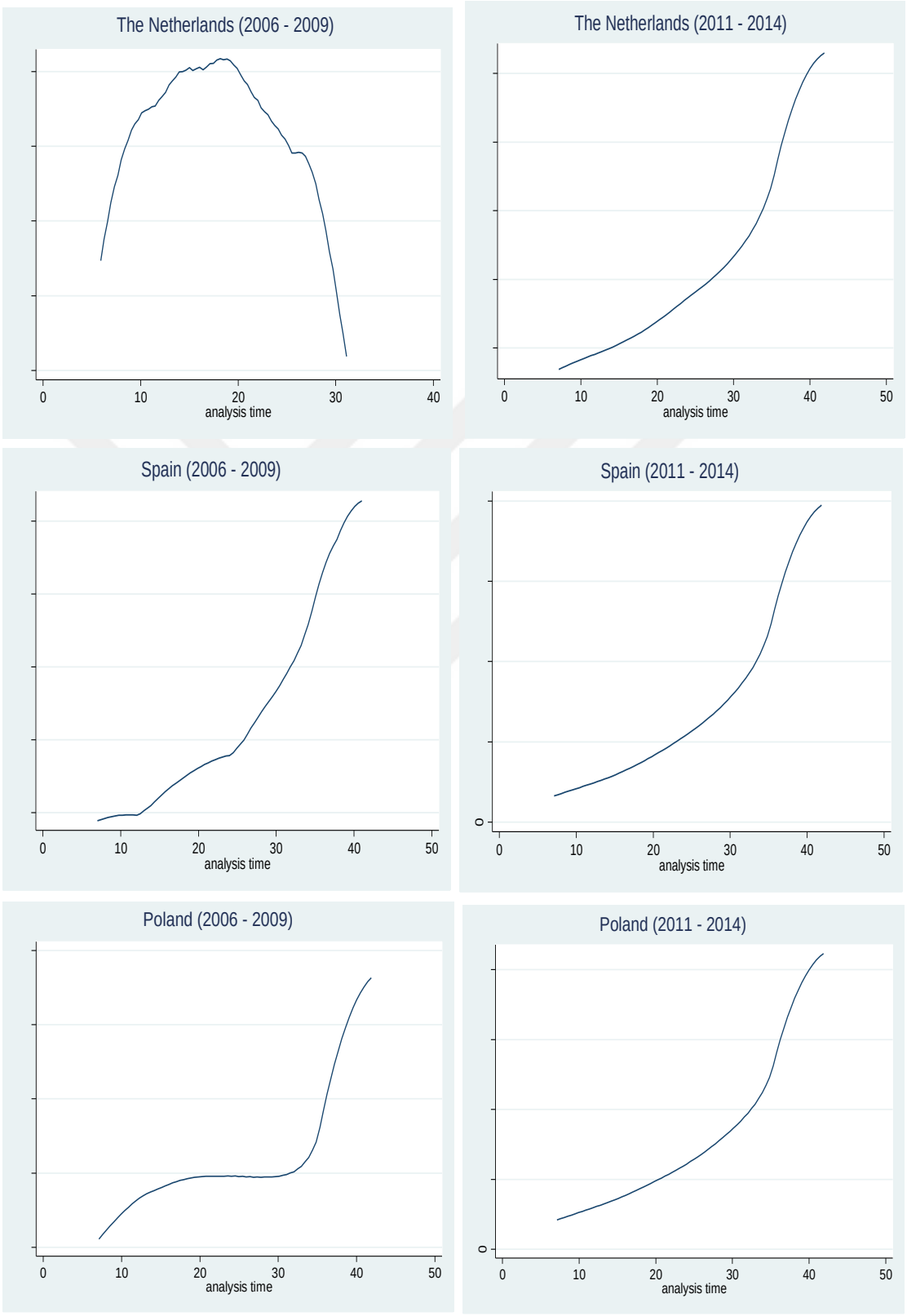


Figure 16 (cont.)



Source: TurkStat, SILC; Eurostat, EU-SILC

7. EMPIRICAL FINDINGS

In order to investigate the link between social transfers and the exit behavior of an individual, the hazard model has been applied and estimated utilizing the survival analysis. After deriving and estimating the parameters, it was possible to see and show how with just a few parameters one can determine the impact of the social transfers on the labor supply with the given variables. The results for exiting from unemployment to employment are reported in table 18[28]. The figures reported are the estimated coefficients indicating the impact of each independent variable on exiting from unemployment. Five regressions were run in the analysis for different models. Our base model (regressor (1)) included only gender, education, and predicted wage variables. The second model (regressor (2)) comprised of all control variables except social transfers. The third and fourth models (regressors (3) and (4)) were done by including unemployment benefits and total social transfers, and finally the fifth model (regressor (5)) included all explanatory variables plus unemployment benefits and a different level of unemployment benefits.

In short, the analyses concerning all countries are presented in table 18. The coefficient estimate of the unemployment benefit recipient shows the significance for both 2006 – 2009 and 2011 – 2014 periods. The sign of the coefficient is positive and shows a longer survival duration, meaning that more unemployment benefits led to longer durations of exiting unemployment. The situation is the same for the social transfers as a total except for the Netherlands in 2006 – 2009 period. The education variables show that when compared with vocational education, both lower and higher education level graduates' unemployment duration is longer in all five countries and both periods. As expected, in general, young individuals are more likely to exit unemployment than middle-aged individuals. On the other hand, it is the opposite for older individuals. And finally, the increasing unemployment rate increases the unemployment duration over time.

[28] Tables showing full version of the AFT hazard model estimation results of each country are given in the Appendix C.

Table 18 AFT Hazard Model Summary Estimations

	2006 – 2009			2011 - 2014		
	(3)	(4)	(5)	(3)	(4)	(5)
Turkey	**LL**	**LL**	**W**	**LL**	**LL**	**W**
ST	0.502***			0.685***		
	(0.076)			(0.070)		
UB		1.346***	2.086***		2.167***	0.860
		(0.256)	(0.275)		(0.453)	(0.707)
LowUB			-0.000452***			0.00104
			(7.09e-05)			(0.00120)
MidUB			-0.000380***			0.00323
			(4.11e-05)			(0.191)
HighUB			-1.34e-05**			0.00106
			(5.76e-06)			(0.0482)
Lower_edu	0.433***	0.434***	0.417***	0.238***	0.245***	0.244***
	(0.022)	(0.022)	(0.0222)	(0.019)	(0.019)	(0.0189)
Higher_edu	0.622***	0.643***	0.642***	0.841***	0.844***	0.844***
	(0.049)	(0.049)	(0.0491)	(0.047)	(0.047)	(0.0473)
Young	-2.715***	-2.728***	-2.742***	-1.740***	-1.737***	-1.695***
	(0.153)	(0.153)	(0.151)	(0.100)	(0.100)	(0.0982)
Old	2.343***	2.348***	2.343***	1.216***	1.293***	1.284***
	(0.204)	(0.204)	(0.204)	(0.073)	(0.073)	(0.0726)
Un_rate	31.504***	31.616***	31.73***	28.458***	28.424***	27.89***
	(1.658)	(1.659)	(1.633)	(1.172)	(1.171)	(1.153)
France	**LL**	**LL**	**LL**	**LL**	**LL**	**LL**
ST	0.346***			0.350***		
	(0.0245)			(0.021)		
UB		0.309***	-0.154***		0.340***	-0.344***
		(0.0245)	(0.0296)		(0.021)	(0.0252)
LowUB			0.000559***			0.000567***
			(3.57e-05)			(3.08e-05)
MidUB			0.000175***			0.000253***
			(1.20e-05)			(1.05e-05)
HighUB			4.88e-05***			9.95e-05***
			(4.04e-06)			(4.60e-06)
Lower_edu	0.591***	0.599***	0.521***	-0.316***	-0.327***	-0.336***
	(0.0333)	(0.0334)	(0.0329)	(0.022)	(0.022)	(0.0221)
Higher_edu	-2.280***	-2.299***	-1.914***	0.643***	0.645***	0.502***
	(0.0945)	(0.0947)	(0.0942)	(0.041)	(0.041)	(0.0400)
Young	0.679***	0.620***	0.710***	-9.797***	-9.558***	-6.456***
	(0.0876)	(0.0875)	(0.0871)	(0.386)	(0.386)	(0.375)
Old	0.561***	0.557***	0.606***	1.009***	0.998***	0.698***
	(0.0483)	(0.0484)	(0.0481)	(0.037)	(0.037)	(0.0363)
Un_rate	-5.986***	-5.371***	-5.914***	73.433***	71.770***	49.84***
	(0.993)	(0.994)	(0.987)	(2.702)	(2.699)	(2.615)

Table 18 (cont.)

	2006 – 2009			2011 - 2014		
	(3)	**(4)**	**(5)**	**(3)**	**(4)**	**(5)**
The Netherlands	**LL**	**W**	**W**	**LL**	**LL**	**LL**
ST	-0.395**			0.405***		
	(0.167)			(0.0710)		
UB		0.766**	-3.502***		0.471***	-0.947***
		(0.322)	(0.450)		(0.0912)	(0.118)
LowUB			0.00644***			0.000715***
			(0.00107)			(0.000147)
MidUB			0.00212			0.00112
			(0.240)			(0.0594)
HighUB			0.000970			0.000101***
			(0.0376)			(1.24e-05)
Lower_edu	4.404***	4.306***	3.995***	0.348***	0.335***	0.315***
	(0.368)	(0.365)	(0.335)	(0.0630)	(0.0643)	(0.0637)
Higher_edu	1.815***	1.703***	1.138***	1.312***	1.275***	1.171***
	(0.378)	(0.376)	(0.369)	(0.254)	(0.256)	(0.252)
Young	17.96	18.15	16.69	9.605	9.561	9.406
	(858.0)	(1,493)	(2,068)	(615.2)	(514.6)	(451.0)
Old	5.973***	5.447***	4.584***	0.818***	0.878***	0.809***
	(0.758)	(0.717)	(0.641)	(0.107)	(0.108)	(0.105)
Un_rate	-285.9***	-252.7***	-206.3***	-16.97***	-19.13***	-19.92***
	(41.09)	(37.60)	(35.25)	(4.671)	(4.668)	(4.640)
Spain	**LL**	**LL**	**LL**	**W**	**W**	**W**
ST	0.195***			0.0937***		
	(0.015)			(0.00750)		
UB		0.210***	0.191***		0.109***	-0.218***
		(0.015)	(0.0258)		(0.00779)	(0.00849)
LowUB			4.11e-05**			0.000250***
			(1.69e-05)			(7.40e-06)
MidUB			8.97e-06			0.000139***
			(9.56e-06)			(3.47e-06)
HighUB			-9.17e-06***			0.000103***
			(3.09e-06)			(4.04e-06)
Lower_edu	0.587***	0.582***	0.576***	0.124***	0.124***	0.0995***
	(0.061)	(0.061)	(0.0611)	(0.00805)	(0.00804)	(0.00790)
Higher_edu	-0.146**	-0.146**	-0.148**	0.400***	0.402***	0.366***
	(0.074)	(0.073)	(0.0733)	(0.0186)	(0.0186)	(0.0183)
Young	-3.238***	-3.249***	-3.256***	-0.993***	-1.003***	-0.733***
	(0.075)	(0.075)	(0.0754)	(0.0606)	(0.0605)	(0.0590)
Old	-0.245***	-0.241***	-0.234***	0.482***	0.481***	0.386***
	(0.022)	(0.022)	(0.0219)	(0.0127)	(0.0126)	(0.0122)
Un_rate	34.426***	34.528***	34.59***	6.383***	6.441***	5.213***
	(0.795)	(0.794)	(0.796)	(0.269)	(0.269)	(0.262)

Table 18 (cont.)

	2006 – 2009			2011 - 2014		
	(3)	**(4)**	**(5)**	**(3)**	**(4)**	**(5)**
Poland	**LL**	**LL**	**LL**	**LL**	**LL**	**LL**
ST	0.808***			0.146***		
	(0.056)			(0.028)		
UB		0.783***	-0.507***		0.181***	-0.766***
		(0.057)	(0.084)		(0.030)	(0.0445)
LowUB			0.004***			0.00552***
			(0.0003)			(0.000579)
MidUB			0.001***			0.00149***
			(0.0001)			(9.71e-05)
HighUB			0.023***			0.000401***
			(0.000)			(2.90e-05)
Lower_edu	0.761***	0.766***	0.760***	0.440***	0.438***	0.425***
	(0.040)	(0.040)	(0.040)	(0.025)	(0.025)	(0.0245)
Higher_edu	0.523***	0.536***	0.549***	0.126**	0.122**	0.133**
	(0.136)	(0.136)	(0.136)	(0.052)	(0.052)	(0.0517)
Young	-0.461***	-0.459***	-3.358***	1.604***	1.604***	1.626***
	(0.026)	(0.026)	(0.053)	(0.112)	(0.112)	(0.111)
Old	0.881***	0.884***	0.977***	0.521***	0.520***	0.515***
	(0.045)	(0.045)	(0.045)	(0.026)	(0.026)	(0.0261)
Un_rate	37.960***	37.885***	38.067***	-10.784***	-10.765***	-10.92***
	(0.454)	(0.453)	(0.454)	(1.039)	(1.039)	(1.036)

a) Standard errors are shown in parentheses.

b) * Significant at 10%; ** significant at 5%; *** significant at 1%.

c) ST: Total Social Transfers, UB: Unemployment Benefits, E: exponential, W: Weibull, LN: log-normal, LL: log -logistic.

Turkey

In Turkey[29], the coefficient estimate of the unemployment benefit receivers shows significance for both 2006 – 2009 and 2011 – 2014 periods. The positive sign of the coefficient refers to longer survival duration. It means that the more individuals received unemployment benefit payments, the longer the duration of their unemployment was. There are several possible reasons for that. First, unemployment benefit payments were first paid in 2002 in Turkey, and since then the unemployment benefit amount is similar to the minimum wage, suggesting that people may not be willing to find a job with a minimum wage and opt for unemployment benefits instead. Also, the unemployment benefit payments depend on the years contributed to the system and the salary, so it may give people the chance to stay unemployed and look for

[29] Tables showing the full version of the AFT hazard model estimation results of Turkey are given in Appendix C1.

a better paid job until they are re-employed or the maximum days eligible have expired. Moreover, in line with the labor mismatch in emerging countries, the problem of chronic overqualified labor is not negligible. Unemployed and overqualified individuals are more likely to wait to re-enter the labor force while getting unemployment benefit. A more detailed look into the 2006 – 2009 period reveals that unemployment benefits increase the duration of transition to employment.

Regarding the different levels of the UB, we see that all three levels are statistically significant with a negative sign. Low, middle, and high amount of unemployment benefits prolong the probability of leaving the unemployment state. However, the 2011 – 2014 period shows no significance when different levels of UB are included in the model. Meanwhile, the existing literature has found mostly similar results as well (see Moffitt, 1985; Katz and Meyer, 1990; Meyer, 1990; Hagedorn *et al.*, 2013; Kupets, 2006). The results are the same for the total social transfers for both periods. Receiving social transfers may exceed the unemployment duration of individuals. The total social transfers include a variety of transfers (education, disability, old age, survivors, etc.) and these kinds of income may affect the individual's exit behavior since there is income coming to the household.

The gender variable is statistically significant with a positive sign in the 2006 – 2009 and 2011 – 2014 periods, indicating that females are less likely to exit unemployment compared to males. However, Yıldırım and Dal (2016) find that males are more likely to leave unemployment in Turkey; the same conclusion is arrived at by Grogan and van den Berg (2001) for Russia. On the other hand, Tansel and Taşçı (2005) show that females are less likely to find a job compared to males, meaning that exiting from unemployment is longer for females, whereas the probability of leaving unemployment is lower for males. Regarding the age group variable, we find a negative link in both 2011 – 2014 and 2006 – 2009 periods. Employers' willingness to hire usually depends on criteria like familiarity with technology, young people's skills, older employees' health problems, lower motivation, etc. The job search theory puts forward that old-aged people are less likely to find a job compared to middle-aged people. The survival duration of individuals between 15 to29 years old is lower, suggesting that

young individuals' transition to employment is faster than 30-49 years old individuals. (see Foley, 1997; Nivorozhkina *et al.*, 2002; Stetsenko, 2003; Kupets, 2006).

With increased population over the years, education rates have dramatically increased, leaving more and more people searching for a job, more overqualified labor, and an increased (reservation) wage, as the labor mismatch literature suggests. Less-educated individuals may look for a job with a lower reservation wage, since they have lower skills compared to well-educated individuals. Moreover, the rapid increase in unemployment rate forces highly educated people to decrease their wage. Added to that, with a larger job network, their opportunity cost on unemployment is higher, and they are more likely to be mobile (Kupets, 2006). Education coefficients estimations turn out to be significant in both four-year periods. Low- and high-educated people tend to stay unemployed compared to vocational high school graduates. Since the data did not provide information about regions of Turkey, the unemployment rate of young, middle, and old-aged people was used as a proxy in the analyses. The results show a positive sign and significant effects both in 2009 and 2011. Our analysis is in line with Meyer (1990), as he states that due to countercyclical layoffs, this may change the situation, indicating that the increasing unemployment rate over time may increase the unemployment duration.

Regarding the marital status coefficient, the results are quite different for the 2006 and 2011 panel sets. Our results show that married people were more likely to find a job in 2006, while it is not possible to say the same for 2011, since the unemployment duration is prolonged for unmarried individuals. The results for occupation dummies in 2006 and 2011 show that those who are workers, elementary occupations, and technicians are less likely to find a job and their duration of unemployment to employment is longer compared to managers. Meanwhile, the coefficient estimates of professionals do not show any significance. However, it is significant in 2011 for professionals, meaning that their probability of exiting unemployment is longer compared to managers. There is a vast amount of studies suggesting that the employment status of household members shapes the individuals' decisions on entering the labor force (see Del Boca *et al.*, 2005; Del Boca, Locatelli, and Pasqua, 2000;

Rossetti and Tanda, 2000 for more). Similar to Yıldırım and Dal's (2016) findings, the number of earners in the household has a significant effect on the probability of finding a job in both periods. When the number of earners in the household increases, then the duration of unemployment is shorter, even though there is income coming into the household. One possible explanation of this result may be the fact that these households are poor. Even though employment in the household is high, being poor increases the probability of leaving unemployment. The wage variable has a negative effect in both the 2006 and 2011 periods, suggesting that when the age increases, the duration of unemployment increases as well.

France

The analyses concerning France reveal that the coefficient estimate of the unemployment benefit receivers is significant for the 2006 – 2009 period. Unemployment benefits prolong the duration of unemployment to employment of individuals in France[30]. The model, which includes the amounts of unemployment benefits, allows us to comment on the elasticities of the UB effect on the transition state. Low, middle, and high amounts of unemployment benefits prolong the survival duration of the unemployed, while the variable coefficient that whether people receive unemployment benefits or not reveals that leaving unemployment happens to be faster for the ones who receive unemployment benefit payments. The analysis concerning 2006 – 2009 period shows that the transition duration is longer for social transfer receivers. Policy makers' efforts concerning social transfer programs improved throughout the years. With those programs, individuals in need are able to receive transfers. If an individual could not meet the requirement for a certain social transfer, s/he were able to apply for another. Thus, this makes them stay unemployed longer instead of finding a job.

Statistics show that the average unemployment duration of individuals is 31 months, which does not change for the ones who receive unemployment benefit or for the non-receivers. However, the number of social transfer receivers in total shows that ST

[30] Tables showing full version of the AFT hazard model estimation results of France are given in the Appendix C1.

receivers stay one month longer unemployed than non-ST receivers. The education variables' survival time differs for the different levels of education attained. The unemployment duration of low-educated workers is longer, while higher-educated workers stay unemployed for a shorter time compared to workers who have vocational degree. The more education people attained, the quicker they exit unemployment. Regarding the age group variable, a negative link is found. The survival duration of young and old individuals is longer than middle-age individuals. One possible explanation of middle-age individuals' shorter unemployment duration is that the average age is 39 in the sample. Moreover, when we look at the descriptive statistics of age variable, we see that in unemployment benefit and social transfers in total the receivers' mean age is 43 and 42, which is way higher than non-receivers (age is 33 for both).

Marital status determines the labor force participation of the individuals. Being married often brings the pressure of taking care of more people to the household. However, in some cases single people find jobs more easily, since they are more mobile and can switch jobs easily. The survival duration of married unemployed people in our analysis is longer. The result is the same for females, their unemployment duration being longer than males in France. The results for the occupation dummies indicate that for those who are workers' and working in elementary occupations, the duration of unemployment to employment is shorter compared to managers. Meanwhile the coefficient estimates of professionals do not show any significance. As the results indicate the opposite in Turkey, the more earners there are in the household, the longer the unemployment duration in France. The effect of the unemployment rate on the probability of exiting unemployment is the opposite of most literature, i.e. Terracol (2009). Our results indicate that the increase in the unemployment rate does not prolong the duration of unemployment. However, one must keep in mind that unemployment rate is not calculated according to region; it represents the unemployment rate with age groups. Moreover, in the 2006 – 2009 period, France is one of several EU member states having low unemployment rates (8.8 %), and the labor force participation is high.

The results for the 2011 – 2014 period state that the survival time of

unemployment is longer for unemployment benefit receivers. The estimation coefficient of regressor (5) indicates that transition state of exiting unemployment is shorter for unemployment benefit receivers but longer for low, middle, and higher UB receivers, as it is in 2006 – 2009 period. Social transfers in total prolong the probability of exiting unemployment. However, according to Pellizzari (2006), in Europe, individuals may receive multiple social transfers. It does not necessarily mean that the level of all social transfers is the same. For example, more generous unemployment benefits may cause the family assistance to be substantially lower. This makes individuals, unwillingly, exit unemployment. In terms of the age motive, individuals who are at a certain age are more likely to receive unemployment benefits and/or social transfers; therefore, they are less likely to be employed by the firms. Our estimation results are in line with the literature, suggesting that young people are more likely to exit unemployment compared to the middle-aged, whereas it is the opposite for old people: the older they get, the longer their unemployment duration. Prioritization expels the elders due to social transfer requirements until they are retired. It is believed that elders tend to be active in the labor force through having temporary jobs and receiving longer social transfers. Hairault (2012) and Baguelin and Remilion (2014) state that unemployment insurance in France plays a crucial role for older individuals, until they reach retirement. This often creates the problem of unemployment insurance costs, especially for workers with high wages (Seignour *et al.*, 2007; Baguelin & Remilion 2014). On the other hand, it is important to keep the duration of unemployment benefit longer because older people are not in a position of negotiating for a job (until retirement) compared to younger workers. Thus, comprehensive policies are more useful (Belot and van Ours, 2004; Inderbitzin *et al.*, 2013; OECD, 2014; Baguelin and Remilion, 2014). In line with the existing literature, the survival rate of females, as well as the coefficient of age, is longer than males. The survival rate decreases as people get older.

The analysis concerning 2006 – 2009 is different from 2011 – 2014 in terms of the unemployment rate. The higher unemployment rate prolongs the duration of unemployment in the 2011 period. The education variable results have changed since 2006 as well. High-educated people's survival of unemployment is longer in 2011. One might explain these situations of unemployment rate and higher education with

reference to lower labor force participation (around 0.2%) and higher unemployment rate due to the Sovereign debt crisis. The individual's transition to employment is mostly determined by the duration of unemployment benefit. Moreover, more generous unemployment benefits shape the individuals' decision and effort on job search. In addition to that, even though the individual's wage increases with more generous unemployment benefits, longer unemployment spells makes them accept low-paid jobs (see Le Barbanchon, 2016; Schmieder *et al.*, 2016 for more). The analysis show that for all occupation dummies (technicians, professionals, elementary occupation employees, and workers), the employees' unemployment duration is longer compared to managers.

The Netherlands

The coefficient estimate of the unemployment benefit receivers is significant for both 2006 – 2009 and 2011 – 2014 periods in the Netherlands. The positive sign of the coefficient points to longer survival duration. It means that the more individuals receive unemployment benefit payment, the longer the duration of their unemployment. However, the effect turns out to be the opposite when the model that includes different levels of unemployment benefit was used. We see that in both periods the low amount of unemployment benefit prolongs the survival time of an unemployed individual.[31] On the other hand, the impact of receiving unemployment benefits makes people exit unemployment faster. In the 2006 – 2009 period, social transfers, as a total, are significant with the negative sign suggesting that the more individuals receive social transfers, the shorter their unemployment duration. The dramatic increase in unemployment along with the low participation rate in the 1980s forced Dutch policy makers to take action in the labor market policies. In the 1990s, reforms in social security system were aimed to fight unemployment. Developments in social transfers, like disability schemes and unemployment benefits, helped today's highly improved Dutch social security system as well as the labor market. However, the high level and duration of social transfers caused individuals to stay unemployed and not work; therefore, their duration of unemployment was longer than expected. de Mooji (1999)

[31] Tables showing full version of the AFT hazard model estimation results of the Netherlands are given in the Appendix C1.

refers to this as the "*hidden unemployment*". He states that the Dutch authorities took action in terms of reducing the inappropriate use of these transfers by reducing them in order to tackle the hidden unemployment so that people who were in actual need could benefit.

On the other hand, the sign of the coefficient turns out to be positive in 2011 period. This could be explained by the policy changes following the political situation in the Netherlands. The consequences of the sovereign debt crisis did not help either. In the Netherlands the average duration of unemployment is 32 months between 2006 and 2009 while it increases to 34 months between 2011 and 2014. Both UB and ST receivers stayed in unemployment 4 months less than non-receivers in the first period. However, in the 2011 – 2014 period, benefits receivers' average unemployment duration is 2 months longer than non-receivers. As expected, the probability of transition to employment is lower for the benefit receivers. Other than the total social transfers variable, the estimation results are pretty much the same in 2006 and 2011 period. The labor market opportunities in the Netherlands were not favorable for individuals who earned lower educational degrees. Even though the situation was seemingly controlled, the Dutch policy makers had had a great deal of concerns since the 1970s. The exit rates of low-educated individuals are longer than for those who held a vocational educational degree. There are a few possible explanations that can be listed. First, individuals who have completed vocational education have technical information that makes them more flexible in terms of job search ability. Second, the trade-off of being unemployed is too costly for them; that is, there is a higher opportunity cost. Demand shift from low-educated to vocational opened up the job opportunities. On a study concerning Finland, Kettunen (1997) also finds that the hazard rate of exiting unemployment increases with education. Regarding occupations, although there is no statistical significance in 2006, the estimation coefficient of all types of occupations points out that the duration of unemployment is longer in the second four-year period. For example: individuals working in elementary occupations (as de Beer, 2006; Salverda *et al.*, 2008; Gesthuizen and Wolbers, 2010 state). One explanation for this situation can be that the labor force share of the elementary occupation has been unchanging (stable). Other occupation dummies show that

professionals, technicians, and workers possibility of exiting unemployment is longer than managers. Since there is a shift from industry to service economy, this is expected. A Study by Lalive and Zweimüller (2004) focuses on a similar issue for Austria. They oppositely find that blue-collar workers are more likely to exit unemployment than white-collar workers.

The coefficient for the duration of unemployment for the married individual' fails to reject the hypothesis by not having a significant effect. Van Opstal and Theeuwes (1986) find that single individuals are less likely to exit unemployment quicker than married. On the other hand, the gender variable shows statistical significance by implying that the duration of unemployment of females is longer than males in the Netherlands in both 2006 – 2009 and 2011 – 2014 periods. This result does not conflict with most of the existing literature, i.e. Van Opstal and Theeuwes, 1986; Van den Berg and Van Ours, 1994; Kupets, 2006.

Even though the labor market conditions are better among other EU member states, the Dutch labor market is not favorable for individuals over 50 years old. The Labor market environment has been changing considerably over the last 30 years in the Netherlands. The age pattern of the individuals happens to be the breaking point. As expected, age is negatively related with the transition state. As it increases, individuals have a difficulty exiting unemployment. Skills, health conditions, familiarity with technology, forthcoming retirement possibilities, and lack of motivation can be listed as the reasons that employers are unwilling to hire older people. Our estimation results indicate that in both periods, age prolongs the unemployment duration. However, statistical significance could not be found for young people. In line with Kupets (2006), wage is negatively associated with the probability of exiting unemployment. As the job search theory explains, the more individuals wish to earn, the less they are probable to find a job that makes their duration of searching for a job longer. One may second this by adding the idea of advanced policies and incentives of social security in the Netherlands, especially the recent ones. These led to people receiving social transfers and staying unemployed. Reaching more than 10% in fifteen years and hitting around 25% of youth unemployment rate during the 1980s forces policy makers to take action.

Hence, reforms and policies on the labor market and social security systems, along with incentives, makes the Netherlands have the second lowest unemployment rate after Germany. Both the 2006 and 2011 periods estimation results indicate that when unemployment rate increases, the individuals' unemployment duration does not get any longer. This may be explained by the low unemployment rate in the country (4.8 % and 6.8 %). The high percentage of part-time employment may also be the reason for this result.

Spain

The 1984 Spanish labor market reform created a new form of unemployment without benefits. Along with the unemployed who received benefits, this reform produced non-recipients. Benefit-wise, there are three outcomes of this reform: a) as benefit comes near exhaustion, individuals more likely to speed up their job search and decrease their reservation wage, b) benefit and hazard rates hand in hand until the benefit expires. As soon as exhaustion takes place, hazard increases and c) when the amount and duration of unemployment benefits increases, hazard declines as a result of the high opportunity cost of a job search. Bover *et al.* (2002) explains this as the "*entitlement effect*". They define the entitlement effect as a positive linear relationship of increased benefits, and the utility expectation of unemployment spells with benefits from the future but the opposite for the current time. It basically makes individuals stay unemployed longer. On the other hand, the 1984 reform suggests that unemployment without benefits makes workers exit unemployment when the benefit duration or amount increases. The reason is the future expectations. After adjusting the unemployment insurance law in April 1992, the authorities in Spain decreased the unemployment insurance generosity. This provided a chance to observe the transition changes in the Spanish labor market (Alba-Ramirez, 1999). Since individuals can benefit from unemployment for a certain duration, the exhaustion of the unemployment benefit forced them to stay out of the labor force or actively search for a job[32]. The Unemployment Compensation System (UCS) in Spain does not include "experience rating" as Alba *et al.* (2012) states. It means that firms have the chance to re-employ

[32] See Jenkins and Garcia-Serrano, 2004; Alba et al., 2012 for more.

individuals between layoffs and recalls. For example, when an individual is receiving unemployment benefit, as the exhaustion nears, s/he would be willing to return to work. That is why in Spain the importance of the UCS is not negligible in terms of the unemployment duration of individuals (Alba, 1999; Bover *et al.*, 2002; Gonzalo, 2002; Jenkins and Garcia-Serrano, 2004; Arranz and Muro, 2007; Card *et al.*, 2007; Arranz *et al.*, 2009; Alba *et al.*, 2012).

In line with the research concerning Spain, our results[33] suggested that receiving unemployment benefit and social transfers as a total prolongs the duration of unemployment in both periods. Because of the limitation of our dataset, it was impossible to look at the duration receiving unemployment benefit for each individual. Therefore, our estimation results do not say much about the effect of benefits on the unemployment spell. Alba-Ramirez (1999), on the one hand, states that the first two months of the unemployment benefit motivates individuals to exit unemployment, yet after six months this effect decreases until they reach one year of unemployment. On the other hand, our results suggest that when including the amounts of unemployment benefit in the model, we find that the survival time of unemployment benefit receivers shortens. Spain has been dealing with high unemployment rate for decades. Not only the authorities but also academics have been trying to understand and tackle the problem. Both labor demand and supply sides are found to be the reasons. Lack of job creation, and generous social transfers (unemployment benefits to be specific) resulted in the structural high unemployment rate in the country (Bentolila and Blanchard, 1990; Ahn and Ugidos, 1995; Toharia and Jimeno, 1995; Ahn *et al.*, 1999). Not surprisingly, as the unemployment rate increases, the individuals' ability to exit from unemployment decreases. More competition and fewer job vacancies become a result of high unemployment rates. Spain is one of the five EU member states that has been affected by the 2008 global financial and 2010 European sovereign debt crises. In the period of 2006 – 2009, Spain was the number one country in the EU with the highest unemployment rate (20.2 %), and in the 2011 – 2014 period, following Greece its unemployment rate reached 22 % (with 48.6 % youth unemployment rate) (Kyyrä *et al.*,

[33] Tables showing full version of the AFT hazard model estimation results of Spain are given in the Appendix C1.

2017). Moreover, the business cycle effect that causes poor employment stability is another explanation.

As regards the gender variable, we see that females have longer survival time than males. Alba et al. (2012) find similar results; additionally, by investigating the gender effect of receiving unemployment benefits, they come to the conclusion that females are more likely to be hired by their previous employers. Alba-Ramirez (1999) finds in his study that age is negatively associated with the possibility of finding a new job. He specifically focused on 50 years and older individuals. Demand side effects led employers not to hire older individuals[34].Tatsiramos (2009) investigates the unemployment duration of individuals in Europe and comes to the conclusion that well-educated individuals are less likely to stay unemployed in Spain (and Italy). Similar to his findings, our results of 2006 – 2009 show that highly educated graduates stay unemployed shorter than those who had a vocational degree. Our estimation coefficients of being married and young show that those individuals are more likely to exit unemployment in both periods. On the other hand, things have changed for education dummies in the period of 2011 – 2014. We find that higher education degrees is negatively associated with unemployment duration as well as being low educated. Similar to Alba-Ramirez's (1999) findings, our results show that vocational education degree owners have better escape rates of unemployment. This may be explained by the extremely high unemployment rate in the country due to the economic crisis. In the same of vein of the results indicated in France, having a higher number of household earner members in the family prolongs the unemployment duration in Spain. Since more income is coming, individuals do not need to exit unemployment. Five different regressors show that for all occupation dummies (technicians, professionals, elementary occupation employees, and workers), employees' unemployment duration is longer compared to managers in the 2011 period. Meanwhile, those who are professionals, workers' and working in elementary occupations' duration of unemployment to employment is shorter compared to managers. The coefficient estimates of technicians do not show any significance in 2006 period.

[34] See Alba-Ramirez, 1999; Bover et al. (2002) for more.

Poland

A summary table of analysis concerning Poland is presented in table 18[35]. We have chosen to dwell on Poland for a few reasons. First, Poland has a considerably large population in the EU. Moreover, its high unemployment rate cannot be underestimated. Even though high unemployment rates are every country's problem, the situation is worth investigating in Central Europe not only economically but also politically. Most countries in Central Europe have transformed their economies from communism to capitalism and then to supranationalism (by entering the EU).

Social transfer regulations constitute an important area of research in Poland. The first payment of unemployment benefits in Poland goes back to 1989. Before the 1991 reform, the unemployment benefit period was unlimited, with 70 % of wages in the first 3 months (Kwiatkowski, 1996). After 1991,[36] the maximum eligibility period was shortened to 12 months, with 36 % of wages. The aim was to reduce the administrative burden (Adamchik, 1999). It was a common idea that long unemployment durations were due to those unlimited benefit periods. However, Puhani (2000) argues that that regime was not to blame, even though it caused longer durations in unemployment (see Boeri and Keese, 1992; Góra, 1994; Steiner and Kwiatkowski, 1995 for more). There is a vast number of studies covering especially post-communist Poland. Góra and Schmidt (1998) focus on how the Polish government acted on social assistance and unemployment benefits in the post-communist era. Having an underdeveloped labor market with high unemployment rate and poverty pushed the Polish authorities to take initiatives on benefits so that poverty would diminish. However, receiving social assistance led individuals to be demotivated with regard to the job search. A great deal of research has been done to look into the effect of unemployment insurance benefits on unemployment duration (Moffitt, 1985; Nickell, 1979; Lancaster, 1979; Meyer, 1990; Atkinson and Micklewright, 1991; Pellizzari, 2006). Some of them find lower unemployment-exiting probabilities, while some finds the opposite. Our results indicate that both unemployment benefits and social transfers as a whole prolong the

[35] Tables showing full version of the AFT hazard model estimation results of Poland are given in the Appendix C1.
[36] "The Act on Employment and Unemployment of October 1991".

unemployment spell. Not only about Poland, but also studies about other CEECs show similar results. For example, Lubyova and Van Ours (1997) for Slovakia, Gabriel *et al.* (2017) for Romania, and Dănăcică and Mazilescu (2014) for Romania and Hungary find that the hazard rate of leaving unemployment is lower for UB receivers than for non-receivers. The estimation coefficient in our model, including the amounts of unemployment benefits, indicates that the transition state of exiting unemployment is shorter for unemployment benefit receivers but longer for low, middle, and higher UB receivers in both periods. Adamchik (1999) also finds that receiving unemployment benefits prolongs the unemployment duration. As in other EU countries mentioned above, the probability of exiting from unemployment speeds up when the exhaustion is near. In Poland, this has been more likely to happen since 1992, after the reform on unemployment insurance system in December 1991. Cazes and Scarpetta (1998) investigate the impact of unemployment benefits on the unemployment duration in Poland and Bulgaria. They come to the conclusion that, just as our findings suggest, the duration of unemployment of females are longer than males. Our results in both 2006 – 2009 and 2011 – 2014 periods point out that males are more likely to escape unemployment in a shorter period compared to females. In terms of the age coefficient, we find that the older individuals' probability to find a job is smaller than the middle-aged in both periods. However, 15-29 years old individuals have a lower probability of exiting unemployment in the 2011 period, while the effect is the opposite in 2006 period. Newell and Pastore (2006) find similar results to our study in terms of age. By focusing on the same year, both studies argue that since high unemployment rate is a crucial problem of transition economies (like Poland), young individuals' transition state from unemployment is faster than old people. In line with our findings, Cazes and Scarpetta study of 1998 finds similar results regarding age. They argue that young and old workers have lower probability of finding a job in Warsaw. One may explain this with reference to the higher unemployment rate, the economic crisis, and a more competitive EU market after becoming an EU member state in 2010. It created fierce competition in the European labor market for Polish workers. By looking at post-communist Poland, Góra and Schmidt's (1998) results indicated that middle-aged individuals are more likely to be unemployed, as well as females and low-educated ones. Along with the age variable, both Newell and Pastore and this study points out the

negative effect of having a college degree on the duration of unemployment. We also find that this effect continues in the 2011 period. Both periods indicate that having low and high education prolong the unemployment duration compared to the vocational education degree. Mondschean and Oppenheimer (2011) similarly find that having a vocational education decreases unemployment. Despite the fact that the estimation coefficient of education dummies indicates that both lower and higher educated individuals' duration of unemployment is longer than vocational degree owners in our study for both periods, Cazes and Scarpetta (1998) argue that higher education leads to higher hazard in employment. Our results point out that in both periods the coefficient estimate of being married is negatively associated with the unemployment duration. One might unfold this with the income/support of the spouse so that one of them has the motive to stay unemployed. Adamchik (1999) finds that marital status provides different results for females and males. Married females are more likely to stay unemployed longer. Also, contrary to Newell and Pastore's (2006) estimates, our results show that the probability of leaving unemployment is shorter for workers in the 2006 period (until 2011 period). However, technicians tend to stay unemployed longer compared to managers in both timeline. We may elaborate this with reference to unemployment protection in large enterprises. Regarding the predicted wage of the individuals, wage is negatively associated with the probability of exiting unemployment. As the job search theory explains, the more individuals wish to earn, the less likely they are to find a job that makes their duration of searching for a job longer. The number of earners in the household has a significant effect on the probability of finding a job in the period of 2011 – 2014. If the number of earners in the household increases, then duration of unemployment is shorter. On the other hand, the 2006 period reveals that the more earners there are in the household, the longer the unemployment duration is, since there is income coming into the household. Contrary to the existing literature, we find that when the unemployment rate increases, the probability of leaving unemployment decreases in the 2011 period. We may explain this with reference to the decreasing unemployment rate after 2010 (9.2 % to 7.6 %). Another possible reason may have been the increase in investments. The boost in investment labor leads the labor demand to increase but the labor supply to decrease due to migrating. Especially after the EU membership in 2010, free movement of labor forced individuals to migrate

and work elsewhere. Emigration increased around 23% after the membership (from 218,216 people in 2010 to 265,299 people in 2014[37]).

Policy Implications: Remedying the long duration of unemployment

Our results reveal that receiving social transfers prolongs the duration of unemployment. Therefore, the question is what could be done to eliminate this long duration or what could help to shrink it? One could suggest that active labor market policies (ALMPs) may help. In principle, ALMPs have been used as a common tool to fight long-term unemployment and increase employment probability. It is highly important for countries to share spending on ALMPs out of their GDPs. In 2015, the total spending on ALPMs was recorded as 2.98 % for France, 2.60 % for the Netherlands, 2.52 % for Spain, and 0.73 % for Poland[38] (OECD, 2018). Governments' initiatives help to improve the labor market conditions. In practice, measures may be taken in order to tackle the chronic skill mismatch problem so that individuals' unemployment duration is reduced. Through training and retraining programs, the aim is to eliminate the mismatch problem.

It is important to create harmony between employers and jobseekers in terms of their needs. Usually public training agencies play an intermediary role. However, demand between the two has been changing so that the efforts of those public agencies are inadequate. In that sense, it may be helpful to redirect the public funds to private and non-profit providers. Therefore, individuals who are hard to reach are not left out, i.e. Romania, Hungary, Bulgaria, Slovenia, and Serbia (World Bank, 2012). Public job creation plays a crucial role in fighting unemployment. Part of the long-term unemployed individuals is put in the labor force via job creation so that ALMPs reconstructs human capital. Nevertheless, there is evidence in terms of the positive and negative outcomes to the countries involved. For example, the effect of public job creation is positive in Colombia and India. On the other hand, it has decreased possible employment in Poland and Romania. Another policy implication is wage subsidies. If unemployed individuals wish to rejoin the labor force, wage subsidies help in the

[37] Retrieved from Eurostat website: http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do
[38] Detailed related figures are given in Appendix D.

process. Subsidized jobs help individuals to foster and recuperate human capital. Hence, they are hired as regular employees. Not only do employees benefit from wage subsidies but also employers, since it shows the efficiency of an employee. Countries like Morocco and Argentina underline the positive impacts of wage subsidies, especially in youth labor market participation. However, in Poland men who are provided wage subsidies were more likely to stay out of the labor market (World Bank, 2012).

In order for ALMPs to be successful, it is important to adjust them according to the labor market needs. Moreover, stepping in upon labor market deficiencies so that employment outcomes are reached.

8. CONCLUSION

The economic and political situations (for the countries included in this study) have changed significantly over the years, bringing about substantial changes in the labor market as well. There is no doubt that unemployment has fluctuated—increased to be precise—and, consequently, the duration of unemployment has increased for twenty years. In advanced countries, the aging population is an issue in terms of maintaining their labor supply and shortages; therefore, social transfers play an important role, since a significant amount of the young population enter the labor market. It is also important to emphasize that not only are there not many studies investigating the impact of social benefits on labor supply for developing countries, but also there has not been any adequate analysis done on the emerging/developing economies in the literature.

Like many other countries, Turkey has been experiencing an upgrade in the social security system. There are several factors that have helped this process. One of the main factors has been the increase in the policy and reforms that public authorities have taken, especially in the last decade. As a result, the number of beneficiaries has increased steadily. On the other hand, the number of unemployed individuals has been increasing. Even though social transfer beneficiaries are increasing day-by-day, the increased unemployment rate and over education create a fierce competition in the Turkish labor market. Unfortunately, the situation is not different in the EU either.

The empirical results of the AFT hazard model demonstrate that, in general, receiving unemployment benefits and social transfers prolongs the unemployment duration in both periods. In Turkey, the more individuals receive unemployment benefit payment, the longer the duration of their unemployment. The period of 2006 to 2009 period reveals that unemployment benefits increases the duration of unemployment. Regarding the different levels of the UB, we can see that all three levels are statistically significant with the negative sign. Low, middle, and high amount of unemployment benefits prolong the probability of leaving unemployment state. However, the second period shows no significance when different levels of UB are included in the model. Receiving social transfers may exceed the unemployment duration of individuals. These kinds of income may have an effect the individual's exit behavior, since there is income coming to the household. Females are less likely to exit unemployment compared to males in both periods. The age group variable shows that the survival duration of individuals between 15-29 years

old's is lower, meaning that young individuals' transition to employment is faster than 30-49 years old individuals in both periods. Also, low and high-educated people tend to stay unemployed compared to vocational high school graduates.

In France, receiving unemployment benefits extend the unemployment duration. Low, middle, and high amounts of unemployment benefits prolong the survival duration of the unemployed, while the variable coefficient—whether people received unemployment benefits or not–reveals that leaving unemployment happens to be faster for the ones who receive unemployment benefit payments. The transition duration is longer for social transfer receivers in both periods. In the first period, as the education level increases the duration of unemployment decreases. The second period shows the opposite. The survival duration of young and old individuals is longer than middle-aged individuals. The gender variable shows that females stay unemployed longer than males. Receiving unemployment benefit payment prolongs the duration of unemployment in the Netherlands. Nonetheless, the effect turns out to be different when the model that includes different levels of unemployment benefit is used. In both periods, the low amount of unemployment benefit prolongs the survival time of an unemployed individual. On the other hand, the impact of receiving unemployment benefit makes people exit unemployment faster. From 2006 to 2009, social transfers do not lengthen the unemployment duration. In terms of education, the exit rates of low-educated individuals are longer than those who held vocational educational degrees. The gender variable implies that the duration of unemployment of females is longer than males in the Netherlands in both the 2006 – 2009 and the 2011 – 2014 periods. Age is negatively related with the transition state. As it increases individuals have a difficulty exiting unemployment. Our results suggest that receiving unemployment benefits and social transfers as a total prolongs the duration of unemployment in both periods in Spain. However, by including the amounts of unemployment benefit in the model, we find that the survival time of unemployment benefit receivers reduced. Females have longer survival time than males, as in other countries we have looked into. We also come to conclusion that unemployment duration reduces as the education level increases in the first period. The second period shows that a higher education degree is negatively associated with the unemployment duration as well as being low educated. As in all the other four countries, unemployment benefits and social transfers as a whole prolong the unemployment spell in Poland. The model that includes amounts of unemployment benefits indicate that leaving unemployment is shorter for unemployment benefit receivers but longer for low, middle,

and higher UB receivers in both periods. In both periods, we find that males are more likely to escape unemployment in a shorter period compared to females. We can conclude that older individuals' probability to find a job is smaller than middle age in both periods. However, 15-29 years old individuals have lower probability of exiting unemployment in the 2011 period, while the effect is the opposite in 2006 period. Both periods indicate that having low and high education prolong the unemployment duration compared to vocational education degree.

The empirical evidence shows that the impact of social transfers on labor supply differs. In light of the structure of the labor market, consequences vary. Out of the five countries that are taken into consideration in this study, only the Netherlands comes to the forefront. Receiving social transfers shortens the unemployment duration in the Netherlands. Being the only country with this result, one might ask this: Why only the Netherlands? There are several possible explanations for this question. First, with a flexible and secure labor market, also known as flexicurity, the Netherlands is one of the leading European countries on this flexicurity approach (Theodoropoulou, 2018). Therefore, social transfer payments are generous in the Netherlands. However, one must take into consideration that this generosity is a result of having a very liberal and elastic labor market, not due to the low unemployment rate. Second, in line with the labor mismatch and overqualified labor problem, unemployed individuals are more likely to wait to re-enter the labor force while getting unemployment benefits. By providing high amounts of social transfers, the Netherlands may be eliminating the mismatch problem. The third possible explanation may be the high GDP per capita and the number of part-time workers. In light with these results, this dissertation offers important policy implications for policy makers. Individuals' labor market participation is highly affected by social transfer durations. In addition, education policies play a vital role in Turkey and the EU, so that the reallocation of investment in training toward old-aged individuals may be the primary policy implication to be drawn. ALMPs often help to serve as a solution for long-term unemployment and increasing employment probability (World Bank, 2012). It is assumed that improving the labor market depends considerably on sharing a spending on ALMPs out of the countries' GDPs. In order to fight the mismatch problem, governments (could/should) take initiatives that boost their labor market conditions. Training and retraining programs, redirecting public funds to private and non-profit providers, public job creation, reconstructing human capital via ALMPs, and wage subsidies are all important implications to be drawn. However, one must

keep in mind that in today's climate, it is very difficult to fight technological unemployment. Keynes (1930) famously predicted this issue when he observed: "We are being afflicted with a new disease of which some readers may not have heard the name, but of which they will hear a great deal in the years to come—namely, technological unemployment.". Since then this issue has been a cause for serious concerns by many academics. The existing literature mostly shows this issue as a threat (Autor *et al.*, 2003; Goos and Manning, 2007; Brynjolfsson and McAfee, 2014; Michaels *et al.*, 2014; Ford, 2015; Acemoglu and Restrepo, 2017). Some countries like Switzerland and some northern European countries try mostly to deal with the social outcomes of (technological) unemployment by increasing the unemployment benefits. As the issue of technological unemployment lies beyond the scope of this thesis/dissertation, it is worth investigating it in further studies.

APPENDICES

APPENDIX A- ADDITIONAL INFORMATION REFERRED IN THE TEXT

Table A.1. Literature Review

Author	Countries, Years	Dataset, Industries	Dependent Variables	Explanatory Variables	Objective	Method	Main Results
(Erosa et al., 2012)	SHARE (Scandinavia—Denmark and Sweden; Central Europe—Austria, France, Germany, Switzerland, Belgium, and the Netherlands; and Mediterranean—- Spain, Italy, and Greece. Israel, the Czech Republic, and Poland) 2004, 2006, 2008, and 2010	Survey of Health, Ageing, and Retirement in Europe (SHARE) - European cross-national panel of micro data on health and socio-economic status- the US Health and Retirement Study (HRS)	Two education groups – college and non-college –		The role of social security, disability insurance, and taxation for understanding differences in labor supply late in the life cycle across European countries and the United States.	GMM	Government policies can go a long way towards accounting for the low labor supply late in the life cycle in the European countries relative to the United States, with social security rules accounting for the bulk of these effects.
(Dynarski and Scott-Clayton, 2015)					Describe the federal tax subsidies for education, their history, and their behavioral		At a minimum, a simpler system of education tax benefits would decrease the administrative

				effects		and time costs of transferring funds to households with postsecondary expenses. At best, simplification would clarify incentives and increase investments in human capital.
(Thévenon, 2011)	28 OECD countries 2005, 2006, and 2007	The OECD Family database	Family policy packages policy instruments (leave entitlements, cash transfers, and provision of services)	Examine cross-country differences in state support to families, to identify the most important discriminating characteristics of country policy packages	PCA-correlation analysis	Support to families with young children is lower in countries in the US, UK, Canada, New Zealand, Switzerland, Ireland, etc. While more comprehensive in countries in the Sweden, Denmark, Norway, Iceland,

						Finland, Germany, etc. Family support thus functions largely through means-tested and/or work-tested transfers focusing on parents at risk of poverty, who are encouraged to enter the labor market.
(Aycan and Eskin, 2005)	Turkey	A total of 434 participants (237 mothers, 197 fathers) in dual-earner families in Turkey with at least one preschool child The sample was drawn from four large banks		Investigate the role of three types of social support (i.e., spousal, childcare, and organizational support) in relation to WFC in dual-earner families with children ages 0–6 years.	Pearson's Correlation	Both men and women allowed greater interference from work-to-family than from family-to-work. The findings also showed that women experienced more W-to-FC than did men
(Bradshaw, 2012)	EU and CEE/CIS countries	CSB/MIPI data set of the child		Comparisons of child benefit	Model family	Universal child benefits are

	June 2009	benefit packages			packages in the EU and CEE/CIS countries	method	dominant in the family benefit package of European countries. also exist in Canada and have recently been introduced in Japan.
(Başlevent, 2014)	Turkey 2013	Micro data set drawn from the SILC from, TurkStat	Retirement and unemployment benefits Health insurance Social assistance	GINI coefficient	To see what the difficulties in are determining the extent to which social transfers have an impact on income inequality in Turkey	Individual-level analysis Household-level analysis	The contributions of retirement and unemployment benefits, on the other hand, were positive, meaning that the correlation of these factors and total household income is positive
(Dabalen et al., 2008)	Albania 2002 and 2005	Albanian Living Standards Measurement Surveys (ALSMS02 and ALSMS05)	Household consumption	Old-age pension, poverty	The separate effects of participation in income support program and the old-age	Propensity score matching methods (panel and cross-section	Urban residents, have lower per capita consumption and are more

					pension program on objective and subjective measures of household poverty.	analyses)	likely to be discontented with their lives the receipt of old-age pension income transfers does not significantly impact the labor supply of prime-age individuals living in pension households
(İlkkaracan and Selim, 2003)	Turkey 1994	Labor Force Participation and Wage Structure Survey from State Institute of Statistics (SIS) three industries (manufacturing, mining and quarrying, and electricity, gas and water)	Wage and regional unemployment (since it is correlation analysis)	Age, job tenure, level of education, gender, union status, economic sector, industry and occupation	Correlation between wages and regional unemployment rates in Turkey	Correlation analysis	Statistically significant negative correlation between wages and regional unemployment rates, also there is correlation between lower bargaining power and higher elasticity of pay

(Prescott, 2004)	G-7 countries (France, Germany, Italy, and the United Kingdom, Canada, Japan, and the United States) 1970–74 and 1993–96	United Nations system of national accounts (SNA) statistics and the OECD labor market statistics and purchasing power GDP numbers.	Labor supply	taxes	The role of taxes in accounting for the differences in labor supply across time and across countries, in particular, the effect of the marginal tax rate on labor income.		Marginal tax rate accounts for the predominance of the differences at points in time and the large change in relative labor supply over time (Elasticity of labor supply is quite large)
(Olsson and Thoursie, 2015)	Sweden 1986–1991	Swedish National Insurance Board	Labor supply (sick reporting and annual labour earnings)	Sickness insurance	Whether the spousal labour supply responds to changes in public sickness insurance	Difference-in-difference	Sickness insurance reforms have no significant direct effect on labor supply
(Krueger and Meyer, 2002)	The U.S.				To review the empirical work on unemployment insurance and workers' compensation insurance		Labor supply responses to WC and UI benefits occur mainly through decisions about weeks worked, and labor supply responses of

(Tatsiramos and Jan Ours, 2014)		Unemployment insurance design (the level and maximum duration of benefits of the UI system)	To provide an overview of recent theoretical and empirical evidence on incentives influencing the behavior of employed workers and UI recipients and discuss its implications for UI design	women mainly concern participation and weeks worked. The behavior of unemployed workers is affected by the two main characteristics of UI systems in a similar way despite the obvious differences between these systems and other differences in labor market institutions such as employment protection legislation, minimum wages and active labor market policies.

(Hillebrand, 2011)	Stylized overlapping generations economy with random production and capital accumulation				To contribute to the discussion by analyzing the welfare effects of Social Security in a stylized OLG model with a particular focus on the role of labor supply	Stylized OLG model	Any welfare analysis of Social Security should pay adequate with respect to the role of labor supply and its dependence on the parameters of the Social Security system
(Gassmann and Trindade, 2015)	Kyrgyz Republic 2012	Kyrgyz Integrated Household Survey by National Statistics Committee of the Kyrgyz Republic			To estimate potential labor disincentives of the Monthly Benefit for Poor Families with Children (MBPF) for adults with different household positions in Kyrgyz Republic	Quasi-experimental method	Overall beneficiaries have on average higher labor market participation rates when compared to non-beneficiaries, but they are more exposed to seasonal effects
(Bagchi, 2015)	The U.S.		Social Security	Overall capital accumulation, pattern of labor supply over the life	To show quantitative importance of traditional roles depends	General-equilibrium life-cycle consumption model	Distortionary effect of Social Security on households' labor supply

				cycle (both with respect to labor force participation and hours per week), the income distribution, and the share of government expenditures in GDP.	on how the pension system distorts households' labor supply decisions.	particularly overlapping-generations model	decisions, both in terms of labor force participation and hours per week, can be large enough to erase much of its traditional welfare gains
(Bargain and Doorley, 2013)	France	French Census Data for (age (in days), employment, type of contract, work duration, marital status and household type) for 1999 from INSEE French LFS for wage estimations			The effect of the pre-2009 French social assistance program, the RMI, on labor supply	RD analysis and the structural model estimation	Eligibility for this program, which began at age 25 for single people, led to a drop of between 5 and 9% in the employment rate of young high school dropouts.
(Ardington et al., 2009)	South Africa	Longitudinal data in northern KwaZulu-Natal (KZN)	Employment, labor migrant, Change in employment status		Whether binding credit and childcare constraints limit the ability of house- holds	OLS	Large cash transfers to the elderly lead to increased employment among prime-

				to send labor migrants, and whether the arrival of a large, stable source of income—here, the South African old-age pension—helps households overcome these constraints		aged adults, which occurs primarily through labor migration.
(Saez, 2002)	The U.S.	Income transfers, taxes	Labor supply	Investigate the optimal income transfer problem at the low end of the income distribution	Simulations	The optimal program provides a moderate guaranteed income, imposes low tax rates on very low annual earnings levels, and then starts phasing out benefits at substantial rates.
(Barrientos, 2012)	Developing countries			Discuss what we know and		Social transfers are capable of

					what we need to know about potential growth effects of social transfer programs in developing countries		having measurable effects on the productive capacity of households in poverty, and of influencing micro- level growth.
(Filiz, 2017)	Turkey 2002- 2012	Turkish Employment Agency (ISKUR)	Unemployment benefit duration	UI generosity	The impact of unemployment insurance benefit generosity on benefit duration and labor market transitions in Turkey	Regression discontinuity approach	Unemployment duration is increased by approximately 0.7 weeks per additional week of UI benefit period
Yıldırım and Dal (2016)	Turkey 2011	Household budget survey data of TurkStat	Social assistance program participation		Investigate the link between labor force and social assistance program participation in Turkey	Bivariate probit model	If individuals work more, they are less likely to participate in social transfer program.
Feldstein (1978)	US 1971	Current Population Survey			Investigates the impact of unemployment		There is a positive correlation

		insurance on temporary layoff unemployment for the US	between UI and temporary layoff unemployment. He not only states that positive relationship but also empirically finds that an increase in UI lifts temporary layoff unemployment rate up around 0.6 percentage points.
Alsasua et al. (2007)	Eleven EU member states 1985-1999	Examines whether social protection benefits converge across the EU	There is convergence in eleven-member states in the period 1985-1999.
Caminada et al. (2012)	OECD countries 1985-2005	Studies if social expenditures have an impact on poverty for OECD countries	Social expenditure and poverty have an inverse relationship through age and unemployment.

Heady et al. (2001)	EU member states	ECHP data		The impact of social transfers in the EU for member states		Even though member states have differences social transfers have a positive effect on inequality and poverty in all member states.
Notten and Guio (2016)	2008 & 2013	EU-SILC data			Static simulation technique	Social transfers help decreasing income poverty.
Baldini et al. (2016)	EU 2014	EU-SILC cross-section and panel longitudinal data	social transfers	Analyze the impact of social transfers on poverty in Europe		Poor individuals are less likely to receive social transfers while longitudinal data shows the same results.
Medgyesi and Pölöskei (2013)	18 EU member states 2011	EU-SILC data		Examines if being a native or mobile EU citizen makes a difference in terms of receiving different kinds of social		Mobile EU citizens are less likely to receive family and child related benefits comparing to natives. On the other hand,

		transfers.		benefits like unemployment and education is not different for natives and mobile EU citizens.
Giulietti et al. (2013)	19 EU member states 1993-2008	Effect of unemployment benefit on migration		Receiving unemployment benefit does not affect migration flows
Boeri and Macis (2010)	27 UB systems existed countries over 48 (21 of them does not introduce UB) 1980- 2002	To see the link between UB and job situation of the labor market	Random and fixed effects	More unemployment benefits lead job destruction for about 1-2 percentage points
Van Ours and Vodopivec (2008)	Slovenia		Difference-in-difference	Positive link on unemployment benefits and unemployment duration spells saying that more benefits lead more unemployed duration for individuals. No effect on the

					quality of the job after unemployment.
Lachowska et al. (2016)	US	Washington Alternative Work Search (WAWS) experiment			Unemployment insurance work test decreases the probability of unemployment to employment.
Hägglund and Bächmann (2017)	Germany 1993-2010.		Investigate women and men's transition from unemployment to employment	Cox proportional hazard estimates	Being male has positive effect on unemployment to employment. Type and duration of benefit affect transition from unemployment to employment.
Lubyova and Van Ours (1997)	Slovakia 1992-1995	Public employment office data	The effect of unemployment benefits on unemployment dynamics	Proportional hazard model	When unemployment benefit system is stronger, the duration of unemployment is shorter in Slovakia
Lalive and Zweimüller (2004)	Austria 1986 - 1995	Austrian social security	Whether the unemployment	Dif-and-dif-and-dif	Transition to employment

		database and the Austrian unemployment register	benefit extends the unemployment duration	Cox Proportional Hazard model	has reduced around 17% with the benefit programs
Kettunen (1997)	Finland	Finnish micro-dataset	The impact of the education level on reemployment of the individuals in Finland	Weibull model	Individuals are more likely to be reemployed if they complete 13-14 years of education
Boeri (1999)	Some of the OECD countries				temporary employment decreases the unemployed individual's chances of job finding
Gabriel et al. (2017)	Botoşani County, Romania 2012 to 2015		The duration of unemployment	Cox regression model	Unemployment duration of the individuals is affected by the unemployment benefits as well as the residence those individuals live
Terracol (2009)	France 1994 – 2000		The impact of the RMI		The RMI has negative impact on unemployment

					hazard only after six months of the 1994 – 2000 period
Lalive (2008)	Austria 1986-1987 and 1989-1991 periods	Austrian social security database (ASSD) and the Austrian unemployment register (AUR)	If additional unemployment benefit increases the duration of unemployment	RDD model	Spell of unemployed women in Austria rises with additional unemployment benefit
Dănăcică and Mazilescu (2014)	Hungary and Romania 2008 and 2010		Reemployment probability of the males in Hungary and Romania	Cox proportional hazard model	Hungarian males' probability of reemployment decreases when their duration of unemployment increases as well as their age.
Fitzenberger and Wilke (2010)	Germany 1975 to 2001	IABS data	The effect of unemployment benefit on duration of unemployment in Germany	Box-Cox quantile regression	Benefits affect the duration if the individual receives it more than 12 months
Kyyrä, Parrotta and Rosholm	Denmark 1999 – 2006			Mixed proportional	Married female individuals are

(2013)				hazard model	more likely to stay unemployed whereas young individuals' unemployment duration is shorter compared to others
Le Barbanchon (2016)	France	Fichier Historique (FH) and the Déclarations Administratives de Données Sociales (DADS) datasets	What happens if the unemployment benefits duration increases in France?	Regression discontinuity design	Extended benefits have positive impact on unemployment
Vodopivec et al. (2005)	Central and Eastern Europe countries 1990s				Unemployment benefits help falling out the poverty if the scope of the benefits is large
Carlinga et al. (1996)	Sweden February, May and August 1991				Individuals are more likely to find jobs after their unemployment benefits

					exhaust
Rebollo-Sanz (2012)	Spain 2005 – 2008	Longitudinal Working Lives Sample		Multivariate mixed proportional hazard rate model (MMPH)	Individuals are more likely to find jobs after their unemployment benefits exhaust
Pellizzari (2006)	1994 to 2001	European Community Household Panel		Proportional hazard model	Unemployment benefit receivers are less likely to be affected by the duration and amount of the unemployment benefit changes since they are also eligible for other types of schemes.

Table A.2. Social Transfers in Turkey

Social Transfers	***Regulatory Framework***	***Type of the Program***	***Coverage***	***Source of Funds***	***Qualifying Conditions***
Old Age, Disability, and	Social insurance: 1965;	Social	Employees (civil	**Insured person:**	**Old-age pension:** Age 65

Survivors	agricultural employee social insurance: 1984; social security institution: 2006; social security and general health insurance: 2007 and 2008; social security: 2008.	insurance system	servants, self-employed persons, and full-time household workers)	9% (monthly) **Self-employed person:** 20% (monthly) **Employer:** 11% (monthly) **Government:** 25% (total contributions)	(men), age 58 (women) (65 for both in 2048). **Old-age settlement:** Age 60 (men), age 58 (women). **Disability pension:** must lost 60% of working capacity and at least 1080 days of paid contribution with 10 years of coverage. **Survivor pension:** Old age or disability pension is eligible to deceased with 900 days of paid contribution with 5 years of coverage. **Funeral grant:** Paid to the family.
Old-Age Benefits Permanent Disability Benefits Survivor Benefits					
Sickness and Maternity	social insurance: 1965); agricultural employee social insurance: 1984; social security institution: 2006 social security and general health insurance: 2007 and 2008; social security reform: 2008.	Social insurance (cash benefits) and universal (medical benefits) system.	**Cash and medical benefits:** Employees and their dependent family members. **Medical benefits only:** All citizens of Turkey including	**Insured person:** *Medical benefits (5*% monthly) **Self-employed person: Cash sickness and maternity benefits (**1% to 6.5% (monthly) and *Medical*	**Cash sickness benefits:** Must have completed contributions for at least 90 days in the year before the diagnosis of illness. **Cash maternity benefits** ***Incapacity for work benefit:*** Must have completed contributions for at least 90 days in the

			refugees, foreigners with residence permit with one year and more, homeless people, foreign students.	*benefits* 12.5% (monthly). **Employer: Cash sickness and maternity benefits:** 1% to 6.5% (monthly) and *Medical benefits:* 7.5% (monthly) **Government:** *Medical benefits:* 25% (total contributions)	year before childbirth. ***Nursing benefit:*** Must have completed contributions for at least 120 days in the year before childbirth. **Medical benefits:** Must have completed contributions for at least 30 days (self-employed must contribute for 60 days) in the year before the illness or accident occurred.
Sickness and Maternity Benefits Workers' Medical Benefits Dependents' Medical Benefits					
Work Injury	Social insurance: 1965; agricultural employee social insurance: 1984; social security institution: 2006; social security and general health insurance: 2007 and 2008; social security: 2008.	Social insurance system.	Contains all employees who work with a service contract either in public or private sector (full-time household workers; applicants for apprenticeships, apprentices, and students; and	**Insured person:** None **Self-employed person: Cash sickness and maternity benefits (**1% to 6.5% (monthly) and *Medical benefits* 12.5% (monthly) **Employer: Cash sickness and**	None

			prisoners working in prison workshops)	**maternity benefits:** 1% to 6.5% (monthly) and *Medical benefits:* 7.5% (monthly) **Government:** *Medical benefits:* 25% (total contributions)	
Temporary Disability Benefits Permanent Disability Benefits Workers' Medical Benefits Survivor Benefits					
Unemployment	Unemployment insurance: 2000; social security institution: 2006; social security and general health insurance: 2007 and 2008; social security: 2008.	Social insurance system.	Contains all employees who work with a service contract either in public or private sector	**Insured person:** 1% (monthly), up to a maximum. **Self-employed person:** Not eligible. **Employer:** 2% (monthly). **Government:** 1% (monthly), up to a maximum.	
Unemployment Benefits					Must have completed contribution in the last 120 days of employment and have completed contributions for at least 600 days in the three years

before unemployment.

Source: Social Security Administration, 2016, Social Security Programs Throughout the World: Europe, 2016.

Table A.3. Social Transfers in the EU

	Old Age, Disability, and Survivors			Sickness and Maternity			Work Injury				Unemployment
	Old-Age Benefits	**Permanent Disability Benefits**	**Survivor Benefits**	**Sickness and Maternity Benefits**	**Workers' Medical Benefits**	**Dependents' Medical Benefits**	**Temporary Disability Benefits**	**Permanent Disability Benefits**	**Workers' Medical Benefits**	**Survivor Benefits**	**Unemployment Benefits**
Austria	**Regulatory Framework:** social insurance: 1956; self-employed: 1979; farmers: 1978; professional persons: 1978; pension harmonization: 2005. **Coverage:** -Miners has special systems; notaries; public-sector employees; and self-employed persons, industry, trade, agriculture			**Regulatory Framework:** social insurance: 1956; employees: 1974; self-employed: 1979; farmers: 1978; professional persons: 1978; pensions harmonization: 2004. **Coverage:** Public sector and railway employees and self-employed persons in agriculture and trade have special systems. **Cash**			**Regulatory Framework:** social insurance: 1956; 1978; professional persons: 1978; pensions harmonization: 2004. **Coverage:** Employed persons, apprentices, and students. Miners have special systems; notaries; public-sector employees; and self-employed persons, industry, trade, agriculture workers are included. **Care benefit:** EUR157.30 to EUR1,688.90 (monthly).				**Regulatory Framework:** 1977 unemployment insurance: 1977; labor market: 1994. **Coverage:** Monthly

	workers are included. -Age 65 (men) or age 60 (65 from 2024 to 2033 for women). **Care benefit:** EUR157.30 to EUR1,688.90 (monthly).	**sickness and maternity benefits**: Employment is required. **Rehabilitation benefits**: Needed rehabilitation is required. **Medical benefits**: Employment is required.		EUR415.72 earning employees The minimum: EUR415.72. The maximum: EUR4,860.
Belgium	**Regulatory Framework:** Old age and survivors: 1967); Guaranteed income: 1994, and 2001. **Coverage**: -Employed. Self-employed persons and civil servants have special systems. -Age 65 (66 in 2025 and 67 in 2030).	**Regulatory Framework:** mandatory health insurance and benefits: 1994. **Coverage**: Employed. **Sickness and maternity benefits:** Completion of two quarters is required before the quarter in which the sickness or maternity leave period started, 120 days of work and legal requirements must have completed (last 30 days before the incapacity began). **Medical benefits:** None. (Must have contributed for six months in certain cases).	**Regulatory Framework:** Occupational diseases: 1970 and work accidents: 1971. **Coverage:** Employed. **Work injury benefits:** None. To and from work are covered.	**Regulatory Framework:** Social security: 1944 and unemployment regulation: 1991. **Coverage:** Employed, job seekers for the first-time, students in specific categories, and workers with disabilities.
Bulgaria	**Regulatory Framework:** Social insurance: 2000 and pensions: 2000. **Coverage:**	**Regulatory Framework:** Health insurance: 1998) and social insurance: 2000. **Coverage:**	**Regulatory Framework:** Social insurance: 2000. **Coverage**: Monthly 40 hours working employees.	**Regulatory Framework:** Social

	Social insurance: All employed and self-employed including farmers. **Individual account**: after December 31, 1959 borns and before December 31, 2014 labor force entrants. After entrants have right to opt into the mandatory individual account system. **Social assistance:** Residents of Bulgaria. Men: Age 63 and 10 months, Women: Age 60 and 10 months.	**Cash sickness and maternity benefits**: Monthly 40 hours working employees. **Medical benefits**: Residents of Bulgaria.		insurance: 2000.**Coverage:** Employed.
Croatia	**Regulatory Framework:** Pension insurance: 1999; occupational diseases: 1998; insurance periods: 1999; contributions: 2008; pension insurance: 2013; contribution collection: 2013; occupational rehabilitation: 2013; compulsory pensions: 2014; voluntary pensions: 2014; pension insurance companies: 2014; medical assessment: 2014; compulsory contributions base: 2016. **Coverage**: **Social insurance**: Employed and self-employed. –Men: age 65, women: age 61. Will	**Regulatory Framework:** Health care for foreigners: 1997; patients' rights: 2004; voluntary health insurance: 2006; health care: 2009; maternal and parental benefits: 2009; compulsory health insurance: 2009; social insurance contributions: 2009. **Coverage**: **Cash sickness and medical benefits**: Employed. **Maternity benefits:** Employed, self-employed, farmers, unemployed. **Medical benefits only**: Farmers, pensioners, unemployed.	**Regulatory Framework:** Occupational diseases: 1998; health care: 2008; health protection: 2011; compulsory health insurance: 2013. **Coverage**: Employed and self-employed. **Medical benefits only**: students, trainees of the Croatian Employment Service, military personnel, and fire fighters.	**Regulatory Framework:** Unemployment insurance: 2008. **Coverage:** Employed with contract, self-employed.

	gradually rise by three months a year from 2031 until reaching age 67 in 2038.			
Cyprus	**Regulatory Framework:** Social pension: 1995; social Insurance: 2010. **Coverage**: **Social insurance**: Employed, self-employed. **Social assistance:** Residents of Cyprus. -Age 65 (age 63 for miners).	**Regulatory Framework:** Social Insurance: 2010. **Coverage**: **Cash benefits**: Employed, self-employed. **Medical benefits**: Residents in Cyprus of certain categories and chronic diseases diagnosed persons.	**Regulatory Framework:** Social Insurance: 2010. **Coverage:** Employed.	**Regulatory Framework:** Social Insurance: 2010. **Coverage**: Employed and aged 64 or 65 not entitled to an old-age pension employed.
Czech Republic	**Regulatory Framework:** Pension insurance: 1996. **Coverage**: **Social insurance**: Employed, self-employed persons. –Men: age 63, women: gradually rising by four months each year).	**Regulatory Framework:** Health insurance: 1992; medical, dental, and pharmaceutical: 1991; health insurance funds: 1992; health insurance premiums: 1993; nonstate health care facilities: 1992; drugs: 1998; public health insurance: 1997; sickness insurance: 2006; labor code: 2006; health services: 2011. **Coverage**: **Cash benefits**: Employed Earns at least 2,500 korunas with at least 15 days a monthly working. **Medical benefits**: Permanent residents of	**Regulatory Framework:** Benefits: 1956; self-employed: 1990; occupational diseases and injuries: 1993; labor code: 1994; pensions: 1995; 1995; compensation: 2001; occupational disease and injuries: 2007; labor code: 2015. **Coverage:** Employed, persons with disabilities, and students.	**Regulatory Framework:** 2004. **Coverage**: Citizens of the Czech Republic and the European Union and their dependents, and non-EU citizens who reside permanently

		the Czech Republic or employees whose employers are based in the Czech Republic.		in the Czech Republic.
Denmark	**Regulatory Framework:** ATP pension: 2009; disability pension, universal pension, and social services: 2015. **Coverage**: Universal **pension**: Residents of Denmark. **Labor-market supplementary pension (ATP):** Employed. - Age 65 (Will rise to age 67 from 2019 to 2022 and to age 68 by 2030).	**Regulatory Framework:** Health: 2010); maternity: 2015. **Coverage**: **Cash sickness and maternity benefits**: Employed, self-employed. **Medical benefits**: Residents of Denmark.	**Regulatory Framework:** Occupational injury: 2006. **Coverage**: Employed, having vocational training people.	**Regulatory Framework:** Unemployment insurance: 2014. **Coverage**: Employed, self-employed persons, have at least 18 months of vocational training, central and local government officials, in military service people.
Estonia	**Regulatory Framework:** Old-age pensions: 1992; pensions: 1992; funeral benefit: 2000; individual accounts: 2001; individual accounts: 2004; investments: 2004. **Coverage**:	**Regulatory Framework:** Health insurance fund: 2001; health organization: 2002; (health insurance: 2002. **Coverage**: **Cash benefits**: Employed, self-employed persons, pensioners,	**Regulatory Framework:** Civil code: 1956; occupational safety and health: 1999; pension insurance: 2001; obligations: 2001; health insurance: 2002. **Coverage**: Employed, self-employed of permanent	**Regulatory Framework:** Unemployment insurance: 2001;

	Social insurance: Permanent residents of Estonia; noncitizens residing temporarily in Estonia; and legal refugees. -Age 63 (Will rise by three months a year from January 1, 2017, until reaching age 65 in 2026).	childcare allowance receivers. **Medical benefits**: Employment or service contract and public-sector workers; self-employed; military personnel; certain benefits receivers; caregivers; 19 and younger aged; and students.	residents of Estonia.	labor market services: 2005. **Coverage**: Permanent residents of Estonia, noncitizens who reside in Estonia with a temporary residence permit, and legal refugees.
Finland	**Regulatory Framework:** Employees' pensions: 2007; universal pensions: 2008; disability benefit: 2008. **Coverage**: **Universal pension (income tested):** Residents of Finland (3 years at least). **Earnings-related pension:** Employed, having 3 years age and younger child with expenses, up to 5 years school degree enrolled students. - Age 65.	**Regulatory Framework:** Municipal healthcare: 1972; maternity: 1984; hospital care: 1991; sickness: 2005). **Coverage: Cash sickness and maternity benefits**: Residents of Finland. **Medical benefits:** Residents or workers in Finland.	**Regulatory Framework:** Workers' compensation: 2015. **Coverage**: Employed and civil servants. Farmers and scholarship recipients have special systems.	**Regulatory Framework:** Unemployment: 1997; financing: 1998; unemployment insurance fund: 1998; assistance: 2002. **Coverage**: **Basic unemployment allowance**:

France	**Regulatory Framework:** Nonagricultural employees: 1945; disabled persons: 1975; administration of social security: 1996; dependency benefits: 2001; pensions: 2003; retirement: 2006; disability benefit and gainful activity: 2009; retirement: 2010. **Coverage: Social insurance**: Employed in commerce and industry, agriculture workers with salary; spouses with specific conditions. -Age 61 and seven months (Risen to age 62 by 2017).	**Regulatory Framework:** Nonagricultural employees: 1945; social security organization: 1996; universal coverage: 1999; paternity leave and mutual benefit societies: 2001; maternity insurance: 2004; sickness insurance reform: 2004. **Coverage**: Employed, people who seek job, students, in vocational training people.	**Regulatory Framework:** Work injury: 1946; agriculture: 1972. **Coverage:** Employed, students, specific job seekers.	Employed, self-employed, entrepreneurs. **Regulatory Framework:** Unemployment: 1958; social assistance: 1973; social insurance and social assistance: 1984; minimum benefit: 1988; unemployment compensation: 2009; inter professional agreement: 2013; unemployment compensation: 2014. **Coverage:**

				Unemployment insurance: Employed residing in France or in the principality of Monaco.
Germany	**Regulatory Framework:** Pension insurance: 2002. **Coverage:** Employed, certain self-employed, military workers, under specific conditions, caregivers, and unemployment benefit, sickness, and specific other benefits receivers. -Age 65 and five months (will rise by one month a year until 2024 and two months a year until reaching age 67 in 2029). For insured people who are born since 1964 age is 67.	**Regulatory Framework:** Sickness: 1988; maternity: 1952; long-term care: 1994. **Coverage**: **Sickness and maternity**: People who earn up to EUR56,250 a year with wage and salary; pensioners, students, disability having people, apprentices, unemployment benefit receivers.	**Regulatory Framework:** Accident insurance: 1997. **Coverage**: Employed; some categories of self-employed in certain categories; voluntary activity doers; apprentices, students.	**Regulatory Framework:** Employment promotion: 1997; basic unemployment allowance: 2011. **Coverage: Social insurance**: Employed, household workers, apprentices. **Social assistance:** Employed and unemployed people who seek jobs in

				need.
Greece	**Regulatory Framework:** Social security: 1951; legislation and regulation: 1960 and 1978; regulation: 1990; pensions: 1991; social security: 1992; financing and administration: 2000; social security: 2002; social security: 2004; social security: 2008; social security: 2010; social security: 2011; pensions: 2012; fiscal strategy: 2012; pensions: 2015; pension reform: 2016. **Coverage**: Employed in industry, commerce, and occupations that are related; urban self-employed in specific areas. – Men: age 67, women: age 62.	**Regulatory Framework:** Social security: 1951; health: 1983; social security: 2011; economic adjustment: 2012; fiscal strategy: 2012; parental leave: 2012; fiscal strategy: 2014. **Coverage**: Employed in industry, commerce, and occupations that are related; urban self-employed in specific areas. Medical benefits: Pensioners and their dependents	**Regulatory Framework:** Social security: 1951. **Coverage**: Employed in industry, commerce, and occupations that are related.	**Regulatory Framework:** Unemployment benefit: 1985; fiscal strategy: 1989, 1990, and 2012. **Coverage**: Employed in industry, commerce, and occupations that are related; 20-29 age people that have not worked before, self-employed.
Hungary	**Regulatory Framework:** Social security: 1998; social insurance: 1998; termination of early retirement pension: 2011; disability benefit: 2011). **Coverage**: Employed, cooperative members, self-employed, specific social	**Regulatory Framework:** Health insurance: 1998; social security: 1997; disability benefit: 2011. **Coverage**: **Cash sickness benefits**: Employed, cooperative members, self-employed, farmers that work independently, and unemployment benefit	**Regulatory Framework:** Social security: 1997; social insurance: 1997; individual account: 1997; disability benefit: 2011. **Coverage:** Employed, cooperative members, self-employed, farmers that work independently, and unemployment benefit receivers.	**Regulatory Framework:** Employment: 1991. **Coverage:** Employed, self-employed.

	insurance benefit receivers. - Age 63 and six months (will rise by six months a year until reaching age 65 in 2022).	receivers. **Cash maternity benefits**: Employed, self-employed women. **Medical benefits**: Employed, cooperative members, self-employed, specific social insurance benefit receivers.		
Ireland	**Regulatory Framework:** Social welfare: 2005. **Coverage**: **Social insurance**: Employed who earn least EUR38 on a weekly basis, most household workers lie is in this category. Self-employed who earn at least EUR5,000 annually. - Age 66 (will rise to age 67 by 2021 and age 68 by 2028).	**Regulatory Framework:** Health: 1970; social welfare: 2005. **Coverage**: **Cash sickness and maternity benefits:** Younger than 66 years employed who earn least EUR38 on a weekly basis, most household workers lie are in this category. Self-employed who earn at least EUR5,000 annually (for cash maternity and adoption benefits only).	**Regulatory Framework:** Social welfare: 2005. **Coverage**: Employed.	**Regulatory Framework:** Social welfare: 2005. **Coverage**: **Social insurance**: Younger than 66 years employed, most household workers lie are in this category. **Social assistance**: Residents of Ireland.
Italy	**Regulatory Framework:** Pension reform: 1995; 2005, 2008, 2009, 2010, 2011, 2012, 2013, and	**Regulatory Framework:** Sickness: 1943; working mothers: 1971; equal treatment: 1977; health service: 1978;	**Regulatory Framework:** Work injury: 1965; domestic accidents: 1999; work injury and occupational diseases: 2000; work injury and occupational diseases:	**Regulatory Framework:** 1935, 1939, 1975, 1977,

2015. **Coverage**: **National defined contribution (NDC)**: Employed, household employees, self-employed in specific categories with January 1, 1996 and after insurance. **Mixed social insurance and NDC:** Employed, household employees, self-employed in specific categories with contribution of less than 18 years as of December 31, 1995. **Social insurance**: Employed, household employees, self-employed in specific categories with contribution of less than 18 years as of December 31, 1995. **Social assistance:** Italian citizens; EU citizens residing in Italy; non-European Union citizens residing in Italy with a special residence permit. (For NDC). –In public sector men and women: age 66 and seven months, in private sector men and women: age 65 and seven months (will rise to age 66 and seven months by 2018).	sickness: 1980; sickness: 1983; tuberculosis: 1987; sickness benefits: 1999; maternity and paternity: 2000; maternity and paternity: 2001; sickness: 2006; sickness: 2011. **Coverage**: **Sickness benefits**: Employed, people work with contract. **Maternity benefits**: Employed, people work with contract, self-employed. **Tuberculosis benefits**: Employed persons, self-employed in specific categories. **Medical benefits**: Residents of Italy.	2000; occupational diseases: 2008; financial stabilization and economic competitiveness: 2010. **Coverage**: Employed, self-employed, household workers, teachers, maritime workers, students.	1988, 1991, 1994, 1996, 1997, 1998, 2000, 2005, 2009, 2012, and 2014. **Coverage:** People work in private sector, apprentices. Special supplementary benefit is provided to construction workers. DIS-COLL unemployment benefit for certain workers.

Latvia	**Regulatory Framework:** Social insurance: 1995; social insurance: 1997; individual accounts: 2000. **Coverage**: **Old-age and survivor pensions (NDC):** Employed, self-employed, disability having unemployed certain social insurance benefit receivers, military personnel's spouses, spouse of diplomatic personnel who work abroad; temporary public workers. **Disability pension (social insurance):** Employed, self-employed. People with 18 mouths and younger child, maternity and paternity benefit and parent's benefit receivers. -Age 62 and 9 months (will rise by 3 months a year until reaching age 65 in 2025.	**Regulatory Framework:** Maternity and sickness benefits: 1995. **Coverage**: **Cash benefits:** Employed, self-employed. **Medical benefits:** Resident Latvian citizens and noncitizens having residence permits.	**Regulatory Framework:** Work injury and occupational disease: 1995. **Coverage:** Employed if accident is work related, or diagnosed with an occupational disease after 1997.	**Regulatory Framework:** Unemployment insurance: 1999. **Coverage:** Employed, military workers who are active and their spouses, Latvia residents with an 18 mouths and younger child, child raising allowance, sickness benefit, or maternity benefit receivers.
Lithuania	**Regulatory Framework:** Social insurance: 1994; social assistance: 1994; pension funds: 2004; pension system: 2002; individual account:	**Regulatory Framework:** Social insurance: 1991; health insurance: 1996; sickness and maternity: 2000. **Coverage:** Specific public sector and	**Regulatory Framework:** Work injury: 1999. **Coverage:** Specific public sector and private sector employees.	**Regulatory Framework:** Social insurance: 2005;

	2004; pension reform: 2012. **Coverage**: Public- sector, private-sector employees, self-employed, military personnel, conscripts, the clergy, at-home caregivers who work for disability having people. –Men: age 63 and 4 months (will rise by two months a year until reaching age 65 in 2026), women: age 61 and 8 months (will rise by four months a year until reaching age 65 in 2026).	private sector employees, self-employed.		unemployment: 2005; employment support: 2006. **Coverage:** Specific public sector and private sector employees, specific public officials, military personnel.
Luxembourg	**Regulatory Framework:** Unified pension insurance: 1987; pension scheme: 1989; special schemes: 1998; pension scheme: 2000; pension: 2012. **Coverage:** People who work in private sector that are active economically (self-employed, farmers, apprentices are included in that category), Public sector workers with December 31, 1998 and after entrance date to labor market. -Age 65.	**Regulatory Framework:** Sickness insurance and health sector: 1992; single fund: 2008; (health care system: 2010. **Coverage:** Public- and private sector workers, social security benefit receivers, self-employed, artists, and farmers are only eligible for medical and attendance benefits.	**Regulatory Framework:** Social security: 2010. **Coverage:** Employed, self-employed persons, household, maritime workers, civil servants, apprentices, students, and military personnel.	**Regulatory Framework:** Labor code: 2006. **Coverage:** Employed, certain self-employed, graduates with recent graduation date, 16 -28 aged with completed vocational

				training.
Malta	**Regulatory Framework:** Social security: 1987; pension system reform: 2006. **Coverage:** Residents, Malta citizens working with foreign employers with a business in Malta, and students in specific work-study programs. **Contributory old-age pension (social insurance, two-thirds pension):** -Age 62: born from 1952 to 1955, age 63: born from 1956 to 1958, age 64: born from 1959 to 1961, age 65: born in 1962 or later.	**Regulatory Framework:** Social security: 1987. **Coverage*:* Cash sickness benefits (social insurance):** Employed, self-employed. **Cash maternity benefits (employer liability):** Employed. **Cash maternity benefits (universal):** Residents of Malta. **Medical benefits (universal):** Residents of Malta.	**Regulatory Framework:** Social security: 1987. **Coverage*:*** Employed, self-employed.	**Regulatory Framework:** Social security: 1987. **Coverage*:* Social insurance:** Employed persons, self-employed are not included. **Social assistance:** Malta citizens.
The Netherlands	**Regulatory Framework:** Old-age pension: 1957; survivor pension: 1959; disability pension for employed persons: 1966; disability pension for self-employed persons: 1998; disability assistance for young persons: 1998; disability pension for employed persons: 2006. **Coverage:** The Netherlands residents, people who work in the Netherlands. -Age 65 and 6	**Regulatory Framework:** Sickness benefits: 1992; maternity benefits for unemployed workers: 2001; health insurance: 2006; long-term care: 2015. **Coverage*:* Cash sickness and maternity benefits:** Is done mostly through private providers. No employer workers: social insurance, with pregnancy or childbirth incapacitated women. **Medical and long-term care benefits:**	**Regulatory Framework:** 1901.	**Regulatory Framework:** 1987. **Coverage*:*** Employed.

	months (will rise to age 67 by 2021) and the Netherlands residents or working in the Netherlands from age 15 and 6 months (will rise to age 17 by 2021) to age 65 and six months (will rise to age 67 by 2021).	The Netherlands residents, professional activities carrying people in the Netherlands but reside outside.		
Poland	**Regulatory Framework:** Farmers: 1990; pension funds: 1997; social insurance system: 1999; social insurance fund: 1998; social pension: 2003; individual accounts: 2004; old age pension: 2008. **Coverage:** People who are active economically. -Age 65 (in January, May, and September rise one month each year until reaching age 67 in 2020).	**Regulatory Framework:** Rehabilitation: 1997; sickness and maternity: 1999; health fund: 2003; health care benefits: 2004; maternity and parental leave: 2013. **Coverage: Cash sickness and maternity benefits:** Employed. **Medical benefits:** Employed, self-employed, pensioners, unemployment allowance receivers, under professional rehabilitation people, students, dependent family members of insured people.	**Regulatory Framework:** Cash benefits: 2002; health care benefits: 2004. **Coverage:** People who are active economically, self-employed.	**Regulatory Framework:** Employment promotion: 2004; Early retirement: 2004. **Coverage:** Employed.
Portugal	**Regulatory Framework:** Noncontributory scheme: 1980; social pension: 1980; survivor pension: 1990; survivor benefits: 1994; general scheme: 2007; social security system: 2007; disability: 2009; contributory	**Regulatory Framework:** National Health Service: 1979; Framework Law on Health: 1990; sickness: 2004, 2005, 2009); social security: 2007; contributory schemes: 2009; parental benefits: 2009; means test: 2010; co-payments: 2011.	**Regulatory Framework:** Work injury and occupational diseases: 2009. **Coverage:** Employed, self-employed persons. Special system exists for civil servants.	**Regulatory Framework:** Unemployment: 2006 and 2010; contributory schemes: 2009; means

	schemes: 2009, 2010, and 2011. **Coverage: Social insurance:** Employed, self-employed are covered if their gross annual income greater than 6 times the social benefit rate. -The social benefit rate is EUR419.22 a month. -Age 66 and 2 months.	**Coverage*:* Cash sickness benefits (social insurance):** Employed, self-employed, household workers. **Cash maternity, paternity, and adoption benefits (social insurance):** Employed, self-employed. **Cash maternity, paternity, and adoption benefits (social assistance):** Portugal residents in need. **Medical benefits:** Portugal residents, illegal immigrants are included.		test: 2010. **Coverage:** Employed, people who regain capability of working after being disabled, self-employed in specific areas, people who are economically dependent on an employer (if one receives 80% of total annual income from the employer).
Romania	**Regulatory Framework:** Mandatory individual accounts: 2004; public pension system: 2011); fiscal code: 2015. **Coverage*:* Social insurance:** Employed work under individual labor	**Regulatory Framework:** Benefits: 2005; social health insurance: 2006. **Coverage*:* Cash sickness and maternity benefits:** Employed work under individual labor contracts, civil servants, people receiving	**Regulatory Framework:** Work injury: 2002; safety and health: 2006; social insurance: 2011. **Coverage:** Employed work under individual labor contracts, civil servants, and people receiving unemployment benefit, full-time students, apprentices, and students in	**Regulatory Framework:** 2002. **Coverage:** Employed work under individual

	contracts, civil servants, military personnel; people receiving unemployment benefit, self-employed earning at least 938 lei monthly, certain other workers. **Mandatory individual accounts:** Employed, self-employed persons younger than age 36 on January 1, 2008. –Age 65, (women, will rise to age 63 by 2030).	unemployment benefit, self-employed, certain other workers. **Medical benefits:** Romania residents (legally).	occupational training.	labor contracts, civil servants.
Slovak Republic	**Regulatory Framework:** Social insurance: 2004; employment services: 2004; individual accounts: 2005. **Coverage:** Employed, self-employed are covered if their annual income greater than 6 times the minimum assessment basis which is EUR429. -Age 62 (will rise from 2017 according to increases in life expectancy).	**Regulatory Framework:** Medical products and devices: 1998; childbirth allowance: 1999; social insurance: 2004; income replacement: 2004; health care and services: 2004; health insurance: 2004. **Coverage: Cash sickness and maternity benefits:** Employed, self-employed are covered if their annual income greater than 6 times the minimum assessment basis which is EUR429.	**Regulatory Framework:** Minimum requirements: 1965; dangerous work: 1986; workplace security and health: 2001; labor code: 2002; income tax: 2004; social insurance: 2004; compensation: 2004. **Coverage***:* Employed, students, and specific fire fighters who work voluntarily, rescue workers.	**Regulatory Framework:** Social insurance: 2004; employment services: 2004. **Coverage:** Unemployed people who seek jobs.
Slovenia	**Regulatory Framework:** 2010 (social benefits), implemented in 2012; 2012 (social insurance), implemented in 2013. **Coverage: Social insurance:**	**Regulatory Framework:** 2001 (parental care and family benefits) and 2006 (health care and health insurance). **Coverage: Cash and medical benefits:** Employed, self-	**Regulatory Framework:** 2006 (health care and health insurance) and 2012 (pension and invalidity). **Coverage:** Employed, self-employed, students and people who are disabled in vocational training, specific unemployed persons.	**Regulatory Framework:** Unemployment: 2010. **Coverage***:* Employed

	Employed, self-employed, farmers, unemployment benefits receivers -Age 65.	employed, farmers, pensioners (not eligible for temporary sickness cash benefits), unemployment benefits receivers, social assistance cash benefits receivers and their dependents.		(public-sector, part-time, and self-employed).
Spain	**Regulatory Framework:** Social assistance: 1991; social security: 1994; social assistance: 2009; social security: 2011; early and partial retirement: 2013; sustainability factor and indexation: 2013; social security: 2015. **Coverage: Social insurance:** Industry, commerce, and services sector workers are covered. -Age 65 and 4 months (will rise to age 67 by 2027).	**Regulatory Framework:** Social security: 1994; disability: 1997; maternity: 2001; paternity and nursing mothers: 2007; maternity benefits: 2009; child care: 2011; social security: 2015. **Coverage:** Employed, specific self-employed. Pensioners are eligible for medical benefits.	**Regulatory Framework:** Social security: 1994; social security: 2011; social security: 2015. **Coverage:** Employed.	**Regulatory Framework:** Unemployment: 1985); social security: 1994); social security: 2015). **Coverage:** Industry, commerce, and services sector workers are covered.
Sweden	**Regulatory Framework:** National insurance: 1962; pensions: 1999; pensions: 2000; sickness: 2008; social insurance: 2011. **Coverage: Earnings-related pension (NDC):** Employed, self-employed who are born since	**Regulatory Framework:** Sick pay: 1991; social insurance: 2011. **Coverage: Cash benefits:** People who earn 10,700 kronor or more a year by being employed, employment service registered people who are involuntarily unemployed.	**Regulatory Framework:** Social insurance: 1976; sick pay: 1991. **Coverage:** Employed, self-employed.	**Regulatory Framework:** 1998. **Coverage: Basic program:** Employed, people who

	1954. **Premium pension (mandatory individual account):** Employed, self-employed. **Guarantee pension:** Sweden residents. **Earnings-related disability pension (sickness compensation) (social insurance):** Employed, self-employed. **Guarantee disability pension (sickness compensation):** Sweden residents. –Age 61 is the retirement age, which is flexible.	**Parental cash benefits (parental insurance):** Sweden residents. **Medical benefits:** Sweden residents.		are seeking employment.
United Kingdom	**Regulatory Framework:** Consolidated legislation: 1992; pensions: 1995; welfare reform and pensions: 1999; child sup- port, pensions, and social security: 2000; pension credit: 2002; pensions: 2004; pensions: 2007; welfare reform: 2009; pensions: 2011; pensions: 2014. **Coverage: Contributory benefits:** Employed people who earn £155 to £827 at weekly basis (April 2016). Self-employed people who earns at least £5,965 annually (April 2016)	**Regulatory Framework:** National health service: 1977; consolidated legislation: 1992; sick pay: 1994; welfare reform and pensions: 1999; work and families: 2005; welfare: 2007; welfare reform: 2009; welfare reform: 2012; shared parental leave: 2014. **Coverage: Statutory sick pay:** Employed people who earns at least average £112 at weekly basis (April 2016). **Employment and support allowance (contributory and means-tested):** Employed, self-	**Regulatory Framework:** Consolidated legislation: 1992. **Coverage:** Employed.	**Regulatory Framework:** Job seekers: 1995; welfare reform: 2009; uprating: 2013. **Coverage: Job seeker's allowance (contributory and means test):** Employees.

	(state second pension excluded). **Employment and support allowance (contributory and means-tested ESA):** Employed, self-employed are not eligible for statutory sick pay, or statutory maternity pay; specific unemployed and non-employed persons. **Noncontributory benefits:** United Kingdom residents. – Men: age 65, women: age 63 before April 6, 2016. There will be no basic state retirement pension after April 6, 2016.	employed are not eligible for statutory sick pay, unemployed and non-employed. **Universal credit (means test):** United Kingdom residents by 2017 (currently only applicable in certain regions). **Maternity allowance:** Employed, self-employed are not eligible for statutory maternity pay. **Statutory maternity Pay:** Female employed people who earn at least £112 at weekly basis (April 2016). **Statutory paternity Pay:** Employed people who earn at least average £112 at weekly basis (April 2016) in condition if wife or partner is expecting a baby. **Statutory adoption Pay:** Employed people who earn at least average £112 at weekly basis (April 2016) in condition if adopting a child. **Statutory shared parental pay:** Employed if have a sharing responsibility for a child born or adopted on or after April 5, 2015. **Medical benefits:** United Kingdom residents.		Self-employed: means-tested job seeker's allowance. **Universal credit (means test):** United Kingdom residents by 2017 (currently only applicable in certain regions).

Source: Social Security Administration, 2016, Social Security Programs Throughout the World: Europe, 2016.

Table A.4. Definition of Variables

Variable	*Definition*
Leaving unemployment (dependent variable)	1=exit 0=otherwise
Gender	1=female 0=male
Age	
Young	1= 15-29 years old 0= otherwise
Middle (Base)	1= 30-49 years old 0= otherwise
Old	1= > 50 years old 0= otherwise
Unemployment Rate	Unemployment rate (young, 15-29 years old) Unemployment rate (middle, 30-49 years old) Unemployment rate (old, > 50)
Marital Status	1= Married 0= Otherwise
Education level (years of schooling)	
Lower *Not Graduated (Illiterate, Literate but not a graduate)* *Primary school* *Secondary school*	1= Lower education 0= Otherwise
High school	1= High school 0= Otherwise
Vocational (Base) *Vocational or technical high school*	1= Vocational education 0= Otherwise
Higher *College = Faculty/university, college or higher education level*	1= higher education 0= Otherwise
Occupation	
Managers (Base)	1=managers 0=otherwise
Professionals	1=professionals 0=otherwise
Technicians and associate professionals	1=technicians 0=otherwise
Workers *Clerical support workers* *Service and sales workers* *Skilled agricultural, forestry and fishery workers* *Craft and related trades workers* *Plant and machine operators, and assemblers*	1=workers 0=otherwise
Elementary occupations	1=elementary occupations 0=otherwise
Predicted wage	Predicted wage of an individual
Number of earners in the household	Number of earners in the household
Unemployment benefit status	1= received

	0= not received
Total social transfers status	1= received
Unemployment benefits	0= not received
Survivors' benefits	
Sickness benefits	
Disability benefits (including ghazi and honor pensions)	
Education-related allowances)	

Note: Lower-high school-higher education for the EU countries in 2006-2009. Vocational secondary school instead of vocational high school for the EU countries in 2011-2014.

APPENDIX B- LIST OF COUNTRY CODES AND CLASSIFICATIONS

Table B.1. European Union Country Codes (Regions)

France - France	The Netherlands-Nederland	Spain- España	Poland- Polska
FR10 Île de France	NL11 Groningen	ES11 Galicia	PL11 Lodzkie
FR21 Champagne-Ardenne	NL12 Friesland (NL)	ES12 Principado de Asturias	PL12 Mazowieckie
FR22 Picardie	NL13 Drenthe	ES13 Cantabria	PL21 Malopolskie
FR23 Haute-Normandie	NL21 Overijssel	ES21 País Vasco	PL22 Slaskie
FR24 Centre	NL22 Gelderland	ES22 Comunidad Foral de Navarra	PL31 Lubelskie
FR25 Basse-Normandie	NL23 Flevoland	ES23 La Rioja	PL32 Podkarpackie
FR26 Bourgogne	NL31 Utrecht	ES24 Aragón	PL33 Swietokrzyskie
FR30 Nord - Pas-de-Calais	NL32 Noord-Holland	ES30 Comunidad de Madrid	PL34 Podlaskie
FR41 Lorraine	NL33 Zuid-Holland	ES41 Castilla y León	PL41 Wielkopolskie
FR42 Alsace	NL34 Zeeland	ES42 Castilla-La Mancha	PL42 Zachodniopomorskie
FR43 Franche-Comté	NL41 Noord-Brabant	ES43 Extremadura	PL43 Lubuskie
FR51 Pays de la Loire	NL42 Limburg (NL)	ES51 Cataluña	PL51 Dolnoslaskie
FR52 Bretagne	NLZZ Extra-Regio	ES52 Comunidad V alenciana	PL52 Opolskie
FR53 Poitou-Charentes		ES53 Illes Balears	PL61 Kujawsko-Pomorskie
FR61 Aquitaine		ES61 Andalucía	PL62 Warminsko-Mazurskie
FR62 Midi-Pyrénées		ES62 Región de Murcia	PL63 Pomorskie
FR63 Limousin		ES63 Ciudad Autónoma de Ceuta	PLZZ Extra-Regio
FR71 Rhône-Alpes		ES64 Ciudad Autónoma de	

	Melilla
FR72 Auvergne	ES70 Canarias
	ESZZ Extra-Regio
FR81 Languedoc-Roussillon	
FR82 Provence-Alpes-Côte d'Azur	
FR83 Corse	
FR91 Guadeloupe	
FRA2 Martinique	
FRA3 Guyane	
FRA4 Réunion	
FRZZ Extra-Regio	

Source: Eurostat

Table B.2. NACE- Statistical Classification of Economic Activities

NACE Rev.1 (until 2008)
Section A: Agriculture, hunting and forestry
01 Agriculture, hunting and related service activities
02 Forestry, logging and related service activities
Section B: Fishing
05 Fishing, operation of fish hatcheries and fish farms; service activities incidental to fishing
Section C: Mining and quarrying
10 Mining of coal and lignite; extraction of peat
11 Extraction of crude petroleum and natural gas; service activities incidental to oil and gas extraction excluding surveying
12 Mining of uranium and thorium ores
13 Mining of metal ores
14 Other mining and quarrying
Section D: Manufacturing
15 Manufacture of food products and beverages
16 Manufacture of tobacco products
17 Manufacture of textiles
18 Manufacture of wearing apparel; dressing and dyeing of fur
19 Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear
20 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials

21 Manufacture of pulp, paper and paper products

22 Publishing, printing and reproduction of recorded media

23 Manufacture of coke, refined petroleum products and nuclear fuel

24 Manufacture of chemicals and chemical products

25 Manufacture of rubber and plastic products

26 Manufacture of other non-metallic mineral products

27 Manufacture of basic metals

28 Manufacture of fabricated metal products, except machinery and equipment

29 Manufacture of machinery and equipment n.e.c.

30 Manufacture of office machinery and computers

31 Manufacture of electrical machinery and apparatus n.e.c.

32 Manufacture of radio, television and communication equipment and apparatus

33 Manufacture of medical, precision and optical instruments, watches and clocks

34 Manufacture of motor vehicles, trailers and semi-trailers

35 Manufacture of other transport equipment

36 Manufacture of furniture; manufacturing n.e.c.

37 Recycling

Section E: Electricity, gas and water supply

40 Electricity, gas, steam and hot water supply

41 Collection, purification and distribution of water

Section F: Construction

45 Construction

Section G: Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods

50 Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of automotive fuel

51 Wholesale trade and commission trade, except of motor vehicles and motorcycles

52 Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods

Section H: Hotels and restaurants

55 Hotels and restaurants

Section I: Transport, storage and communication

60 Land transport; transport via pipelines

61 Water transport

62 Air transport

63 Supporting and auxiliary transport activities; activities of travel agencies

64 Post and telecommunications

Section J: Financial intermediation

65 Financial intermediation, except insurance and pension funding

66 Insurance and pension funding, except compulsory social security

67 Activities auxiliary to financial intermediation

Section K: Real estate, renting and business activities

70 Real estate activities

71 Renting of machinery and equipment without operator and of personal and household goods

72 Computer and related activities

73 Research and development

74 Other business activities

Section L: Public administration and defence, compulsory social security

75 Public administration and defence; compulsory social security

Section M: Education

80 Education

Section N: Health and social work

85 Health and social work

Section O: Other community, social and personal service activities

90 Sewage and refuse disposal, sanitation and similar activities

91 Activities of membership organization n.e.c.

92 Recreational, cultural and sporting activities

93 Other service activities

Section P: Private households with employed persons

95 Private households with employed persons

Section Q: Extra-territorial organisations and bodies

99 Extra-territorial organizations and bodies

NACE Rev.2 From 2008

Section A — Agriculture, Forestry and Fishing

01 Crop and animal production, hunting and related service activities

02 Forestry and logging

03 Fishing and aquaculture

Section B — Mining and Quarrying

05 Mining of coal and lignite

06 Extraction of crude petroleum and natural gas

07 Mining of metal ores

08 Other mining and quarrying

09 Mining support service activities

Section C — Manufacturing

10 Manufacture of food products

11 Manufacture of beverages

12 Manufacture of tobacco products

13 Manufacture of textiles

14 Manufacture of wearing apparel

15 Manufacture of leather and related products

16 Manufacture of wood and of products of wood and cork, except

17 Manufacture of paper and paper products

18 Printing and reproduction of recorded media

19 Manufacture of coke and refined petroleum products

20 Manufacture of chemicals and chemical products

21 Manufacture of basic pharmaceutical products and pharmaceutical preparations

22 Manufacture of rubber and plastic products

23 Manufacture of other non-metallic mineral products

24 Manufacture of basic metals

25 Manufacture of fabricated metal products, except machinery and equipment

26 Manufacture of computer, electronic and optical products

27 Manufacture of electrical equipment

28 Manufacture of machinery and equipment n.e.c.

29 Manufacture of motor vehicles, trailers and semi-trailers

30 Manufacture of other transport equipment

31 Manufacture of furniture

32 Other manufacturing

33 Repair and installation of machinery and equipment

Section D — Electricity, Gas, Steam and Air Conditioning Supply

35 Electricity, gas, steam and air conditioning supply

Section E — Water Supply; Sewerage, Waste Management and Remediation Activities

36 Water collection, treatment and supply

37 Sewerage

38 Waste collection, treatment and disposal activities; materials recovery

39 Remediation activities and other waste management services

Section F — Construction

41 Construction of buildings

42 Civil engineering

43 Specialised construction activities

Section G — Wholesale and Retail Trade; Repair Of Motor Vehicles and Motorcycles

45 Wholesale and retail trade and repair of motor vehicles and motorcycles

46 Wholesale trade, except of motor vehicles and motorcycles

47 Retail trade, except of motor vehicles and motorcycles

Section H — Transportation and Storage

49 Land transport and transport via pipelines

50 Water transport

51 Air transport

52 Warehousing and support activities for transportation

53 Postal and courier activities

Section I — Accommodation and Food Service Activities

55 Accommodation

56 Food and beverage service activities

Section J — Information and Communication

58 Publishing activities

59 Motion picture, video and television programme production, sound

60 Programming and broadcasting activities

61 Telecommunications

62 Computer programming, consultancy and related activities

63 Information service activities

Section K — Financial and Insurance Activities

64 Financial service activities, except insurance and pension funding

65 Insurance, reinsurance and pension funding, except compulsory social security

66 Activities auxiliary to financial services and insurance activities

Section L — Real Estate Activities

68 Real Estate Activities

Section M — Professional, Scientific and Technical Activities

69 Legal and accounting activities

70 Activities of head offices; management consultancy activities

71 Architectural and engineering activities; technical testing and analysis

72 Scientific research and development

73 Advertising and market research

74 Other professional, scientific and technical activities

75 Veterinary activities

Section N — Administrative and Support Service Activities

77 Rental and leasing activities

78 Employment activities

79 Travel agency, tour operator reservation service and related activities

80 Security and investigation activities

81 Services to buildings and landscape activities

82 Office administrative, office support and other business support

Section O — Public Administration and Defence; Compulsory Social Security

84 Public administration and defence; compulsory social security

Section P — Education

85 Education

Section Q — Human Health and Social Work Activities

86 Human health activities

87 Residential care activities

88 Social work activities without accommodation

Section R — Arts, Entertainment and Recreation

90 Creative, arts and entertainment activities

91 Libraries, archives, museums and other cultural activities

92 Gambling and betting activities

93 Sports activities and amusement and recreation activities

Section S — Other Service Activities

94 Activities of membership organisations

95 Repair of computers and personal and household goods

96 Other personal service activities

Section T — Activities Of Households As Employers; Undifferentiated Goods- and Services-Producing Activities Of Households For Own Use

97 Activities of households as employers of domestic personnel

98 Undifferentiated goods- and services-producing activities of private households for own use

Section U — Activities Of Extraterritorial Organisations and Bodies

99 Activities of extraterritorial organisations and bodies

Source: Eurostat

Table B.3. ISCO: International Standard Classification of Occupations

ISCO-088 until 2011

1- Chief Executives, Senior Officials and Legislators

2- Professionals

3- Associate professionals

4- Clerical support workers

5- Service and sales workers

6- Skilled agricultural and fishery workers

7- Crafts and related trades workers

8- Plant and machine operators and assemblers

9- Elementary occupations

ISCO-08 from 2012

1- Managers

2- Professionals

3- Technicians and associate professionals

4- Clerical support workers

5- Service and sales workers

6- Skilled agricultural and fishery workers

7- Crafts and related trades workers

8- Plant and machine operators and assemblers

9- Elementary occupations

Source: International Labor Organization (ILO),
http://www.ilo.org/public/english/bureau/stat/isco/isco08/index.htm

APPENDIX C- ESTIMATIONS

Table C.1. AFT Hazard Estimations for Different Distributions

Turkey

E	**2006 2009**					**2011 2014**				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
ST			1.096***					1.491***		
			(0.171)					(0.153)		
UB				2.982***	4.738***				4.721***	2.058
				(0.578)	(0.620)				(1.000)	(1.527)
LowUB					-0.00108***					0.00210
					(0.000160)					(0.00256)
MidUB					-0.000904***					0.00699
					(9.39e-05)					(0.433)
HighUB					-3.21e-05**					0.00230
					(1.28e-05)					(0.107)
Female	0.722***	0.673***	0.635***	0.667***	0.645***	1.434***	1.214***	1.122***	1.194***	1.194***
	(0.062)	(0.065)	(0.065)	(0.065)	(0.0646)	(0.069)	(0.070)	(0.070)	(0.070)	(0.0699)
Lower_edu	1.062***	0.989***	1.003***	1.005***	0.968***	0.933***	0.495***	0.504***	0.519***	0.519***
	(0.046)	(0.047)	(0.047)	(0.047)	(0.0473)	(0.040)	(0.041)	(0.041)	(0.041)	(0.0410)
Higher_edu	1.441***	1.478***	1.425***	1.472***	1.476***	2.097***	1.828***	1.828***	1.831***	1.831***
	(0.104)	(0.107)	(0.108)	(0.107)	(0.108)	(0.100)	(0.101)	(0.101)	(0.101)	(0.101)
Pre_wage	0.198***	0.043***	0.047***	0.046***	0.0368**	0.219***	0.020	0.019	0.019	0.0192
	(0.008)	(0.016)	(0.016)	(0.016)	(0.0162)	(0.006)	(0.013)	(0.012)	(0.012)	(0.0124)
Marital_sta		-0.155***	-0.138***	-0.124**	-0.147***		1.721***	1.693***	1.690***	1.691***
		(0.051)	(0.051)	(0.051)	(0.0515)		(0.050)	(0.050)	(0.050)	(0.0498)
Young		-6.381***	-6.189***	-6.222***	-6.304***		-3.843***	-3.659***	-3.669***	-3.668***

		(0.321)	(0.322)	(0.322)	(0.322)		(0.211)	(0.210)	(0.210)	(0.210)
Old		5.349***	5.336***	5.349***	5.338***		2.811***	2.617***	2.791***	2.791***
		(0.453)	(0.453)	(0.453)	(0.453)		(0.156)	(0.156)	(0.156)	(0.156)
Technicians		1.785***	1.736***	1.699***	1.698***		2.618***	2.601***	2.604***	2.604***
		(0.292)	(0.292)	(0.292)	(0.292)		(0.411)	(0.411)	(0.411)	(0.411)
Pro		0.230	0.242	0.213	0.262		2.786***	2.795***	2.825***	2.825***
		(0.273)	(0.273)	(0.273)	(0.272)		(0.588)	(0.588)	(0.587)	(0.587)
Elem_occ		0.463***	0.447***	0.455***	0.488***		1.155***	1.162***	1.166***	1.166***
		(0.113)	(0.113)	(0.113)	(0.112)		(0.094)	(0.093)	(0.093)	(0.0928)
Workers		1.222***	1.197***	1.197***	1.228***		1.333***	1.314***	1.309***	1.309***
		(0.108)	(0.108)	(0.108)	(0.107)		(0.096)	(0.095)	(0.095)	(0.0951)
No of earner		-0.299***	-0.294***	-0.294***	-0.299***		-0.297***	-0.293***	-0.300***	-0.300***
		(0.012)	(0.012)	(0.012)	(0.0121)		(0.013)	(0.013)	(0.013)	(0.0127)
Un_rate		73.960***	72.014***	72.303***	73.09***		62.582***	60.593***	60.709***	60.70***
		(3.444)	(3.455)	(3.457)	(3.454)		(2.400)	(2.398)	(2.399)	(2.399)
Constant	8.015***	4.395***	4.444***	4.424***	4.466***	8.092***	3.611***	3.697***	3.694***	3.694***
	(0.044)	(0.199)	(0.200)	(0.200)	(0.200)	(0.038)	(0.157)	(0.157)	(0.157)	(0.157)
Observations	1127992	1127992	1127992	1127992	1127992	2006217	2006217	2006217	2006217	2006217
Log Likelihood	-28884.74	-28203.32	-28173.80	-28157.38	-28549.15	-43718.91	-41377.88	-41297.92	-41274.19	-41592.17
chi^2	1297.4	2660.3	2719.3	2752.1	1968.6	2924.1	7606.2	7766.1	7813.6	7177.6
AIC	57779.49	56434.64	56377.59	56344.77	38130.08	87447.82	82783.76	82625.84	82578.38	55541.36
W			**2006 2009**					**2011 2014**		
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
ST			2.155***					2.964***		
			(0.343)					(0.305)		
UB				5.898***	2.086***				9.372***	0.860
				(1.156)	(0.275)				(2.000)	(0.707)
LowUB					-0.000452***					0.00104
					(7.09e-05)					(0.00120)

MidUB					-0.000380***					0.00323
					(4.11e-05)					(0.191)
HighUB					-1.34e-05**					0.00106
					(5.76e-06)					(0.0482)
Female	1.427***	1.327***	1.251***	1.311***	0.292***	2.858***	2.430***	2.241***	2.394***	0.539***
	(0.124)	(0.129)	(0.129)	(0.129)	(0.0289)	(0.139)	(0.140)	(0.140)	(0.140)	(0.0326)
Lower_edu	2.131***	1.999***	2.024***	2.029***	0.417***	1.868***	0.981***	1.000***	1.027***	0.244***
	(0.091)	(0.093)	(0.093)	(0.093)	(0.0222)	(0.080)	(0.082)	(0.082)	(0.082)	(0.0189)
Higher_edu	2.883***	2.974***	2.873***	2.967***	0.642***	4.168***	3.631***	3.635***	3.636***	0.844***
	(0.208)	(0.214)	(0.215)	(0.214)	(0.0491)	(0.200)	(0.202)	(0.202)	(0.202)	(0.0473)
Pre_wage	0.403***	0.097***	0.104***	0.102***	0.0113	0.440***	0.034	0.031	0.032	0.0127**
	(0.016)	(0.033)	(0.033)	(0.033)	(0.00720)	(0.012)	(0.025)	(0.025)	(0.025)	(0.00574)
Marital_sta		-0.287***	-0.256**	-0.227**	-0.0744***		3.451***	3.400***	3.391***	0.761***
		(0.103)	(0.103)	(0.103)	(0.0227)		(0.100)	(0.100)	(0.100)	(0.0250)
Young		-12.894***	-12.527***	-12.593***	-2.742***		-7.633***	-7.262***	-7.298***	-1.695***
		(0.640)	(0.642)	(0.642)	(0.151)		(0.421)	(0.421)	(0.421)	(0.0982)
Old		10.745***	10.719***	10.744***	2.343***		5.583***	5.200***	5.546***	1.284***
		(0.905)	(0.905)	(0.905)	(0.204)		(0.311)	(0.312)	(0.311)	(0.0726)
Technicians		3.551***	3.445***	3.368***	0.761***		5.223***	5.186***	5.188***	1.188***
		(0.585)	(0.585)	(0.585)	(0.130)		(0.822)	(0.822)	(0.822)	(0.187)
Pro		0.490	0.501	0.444	0.106		5.644***	5.652***	5.719***	1.236***
		(0.544)	(0.545)	(0.545)	(0.121)		(1.175)	(1.175)	(1.175)	(0.267)
Elem_occ		0.926***	0.893***	0.911***	0.220***		2.377***	2.388***	2.398***	0.495***
		(0.226)	(0.227)	(0.226)	(0.0498)		(0.185)	(0.185)	(0.184)	(0.0434)
Workers		2.419***	2.371***	2.372***	0.556***		2.743***	2.702***	2.695***	0.553***
		(0.215)	(0.215)	(0.215)	(0.0481)		(0.190)	(0.189)	(0.188)	(0.0447)
No of earner		-0.606***	-0.596***	-0.597***	-0.129***		-0.591***	-0.581***	-0.595***	-0.139***
		(0.024)	(0.024)	(0.024)	(0.00584)		(0.025)	(0.025)	(0.025)	(0.00608)
Un_rate		149.643***	145.914***	146.483***	31.73***		124.586***	120.601***	120.986***	27.89***

		(6.867)	(6.887)	(6.891)	(1.633)		(4.797)	(4.794)	(4.796)	(1.153)
Constant	12.426***	5.062***	5.158***	5.120***	4.058***	12.618***	3.695***	3.868***	3.853***	3.629***
	(0.089)	(0.398)	(0.398)	(0.399)	(0.0889)	(0.076)	(0.315)	(0.314)	(0.314)	(0.0716)
Observations	1127992	1127992	1127992	1127992	1127992	2006217	2006217	2006217	2006217	2006217
Log Likelihood	-30339.26	-29651.36	-29622.93	-29607.13	-29688.43	-45885.11	-43543.00	-43464.31	-43442.92	-43523.02
chi^2	1320.9	2696.7	2753.5	2785.1	2622.5	2935.7	7619.9	7777.3	7820.0	7659.8
AIC	60688.51	59330.73	59275.86	59244.26	36460.06	91780.23	87114	86958.62	86915.84	53143.92
LN			**2006 2009**					**2011 2014**		
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
ST			0.543***					0.711***		
			(0.081)					(0.069)		
UB				1.401***	2.483***				1.982***	0.784
				(0.241)	(0.306)				(0.341)	(0.582)
LowUB					-0.000603***					0.000914
					(0.000108)					(0.000969)
MidUB					-0.000536***					0.00233
					(6.82e-05)					(0.119)
HighUB					-1.64e-05*					0.000781
					(8.68e-06)					(0.0367)
Female	0.377***	0.357***	0.339***	0.355***	0.344***	0.731***	0.621***	0.574***	0.610***	0.610***
	(0.032)	(0.033)	(0.033)	(0.033)	(0.0333)	(0.035)	(0.035)	(0.034)	(0.034)	(0.0345)
Lower_edu	0.551***	0.526***	0.535***	0.536***	0.516***	0.492***	0.291***	0.302***	0.308***	0.308***
	(0.027)	(0.028)	(0.028)	(0.028)	(0.0278)	(0.023)	(0.023)	(0.023)	(0.023)	(0.0232)
Higher_edu	0.714***	0.737***	0.708***	0.732***	0.734***	1.083***	0.903***	0.910***	0.909***	0.909***
	(0.052)	(0.054)	(0.054)	(0.054)	(0.0545)	(0.050)	(0.048)	(0.048)	(0.048)	(0.0480)
Pre_wage	0.096***	0.019**	0.021***	0.021**	0.0165**	0.107***	0.015**	0.014**	0.014**	0.0143**
	(0.004)	(0.008)	(0.008)	(0.008)	(0.00807)	(0.003)	(0.007)	(0.007)	(0.007)	(0.00654)
Marital_sta		-0.074***	-0.065**	-0.057**	-0.0640**		0.853***	0.840***	0.837***	0.837***
		(0.027)	(0.027)	(0.027)	(0.0267)		(0.026)	(0.026)	(0.026)	(0.0260)

Young		-3.820***	-3.711***	-3.722***	-3.748***		-2.848***	-2.730***	-2.737***	-2.735***
		(0.218)	(0.218)	(0.218)	(0.218)		(0.135)	(0.134)	(0.134)	(0.134)
Old		2.567***	2.557***	2.561***	2.551***		1.582***	1.477***	1.563***	1.564***
		(0.180)	(0.180)	(0.180)	(0.180)		(0.073)	(0.073)	(0.073)	(0.0730)
Technicians		0.928***	0.901***	0.871***	0.867***		1.322***	1.321***	1.325***	1.325***
		(0.139)	(0.138)	(0.137)	(0.137)		(0.189)	(0.189)	(0.189)	(0.189)
Pro		0.170	0.182	0.168	0.185		1.190***	1.201***	1.212***	1.211***
		(0.138)	(0.137)	(0.137)	(0.137)		(0.234)	(0.234)	(0.234)	(0.234)
Elem_occ		0.255***	0.246***	0.250***	0.265***		0.560***	0.565***	0.567***	0.567***
		(0.056)	(0.056)	(0.056)	(0.0559)		(0.047)	(0.047)	(0.047)	(0.0471)
Workers		0.620***	0.606***	0.608***	0.621***		0.649***	0.642***	0.639***	0.639***
		(0.054)	(0.053)	(0.053)	(0.0533)		(0.050)	(0.049)	(0.049)	(0.0492)
No of earner		-0.163***	-0.159***	-0.160***	-0.162***		-0.170***	-0.166***	-0.171***	-0.171***
		(0.007)	(0.007)	(0.007)	(0.00740)		(0.007)	(0.007)	(0.007)	(0.00717)
Un_rate		43.791***	42.679***	42.754***	42.95***		43.079***	41.784***	41.835***	41.81***
		(2.375)	(2.373)	(2.372)	(2.374)		(1.608)	(1.601)	(1.600)	(1.599)
Constant	7.227***	4.974***	4.996***	4.986***	5.018***	7.335***	4.020***	4.067***	4.063***	4.064***
	(0.062)	(0.136)	(0.136)	(0.136)	(0.136)	(0.053)	(0.102)	(0.102)	(0.102)	(0.102)
Observations	1127992	1127992	1127992	1127992	1127992	2006217	2006217	2006217	2006217	2006217
Log Likelihood	-28248.05	-27566.06	-27535.71	-27518.00	-28347.89	-42797.53	-40387.85	-40306.37	-40282.01	-78825.98
chi²	1215.8	2579.7	2640.4	2675.9	1016.1	2809.8	7629.2	7792.1	7840.9	-69247.0
AIC	56508.09	55162.13	55103.43	55068	36861.06	85607.07	80805.69	80644.75	80596.01	53557.33
LL			**2006 2009**					**2011 2014**		
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
ST			0.502***					0.685***		
			(0.076)					(0.070)		
UB				1.346***	2.102***				2.167***	0.857
				(0.256)	(0.277)				(0.453)	(0.705)
LowUB					-0.000454***					0.00103

					(7.20e-05)					(0.00120)
MidUB					-0.000387***					0.00338
					(4.31e-05)					(0.271)
HighUB					-1.33e-05**					0.00116
					(5.82e-06)					(0.0878)
Female	0.321***	0.302***	0.284***	0.300***	0.292***	0.657***	0.550***	0.510***	0.539***	0.538***
	(0.028)	(0.029)	(0.029)	(0.029)	(0.0290)	(0.033)	(0.033)	(0.033)	(0.033)	(0.0326)
Lower_edu	0.462***	0.426***	0.433***	0.434***	0.418***	0.426***	0.233***	0.238***	0.245***	0.245***
	(0.022)	(0.022)	(0.022)	(0.022)	(0.0223)	(0.019)	(0.019)	(0.019)	(0.019)	(0.0190)
Higher_edu	0.634***	0.649***	0.622***	0.643***	0.643***	0.969***	0.843***	0.841***	0.844***	0.843***
	(0.047)	(0.049)	(0.049)	(0.049)	(0.0492)	(0.048)	(0.047)	(0.047)	(0.047)	(0.0472)
Pre_wage	0.084***	0.014*	0.016**	0.015**	0.0114	0.099***	0.013**	0.012**	0.013**	0.0126**
	(0.004)	(0.007)	(0.007)	(0.007)	(0.00720)	(0.003)	(0.006)	(0.006)	(0.006)	(0.00577)
Marital_sta		-0.078***	-0.069***	-0.063***	-0.0736***		0.778***	0.762***	0.761***	0.761***
		(0.023)	(0.023)	(0.023)	(0.0227)		(0.025)	(0.025)	(0.025)	(0.0250)
Young		-2.811***	-2.715***	-2.728***	-2.770***		-1.826***	-1.740***	-1.737***	-1.737***
		(0.153)	(0.153)	(0.153)	(0.153)		(0.100)	(0.100)	(0.100)	(0.0996)
Old		2.352***	2.343***	2.348***	2.347***		1.306***	1.216***	1.293***	1.293***
		(0.204)	(0.204)	(0.204)	(0.204)		(0.073)	(0.073)	(0.073)	(0.0726)
Technicians		0.794***	0.776***	0.761***	0.761***		1.194***	1.186***	1.188***	1.188***
		(0.130)	(0.130)	(0.130)	(0.130)		(0.187)	(0.187)	(0.187)	(0.187)
Pro		0.087	0.099	0.085	0.106		1.219***	1.227***	1.236***	1.235***
		(0.121)	(0.121)	(0.121)	(0.121)		(0.267)	(0.267)	(0.267)	(0.267)
Elem_occ		0.209***	0.202***	0.205***	0.219***		0.492***	0.497***	0.497***	0.497***
		(0.050)	(0.050)	(0.050)	(0.0498)		(0.044)	(0.044)	(0.043)	(0.0435)
Workers		0.554***	0.541***	0.542***	0.556***		0.567***	0.559***	0.555***	0.555***
		(0.049)	(0.048)	(0.048)	(0.0482)		(0.045)	(0.045)	(0.045)	(0.0448)
No of earner		-0.130***	-0.127***	-0.127***	-0.129***		-0.138***	-0.136***	-0.140***	-0.140***
		(0.006)	(0.006)	(0.006)	(0.00587)		(0.006)	(0.006)	(0.006)	(0.00612)
Un_rate		32.484***	31.504***	31.616***	32.04***		29.408***	28.458***	28.424***	28.42***

		(1.659)	(1.658)	(1.659)	(1.660)		(1.177)	(1.172)	(1.171)	(1.171)
Constant	5.580***	4.007***	4.030***	4.021***	4.035***	5.659***	3.542***	3.583***	3.584***	3.584***
	(0.038)	(0.090)	(0.090)	(0.091)	(0.0907)	(0.033)	(0.073)	(0.073)	(0.073)	(0.0729)
Observations	1127992	1127992	1127992	1127992	1127992	2006217	2006217	2006217	2006217	2006217
Log Likelihood	-2043.080	-27370.72	-27338.59	-27320.98	-28346.78	-42534.14	-40185.81	-40102.99	-40074.81	-11742,73
chi^2	1237.2	2581.9	2646.2	2681.4	629.8	2896.5	7593.2	7758.8	7815.2	-23397.5
AIC	56098.17	54771.43	54709.18	54673.97	36464.05	85080.28	80401.61	80237.97	80181.63	53144.31

a) Standard errors are shown in parentheses.

b) * Significant at 10%; ** significant at 5%; *** significant at 1%.

c) E: exponential, W: Weibull, LN: log-normal, LL: log –logistic.

France

E			**2006 2009**					**2011 2014**		
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
ST			0.532***					0.611***		
			(0.0377)					(0.035)		
UB				0.480***	-0.240***				0.593***	-0.559***
				(0.0379)	(0.0457)				(0.036)	(0.0428)
LowUB					0.000885***					0.000982***
					(5.54e-05)					(5.22e-05)
MidUB					0.000282***					0.000439***
					(1.85e-05)					(1.74e-05)
HighUB					7.90e-05***					0.000174***
					(6.26e-06)					(7.74e-06)
Female	2.784***	2.939***	2.840***	2.863***	2.543***	1.040***	1.380***	1.436***	1.432***	1.272***
	(0.0539)	(0.0539)	(0.0543)	(0.0542)	(0.0554)	(0.044)	(0.046)	(0.046)	(0.046)	(0.0468)
Lower_edu	1.031***	1.008***	0.929***	0.943***	0.830***	0.599***	-0.344***	-0.331***	-0.352***	-0.362***

	(0.0495)	(0.0490)	(0.0495)	(0.0494)	(0.0492)	(0.036)	(0.039)	(0.038)	(0.038)	(0.0381)
Higher_edu	-2.178***	-3.581***	-3.431***	-3.455***	-2.845***	0.758***	1.135***	1.147***	1.151***	0.915***
	(0.137)	(0.142)	(0.142)	(0.142)	(0.144)	(0.062)	(0.070)	(0.070)	(0.070)	(0.0693)
Pre_wage	1.267***	1.634***	1.562***	1.573***	1.325***	0.220***	-0.158***	-0.175***	-0.181***	-0.144***
	(0.0289)	(0.0318)	(0.0321)	(0.0321)	(0.0340)	(0.009)	(0.012)	(0.012)	(0.012)	(0.0119)
Marital_sta		0.283***	0.191***	0.195***	0.217***		0.399***	0.440***	0.422***	0.314***
		(0.0426)	(0.0432)	(0.0432)	(0.0435)		(0.044)	(0.044)	(0.044)	(0.0446)
Young		1.032***	1.190***	1.110***	1.211***		-16.838***	-16.520***	-16.141***	-10.93***
		(0.134)	(0.134)	(0.134)	(0.133)		(0.636)	(0.628)	(0.631)	(0.635)
Old		1.022***	0.924***	0.919***	0.955***		1.816***	1.731***	1.717***	1.202***
		(0.0734)	(0.0740)	(0.0740)	(0.0737)		(0.060)	(0.060)	(0.060)	(0.0615)
Technicians		1.369***	1.242***	1.249***	1.090***		2.063***	1.850***	1.867***	1.654***
		(0.270)	(0.270)	(0.270)	(0.270)		(0.111)	(0.112)	(0.112)	(0.112)
Pro		7.208	7.536	7.477	9.628		3.408***	3.284***	3.312***	3.068***
		(501.7)	(499.3)	(500.6)	(805.5)		(0.304)	(0.304)	(0.304)	(0.304)
Elem_occ		-10.27***	-9.811***	-9.899***	-8.168***		2.463***	2.341***	2.358***	2.000***
		(0.373)	(0.374)	(0.374)	(0.384)		(0.072)	(0.072)	(0.072)	(0.0722)
Workers		-9.614***	-9.225***	-9.296***	-7.778***		2.259***	2.132***	2.148***	1.810***
		(0.256)	(0.258)	(0.258)	(0.268)		(0.052)	(0.052)	(0.052)	(0.0519)
No of earner		0.651***	0.669***	0.662***	0.646***		0.004	-0.012	-0.007	-0.0110
		(0.0397)	(0.0394)	(0.0394)	(0.0395)		(0.023)	(0.022)	(0.022)	(0.0221)
Un_rate		-9.885***	-10.44***	-9.617***	-10.04***		125.270***	123.878***	121.247**	84.47***
		(1.529)	(1.526)	(1.527)	(1.518)		(4.396)	(4.345)	(4.360)	(4.403)
Constant	4.675***	4.373***	4.390***	4.329***	4.865***	7.439***	-8.267***	-8.293***	-7.905***	-3.217***
	(0.059)	(0.142)	(0.141)	(0.141)	(0.144)	(0.045)	(0.546)	(0.540)	(0.542)	(0.548)
Observations	932256	932256	932256	932256	932256	1195035	1195035	1195035	1195035	1195035
Log	-31830.27	-3800.630	-30699.06	-3718.600	-32703.69	-38000.11	-35019.76	-34865.37	-	-34231.96

Likelihood									34880.30	
chi^2	6337.2	8396.5	8599.7	8560.6	4590.4	2627.5	8588.2	8897.0	8867.2	10163.9
AIC	63670.54	41367.95	41166.81	41205.9	40584.96	76010.23	70067.52	69760.75	69790.6	45192.42
W			**2006 2009**					**2011 2014**		
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
ST			0.341***					1.215***		
			(0.0244)					(0.071)		
UB				0.305***	-0.156***				1.175***	-0.330***
				(0.0245)	(0.0291)				(0.072)	(0.0247)
LowUB					0.000562***					0.000562***
					(3.58e-05)					(3.07e-05)
MidUB					0.000177***					0.000252***
					(1.20e-05)					(1.05e-05)
HighUB					4.94e-05***					9.86e-05***
					(4.02e-06)					(4.60e-06)
Female	1.879***	1.868***	1.804***	1.821***	1.614***	2.052***	2.690***	2.800***	2.790***	0.752***
	(0.0461)	(0.0441)	(0.0437)	(0.0438)	(0.0425)	(0.089)	(0.092)	(0.092)	(0.093)	(0.0283)
Lower_edu	0.667***	0.615***	0.565***	0.574***	0.500***	1.479***	-0.342***	-0.326***	-0.367***	-0.335***
	(0.0351)	(0.0326)	(0.0326)	(0.0326)	(0.0322)	(0.072)	(0.077)	(0.075)	(0.076)	(0.0217)
Higher_edu	-1.555***	-2.396***	-2.302***	-2.320***	-1.927***	1.648***	2.350***	2.368***	2.374***	0.493***
	(0.0946)	(0.0957)	(0.0951)	(0.0954)	(0.0946)	(0.125)	(0.141)	(0.141)	(0.141)	(0.0399)
Pre_wage	0.870***	1.063***	1.018***	1.026***	0.866***	0.451***	-0.283***	-0.319***	-0.329***	-0.0942***
	(0.0233)	(0.0253)	(0.0251)	(0.0252)	(0.0249)	(0.017)	(0.023)	(0.023)	(0.024)	(0.00681)
Marital_sta		0.181***	0.119***	0.123***	0.142***		0.773***	0.845***	0.808***	0.193***
		(0.0271)	(0.0274)	(0.0275)	(0.0276)		(0.089)	(0.088)	(0.088)	(0.0253)
Young		0.551***	0.658***	0.598***	0.687***		-33.292***	-32.551***	-31.853***	-6.275***
		(0.0859)	(0.0859)	(0.0858)	(0.0853)		(1.273)	(1.259)	(1.264)	(0.370)
Old		0.615***	0.549***	0.544***	0.594***		3.616***	3.433***	3.411***	0.686***
		(0.0475)	(0.0477)	(0.0478)	(0.0475)		(0.121)	(0.120)	(0.120)	(0.0361)

Technicians		0.807***	0.725***	0.731***	0.632***		4.113***	3.686***	3.719***	0.945***
		(0.171)	(0.171)	(0.171)	(0.171)		(0.222)	(0.223)	(0.223)	(0.0645)
Pro		4.631	4.818	4.786	5.747		6.800***	6.552***	6.603***	1.759***
		(406.9)	(399.5)	(401.8)	(470.5)		(0.607)	(0.608)	(0.608)	(0.174)
Elem_occ		-6.798***	-6.506***	-6.571***	-5.454***		4.813***	4.572***	4.603***	1.177***
		(0.254)	(0.254)	(0.254)	(0.255)		(0.144)	(0.144)	(0.144)	(0.0437)
Workers		-6.367***	-6.124***	-6.177***	-5.201***		4.401***	4.149***	4.178***	1.070***
		(0.185)	(0.184)	(0.184)	(0.184)		(0.104)	(0.104)	(0.104)	(0.0326)
No of earner		0.499***	0.508***	0.504***	0.494***		0.021	-0.011	-0.002	-0.0122
		(0.0259)	(0.0257)	(0.0257)	(0.0257)		(0.045)	(0.045)	(0.045)	(0.0126)
Un_rate		-5.391***	-5.841***	-5.212***	-5.710***		247.507***	243.950***	239.088***	48.56***
		(0.975)	(0.973)	(0.973)	(0.966)		(8.802)	(8.704)	(8.736)	(2.584)
Constant	4.294***	3.954***	3.971***	3.925***	4.279***	11.109***	-19.944***	-19.882***	-19.157***	-0.263
	(0.0415)	(0.0903)	(0.0897)	(0.0898)	(0.0921)	(0.089)	(1.094)	(1.082)	(1.085)	(0.315)
Observations	932256	932256	932256	932256	932256	1195035	1195035	1195035	1195035	119035
Log Likelihood	-33235.96	-32298.38	-32199.04	-32216.90	-32681.88	-39643.62	-36746.06	-36593.79	-36609.62	-35991.04
chi^2	6284.7	8159.9	8358.5	8322.8	7392	2740.7	8535.8	8840.4	8808.7	10045.9
AIC	66481.91	40605.05	40400.09	40442.68	39819.18	79297.23	73520.12	73217.57	73249.25	43995.64
LN			**2006 2009**					**2011 2014**		
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
ST			0.458***					0.382***		
			(0.0269)					(0.024)		
UB				0.409***	-0.241***				0.373***	-0.505***
				(0.0269)	(0.0356)				(0.024)	(0.0309)
LowUB					0.000641***					0.000655***
					(3.58e-05)					(3.22e-05)

MidUB					0.000202***					0.000278***
					(1.17e-05)					(1.04e-05)
HighUB					6.11e-05***					0.000111***
					(4.26e-06)					(4.66e-06)
Female	1.734***	1.845***	1.772***	1.789***	1.613***	0.693***	0.959***	0.992***	0.990***	0.869***
	(0.0431)	(0.0417)	(0.0412)	(0.0413)	(0.0404)	(0.030)	(0.031)	(0.031)	(0.031)	(0.0309)
Lower_edu	1.188***	1.007***	0.945***	0.953***	0.827***	0.298***	-0.341***	-0.346***	-0.351***	-0.356***
	(0.0457)	(0.0411)	(0.0408)	(0.0409)	(0.0405)	(0.027)	(0.026)	(0.026)	(0.026)	(0.0262)
Higher_edu	-0.0954	-1.412***	-1.335***	-1.347***	-1.133***	0.434***	0.813***	0.815***	0.823***	0.665***
	(0.0855)	(0.0870)	(0.0866)	(0.0867)	(0.0862)	(0.041)	(0.046)	(0.046)	(0.046)	(0.0455)
Pre_wage	0.603***	0.911***	0.866***	0.873***	0.744***	0.148***	-0.138***	-0.148***	-0.151***	-0.122***
	(0.0187)	(0.0219)	(0.0216)	(0.0217)	(0.0214)	(0.007)	(0.008)	(0.009)	(0.009)	(0.00845)
Marital_sta		0.133***	0.0724**	0.0726**	0.0976***		0.229***	0.244***	0.234***	0.179***
		(0.0303)	(0.0305)	(0.0305)	(0.0311)		(0.028)	(0.028)	(0.028)	(0.0285)
Young		1.401***	1.454***	1.412***	1.380***		-13.844***	-13.444***	-13.252***	-9.234***
		(0.111)	(0.111)	(0.111)	(0.110)		(0.475)	(0.472)	(0.472)	(0.458)
Old		1.091***	0.972***	0.984***	0.957***		1.311***	1.254***	1.247***	0.890***
		(0.0584)	(0.0580)	(0.0582)	(0.0580)		(0.042)	(0.042)	(0.042)	(0.0412)
Technicians		0.847***	0.731***	0.741***	0.651***		1.134***	1.000***	1.013***	0.926***
		(0.154)	(0.154)	(0.154)	(0.156)		(0.060)	(0.060)	(0.060)	(0.0605)
Pro		1.693	2.695	1.836	2.583		1.909***	1.845***	1.861***	1.743***
		(141.3)	(456.8)	(128.0)	(154.4)		(0.148)	(0.150)	(0.150)	(0.150)
Elem_occ		-5.651***	-5.366***	-5.415***	-4.524***		1.669***	1.602***	1.609***	1.393***
		(0.220)	(0.219)	(0.220)	(0.220)		(0.048)	(0.048)	(0.048)	(0.0467)
Workers		-5.290***	-5.072***	-5.109***	-4.329***		1.533***	1.458***	1.466***	1.269***
		(0.161)	(0.159)	(0.160)	(0.160)		(0.037)	(0.037)	(0.037)	(0.0359)
No of earner		0.497***	0.507***	0.504***	0.499***		0.009	0.0002	-0.00000	0.00276
		(0.0256)	(0.0255)	(0.0255)	(0.0257)		(0.014)	(0.014)	(0.014)	(0.0141)
Un_rate		-13.27***	-12.81***	-12.43***	-11.81***		101.997***	99.714***	98.386***	69.97***

		(1.263)	(1.254)	(1.257)	(1.248)		(3.329)	(3.309)	(3.309)	(3.201)
Constant	6.088***	5.803***	5.678***	5.669***	5.950***	7.808***	-5.526***	-5.370***	-5.171***	-1.640***
	(0.065)	(0.120)	(0.119)	(0.119)	(0.120)	(0.066)	(0.401)	(0.399)	(0.399)	(0.391)
Observations	932256	932256	932256	932256	932256	1195035	1195035	1195035	1195035	1195035
Log Likelihood	-3,016.83	-30772.62	-30619.92	-30650.92	-33592.70	-37678.46	-34517.42	-34378.08	-34389.04	-33735.18
chi^2	5606.0	8094.4	8399.9	8337.9	2454.3	2514.5	8836.6	9115.3	9093.3	10401.1
AIC	64045.66	41313.94	41010.54	41072.53	40327.95	75368.91	69064.83	68788.17	68810.09	44104.3
LL			**2006 2009**					**2011 2014**		
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
ST			0.346***					0.350***		
			(0.0245)					(0.021)		
UB				0.309***	-0.154***				0.340***	-0.344***
				(0.0245)	(0.0296)				(0.021)	(0.0252)
LowUB					0.000559***					0.000567***
					(3.57e-05)					(3.08e-05)
MidUB					0.000175***					0.000253***
					(1.20e-05)					(1.05e-05)
HighUB					4.88e-05***					9.95e-05***
					(4.04e-06)					(4.60e-06)
Female	1.875***	1.866***	1.801***	1.818***	1.614***	0.633***	0.821***	0.855***	0.852***	0.755***
	(0.0459)	(0.0438)	(0.0433)	(0.0434)	(0.0423)	(0.028)	(0.029)	(0.029)	(0.029)	(0.0284)
Lower_edu	0.692***	0.639***	0.591***	0.599***	0.521***	0.265***	-0.324***	-0.316***	-0.327***	-0.336***
	(0.0359)	(0.0333)	(0.0333)	(0.0334)	(0.0329)	(0.023)	(0.022)	(0.022)	(0.022)	(0.0221)
Higher_edu	-1.528***	-2.378***	-2.280***	-2.299***	-1.914***	0.413***	0.635***	0.643***	0.645***	0.502***
	(0.0945)	(0.0952)	(0.0945)	(0.0947)	(0.0942)	(0.038)	(0.041)	(0.041)	(0.041)	(0.0400)
Pre_wage	0.870***	1.065***	1.019***	1.028***	0.870***	0.127***	-0.106***	-0.115***	-0.118***	-0.0956***
	(0.0233)	(0.0253)	(0.0250)	(0.0251)	(0.0248)	(0.006)	(0.007)	(0.007)	(0.007)	(0.00690)
Marital_sta		0.184***	0.124***	0.127***	0.145***		0.240***	0.265***	0.255***	0.191***

		(0.0274)	(0.0276)	(0.0277)	(0.0278)		(0.026)	(0.026)	(0.025)	(0.0255)
Young		0.574***	0.679***	0.620***	0.710***		-9.943***	-9.797***	-9.558***	-6.456***
		(0.0876)	(0.0876)	(0.0875)	(0.0871)		(0.391)	(0.386)	(0.386)	(0.375)
Old		0.630***	0.561***	0.557***	0.606***		1.050***	1.009***	0.998***	0.698***
		(0.0481)	(0.0483)	(0.0484)	(0.0481)		(0.038)	(0.037)	(0.037)	(0.0363)
Technicians		0.797***	0.713***	0.720***	0.625***		1.168***	1.047***	1.058***	0.941***
		(0.170)	(0.169)	(0.170)	(0.169)		(0.065)	(0.065)	(0.065)	(0.0643)
Pro		4.235	5.106	4.935	6.072		1.943***	1.873***	1.890***	1.753***
		(318.2)	(539.8)	(485.1)	(655.5)		(0.174)	(0.174)	(0.174)	(0.173)
Elem_occ		-6.824***	-6.530***	-6.594***	-5.486***		1.455***	1.385***	1.395***	1.185***
		(0.253)	(0.252)	(0.253)	(0.254)		(0.045)	(0.045)	(0.045)	(0.0437)
Workers		-6.391***	-6.145***	-6.198***	-5.229***		1.338***	1.265***	1.274***	1.077***
		(0.184)	(0.183)	(0.184)	(0.184)		(0.035)	(0.034)	(0.034)	(0.0326)
No of earner		0.501***	0.511***	0.506***	0.495***		-0.002	-0.011	-0.009	-0.0112
		(0.0259)	(0.0257)	(0.0257)	(0.0258)		(0.013)	(0.013)	(0.013)	(0.0126)
Un_rate		-5.589***	-5.986***	-5.371***	-5.914***		73.965***	73.433***	71.770***	49.84***
		(0.995)	(0.993)	(0.994)	(0.987)		(2.731)	(2.702)	(2.699)	(2.615)
Constant	4.253***	3.907***	3.915***	3.871***	4.236***	5.964***	-3.412***	-3.464***	-3.224***	-0.442
	(0.043)	(0.093)	(0.092)	(0.092)	(0.0943)	(0.043)	(0.330)	(0.327)	(0.326)	(0.319)
Observations	932256	932256	932256	932256	932256	1195035	1195035	1195035	1195035	1195035
Log Likelihood	-31548.25	-30415.06	-30309.17	-30330.97	-32765.34	-37518.51	-34430.69	-34276.65	-34290.32	-33644.31
chi^2	6345.5	8611.8	8823.6	8780.0	3911.3	2535.3	8710.9	9019.0	8991.7	10283.7
AIC	63108.5	40598.82	40389.02	40432.63	39816.69	75049.02	68891.37	68585.31	68612.63	43984.31

a) Standard errors are shown in parentheses.

b) * Significant at 10%; ** significant at 5%; *** significant at 1%.

c) E: exponential, W: Weibull, LN: log-normal, LL: log –logistic.

The Netherlands

E	2006 – 2009					2011 - 2014				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
ST			-0.523**					0.643***		
			(0.223)					(0.136)		
UB				1.058**	-4.487***				0.762***	-1.908***
				(0.461)	(0.660)				(0.175)	(0.208)
LowUB					0.00831***					0.00136***
					(0.00160)					(0.000281)
MidUB					0.00329					0.00230
					(0.490)					(0.205)
HighUB					0.00155					0.000192***
					(0.102)					(2.24e-05)
Female	5.992***	2.578***	2.471***	2.701***	3.079***	2.321***	1.778***	1.746***	1.775***	1.989***
	(0.329)	(0.405)	(0.409)	(0.404)	(0.450)	(0.126)	(0.138)	(0.135)	(0.137)	(0.141)
Lower_edu	5.882***	5.917***	6.001***	5.959***	5.899***	2.005***	0.903***	0.808***	0.786***	0.768***
	(0.222)	(0.265)	(0.266)	(0.267)	(0.269)	(0.104)	(0.112)	(0.113)	(0.114)	(0.115)
Higher_edu	-0.533	2.438***	2.549***	2.447***	1.795***	2.725***	2.469***	2.565***	2.504***	2.308***
	(0.435)	(0.502)	(0.497)	(0.498)	(0.543)	(0.471)	(0.484)	(0.481)	(0.482)	(0.482)
Pre_wage	2.777***	1.047***	1.015***	1.083***	1.353***	0.718***	0.408***	0.362***	0.372***	0.393***
	(0.154)	(0.185)	(0.184)	(0.183)	(0.208)	(0.0315)	(0.0435)	(0.0429)	(0.0435)	(0.0428)
Marital_sta		14.79	15.42	14.80	16.44		17.76	17.64	17.48	17.74
		(736.8)	(908.7)	(921.4)	(1,871)		(869.2)	(870.4)	(821.4)	(1,132)
Young		25.10	26.05	25.37	26.44		19.50	19.52	19.56	20.59
		(1,214)	(1,557)	(1,555)	(4,402)		(1,920)	(1,923)	(1,812)	(2,913)
Old		7.901***	8.376***	7.692***	6.910***		1.670***	1.476***	1.552***	1.452***
		(0.837)	(0.857)	(0.836)	(0.842)		(0.193)	(0.195)	(0.194)	(0.192)
Technicians		16.33	17.03	16.17	17.27		2.595***	2.533***	2.514***	2.299***
		(2,112)	(2,671)	(2,555)	(5,337)		(0.416)	(0.416)	(0.416)	(0.418)
Pro		10.22	11.22	9.752	8.671		1.620***	1.702***	1.618***	1.336**
		(866.4)	(1,109)	(1,105)	(2,243)		(0.602)	(0.604)	(0.605)	(0.608)

Elem_occ		8.682	9.351	8.745	9.154		0.918***	1.040***	0.993***	0.866***
		(2,333)	(2,934)	(2,945)	(5,891)		(0.329)	(0.328)	(0.329)	(0.328)
Workers		10.48	11.51	9.938	7.597		1.461***	1.548***	1.521***	1.379***
		(962.5)	(1,203)	(1,264)	(1,929)		(0.236)	(0.236)	(0.237)	(0.237)
No of earner		13.93	14.32	14.36	16.28		0.802***	0.648***	0.569***	0.400*
		(552.1)	(704.8)	(697.9)	(1,906)		(0.197)	(0.201)	(0.203)	(0.215)
Un_rate		-373.3***	-402.6***	-356.0***	-310.2***		-35.65***	-29.57***	-32.59***	-34.86***
		(46.63)	(48.93)	(46.37)	(49.17)		(8.713)	(8.741)	(8.688)	(8.704)
Constant	-4.406***	4.870***	5.430***	4.417***	3.069**	4.515***	6.407***	6.306***	6.414***	6.439***
	(0.573)	(1.109)	(1.142)	(1.101)	(1.212)	(0.125)	(0.303)	(0.303)	(0.303)	(0.304)
Observations	211797	211797	211797	211797	211797	402520	402520	402520	402520	402520
Log Likelihood	-1069.12	-943.65	-941.07	-940.04	-923.01	-4266.49	-4029.49	-4017.24	-4018.53	-4955.66
chi^2	681.1	932.09	937.2	939.3	973.3	1564.8	2038.8	2063.3	2060.7	2186.4
AIC	1567.58	1334.65	1331.481	1329.425	1295.157	5770.701	5314.706	5292.189	5294.781	5152.637
W			**2006 2009**					**2011 2014**		
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
ST			-0.348**					0.406***		
			(0.161)					(0.0711)		
UB				0.766**	-3.502***				0.475***	-0.944***
				(0.322)	(0.450)				(0.0914)	(0.117)
LowUB					0.00644***					0.000716***
					(0.00107)					(0.000147)
MidUB					0.00212					0.00119
					(0.240)					(0.103)
HighUB					0.000970					0.000101***
					(0.0376)					(1.24e-05)
Female	4.864***	1.970***	1.924***	2.024***	2.147***	1.268***	0.936***	0.898***	0.916***	1.042***
	(0.437)	(0.312)	(0.314)	(0.310)	(0.326)	(0.0902)	(0.0843)	(0.0801)	(0.0818)	(0.0858)
Lower_edu	4.733***	4.322***	4.412***	4.306***	3.995***	1.075***	0.420***	0.337***	0.323***	0.303***

	(0.398)	(0.365)	(0.372)	(0.365)	(0.335)	(0.0764)	(0.0642)	(0.0626)	(0.0639)	(0.0632)
Higher_edu	-0.481	1.733***	1.827***	1.703***	1.138***	1.512***	1.302***	1.331***	1.291***	1.188***
	(0.348)	(0.382)	(0.386)	(0.376)	(0.369)	(0.268)	(0.264)	(0.255)	(0.257)	(0.253)
Pre_wage	2.248***	0.800***	0.783***	0.824***	0.960***	0.390***	0.211***	0.176***	0.184***	0.190***
	(0.205)	(0.140)	(0.141)	(0.137)	(0.148)	(0.0249)	(0.0250)	(0.0235)	(0.0240)	(0.0237)
Marital_sta		10.84	11.03	10.53	9.792		8.900	8.601	9.126	9.156
		(775.2)	(759.8)	(837.5)	(701.1)		(276.3)	(268.3)	(444.6)	(574.3)
Young		18.38	18.83	18.15	16.69		9.849	9.617	10.28	10.67
		(1,343)	(1,354)	(1,493)	(2,068)		(621.2)	(604.2)	(1,001)	(1,503)
Old		5.654***	6.015***	5.447***	4.584***		0.952***	0.809***	0.869***	0.799***
		(0.735)	(0.772)	(0.717)	(0.641)		(0.109)	(0.106)	(0.106)	(0.104)
Technicians		11.88	12.12	11.42	10.40		1.388***	1.326***	1.325***	1.221***
		(2,190)	(2,204)	(2,287)	(2,055)		(0.228)	(0.222)	(0.223)	(0.221)
Pro		7.415	7.823	6.735	4.242		0.877***	0.928***	0.874***	0.755**
		(878.8)	(876.3)	(980.7)	(841.0)		(0.321)	(0.314)	(0.315)	(0.313)
Elem_occ		6.126	6.300	5.865	4.337		0.503***	0.581***	0.548***	0.488***
		(2,425)	(2,381)	(2,670)	(1,749)		(0.176)	(0.171)	(0.172)	(0.170)
Workers		7.483	7.931	6.733	3.559		0.785***	0.837***	0.823***	0.770***
		(1,056)	(1,039)	(1,194)	(708.5)		(0.129)	(0.126)	(0.128)	(0.125)
No of earner		10.34	10.36	10.33	9.878		0.434***	0.327***	0.279***	0.171
		(562.7)	(565.4)	(619.0)	(760.9)		(0.105)	(0.104)	(0.106)	(0.111)
Un_rate		-267.7***	-288.9***	-252.7***	-206.3***		-21.08***	-16.62***	-18.78***	-19.56***
		(38.74)	(41.52)	(37.60)	(35.25)		(4.694)	(4.570)	(4.565)	(4.539)
Constant	-3.052***	4.093***	4.471***	3.743***	2.761***	4.161***	5.202***	5.094***	5.174***	5.176***
	(0.621)	(0.799)	(0.838)	(0.777)	(0.789)	(0.0710)	(0.172)	(0.167)	(0.168)	(0.167)
Observations	211797	211797	211797	211797	211797	402520	402520	402520	402520	402520
Log Likelihood	-1108.74	-988.66	-986.18	-985.24	-969.99	-4465.91	-4235.93	-4226.91	-4227.66	-4544.45
chi^2	644.5	884.6	889.6	891.5	922.0	1589.4	2049.3	2067.4	2065.9	1432.3
AIC	1562.204	1321.044	1318.385	1314.966	1273.701	5627.442	5150.646	5115.479	5120.133	4972.682

LN	**2006 – 2009**					**2011 - 2014**				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
ST			-0.463***					0.403***		
			(0.163)					(0.0770)		
UB				0.581*	-3.677***				0.451***	-1.067***
				(0.337)	(0.641)				(0.0943)	(0.144)
LowUB					0.00707***					0.000725***
					(0.00135)					(0.000133)
MidUB					0.00170					0.000867
					(0.311)					(0.0300)
HighUB					0.000751					0.000107***
					(0.0668)					(1.35e-05)
Female	3.963***	1.986***	1.873***	2.028***	1.985***	1.547***	1.178***	1.126***	1.145***	1.234***
	(0.351)	(0.267)	(0.262)	(0.271)	(0.253)	(0.101)	(0.0965)	(0.0925)	(0.0940)	(0.0958)
Lower_edu	4.845***	4.378***	4.406***	4.422***	4.067***	1.410***	0.689***	0.612***	0.613***	0.584***
	(0.379)	(0.333)	(0.331)	(0.338)	(0.307)	(0.0878)	(0.0768)	(0.0756)	(0.0766)	(0.0764)
Higher_edu	0.811***	1.993***	2.117***	2.043***	1.599***	1.380***	1.058***	1.092***	1.095***	0.969***
	(0.290)	(0.315)	(0.317)	(0.320)	(0.290)	(0.231)	(0.236)	(0.228)	(0.233)	(0.230)
Pre_wage	1.796***	0.790***	0.743***	0.796***	0.854***	0.496***	0.329***	0.291***	0.296***	0.307***
	(0.149)	(0.106)	(0.104)	(0.106)	(0.100)	(0.0300)	(0.0332)	(0.0318)	(0.0323)	(0.0320)
Marital_sta		6.862	7.020	6.482	7.133		6.052	5.839	5.799	5.768
		(442.7)	(353.4)	(493.8)	(948.8)		(155.9)	(147.2)	(134.2)	(135.5)
Young		14.58	14.69	14.67	13.54		7.106	6.924	6.955	6.989
		(537.4)	(457.3)	(604.1)	(1,173)		(255.0)	(222.6)	(195.4)	(216.8)
Old		5.472***	5.849***	5.453***	4.680***		1.292***	1.138***	1.189***	1.148***
		(0.616)	(0.639)	(0.616)	(0.542)		(0.142)	(0.139)	(0.140)	(0.137)
Technicians		7.177	7.304	6.898	6.853		1.375***	1.278***	1.315***	1.189***
		(1,074)	(876.2)	(1,227)	(2,322)		(0.211)	(0.203)	(0.210)	(0.209)
Pro		4.759	5.111	4.238	1.515		0.426	0.455*	0.454	0.313
		(758.7)	(630.0)	(770.9)	(975.1)		(0.281)	(0.274)	(0.281)	(0.283)

Elem_occ		1.037	1.144	0.916	1.495		0.258	0.344*	0.322*	0.237
		(1,126)	(825.5)	(1,158)	(1,832)		(0.181)	(0.177)	(0.178)	(0.176)
Workers		3.544	3.945	3.098	1.397		0.410***	0.479***	0.475***	0.424***
		(453.4)	(380.7)	(501.5)	(823.9)		(0.132)	(0.129)	(0.131)	(0.130)
No of earner		6.407	6.064	6.500	6.337		0.349***	0.242**	0.202**	0.0973
		(379.5)	(309.6)	(417.6)	(794.8)		(0.0955)	(0.0954)	(0.0975)	(0.107)
Un_rate		-275.0***	-298.1***	-269.9***	-234.7***		-32.63***	-28.13***	-29.83***	-31.46***
		(36.68)	(38.29)	(36.57)	(32.99)		(6.496)	(6.370)	(6.394)	(6.304)
Constant	0.0610	5.163***	5.636***	5.018***	4.311***	5.156***	6.302***	6.188***	6.270***	6.240***
	(0.444)	(0.712)	(0.736)	(0.713)	(0.647)	(0.123)	(0.253)	(0.247)	(0.249)	(0.244)
Observations	211797	211797	211797	211797	211797	402520	402520	402520	402520	402520
Log Likelihood	-1078.09	-941.60	-937.59	-939.78	-1164.75	-4186.64	-3955.01	-3940.39	-3942.21	-4427.24
chi^2	660.7	933.6	941.7	937.3	487.3	1584.1	2047.4	2076.6	2073.0	1102.9
AIC	1587.522	1332.548	1326.52	1330.897	1294.051	5612.987	5167.731	5140.501	5144.146	5006.098
LL			**2006 – 2009**					**2011 - 2014**		
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
ST			-0.395**					0.405***		
			(0.167)					(0.0710)		
UB				0.769**	-3.531***				0.471***	-0.947***
				(0.326)	(0.482)				(0.0912)	(0.118)
LowUB					0.00650***					0.000715***
					(0.00109)					(0.000147)
MidUB					0.00212					0.00112
					(0.254)					(0.0594)
HighUB					0.00104					0.000101***
					(0.0726)					(1.24e-05)
Female	4.811***	2.000***	1.939***	2.065***	2.167***	1.288***	0.948***	0.908***	0.926***	1.049***
	(0.432)	(0.311)	(0.311)	(0.311)	(0.322)	(0.0909)	(0.0847)	(0.0805)	(0.0821)	(0.0860)
Lower_edu	4.715***	4.312***	4.404***	4.308***	3.992***	1.088***	0.430***	0.348***	0.335***	0.315***

	(0.395)	(0.362)	(0.368)	(0.363)	(0.332)	(0.0765)	(0.0646)	(0.0630)	(0.0643)	(0.0637)
Higher_edu	-0.430	1.718***	1.815***	1.701***	1.145***	1.493***	1.282***	1.312***	1.275***	1.171***
	(0.345)	(0.377)	(0.378)	(0.372)	(0.361)	(0.267)	(0.263)	(0.254)	(0.256)	(0.252)
Pre_wage	2.222***	0.809***	0.791***	0.832***	0.961***	0.398***	0.218***	0.182***	0.190***	0.196***
	(0.202)	(0.138)	(0.138)	(0.135)	(0.145)	(0.0254)	(0.0256)	(0.0241)	(0.0246)	(0.0242)
Marital_sta		10.92	11.05	10.26	11.02		9.994	9.021	8.869	8.425
		(911.0)	(867.8)	(754.9)	(2,044)		(808.1)	(419.0)	(359.9)	(292.2)
Young		17.41	17.96	16.17	15.32		10.60	9.605	9.561	9.406
		(779.9)	(858.0)	(396.7)	(790.8)		(1,301)	(615.2)	(514.6)	(451.0)
Old		5.584***	5.973***	5.394***	4.549***		0.962***	0.818***	0.878***	0.809***
		(0.723)	(0.758)	(0.707)	(0.629)		(0.111)	(0.107)	(0.108)	(0.105)
Technicians		12.20	12.43	10.99	11.85		1.381***	1.318***	1.318***	1.213***
		(3,096)	(3,134)	(1,832)	(7,106)		(0.227)	(0.221)	(0.222)	(0.220)
Pro		8.787	9.188	7.590	6.621		0.850***	0.902***	0.849***	0.730**
		(2,678)	(2,624)	(2,046)	(6,117)		(0.320)	(0.313)	(0.315)	(0.312)
Elem_occ		6.403	6.643	6.338	6.225		0.480***	0.559***	0.527***	0.466***
		(3,443)	(3,608)	(4,341)	(8,643)		(0.176)	(0.171)	(0.172)	(0.170)
Workers		7.194	7.708	6.897	5.576		0.760***	0.814***	0.801***	0.748***
		(992.3)	(1,021)	(1,535)	(3,866)		(0.130)	(0.126)	(0.128)	(0.126)
No of earner		11.05	11.11	10.93	11.27		0.430***	0.323***	0.276***	0.168
		(1,032)	(1,104)	(1,041)	(2,517)		(0.105)	(0.104)	(0.105)	(0.111)
Un_rate		-263.2***	-285.9***	-248.7***	-203.9***		-21.45***	-16.97***	-19.13***	-19.92***
		(38.37)	(41.09)	(37.33)	(34.74)		(4.798)	(4.671)	(4.668)	(4.640)
Constant	-3.011***	3.940***	4.345***	3.595***	2.661***	4.100***	5.164***	5.059***	5.140***	5.141***
	(0.613)	(0.790)	(0.825)	(0.772)	(0.773)	(0.074)	(0.176)	(0.171)	(0.172)	(0.171)
Observations	211797	211797	211797	211797	211797	402520	402520	402520	402520	402520
Log Likelihood	-1065.34	-935.83	-933.01	-931.97	-913.91	-4191.00	-3945.91	-3927.47	-3929.93	-4474.04
chi^2	688.4	947.4	953.1	955.1	991.2	1539.9	2030.1	2067.0	2062.0	973.8
AIC	1562.02	1321.003	1317.359	1315.278	1274.065	5612.987	5149.527	5114.648	5119.582	4972.524

a) Standard errors are shown in parentheses.
b) * Significant at 10%; ** significant at 5%; *** significant at 1%.
c) E: exponential, W: Weibull, LN: log-normal, LL: log –logistic.

Spain

E	**2006 – 2009**					**2011 - 2014**				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
ST			0.276***					0.226***		
			(0.027)					(0.0177)		
UB				0.298***	0.281***				0.257***	-0.493***
				(0.027)	(0.0450)				(0.0184)	(0.0199)
LowUB					5.53e-05*					0.000574***
					(2.95e-05)					(1.71e-05)
MidUB					7.27e-06					0.000324***
					(1.67e-05)					(8.00e-06)
HighUB					-1.48e-05***					0.000242***
					(5.39e-06)					(9.49e-06)
Female	1.499***	0.305***	0.332***	0.332***	0.324***	1.897***	1.300***	1.303***	1.307***	1.304***
	(0.019)	(0.053)	(0.053)	(0.053)	(0.0529)	(0.0248)	(0.0260)	(0.0260)	(0.0260)	(0.0261)
Lower_edu	4.922***	0.829***	0.814***	0.809***	0.803***	0.952***	0.342***	0.325***	0.326***	0.279***
	(0.018)	(0.104)	(0.104)	(0.104)	(0.105)	(0.0176)	(0.0188)	(0.0188)	(0.0188)	(0.0186)
Higher_edu	3.116***	-0.116	-0.117	-0.117	-0.119	1.192***	0.864***	0.880***	0.885***	0.816***
	(0.039)	(0.125)	(0.125)	(0.125)	(0.125)	(0.0420)	(0.0438)	(0.0438)	(0.0438)	(0.0435)
Pre_wage	0.699***	0.414***	0.407***	0.402***	0.403***	0.312***	0.0926***	0.0820***	0.0800***	0.0723***

	(0.006)	(0.046)	(0.045)	(0.045)	(0.0453)	(0.00429)	(0.00580)	(0.00586)	(0.00587)	(0.00586)
Marital_sta		-0.041	-0.044	-0.056*	-0.0553*		0.0235	-0.00788	-0.0155	-0.0288*
		(0.030)	(0.030)	(0.030)	(0.0298)		(0.0174)	(0.0176)	(0.0177)	(0.0175)
Young		-4.203***	-4.027***	-4.044***	-4.053***		-2.463***	-2.404***	-2.422***	-1.819***
		(0.126)	(0.127)	(0.126)	(0.127)		(0.143)	(0.143)	(0.143)	(0.140)
Old		-0.326***	-0.328***	-0.321***	-0.310***		1.211***	1.152***	1.152***	0.922***
		(0.038)	(0.038)	(0.038)	(0.0378)		(0.0286)	(0.0290)	(0.0290)	(0.0285)
Technicians		-0.065	-0.061	-0.051	-0.0612		3.475***	3.393***	3.378***	3.092***
		(0.087)	(0.087)	(0.087)	(0.0873)		(0.148)	(0.149)	(0.149)	(0.148)
Pro		-2.392***	-2.349***	-2.325***	-2.336***		2.508***	2.474***	2.466***	2.164***
		(0.266)	(0.264)	(0.264)	(0.264)		(0.178)	(0.178)	(0.178)	(0.178)
Elem_occ		-2.912***	-2.868***	-2.839***	-2.859***		1.104***	1.069***	1.061***	0.891***
		(0.310)	(0.307)	(0.307)	(0.308)		(0.0295)	(0.0295)	(0.0296)	(0.0293)
Workers		-2.629***	-2.602***	-2.579***	-2.596***		1.131***	1.096***	1.088***	0.866***
		(0.274)	(0.272)	(0.271)	(0.272)		(0.0218)	(0.0219)	(0.0219)	(0.0213)
No of earner		0.563***	0.551***	0.549***	0.548***		0.133***	0.129***	0.127***	0.106***
		(0.019)	(0.019)	(0.019)	(0.0194)		(0.0106)	(0.0106)	(0.0106)	(0.0106)
Un_rate		43.963***	42.760***	42.920***	43.00***		15.53***	15.42***	15.53***	12.81***
		(1.326)	(1.327)	(1.327)	(1.333)		(0.628)	(0.628)	(0.628)	(0.617)
Constant	-4.406***	4.870***	5.430***	4.417***		6.018***	3.093***	3.114***	3.101***	3.805***
	(0.573)	(1.109)	(1.142)	(1.101)		(0.019)	(0.123)	(0.123)	(0.123)	(0.122)
Observations	183824	183824	183824	183824	183824	2584165	2584165	2584165	2584165	2584165
Log Likelihood	-58561.77	-47530.23	-47476.33	-47467.58	-48432.65	-16527.90	-158633.00	-158549.80	-158532.80	-157351.50
chi²	-20661.2	1401.8	1509.6	1527.1	-402.9	18812.1	28601.8	28768.1	28802.1	31164.7
AIC	117131.5	95086.46	94980.66	94963.16	96899.29	208982.5	199210.8	199046.4	199012.5	195661.7
W			**2006 – 2009**					**2011 - 2014**		
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
ST			0.461***					0.0937***		
			(0.053)					(0.00750)		

UB				0.498***	0.189***				0.109***	-0.218***
				(0.053)	(0.0255)				(0.00779)	(0.00849)
LowUB					4.09e-05**					0.000250***
					(1.68e-05)					(7.40e-06)
MidUB					8.75e-06					0.000139***
					(9.45e-06)					(3.47e-06)
HighUB					-9.14e-06***					0.000103***
					(3.02e-06)					(4.04e-06)
Female	1.802***	0.443***	0.487***	0.488***	0.254***	0.798***	0.532***	0.533***	0.534***	0.534***
	(0.040)	(0.103)	(0.102)	(0.102)	(0.0310)	(0.0118)	(0.0116)	(0.0116)	(0.0116)	(0.0116)
Lower_edu	8.104***	1.367***	1.338***	1.330***	0.565***	0.403***	0.132***	0.124***	0.124***	0.0995***
	(0.036)	(0.208)	(0.208)	(0.208)	(0.0593)	(0.00791)	(0.00804)	(0.00805)	(0.00804)	(0.00790)
Higher_edu	6.574***	-0.033	-0.036	-0.038	-0.155**	0.528***	0.393***	0.400***	0.402***	0.366***
	(0.075)	(0.246)	(0.245)	(0.244)	(0.0722)	(0.0181)	(0.0186)	(0.0186)	(0.0186)	(0.0183)
Pre_wage	0.568***	0.621***	0.608***	0.601***	0.311***	0.129***	0.0318***	0.0270***	0.0260***	0.0233***
	(0.009)	(0.087)	(0.087)	(0.086)	(0.0269)	(0.00202)	(0.00247)	(0.00250)	(0.00250)	(0.00249)
Marital_sta		-0.059	-0.064	-0.086	-0.0428**		0.00424	-0.00828	-0.0119	-0.0157**
		(0.059)	(0.060)	(0.060)	(0.0168)		(0.00734)	(0.00742)	(0.00743)	(0.00732)
Young		-6.144***	-5.858***	-5.887***	-3.287***		-1.014***	-0.993***	-1.003***	-0.733***
		(0.248)	(0.249)	(0.249)	(0.0737)		(0.0606)	(0.0606)	(0.0605)	(0.0590)
Old		-0.513***	-0.520***	-0.507***	-0.235***		0.506***	0.482***	0.481***	0.386***
		(0.075)	(0.075)	(0.075)	(0.0216)		(0.0126)	(0.0127)	(0.0126)	(0.0122)
Technicians		-0.029	-0.028	-0.013	-0.0766		1.460***	1.425***	1.417***	1.292***
		(0.175)	(0.175)	(0.175)	(0.0495)		(0.0633)	(0.0633)	(0.0633)	(0.0628)
Pro		-3.523***	-3.450***	-3.414***	-1.835***		1.073***	1.062***	1.058***	0.929***

		(0.510)	(0.507)	(0.506)	(0.156)		(0.0755)	(0.0755)	(0.0754)	(0.0750)
Elem_occ		-4.306***	-4.229***	-4.186***	-2.234***		0.486***	0.473***	0.469***	0.392***
		(0.592)	(0.588)	(0.587)	(0.182)		(0.0128)	(0.0128)	(0.0128)	(0.0125)
Workers		-3.884***	-3.836***	-3.802***	-2.029***		0.497***	0.484***	0.479***	0.380***
		(0.523)	(0.520)	(0.519)	(0.161)		(0.00967)	(0.00967)	(0.00967)	(0.00921)
No of earner		0.925***	0.906***	0.902***	0.387***		0.0619***	0.0601***	0.0589***	0.0503***
		(0.038)	(0.038)	(0.038)	(0.0116)		(0.00449)	(0.00449)	(0.00449)	(0.00445)
Un_rate		64.046***	62.126***	62.385***	34.94***		6.409***	6.383***	6.441***	5.213***
		(2.603)	(2.604)	(2.603)	(0.777)		(0.269)	(0.269)	(0.269)	(0.262)
Constant	-10.617***	7.696***	8.837***	6.822***		4.649***	3.453***	3.459***	3.451***	3.759***
	(1.135)	(2.178)	(2.240)	(2.163)		(0.0105)	(0.0520)	(0.0520)	(0.0519)	(0.0511)
Observations	183824	183824	183824	183824	183824	2584165	2584165	2584165	2584165	2584165
Log Likelihood	-54660.38	-50208.89	-50171.26	-50165.18	-50581.90	-173194.60	-168342.60	-168255.30	-168240.40	-166717.40
chi^2	-7946.1	956.7	1032.0	1044.1	210.7	18944.1	28648.2	28822.8	28852.7	31898.5
AIC	109328.8	100443.8	100370.5	100358.4	101197.8	196967.2	187009.3	186851.3	186808.5	183320.5
LN			**2006 – 2009**					**2011 - 2014**		
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
ST			0.258***					0.104***		
			(0.020)					(0.00876)		
UB				0.277***	0.246***				0.122***	-0.293***
				(0.020)	(0.0341)				(0.00900)	(0.0109)
LowUB					5.16e-05**					0.000280***
					(2.19e-05)					(7.98e-06)
MidUB					1.62e-05					0.000155***
					(1.26e-05)					(3.69e-06)
HighUB					-1.02e-					0.000108***

					05**					
					(4.32e-06)					(3.83e-06)
Female	0.705***	0.221***	0.245***	0.246***	0.238***	0.899***	0.613***	0.614***	0.615***	0.599***
	(0.033)	(0.037)	(0.037)	(0.037)	(0.0366)	(0.0122)	(0.0122)	(0.0123)	(0.0123)	(0.0122)
Lower_edu	8.181***	0.745***	0.727***	0.721***	0.713***	0.533***	0.198***	0.190***	0.189***	0.161***
	(0.063)	(0.083)	(0.082)	(0.082)	(0.0818)	(0.0102)	(0.0103)	(0.0103)	(0.0103)	(0.0101)
Higher_edu	7.710***	0.028	0.026	0.022	0.0207	0.597***	0.454***	0.462***	0.464***	0.443***
	(0.077)	(0.092)	(0.091)	(0.091)	(0.0910)	(0.0197)	(0.0211)	(0.0211)	(0.0211)	(0.0209)
Pre_wage	0.193***	0.316***	0.308***	0.305***	0.304***	0.167***	0.0497***	0.0446***	0.0433***	0.0341***
	(0.006)	(0.031)	(0.030)	(0.030)	(0.0303)	(0.00257)	(0.00320)	(0.00323)	(0.00323)	(0.00319)
Marital_sta		-0.031	-0.035	-0.047**	-0.0466**		0.0207**	0.00687	0.00291	-0.00681
		(0.023)	(0.022)	(0.022)	(0.0224)		(0.00877)	(0.00886)	(0.00888)	(0.00886)
Young		-4.197***	-4.017***	-4.031***	-4.040***		-1.673***	-1.642***	-1.646***	-1.285***
		(0.097)	(0.097)	(0.096)	(0.0965)		(0.0756)	(0.0757)	(0.0756)	(0.0742)
Old		-0.330***	-0.333***	-0.324***	-0.315***		0.653***	0.626***	0.625***	0.515***
		(0.029)	(0.028)	(0.028)	(0.0283)		(0.0143)	(0.0144)	(0.0144)	(0.0142)
Technicians		-0.064	-0.064	-0.055	-0.0629		1.536***	1.496***	1.487***	1.385***
		(0.066)	(0.065)	(0.065)	(0.0650)		(0.0579)	(0.0578)	(0.0578)	(0.0589)
Pro		-1.837***	-1.792***	-1.774***	-1.777***		1.005***	0.996***	0.992***	0.883***
		(0.181)	(0.179)	(0.178)	(0.179)		(0.0667)	(0.0670)	(0.0670)	(0.0671)
Elem_occ		-2.252***	-2.204***	-2.182***	-2.192***		0.551***	0.538***	0.534***	0.469***
		(0.209)	(0.206)	(0.206)	(0.206)		(0.0142)	(0.0142)	(0.0142)	(0.0141)
Workers		-2.036***	-2.004***	-1.988***	-1.994***		0.568***	0.554***	0.550***	0.465***
		(0.184)	(0.182)	(0.182)	(0.182)		(0.0109)	(0.0110)	(0.0110)	(0.0107)
No of earner		0.502***	0.490***	0.488***	0.487***		0.0670***	0.0662***	0.0653***	0.0543***
		(0.014)	(0.014)	(0.014)	(0.0139)		(0.00525)	(0.00525)	(0.00525)	(0.00524)
Un_rate		44.118***	42.830***	42.948***	43.03***		9.644***	9.581***	9.610***	7.944***
		(1.015)	(1.008)	(1.005)	(1.006)		(0.339)	(0.339)	(0.339)	(0.332)
Constant	0.061	5.164***	5.636***	5.018***		5.493***	3.568***	3.580***	3.578***	3.987***

	(0.444)	(0.712)	(0.736)	(0.713)		(0.017)	(0.066)	(0.066)	(0.066)	(0.0655)
Observations	183824	183824	183824	183824	183824	2584165	2584165	2584165	2584165	2584165
Log Likelihood	-52136.42	-47313.17	-47230.40	-47217.52	-48278.96	-158684.40	-153481.60	-153410.60	-153388.40	-153433.80
chi^2	-7723.2	1923.2	2088.7	2114.5	-8346	18519.8	28925.5	29067.5	29111.8	29021.0
AIC	104282.8	94654.35	94490.8	94465.04	96593.91	199297.6	188909.9	188769.9	188725.6	185360.4
LL			**2006 – 2009**					**2011 - 2014**		
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
ST			0.195***					0.0943***		
			(0.015)					(0.00754)		
UB				0.210***	0.191***				0.110***	-0.223***
				(0.015)	(0.0258)				(0.00782)	(0.00863)
LowUB					4.11e-05**					0.000251***
					(1.69e-05)					(7.41e-06)
MidUB					8.97e-06					0.000139***
					(9.56e-06)					(3.46e-06)
HighUB					-9.17e-06***					0.000102***
					(3.09e-06)					(4.02e-06)
Female	0.993***	0.244***	0.262***	0.262***	0.256***	0.799***	0.533***	0.534***	0.536***	0.534***
	(0.034)	(0.032)	(0.031)	(0.031)	(0.0314)	(0.0118)	(0.0116)	(0.0116)	(0.0116)	(0.0115)
Lower_edu	6.973***	0.598***	0.587***	0.582***	0.576***	0.410***	0.136***	0.128***	0.128***	0.103***
	(0.054)	(0.062)	(0.061)	(0.061)	(0.0611)	(0.00801)	(0.00817)	(0.00818)	(0.00817)	(0.00803)
Higher_edu	6.216***	-0.146*	-0.146**	-0.146**	-0.148**	0.528***	0.394***	0.401***	0.403***	0.369***
	(0.071)	(0.075)	(0.074)	(0.073)	(0.0733)	(0.0181)	(0.0186)	(0.0186)	(0.0186)	(0.0184)
Pre_wage	0.288***	0.322***	0.317***	0.313***	0.313***	0.131***	0.0328***	0.0281***	0.0270***	0.0237***
	(0.007)	(0.028)	(0.027)	(0.027)	(0.0272)	(0.00205)	(0.00252)	(0.00254)	(0.00255)	(0.00253)
Marital_sta		-0.033*	-0.035**	-0.043**	-0.0426**		0.00481	-0.00784	-0.0115	-0.0155**
		(0.017)	(0.017)	(0.017)	(0.0171)		(0.00740)	(0.00747)	(0.00749)	(0.00739)
Young		-3.376***	-3.238***	-3.249***	-3.256***		-1.053***	-1.031***	-1.041***	-0.768***

		(0.076)	(0.075)	(0.075)	(0.0754)		(0.0612)	(0.0612)	(0.0612)	(0.0597)
Old		-0.246***	-0.245***	-0.241***	-0.234***		0.512***	0.487***	0.487***	0.393***
		(0.022)	(0.022)	(0.022)	(0.0219)		(0.0126)	(0.0127)	(0.0127)	(0.0123)
Technicians		-0.083	-0.077	-0.070	-0.0761		1.456***	1.421***	1.413***	1.290***
		(0.051)	(0.050)	(0.050)	(0.0500)		(0.0629)	(0.0629)	(0.0629)	(0.0624)
Pro		-1.897***	-1.860***	-1.841***	-1.844***		1.065***	1.054***	1.050***	0.923***
		(0.160)	(0.158)	(0.158)	(0.158)		(0.0751)	(0.0751)	(0.0750)	(0.0745)
Elem_occ		-2.300***	-2.262***	-2.238***	-2.246***		0.485***	0.472***	0.468***	0.394***
		(0.188)	(0.185)	(0.184)	(0.184)		(0.0128)	(0.0128)	(0.0128)	(0.0125)
Workers		-2.078***	-2.053***	-2.034***	-2.039***		0.497***	0.484***	0.479***	0.382***
		(0.166)	(0.163)	(0.163)	(0.163)		(0.00968)	(0.00968)	(0.00968)	(0.00924)
No of earner		0.402***	0.392***	0.390***	0.389***		0.0622***	0.0605***	0.0593***	0.0504***
		(0.012)	(0.012)	(0.012)	(0.0116)		(0.00452)	(0.00452)	(0.00452)	(0.00449)
Un_rate		35.421***	34.426***	34.528***	34.59***		6.593***	6.564***	6.620***	5.376***
		(0.802)	(0.795)	(0.794)	(0.796)		(0.272)	(0.272)	(0.272)	(0.265)
Constant	-3.011***	3.940***	4.345***	3.595***		4.626***	3.391***	3.397***	3.390***	3.704***
	(0.613)	(0.790)	(0.825)	(0.772)		(0.011)	(0.053)	(0.053)	(0.053)	(0.0518)
Observations	183824	183824	183824	183824	183824	2584165	2584165	2584165	2584165	2584165
Log Likelihood	-52749.47	-46669.90	-46588.83	-46575.45	-47787.35	-157533.70	-152542.30	-152462.20	-152440.60	-152942.00
chi^2	-10144.3	2014.7	2176.9	2203.6	-220.1	18538.3	28521.0	28681.3	28724.4	27721.7
AIC	105508.9	93367.79	93207.67	93180.9	95610.7	196996.1	187031.4	186873.1	186830.1	183351.4

a) Standard errors are shown in parentheses.

b) * Significant at 10%; ** significant at 5%; *** significant at 1%.

c) E: exponential, W: Weibull, LN: log-normal, LL: log –logistic.

Poland

E	**2006 – 2009**					**2011 - 2014**				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
ST			1.148***					0.313***		
			(0.080)					(0.059)		
UB				1.111***	-0.766***				0.392***	-1.518***
				(0.082)	(0.121)				(0.064)	(0.0912)
LowUB					0.005***					0.0110***
					(0.0005)					(0.00118)
MidUB					0.001***					0.00309***
					(0.0001)					(0.000204)
HighUB					0.006					0.000799***
					(0.165)					(6.08e-05)
Female	2.773***	2.918***	2.862***	2.874***	2.860***	2.934***	2.696***	2.687***	2.692***	2.632***
	(0.046)	(0.047)	(0.047)	(0.047)	(0.046)	(0.046)	(0.049)	(0.049)	(0.049)	(0.0488)
Lower_edu	1.304***	1.094***	1.044***	1.050***	1.044***	1.128***	0.986***	0.975***	0.972***	0.946***
	(0.053)	(0.053)	(0.053)	(0.053)	(0.053)	(0.048)	(0.050)	(0.050)	(0.050)	(0.0496)
Higher_edu	2.257***	0.753***	0.795***	0.813***	0.830***	0.735***	0.368***	0.357***	0.349***	0.362***
	(0.192)	(0.197)	(0.196)	(0.196)	(0.196)	(0.105)	(0.111)	(0.111)	(0.111)	(0.110)
Pre_wage	0.697***	1.230***	1.166***	1.173***	1.165***	0.577***	0.557***	0.551***	0.551***	0.540***
	(0.018)	(0.024)	(0.024)	(0.024)	(0.024)	(0.009)	(0.013)	(0.013)	(0.013)	(0.0127)
Marital_sta		0.292***	0.262***	0.262***	0.249***		0.147***	0.128***	0.121***	0.160***
		(0.038)	(0.038)	(0.038)	(0.038)		(0.034)	(0.034)	(0.034)	(0.0346)
Young		-0.624***	-0.622***	-0.619***	-3.915***		3.478***	3.485***	3.485***	3.538***
		(0.036)	(0.036)	(0.036)	(0.072)		(0.228)	(0.228)	(0.228)	(0.228)
Old		1.336***	1.258***	1.264***	1.362***		1.121***	1.087***	1.086***	1.093***
		(0.063)	(0.063)	(0.063)	(0.063)		(0.053)	(0.053)	(0.053)	(0.0533)
Technicians		2.379***	2.238***	2.245***	2.251***		2.657***	2.622***	2.614***	2.520***
		(0.448)	(0.448)	(0.448)	(0.448)		(0.169)	(0.169)	(0.169)	(0.169)
Pro		6.252	6.588	6.552	0.599***		0.272	0.253	0.260	0.209

		(294.947)	(292.150)	(293.050)	(0.000)		(0.216)	(0.216)	(0.216)	(0.216)
Elem_occ		-6.925***	-6.525***	-6.575***	-6.517***		0.002	-0.003	-0.006	0.0327
		(0.194)	(0.195)	(0.195)	(0.195)		(0.069)	(0.068)	(0.068)	(0.0674)
Workers		-4.099***	-3.909***	-3.934***	-3.898***		0.187***	0.171***	0.165***	0.151***
		(0.138)	(0.138)	(0.138)	(0.138)		(0.044)	(0.044)	(0.044)	(0.0431)
No of earner		0.796***	0.775***	0.781***	0.785***		-0.100***	-0.101***	-0.101***	-0.112***
		(0.031)	(0.031)	(0.031)	(0.031)		(0.013)	(0.013)	(0.013)	(0.0133)
Un_rate		42.48***	43.11***	43.01***	43.245***		-23.401***	-23.481***	-23.455***	-23.85***
		(0.599)	(0.602)	(0.601)	(0.601)		(2.147)	(2.147)	(2.147)	(2.147)
Constant	5.538***	4.843***	4.914***	4.903***		5.448***	7.575***	7.605***	7.608***	7.706***
	(0.061)	(0.068)	(0.069)	(0.069)		(0.049)	(0.241)	(0.242)	(0.241)	(0.242)
Observations	1074611	1074611	1074611	1074611	1074611	1397177	1397177	1397177	1397177	1397177
Log Likelihood	-42731.78	-40616.81	-40471.13	-40487.56	-40370.97	-51010.85	-50040.49	-50025.24	-50020.12	-50229.23
chi^2	7635.48	11865.4	12156.7	12123.9	12357.1	9160.5	11101.2	11131.7	11142.0	10723.8
AIC	113175.6	81259.62	80970.26	81003.11	80775.95	102031.7	100109	100080.5	100070.2	64459.21
W			**2006 – 2009**					**2011 - 2014**		
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
ST			2.221***					0.633***		
			(0.160)					(0.118)		
UB				2.143***	-1.617***				0.792***	-0.765***
				(0.164)	(0.241)				(0.129)	(0.0438)
LowUB					0.011***					0.00554***
					(0.001)					(0.000579)
MidUB					0.003***					0.00149***
					(0.0003)					(9.71e-05)
HighUB					0.012					0.000399***
					(0.203)					(2.88e-05)
Female	5.494***	2.055***	5.667***	5.688***	5.662***	5.866***	5.373***	5.353***	5.363***	1.237***
	(0.092)	(0.0417)	(0.093)	(0.093)	(0.093)	(0.092)	(0.097)	(0.098)	(0.098)	(0.0273)

Lower_edu	2.550***	0.737***	2.145***	2.157***	2.144***	2.377***	2.055***	2.034***	2.027***	0.411***
	(0.106)	(0.0390)	(0.107)	(0.107)	(0.107)	(0.096)	(0.099)	(0.099)	(0.099)	(0.0238)
Higher_edu	4.521***	0.457***	1.772***	1.807***	1.833***	1.570***	0.836***	0.816***	0.801***	0.134***
	(0.383)	(0.138)	(0.392)	(0.392)	(0.392)	(0.210)	(0.221)	(0.221)	(0.221)	(0.0516)
Pre_wage	1.323***	0.887***	2.234***	2.248***	2.231***	1.150***	1.100***	1.089***	1.089***	0.257***
	(0.035)	(0.0196)	(0.047)	(0.047)	(0.047)	(0.017)	(0.026)	(0.026)	(0.026)	(0.00670)
Marital_sta		0.198***	0.538***	0.537***	0.509***		0.305***	0.267***	0.253***	0.0725***
		(0.0264)	(0.075)	(0.075)	(0.075)		(0.068)	(0.068)	(0.068)	(0.0162)
Young		-3.389***	-1.170***	-1.165***	-5.594***		7.097***	7.110***	7.112***	1.599***
		(0.0521)	(0.072)	(0.072)	(0.143)		(0.457)	(0.457)	(0.457)	(0.109)
Old		1.062***	2.463***	2.475***	2.584***		2.228***	2.160***	2.158***	0.511***
		(0.0455)	(0.126)	(0.126)	(0.125)		(0.106)	(0.107)	(0.106)	(0.0256)
Technicians		1.624***	4.610***	4.633***	4.642***		5.321***	5.252***	5.237***	1.177***
		(0.314)	(0.896)	(0.896)	(0.896)		(0.338)	(0.338)	(0.338)	(0.0803)
Pro		5.085	13.971	13.897	1.987***		0.569	0.533	0.546	0.0892
		(399.9)	(593.898)	(595.739)	(0.000)		(0.432)	(0.432)	(0.432)	(0.101)
Elem_occ		-5.052***	-12.317***	-12.412***	-12.302***		0.054	0.046	0.041	-0.00196
		(0.147)	(0.389)	(0.389)	(0.389)		(0.137)	(0.137)	(0.137)	(0.0317)
Workers		-3.017***	-7.295***	-7.343***	-7.271***		0.422***	0.390***	0.380***	0.0551***
		(0.102)	(0.275)	(0.275)	(0.275)		(0.088)	(0.088)	(0.088)	(0.0203)
No of earner		0.645***	1.235***	1.246***	1.250***		-0.215***	-0.216***	-0.217***	-0.0463***
		(0.0225)	(0.059)	(0.059)	(0.060)		(0.027)	(0.027)	(0.027)	(0.00626)
Un_rate		56.546***	57.743***	57.548***	58.031***		-47.973***	-48.115***	-48.077***	-10.69***
		(1.194)	(1.200)	(1.199)	(1.199)		(4.299)	(4.298)	(4.297)	(1.014)
Constant	7.794***	6.446***	6.583***	6.561***		7.235***	11.665***	11.724***	11.731***	5.499***
	(0.120)	(0.136)	(0.137)	(0.137)		(0.098)	(0.483)	(0.483)	(0.483)	(0.115)
Observations	1074611	1074611	1074611	1074611	1074611	1397177	1397177	1397177	1397177	1397177
Log Likelihood	-44292.0	-42456.22	-42321.58	-42337.55	-42220.79	-53796.27	-52824.76	-52809.1	-52803.94	-52858.29
chi^2	7528.8	11200.4	11469.7	11437.7	11671.3	9212.4	11155.4	11186.7	11197.1	11088.4

AIC	97935.23	84938.45	84671.16	84703.09	84475.57	107602.5	105677.5	105648.3	105637.9	61541.67
LN			**2006 – 2009**					**2011 - 2014**		
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
ST			0.848***					0.170***		
			(0.052)					(0.030)		
UB				0.837***	-0.435***				0.199***	-0.820***
				(0.054)	(0.096)				(0.032)	(0.0595)
LowUB					0.004***					0.00493***
					(0.0003)					(0.000515)
MidUB					0.001***					0.00145***
					(0.0001)					(9.57e-05)
HighUB					0.144***					0.000437***
					(0.000)					(3.53e-05)
Female	2.144***	2.062***	2.009***	2.018***	2.011***	1.575***	1.473***	1.467***	1.471***	1.438***
	(0.043)	(0.039)	(0.038)	(0.038)	(0.038)	(0.028)	(0.029)	(0.029)	(0.029)	(0.0284)
Lower_edu	1.084***	1.083***	1.023***	1.032***	1.017***	0.736***	0.616***	0.610***	0.608***	0.591***
	(0.053)	(0.049)	(0.048)	(0.048)	(0.048)	(0.032)	(0.032)	(0.032)	(0.032)	(0.0321)
Higher_edu	2.023***	0.893***	0.880***	0.917***	0.922***	0.419***	0.129**	0.122**	0.116**	0.135**
	(0.138)	(0.123)	(0.121)	(0.123)	(0.123)	(0.054)	(0.057)	(0.057)	(0.057)	(0.0574)
Pre_wage	0.452***	0.827***	0.780***	0.785***	0.778***	0.342***	0.347***	0.345***	0.345***	0.336***
	(0.012)	(0.018)	(0.018)	(0.018)	(0.018)	(0.006)	(0.008)	(0.008)	(0.008)	(0.00822)
Marital_sta		0.221***	0.195***	0.193***	0.184***		0.126***	0.115***	0.112***	0.127***
		(0.028)	(0.028)	(0.028)	(0.028)		(0.019)	(0.019)	(0.019)	(0.0189)
Young		-0.575***	-0.563***	-0.560***	-4.282***		2.136***	2.147***	2.139***	2.153***
		(0.028)	(0.027)	(0.028)	(0.062)		(0.149)	(0.149)	(0.148)	(0.148)
Old		0.981***	0.925***	0.929***	1.060***		0.668***	0.649***	0.648***	0.650***
		(0.044)	(0.044)	(0.044)	(0.044)		(0.033)	(0.033)	(0.033)	(0.0331)
Technicians		1.791***	1.688***	1.688***	1.695***		1.399***	1.384***	1.381***	1.332***
		(0.291)	(0.292)	(0.292)	(0.292)		(0.078)	(0.079)	(0.079)	(0.0786)
Pro		1,588.058***	1,531.485***	1,562.683***	-0.686***		0.026	0.013	0.021	-0.00263

		(0.000)	(0.000)	(0.000)	(0.000)		(0.102)	(0.102)	(0.102)	(0.102)
Elem_occ		-4.579***	-4.283***	-4.315***	-4.267***		-0.067*	-0.071**	-0.073**	-0.0537
		(0.139)	(0.138)	(0.138)	(0.138)		(0.035)	(0.035)	(0.035)	(0.0352)
Workers		-2.650***	-2.517***	-2.530***	-2.491***		0.064***	0.055**	0.052**	0.0435*
		(0.095)	(0.094)	(0.094)	(0.095)		(0.023)	(0.023)	(0.023)	(0.0229)
No of earner		0.689***	0.672***	0.677***	0.682***		-0.058***	-0.059***	-0.059***	-0.0628***
		(0.022)	(0.022)	(0.022)	(0.022)		(0.008)	(0.008)	(0.008)	(0.00770)
Un_rate		48.512***	48.739***	48.655***	48.881***		-14.934***	-15.053***	-14.968***	-15.09***
		(0.588)	(0.585)	(0.585)	(0.587)		(1.383)	(1.383)	(1.383)	(1.378)
Constant	7.069***	5.530***	5.556***	5.547***		5.347***	6.656***	6.679***	6.674***	6.718***
	(0.074)	(0.067)	(0.067)	(0.067)		(0.040)	(0.158)	(0.158)	(0.158)	(0.157)
Observations	1074611	1074611	1074611	1074611	1074611	1397177	1397177	1397177	1397177	1397177
Log Likelihood	-42887.12	-40557.47	-40380.03	-40396.44	-40289.78	-49810.01	-48756.73	-48739.52	-48736.47	-49357.49
chi^2	7178.47	11837.7	12192.6	12159.8	12373.1	9184.5	11291.1	11325.5	11331.6	10089.5
AIC	99995.32	81142.94	80790.07	80822.89	80615.57	99632.02	97543.46	97511.04	97504.95	61964.51
LL			**2006 – 2009**					**2011 - 2014**		
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
ST			0.808***					0.146***		
			(0.056)					(0.028)		
UB				0.783***	-0.507***				0.181***	-0.766***
				(0.057)	(0.084)				(0.030)	(0.0445)
LowUB					0.004***					0.00552***
					(0.0003)					(0.000579)
MidUB					0.001***					0.00149***
					(0.0001)					(9.71e-05)
HighUB					0.023***					0.000401***
					(0.000)					(2.90e-05)
Female	2.215***	2.049***	1.998***	2.007***	1.997***	1.385***	1.281***	1.276***	1.279***	1.243***
	(0.047)	(0.041)	(0.041)	(0.041)	(0.041)	(0.027)	(0.028)	(0.028)	(0.028)	(0.0273)

Lower_edu	1.059***	0.805***	0.761***	0.766***	0.760***	0.513***	0.445***	0.440***	0.438***	0.425***
	(0.045)	(0.041)	(0.040)	(0.040)	(0.040)	(0.024)	(0.025)	(0.025)	(0.025)	(0.0245)
Higher_edu	1.808***	0.495***	0.523***	0.536***	0.549***	0.322***	0.131**	0.126**	0.122**	0.133**
	(0.155)	(0.137)	(0.136)	(0.136)	(0.136)	(0.050)	(0.052)	(0.052)	(0.052)	(0.0517)
Pre_wage	0.565***	0.895***	0.845***	0.850***	0.843***	0.277***	0.272***	0.270***	0.270***	0.262***
	(0.016)	(0.020)	(0.019)	(0.019)	(0.019)	(0.005)	(0.007)	(0.007)	(0.007)	(0.00680)
Marital_sta		0.206***	0.185***	0.185***	0.176***		0.065***	0.056***	0.053***	0.0749***
		(0.026)	(0.026)	(0.026)	(0.026)		(0.016)	(0.016)	(0.016)	(0.0164)
Young		-0.464***	-0.461***	-0.459***	-3.358***		1.602***	1.604***	1.604***	1.626***
		(0.026)	(0.026)	(0.026)	(0.053)		(0.112)	(0.112)	(0.112)	(0.111)
Old		0.938***	0.881***	0.884***	0.977***		0.537***	0.521***	0.520***	0.515***
		(0.045)	(0.045)	(0.045)	(0.045)		(0.026)	(0.026)	(0.026)	(0.0261)
Technicians		1.612***	1.505***	1.507***	1.512***		1.245***	1.229***	1.225***	1.178***
		(0.310)	(0.309)	(0.309)	(0.309)		(0.080)	(0.080)	(0.080)	(0.0799)
Pro		208.824***	208.095***	208.763***	318.583***		0.102	0.093	0.096	0.0768
		(0.000)	(0.000)	(0.000)	(0.000)		(0.101)	(0.101)	(0.101)	(0.101)
Elem_occ		-5.109***	-4.796***	-4.833***	-4.788***		-0.031	-0.033	-0.035	-0.0107
		(0.147)	(0.146)	(0.146)	(0.146)		(0.032)	(0.032)	(0.032)	(0.0317)
Workers		-3.060***	-2.907***	-2.925***	-2.897***		0.063***	0.055***	0.053**	0.0505**
		(0.102)	(0.101)	(0.101)	(0.101)		(0.021)	(0.021)	(0.021)	(0.0203)
No of earner		0.645***	0.628***	0.634***	0.636***		-0.040***	-0.041***	-0.041***	-0.0467***
		(0.022)	(0.022)	(0.022)	(0.022)		(0.006)	(0.006)	(0.006)	(0.00637)
Un_rate		37.507***	37.960***	37.885***	38.067***		-10.746***	-10.784***	-10.765***	-10.92***
		(0.453)	(0.454)	(0.453)	(0.454)		(1.040)	(1.039)	(1.039)	(1.036)
Constant	5.072***	4.276***	4.327***	4.319***		4.458***	5.421***	5.436***	5.436***	5.480***
	(0.055)	(0.052)	(0.052)	(0.052)		(0.026)	(0.118)	(0.118)	(0.118)	(0.118)
Observations	1074611	1074611	1074611	1074611	1074611	1397177	1397177	1397177	1397177	1397177
Log Likelihood	-42608.96	-40280.50	-40127.43	-4144.240	-40028.46	-49551.83	-48583.30	-48568.29	-48563.53	-49143.19
chi^2	7656.5	12313.4	12619.6	12585.9	12817.5	9108.27	11045.3	11075.3	11084.8	9925.5

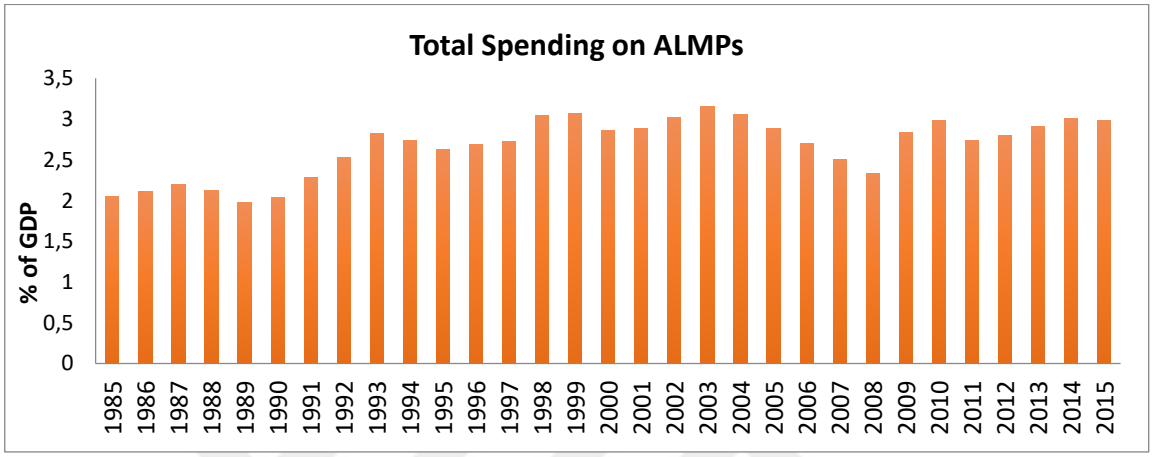
AIC	95060.19	80589	80284.85	80318.48	80092.92	99115.67	97196.6	97168.58	97159.06	61525.84

a) Standard errors are shown in parentheses.
b) * Significant at 10%; ** significant at 5%; *** significant at 1%.
c) E: exponential, W: Weibull, LN: log-normal, LL: log –logistic.

APPENDIX D – SPENDINGS ON ALMPs IN SELECTED EU COUNTRIES

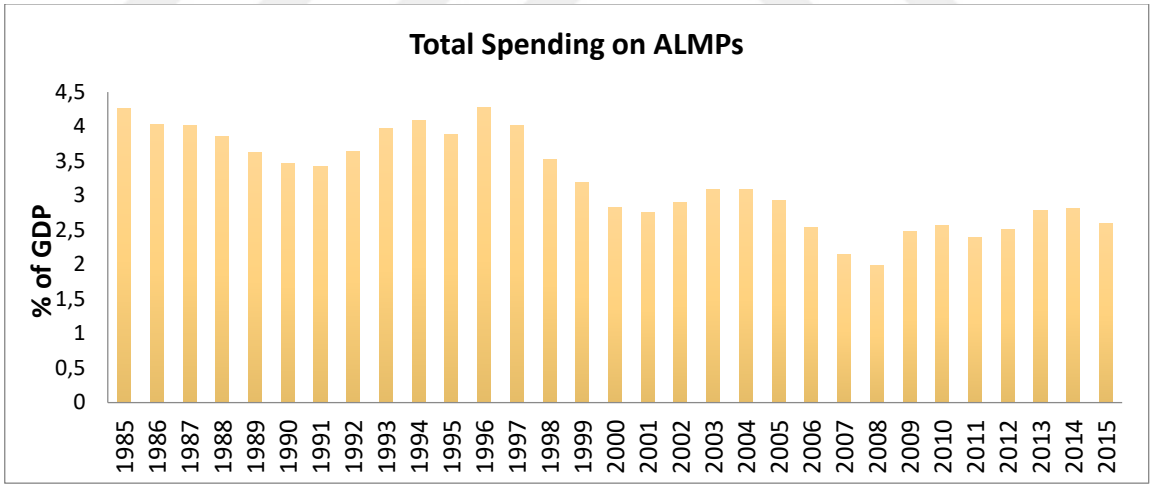
Figure D.1. Total Spending on ALMPs (% of GDP)

France



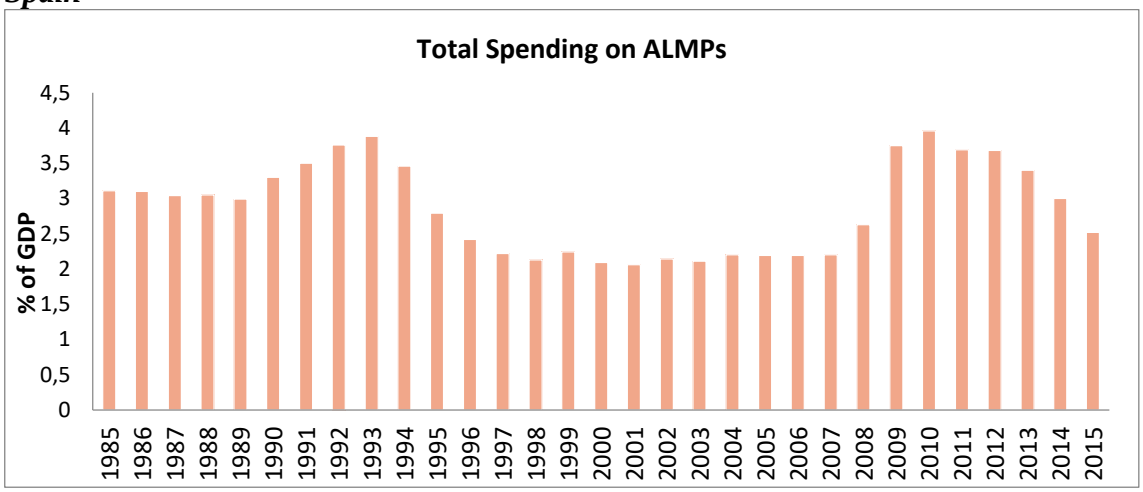
Source: OECD

The Netherlands



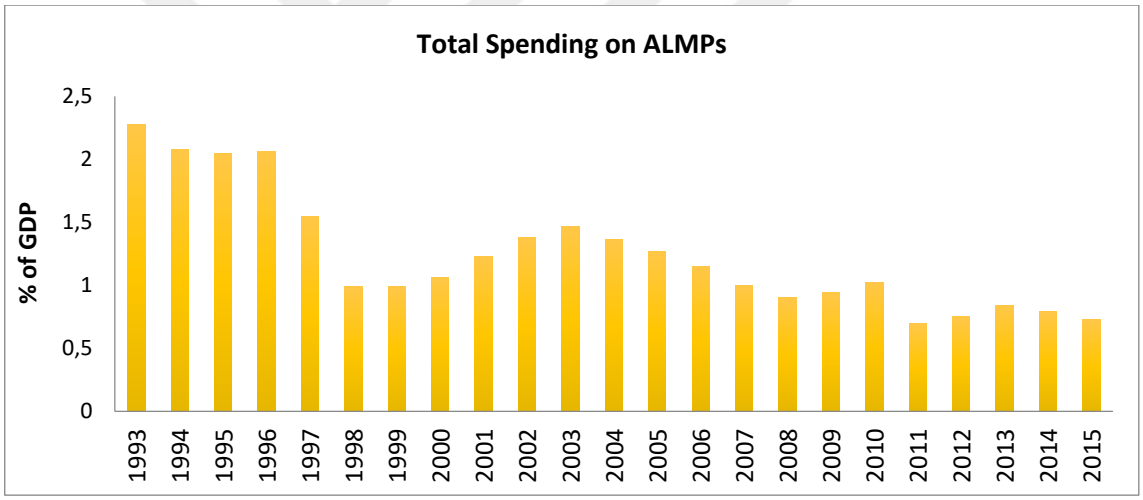
Source: OECD

Spain



Source: OECD

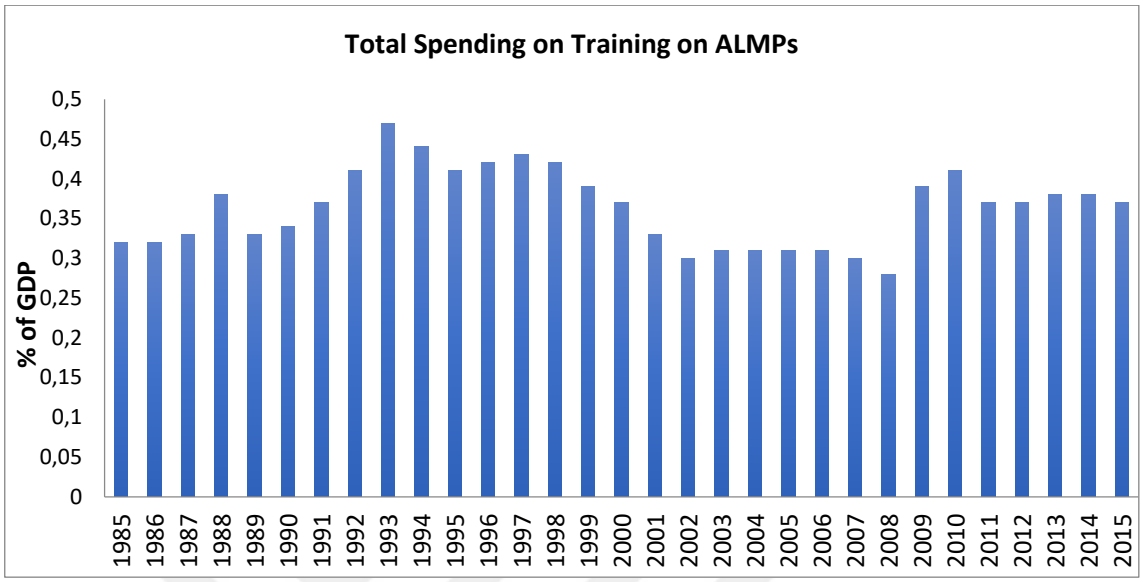
Poland



Source: OECD

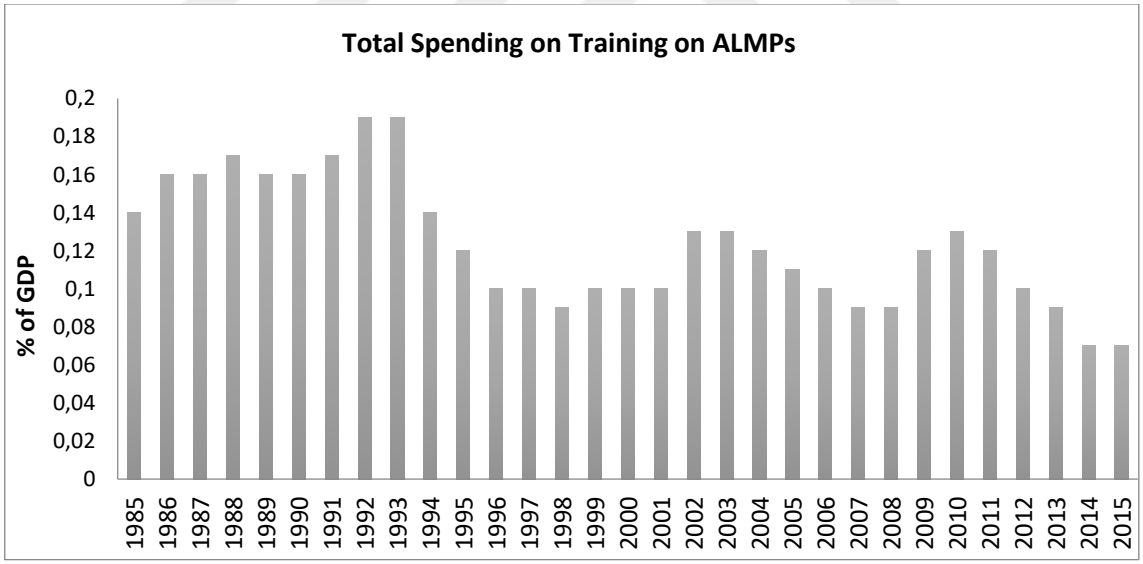
Figure D.2. Total Spending on Training on ALMPs (% of GDP)

France



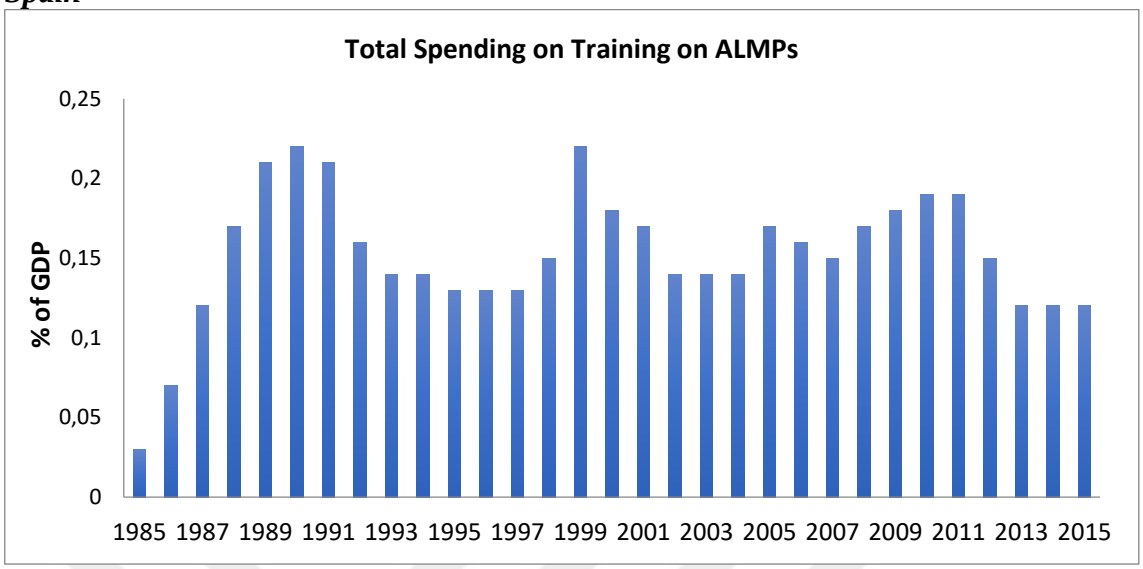
Source: OECD

The Netherlands



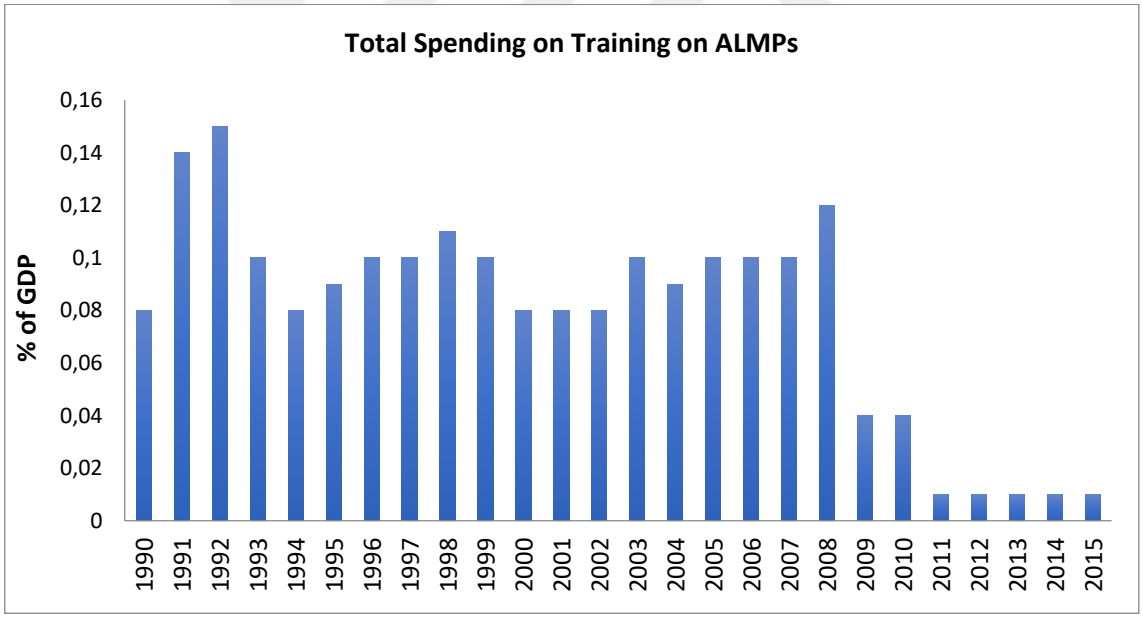
Source: OECD

Spain



Source: OECD

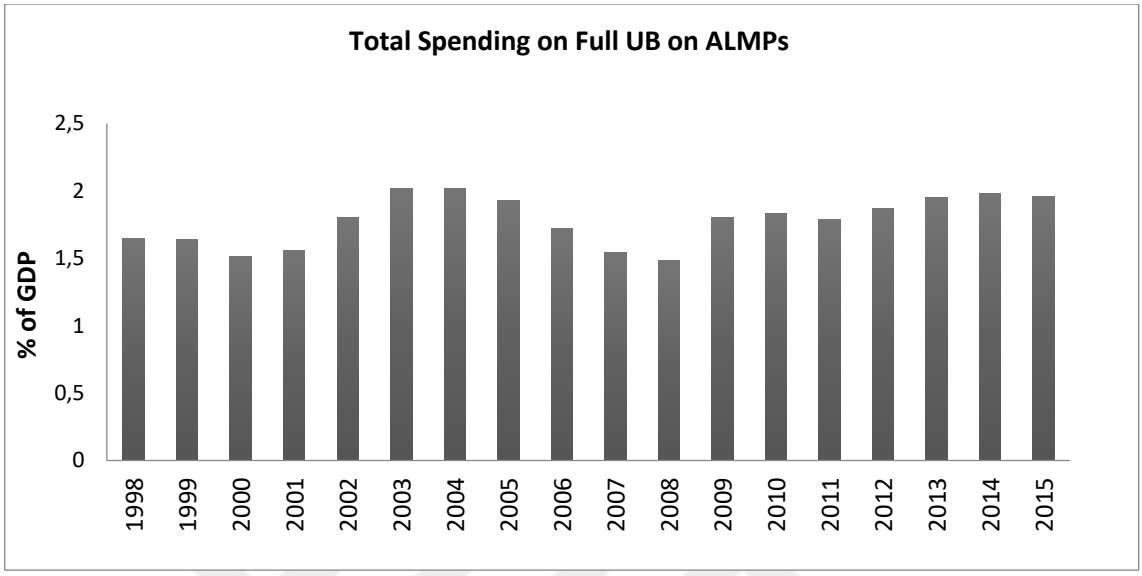
Poland



Source: OECD

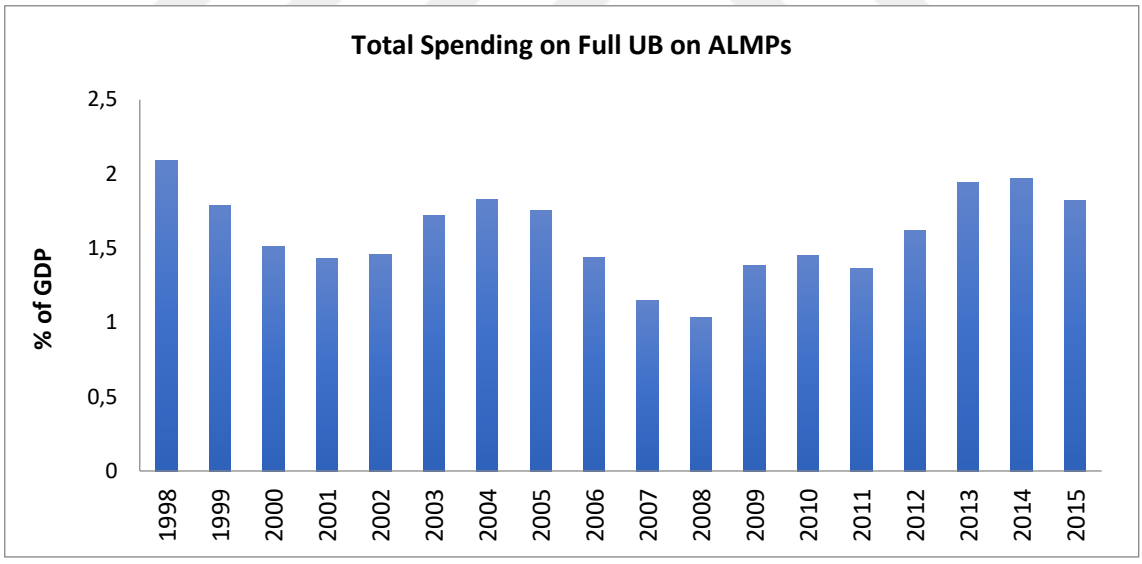
Figure D.3. Total Spending on Full UB on ALMPs (% of GDP)

France



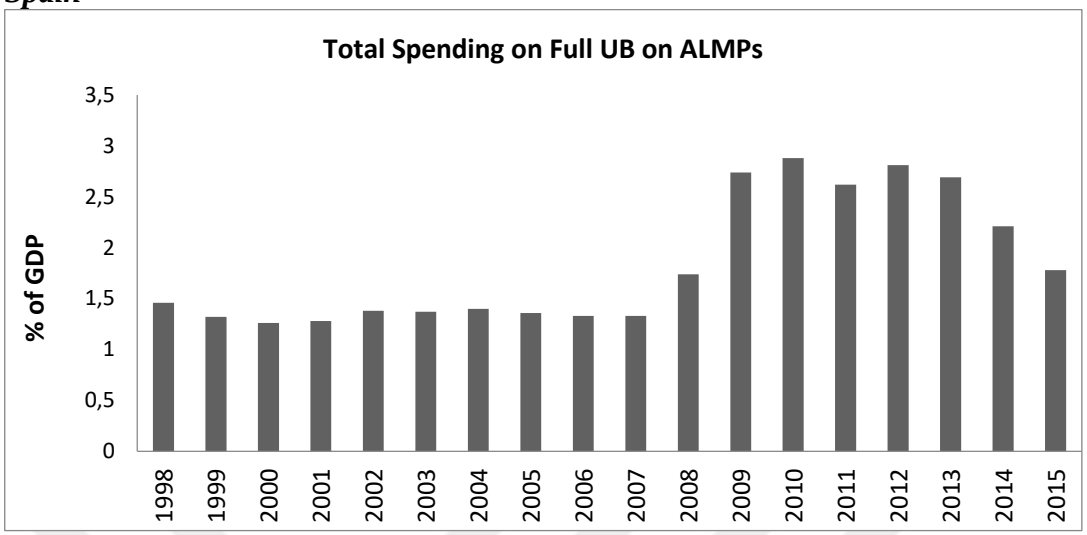
Source: OECD

The Netherlands



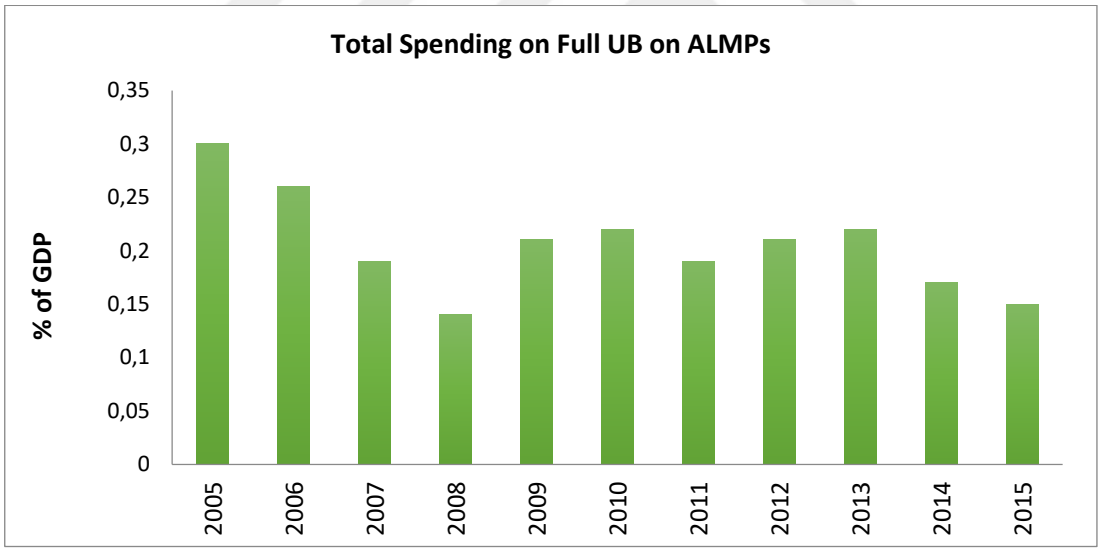
Source: OECD

Spain



Source: OECD

Poland



Source: OECD

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