



Unregistered Employment

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Selçuk Koç - Ayhan Orhan
Mehmet Çağrı Gözen



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BÜYÜKŞEHİR BELEDİYESİ



MARKA
EAST MARMARA
DEVELOPMENT AGENCY

UNREGISTERED EMPLOYMENT

Edited By

Selçuk KOÇ

Kocaeli University, Kocaeli/Turkey

Ayhan ORHAN

Kocaeli University, Kocaeli/Turkey

Mehmet Çağrı GÖZEN

Kocaeli University, Kocaeli/Turkey

Ecoei No: 5

Dr. Selçuk KOÇ is an Associate Prof. Ph.D at the Department of Economics, Faculty of Economics and Administrative Sciences at Kocaeli University, Kocaeli, Turkey. His teaching and research fields are econometrics and economics theory. His research interests include linear time series econometrics and non-linear time series econometrics.

Dr. Ayhan ORHAN is an Associate Prof. Ph.D at the Department of Economics, Faculty of Economics and Administrative Sciences at Kocaeli University, Kocaeli, Turkey. His teaching and research fields are monetary policy, Turkish Economy and macroeconomics. His research interests include the economic crisis, environmental economics and urban economics.

Mehmet Çağrı GÖZEN is a research assistant at the the Department of Economics, Faculty of Economics and Administrative Sciences at Kocaeli University, Kocaeli, Turkey. He is also a Ph.D student at Kocaeli University. He focuses on Econometrics, Financial Economics and microeconomics.

Economic Issues (Edited by: Selçuk KOÇ, Erhan ÖRUÇ, Aslıhan ANLAR)



IJOPEC Publication
12, Belgrave Court,
London, London, E14 8RJ,
UNITED KINGDOM

www.ijopec.co.uk
E-Mail: info@ijopoc.co.uk
Phone: (+44) 73 875 2361 (UK)
(+90) 488 217 4007 (Turkey)

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Çukurbağ Mh. İnönü Cd. Erkan Apt. No: 177/2
İzmit / Kocaeli, Turkey
Phone: (+90) 546 885 1441

Composer:
ECOEI Art Design
Kocaeli, Turkey
nte@ecoei2.org

Preface

Underdeveloped economies and emerging markets are suffering from various economic problems on the path of development and welfare. Unregistered employment, among these problems, are one of the most critical one to reach the welfare and development targets of countries since negative effects of this problem considered to other problems are not only heading the economic growth off but also income distribution. Turkey, as an emerging market, is also one of the countries struggling with severe informal employment issue. A yearlong European Union Project conducted by Kocaeli University from Turkey aims to tackle with this issue in regional aspect. Within the scope of this project called “Do not Remain Indifferent to Unregistered Youth Employment” (Genç İstihdama Kayıt(dışı)sız Kalma), many activities have been carried out to raise the awereness of the people about negative results of unregistered employment.

The project has also been serving as a forum for researchers, specialists and scientists from academia, public sector and industry to discuss progress and developments achieved in the area of unregistered employment and related topics. One of the main goals of this project was to emphasize unregistered employment’s impacts, to discuss possible policies to overcome this problem, to offer remedies, and to talk about successful local practices. Invited speakers presented 3 plenary lectures tackling broad subjects in unregistered employment. Since our notable keynote speakers are from academia and International Labor Organization (ILO) participants could take the benefit of wide range of experience and knowledge from the invited speakers.

This book contains selected papers presented by speacialists and academician studying in this area at this project implemented in Kocaeli, Turkey. European Congress on Economic Issues (ECOEI), which is one of the activities in the project, also welcomed contributions on other topics in economics such as unemployment, labour market, taxation, shadow economy and welfare economics and in econometrics such as panel data and time series. During the project, more than 300 authors from 18 different countries have been contributing to the project through a total of 139 presentations and papers. After reviewing the submitted full papers with the help of international scientific committee, Papers were accepted to be published in this book. International reviewers evaluated each abstract and full papers. Recommended papers are printed in this book. The organizers are grateful to the members of the International Scientific Committee and to Special Reviewers for their effort.

Before closing, we would like to thank all the invited speakers, reviewers, authors and organizers in this project. This book is the result of not only their contributions, time, and efforts but also their dedication to science. Satellite events added a plus to the scientific dimension to this project. The high-quality scientific contributions included in this volume serve as extensive documentation basis for those interested. We hope that this book can serve a very important purpose and it brings a real added value to the related literature.

Dr. Selçuk KOÇ
Dr. Ayhan ORHAN
Mehmet Çağrı GÖZEN

The European Union Project

The “European Congress on Economic Issues: Unregistered “Youth” Employment: Impacts, Policies, Remedies, and Local Practices”, is scheduled to be held from 30 March to 1 April 2017 in İzmit/Kocaeli which is closely located to Istanbul in Turkey.

The ECOEI 2017 is organized as part of the European Union Project- “Do not Remain Indifferent to Unregistered Youth Employment” (Genç İstihdama Kayıt(dışı)sız Kalma), carried out under the Grant Scheme for Promoting Registered Employment Program. “Promoting Registered Employment II” operation funded under Instrument for Pre-Accession Assistance (IPA), will contribute to the achievement of the overall objective of ‘employment’ priority axes 1, which is to attract and retain more people in employment, particularly by increasing labour force participation of women, and decrease unemployment rates, especially for young people. More specifically, the Operation will contribute to the implementation of Measure 1.3 in The Human Resources Development Operational Programme (HRD OP) which aims to “combat unregistered employment” and “promote registered employment”.

“Promoting Registered Employment II” operation funded under IPA, will contribute to the achievement of the overall objective of ‘employment’ priority axes 1, which is to attract and retain more people in employment, particularly by increasing labour force participation of women, and decrease unemployment rates, especially for young people. More specifically, the Operation will contribute to the implementation of Measure 1.3 in HRD OP which aims to “combat unregistered employment” and “promote registered employment”.

Unregistered employment means unrecorded or under recorded labour force in any official records or statistics. This type of employment is not reflected in the official figures of the labour force. The main factor/motive behind the unregistered employment is the employer's attempt to reduce production costs by avoiding the labour cost components such as social security contributions and taxes. Another factor/motive of unregistered employment is insufficient knowledge of the public about social security.

Informal employment leads to various problems. The main ones are increase in the social security deficits; inequality in distribution of income; unfair competition; bad working conditions; difficulties in realization of the foreseen targets in various documents published in the field of social protection; difficulties in management of social protection system; low production quality; higher rate of work accidents and occupational diseases risk for unregistered workers; impossibilities to reach trade union and collective bargaining rights for unregistered workers; increase in unskilled labour.

Although the above mentioned problems’ have heavy impacts on Turkey over the last ten years, as a result of various efforts in this field, unregistered employment rate declined to 38.5 % as of November 2012 (TURKSTAT statistics).

This grant scheme is launched in order to contribute to the solution of unregistered employment in Turkey. The previous Promoting Registered Employment-I (PRE-I) operation not only contributed much to the cooperation within local social partners via grant scheme, but also increased awareness and knowledge level of Social Security Institutions (SSI) personnel and other related people via its technical assistance scheme. Under the grant scheme of PRE I Operation, 41 grant projects with a total amount of € 9.317.650 were implemented by local authorities, NGOs, and social partners collaboratively with the SSI local offices.

In this respect, the PRE-II operation will seek to undertake complementary and follow-up activities. Through such activities, this Operation will further strengthen the institutional capacity of SSI central and local staff, local organizations and social partners. Besides, the Operation will institutionalize the bonds established during PRE-I operation between local branches of SSI and social partners.

The Project is being implemented jointly by the European Union, the Ministry of Labour and Social Security of Turkey and University of Kocaeli. This project includes a set of activities such as analysis of current situation, public spotlight, workshops, training courses and seminars; which will be completed with the international congress- the ECOEI. It is planned to be organized annually on a selected topic, having utmost importance for developing and underdeveloped economies.

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List of Contributors

Gülten DURSUN is an Associate Professor at the Department of Economics in Kocaeli University. Her research activities are focused on Foreign Direct Investment, Poverty, Gender and Economic Growth. Specific interests include natural disasters and poverty, interdisciplinary and methodology; panel econometrics, development and philosophical issues in economics and development. She holds a PhD in International Economics from the University of Marmara, Turkey.

Yılmaz BAYAR was born in Malatya, Turkey in 1977. He completed Navy High School in 1995, graduated from Naval Academy in 1999 and served 13 years in the Navy. He was awarded master degrees in the field of Accounting and Finance from Marmara University Institute of Social Sciences in 2006, in the field of International Economics & Finance from Bahcesehir University Institute of Social Sciences in 2007, and in the field of International Relations & Globalization from Kadir Has University Institute of Social Sciences in 2008. He was also awarded a PhD degree in the field of Economics in Istanbul University Institute of Social Sciences in 2012. He worked as an Assistant Professor in the Faculty of Business Administration, Karabuk University during the period September 2012-March 2015 and now working as an Associate Professor Doctor in the Faculty of Economics and Administrative Sciences, Usak University, since March 2012.

Ayhan GÖRMÜŞ was born in Ordu, Akkuş. He was awarded bachelor degree in the field of Labor Economics from Kocaeli University in 2003 and finished master degree in the Labor Economics from Kocaeli University in 2006. He was also awarded PhD from Marmara University in 2011 and started working in Namık Kemak University in 2012 in the department of Labor Economics. He also finished his Post Doctorate in Cardiff University between 2014 and 2015.

Eda Yalçın KAYACAN is a researcher assistant at the Department of Econometrics in Dokuz Eylül University and she has written her PhD thesis.

Rabab FARRASH was awarded Bachelor degree in Accounting ,King Abdulaziz University in 1994, master degree in Accounting ,King Abdulaziz University in 2002. He worked as education consultant from 2007 to 2014 and has been working as Lecturer in the accounting department University of business and technology from 2015 to date.

Ruhal SAMANLI is working as research assistant in Çankırı Karatekin University and is doing PhD in the field of social policy in Kocaeli University.

Mehmet Şaban UÇARI finished bachelor degree in statistics in Gazi University and was also awarded econometrics degree from the same university. He is working for TUIK Kocaeli Region Household Labor Force Statistics Department and studying master degree in Economics in Kocaeli University.

Burcu TÜRKCAN has been lecturing at the Department of Economics in Ege University since 2013. Her main research areas are regional economics and development.

Ceyhun ELGİN is an associate professor of economics at Bogazici University, Turkey.

Melike BİLDİRİCİ, Professor at the Yıldız Technical University in Istanbul, Turkey, holds a B.S. from Marmara University (Istanbul) and earned both his M.A. and Ph.D. degrees in economics from that institution. Dr. Bildirici's studies have appeared in such publications as Resources policy, Petroluem Science, JRSE, JESA, Energy Economics, The Journal of Energy and Development, Expert Systems with Applications, Energy, Family History, Energy Economics, JRSE, AEID, Economic Research, Emerging Markets Finance and Trade etc.

Ferda Esin GÜLEL is working in the department of Econometrics in Pamukale University.

Züleyha YILMAZ was born in Ordu / Ünye in 1982. She graduated from Ondokuz Mayıs University, Ünye Faculty of Economics and Administrative Sciences and Department of Business Administration in 2002. She was awarded a master's degree in Istanbul University, Institute of Social Sciences, and Accounting Programme in 2004. After taking her master's degree, she worked at Ünye Plastics and Construction Ltd. as an accountant during almost two years. In 2011, she graduated another master's degree programme in Accounting at LeBow College of Business in Drexel University, USA. Returning to Turkey in 2011, she continued her education at the Karadeniz Technical University, Institute of Social Sciences, Department of Business Administration, where she received her Ph.D. degree in 2016. Besides, she started to work as a research assistant in Ordu University, Faculty of Economics and Administrative Sciences, and Department of Business Administration in 2012. She continues her studies at the same university.

Bilge ÖNAL was born in Germany and lived there for twenty years. During this period she graduated from St. Ursula Gymnasium and came for her undergraduate education to Sakarya University. After she got her degree from the business department she started doing her master degree at the same university. Now she is working as research assistant at Sakarya University.

Eylül KABAKÇI GÜNAY graduated from Anadolu University in the Department of Economics of Anadolu University in 2009 and completed her graduate degree in Economics department of Anadolu University social science institute in 2012. Günay, who is continuing on to the same universities with doctorate degree, is also a research assistant at Bilecik Seyh Edebali University, Faculty of economics and administrative sciences, department of economic development and international economics. Günay, who has published 5 international papers, 3 national papers and researcher at the 1 BAP project, continues to work on economic development, development, poverty, African economy, globalization and feminine employment.

Erhan ÖRUÇ is a research assistant at Department of Economics in Kocaeli University. He holds a BA degree in Dokuz Eylül University. He received his MA (Financial Economics and Banking) degree at the same university. He holds a PhD degree in economics in the University of Kansas in the U.S. His research areas are monetary policy, macroeconomics and Bayesian econometrics.

Habibou YAKITE is a graduate student at the department of International Economics and Development in Kocaeli University. He has completed his bachelor in The International Institute of Management-IIM-University, Bénin. His areas of interest are International Economic Theory and International Political Economy.

Introduction

There are various types of goods and services in the markets not just in domestic level but also at international level due to the technological developments in today's world. This current situation creates different kind of jobs in different sectors. On the other hand, when it is considered together with increasing population of the world, production and supply of the new goods and services are needed to be increased to meet the demand of the markets. Since new sectors should need more workers who are with specialized abilities and are unskilled demand for any kind of labor force increases but continuously increasing labor force supply, in conjunction with raising world population, especially in emerging markets and under-developed countries is higher than the total labor force demand in the labor market. Thus, unemployment is a serious problem for the countries especially those which are economically under-developed and developing.

Unemployment problem of the countries mentioned above creates another big problem which seriously hampers the related countries to reach their target for economic development together with unfair distribution of income. This problem is called unregistered employment which keeps the workers away from awareness of government. Unskilled workers and child labor are especially inevitable victims of this problem. Reasons which make it a serious problem are violation of minimum wage rules, health and security rules of work place, overtime work rules and violation of many other regulations. One of the definitions for unregistered employment mentions any worker who is not enrolled any official social security institution for the time she or he works. Another definition states that unregistered employment is also any worker's avoidance from legal responsibilities such as paying tax or social security premiums due to incomplete declaration of work. When looked at all the definitions of unregistered employment it is understood that it means decrease in public revenues creating serious problem in reaching economic targets for the countries.

This book collects many valuable scientific studies considering the unregistered employment from different angles. These studies are prepared by academicians, master and Phd students and specialists who are working at university or public institutions. You will find short summaries of studies which are about unregistered employment and related topics below:

The study prepared by Mehmet Şaban Ucari and Selçuk Koc is having title "*A General Overview on Regional Informal Employment*" in this book. This topic mentions since the rate of taxes and social security premiums on employments are high employers and employees are more inclined to work informally. Unregistered employment is especially concentrated in agricultural sector in Turkey and any attempt to decrease the rate of unregistered employment remains limited in regions with agricultural structures. The study is searching for informal employment in terms of demographic variables at the level of statistical regions.

"*Does Unregistered Employment Really Reduce The Labour Costs? A Study in Turkey*" is the another study prepared by Bilge Önal and Zülküf Çevik. The aim of this study is to compare the costs of registered and unregistered workers. The paper seeks to answer the question whether or not unregistered employment really reduces the labour costs. Besides, the analysis of incentives and sanctions for employment according to its advantages and disadvantages to the costs of the employees is part of study. Risk analysis method is performed to determine the cost of unregistered employees.

Eda Yalçın Kayacan, Özlem Kiren Gürler and Şenay Üçdoğruk Birecikli focus on the relationship between young employment and informality with the study of "*The Role of Young Employment on the Informal Economy*". Young unemployment is an important part of the concept of unemployment and an important problem in Turkey. The education levels of young people is another reason causing the informal economy. The relationship between informal economy size estimated by the monetary rate method and unemployment rates related to education levels of young people will be assessed for Turkey for 2006: Q1 - 2016: Q2 and political evaluations will be made using the causality and cointegration tests.

The work of Orhan Erem Atesagaoglu, Ceyhun Elgin and Oguz Oztunali "*The Growth Performance of the Turkish Economy: The Role of Informal Sector*" explores the potential effect of the informal economy on economic growth in the Turkish economy for the time interval between 1950-2013. It is performed growth accounting exercises on the formal GDP per capita and total GDP per capita under two frameworks by defining total GDP as the aggregation of the formal and informal GDP. In this benchmark framework, It is implicitly assumed that the formal and informal sectors are isolated from each other and utilize potentially different technologies, while under second model two sectors are united and it is assumed that the total economy is governed by a single production function. Results of the two

methodologies imply that the potential interactions between the two sectors may have played a role in determining the growth performance of the total GDP in the Turkish economy. Moreover, results indicate that the major contributor to growth in both formal and total GDP is total factor productivity, which is followed by human capital per capita. Informal sector seems to have negatively contributed to the growth in total GDP since the size of the informal sector has declined dramatically over time in Turkey.

The “*Analyzing Child Labor in Turkey*” was prepared by Melike E. Bildirici and Fulya Özaksoy. According to this study, child labor is not the socio-economic phenomenon only of recent times. It was also a phenomenon by the mid-nineteenth century in Europe and during the Industrial Revolution in Britain. Related literature shows that child labor force participation is highly associated with development level of countries. Child labor is considered as an essential production input especially in emerging countries. This employment structure creates vicious circle, socialization problem and effects welfare status of especially developing countries. This paper aims to search the dynamics of child labor in Gulf industrial district of Kocaeli, Turkey in the period of 1990-2014 by Panel data analysis. Moreover, it is examined whether child labor is an indicator of economic development of countries or not.

The study “*The Impact of Internship on Youth Employment: Case University of Business and Technology, Saudi Arabia*” from Farrash Rabab And Shata Sameera explores the effect of internship program only on female Youth employment, by analyzing the employers evaluation forms, for undergraduate students from University of Business and Technology in Saudi Arabia, Jeddah. This study also investigates the impact of internship on intern's employment to find out the most important non-academic skills from employer's perspective.

Züleyha YILMAZ's work “*Employment Profile of Business School Graduates: A Study at Ordu University*” has objectives which are to collect information about the job fields of graduates of economics and administrative sciences, their public or private sector preferences and postgraduate employment processes. data utilized in this study is obtained through the questionnaire and results of analysis show that gender of graduates has an important effects. In addition, the ages and departments of the graduates also have some effects on finding a job during the first year after graduation.

The study “*Investigation of Youth Unemployment In Turkey With Spatial Interaction*” prepared by Ferda Esin Gülel and Halil Tunca examines the youth unemployment in Turkey by using spatial regression analysis. Studies from related literature have mentioned that the unemployment rate in the youth population (ages 18-24) is much higher than the general unemployment rate. In Turkey, which has a relatively young population, youth unemployment is a serious problem that can have social and economic consequences. Findings from this study show that there is a spatial interaction between regions according to youth unemployment, as well as the impact of demographic and economic variables on youth unemployment.

The “*Youth Unemployment Hysteresis in the CEMAC Region: Evidences From Suradf and Panel Data Analysis with Multiple Structural Breaks Under Cross-Sectional Dependence*” was prepared by Gülten Dursun and Habibou Yakite. By using six CEMAC countries covering the period 1991-2014, they explore whether country-specific youth unemployment in CEMAC countries is explained by natural rate of unemployment or hysteresis hypothesis. Panel unit root test with multiple structural breaks is used to obtain results from this study. The results of panel unit root tests show the existence of youth unemployment hysteresis hypothesis in the presence of cross dependence and structural breaks only for Cameroon.

Eylül Kabakçı Günay's study “*Effects of Part-Time Working on Female Labor Force Participation and Population Growth Rate: The Example of Turkey*” discuss possible effects of the widespread use of part-time work in the framework of the regulation, which is enacted in late 2016 in Turkey, and gives civil servant and worker women the right to work part-time and in the case of motherhood. Responsibilities of a woman at home such as the tasks of housework, being a good wife, being a good mother and fulfilling the duties have always been one of the important factors that keep her away from the labor market in countries where the weight of patriarchal family regulation is still felt like the Turkey. However, in countries where women's participation in labor is already low, such as Turkey, this

ratio needs to be raised to speed up the economic growth of the country and increase the level of prosperity. This study tries to make clear expected effects of the new regulation (November 8, 2016-the official gazette number 29882) on the decision to become a mother which is given by female workers and civil servants.

Purpose of Taner Güney's work "*Youth Employment And Sustainable Development*" is to analyze the impact of youth employment on sustainable development in EU member countries, including Turkey. Findings from this study covering the 1990-2014 periods show that youth employment has a positive and significant effect on sustainable development. Therefore, it is important to reach sustainable development based youth employment level in Turkey and EU member countries, for the sustainability of the development.

The study of Ayhan Görmüş titled "*The Micro Determinants of Informal Youth Employment in Turkey*" investigates the differential impacts of socio-economic determinants on informal employment by age in Turkey by using Turkish Household Labor Force Survey micro data and employs logistic regression modelling. The results suggest that informal employment is significantly affected by a range of workplace characteristics, flexible work and work-related nominators used in the study.

The "*Financial Development and Shadow Economy in Turkey*" was prepared by Yılmaz Bayar and Levent Aytemiz. The interaction between financial sector development and the size of shadow economy in Turkey during the period 1960-2009 is analyzed in this study by using Maki (2012) cointegration test and Hacker and Hatemi-J (2006) bootstrap causality test. According to findings obtained from this study, financial development has negative impact on the size of shadow economy in the long run and there is unidirectional causality from financial development to shadow economy.

The study of Burcu Türkcan and Utku Akseki titled "*The Determinants of Regional Unemployment in Turkey: A Spatial Panel Data Analysis*" aims to analyze spatially the main determinants of regional unemployment in Turkey covering the period of 2008 – 2015 in terms of NUTS2 level. A balanced panel data set with 8 years and 26 regions has been used to obtain findings which suggest that the main determinants of the regional unemployment are the lagged values of both dependent and independent variables.

Ruhal Samanlı's study "*The Role of Social Investments in Reducing Unemployment and Poverty*" mentions the change of labor market's structure along with the transformation of global economic system. The consequences of these changes have created unemployment and poverty. Programs trying to reduce poverty are thought to be the different dimension of the transformation of universal economic system. The existence of unemployment and poverty entails expenses from social policy implementations to the social investment programs. In other words, social investments are regarded to be solution for the eradication of unemployment and poverty. The purpose of this study is to reduce the unemployment and poverty through social investments. The study was formed by data collection methods in qualitative researches. It was emphasized that social investments can be considered as a solution to reduce unemployment and poverty while starting to work.

The "*The Effects of the Minimum Wage on Youth (Un)employment in OECD Countries*" was prepared by Erhan Oruç. The study aims to explain high youth unemployment rate with the help of macroeconomic variables and institutional variables in OECD countries. His study covering the 1990-2014 period for 25 OECD countries employs the panel data analysis. Findings from this study mention significant effect of real GDP and real interest rates on youth employment and author states that development of law, institutional structure of countries, etc should be considered by authorities.

This book contains the studies presented in first "European Congress on Economic Issues". Some of the studies were developed and derived after they were presented. We are hoping that these studies make contribution to related literature and we are grateful to all the author whose paper published on this book.

1

A General Overview on Regional Informal Employment

Mehmet Şaban UÇARI
Selçuk KOÇ

Abstract

Employment and unemployment are important issues in the country's economy. Although the government has made some regulatory efforts to increase employment and to reduce unemployment in terms of social and economic aspects, the high rate of taxation and social security premiums on employment has forced both employers and employees to work unregistered. The rate of informal employment in Turkey, which was 50% in 2000, has fallen to 35% in recent years. However, as informal employment is concentrated in the agricultural sector, this decline was limited in regions with agricultural structures. In addition to the sectors, due to social and demographic structure, informal employment statistics show some differences among the regions in terms of age group, sex, etc. In this study, informal employment, which is a significant economic problem of the countries, have been examined in terms of demographic variables at the level of statistical regions.

Keywords: informal employment, demographic structure, statistical regions

Introduction

Informal employment is the sum of employment patterns that are not reflected in statistical calculations and statistically not fully calculated in both official and informal sector and in informal economic activities on their own behalf or as paid workers and their activities are in public records and statistics (Yereli and Karadeniz, 2004: 45). There are many negative economic and social consequences of informal employment. All the actors who are employing are affected by these negative outcomes, in some ways. Unregistered workers cannot afford the health costs because of existing health problems, work accidents or occupational illnesses, and in the long term, they suffer from financial difficulties, because they do not receive pension premiums. Employers steal the future of their employees and also employing unregistered workers leads to unfair competition in the market. Due to the high tax burden of employment in our country, some employers who want to pay lesser income tax and some employees who want to get more income tend to informal employment. Tending employers and employees to informal employment causes the tax loss, which is the most important income source of the state. But, even if informal employment causes tax loss, states sometimes overlook this phenomenon not to rising unemployment.

Fundamental Labor Indicators

Employment and unemployment are among the most important indicators of the economy. Employment refers to the level of employment of human power that will participate in economic activities in a one-year period in a country (Köklü, 1976, 67). Unemployment is the existence of a workforce that cannot find a job and is willing to work on the current wage (Yıldırım and Karaman, 2003, 312). The overall picture of the labor market in the last ten years in our country is given in Table-1.

Table-1. Turkey Fundamental Labour Force Indicators between 2005 and 2015

Years	Labor Force (thousand person)	Employment (thousand person)	Unemployment (thousand person)	Not in labour force (thousand person)	Labour force participation rate (%)	Unemployment rate (%)	Non-agricultural unemployment rate (%)	Employment rate (%)
2005	21 691	19 633	2 058	26 665	44,90	9,50	12,00	40,60
2006	21 913	19 933	1 980	27 362	44,50	9,00	11,10	40,50
2007	22 253	20 209	2 044	27 925	44,30	9,20	11,20	40,30
2008	22 899	20 604	2 295	28 083	44,90	10,00	12,30	40,40
2009	23 710	20 615	3 095	28 124	45,70	13,10	16,00	39,80
2010	24 594	21 858	2 737	28 310	46,50	11,10	13,70	41,30
2011	25 594	23 266	2 328	28 391	47,40	9,10	11,30	43,10
2012	26 141	23 937	2 204	28 820	47,60	8,40	10,30	43,60
2013	27 046	24 601	2 445	28 936	48,30	9,00	10,90	43,90
2014	28 786	25 933	2 853	28 200	50,50	9,90	12,00	45,50
2015	29 678	26 621	3 057	28 176	51,30	10,30	12,40	46,00

TURKSTAT Household Labour Force Survey

When we look at the table, it is seen that the unemployment rate which was 10.0% in 2008 after the global crisis, which was affected all over the world in 2008, increased to 13.7% in 2009. After the declining trend of the unemployment rate between 2009 and 2012, it follows increasing trend. Employment, on the other hand, increased after a slight slowdown in the crisis period.

Informal Employment

The concept of informal employment was first used as an "informal sector" in the Kenya report under the World Employment Program of the International Labor Organization (ILO) in 1970. (Güloğlu et al., 2010). In terms of social security, informal employment can be defined as workday or fee of the people participating in the employment by working in legal affairs has never been reported or reported incompletely to the relevant public institutions and organizations.

Informal employment is defined on the 17th International Conference of Labour Statisticians (ICLS) as comprising the total number of informal jobs, whether carried out in formal sector enterprises, informal sector enterprises, or households, during a given reference period (Husmanns, 2004)

In Turkey, informal employment generally emerges as three main categories. These are;

1) The employees whose work has never been reported

Some groups of employees do not want to register with the Social Security Institution and / or the tax offices, even if employers wish to. There are reasons for not registering, such as economic losses in some cases, or the possibility of more important consequences such as deportation, as in foreign illegal workers.

We can list workers who works informal on their own wishes such as foreign illegal workers, child workers, monthly or income earners from the SGK in various names, unemployment income earners and beneficiaries of social assistance or service.

2) The employees whose workdays or fees has been reported incompletely

Another important aspect of informal employment is that reported wages do not reflect real wages. In order to partially reduce the cost of the employer, the wage paid to the workers is reported to the public institutions on the minimum

wage and the amount between the wage actually paid by the workers and the wage reported to the public institutions (SGK, GİB and İŞKUR) is left out.

3) The employees who has been left out of formal employment by legislation

Social security legislation excludes some employees. At the beginning of the reason for leaving the scope is the obligation to register permanent workers in agriculture and their own work. On the other hand, the fact that not considering works of some people who works in the service stream also causes their work to be excluded from social security.

The heavy economic conditions forces people to work in other jobs in addition to their main job. In our country, it is known that some civil servants and workers have been working in a second job in various forms, except for their actual work. In second job in Turkey, the income obtained from the informal work exceeds the income from the formal work (Altuğ, 1994)

Table-2. Distribution of informal employment in Turkey by years (2000 persons) between 2000 and 2015

Years	Informal Employees	Formal Employees	Total	Informal Employment Rate (%)
2000	11 050	10 531	21 581	51,20
2001	11 439	10 086	21 524	53,15
2002	11 133	10 221	21 354	52,14
2003	10 943	10 204	21 147	51,75
2004	9 844	9 788	19 632	50,14
2005	9 666	10 401	20 066	48,17
2006	9 593	10 830	20 423	46,97
2007	9 423	11 315	20 738	45,44
2008	9 220	11 974	21 194	43,50
2009	9 328	11 949	21 277	43,84
2010	9 772	12 822	22 594	43,25
2011	10 139	13 971	24 110	42,05
2012	9 686	15 134	24 821	39,02
2013	9 379	16 145	25 524	36,75
2014	9 069	16 864	25 933	34,97
2015	8 937	17 683	26 620	33,57

TURKSTAT, Household Labour Force Survey

In 2000, approximately one out of every two employees in our country were working informally. The state has taken regulatory measures to reduce this rate. To this end, the government has taken some steps with the launch of the Fight Against Informal Employment (KADİM) project in 2006, the Social Insurance and General Health Insurance Law No. 5510, which was enacted in 2008, and the Unregistered Employment Defence Circular issued in 2015 (SGK, 2016). Together with these regulations, the level of informal employment declined from 50% to 35% in the last period.

In Turkey, informal employment affects the labour market as an important problem. The high informality rate seen in agriculture, especially in women who work in agriculture, as a sector is a structural problem of the labour market (Şentürk, 2015). The rate of informal employment in women has been higher than in men in each period. It is observed that informal female employment, which was around 70 percent at the beginning of the 2000s, has recently decreased. Informal employment shows great differences according to age groups. The rate of informal employment is particularly high in the young population, especially in school age, and in the elderly population after retirement. In order to meet the needs of the students during their school period, they tend to work in uninsured jobs mostly in uninsured part-time jobs and in the same way employees who are retired work informally because of livelihood difficulties. This is the main reason why the informal employment rate is high in these age groups. One of the important reasons for informal employment in our country is that the awareness of informality is not settled exactly. As seen in Figure-1, as the level of education increases, the ratio of informal employment decreases.

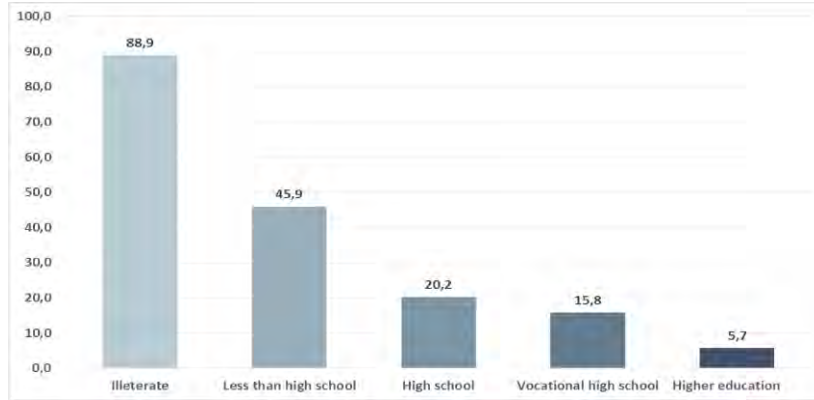


Figure 1. Distribution of informal employment in Turkey by education level in 2015

The sectors where informal employment is most prevalent are generally the agricultural and construction sectors where unpaid family labour and casual work are common. Moreover, prevalence of short-term (seasonal) working is another reason why the informality is high in these sectors.

Monthly informal employment figures are given in Figure-2. When these data are examined, it is easily understood from the graph that the data are seasonal. It is clear that informal employment will be higher in summer months because people who work in agriculture and construction sector take part in employment in the summer.

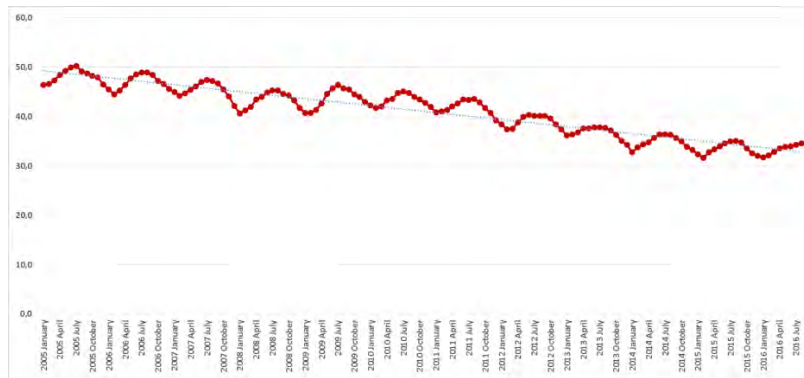


Figure-2. Informal employment rate by period from 2005 to 2016 (%)

When informal employment is examined by occupation, it is seen to be high in unpaid family workers and self-employed. The first reason for this is the fact that there are a lot of people working in the agriculture sector as self-employed and unpaid family workers. The other reason is that not only does social consciousness settle in the informal employment but also individuals who are working on their own account because of economic concerns of the individuals are considering the present situation instead of securing the future situation.

Reasons for Informal Employment

Individuals who work to keep their lives have to think of both current and future prosperity levels. However, some of these individuals prefer to give up their future prosperity for some reasons and only want to maintain their present level of life and prefer to work informally. We can summarize the main reasons why people work informally;

- Economic reasons,
- Social and cultural reasons,
- Legislations and social security regulations
- Public reasons.

The main economic reasons of informal employment are unemployment and poverty, unfair distribution of income and tax burden. Besides, the sectorial structure of employment, the surplus of small enterprises is also the economic reasons

that individuals lead to informal employment. The main social reason of informal employment are low level of education and unconsciousness of social security, high population growth and high labour mobility. A large part of the main reasons for the informal work of employees can be said to be economic and social reasons. The minimum wage, the shortcomings of the social security system, the complications and inadequacies in the legislation, and the lack of coordination between the public institutions are some of the causes stemming from the public and the law.

Regional Level of Informal Employment

Turkey are divided into 26 statistical regions considering the demographic, social, cultural and economic differences of provinces. Since there are regions of different cultural and economic structure in our country, informal employment also differs according to the regional structure. Informal employment figures at the level of Statistical Region Units Classification (NUTS) are given in Table 4 for the purpose of examining the reflection of these differences on informal employment.

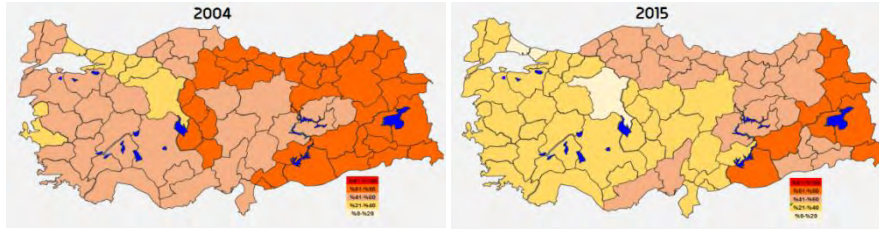
Table-4. Informal employment rates (%) at the regional (NUTS-2) level between 2004 and 2015

Regions	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TR10 (İstanbul)	32,32	33,28	32,27	29,40	23,88	25,17	24,35	22,65	19,36	16,49	18,82	18,36
TR21 (Tekirdağ, Edirne, Kırklareli)	44,75	43,48	43,81	41,90	40,26	41,32	39,80	37,50	32,88	30,64	30,15	28,59
TR22 (Balıkesir, Çanakkale)	56,56	55,74	54,18	52,20	46,91	48,39	45,77	45,22	42,25	41,40	38,21	34,89
TR31 (İzmir)	36,56	35,69	37,77	32,95	27,75	28,97	30,47	32,91	30,13	30,38	27,48	23,47
TR32 (Aydın, Denizli, Muğla)	51,32	48,85	49,61	47,81	45,37	43,04	42,55	45,86	48,10	44,30	36,62	35,63
TR33 (Manisa, Afyon, Kütahya, Uşak)	55,68	51,28	52,76	48,62	44,90	45,54	42,92	43,43	45,22	45,65	39,70	39,37
TR41 (Bursa, Eskişehir, Bilecik)	43,39	40,43	35,01	34,76	30,41	29,91	28,42	28,05	23,67	24,55	20,41	20,44
TR42 (Kocaeli, Sakarya, Düzce, Bolu, Yalova)	31,25	37,19	36,59	32,50	33,26	36,81	38,46	37,93	34,48	32,31	32,82	30,10
TR51 (Ankara)	27,10	28,04	28,06	24,79	21,38	19,30	21,36	21,36	17,67	16,08	17,37	17,09
TR52 (Konya, Karaman)	50,17	43,83	43,41	49,05	53,77	52,95	54,33	50,13	43,99	43,99	39,69	40,17
TR61 (Antalya, Isparta, Burdur)	47,68	41,96	46,28	47,29	47,40	46,01	44,21	41,86	38,64	36,86	32,89	28,97
TR62 (Adana, Mersin)	58,57	55,37	52,51	51,42	51,90	53,90	52,77	53,42	47,52	43,97	45,71	43,31
TR63 (Hatay, Kahramanmaraş, Osmaniye)	58,56	62,75	58,68	57,85	54,76	57,57	61,28	58,61	53,69	48,94	40,95	36,72
TR71 (Kırıkkale, Aksaray, Niğde, Nevşehir, Kırşehir)	61,94	55,56	55,84	49,76	40,39	47,65	51,21	46,41	43,13	44,71	38,38	37,91
TR72 (Kayseri, Sivas, Yozgat)	51,40	47,89	39,38	41,71	41,96	42,07	45,32	50,87	50,00	39,11	32,85	34,83
TR81 (Zonguldak, Karabük, Bartın)	50,49	55,31	54,45	56,98	60,46	60,67	52,91	53,00	51,72	52,40	49,37	46,32
TR82 (Kastamonu, Çankırı, Sinop)	45,90	42,63	55,94	55,89	59,06	59,07	62,72	62,96	57,19	50,95	50,00	48,80
TR83 (Samsun, Tokat, Çorum, Amasya)	68,01	67,38	63,83	62,20	63,49	62,69	55,78	50,50	46,92	47,82	46,61	46,52
TR90 (Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane)	73,72	67,83	63,96	65,15	65,36	67,26	64,71	61,78	62,27	55,74	54,09	52,46
TR A1 (Erzurum, Erzincan, Bayburt)	76,84	71,78	63,44	57,53	60,29	59,48	63,28	56,13	49,35	49,20	56,10	52,35
TR A2 (Ağrı, Kars, Iğdır, Ardahan)	78,60	76,60	75,82	80,54	83,81	78,62	74,34	73,26	69,51	71,43	71,54	71,10
TR B1 (Malatya, Elazığ, Bingöl, Tunceli)	56,99	57,58	59,45	58,11	51,57	53,79	57,73	53,18	55,38	58,58	48,06	46,32
TR B2 (Van, Muş, Bitlis, Hakkâri)	76,62	75,97	78,84	76,34	70,33	66,75	71,57	74,85	72,74	69,75	70,42	70,80
TR C1 (Gaziantep, Adıyaman, Kilis)	62,92	58,86	61,69	67,31	67,36	59,32	57,82	53,18	49,13	44,27	38,45	35,09
TR C2 (Şanlıurfa, Diyarbakır)	79,59	78,20	73,15	71,46	76,72	67,92	63,59	60,69	63,27	61,60	67,67	65,05
TR C3 (Mardin, Batman, Şırnak, Siirt)	68,62	51,01	59,62	68,53	71,59	63,82	61,08	57,26	51,47	49,06	54,67	51,47

TURKSTAT, Household Labour Force Survey

In terms of statistical regions, the informal employment rate in 2004 was only below 40% in İstanbul, Ankara, İzmir and Kocaeli regions, but fell below 40% in all of western regions of our country in 2015. In the eastern regions in recent years, informal employment is seen to be partially reduced. In the eastern regions such as Ağrı and Van, it is seen that the informal employment rate is around 70%. Due to the fact that the main source of livelihood in these regions is based on agriculture and livestock, and informal employment is high in the agriculture and livestock sector, in these regions informal employment rate is very high and has not decreased too much over the years.

Figure-3. Regional informal employment rate for the years 2004 and 2015 (%)



Informal employment is seen much higher in the agricultural and livestock sector than the service and commerce sectors. The working of women and children as unpaid family workers especially in the agriculture and livestock sectors is influential in the high level of informality among the women in regions where agriculture such as Konya, Manisa, etc., where livestock such as Ağrı and Van are prevalent. In the Istanbul and Ankara regions where Manufacturing, Trade and Services sector is predominant, so informality is lesser than other regions.

The rate of informal employment in young age groups is quite high in eastern regions. While the informal employment rate in the 15-19 age group in the Western regions is around 50% , this rate can be around 90% in the eastern and south-eastern regions. Likewise, in the 20-24 age group that we call university age, the informality rate in the western regions is around 20% while this ratio can reach to around 60% in the eastern regions.

When post-retired workers (over 55 years of age) are assessed, informality in this age group is around 50% in Istanbul, Ankara and İzmir, while this ratio is higher in other regions and this ratio is up to around 80% in some regions. Kocaeli, Konya, Zonguldak, Kastamonu Trabzon, Van regions in this age group, informality is up to level of 80%, in the Bursa, Antalya, Mardin, Gaziantep region, this rate is level of 60%, In general, there is an irregular distribution between regions in this age group.

Table-5. Population, migration, income, education and informal employment at the regional level in 2015

Regions	Population growth rate (per thousand)	Net migration rate (per thousand)	Average household disposable income (TL)	Middle school and undergraduate rate (%)	High school and above graduation rate (%)	Informal employment rate (%)
TR10 (Istanbul)	19,32	3,45	47 696	56,02	43,98	18,36
TR21 (Tekirdağ, Edirne, Kırklareli)	21,98	14,41	35 016	61,90	38,10	28,59
TR22 (Balıkesir, Çanakkale)	-0,48	-2,06	25 972	63,78	36,22	34,89
TR31 (Izmir)	13,37	5,01	38 061	57,06	42,94	23,47
TR32 (Aydın, Denizli, Muğla)	13,84	4,99	29 052	63,73	36,27	35,63
TR33 (Manisa, Afyon, Kütahya, Uşak)	6,19	-1,10	30 424	69,23	30,77	39,37
TR41 (Bursa, Eskişehir, Bilecik)	18,68	7,38	37 580	59,10	40,90	20,44
TR42 (Kocaeli, Sakarya, Düzce, Bolu, Yalova)	26,72	12,14	39 440	60,00	40,00	30,10
TR51 (Ankara)	23,13	9,73	45 670	48,14	51,86	17,09
TR52 (Konya, Karaman)	9,98	-0,38	33 956	68,06	31,94	40,17
TR61 (Antalya, Isparta, Burdur)	23,97	9,73	35 286	59,52	40,49	28,97
TR62 (Adana, Mersin)	9,09	-3,50	31 644	63,28	36,73	43,31
TR63 (Hatay, Kahramanmaraş, Osmaniye)	8,73	-4,70	26 051	68,59	31,41	36,72
TR71 (Kırıkkale, Aksaray, Niğde, Nevşehir, Kırşehir)	4,65	-4,67	29 404	66,58	33,42	37,91
TR72 (Kayseri, Sivas, Yozgat)	0,45	-7,67	33 347	64,01	35,99	34,83
TR81 (Zonguldak, Karabük, Bartın)	3,97	-1,84	34 587	65,07	34,93	46,32
TR82 (Kastamonu, Çankırı, Sinop)	0,96	-1,52	28 434	69,70	30,30	48,80
TR83 (Samsun, Tokat, Çorum, Amasya)	1,54	-6,09	30 000	68,02	31,98	46,52
TR90 (Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane)	2,34	-5,88	31 441	63,36	36,64	52,46
TRA1 (Erzurum, Erzincan, Bayburt)	-3,54	-15,87	30 837	64,36	35,65	52,35
TRA2 (Ağrı, Kars, Iğdır, Ardahan)	-6,34	-25,73	30 179	75,15	24,86	71,10
TRB1 (Malatya, Elazığ, Bingöl, Tunceli)	5,68	-4,88	29 133	62,39	37,61	46,32
TRB2 (Van, Muş, Bitlis, Hakkâri)	6,27	-18,79	27 899	75,01	24,99	70,80
TRC1 (Gaziantep, Adıyaman, Kilis)	18,63	-2,92	27 810	71,39	28,61	35,09
TRC2 (Şanlıurfa, Diyarbakır)	18,73	-8,52	25 113	76,25	23,75	65,05
TRC3 (Mardin, Batman, Şırnak, Siirt)	9,17	-14,80	27 307	73,39	26,62	51,47

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Social factors that drive employees to informal employment include high population growth, high migratory mobility, low income levels, and low levels of education and public awareness. In Table 5 are given the year 2015 data at the regional level for such social variables that cause informal employment. In regions with high disposable income, it is seen that the rate of informal employment is low. Similarly, in regions with high levels of education, the informal employment rate is low. Despite high population growth in non-industrial areas, inadequate employment opportunities cause individuals to migrate, and this lead to population imbalances between regions. Inter-regional labour mobility is high, and inadequate employment opportunities in the region force individuals to work informally.

Conclusion

Informal employment, one of the major problems of our country that has not been solved for years, has threatened the future of the individual in the long term, even though it provides income in the short term for the livelihoods of the individuals. Individuals work informally because of social, economic or regulatory reasons.

In addition to demographic characteristics such as gender, age, educational status of the individuals, factors such as the sectors they are working in and the status of their employment can be said to be related to the working informally of the individual. Considering the geographical structure of our country, the western regions have a structure based on industry and the eastern regions have a structure based on livestock, which is the main reason why informal employment is high in eastern regions. It would be useful here to work to reduce informal employment in the agriculture and livestock sectors. It is important here to prepare the agricultural labour laws that can reduce informality and to put the necessary regulations into effect to register the workers in this sector. In addition, it is seen that informal employment rate is high in regions where education level is low. For this reason, it is necessary to emphasize the increase in social consciousness at the point of informal employment.

Reducing informal employment is of great importance in solving many structural problems in working life. At this point, reducing informal employment will provide significant contributions in addressing key issues such as reducing social security deficits, increasing tax revenues, job health and safety.

Finally, it is important to fulfill its responsibilities on the part of public institutions in the struggle against informal employment. It will also be useful at this point to pass on a high-level public formation, which will enable the public institutions to coordinate with each other.

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2

Does Unregistered Employment Really Reduce The Labour Costs? A Study in Turkey

*Bilge ÖNAL
Zülküf ÇEVİK*

Abstract

Employment is one of the important economic indicators for the country's economic growth. Unregistered employment has negative effects on both workers' rights and to the economy of the country. The aim of this study is to compare the costs of registered and unregistered workers. Also the incentives and sanctions for employment have been analysed according to its advantages and disadvantages to the costs of the employees. In this study, the cost of unregistered employees is calculated with the help of process risk analysis method. The cost of employing an unregistered worker was calculated using the risks and risk ratios of unregistered worker. The paper seeks to answer the question: does unregistered employment really reduce the labour costs?

Keywords: Unregistered Employment, Employment Incentives, the Cost of Unregistered Workers

Introduction

Today, unregistered employment continues to hurt not only the emerging economies like Turkey, but also the economies of many developed countries, even at different levels. In recent years, important policies have been developed in Turkey to combat tax evasion, the unregistered economy and employment. In Turkey, in order to prevent unregistered economy and employment, many incentives have been announced, while the amount of penalties imposed on unregistered economy and employment is also increasing. The announced incentives and increased penalties prove that the state is aimed to reduce unregistered employment to the lowest level.

While unregistered employment is sometimes beneficial for employee, it sometimes only benefits the employer, but in most cases the economy is negatively affected from it in many ways. From the aspect of employer, unregistered employment seems to be favourable for reducing the labour costs and bureaucratic procedures of registering labour. At the same time, employee finds a job easily by accepting to work unregistered, especially in recession times. On the other hand, the unregistered employment poses a disadvantage to workers who work less than the minimum wage, that

they are employed without overtime and overworked working hours at a lower rate than the minimum wage. Also they cannot utilize the benefits, such as pension funds and health benefits, from the social security institutions. When we look at the unregistered employment from the state's point of view, it leads to reduce of tax revenues and it has the negative impact of high unemployment rates on the national economic growth.

In this study, it is aimed to show the pros and cons of the unregistered employment from the point of each interest group's – state, employer and employee. Furthermore we also make the cost comparison of registered and unregistered workers by taking into account the measurable risks of employing unregistered workers.

Definition of the unregistered employment

Unregistered employment means simply employing workers without the knowledge of official institutions. According to the ILO, under the Employment Policy (Supplementary Provisions) Recommendation, 1984 (No. 169), illegal employment is defined as “*employment which does not comply with the requirements of national laws, regulations and practice*”.

Another definition has been made by The Organization for Economic Cooperation and Development (OECD). OECD defines it as (1986, s. 66):

“...which, while not illegal in itself, has not been declared to one or more administrative authorities to whom it should be made known, thereby leading to the evasion of legal regulations, the evasion of taxes...”

In the light of these definitions, unregistered employment is not legally authorized to work and it is employment which is not notified to the official institutions (tax offices, social security institutions, etc.).

Reasons for Unregistered Employment

The causes of unregistered employment are categorized in many studies as (a) economic reasons, (b) social causes, and (c) legal and managerial reasons (Aydın, 2013; Akgün, 2015; Kaleli, 2015; Şen, 2015). In this study, the reasons for the unregistered employment is classified by the interest groups who are listed as state, employer and employee.

Employer Perspective: Reasons for Unregistered Employment

It is possible to categorize the main causes of unregistered employment that employ by employers as follows: (a) avoidance of tax and insurance obligations, (b) avoidance of bureaucratic procedures for labour registering, and (c) lack of social security awareness (Şen, 2015; Kaleli, 2015; Akgün, 2015).

The competition is rising gradually in every markets all over the world. Therefore companies need to gain competitive advantage in order to survive in the market. Reducing cost is a way to gain competitive advantages for companies. Employers are looking for new ways to reduce costs and to raise profits whenever possible. Sometimes the ways to reduce costs are legal, but sometimes this aim can lead to illegal ways to reduce costs. Avoiding to register workers is an example of reducing costs by illegal ways. In other words, some companies prefer illegality and employ worker without registering in order to avoiding some costs of labour tax and social security contributions.

On the other hand, bureaucratic procedures seem to be needless and time-consuming which creates unwillingness to employ formal workers by employers. Moreover, employers' avoidance of social security obligations by employing unregistered workers indicates the lack of social security awareness.

In this study, we analyse the cost of legal and illegal workers by calculating measurable costs. It is aimed to find out whether employing workers informally is really reducing the costs or not.

Employee/Job Seeker Perspective: Reasons for Unregistered Employment

Another component that constitutes the cause of unregistered employment is employee's/job seeker's attitude. Employers' avoidance of costs and bureaucratic procedures as well as the current situation of workers (such as low educational level and unqualified workers) play an increasing role in unregistered employment.

Low educated workers and low skilled workers may have difficulties in finding a job, so many times they have to work informally in order to find a job. At the same time, some employers offer more wages to workers than they would receive in a formal job that attract low skill and educated workers to work informally.

Government Perspective: Reasons for Unregistered Employment

When considered the role of the government about the reasons for unregistered employment, unsuccessful social policies and the increasing unemployment rate as a result of the economic conditions of the country make it difficult for workers to find work, and as a result workers become willing to work informally.

On the other hand, lack of coordination and effective supervision of government institutions and excessive bureaucratic procedures are among the factors that increase unregistered employment. In addition, the inconveniences and dissatisfaction with the social security system, combined with the high costs of disruptions in social security, can make it more attractive to employ informal workers in terms of employers.

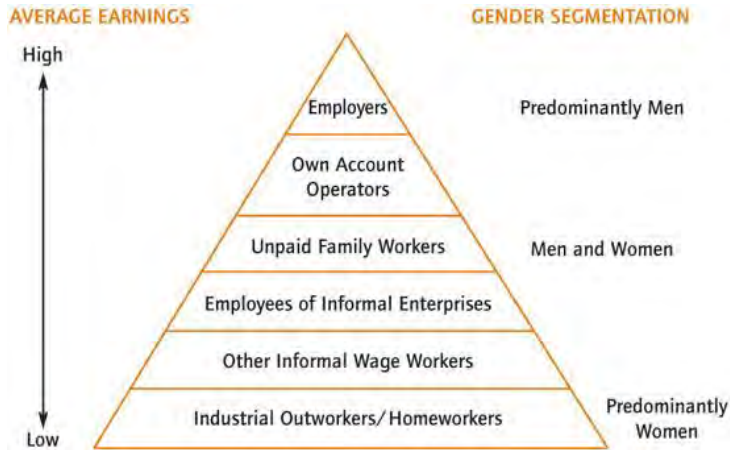
Theoretical Literature Review

Many studies related to unregistered employment have been dealt with from various angles. In the directions of this study's aims, studies dealing with unregistered employment in terms of costs (such as tax and social security) will be taken into account.

Davis and Henrekson (2004) find a positive and significant relationship between tax rates and the informal economy. Furthermore, one of the reason for the increase in the share of unregistered employment have been pointed out that employing informal workers causes employer to endure lower costs and gives them competitive advantage (Huitfeldt & Jütting, 2009). In another study, it is find out that informality results in the reduction of the government's income, the collapse of the formal sector, adversely the identified benefits of informality is the creation of employment (Sakuhuni, 2014). The informality is mainly linked to tax evasion. There is a positive relation between tax rates and size of the informality (Kuehn, 2007).

On the other hand, Chen et al. (2004) focus on unregistered worker's earnings and segmented them as sex and poverty risks. Figure 1 demonstrates the segmentation of unregistered employment by average earnings and sex. Average earnings are lower among all women workers in the unregistered employment compared to all men workers within the unregistered employment. According to following pyramid it can be said that women are represented in segments of the unregistered workers with low earnings. Employers who are at the top of the pyramid are generally male and has highest earnings in the pyramid (Chen, Vanek, & Carr, 2004). Informally employed workers do not contribute to social security systems and they cannot benefit social protection policies (Ernst & Berg, 2009).

Figure 1: Unregistered Employment in terms of Gender Classification and Earnings Amounts



Source: (Chen, Vanek, & Carr, 2004, s. 40)

Cost of Officially Employed Workers to the Employer

The cost of a worker with a minimum wage without any incentive to the employer is calculated as:

Gross minimum wage: 1,777.50 TL

Social Security Institution worker's share and unemployment insurance worker's share should be calculated firstly on the gross minimum wage. Premium rates are taken from the Social Insurance Law No. 5510 and Article 81 of the General Health Insurance Law. SSI Labor Share, 9% Invalidity, Old Age and Death Insurance and 5% General Health Insurance must be calculated as 14% in total. In this case;

Calculating the SSI employee's share				
Gross minimum wage	*	SSI employee's share ratio	=	SSI employee's share
1,777.50 TL	*	0.14	=	248.85 TL

In addition to this, the Worker is deducted 1% for the Unemployment Insurance.

Calculating the Unemployment insurance employee's share				
Gross minimum wage	*	Unemployment insurance employee's share ratio	=	Unemployment insurance employee's share
1,777.50 TL	*	0.01	=	17.78 TL

The worker is obliged to pay income tax on the remaining amount after deduction of these interruptions. Income tax cuts the employer on behalf of the employee. A 15% tax slice was used because a minimum worker remained in the 15% tax rate throughout the year. In order to be able to calculate the income tax, the income tax base must first be found. The income tax base is obtained by deducting the gross minimum wage from the social security institution employee share and the unemployment insurance employee share.

Calculating the Income tax base						
Gross minimum wage	-	SSI worker's share	-	unemployment worker's share	=	Income tax base
1,777.50 TL	-	248.85 TL	-	17.78 TL	=	1,510.87 TL

If 15% of income tax is calculated over income tax base;

Calculating the income tax				
Income tax base	*	Income tax rate	=	Income tax
1,510.87 TL	*	0.15	=	226.63 TL

This calculated income tax is the income tax withholding tax deducted from the salary of the worker. However, Minimum Living Allowance (MLA) is applied for the income tax amount. The minimum living allowance has emerged with the aim of ensuring social justice in the taxation system, moving from the belief that one person can pay taxes only if he or she can survive his / her physiological existence (Özdemir, 2007). When the MLA amount is calculated, the marital status of the worker, the working status of the partner and the number of children is taken into consideration. The Minimum Living Allowance amount is for 2017 133.31 TL. Although the minimum subsistence is deducted from the income tax paid by the worker, it is a receivable for the enterprise and is therefore accounted for in the account of the various other receivables.

Another tax that the employee should pay is stamp tax. The stamp tax is 7.59 % of gross income.

Calculating the Stamp tax				
Gross minimum wage	*	Stamp tax rate	=	Stamp tax
1,777.50 TL	*	0.00759	=	13.49 TL

All deductions are deducted over the gross Minimum Wage to obtain the net figure.

The net pay of a minimum wage worker												
Gross minimum wage	-	SSI worker's share	-	Unemployment worker's share	-	Income tax	+	Minimum living allowance	-	Stamp tax	=	Net pay
1,777.50 TL	-	248.85 TL	-	17.78 TL	-	226.63 TL	+	133.31 TL	-	13.49 TL	=	1,404.06 TL

On the other hand, the cost of the calculated net wage of the employee for the employer is higher than the gross wage above. The reason for this is the Social Security Institution and Unemployment Insurance Premium Employer shares that must be paid by the employer. These are calculated over the gross rate. The Social Security Institution Employer's share is calculated on the basis of 20.5%, including 11% Disability, Old Age and Death Insurance, 2% Short Term Insurance Branches and 7.5% General Health Insurance. Thus;

Calculation of the SSI employer's share				
Gross minimum wage	*	SSI employer's share rate	=	SSI employer's share
1,777.50 TL	*	0.205	=	364.39 TL

In addition, a 2% calculation is also required for the Unemployment Insurance Employer Share.

Calculation of the Unemployment insurance employer's share				
Gross minimum wage	*	Unemployment insurance employer's share rate	=	Unemployment insurance employer's share
1,777.50 TL	*	0.02	=	35.55 TL

When all these are added, the cost of the employee for the employer is found under the assumption that there is not any benefit from government incentives.

Calculating the cost of a minimum wage worker to the employer						
Gross minimum wage	+	SSI employer's share	+	Unemployment employer's share	=	Cost to the employer
1,777.50 TL	+	364.39 TL	+	35.55 TL	=	2,177.44 TL

To summarize, the amount of the cost of an employer in order for him/her to receive a net salary of 1,404.06 TL to the employer is 2,177.44 TL.

Government Incentives Related to Employment

According to the information shared by the Social Security Institution, the distribution of unregistered workers is shown in the following graph based on years.

Graph 2: Unregistered Employment Rate by Years (%)



Source:

http://www.sgk.gov.tr/wps/portal/sgk/tr/calisan/kayitdisi_istihdam/kayitdisi_istihdam_oranlari/kayitdisi_istihdam_orani

Although it is observed that the rate of unregistered (Non-Agricultural) workers has fallen by years, it is observed that the total rate of unregistered workers has also declined. To reduce the loss to the state as much as possible. Towards this aim, the State has issued a number of incentives for employers to lighten the burden and encourage the registered economy. One of these incentives is that

the SSI employer's share is deducted 5 points. In order to benefit from this incentive, in accordance with Article 81 of the Law No. 5510, the employer must provide the Social Security Institution with preconditions such as the absence of any debts or the structuring of debts. In this case, the cost for the employer of a minimum wage worker will diminish. The reason for this decrease is the 5 point decrease in SSI Employer share.

Calculating the SSI employer's share with Government Promotion				
SSI employer's share	-	discount rate	=	Rate of SSI employer's share with Government Promotion
20.50%	-	5%	=	15.50%
Gross minimum wage	*	Rate of SSI employer's share with Government Promotion	=	SSI employer's share with Government Promotion
1,777.50 TL	*	0.155	=	275.51 TL

Therefore, the new cost of the worker for the employer must be calculated (İnce, 2008).

Calculating the cost of a minimum wage worker to the employer with Government Promotion						
Gross minimum wage	+	SSI employer's share with Government Promotion	+	Unemployment employer's share	=	Cost to the employer
1,777.50 TL	+	275.51 TL	+	35.55 TL	=	2,088.56 TL

In addition, if the employer employs a male employee older than 18 and younger than 29, or a female employee older than 18, the full amount of the employer's insurance premiums will be covered by the unemployment insurance fund, provided there has been no premium entry for six months prior to their entry into employment. In this case the cost of a minimum wage worker will be reduced to 1,777.50 TL. According to the conditions provided by workers, employers can benefit from this incentive up to 4 years (Sosyal Güvenlik Kurumu, 2017).

In addition to this, it is stated in the General Health Insurance Law No 5510 and Annex-2, that the insurance premium is not limited to employer's share support, but the insurance premium worker's share will be covered by ministries. Only the concerns which invest in the 6th area according the Decree No. 2012/3305 on State Aids in Investments can benefit from this incentive.

Picture 1: Province Based Turkey Investment Incentive Map



Source: <http://dengemusavirlik.com/illere-gore-turkiye-yatirim-tesvik-haritasi>

Assuming that the employer also benefits from this incentive, the cost of the employer of a worker with a minimum wage falls to 1.510,87 TL, which is also the income tax base.

In order to examine the cost of an unregistered worker to the business, it is necessary to consider the circumstances under which the worker will accept to be unregistered. The first thing that comes to mind is that the worker may be young. First of all, a young healthy person may not care about health insurance in the first place. At the same time, it can be considered that this young worker, which we assume to be a new graduate and not having any work experience, can accept such a proposal, even for a short period of time to enrich his CV.

This young worker does not care about insurance entry because he thinks it is a long time to his retirement age. But to convince our young worker, the only argument for winning work experience is not enough. In addition to this, the employer should pay 10% more salary in this period when the minimum wage is 1,400 TL on average.

Because this worker is unregistered, although the cost of this worker at first sight seems to be only 1,550 TL, the taxation of the enterprise will increase. The employer will not be able to show the worker's salary as an expense so the tax base and accordingly the corporation income tax to be paid will increase. According to Article 32 of the Law on Corporations Tax No 5520, the rate of corporations' income tax is 20%.

Extra corporation income tax to be paid				
Wage of the worker that cannot be written off	*	corporation income tax rate	=	extra corporation income tax to be paid
1,550 TL	*	0,2	=	310 TL

In this case the total cost of the employee to the operation will reach an amount higher than 1,550 TL.

The raised cost of an unregistered worker				
Wage of the worker that cannot be written off	*	extra corporation income tax to be paid	=	The raised cost of an unregistered worker
1,550 TL	*	310 TL	=	1,860 TL

Therefore, even with this simple calculation, it is clear that actually employing an informal worker is more costly than the cost of the same worker exploiting government incentive.

But there is one other detail that needs to be taken into account here is that what if this employer, who is employing an unregistered worker, will be spotted during the inspections. Risks that may be encountered in this process have been tried to be analyzed through process risk analysis. The charges for Corporations, who hire unregistered workers, are divided into those who are obliged to keep books on the basis of balance sheet and those who are obliged to keep other books and those who are not obliged to keep books¹ (Anonim, 2016). In this example, fines that have been suspended for businesses that are not obligated to keep books have been taken into consideration.

With the help of Process risks analysis method the risks faced by an operator working with informal workers, and the penalties payable as a result, are shown in Figure-1. Using this method, first it is mainly divided into two possibilities of being caught and not caught during the inspections.

Because the rate of catch is not available, the average decline in the number of unregistered workers is taken to use in this phase. The penalty to be paid in the event of an unregistered employer being caught on an inspection or complaint is shown as a penalty charge per worker. In the event that the operator is not caught during inspections or complaints, the possibility of a worker having a work accident must be considered.

The probability of a worker having a work accident is calculated by compiling the information obtained from the 2015 Annual Report prepared by the Social Security Institution. Occupational accidents are divided into four categories: absence of accidental damage, temporary incapacity, permanent incapacity and death (Sosyal Güvenlik Kurumu, 2016). The point to note here is that all expenses, penalties and indemnities must be paid by the employer in the event that the employer is unregistered pursuant to Law No. 5510 while if the worker is registered the hospital expenses and the percentage of the employer's innocent will be covered by the Social Security Institution.

The amounts that need to be calculated according to the method of process risk analysis will be reached by multiplying the probabilities in each case multiplied by the costs that can be encountered if the event is realized.

Caption of the business in inspection or complaint:

Caption of the business in inspection or complaint:				
Amount of Penalty	*	Probability of getting caught	=	Expected Cost
4295.63 TL	*	0.0142	=	61 TL

The business is not caught during the audits or complaint and the worker is in workable condition on the day of the accident:

The business is not caught during the audits or complaint and the worker is in workable condition on the day of the accident:										
(Amount of penalty for employing unregistered worker	+	Average of minimum examination fee)	*	Probability of getting caught	*	Probability of having a job accident	*	Probability of being in workable condition on the day of the accident	=	Expected Cost
(4,295.63 TL	+	30 TL)	*	0.9858	*	0.0152	*	0.4437	=	28.76 TL

¹ Look at Table -1 in the annex

The business is not caught during the audits or complaint and the worker is in temporary job incapacity status after the accident:

The business is not caught during the audits or complaint and the worker is in temporary job incapacity status after the accident:														
(Amount of penalty for employing unregistered worker	+	Average of minimum wound treatment fee	+	Pension against incapacity to work for 5 days	*	Prime basis for daily earnings)	*	Probability of getting caught	*	Probability of having a job accident	*	Probability of being in temporary job incapacity status after the accident	=	Expected Cost
(4,295.63 TL	+	100 TL	+	5	*	59.25 TL)	*	0.9858	*	0.0152	*	0.2806	=	19.72 TL

In this section, it is concluded that there is no disability of the worker and that the temporary incapacity continues 5 days. So the minimum daily prime base gain is multiplied by 5 days.

The business is not caught during the audits or complaint and the worker is in permanently job incapacity status after the accident:

The business is not caught during the audits or complaint and the worker is in permanently job incapacity status after the accident:												
(Amount of penalty for employing unregistered worker	+	Average of minimum wound treatment fee	+	Permanent incapacity indemnity (extra pay amount))	*	Probability of getting caught	*	Probability of having a job accident	*	Probability of being in permanently job incapacity status after the accident	=	Expected Cost
(4,295.63 TL	+	100 TL	+	58,274.36 TL)	*	0.9858	*	0.0152	*	0.2705	=	254.01 TL

Employers are presumed to be defective at 50% while calculating permanent incapacity compensation. The employer who employs the registered worker here is obliged to pay the defective rate of the calculated compensation, while the employer who employs his / her worker unregistered is obliged to pay the calculated compensation for the part which he is not defective also. In the above calculation only the extra pay amount of compensation that the employer employing the informal according to the employer with the registered employee, is considered.

The business is not caught during the audits or complaint and the worker is death after the accident:

The business is not caught during the audits or complaint and the worker is death after the accident:														
(Amount of penalty for employing unregistered worker	+	Average of minimum wound treatment fee	+	Death indemnity (extra pay amount)	+	Widow's Pension)	*	Probability of getting caught	*	Probability of having a job accident	*	Probability of being death after the accident	=	Expected Cost
(4,295.63 TL	+	100 TL	+	416,245.40 TL	+	982.80 TL)	*	0.9858	*	0.0152	*	0.0052	=	32.85 TL

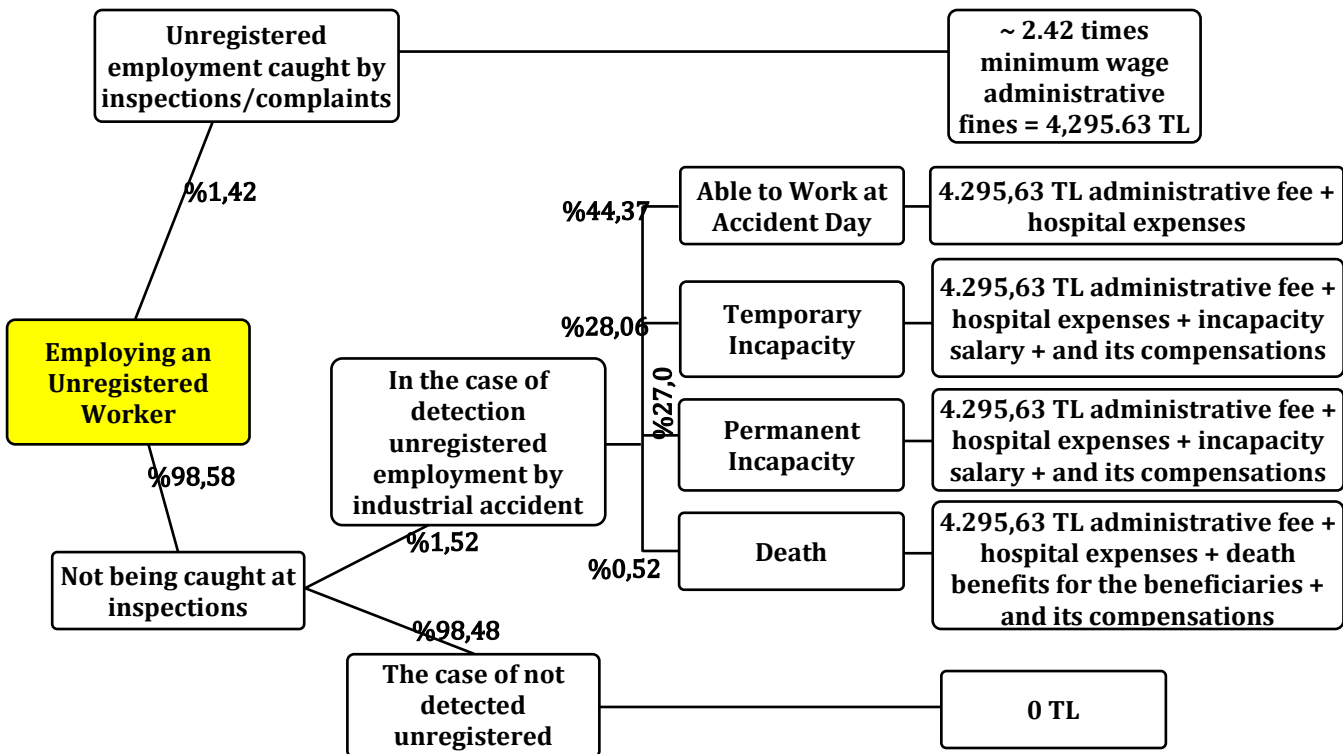
Calculation of death compensation is shown on the table in Appendix 2. According to the 20th Article of Law No. 5510, 70% of the minimum wage is taken as basis for the amount of death income. When all these risk factors are taken into consideration, for the real cost of the informal workers the proportion to the probable costs of these risks must be taken into account.

The real expected cost of an unregistered worker for the employer														
Wage of the worker	+	extra corporation income tax to be paid	+	Cost rate caused by caught	+	Cost rate caused by job accident and the worker is in workable condition	+	Cost rate caused by job accident and the worker is in temporary job incapacity	+	Cost rate caused by job accident and the worker is in permanently job incapacity	+	Cost rate caused by job accident and death	=	Expected Cost
1,550 TL	+	310 TL	+	61 TL	+	27.76 TL	+	19.72 TL	+	254.01 TL	+	32.85 TL	=	2,255.34 TL

As it is observed in the table above, a company that runs its worker informally believes mistakenly that the worker has a cost of 1,550 TL, but it is actually seen that the cost to be calculated per worker is 2,255.34 TL.

Therefore, it is obvious that this cost (2,177.44 TL) is lower than the cost of the worker for whom any incentive is not utilized.

Figure 2: The Risks Rate and Costs of Employing Unregistered Workers by Using Process Risk Analysis Method



Results and Successions

The TurkStat data shows that the unregistered employment rate in Turkey is declining in last decades. Despite the positive decline, the unregistered employment rate still remains a big problem for Turkey. In 2016, the unregistered employment rate is still over 33%. In this study, the costs of registered workers and the costs of employing unregistered workers were compared in terms of incentives that aimed to reduce unregistered employment rate.

In this study, the employee cost of an unregistered worker has been calculated as 2,255.34 Turkish Liras by using the risk ratios obtained from the process risk analysis and the probable costs of unregistered employment. When the same worker is registered, the cost of this worker is 2,177.44 Turkish Liras. This result suggests that employing unregistered workers does not reduce the cost of labour, on the contrary, it increases the cost of workers due to possible risks.

On the other hand, there are measurable and none measurable risks that are caused by employing unregistered workers. The penalties for employing unregistered workers are high enough. The employer's efforts to reduce labour costs by employing unregistered workers means the employer bears the risk of incurring higher costs when considering possible penalties for employing an unregistered worker who has an job accident in his/her workplace.

We suppose that employing unregistered workers may cause the high turnover rate, low productivity and low job specialization. Turkish government gives many positive incentives in order to reduce the rate of unregistered employment. Besides the incentives given, bureaucratic or worker's registrations procedures should be reduced both in terms of cost and time. And it also should be simplified. Inspection mechanisms should be strengthened and controls should be increased for reducing the unregistered employment. Inter-agency cooperation should be increased to fight informality. As the employer is penalized for employing unregistered workers, sanctions should also be applied to the worker who accepts to work informally. Lastly, it is necessary to raise the awareness of workers and employers about the negative consequences of unregistered employment.

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Annex

Table-1: Administrative fines for operating unregistered workers

Cause of the penalty	Penalty amount	Bookkeeping obligation on the basis of balance (for one year)	Bookkeeping obligation on the basis of other books (for one year)	Not any obligation for bookkeeping (for one year)
Not submitted the statement of employment	Minimum wage x 2	Minimum Wage x 2	Minimum Wage x 2	Minimum Wage x 2
Not submitted the monthly premium and service document	Minimum Wage times /Month 2	Minimum Wage x2x12 =24 Minimum Wage	Minimum Wage x2x12 =24 Minimum Wage	Minimum Wage x2x12 =24 Minimum Wage
The payroll is invalid (Because there aren't any registration of the worker)	½ Minimum Wage /Month	Minimum Wage x ½ x12 =6 Minimum Wage	Minimum Wage x ½ x12 =6 Minimum Wage	Minimum Wage x ½ x12 = 6 cause exceeding the upper limit, 3 Minimum Wage
The legal books are invalid (because there aren't any records of the unregistered worker)	½ Minimum Wage /Month	Minimum Wage x ½ x12 =6 Minimum Wage	Minimum Wage x ½ x12 =6 Minimum Wage	Not any penalties because not any obligation for bookkeeping
Total		38 times Minimum Wage amount	32 times Minimum Wage amount	29 times Minimum Wage amount
Monthly average		3,16 times Minimum Wage amount	2,66 times Minimum Wage amount	2,41 times Minimum Wage amount

Source: <http://www.devlette.com/kayit-disi-sigortasiz-isci-calistirma-cezasi/>

Table-2: Calculation of indemnity to be paid in case of permanent incapacity to the worker

Calculation of indemnity to be paid in case of permanent incapacity to the worker						
Expected losses in the period up to the retirement of the worker are calculated						
Assuming that the worker is newly graduated from college and is 23 years old. So there are 40 years until his/her retirement						
	Last wage	Month	Annual Income	10%	1/KN	Annual Income
1st year	1404,06	12	16848,72	1,1	0,909091	16848,72
2nd year			18533,59	1,1	0,826446	16848,72
3rd year			20386,95	1,1	0,751315	16848,72
4th year			22425,65	1,1	0,683013	16848,72
5th year			24668,21	1,1	0,620921	16848,72
6th year			27135,03	1,1	0,564474	16848,72
7th year			29848,54	1,1	0,513158	16848,72

8th year		32833,39	1,1	0,466507	16848,72
9th year		36116,73	1,1	0,424098	16848,72
10th year		39728,4	1,1	0,385543	16848,72
11th year		43701,24	1,1	0,350494	16848,72
12th year		48071,36	1,1	0,318631	16848,72
13th year		52878,5	1,1	0,289664	16848,72
14th year		58166,35	1,1	0,263331	16848,72
15th year		63982,99	1,1	0,239392	16848,72
16th year		70381,28	1,1	0,217629	16848,72
17th year		77419,41	1,1	0,197845	16848,72
18th year		85161,35	1,1	0,179859	16848,72
19th year		93677,49	1,1	0,163508	16848,72
20th year		103045,2	1,1	0,148644	16848,72
21th year		113349,8	1,1	0,135131	16848,72
22th year		124684,7	1,1	0,122846	16848,72
23th year		137153,2	1,1	0,111678	16848,72
24th year		150868,5	1,1	0,101526	16848,72
25th year		165955,4	1,1	0,092296	16848,72
26th year		182550,9	1,1	0,083905	16848,72
27th year		200806	1,1	0,076278	16848,72
28th year		220886,6	1,1	0,069343	16848,72
29th year		242975,3	1,1	0,063039	16848,72
30th year		267272,8	1,1	0,057309	16848,72
31th year		294000,1	1,1	0,052099	16848,72
32th year		323400,1	1,1	0,047362	16848,72
33th year		355740,1	1,1	0,043057	16848,72
34th year		391314,1	1,1	0,039143	16848,72
35th year		430445,5	1,1	0,035584	16848,72
36th year		473490,1	1,1	0,032349	16848,72
37th year		520839,1	1,1	0,029408	16848,72
38th year		572923	1,1	0,026735	16848,72
39th year		630215,3	1,1	0,024304	16848,72
40th year		693236,8	1,1	0,022095	16848,72
				TOTAL	673948,8

Since the disability rate of 14% was the most common disability rate with 22,02% in case of continuous incapacity to the report prepared by the Social Security Institution, this rate was taken as the basis

%14 disability rate:	67394		0,1	=	94352,83
	8,8	X	4	=	
The business is 50% faulty	94352,83	X	0,5	=	47176,42
Loss of the period:					47176,42

Passive Period (Retirement)

It is assumed that a Human lives until the age of 70. If he retires at the age of 63 he will have 7 years remaining

	Daily Wage	Days	Annual Income	10%	1/KN	Annual Income
1st YEAR	59,25	365	21626,25	1,1	0,909091	21626,25
2nd YEAR			23788,88	1,1	0,826446	21626,25
3rd YEAR			26167,76	1,1	0,751315	21626,25
4th YEAR			28784,54	1,1	0,683013	28784,54
5th YEAR			31662,99	1,1	0,620921	21626,25
6th YEAR			34829,29	1,1	0,564474	21626,25
7th YEAR			38312,22	1,1	0,513158	21626,25
					TOPLAM	158542

%14 disability rate:	158542	X	0,14	=	22195,89
The business is 50% faulty	22195,8	X	0,5	=	11097,94
Loss of the period:					11097,94

Loss of the Period	47176,4	
Loss of the Period of Retirement	2	
	11097,9	
Total	58274,36	

Table – 3 Amount of compensation to be paid in case of death of the worker

%100 disability rate:	673948,8	X	1	=	673948,8
The business is 50% faulty	673948,8	X	0,5	=	336974,4
Loss of the Period:					336974,4

%100 disability rate:	158542	X	1	=	158542
The business is 50% faulty	158542	X	0,5	=	79271
Loss of the Period:					79271

Loss of the Period	336974,4
Loss of the Period of Retirement	79271
Total	416245,4

3

The Role of Young Employment on the Informal Economy

Eda YALÇIN KAYACAN

Özlem KIREN GÜRLER

Şenay ÜÇDOĞRUK BİRECİKLİ

Abstract

The informal economy, which emerges from the causes such as economic, political, social and psychological and which is defined as the whole of informal economic activities, has an important place among the economic problems. The relationship between informal economy and the concept of unemployment, which is another important economic problem, is the starting point of the study.

Young unemployment is an important part of the concept of unemployment and an important problem in our country. For this reason, the study focuses on the relationship between young employment and informality. One of the important reasons for young unemployment is the lack of quality in young people. "The effects of the education levels of young people on the informal economy" is also take part in the aim of study by acting this hypothesis.

In the study, the relationship between informal economy size estimated by the monetary rate method and unemployment rates related to education levels of young people will be assessed for Turkey for 2006: Q1 - 2016: Q2 and political evaluations will be made using the causality and cointegration tests.

Keywords: Young Unemployment, Informal economy, Causality, Cointegration

Jel Codes: J13, E24, E26, C22, C32

Introduction

The informal economy simply is defined as the whole of informal economic activities. It is major problem for underdeveloped and developing countries. It affects the whole country's economic indicators, government revenues and the power of competition. (Derdiyok 1993:54).

In empirical studies, the problems of measuring the size and development of the informal economy by different methods have to be examined. Attempting to measure the size of an informal economy is a very difficult and

challenging task. The following three methods are useful to measure its size and development (Schneider and Enste 2003:16-30).

The first method is direct approaches. The direct approaches which are microeconomic approaches, employing either well-designed surveys or samples based on voluntary replies, or tax auditing and other compliance methods.

The second method is indirect approaches. The indirect approaches are also called 'indicator' approaches. They use various economic and other indicators as information on the development of the informal economy. There are four indirect indicators. One is based on discrepancies between income and expenditure statistics. This approach is based on inconsistencies between income and expenditure statistics. Accordingly, the income measure of GNP should be equal to the expenditure measure. The second approach is concerned with discrepancy between official labour force and actual labour force in the economy. A decline in labour-force participation in the official economy can be seen as an indication of increased activity in the informal economy. The third approach is the monetary approach. There are two different statistics to measure the informal economy according to the monetary approach. One is that the transactions approach. Feige (1979) assumes a constant relationship over time between the volume of transactions and official GNP (Feige 1990: 20). Another is that the currency demand approach. The currency demand approach was first used by Cagan (1958). He calculated a correlation of the currency demand and tax pressure (as one cause of the informal economy) for the USA for the period between 1919 and 1955 (Schneider 2013: 20). The last indirect approach is the approach of electricity consumption. Measuring all economic activities (formal and informal), the electricity-power consumption is the best physical indicator (Schneider and Enste 2003:23).

The model approaches are the last method. The model approach explicitly considers multiple causes that lead to the existence and growth of the informal economy, and to its multiple effects over time (Schneider and Enste 2003: 26).

Many different methods are used in the estimation of the informal economy because of the various difficulties in measuring the informal economic activities. So many studies have been carried out in Turkey to estimate the size of the informal economy. Some studies examine informal economy as a part of education for Turkey. Sisman (1999:78-79) explains that undereducated and unskilled people tend to work in informal sector in developing country. Akturk (2005:298-299) also explains that undereducated and unskilled people are insufficient to creating employment. Ela (2013:919) emphasizes that the increase of education level is a key element for the decrease of informal economy in Turkey.

The remainder of this paper is divided into three sections. Section-2 features the econometric methodology of cointegration and causality tests. The empirical results are mentioned section-3 and the paper ends with conclusions drawn from the research findings.

Econometric Methodology

If a time series has a constant mean and variance for all t and its autocovariance function between two periods depends only on the interval from t_1 to t_2 is named as stationary. If the series is non-stationary, the effect of a shock will be permanent. Non-stationary variables might lead to a problem of spurious regression so it is not possible to use traditional econometric techniques. Because of these reasons, it is important to establish the stationary properties of the series, which can be tested unit root tests.

Unit Root Tests:

Augmented Dickey-Fuller (ADF) test and Phillips-Perron (PP) Unit Root Tests:

Dickey-Fuller (DF) test is based on independently and identically distributed (iid) errors. Augmented Dickey-Fuller (ADF) test and Phillips-Perron (PP) tests have been proposed to modify the standard DF test in case of errors which allows some heterogeneity and serial correlations in error. (Kirchgässner and Wolters,2007:168).Both tests have the same null hypothesis is that "there is a unit root".

If there exists a one- time permanent change in data, the tests such as ADF and PP test can be could be biased toward non-rejection of unit root. (Perron, 1989). The tests such as Zivot and Andrews (1992), Perron (1994, 1997), Bai and Perron (2003) and so on have proposed different ways of estimating the time of the break endogenously. Zivot and Andrews (1992) and Perron (1997) also allowed that the date of the change in the series to be unknown.

The Zivot- Andrews (ZA) Test :

The Zivot- Andrews (ZA) test is a developed version of the Perron (1989) test. ZA uses three models to test a unit root. These models are “break in the intercept (A)”, “break in the trend (B)” and “break in both intercept and trend(C)”. The regression form can be written as:

$$y_t = \mu + \theta DU_t + \beta t + \gamma DT_t + \alpha y_{t-1} + \sum_{j=1}^k c_j \Delta y_{t-j} + e_t \quad (1)$$

In equation (1), DU_t is a sustained dummy variable capturing a break in the intercept, and DT_t is another dummy variable representing a break in the trend occurring at time. When TB denotes the time at which the structural break occurs, if $t > TB$, $DU_t=1$ and zero otherwise and if $t > TB$, $DT_t = t-TB$ and zero otherwise. The lag parameters are determined using AIC.

Perron Unit Root Test with Breakpoint Test:

An alternative unit root test is proposed by Perron (1989) uses the three models such as ZA. This test differs from the ZA test by adding a one-time shock dummy variable. If $t=TB+1$, $DTB_t = 1$. The lag parameters are determined using AIC. The regression form can be written as:

$$y_t = \mu + \theta DU_t + \beta t + \gamma_1 DT_t + \gamma_2 DTB_t + \alpha y_{t-1} + \sum_{j=1}^k c_j \Delta y_{t-j} + e_t \quad (2)$$

Bai-Perron Multiple Breakpoint Test :

The Bai-Perron (BP) methodology considers the following multiple structural break model with m breaks ($m+1$ regimes) and they consider estimating multiple structural changes in a linear model and develop three tests: a test of no break versus a fixed number of breaks, a double maximum test and a sequential test.

Cointegration Analyses:**Johansen Cointegration Test:**

Johansen and Juselius (1990) have developed the maximum likelihood estimator and likelihood ratio tests for hypothesis testing in a cointegrated system. The cointegration can be defined as a common stochastic trend among two or more economic variables over the long run. Johansen’s methodology takes its starting point in the vector autoregression (VAR) of order p .

According to Johansen Cointegration test to determine for the existence of cointegration uses the trace test (λ_{trace}) and maximum eigenvalue test (λ_{max}). The trace statistic for the null hypothesis of at most r cointegration vectors against the alternative hypothesis of $r = k$ cointegrating vectors is computed as follows:

$$\lambda_{trace}(r|k) = -T \sum_{i=r+1}^k \ln(1 - \lambda_i) \quad (3)$$

Where λ_i is the i -th largest eigenvalues of the matrix Π . The maximum eigenvalue statistic for testing the null hypothesis of r cointegrating vectors against the alternative of $r + 1$ cointegrating relations is described as follows:

$$\lambda_{max}(r|r+1) = -T \ln(1 - \lambda_{r+1}) \quad r = 0, 1, \dots, k-1 \quad (4)$$

Autoregressive Distributed Lag Model (ARDL):

Autoregressive Distributed Lag (ARDL) model was developed by Pesaran and Shin (1995, 1999), Pesaran et al. (1996) and Pesaran (1997), Pesaran and Smith (1998), and Pesaran et al. (2001). It was proposed for investigating long-run cointegration among time series variables. The ARDL modelling has an ability to estimate the long and short-run

parameters of the model simultaneously. This approach can test on the existence relationship between variables in levels is applicable irrespective of whether the underlying regressors are purely I (0), purely I (1) or mixture of both.

Pesaran et. al. (2001) proposed the bounds test based on the Wald or F-statistic for testing the existence of long-run relationship. When long-run relationship exists, F test indicates which variable should be normalized. The null hypothesis is that “no cointegration among variables”. If the F test statistic exceeds their respective upper critical values, we can reject the null hypothesis. So, there is evidence of a long-run relationship between the variables. If the test statistic is below the upper critical value, we cannot reject the null hypothesis of no cointegration. If the test statistic is between the bounds, a conclusive inference cannot be made.

The diagnostic tests such as serial correlation, functional form, normality and heteroscedasticity are conducted goodness of fit of the ARDL model. ARDL specification of the short-run dynamics can be derived by constructing an error correction model (ECM). The ARDL modelling approach involves estimating the following error correction models:

$$\Delta Y_t = \alpha_{0y} + \alpha_{1y} Y_{t-1} + \alpha_{2y} X_{t-1} + \sum_{i=1}^m \beta_i \Delta Y_{t-i} + \sum_{i=1}^m \gamma_i \Delta X_{t-i} + u_{1t} \quad (5)$$

$$\Delta X_t = \alpha_{0x} + \alpha_{1x} Y_{t-1} + \alpha_{2x} X_{t-1} + \sum_{i=1}^m \theta_i \Delta X_{t-i} + \sum_{i=1}^m \delta_i \Delta Y_{t-i} + u_{2t} \quad (6)$$

Gregory and Hansen Cointegration Tests:

The Gregory- Hansen (1996) test is developed within the framework of the Engle-Granger residual-based cointegration analysis. It can be considered as a multivariate extension of the endogenous break univariate tests of Zivot and Andrews (1992). The null hypothesis under these tests is that there is no cointegration with a structural break against the alternative that there is cointegration with a structural break.

Gregory and Hansen present the following three models:

$$\text{Level shift (C):} \quad y_t = \gamma_1 + \gamma_2 DU_t + \gamma_3 x_t + \varepsilon_t \quad (7)$$

$$\text{Level shift with trend(C/T):} \quad y_t = \gamma_1 + \gamma_2 DU_t + \beta_t + \gamma_3 x_t + \varepsilon_t \quad (8)$$

$$\text{Regime shift (C/T):} \quad y_t = \gamma_1 + \gamma_2 DU_t + \gamma_3 x_t + \gamma_4 x DU_t + \varepsilon_t \quad (9)$$

They propose three test statistics as:

$$ADF^* = \inf_{\tau \in T} ADF(\tau) \quad ; \quad Z_t^* = \inf_{\tau \in T} Z_t(\tau) \quad ; \quad Z_a^* = \inf_{\tau \in T} Z_a(\tau) \quad (10)$$

Causality Analysis:

The Granger Causality Test based on the VECM:

The standard Granger causality approach entails estimating the vector autoregression (VAR) model in the first difference form. Therefore, there is an evidence of cointegration; results from this approach will be misleading. Because of this reason, the vector error correction model (VECM) is estimated.

The Granger causality analysis based on the VECM specification allows testing for both the short-run and long-run causality.

Toda-Yamamoto Causality Test:

Toda and Yamamoto (1995) propose a simple procedure requiring the estimation of an augmented VAR. Because of the testing procedure is robust to the integration and cointegration properties of the process, it guarantees the asymptotic distribution of the Wald statistic.

Two steps are involved with implementing the procedure. The first step includes the determination of the lag length (m) and the second one is the selection of the maximum order of integration (dmax) for the variables in the system. Akaike Information Criterion (AIC), Schwarz Information Criterion (SC) and Hannan-Quinn (HQ) Information Criterion can be used to determine the appropriate lag order of the VAR.

Empirical Results and Discussions

In order to examine the impact of young employment on the informal economy, the relationship between informal economy size estimated by the monetary rate method and unemployment rates related to education levels of young people is assessed for Turkey for the period from 2006: Q1 to 2016: Q2.

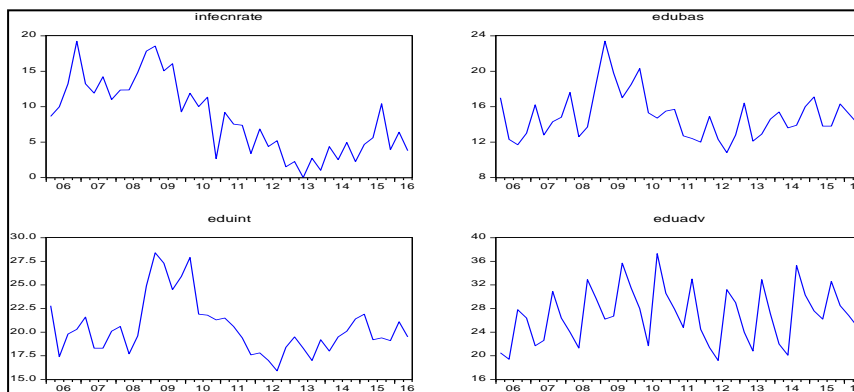
Variables included in the analysis are used in proportion. The proportion for the informal economy is obtained the ratio of informal economy’s size to GDP. The related unemployment rates according to education level of young population between 15-24 years old have three levels such as primary education, secondary education and higher education level. These rates are obtained from the International Labor Organization (ILO). The data required to obtain for the size of informal economic was taken from the Central Bank of the Republic of Turkey (CBRT). The names of variables were summarized at the Table 1.

Table 1: Variables

INFECN INFECRATE	The proportion of the size of informal economy over to GDP
EDUBAS EDUBAS	unemployment rate according to basic education level for ages of 15-24
EDUINT EDUINT	unemployment rate according to intermediate education level for ages of 15-24
EDUADV EDUADV	unemployment rate according to advanced education level for ages of 15-24

The first step in testing cointegration is to test time series variables for their stationarity. When we look at the graphs of our variables series on the graph 1, we can see that they are not stable and there are breaks.

Graph 1: The Graphs of the Variables



Necessary tests were carried out to determine their levels of stationaries. The results of the ADF the PP unit root tests for each variable are reported in Table 2.

While the related tests' null hypothesis is that "there is a unit root", the results indicate that the series of INFECNRAT and EDUINT are non-stationary at their level; therefore they are stationary at their first differences. The series of EDUADV is stationary at level, it is only stationary at its first difference for ADF test with constant and trend. The series of EDUBAS is also non-stationary at its first differences, but it is stationary at its second difference.

Table2: The Results of ADF and PP Unit Root Tests

Variable	ADF		PP	
	With Constant	With Constant & Trend	With Constant	With Constant & Trend
INFECNRATE	-1.4733	-1.7813	-1.9615	-3.6637
ΔINFECNRATE	-3.1148**	-3.1478	-11.4624**	-11.1113**
EDUBAS	-2.828	-3.2754	-3.5775	-3.5338
ΔEDUBAS	-2.259	-2.1907	-10.131	-10.1713
Δ(ΔEDUBAS)	-4.4952**	-4.4249**	-17.8471**	-17.3969**
EDUINT	-2.5594	-4.8495	-2.575	-2.5872
ΔEDUINT	-5.7969**	-5.7237**	-7.7274**	-7.8006**
EDUADV	-3.0944**	-3.0028	-6.9044**	-6.5583**
ΔEDUADV	-----	-1.0534***	-----	-----

Note: It is used SIC (Schwarz Information Critter) for lag. *1% level, **5% level and ***10% level

The graphs of the series show the existence of breaks, so the unit root analyzes are detailed with the tests taking these breaks into account.

Firstly, the Zivot Andrews test, which takes into account the breaks, is summarized in Table3. Three models for intercept, trend and trend+ Intercept are estimated and break dates are obtained. The null hypothesis cannot be rejected because the test statistics obtained are smaller than the critical values at the 1% and 5% significance levels. Thus, while the hypothesis "there is a unit root" is accepted. The alternative hypothesis "there isn't a unit root with a structural break in the (intercept/intercept+trend/trend)" cannot be accepted.

Table 3: Zivot-Andrews Unit Root

variable	model	lag	date of break	test statistic	critical value	
					1%	5%
INFECNRATE	A(intercept)	4	2010Q4	-2.877872	-5.34	-4.93
	B(trend)	4	2013Q3	-2.620575	-4.8	-4.42
	C(intercept+trend)	4	2012Q4	-2.597513	-5.57	-5.08
EDUBAS	A(intercept)	4	2010Q4	-3.497116	-5.34	-4.93
	B(trend)	4	2009Q1	-2.880434	-4.8	-4.42
	C(intercept+trend)	8	2010Q4	-3.533445	-5.34	-4.93
EDUINT	A(intercept)	4	2011Q3	-3.519986	-5.34	-4.93
	B(trend)	4	2009Q1	-3.202604	-4.8	-4.42
	C(intercept+trend)	4	2011Q3	-3.57646	-5.34	-4.93
EDUADV	A(intercept)	4	2011Q3	-4.635908	-5.34	-4.93
	B(trend)	4	2009Q3	-2.615098	-4.8	-4.42
	C(intercept+trend)	4	2011Q3	-4.548192	-5.57	-5.08

Because the Zivot Andrews Unit Root Test only tests the stationarity in the null hypothesis, Perron (1997) Breakpoint Unit Root Test, which also takes into account the break effects in the null hypothesis, was tested and the results are summarized in Table 4.

Table 4: Perron (1997) Unit Root Test with Breakpoint

variable	model	lag	date of break	test statistic	critical value	
					1%	5%
INFECNRATE	A(intercept)	0	2009Q1	-8.118223	-5.92*	-5.23**
	B(intercept+trend)	0	2009Q1	-8.039694	-6.32*	-5.59**
	C(trend)	0	2011Q3	-7.343845	-5.45*	-4.83**
EDUBAS	A(intercept)	4	2010Q3	-3.469232	-5.92	-5.23
	B(intercept+trend)	0	2009Q1	-8.039694	-6.32*	-5.59**
	C(trend)	0	2011Q3	-7.343845	-5.45*	-4.83**
EDUINT	A(intercept)	4	2011Q3	-3.47419	-5.92	-5.23
	B(intercept+trend)	4	2011Q3	-3.569266	-6.32	-5.59
	C(trend)	4	2014Q2	-2.872936	-5.45	-4.83
EDUADV	A(intercept)	4	2011Q2	-4.661261	-5.92	-5.23
	B(intercept+trend)	4	2011Q3	-4.408972	-6.32	-5.59
	C(trend)	4	2008Q3	-2.573057	-5.45	-4.83

H_0 : The variable has an unit root with a structural break in the (intercept/intercept+trend/trend)

H_1 : The variable has not an unit root with a structural break in the (intercept/intercept+trend/trend)

According to the Perron (1997) Breakpoint Unit Root Test, which has the null hypothesis “there is a unit root with a structural break in the (intercept/intercept+trend/trend)”, the series of INFECNRATE is stationary with break in the intercept/intercept+trend/ trend. The series of EDUBAS only includes the unit root with break in the intercept. The series of EDUINT and EDUADV are not stationary. They have a unit root with break in intercept/ intercept+trend/ trend.

The cointegration tests with breaks should be done because the variables are affected by breaking. However, if only the ADF-PP unit root tests were taken into consideration, Johansen cointegration test can be used to analyze the long-term relationships between variables. The long term relationships between the variables are examined with Johansen cointegration test without the EDUBAS variable, which was stationary at the second level.

Firstly for Johansen cointegration test, Vector Autoregressive (VAR) model was established by using the level values of the variables. The appropriate number of lag was determined as 7 based on the criteria such as AIC, SIC, HQ. Then, stability condition, the tests of autocorrelation and heteroscedasticity were performed. Their results are on the Table 5. Because all inverse roots are in the unit circle, the VAR model provides the stability condition and there is no problem with autocorrelation and heteroscedasticity.

Table 5: The Results of Stability Condition, Autocorrelation and Heteroscedasticity

AR Roots Graph	Serial Correlation LM Tests	Heteroscedasticity Test																															
	<table border="1"> <thead> <tr> <th>Lags</th> <th>LM-Stat</th> <th>Prob</th> </tr> </thead> <tbody> <tr><td>1</td><td>0.903214</td><td>0.9996</td></tr> <tr><td>2</td><td>12.24891</td><td>0.1996</td></tr> <tr><td>3</td><td>9.573565</td><td>0.3861</td></tr> <tr><td>4</td><td>5.934066</td><td>0.7465</td></tr> <tr><td>5</td><td>10.08818</td><td>0.3434</td></tr> <tr><td>6</td><td>6.381949</td><td>0.7012</td></tr> <tr><td>7</td><td>3.172345</td><td>0.9571</td></tr> <tr><td>8</td><td>10.25029</td><td>0.3306</td></tr> </tbody> </table>	Lags	LM-Stat	Prob	1	0.903214	0.9996	2	12.24891	0.1996	3	9.573565	0.3861	4	5.934066	0.7465	5	10.08818	0.3434	6	6.381949	0.7012	7	3.172345	0.9571	8	10.25029	0.3306	<table border="1"> <thead> <tr> <th>Chi-sq</th> <th>Prob.</th> </tr> </thead> <tbody> <tr> <td>179.3668</td> <td>0.1663</td> </tr> </tbody> </table>	Chi-sq	Prob.	179.3668	0.1663
Lags	LM-Stat	Prob																															
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Chi-sq	Prob.																																
179.3668	0.1663																																

The cointegration test was performed because the conditions required for the VAR model were obtained. The results are given in Table 6.

Table 6: Results of the Johansen Co-integration Test by the Max-eigenvalue and Trace Methods

Results of Johansen co-integration rank test for INFECNRATE EDUINT EDUADV					
		Max-Eigen		Trace statistic	
null hypothesis	Eigen value	statistic	critical value	statistic	critical value
$r = 0$	0.496346	23.31945*	21.13	43.40784*	29.7971
$r \leq 1$	0.382261	16.37745*	14.26	20.08839*	15.4947
$r \leq 2$	0.1034	3.71094	3.841	3.71094	3.84147

* Rejection of the hypothesis at the 5% significance level.

We see that the results of the Johansen co-integration test as determined by the Max-Eigenvalue and Trace tests on the Table 6. It can be seen that the null hypothesis of no co-integration is rejected against the alternative of two co-integrating relationship. The result indicates two cointegrating equation at the 0.05 level.

After the existence of co-integration, it can be found that short-run and long-run Granger causalities using the error correction model (ECM).

The next step after the long-term relationship between the series is identified is to determine the relationships and direction of causalities between the series. The error correction parameter balances model dynamics and forces variables to converge towards long term equilibrium values. In practice, the error correction coefficient is negative.

In the error correction model, the coefficients of the independent variables with delayed values as a whole indicate the significance of the standard F-statistic or the significance of the error correction coefficient show the existence of causality (Aktaş, C.2009).

Table 7: Results of VECM

	lag	Chi-sq	t statistic of ECM_{t-1}
INFECNRATE<---EDUINT	2	3.007	[-7.39718]*
EDUINT<---INFECNRATE	2	3.269	[-4.92318]*
INFECNRATE<---EDUADV	2	3.737	[7.03405]*
EDUADV<---INFECNRATE	2	9.779*	[3.86538]
EDUADV<---EDUINT	2	25.868*	[-7.58484]*
EDUADV<---EDUINT	2	2.213	[-9.18626]*

*5% level of importance

The ECM_{t-1} coefficient is negative and statistically significant for all coefficients except a coefficient. The results show the existence of a one-sided causal relationship from that unemployment rate according to intermediate education level for ages of 15-24 is causal unemployment rate according to advanced level education for ages of 15-24.($EDUADV \leftarrow EDUINT$). Since the coefficient of ECM_{t-1} isn't negative and significant statistically. For this reason, there is no causality from informal economy to unemployment rate according to advanced level education for ages of 15-24($EDUADV \leftarrow INFECNRATE$). There is only one causality relation from unemployment rate according to intermediate education level for ages of 15-24 to unemployment rate according to education high level for ages of 15-24.

The long term relationship between variables is also examined with ARDL model. However, because of the effect of the breaks in the model, firstly Bai-Perron Multiple Breakpoint Test was performed and then the related breakpoint was added to the ARDL model as a dummy variable. If the any one of the series is stationary at the second difference, ARDL model is not reliable. Although the variable of EDUBAS is stationary at the second difference according to the ADF and PP unit root tests, it is stationary with break in the intercept+trend. For this reason, the variable of EDUBAS is included in ARDL model.

Table 8: Bai-Perron Multiple Breakpoint Test Result

supFt(1)	supFt(1)	19.62219*
	supFt(2)	11.99475*
	supFt(3)	10.90002*
	supFt(4)	10.33777*
	supFt(5)	9.329231*
UDMax statistic		78.48874*
WMax statistics		78.48874*
Schwarz criterion selected breaks		1
LWZ criterion selected breaks		1
Estimated break dates(SC)		2009Q4
Estimated break dates(LWZ)		2009Q4

(Max break:5 , *5% level of importance)

Bai-Perron has detected a break at the 2009Q4 point based on the Multiple Breakpoint Test result. This breakpoint is transformed into a dummy variable and added to the model. The addition of the trend has also reduced the SIC, AIC and HQ statistics in the ARDL model. the ARDL (1, 0, 0, 2) * model was chosen as the most suitable model based on the SIC criterion,. Then, the existence of autocorrelation in the model was tested by the LM test and it was determined that there was no autocorrelation problem. After the necessary steps have been completed, the existence of the cointegration relationship has been tested by performing a Bound test. The results are seen in the Table 9. The null hypothesis "no long-run relationships exist" is cannot rejected at the 1% and 5% significance levels, because the value of F statistic is lower than the lower limit. There is no cointegration relationship between variables for these importance levels. The F

statistic remains between the upper and lower limits at the 10%. There is no evaluation of the cointegration relationship at this level of importance.

Table 9: ARDL Bound Test

			Critical Value Bounds		
Test Statistic	Value	k	Significance	I0 Bound	I1 Bound
↓	↓	↓	10%	3.47	4.45
F-statistic	3.843109	3	5%	4.01	5.07
			1%	5.17	6.36

Finally, the cointegration relation was tested with the Gregory-Hansen cointegration test with Regime Shifts, which makes it possible to perform a cointegration relation analysis taking into account an one shift. The results of the analysis are given in Table 10.

Table 9: The Results of Gregory-Hansen Cointegration Test

	Test Statistics	Breakpoint Date	Asymptotic Critical Values		
			1%	5%	10%
Change in Intercept	ADF -6.40	2009Q2	-5.77	-5.28	-5.02
Change in Intercept and Trend	ADF -6.31	2009Q2	-6.05	-5.57	-5.33
Change in Regime	ADF -6.40	2009Q2	-6.51	-6.00	-5.75

*Lags = 0 chosen by Akaike criterion Maximum Lags = 5

According to the Gregory-Hansen Cointegration test results, the null hypothesis "no cointegration" was rejected in all models at the 5%. According to this result, there is a long-term relationship between the rate of informal economy and unemployment rates for young population according to education levels in the intercept break, intercept and trend break and regime break. Three models also give a same breakpoint date as 2009:Q2.

Finally, the Toda Yamamoto Causality test was conducted for causalities between variables. Firstly, the appropriate lag p is determined with the VAR model. Then, the VAR model for the lag (p + dmax) is estimated by adding the highest degree of cointegration (dmax). When the model selection criterion is taken into account, the most appropriate VAR model is determined for 3 delays. Since the largest integration level is I(2), the VAR model was estimated for 5 lag (2 + 3) for Toda Yamamoto Causality Test. Finally, MWALD test was performed for lag p = 4. The results are taken part in Table 10.

When Toda-Yamamoto test results are examined, it is seen that the rate of informal economy is the causal for unemployment rate according to basic level education of youth people. Moreover, it seems that the unemployment rate according to basic level education of young people has a causal role on unemployment rate according to advanced level education of youth people.

Table 10: The Results of Toda-Yamamoto

Dependent variable		Variables	lag	Chi-sq
INFECNRATE	←	EDUBAS	4	0.7924
		EDUINT	4	2.1268
		EDUADV	4	3.1371
EDUBAS	←	INFECNRATE	4	10.076**
		EDUINT	4	3.0836
		EDUADV	4	4.5581
EDUINT	←	INFECNRATE	4	5.3947
		EDUBAS	4	4.6619
		EDUADV	4	0.5431
EDUADV	←	EDUINT	4	4.0431
		EDUBAS	4	10.890**
		INFECNRATE	4	0.5705

**5% level of importance

Conclusions

Our purpose for this study were determined the impact of young employment on the informal economy. So, we examined the relationships for long term, rate of informal economy and the unemployment rates according to educational levels for young people. We tried different methods for the cointegrations and causalities because of differences level for stationarities of the variables.

Firstly, it was established Johansen cointegration tests and it was found two cointegrating relationships. And then, Granger causality test based on VECM was tested. The only one causality was importance significantly. It was found that unemployment rate according to intermediate education level for ages of 15-24 is causal unemployment rate according to advanced level education for ages of 15-24.

Secondly, it was considered effect of breakpoint. And ARDL model with breakpoint, which obtained Bai-Perron multiple breakpoint test 2009:Q4, was analyzed. The results of ARDL model were found that the variables didn't have the relationships for long term.

Finally, the cointegration relation was tested with the Gregory-Hansen cointegration, which makes it possible to perform a cointegration relation analysis taking into account an one shift. According to the results of this test, there was a long-term relationship between the rate of informal economy and unemployment rates according to all education levels for young people in the intercept break, intercept and trend break and regime break. Three models also give a same breakpoint date as 2009:Q2.

Lastly, The Toda Yamamoto Causality test was conducted for causalities between variables. it was that the rate of informal economy is causal for unemployment rate according to basic level education of youth people. Moreover, it seems that the unemployment rate according to basic level education of young people has a causal role on unemployment rate according to advanced level education of youth people.

The results show that the variables have a relationship with the breakpoint dates found as 2009:Q2. The breakpoint date is important for Turkey. After the 2008 crisis, the effects of the crisis appear in the results. When the breakpoint is taken into account, it is possible to deduce consistently about the relationship between informal economy and unemployment rates according to educational levels for young people. The unemployment rate according to basic level education of youth people is important. Because it is causal for the unemployment rate according to advanced level education of youth people and informal economy is causal for it. It shows that the increasing the education level of young people is a major solution for the decreasing of both the unregistered youth employment and informal economy in Turkey.

It is obtained cointegration when considering breaks so the study may be developed with cointegration and causality tests that take into account multiple breaks.

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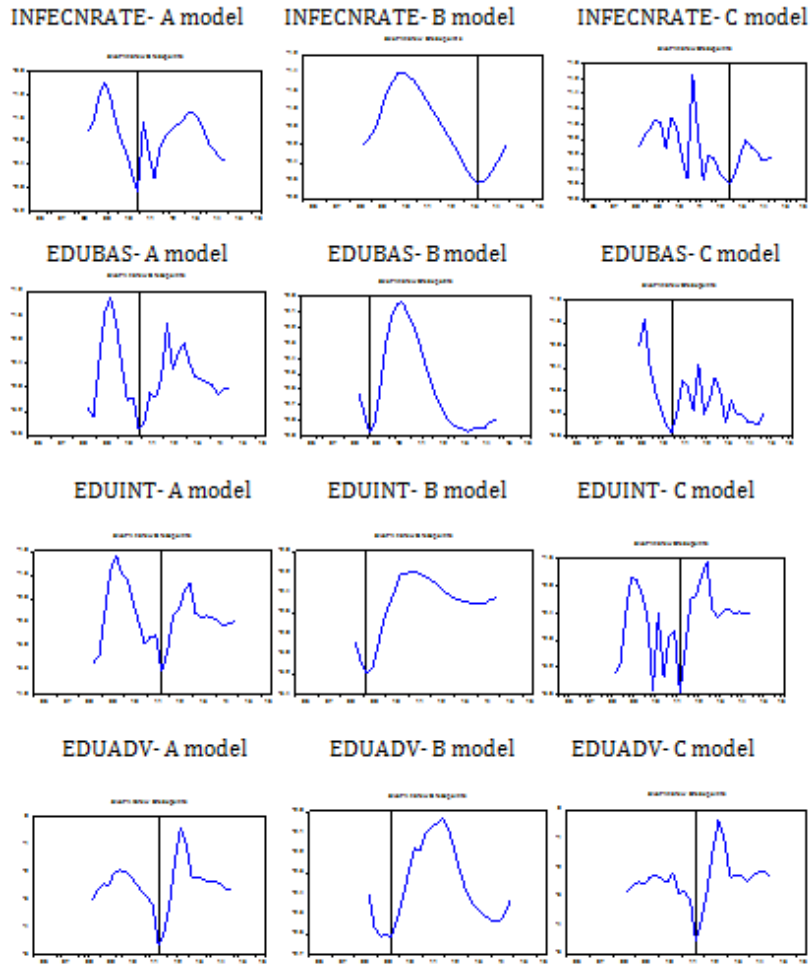
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APPENDICES

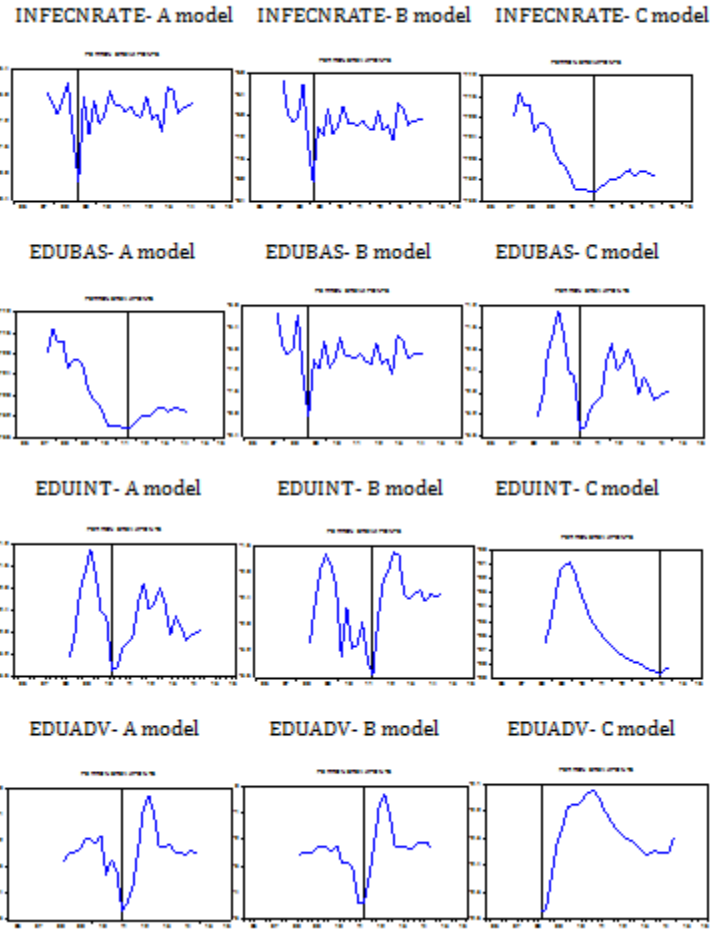
1) Obtaining the size of informal economy according to Monetarist Approach

years	C	D	Yr	C/D	Cr	Yu (size of informal economy)
2006Q1	18907654.00	22353613.00	160072572.19	0.845843	15627226.30	13825563.37
2006Q2	21659425.00	24936339.00	183652122.35	0.868589	17432788.72	18320668.03
2006Q3	21950912.00	23759445.00	213295395.72	0.923882	16610031.84	28218972.26
2006Q4	24589947.00	23967479.00	201370694.94	1.025971	16755466.69	38740683.35
2007Q1	20740768.00	22447970.00	187950694.10	0.923948	15693190.49	24873278.19
2007Q2	23158394.00	25686546.00	203279705.12	0.901577	17957252.24	24225356.32
2007Q3	24476332.00	26022437.00	232256565.98	0.940586	18192070.86	33010904.83
2007Q4	26072505.00	29427691.00	219691456.22	0.885985	20572655.82	24165229.88
2008Q1	26581454.00	29250975.00	215605653.90	0.908737	20449115.12	26602908.16
2008Q2	27790336.00	30564953.00	239363433.42	0.909222	21367706.30	29602618.44
2008Q3	31974600.00	33622672.00	262392169.94	0.950983	23505332.40	38899827.25
2008Q4	30468001.00	30403738.00	233172993.45	1.002114	21255002.22	41584879.83
2009Q1	31909720.00	31459320.00	207925990.91	1.014317	21992950.88	38575611.69
2009Q2	32137996.00	33660590.00	228571898.26	0.954766	23531840.56	34394853.74
2009Q3	34843833.00	35845191.00	261710448.90	0.972064	25059077.09	42045868.75
2009Q4	35251149.00	41154310.00	254350240.75	0.85656	28770638.35	23572694.49
2010Q1	36484854.00	40484049.00	241026016.19	0.901216	28302064.42	28672432.22
2010Q2	40121846.00	46164917.00	265996869.15	0.869098	32273512.33	26614915.69
2010Q3	42762615.00	47953783.00	295995607.36	0.891746	33524093.79	33562014.70
2010Q4	44368280.00	59611531.00	295780855.75	0.74429	41673929.16	7868230.98
2011Q1	46921814.00	54864825.00	289904997.71	0.855226	38355546.19	26640141.19
2011Q2	51099369.00	61777993.00	317392144.02	0.827145	43188484.86	23920517.57
2011Q3	51843611.00	62884048.00	351173121.67	0.824432	43961718.78	25905646.79
2011Q4	49347189.00	65220312.00	339242946.72	0.756623	45594981.66	11486770.77
2012Q1	47720266.00	58519831.00	325184111.11	0.815455	40910730.71	22270342.67
2012Q2	51142850.00	66135556.00	350160525.22	0.773303	46234821.18	15294048.06
2012Q3	54764455.00	69553374.00	377042314.50	0.787373	48624189.53	19590350.63
2012Q4	54565770.00	75304164.00	364411539.00	0.724605	52644519.34	5471927.44
2013Q1	54697872.00	74190512.00	355812713.81	0.737262	51865974.42	7993441.61
2013Q2	61609179.00	88127459.00	387127908.06	0.699092	61609179.00	0.000000
2013Q3	68016851.00	91281396.00	417849258.75	0.745134	63814070.32	11322889.28
2013Q4	67755894.00	94575852.00	406499357.27	0.716419	66117197.31	4145351.37
2014Q1	70572904.00	91276801.00	411207665.89	0.773175	63810857.99	17929248.36
2014Q2	73072351.00	98509923.00	427812471.76	0.741777	68867473.86	10747561.59
2014Q3	80086337.00	102275879.00	462875921.73	0.783042	71500222.61	22870265.67
2014Q4	77420141.00	105042324.00	446271757.23	0.737038	73434221.47	9966594.25
2015Q1	82885303.00	106484919.00	443841493.12	0.778376	74442727.73	20710849.25
2015Q2	88114487.00	110903199.00	482383247.83	0.794517	77531510.80	27091879.40
2015Q3	106281644.20	121313893.10	519443753.94	0.876088	84809541.09	54111022.79
2015Q4	94464629.70	123367891.30	506969914.02	0.765715	86245474.27	19878811.20
2016Q1	96339669.10	119236469.40	497844426.41	0.807972	83357231.33	31902444.45
2016Q2	103986968.10	136222992.50	525932050.19	0.763358	95232369.39	19892924.54

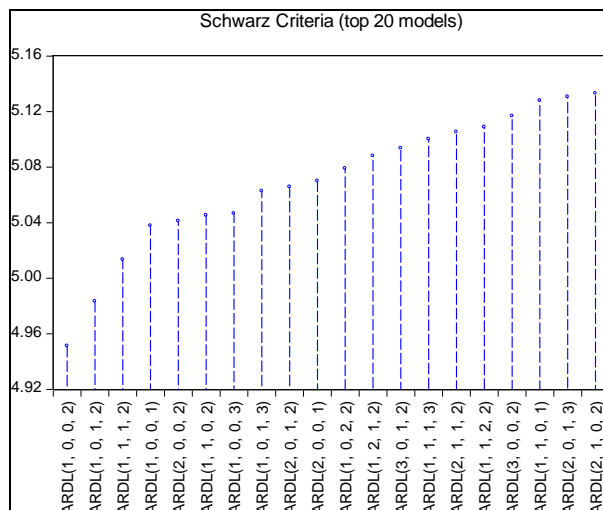
THE GRAPS OF ZIVOT-ANDREWS BREAK POINT



THE GRAPHS OF PERRON BREAKPOINT UNIT ROOT



THE SELECTION LAGS FOR ARDL



The results of LM test for ARDL model

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.613798	Prob. F(5,26)	0.6902
Obs*R-squared	4.223040	Prob. Chi-Square(5)	0.5178

4

The Growth Performance of the Turkish Economy: The Role of Informal Sector

*Orhan Erem ATEŞAĞAOĞLU
Ceyhan ELGİN
Oğuz ÖZTUNALI*

Abstract

In this study, we explore the potential effect of the informal economy on economic growth in the Turkish economy for the time interval between 1950-2013. Specifically, by defining total GDP as the aggregation of the formal and informal GDP, we perform growth accounting exercises on the formal GDP per capita and total GDP per capita under two frameworks. In our benchmark framework, we implicitly assume that the formal and informal sectors are isolated from each other and utilize potentially different technologies, while under our second model we unite the two sectors and assume that the total economy is governed by a single production function. Results of the two methodologies imply that the potential interactions between the two sectors may have played a role in determining the growth performance of the total GDP in the Turkish economy. Moreover, our results indicate that the major contributor to growth in both formal and total GDP is total factor productivity, which is followed by human capital per capita. Informal sector seems to have negatively contributed to the growth in total GDP since the size of the informal sector has declined dramatically over time in Turkey.

Introduction

One of the most popular research topics in macroeconomics is the identification of the main determinants of long-run economic growth. Although our understanding of the topic has significantly improved over time, various questions on the determinants and effects of economic growth still remain under-investigated. One such issue is the impact of the extent of informality on economic growth.

To address this gap in the literature, in this paper we bring two strands of the literature together within the scope of the Turkish economy. That is using annual data from Turkey, we extend a standard growth accounting exercise to incorporate the role of the informal sector. To do this we basically study the factors that contribute to the growth of formal GDP as well as of the sum of the formal and informal GDP in Turkey and quantitatively examine the effect of the informal sector on the growth rates of these variables as well their growth accounts. We also compare the results coming from the informality-augmented growth accounting framework with the standard growth accounting methodology focusing only on the growth of formal sector.

Our results indicate that while the formal GDP per capita in Turkey has grown by 2.75% on average between 1950-2013, the total GDP per capita (defined as formal plus informal GDP per capita) has grown around 2.53% each year in this time interval - and on average the ratio of informal to formal GDP has been around 36%. Furthermore, the growth of total GDP per capita has been more volatile compared to that of formal GDP – the standard deviation of the growth rate of total GDP is 5.12 while for formal GDP this value is only 3.91. Therefore, from these numbers only we can conclude that the unobserved informal economy has constituted a substantial part of the Turkish economy and exhibited a strikingly different growth path compared to the formal GDP. Our analysis also enables us to decompose the determinants of the growth in formal GDP and total GDP separately. The results of this procedure indicate that the most important component of growth in formal or total GDP per capita in the Turkish economy has been the growth in total factor productivity (TFP). Aside from TFP, the growth in human capital per capita is the other major determinant of formal and total GDP per capita. The contraction of the informal economy over time seems to negatively contribute to the growth performance of the total economy in general. In addition to this, the results from the informality-augmented growth accounting framework suggest that a growth accounting exercise that only focuses on formal GDP, and neglects the informal economy, exacerbates the adverse effect of the fall in per capita labor supply on economic growth in Turkish economy – especially for the period between 1977-1983.

A general empirical result arising from the empirical growth economics literature is that the total factor productivity is the main source of economic growth for a large set of countries and a significant time horizon. (See Prescott (1998) or Senhadji (2000) among many others in the literature). Independent of the production function or the dataset Turkey is also not an exception with respect to the growth accounting. Even though in some sub-episodes of the Turkish economy, inputs other than the TFP might play some significant roles, TFP is also the main general source of growth in Turkish economy over the past 60 years. (See Ismihan and Metin-Ozcan (2006), Imrohorglu and Ungor (2009), Cicek and Elgin (2011) and more recently Ungor (2013)) Therefore, it is very important for economists as well as policy-makers in Turkey to understand the evolution of the TFP and its effect on economic growth. On the theoretical side, De Soto (1989), Raj and Natarajan (2007), Benjamin and Mbaye (2012) show that the fear of detection by authorities forces informal firms to operate on a small scale that is far from efficient scale of production, thereby reducing productivity.

Therefore, taking informality into consideration may change the share of the growth of production factors as well as total factor productivity in the growth of total output.

Furthermore, for yet another growth account, the growth in the capital intensity, the informal sector might also play a crucial role. The prevalence of informality is potentially negatively related to productivity and accumulation -or utilization - of capital. Caro, Galindo and Melendez (2012), Dabla-Norris and Koeda (2008) and Moron, Salgado and Seminario (2012) argue that informal economy lacks of access to credit markets.

Turkey with an informal sector size at about 25-30 % of official GDP has the largest informal sector size (relative to GDP) among OECD members along with Mexico. Even though the informal sector size has declined significantly after 1980.s, it still constitutes a large fraction within the economy and acts as a barrier for growth, technological advancement and efficiency of the public finance. Even though, the analysis we present here only applies to the Turkish economy (See Elgin and Birinci, 2016 for a cross-sectional panel data analysis), it can also be generalized to include any other economy with a significant informal sector size.

The rest of the paper is organized as follows: In Section 2, we provide a brief summary of the main time-series data used in our analysis. In Section 3, we introduce the benchmark growth accounting methodology as well as alternative approaches used for sensitivity analysis. In Section 4, we discuss the calibration of the setups. In Section 5, we summarize the quantitative results from the growth accounting exercises considered in Section 3. Finally, in Section 6, we conclude.

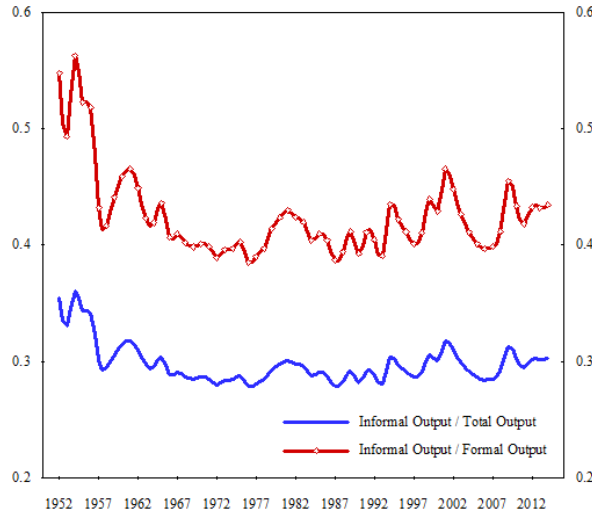
Data

The formal sector macro data that used in our analysis is from Penn World Tables and cover the years between 1950 and 2013. The data on informal sector is from Elgin and Oztunali (2012). Below, we provide a short summary of the key data series used in our analysis.

Figure 1 plots (i) the ratio of informal output to total output, and (ii) the ratio of informal output as a share of formal output. The figure shows that while the informal output to total output ratio was around 35% in the early 1950s, it rapidly decreased to approximately 30% in the late 1950s and has been stable at round this level since then. When we focus on the informal output to formal output ratio, we see a similar trend with different levels; while the ratio was around 55% in the early 1950s, it fell approximately to a level of 43% in the late 1950s and has been stable at around

this level since then. The main message of this figure is that the informal sector constitutes an important part of the Turkish economy.

Figure 1: Informal Output as a Share of (i) Formal Output, (i) Total Output



In a similar fashion, Figure 2 plots (i) the ratio of informal labor to total labor, and (ii) the ratio of informal labor as a share of formal output. The figure shows that while the informal labor to total labor ratio was around 30% in the early 1950s, it has steadily decreased over the post-war period and reached approximately to a level of 20% in the 2012. When we look at the ratio of informal labor to formal labor, while the ratio was around 45% in the early 1950s, it has steadily decreased since then a reached approximately to a level of 24% in 2012. In contrast to output series, we observe a steady decrease in informal labor in Turkey over the post-war period.

Figure 3 plots TFP series for Turkey over the post-war period. While we observe a steady increase in TFP from 1950s to late 1980s, we observe that the 1990s seems to be a lost decade in terms of TFP growth. On the other hand, while early 2000s seems to be a boom period for TFP growth, once more the late 2000s seems to be a sub-period with TFP stagnation.

Figure 2: Informal Labor as a Share of (i) Formal Labor, (i) Total Labor

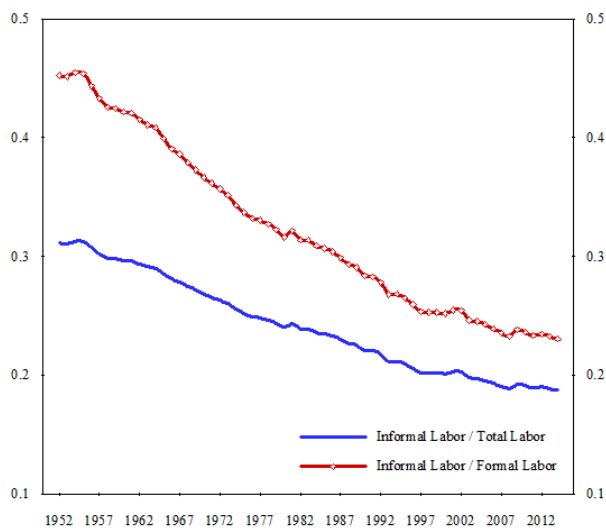


Figure 3: TFP

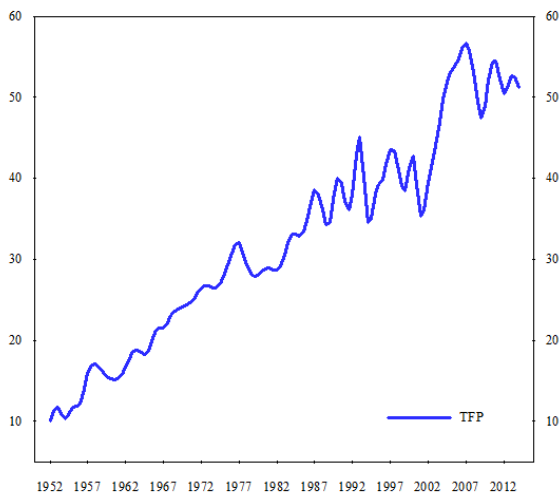
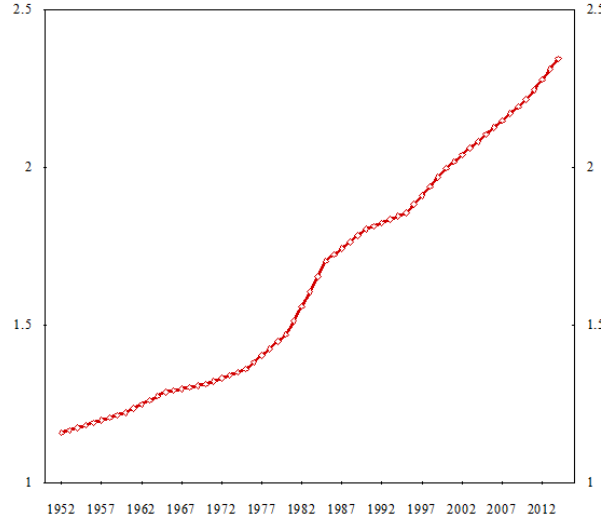


Figure 4 plots the human capital stock in Turkey over the post-war period. We observe that the stock of human capital continuously increased in this period. On the other hand, we also observe that the rate of increase accelerated after the 1980s, which seems to be consistent with the increased educational spending patterns in Turkey over the same period.

Figure 4: Human Capital



Model

First, we will describe the benchmark methodology that we adopt during the growth accounting procedure of the total GDP per capita (i.e. formal + informal GDP per capita), in which formal and informal sectors are treated as separate sectors with potentially different production technologies, and compare this methodology with the one used for the growth accounting of formal GDP per capita. Secondly, we will repeat this procedure via incorporating human capital into our model. Finally, we will describe the second methodology in which we unite the formal and informal sectors and assume that the total economy is characterized by a single production technology.

Benchmark Growth Accounting Models for Total GDP and Formal GDP

Our benchmark growth accounting methodology is based on the two sector variant of the one sector model use by Mankiw et al. (1992). Specifically, we assume that the total economy consists of a formal sector and an informal sector which potentially exhibit distinct production technologies:

$$Y_t = Y_{Ft} + Y_{It} \quad (1)$$

where total output (Y_t) is defined as the sum of formal output (Y_{Ft}) and informal output (Y_{It}). The formal sector production technology is assumed to utilize capital (K_t) and formal labor (L_{Ft}). In this exercise, we do not impose a functional form on the informal sector as we directly borrow the estimated values of (Y_{It} / Y_{Ft}) ratio for the Turkish economy from Elgin and Oztunali (2012). Therefore, the total output can be written in terms of production factors and Y_{It} / Y_{Ft} in the following way:

$$Y_t = Y_{Ft} + Y_{It} = \left[1 + \left(\frac{Y_{It}}{Y_{Ft}} \right) \right] Y_{Ft} = \left[1 + \left(\frac{Y_{It}}{Y_{Ft}} \right) \right] A_t K_t^\alpha L_{Ft}^{1-\alpha} \quad (2)$$

where A_t corresponds to the formal sector total factor productivity. Dividing with population (N_t), taking the natural logarithm and then first-differencing both sides of (2) allows us to decompose the growth of total per capita output (

$\Delta Y / N$) in terms of the growth in informal to formal output ratio (ΔS), growth in formal TFP (ΔA), growth in capital to total output ratio ($\Delta K / Y$) and growth in formal labor supply per capita ($\Delta L_F / N$) in the following way:

$$\ln\left(\frac{Y_t}{N_t}\right) - \ln\left(\frac{Y_{t-1}}{N_{t-1}}\right) = \underbrace{\frac{1}{1-\alpha} \left[\ln\left(1 + \frac{Y_{It}}{Y_{Ft}}\right) - \ln\left(1 + \frac{Y_{It-1}}{Y_{Ft-1}}\right) \right]}_{\Delta S} + \underbrace{\frac{1}{1-\alpha} [\ln(A_t) - \ln(A_{t-1})]}_{\Delta A} \quad (3)$$

$$+ \underbrace{\frac{\alpha}{1-\alpha} \left[\ln\left(\frac{K_t}{Y_t}\right) - \ln\left(\frac{K_{t-1}}{Y_{t-1}}\right) \right]}_{\Delta K/Y} + \underbrace{\left[\ln\left(\frac{L_{Ft}}{N_t}\right) - \ln\left(\frac{L_{Ft-1}}{N_{t-1}}\right) \right]}_{\Delta L_F/N}$$

After decomposing the growth of total GDP into its main elements, we compare our results with those coming from the standard methodology of the growth accounting literature - decomposition of the growth in formal GDP per capita under a single sector setting a la Mankiw et al. (1992). However, since this practice omits the informal sector the potential effect of the informal sector's relative size to the formal sector on the growth performance is neglected. (4) displays how the standard methodology decomposes the growth of formal GDP per capita ($\Delta Y_F / N$) into the growth in formal TFP (ΔA), the growth in capital to formal output ratio ($\Delta K / Y_F$) and the growth in formal labor supply per capita ($\Delta L_F / N$):

$$\underbrace{\ln\left(\frac{Y_{Ft}}{N_t}\right) - \ln\left(\frac{Y_{Ft-1}}{N_{t-1}}\right)}_{\Delta Y_F/N} = \underbrace{\frac{1}{1-\alpha} [\ln(A_t) - \ln(A_{t-1})]}_{\Delta A} + \underbrace{\frac{\alpha}{1-\alpha} \left[\ln\left(\frac{K_t}{Y_{Ft}}\right) - \ln\left(\frac{K_{t-1}}{Y_{Ft-1}}\right) \right]}_{\Delta K/Y_F} \quad (4)$$

$$+ \underbrace{\left[\ln\left(\frac{L_{Ft}}{N_t}\right) - \ln\left(\frac{L_{Ft-1}}{N_{t-1}}\right) \right]}_{\Delta L_F/N}$$

As (4) shows, the standard growth accounting equation differs from our practice due to the definition of output ($Y = Y_F + Y_I$ vs. Y_F), definition of capital to output ratio (K / Y vs. K / Y_F) and the existence of the informal sector (Y_I / Y_F).

Benchmark Growth Accounting Models with Human Capital for Total GDP and Formal GDP

In order to account for the potential effect of the growth of human capital on economic growth, we incorporate human capital in the formal production function. In this case, total output takes the following functional form:

$$Y_t = Y_{Ft} + Y_{It} = \left[1 + \left(\frac{Y_{It}}{Y_{Ft}} \right) \right] Y_{Ft} = \left[1 + \left(\frac{Y_{It}}{Y_{Ft}} \right) \right] A_t K_t^\eta H_t^\beta L_{Ft}^{1-\eta-\beta} \quad (5)$$

where H_t corresponds to total human capital. Similar to the previous exercise, we can now decompose the growth rate of total output per capita ($\Delta Y / N$) in terms of the growth in informal to formal output ratio (ΔS), growth in formal TFP (ΔA), growth in capital to total output ratio ($\Delta K / Y$), growth in human capital per capita ($\Delta H / N$) and growth in formal labor supply per capita ($\Delta L_F / N$) by dividing with population (N), taking the natural logarithm and then first-differencing both sides of (5):

$$\begin{aligned}
 \underbrace{\ln\left(\frac{Y_t}{N_t}\right) - \ln\left(\frac{Y_{t-1}}{N_{t-1}}\right)}_{\Delta Y/N} &= \underbrace{\frac{1}{1-\eta} \left[\ln\left(1 + \frac{Y_{It}}{Y_{Ft}}\right) - \ln\left(1 + \frac{Y_{It-1}}{Y_{Ft-1}}\right) \right]}_{\Delta S} + \underbrace{\frac{1}{1-\eta} [\ln(A_t) - \ln(A_{t-1})]}_{\Delta A} \\
 &+ \underbrace{\frac{\eta}{1-\eta} \left[\ln\left(\frac{K_t}{Y_t}\right) - \ln\left(\frac{K_{t-1}}{Y_{t-1}}\right) \right]}_{\Delta K/Y} + \underbrace{\frac{\beta}{1-\eta} \left[\ln\left(\frac{H_t}{N_t}\right) - \ln\left(\frac{H_{t-1}}{N_{t-1}}\right) \right]}_{\Delta H/N} \\
 &+ \underbrace{\frac{1-\eta-\beta}{1-\eta} \left[\ln\left(\frac{L_{Ft}}{N_t}\right) - \ln\left(\frac{L_{Ft-1}}{N_{t-1}}\right) \right]}_{\Delta L_F/N}
 \end{aligned} \quad (6)$$

Similar to the previous section, we will compare our results with those from a standard growth accounting practice with a single formal sector model a la Mankiw et al. (1992). Again across exercise that also take into account the effect of human capital on economic growth, the two models will potentially yield different results as our output and capital to output definitions are different than the standard growth accounting literature due to the existence of informal sector. (7) describes the standard growth accounting model with human capital:

$$\begin{aligned}
 \underbrace{\ln\left(\frac{Y_{Ft}}{N_t}\right) - \ln\left(\frac{Y_{Ft-1}}{N_{t-1}}\right)}_{\Delta Y_F/N} &= \underbrace{\frac{1}{1-\eta} [\ln(A_t) - \ln(A_{t-1})]}_{\Delta A} + \underbrace{\frac{\eta}{1-\eta} \left[\ln\left(\frac{K_t}{Y_{Ft}}\right) - \ln\left(\frac{K_{t-1}}{Y_{Ft-1}}\right) \right]}_{\Delta K/Y_F} \\
 &+ \underbrace{\frac{\beta}{1-\eta} \left[\ln\left(\frac{H_t}{N_t}\right) - \ln\left(\frac{H_{t-1}}{N_{t-1}}\right) \right]}_{\Delta H/N} + \underbrace{\frac{1-\eta-\beta}{1-\eta} \left[\ln\left(\frac{L_{Ft}}{N_t}\right) - \ln\left(\frac{L_{Ft-1}}{N_{t-1}}\right) \right]}_{\Delta L_F/N}
 \end{aligned} \quad (7)$$

Second Growth Accounting Model for Total GDP

In addition to accounting for the effect of the informal sector on growth performance in an indirect manner via Y_I / Y_F term, we follow a second approach in which we unite the formal and informal sectors. In doing so, we first estimate the informal labor supply by assuming a functional form for informal production. This practice enables us to obtain the total labor supply (which corresponds to formal plus informal labor supplies). Then, we assume that the total output is produced a single overall production function which utilizes capital (for which we generate a new series as we implicitly assume that informal sector also has access to capital in this methodology) and the newly estimated total labor supply. We repeat the same exercise by incorporating the human capital into the overall production function as well.

We first estimate the informal labor supply (L_{It}) by assuming that the following function characterizes the informal production technology:

$$Y_{It} = \theta_t L_{It}^\gamma \quad (8)$$

After estimating informal labor supply, we assume that the total output is produced with the following production technology:

$$Y_t = Y_{Ft} + Y_{It} = B_t K_t^\alpha L_t^{1-\alpha} = B_t K_t^\alpha (L_{Ft} + L_{It})^{1-\alpha} \quad (9)$$

where L_t is the total labor supply, B_t is the total factor productivity and K_t is the informality-augmented capital. We create this new capital variable as (9) implicitly assumes that all productive activities utilize capital. Therefore, we estimate a new capital series during this exercise and call it as the informality-augmented capital. After this step, we normalize both sides of (9) with population, take natural logarithms and first-difference both sides in order to decompose the growth in total output per capita ($\Delta Y / N$) into growth in total factor productivity (ΔB), growth in informality-augmented capital to total output ratio (K / Y) and growth in total labor supply per capita ($\Delta L / N$):

$$\underbrace{\ln\left(\frac{Y_t}{N_t}\right) - \ln\left(\frac{Y_{t-1}}{N_{t-1}}\right)}_{\Delta Y/N} = \underbrace{\frac{1}{1-\alpha} [\ln(B_t) - \ln(B_{t-1})]}_{\Delta B} + \underbrace{\frac{\alpha}{1-\alpha} \left[\ln\left(\frac{K_t}{Y_t}\right) - \ln\left(\frac{K_{t-1}}{Y_{t-1}}\right) \right]}_{\Delta K/Y} + \underbrace{\left[\ln\left(\frac{L_t}{N_t}\right) - \ln\left(\frac{L_{t-1}}{N_{t-1}}\right) \right]}_{\Delta L/N} \quad (10)$$

Finally, we modify the overall production function by incorporating human capital in order to account for the effect of human capital in our second methodology. In this case, the total output is produced with the following technology:

$$Y_t = B_t K_t^\alpha H_t^\beta L_t^{1-\alpha-\beta} \quad (11)$$

where H_t again corresponds to human capital. Using this production technology, one can decompose the growth rate of total output into the growth in total factor productivity (ΔB), growth in informality-augmented capital to total output ratio (K/Y), growth in human capital per capita ($\Delta H/N$) and growth in total labor supply per capita ($\Delta L/N$) in the following way:

$$\underbrace{\ln\left(\frac{Y_t}{N_t}\right) - \ln\left(\frac{Y_{t-1}}{N_{t-1}}\right)}_{\Delta Y/N} = \underbrace{\frac{1}{1-\eta} [\ln(B_t) - \ln(B_{t-1})]}_{\Delta B} + \underbrace{\frac{\eta}{1-\eta} \left[\ln\left(\frac{K_t}{Y_t}\right) - \ln\left(\frac{K_{t-1}}{Y_{t-1}}\right) \right]}_{\Delta K/Y} + \underbrace{\frac{\beta}{1-\eta} \left[\ln\left(\frac{H_t}{N_t}\right) - \ln\left(\frac{H_{t-1}}{N_{t-1}}\right) \right]}_{\Delta H/N} + \underbrace{\frac{1-\eta-\beta}{1-\eta} \left[\ln\left(\frac{L_t}{N_t}\right) - \ln\left(\frac{L_{t-1}}{N_{t-1}}\right) \right]}_{\Delta L/N} \quad (12)$$

Calibration

Recall that, the time interval of our study spans the period between 1950-2013. Formal output Y_{Ft} , population N_t , human capital H_t and formal labor supply L_{Ft} are from Penn World Tables. We borrow the data for the ratio of informal output to formal output Y_{It}/Y_{Ft} of the Turkish economy from Elgin (2012). We generate the formal sector capital K_t ² and informality-augmented capital K_t series using the perpetual inventory method³. Following Mankiw et al. (1992) we assume that $\alpha = 0.36$, $\eta = 0.14$, $\beta = 0.49$ and $\delta = 0.047$.

During the estimation of the informal labor supply by using (8) we adhere to the following strategy: According to an OECD report (Charmes, 2009) the ratio of $L_{It}/L_{Ft} = 0.3$ in year 2008. Using this observation together with the 2008 values of Y_{Ft} , Y_{It} and L_{Ft} , for which we have data, and assuming that $\gamma = 0.65$ following Ihrig and Moe (2004) we calculate informal sector TFP θ_t for year 2008. Then, by assuming that the growth rate of θ_t is equal to the average of the growth rate of formal capital and formal TFP we estimate informal labor supply for the remaining years in our dataset.

² The initial capital to formal output ratio is calculated with $K_{1950}/Y_{F,1950} = g_F/(i + \delta)$ where i and g_F correspond to the average share of investment in formal GDP and growth rate of formal output in 1950-2013. i and g_F are obtained from Penn World Tables.

³ The initial informality-augmented capital to total output ratio is calculated with $K_{1950}/Y_{1950} = g/(i + \delta)$ where i and g correspond to the average share of investment in formal GDP (we assume that share of investment in total GDP and formal GDP are equal) and growth rate of total output in 1950-2013.

Quantitative Analysis

We will first compare the results from the growth accounting exercises with formal GDP and total GDP under the benchmark model. Here, we will also compare the effect of introducing human capital across the growth accounting exercises under the two settings. Then, we will describe the results from the second methodology and compare our findings with the benchmark model.

Benchmark Model - Total vs. Formal GDP

Table 1 displays the decomposition of the growth rate of total output into its components according to (3). The first striking observation is the fact that the highest weight in this decomposition is always formal sector TFP. On average the magnitude of $|\Delta A| = 3.98$ and always larger than other components of formal per capita GDP growth. Per capita formal labor supply turns out to be the second component with highest magnitude - $|\Delta L_F / N| = 1.24$ for the interval between 1950-2013. However, the sign of this component is negative as per capita formal labor supply exhibits a declining trend over time in Turkey. At the other end of the spectrum, capital to total output ratio $\Delta K / Y$ is the component with the smallest magnitude ($|\Delta K / Y| = 0.13$ for 1950-2013) as capital to formal output exhibits a relatively more stagnant trend over time compared to the other variables listed here. The relative size of the informal sector compared to the formal sector is the third component with highest magnitude - $|\Delta IS| = 0.34$ for 1950-2013. The growth of the relative size of the informal sector seems to contribute negatively to the growth of total output per capita. This is an expected result, as the relative size of the informal sector has sharply declined especially between 1950-1977 (from %53 to %20) according to the estimates of Elgin and Oztunali (2012). Only in 1977-1983 the growth rate of the informal sector seems to have positively contributed to the growth of total output per capita as the relative size of the informal sector grew by %12 on average in this interval - which is not surprising due to the political and economic turmoil experienced during these years.

Table 2 shows the growth accounting results for formal GDP in Turkey between 1950-2013. Compared to Table 1, the contributions of total factor productivity and formal per capita labor supply seem to be identical. This is not a coincidence, but instead a natural result of our methodology. Specifically, we construct total output as $Y_t = [1 + (Y_{It} / Y_{Ft})] Y_{Ft}$ where Y_{It} / Y_{Ft} can be treated as an exogenously given number. Therefore, both sides of (3) actually correspond to the multiplication of the formal output with this constant number. Hence, the contributions of formal TFP and per capita formal labor supply turn out to be identical in Table 1 and Table 2.

<i>Period</i>	$\Delta Y / N$	ΔIS	ΔA	$\Delta K / Y$	$\Delta L_F / N$
1950-2013	2.53	-0.34	3.98	0.13	-1.24
1950-1960	2.65	-0.95	8.44	-0.47	-4.38
1961-1976	3.11	-1.10	4.78	0.99	-1.56
1977-1983	1.23	1.43	-0.05	1.27	-1.42
1984-1990	3.37	-0.18	5.09	-0.70	-0.84
1991-2001	1.10	-0.07	1.05	0.13	-0.02
2002-2013	3.23	-0.23	3.60	-0.68	0.54

<i>Period</i>	$\Delta Y_F / N$	ΔA	$\Delta K / Y_F$	$\Delta L_F / N$
1950-2013	2.75	3.98	0.01	-1.24
1950-1960	3.26	8.44	-0.81	-4.38
1961-1976	3.81	4.78	0.59	-1.56
1977-1983	0.31	-0.05	1.79	-1.42
1984-1990	3.49	5.09	-0.76	-0.84
1991-2001	1.14	1.05	0.11	-0.02
2002-2013	3.37	3.60	-0.76	0.54

Table 3 displays the results of the growth accounting exercise for total output with human capital. Similar to what we observe in Table 1, formal TFP ΔA is the major component of total GDP per capita while the capital to total output

ratio $\Delta K / Y$ is the component with smallest effect. The most striking observation here is the contribution of human capital per capita: the magnitude of the growth of per capita human capital seems to be higher remaining components (except for formal TFP). This is also expected as per capita human capital seems to have grown continuously between 1950-2013 according to our data from Penn World Tables. Finally, the growth of the relative size of the informal sector seems to have negatively contributed to the growth in total GDP per capita as we also have observed in Table 1. However, the magnitude of informal sector's contribution is now smaller.

Table 3: Benchmark Model with Human Capital – Total GDP per capita

<i>Period</i>	$\Delta Y / N$	ΔIS	ΔA	$\Delta K / Y$	$\Delta H / N$	$\Delta L_F / N$
1950-2013	2.53	-0.26	2.64	0.04	0.64	-0.53
1950-1960	2.65	-0.70	4.87	-0.14	0.50	-1.88
1961-1976	3.11	-0.82	3.70	0.29	0.61	-0.67
1977-1983	1.23	1.07	-0.77	0.37	1.17	-0.61
1984-1990	3.37	-0.13	3.38	-0.20	0.69	-0.36
1991-2001	1.10	-0.05	0.52	0.04	0.59	-0.01
2002-2013	3.23	-0.17	2.86	-0.20	0.50	0.23

Table 4 indicates that, aside from the effect of capital to formal output ratio, the contributions of other components are identical across the growth accounting exercise with total GDP and the exercise with formal GDP. Again, this is due to our methodology: both sides of (6) actually correspond to the multiplication of the formal output with this constant number. Hence, the contributions of formal TFP, per capita human capital and per capita formal labor supply turn out to be identical in Table 3 and Table 4.

Table 4: Benchmark Model with Human Capital – Formal GDP per capita

<i>Period</i>	$\Delta Y_F / N$	ΔA	$\Delta K / Y_F$	$\Delta H / N$	$\Delta L_F / N$
1950-2013	2.75	2.64	0.00	0.64	-0.53
1950-1960	3.26	4.87	-0.24	0.50	-1.88
1961-1976	3.81	3.70	0.17	0.61	-0.67
1977-1983	0.31	-0.77	0.52	1.17	-0.61
1984-1990	3.49	3.38	-0.22	0.69	-0.36
1991-2001	1.14	0.52	0.03	0.59	-0.01
2002-2013	3.37	2.86	-0.22	0.50	0.23

Benchmark Model vs. Second Model

In this section we compare the results of the second model with the benchmark model. Table 5 provides the results from the growth accounting exercise with the second model. Since our benchmark model with total GDP involves a higher number of components compared to the second model, we will compare the second model's results with those obtained from the benchmark model with formal GDP. When we compare Table 2 and Table 5, we observe that while the contribution of labor supply to growth is always negative, this effect is somewhat exacerbated in the case of formal GDP. Specifically, between 1977-1983 benchmark model results indicate that the fall in formal labor supply lowered growth by %1.42 while according to the second model the negative effect of the labor supply channel was %0.48. This can occur if the decline in the informal labor supply was much lower in that period - which is not unexpected given the political and economic conditions of 1977-1983 period during which the growth rate of total GDP per capita nearly dipped. Therefore, a growth accounting exercise that neglects the existence of the informal sector cannot capture this effect and may overemphasize the role of declining per capita labor supply in cases where informal labor supply increases or exhibits a relatively stable trend.

Aside from the contribution of the labor supply to economic growth, the contribution of TFP is another dimension along which the benchmark model and the second model differ from each other. The comparison of results from Table 2 and Table 5 indicate that, while the major determinant of economic growth is TFP across the two models, these results also indicate that the contribution of TFP to economic growth in second model is smaller (on average 3.86% for 1950-2013) compared to the benchmark model (3.98% for 1950-2013). One can observe that this result is even more pronounced when human capital is incorporated into the analysis: the contribution of TFP in the second model is now 2.46 on average between 1950-2013 (Table 6), whereas it is 2.64 in the benchmark model (Table 3). Therefore, the second methodology – which unites the formal and informal sectors under a single production function that utilizes informality-

augmented capital and total labor supply (formal plus informal hours of work) – suggests that the contribution of TFP to economic growth is smaller than what the benchmark methodology predicts.

<i>Period</i>	$\Delta Y / N$	ΔB	$\Delta K / Y$	$\Delta L / N$
1950-2013	2.53	3.86	0.01	-1.34
1950-1960	2.65	7.64	-0.63	-4.37
1961-1976	3.11	4.75	0.73	-2.36
1977-1983	1.23	0.69	1.02	-0.48
1984-1990	3.37	4.74	-0.71	-0.65
1991-2001	1.10	1.07	0.17	-0.14
2002-2013	3.23	3.42	-0.73	0.54

Table 6 displays the results of the second model in the existence of human capital. The introduction of human capital reduces the magnitudes of other components substantially. Compared to Table 4, we again observe that the benchmark methodology with formal output exacerbates the role of the fall in labor supply in 1977-1983 (-0.61) compared to the second model (-0.21).

<i>Period</i>	$\Delta Y / N$	ΔB	$\Delta K / Y$	$\Delta H / N$	$\Delta L / N$
1950-2013	2.53	2.46	0.00	0.64	-0.58
1950-1960	2.65	4.21	-0.18	0.50	-1.88
1961-1976	3.11	3.31	0.21	0.61	-1.02
1977-1983	1.23	-0.03	0.29	1.17	-0.21
1984-1990	3.37	3.17	-0.21	0.69	-0.28
1991-2001	1.10	0.52	0.05	0.59	-0.06
2002-2013	3.23	2.71	-0.21	0.50	0.23

Conclusion

In this study, to account for the effect of the informal economy on the growth performance of the Turkish economy, we performed various growth accounting exercises under different frameworks on both formal GDP per capita and total GDP per capita (which we have defined as the sum of formal and informal GDP per capita). Our main motivation for these growth accounting exercises relied on some key observations regarding the informal and total GDP: (i) the informal sector has constituted a major part of the Turkish economy, (ii) the informal sector's size relative to the observed formal sector declined over time, (iii) the growth rate of the total GDP per capita has been lower than the growth rate of the formal GDP per capita on average, while the growth rate of the total GDP exhibited a relatively higher variance on average.

We adopted two methodologies during our analysis. First, in our benchmark model we implicitly assumed that the dynamics of the formal and informal sector did not affect each other and then performed growth accounting exercises on the formal GDP per capita and total GDP per capita separately. In our alternative second model, we instead united the two sectors under a single production function and performed growth accounting exercises on the total GDP per capita. The differences between the results from the growth accounting of the formal GDP under the benchmark framework and the growth accounting of total GDP under the second model indicate that the interplay between the two sectors over time may have played an important role in the growth performance of the Turkish economy.

Our results indicate that TFP has been the major driving force behind the growth of both the formal GDP per capita and total GDP per capita in the Turkish economy. The accumulation of human capital has been another major component of both the formal and total GDP per capita. The relative size of the informal economy fell from around 49% in 1950 to nearly 30% in 2013, and because of that reason the informal economy has inversely contributed to the growth of total GDP per capita.

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5

Analyzing Child Labor in Turkey

Melike E. BİLDİRİCİ
Fulya ÖZAKSOY

Abstract

Child labor is not socio-economic phenomenon only of recent times. By the mid-nineteenth century in Europe and during the Industrial Revolution in Britain, this matter attracted great attention especially in the third world. A large body of literature accepts that child labor force participation is highly associated with development level of countries. Overcoming poverty problem is so difficult in the countries use child labor intensive production. Child labor is considered as an essential production input especially in emerging countries. This employment structure creates vicious circle, socialization problem and effects welfare status of especially developing countries. To overcome this complication, governments need to develop feasible and effectual social economic policies. This paper aims to search the dynamics of child labor in Gulf industrial district of Kocaeli, Turkey in the period of 1990-2014 by Panel data analysis. Moreover, it is examined whether child labor is an indicator of economic development of countries or not.

Keywords: Child labor, Poverty, Panel data analysis

Introduction

Although economics literature does not reach a general consensus about definition of child labor, International Labor Organization (ILO) defines child labor with 15 age limit who is obliged to participate labor force on the purpose of breadwinning or surviving. It is regarded as a serious obstacle in social and economic developments of developing countries. Although many regulative precautions were taken and various preventive laws were made, this problem still maintains its importance and it concerns widespread community. For many of the developing countries, eliminating child labor is a long-term goal to prevent their physical, mental and psychological disabilities. According to ILO estimations, a great majority of the child laborers work in hazardous conditions with the aim of providing financial support to their families. These ignored children are deprived of socio-economic exploitation which affect their developmental psychology adversely (Osment and Jönsson, 2014).

Child labor force participation points out all kinds of working conditions which endanger health, education, physical and social development of child. The most severe definition of child labor states that enslaved and separated child is exposed to hard living conditions such as disease, poverty obliged them to take care of themselves (ILO, Child Labor, 2017).

ILO targets for solving child labor problem with their 182 and 138 numbered contracts which are confirmed by some of the major developed countries of the world. Further, although ILO made enormous strides with International

Programme on the Elimination of Child Labor (IPEC) launched in 1991, this problem still continues its existence which reveals the importance, prevalence of this socio-economic matter.

Although this exploitation system dates back to industrial revolution which changed production method, has not been exactly obviated yet. By globalization, child labor problem mainly bases on capitalist economy and neoliberal politics. Before 2000, child labor was 246 million and after 2010 this number fell to 168 million in the world (ILO-IPEC, 2013). These numbers indicate that 85 million child labor engages in heavy and dangerous works.

There is a general perception is that driving power behind child labor problem lies on supply and demand-side factors. According to ILO's estimation, poverty is the most substantial problem with regard to supply-side factors. Tragic impressions of HIV/AIDS epidemics especially in Africa expanded aspects of child labor so, this issue is highly correlated with poverty problem. Besides working in conditions of hard and hazardous occupations, these children are deprived of education and they are obliged to work in more severe working provisions with low wages. This mechanism causes to child labor trap. Another important point is customs and traditions. Customs burden poor families with heavy debt because of social needs and religious rituals so, the families need to their children's income to maintain their lives. Chain bread which is regarded as the worst form of child labor, is prevalent because of vulnerability of poor families against such social pressure. On the demand side of this issue, child labor with the reasons of low cost, more effective working, competing with globalization is so high.

Child labor with its different dimensions is one of the most complicated problem of the world which will be investigated by using Turkish Statistical Institute (TSI) data in the first section of the paper. In the second section, survey results will be examined and the last section consists of socio-economic policy proposals.

Child Labor in Turkey

TSI data indicates that in 2015, number of children is 22 million 870 thousand 683 in 78 million 741 thousand 53 total population. The children aged of '0-17' range consisted 45 percent of the total population in 1935. This rate rose to 29 percent in 2015. Şanlıurfa remarked with its highest children population rate which is %47.4. And following, Şırnak and Ağrı attract notice with their high rates, %47.1 and %45, respectively. These ratios are %17.5, %19 and %19.5 in Tunceli, Edirne and Kırklareli, respectively which is shown in Table 1 in details.

Table 1: Turkey's 5 provinces with lowest and highest rates of child labor, 2015

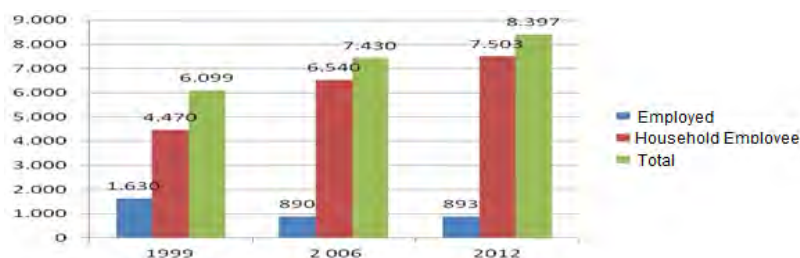
<i>Provinces with highest rates</i>	<i>%</i>	<i>Provinces with lowest rates</i>	<i>%</i>
Şanlıurfa	47.4	Tunceli	17.5
Şırnak	47.1	Edirne	19.0
Ağrı	45.0	Kırklareli	19.5
Muş	44.6	Çanakkale	19.6
Siirt	44.4	Karabük, Kastamonu	21.2

Source: TSI, 2015

According to household labor force statistics, labor force participation of children with 15-17 age group was %21, employment rate was %18.1 and unemployment rate was %13.9 in 2015. The labor force participation rate in male child was %29.4 in 2014 while this rate was %28.6 in 2015. This ratio was %12.1 for girls in 2014 and %13 in 2015 (TSI, 2015).

When child population rate is analyzed in NUTS 1 (Nomenclature of Territorial Units for Statistics) in Turkey, it is noticed that the highest child population rate is %43 in Southeastern Anatolia and the lowest rate is %21.9 in the Western Marmara region of Turkey (1 Million Child Labor in Turkey, 2015).

Graph 1: Distribution numbers of employed, homemaker, total employed child labor by years



Source: DİSK-AR: Türkiye'de Çocuk İşçiliği Gerçeği Raporu, 2015

By comparing the data of 2012 with 2006, it is seen that rates of unpaid child labor force rises to %46 while this rate rises to %45 in agricultural sector.

Graph 2: Child labor of Turkey by age groups and status in employment



Source: DİSK-AR: Türkiye'de Çocuk İşçiliği Gerçeği Raporu, 2015

Child labor problem as a derivation of poverty, is still the most elaborated matter not only for Turkey but also for the world. Although the ratio is considered as low in formal records, it is not credible because of existence shadow economy related with informal employment. Weekly working hours of children is quite high. It is 40 hour for 6-17 aged group while 45.8 hour for 15-17 aged group of children (weekly working hour is 28 for 6-14 aged group of children). Male and female children work 43.2 and 33 hour in weekly average, respectively (DİSK-AR, 2015).

Survey Study about Child Labor in Gulf Industrial District of Kocaeli *Scope of the Research and Selection of the Sample*

The aim of the paper is to investigate dynamics of child labor in Kocaeli which is a province of Marmara region, by using survey method. Kocaeli is near-by İstanbul which is one of the biggest trade center in Turkey so, this advantage enables Kocaeli to benefit from road transport. Moreover, Kocaeli is one of the biggest provinces and industrial heart of Turkey with its industrial production. Gebze, İzmit, Körfez and Dilovası are industry-intensive regions of Kocaeli. Because child labor in private sector was not determined exactly, sample of the study includes 55 children work in automotive manufacturing industry.

Statistical Analysis

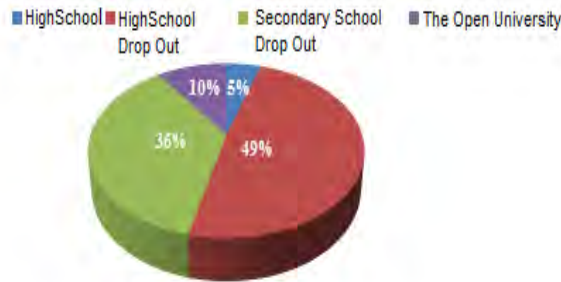
In the paper, descriptive statistics of continuous variables were pointed by mean and standard deviation value. Yates Correction Chi-Square and Pearson Chi-Square tests were applied in the cross tab analysis of this study. Normal distribution assumption of variables was tested by The Kolmogorov-Smirnov test (KS-test). Correlation of variables was examined by Spearman rank correlation method and it was graphed. In the comparison of average mean of two groups, Student's t-test was used. Empirical analysis was implemented by SPSS 21 statistical package program.

Findings and Survey Results

Demographic Results

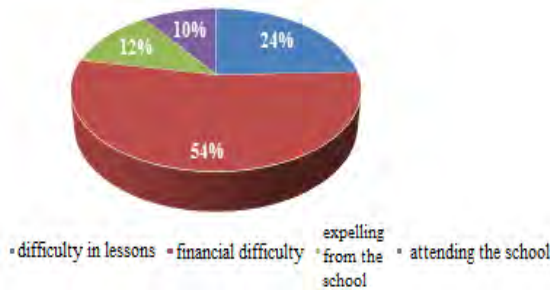
Graph 3 shows education levels of child labor who participate in the survey. The graph indicates that only %5 of child labor is high school student while %49, %36 of them is obliged to drop out of high school and secondary school, respectively.

Graph 3: Education Level of Child Labor



When the main reasons of drop out of school are examined, it is found that %54 of child labor dropped out of school because of financial difficulties and %24 of them drop out of school because of difficulty in lessons. These findings demonstrate that poverty stimulates children to participate in labor market (Graph 4).

Graph 4: The main reasons of leaving education



Graph 5 signs income distribution of child labor's families. Accordingly, %27 of them live with the range of 800-1000 TL income while only %15 of them earn more than 2000 TL, monthly.

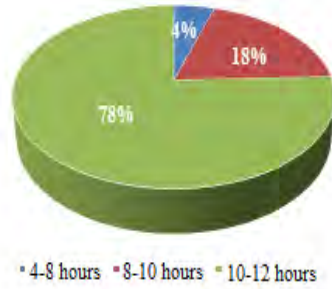
Graph 5: Income distribution of families



Working Conditions of Survey Participants

%78 of the child labor who took a part in the survey, work between 10-12 hour in a day, six days in a week while only %4 of them work between 4-8 hour in a day (Graph 6).

Graph 6: Weekly working hours of child labor



According to Ministry of Labor and Social Security, child labor has the right of taking a vacation 20 working days in a year. However, our survey results indicate that %45 of these children do not take leave and only %24 of them is off duty during a week (Graph 7).

Graph 7. Holiday duration rates of child labor



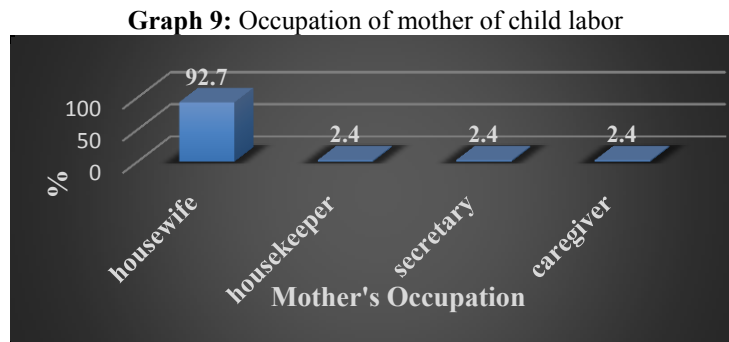
Graph 8: Expense details of child labor



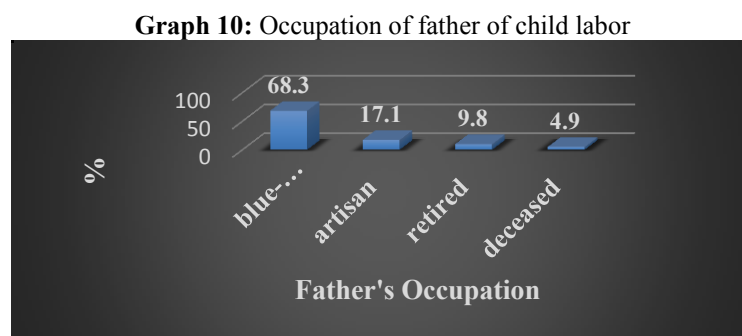
Our survey results specify that %39 of the surveyed child labor work overtime while %61 of them do not. %80 of the surveyed child labor work in holidays although it is forbidden. Besides, statistical findings of this paper sign that %24 of them work because of financial needs while %17 of them work on the purpose of gaining experience. Keeping working in future and being pleased with their works can be explained by child labor’s perception of gaining experience in their works. The question in the survey related with expenditure details of the surveyed child labor reveals that only %34 of them spend their money for their own needs.

According to our empirical findings, %90 of them pleased with their works and workplaces. The reasons of this result are unemployment anxiety (%23), parental pressure (%17), family problems (%20), wishes of stand on their own legs (%10), thinking about gaining experience and feeling hopeful about future (%30).

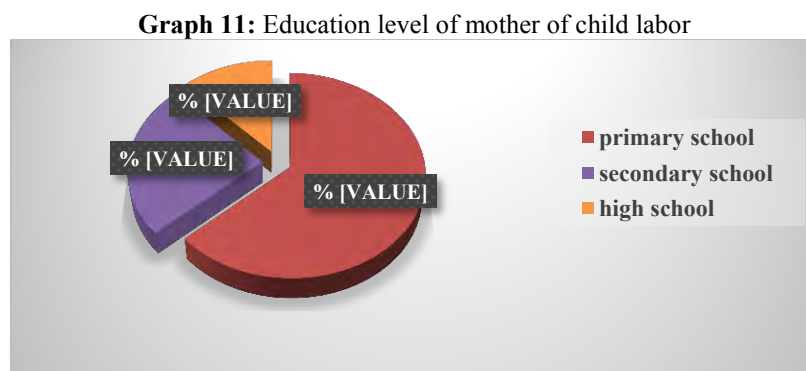
Graph 9 shows mother's occupation of the surveyed child labor. According to the estimations, %92.7 of them is housewife.



Graph 10 represents father's occupation of the surveyed child labor. Accordingly, %68.3 of them is blue-collar worker while %17.1 of them is artisan. Education levels of mothers and fathers of child labor reveal that %63.4 of the mothers and %43.9 of the fathers graduated from primary school.

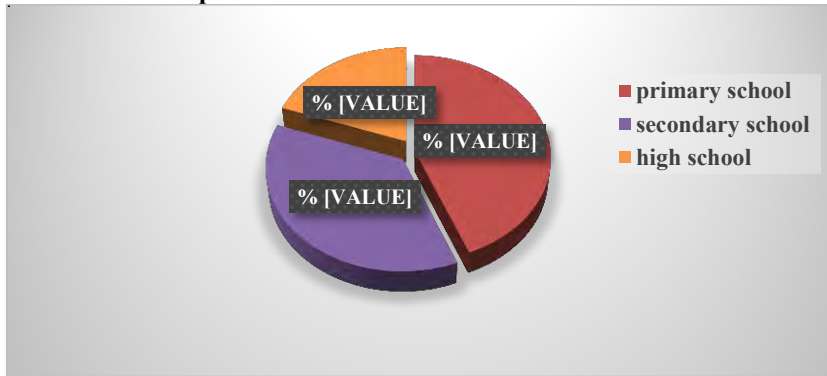


Graph 11 and 12 indicate that %24.4 of the mothers and %36.6 of the fathers graduated from secondary school.



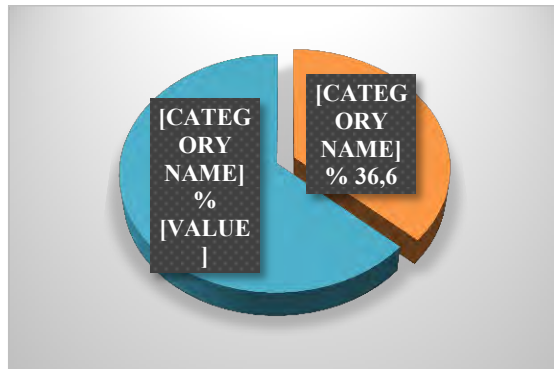
These findings suggest that education levels of parents and their choice of profession is highly correlated with each other. Almost all of the children's families live below the poverty line.

Graph 12: Education level of father of child labor

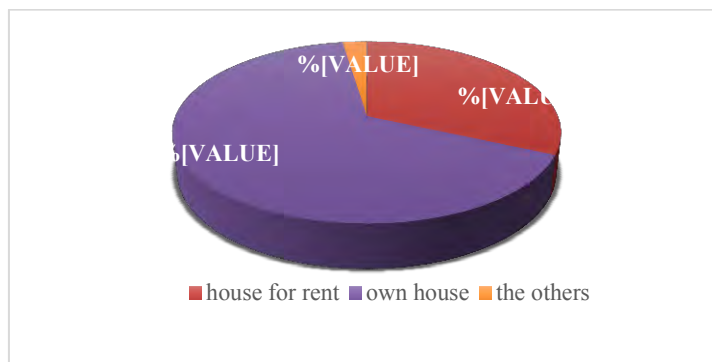


As seen in the Graph 13, %36.6 of the surveyed child labor is immigrant. %65.9 of them is homeowner while %31.7 of them live in a rented house (Graph 14).

Graph 13: Is child immigrant?



Graph 14: Is child residing in house for rent or his/her own home?



Daily working hours of %39 of the child labor is between 8-10 hours while %56.1 of them work between 10-12 hours in a day (Graph 15).

Graph 15: Daily working hours of children

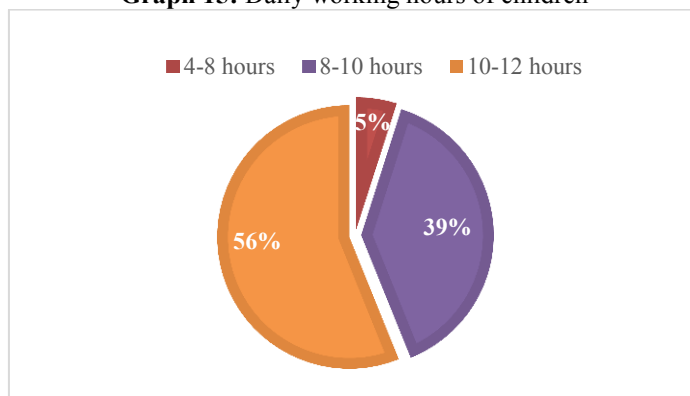


Table 2 indicates that 19 children drop out of high school and secondary school and choose their occupation voluntarily. 47 educated children of 55 select their job with their own claims 19 of whom high school drop out.

Table 2: Crosstab of education level and choice of profession of child labor

		Was the occupation chosen by considering the children’s own claim or not?		
		his/her own	anybody else	TOTAL
education level	high school drop out	19	5	24
	secondary school drop out	19	3	22
	high school attendance	3	0	3
	the open university	6	0	6
	TOTAL	47	8	55

As specified in Table 3, 47 of the surveyed child labor choose their job with their own desire and 34 of these children’s fathers are blue-collar workers, 5 of them have artisan fathers and %6 of them have retired fathers. On the other side, 8 of the 55 children make their job preference by regarding other people’s guidance and 5 of these children’s fathers are blue-collar workers and 3 of them have artisan fathers.

Table 3: Crosstab of father’s profession and occupation preference of child labor

		Was the occupation chosen with children’s own claim or was the occupation their fathers’ profession?		
		his/her own	anybody else	TOTAL
father profession	blue-collar worker	34	5	39
	artisan	5	3	8
	retired	6	0	6
	deceased	2	0	2
	TOTAL	47	8	55

Table 4 points out the relationship between working reasons of child labor and their father’s occupation. 34 of the surveyed children have to work because of financial needs and 25 of these children have blue-collar worker fathers. 21 of the surveyed children obliged to work for gaining experience and 14 of whose fathers are blue-collar workers while only 3 of them are retired. As mentioned above, these estimation findings confirm that poverty is driving factor in child labor.

Table 4: Crosstab of father's profession and working reasons of child labor

		The reasons of working		
		financial needs	for gaining experience	TOTAL
father profession	blue-collar worker	25	14	39
	artisan	5	3	8
	retired	3	3	6
	deceased	1	1	2
	TOTAL	34	21	55

Table 5 presents the relationship between working reasons of child labor and education levels of them. Accordingly, related with Table 4, 34 of the 55 surveyed children work for financial needs; 18 and 12 of them dropped out of high school and secondary school, respectively.

Table 5: Crosstab of education level and working reasons of child labor

		The reasons of working		
		financial needs	for gaining experience	TOTAL
education level	high school drop out	18	6	24
	secondary school drop out	12	10	22
	high school attendance	3	0	3
	the open university	1	5	6
	TOTAL	34	21	55

Table 6 suggests that 47 of the 55 surveyed children start to work with their own preference and 16 of them are migrant. 22 of the 55 surveyed children are migrant and 14 of them have to work because of financial needs. %34 of the children who work with their own claim is migrant and %75 of the children who work with guidance of someone else is migrant.

Table 6: Crosstab of migration and occupation preference of child labor

		Was the occupation chosen considering the childrens' own claim?		
		his/her own	anybody else	TOTAL
migration	yes	16	6	22
	no	31	2	33
	TOTAL	47	8	55

Conclusion

Besides economic factors, sociological and psychological determinants play active role on labor force participation of child labor. Some of the key drivers such as low wages of child labor, long duration of working hours without social security provide insight us about exploitation of child labor. One of the strategy proposed to settle this matter is state supervision. The other remarkable policy recommendation for resolving this issue is adult learning programs which aid children for developing their cognitive abilities. In many of the developed countries implement these types of strategies to overcome this problem for years because child labor is accepted as one of the main indicator of social welfare and sustainable development levels.

Child labor studies allege that labor market regulations, consciousness-raising policies especially about birth control for low-income families necessary for diminishing negative effects of this phenomenon to economies. Considering child

labor as a social and economic puzzle, government can exercise influence over it by developing new policies, providing social support to poor families, creating new employment opportunities which are key elements in poverty alleviation. Especially in emerging countries, many social institutions such as non-governmental organizations, international foundations closely interested in this issue by creating social responsibility projects, allowing the poor children and their families for building new capabilities for a job.

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6

The Impact of Internship on Youth Employment: Case University of Business and Technology, Saudi Arabia

*Farrash RABAB
Shata SAMEERA*

Abstract

This paper study the effect of internship program on female Youth employment, by analyzing the employers evaluation forms, for undergraduate students from University of business and technology in Saudi Arabia, Jeddah. While most previous studies examined the relation between internship and College performance and the impact of internships from students perspective to see how satisfied they are with their knowledge and skills in the real work environment, and if this improves their GPA level. This study investigate the impact of internship on intern's employment to find out the most important non-academic skills from employer's perspective. Interns in this study from two Colleges: College of Business and administration (CBA) and Jeddah College of advertising (JCA), with different majors and they conducted the internship in their last semester as a university requirement for graduation.

Keywords: Internship, Unemployment, Youth development, skills, Business

Introduction

Youth unemployment is among the most important problems most countries is facing. As youth population is increasing in Saudi Arabia, which is a leading country in the Middle East, this raises the risk toward unemployment among young people, Saudi workforce need development in the skills and knowledge required in the private sector labor market (Bagader, 2011).The private sector expected to offer good percentage of jobs to face youth unemployment. Recent date released by the General Authority of Statistics (GAS) shows that the percentage of unemployment rate for Saudi Female

between the age of (20-24) years old of 11.3% in the third quarter 2016, taking in consideration that most of them still studying to obtain a degree, Although the education development has been among the main concerns in Saudi Arabia for the past few decades, but one of the most important challenges is training youth and provide them the support to transit from classroom to real work environment, This support must include the skills required and the supervision from both the academic supervisors who represents the educational institutes and the employers. Alzu'be, 2012 in his study of the need of Saudi labor market mentioned the training as important way to develop Saudi graduates. One of training method is the internship. Internship or coop training which is a training program for undergraduate or postgraduate students usually for 3 to 6 months, paid or unpaid without formal contract, it could be full time or part time. It allows students to integrate classroom education with experience based learning (Jerice Hanson, 1984). (The European youth Forum, 2009) distinguished between two forms of Internships: 1-Internship as part of a formal education program. 2- Internship that takes place outside formal education (David Lain and others). So there are three parties involved in the internship, the students, Universities or educational institutes and the employers. Interns should improve their non-academic skills through the internships programs (Robert I Leman, 2013), For example: time management, problem solving, team working skills and other skills, the intern's personal traits also determine how likely students gain the benefits from the internship. On the other hand employers (firms) get better opportunities in recruitment having the chance to scan the intern's ability in certain job or position (Zhao, 2006), and the time to decide the suitable job for the trainee, and to get free help in the high seasons, or cheap labor (Coco, 2000).

Universities and educational institutions also getting the advantage of good reputation and connection with the society and companies ,getting the feedback about their students level and skills ,which enable them to improve the curriculums.

In Saudi Arabia some universities and colleges applying the internship or coop training as part of their curriculum, University of Business and technology is one of them despite that it is consider new University as it has been established in 2002 started as Business College and develop to University with different majors: Business, engineering and advertising and the female campus offers business and advertising only. This study includes only female students and investigated the effects of Internship on the opportunity to get job placement and the employers evaluation and the most important skills ,the results should help to improve the Internship program design and implication and hopefully to develop University programs. And on the other hand it should add insight to face Youth unemployment through well structured internships.

Literature Review:

In (1988) Taylor, defined Internships as "structured and career-relevant work experiences obtained by students prior to graduation from an academic program"(p. 393). The importance of internship has been noticed in many recent researches and in USA over 94% of Colleges of business offer some type of Internship to their students (Weible, 2009). Students with internship found more likely to persist to graduation versus those who did not participate in internship (Walker, 2011). Internship should improve college performance, students with internship, score better GPA than non-interns. (Knouse and others, 1999) . Researches also examined the effects of internship on increasing job opportunities in specific fields for example accounting major (Rigsby and others ,2013) studied the relation between participation in an accounting internship and job opportunities, the study found that employing firms placing students with internship in a better position than non-interns. Another study focused on employability skills of international accounting students from employer perspective found that the most skill developed among interns was team working while 40% of employers indicated that it is hard to determine if the intern ready to work place and to solve unusual problems (Jackling and Reccardo, 2015). Internship could be a method to curriculum innovation an example on accounting degree program (Bayerlein, 2015).

From students perspective most studies found that students place great value on Internship experience in Business education (Hergert, 2009), in 2011, Moghaddam found that students believe that business internship is an effective way to provide them with business education and to prepare them for their future job. Being ready for the work place environment leading to discuss the skills required or the employability skills ,A study about the skills required for a success career in agri-marketing and the important of internship experience (William,2003) found the the most important employability skills are communication skills and Ethics. In Arab world we found a study in Yemen evaluated a Youth internship program and indicated that students with internship had double work experience and 73% increase income and better employment outcomes (Mckenzie and others, 2016).In UAE University a study examined the impact of the Internship of accounting students on their academic performance and the results found that internship students perform better in the accounting classes than those without internship. (Ebeid, 2004)

Also Internship and training programs has been a subject of researches in Europe and other countries for example in Greek an empirical study examined the student point of view about internship and what skills they gained from internship and what is the benefits of their experience (Mihail,2006).

In Malaysia (Maelah and others, 2014) studied the benefits students may gain from internship from perspective of students and found that both University and employers, believed that students benefits from internship and gain the skills required for work place. Skills gained from internship is an important factor to study and to develop, Companies started to focus on the internship program and provide better opportunities for students with internship such as better started salary and full time jobs (Gault,2010). Recent study investigated the different between paid and unpaid internship and how it effects job satisfaction and career development (Rogers, 2013).

Canadian HR reporter (Shelly, 2016) mentioned that preparing youth to success in their careers require training and that internships provide and offer youth an opportunity to gain real work experience and strengthen their professional development, which will increase their future job opportunities. For example (Nestle) increased internship recently by 25 percent.

After reviewing the previous studied, the benefits and criteria of internship should be considered in preparing internship programs, if educational institute providing interns with high performance level, it will gain reputation and connection with the companies in the labor market and may also get financial support. And in order to measure the success of these programs we need the employer's feedback.

Questions raises such as:

- How internship impact the first job opportunity for female students?
- Which skills most important for employers?

Communication skills, Computer skills, Character traits, measures the satisfaction of the employers and academic supervisors and usually included in evaluations instrument (Verney and others, 2009).

- Are they prepared enter to the job market after the internship experience?

This paper seeks to answer these questions through analyzing the employer's evaluation and from interviews with career centers supervisors.

Methodology:

The subject in this study consisted of 120 evaluation forms for Female students from the University of Business and Technology in Saudi Arabia. From 6 departments: Marketing, Accounting, Finance, supply chain, Human Resources and Advertising. Those students completed the Internship program in 2016 as part of the graduation requirements, which is considered a 6 credits course per semester. The program designed to offers the students the opportunity to

apply and test their academic knowledge and education, acquire skills and experience. It is considered an academic degree requirement for all majors. Duration of the Internship is 16 weeks. 12 weeks field experience and 4 weeks report writing and research presentation.

During the 16 weeks academic supervisor assigned to each student to follow on weekly base, On the other hand business supervisor should follow the interns and evaluate them. Also career center supervisor arrange for the students the training place and continue observing the Internship program. By the end of the Internship business supervisor evaluate the student's performance by filling evaluation form consisting of eight performance factors and the evaluation total grade from 120.

The evaluation also contains assessment concentrated on the Knowledge and the professional skills of the intern. The three parts of the evaluation use a scale to rate the intern ranges from Excellent to weak and also including not at all .The values correspond to the ratings used in this study as follow: 1-Excellent, 2- Fair,3-weak,4-not at all. So there is three categories to analyze:

- 1- The Knowledge category included five questions about: the basic concepts, ability to apply knowledge, IT skills, ability to apply IT skills and ethical aspect.
- 2- The performance included eight questions about: the attendance, interpersonal skills, knowledge related to the major, professional skills, achievement, compliance with instruction, motivation, and English communication skills.
- 3- The professional skills category included 12 questions about: team working, interpersonal skills, presentation, write communication, ethical responsibility, problem solving, creativity, English language, business etiquette, commitment, motivation and accuracy. In their study (Verny&others,2009) used similar evaluation instrument, Their sample includes employers, Alumni and faculty.

In addition to the above categories, there is a question to employers: Do they think UBT students (interns) ready to work in different area related to their major? and the answer scale: 1- yes, 2- No, 3- Maybe, 4-other, In analyzing the evaluation the answer to this question used as a measure to indicate the employers satisfaction which may lead to future job opportunity and to investigate which skills are most important from the employers perspective. However we only considered YES or NO, to get more accurate results.

The question of the study is which skills are most important to obtain employer satisfactions. The total of the complete evaluations was 80 from the 120.This lead to Two Hypothesis:

- H0:** there is no relation between intern's skills and the employer's satisfaction (null).
- H1:** there is a positive and significant relation between skills level included in the three parts (Knowledge, professional skills and achievement) and between the employers opinion, That is mean if these skills increase the employers satisfaction will increase and they will consider her ready to work.

In order to test these hypothesis t- test applied using SPSS statistic data program.

Applying the t-test for each category in the evaluation forms, Started by the first category the Knowledge, Most significant factors: knowledge of the basic concepts and terminologies, perform tasks and analyze situation ability based to the education knowledge, Ethical aspects related to profession, Thus there is significant relation between these aspects and the employer satisfaction, another non-parametric test used to support the findings and shows the same results. So we can reject the Null hypothesis. (Table1.2)

From Table 1.1 below the most significant skill is the ability to perform tasks and analyze situation.

Table 1.1 Knowledge**Paired Samples Correlations**

		N	Correlation	Sig.
Pair 1	basic concepts,terminologies,strategies & do you think CBA students prepared to job	80	.302	.006
Pair 2	perform tasks and analyze situation based to the education knowledge & do you think CBA students prepared to job	80	.335	.002
Pair 3	IT & do you think CBA students prepared to job	80	.203	.072
Pair 4	apply IT skills & do you think CBA students prepared to job	80	.227	.043
Pair 5	ethical aspects related to profession & do you think CBA students prepared to job	80	.262	.019

Table 1.2

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of basic concepts, terminologies, strategies is the same across categories of do you think CBA students prepared to job.	Independent-Samples Kruskal-Wallis Test	.029	Reject the null hypothesis.
2	The distribution of perform tasks and analyze situation based to the education knowledge is the same across categories of do you think CBA students prepared to job.	Independent-Samples Kruskal-Wallis Test	.030	Reject the null hypothesis.
3	The distribution of IT is the same across categories of do you think CBA students prepared to job.	Independent-Samples Kruskal-Wallis Test	.160	Retain the null hypothesis.
4	The distribution of apply IT skills is the same across categories of do you think CBA students prepared to job.	Independent-Samples Kruskal-Wallis Test	.187	Retain the null hypothesis.
5	The distribution of ethical aspects related to profession is the same across categories of do you think CBA students prepared to job.	Independent-Samples Kruskal-Wallis Test	.023	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

In the second category of the evaluation (the professional skills), the most significant skills found: team work, the problem solving, the interpersonal skills, presentation skills, creativity, the written communication, commitment and accuracy.as shown in Table.2.1 and Table 2.2.

This results compatible with previous studies which considered the communication skill and problem solving among the most important non-academic skills required in the job market. (Lerman, 2013). And that Internship improve personal skills (Knouse, 1999).

The career center supervisor also mentioned that employers looking for skills like presentation skills and creativity and highly appreciate interns who have these skills. For example that advertising companies looking for creative and new ideas and got the benefit of the fresh graduate interns as they have the opportunity and the intention to prove their ability to gain the job.

Table 2.1. Professional Skills

		Paired Samples Correlations		
		N	Correlation	Sig.
Pair 1	team work & do you think CBA students prepared to job	80	.493	.000
Pair 2	interpersonal skills & do you think CBA students prepared to job	80	.384	.000
Pair 3	presentation and speaking skills & do you think CBA students prepared to job	80	.417	.000
Pair 4	written communication & do you think CBA students prepared to job	80	.355	.001
Pair 5	ethical responsibility & do you think CBA students prepared to job	80	.209	.063
Pair 6	problem solving and analytical skills & do you think CBA students prepared to job	80	.366	.001
Pair 7	creativity & do you think CBA students prepared to job	80	.376	.001
Pair 8	English language & do you think CBA students prepared to job	80	.100	.378
Pair 9	business etiquette & do you think CBA students prepared to job	80	.272	.015
Pair 10	commitment & do you think CBA students prepared to job	80	.292	.009
Pair 11	motivation & do you think CBA students prepared to job	80	.272	.015
Pair 12	accuracy and precision in work & do you think CBA students prepared to job	80	.369	.001

Table 2.2

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of team work is the same across categories of do you think CBA students prepared to job.	Independent-Samples Kruskal-Wallis Test	.000	Reject the null hypothesis.
2	The distribution of interpersonal skills is the same across categories of do you think CBA students prepared to job.	Independent-Samples Kruskal-Wallis Test	.003	Reject the null hypothesis.
3	The distribution of presentation and speaking skills is the same across categories of do you think CBA students prepared to job.	Independent-Samples Kruskal-Wallis Test	.006	Reject the null hypothesis.
4	The distribution of written communication is the same across categories of do you think CBA students prepared to job.	Independent-Samples Kruskal-Wallis Test	.008	Reject the null hypothesis.
5	The distribution of ethical responsibility is the same across categories of do you think CBA students prepared to job.	Independent-Samples Kruskal-Wallis Test	.007	Reject the null hypothesis.
6	The distribution of problem solving and analytical skills is the same across categories of do you think CBA students prepared to job.	Independent-Samples Kruskal-Wallis Test	.000	Reject the null hypothesis.
7	The distribution of creativity is the same across categories of do you think CBA students prepared to job.	Independent-Samples Kruskal-Wallis Test	.026	Reject the null hypothesis.
8	The distribution of english language is the same across categories of do you think CBA students prepared to job.	Independent-Samples Kruskal-Wallis Test	.012	Reject the null hypothesis.
9	The distribution of busniess etiquette is the same across categories of do you think CBA students prepared to job.	Independent-Samples Kruskal-Wallis Test	.052	Retain the null hypothesis.
10	The distribution of commitment is the same across categories of do you think CBA students prepared to job.	Independent-Samples Kruskal-Wallis Test	.070	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

The third part is the achievement results shows the most significant variables are the Compliance with the instructions, achievement and the English language skills. Table 3.1 and 3.2. On the other hand the career center supervisors believes that English language skills is very important to employers in the Saudi labor market.

Table3.1**Paired Samples Correlations**

		N	Correlation	Sig.
Pair 1	attendance & do you think CBA students prepared to job	80	.262	.019
Pair 2	interpersonal skills & do you think CBA students prepared to job	80	.136	.230
Pair 3	knowledge of the subject & do you think CBA students prepared to job	80	.273	.014
Pair 4	professional skills & do you think CBA students prepared to job	80	.203	.072
Pair 5	achievements level & do you think CBA students prepared to job	80	.263	.018
Pair 6	compliance with instruction & do you think CBA students prepared to job	80	.287	.010
Pair 7	motivation and taking the initiative & do you think CBA students prepared to job	80	.287	.010
Pair 8	english skills & do you think CBA students prepared to job	80	.149	.188

Table 3.2

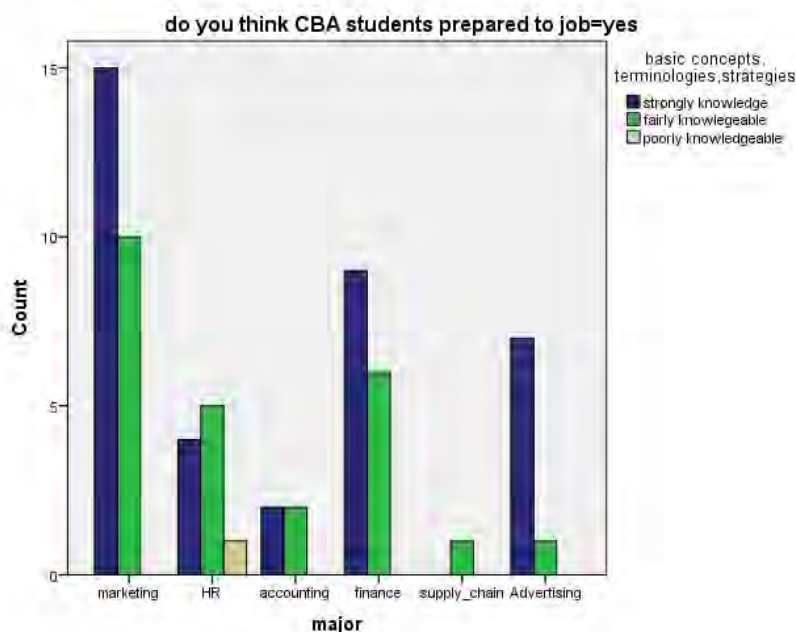
Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of attendance is the same across categories of do you think CBA students prepared to job.	Independent-Samples Kruskal-Wallis Test	.258	Retain the null hypothesis.
2	The distribution of interpersonal skills is the same across categories of do you think CBA students prepared to job.	Independent-Samples Kruskal-Wallis Test	.230	Retain the null hypothesis.
3	The distribution of knowledge of the subject is the same across categories of do you think CBA students prepared to job.	Independent-Samples Kruskal-Wallis Test	.042	Reject the null hypothesis.
4	The distribution of professional skills is the same across categories of do you think CBA students prepared to job.	Independent-Samples Kruskal-Wallis Test	.139	Retain the null hypothesis.
5	The distribution of achievements level is the same across categories of do you think CBA students prepared to job.	Independent-Samples Kruskal-Wallis Test	.035	Reject the null hypothesis.
6	The distribution of compliance with instruction is the same across categories of do you think CBA students prepared to job.	Independent-Samples Kruskal-Wallis Test	.026	Reject the null hypothesis.
7	The distribution of motivation and taking the initiative is the same across categories of do you think CBA students prepared to job.	Independent-Samples Kruskal-Wallis Test	.011	Reject the null hypothesis.
8	The distribution of english skills is the same across categories of do you think CBA students prepared to job.	Independent-Samples Kruskal-Wallis Test	.000	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

To investigate the relation between the major and the employer satisfaction a correlation test (Figure 1), used between the major and the basic concepts and knowledge as it is the most item that reflect the outcome for each program ,results shows that the interns from the marketing department got the highest level ,As employers think that they strongly have the basic concepts and terminologies related to the field ,in the second high score the Finance department and then the Advertising major ,However interns from Advertising College has the highest employment rate after their graduation according to the career center records for Alumni spring 2016,Out of 18 graduate students 15 got job offer and accepted the job.

Figure 1



The descriptive statistics shows that 70% from the employers think that Interns in this study are ready to work in the related job to their majors. And from the comments of the employers, most indicates that they found the interns hard workers and ready to learn. They indicate that with a longer period of training they will achieve the improvement required to fit the job.

On the other hand, most indicate that the sensitivity when doing mistakes or facing unusual problems may be the weakest points among interns.

Conclusion:

In summary, the present paper is an attempt to provide insights regarding the internship program and the benefit of this training method to improve the skills required for the real work environment from the perspective of the employers.

As the employer's satisfaction means more job opportunity, knowing which skills they are looking for in the interns will help to develop the internship programs to meet the market place requirements, as noticed from the interpersonal skills and the ability to analyze and solve the problems results in better evaluation points. The universities should consider improving the courses and provide more simulation exercises to fill this gap. Also, improving the internship program design as the length of the program and the evaluation forms to understand better the employers' need. The English language and the written communication could be easily improved to give students more chances in the career jobs. The employers' comments in the open end questions are very important to understand the need in different industries. For example, some employers mentioned the accounting software and other software used in the work place as they noticed that interns do not have enough knowledge about it.

Limitation and Future Research:

The limitation of the study was the number of evaluations available in the career center, increasing the size of the subject, may lead to different results. It included only female students. Also, the authors tried to find the students' feedback, but there is no form to study the intern's satisfaction. Comparing Interns' feedback and employer's feedback

is a good area for Future research and comparing the male and female interns in Saudi Arabia to see the differences and the labor market needs.

Future area of studies could be the differences in the evaluations in different majors to see the quality of each department.

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7

Employment Profile of Business School Graduates: A Study at Ordu University

Züleyha YILMAZ

Abstract

Faculties of economics and administrative sciences are the most crowded faculties of almost all universities with the number of students. Their graduated students are employed in many areas, from the public sector to the private sector. The objectives of this study are to collect information about the job fields of graduates of economics and administrative sciences, their public or private sector preferences and postgraduate employment processes. As a result of the Chi-Square Analysis of the data obtained through the questionnaire, the gender of the graduates' affects their grade point averages, finding jobs in the first year after graduation, and satisfaction levels in their professions. In addition, the ages and departments of the graduates also affect the ability of graduates to find a job during the first year after graduation and their thoughts on education during their bachelor's degree.

Keywords: Faculties of Economics and Administrative Sciences Graduates, Employment, Employment Profile, Graduated Students, Ordu University.

Introduction

Unemployment is accepted as one of the most important economic and social problems not only in Turkey but also in almost every country in the world. Unemployment can arise from lack of employment area or economic development in the regions. While the problem of unemployment in developed countries has been resolved much earlier, undeveloped and developing countries are recently facing challenges with the increasing problem of unemployment because of the effects of technology and globalization. Aydemir (2013: 116) defined unemployment as a situation in which unemployment arises out of the will of the workforce for several reasons over several days, weeks or months. The youth unemployment rate by the OECD is defined as the percentage of young people in the unemployed population. Besides, they should be between 15-24 years old, available for work and actively seeking job for the last four weeks (<https://data.oecd.org>).

The problem of unemployment in Turkey started with the migrations of the villagers towards the cities, especially in the 1950s. The unemployment rate, which increased in the 1980s, rapidly continued to increase in the 1990s and became a

very serious problem following the period 2001 crisis (Durak and Kaya, 2014: 55). When Turkey and other countries were compared in terms of the unemployment rates as of 2009, it was seen that Turkey is one of the countries, which has the highest rates in the world in terms of unemployment rates and young and educated unemployment rates (Mütevellioglu, 2010: 208). The employment policies and the ability to efficient use of human resources considered a sign of the development level of that country. It is wrong to see unemployment only as an economic problem since it causes social problems in a country. Managing the human resources in a correct and efficient manner contributes to the development of a country both economically and socially.

The main reasons for unemployment in Turkey can be listed as demographic factors of the population, economic crises, stagnation, political and economic instability, rapid growth in population, untrained labour force, instability in educational policies, scarcity in investments, the massive migration from rural to urban because of the many economic and social factors in the rural area, and the gradual decline in the share of the agricultural sector in the Gross Domestic Product (GDP), although employment in it does not decline at the same time, etc. (Durak and Kaya, 2014: 56, Taş and Bilen, 2014: 55, TurkStat). Indicators such as unemployment, employment, and labor force rates in Turkey and in the world are statistically analyzed according to many factors such as age, educational status, region, employment area, etc. In this research, especially the issue of youth unemployment has been investigated. In the most general sense, the concept of the young is defined as the period between the ages of 15 and 24, and the transition of human life from childhood to adulthood (Murat and Şahin, 2011: 96).

Given that the increase in education leads to a decrease in income inequality (Akça and Ela, 2012: 252), individuals' increasing demand for higher education is one of the rational behaviours for reducing both unemployment and youth unemployment. In this sense, higher education is expected to prepare graduates for the business world, to equip them for the demands of the labour market, to increase their employability in employers' eyes (Hodges and Burchell, 2003: 16), and to increase educational and employment opportunities (Wilton, 2011: 85). Therefore, universities have a great responsibility to provide high quality education, to prepare compatible curriculums with labour market, to offer internship opportunities for students during their higher education period, etc. On the other hand, in despite of both employers' concern about business graduates to meet their demands and graduates' concern about finding a proper job, there are a few researches addressing employability of undergraduates in business (Azevedo, 2012: 22).

Researches about employment of higher education graduates are very necessary to revise higher education curriculums according to demands of labour market's requirements for current and future, to see what kind of jobs are available for graduates, to understand the relation between higher education and unemployment/young unemployment rates, to evaluate quality of education given in universities, etc. Thus, it can be evaluated that which programmes in higher education should be stay opened or closed for next academic years, decided the numbers of students in that programmes, revised curriculums or not, etc..

In this research, firstly unemployment problem in Turkey was discussed, then various statistics about both current and graduated students of Ordu University Faculty of Economics and Administrative Sciences were given. Finally, the employment profiles of graduates were evaluated by a questionnaire study. It is believed that the results of this study will be useful for planning the post graduation periods of the students who are currently registered to the programmes in the Faculty of Economics and Administrative Sciences, for providing guidance to the university student candidates who are considering to register these programmes, for evaluating the efficiency of curriculums by authorities in universities, and for making higher education policies by regulators. The necessity of examining the relationship between higher education and employment is quite obvious since the choice of university or programme implies usually the choice of profession, and the choice of profession affects the possibility of employment in this profession.

Unemployment Issue in Turkey

Unemployment issue in Turkey became one of the major problems especially after 1980s. For this reason, the labor market and unemployment rates were kept track with monthly statistics. Statistics on employment in 1988 and before were calculated four different forms by population statistics, labor force statistics, State Planning Organization statistics, and Employment Agency statistics. After 1988, The Turkish Statistical Institute (TurkStat) has calculated these

statistics in accordance with the norms of the International Labor Organization (ILO). The most obvious difference between the two forms of calculation is that the passive unemployed is calculated within the group of "non-labor force" in the calculations after 1988 while it was calculated within the unemployed group in 1988 and before (Durak and Kaya, 2014: 56). Table 1 shows employed numbers, unemployed numbers and unemployment rate by gender for years.

Table 1: Unemployment Rate by Years in Turkey

Year	Employed Numbers (Thousand)	Unemployed Numbers (Thousand)	Unemployment Rate	Year	Employed Numbers (Thousand)	Unemployed Numbers (Thousand)	Unemployment Rate (%)
1988	-	-	8.4	2003	23818	2493	10.5
1989	-	-	8.6	2004	22016	2385	10.3
1990	20150	1611	8.0	2005	22454	2388	10.3
1991	21010	1722	8.2	2006	22751	2328	9.9
1992	21264	1805	8.5	2007	23114	2377	9.9
1993	20314	1814	8.9	2008	23805	2611	11.0
1994	21876	1870	8.5	2009	24748	3471	14.0
1995	22286	1700	7.6	2010	25641	3046	11.9
1996	22697	1502	6.6	2011	26725	2615	9.8
1997	22755	1551	6.8	2012	24821	2518	9.2
1998	23385	1606	6.9	2013	25524	2747	8.8
1999	23878	1829	7.7	2014	25933	2853	9.9
2000	23078	1497	6.5	2015	26621	3057	10.3
2001	23491	1967	8.4	2016	27205	3330	10.9
2002	23818	2464	10.3				

Resource: TurkStat (Accessed on 25.03.2017)

As seen in Table 1, unemployment rate has increased after 2002, decreased at the lowest point in 2013 in the decade, and reached to the highest point (10.9) in 2016. Unemployment rates for some countries are presented in Table 2 to make better comparison between countries.

Table 2: Youth Unemployment Rates by Some Countries (15-24 Years-Old) (%)

Country	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Japan	8.6	8.0	7.7	7.3	9.2	9.3	8.3	8.1	6.8	6.2	5.6
Germany	15.6	13.8	11.9	10.6	11.3	9.8	8.5	8.1	7.8	7.8	7.3
USA	11.3	10.5	10.5	12.8	17.6	18.4	17.3	16.2	15.5	13.4	11.6
OECD –	13.3	12.5	11.9	12.7	16.5	16.7	16.3	16.3	16.2	15.1	13.9
UK	12.7	13.9	14.3	15.0	19.1	19.9	21.3	21.2	20.6	16.9	14.6
Turkey	-	16.5	17.3	18.5	22.9	19.8	16.7	15.7	16.9	17.8	18.5
European Union (28)	18.6	17.3	15.5	15.6	19.9	21.0	21.7	23.2	23.6	22.2	20.4
Euro Area (19)	17.9	16.6	15.0	15.5	20.0	20.9	21.2	23.4	24.2	23.8	22.4

Resource: <https://data.oecd.org>. (Accessed on 25.03.2017)

Table 2 shows that the unemployment rate in Turkey in 2015 is lower than the same rate in European Union and Euro Area in 2015 while it is the highest one in 2009 among the all countries and unions at the table. The reason of this situation is the rapid increase in the unemployment rate of Europe because of crisis in some countries in the European Union.

The relationship between the unemployment rate and the level of education has been specifically investigated since it is closely related to the objective of this research. According to the table 3 prepared by using TurkStat, the unemployment rate in total is quite high among the higher educated people with (12%), while it is almost half for the illiterate (5.7%) in 2016. When statistics are evaluated by gender in Table 2, it is observed that the unemployment rate for the higher educated male group is 8.8 %, and it is almost half of the rate for the higher educated female group (16.9%). In addition, while the unemployment rate among the high school level educated males is 10.5%, this rate is 21.1% for females. These results show that there is an inequality in female's unemployment in terms of the unemployment rates between male and female.

Table 3: Educational Unemployment Rates by Gender in Turkey (%)

Year	TOTAL						MALE						FEMALE					
	illiterate	Less than high School	High School	Vocational High School	Higher Education	illiterate	Less than high School	High School	Vocational High School	Higher Education	illiterate	Less than high School	High School	Vocational High School	Higher Education			
2000	3.	5.7	10.6	-	7.0	5.6	6.1	8.9	-	5.9	2.	4.4	16.	-	9.1			
2001	3.	7.8	13.3	-	7.8	6.7	8.3	11.4	-	6.7	1.	6.1	20.	-	9.9			
2002	4.	9.6	14.7	-	11.	8.9	10.	12.0	-	9.2	2.	6.6	24.	-	14.			
2003	7.	10.	12.8	-	11.	11.	11.	10.7	-	8.9	5.	7.6	20.	-	15.			
2004	4.	9.7	14.7	16.0	12.	8.9	10.	12.3	13.	9.8	1.	7.3	22.	26.	17.			
2005	4.	10.	13.9	13.6	10.	10.	10.	11.1	11.	7.9	2.	8.1	23.	23.	14.			
2006	4.	9.8	14.0	11.8	9.6	11.	10.	11.1	9.4	7.7	1.	8.6	23.	20.	13.			
2007	5.	9.8	13.9	12.0	9.7	12.	10.	11.0	9.7	7.4	1.	7.8	22.	20.	13.			
2008	6.	10.	14.1	11.7	10.	14.	11.	11.8	9.2	8.1	2.	8.9	20.	20.	14.			
2009	8.	13.	18.0	15.6	12.	17.	14.	15.1	12.	9.6	3.	11.	26.	25.	16.			
2010	6.	11.	15.9	13.2	11.	13.	12.	12.6	10.	8.0	2.	10.	24.	22.	15.			
2011	4.	9.3	12.6	11.0	10.	10.	9.6	9.5	8.4	7.6	2.	8.5	21.	20.	15.			
2012	3.	8.7	11.8	10.1	10.	9.9	8.9	9.2	7.5	7.2	1.	8.1	19.	19.	14.			
2013	4.	9.3	12.0	10.5	10.	11.	9.3	9.0	7.5	7.4	2.	9.4	20.	20.	15.			
2014	6.	9.4	11.9	10.6	10.	13.	9.5	9.3	8.0	7.6	3.	9.3	19.	19.	15.			
2015	5.	10.	12.4	10.2	11.	11.	10.	9.5	7.7	7.6	2.	10.	20.	18.	16.			
2016	5.	10.	13.4	11.6	12.	11.	9.8	10.5	8.7	8.8	3.	11.	21.	20.	16.			

Resource: TurkStat (Accessed on 28.03.2017)

Overall, table 3 shows that for almost all levels of education, males are less likely suffer from unemployment than females. In order to better understanding of the inequality between male and female in terms of unemployment rates, the income levels of male and female are investigated whether there is another inequality in this subject. Table 4 shows the average annual gross earnings of male and female employees by educational status.

Table 4: Annual Average Gross Earnings by Gender and Educational Status in Turkey (TL)

	Year	Less than Primary	Primary and Junior Schools	High School	Vocational High	Higher Education
Male	2006	9952	9999	12042	17312	29258
	2010	13526	13505	16907	22195	37878
	2014	19417	19081	21758	29561	55633
Female	2006	8159	8064	11182	11990	23899
	2010	11065	10949	15049	17109	31437
	2014	15748	15981	19760	22842	45483
Difference	2006	1793	1935	860	5322	5360
	2010	2460	2556	1858	5085	6442
	2014	3669	3100	1999	6719	10150

Resource: TurkStat (Accessed on 28.03.2017)

As seen in table 4, the difference between the annual average gross earnings of male and female employers is quite high in every year. The annual average gross earning between the two groups is even higher for the higher educated employers (TL 10150). Beside, this difference is seen to increase even more in the transition from 2006 to 2014. As a result, the inequality seen in terms of finding jobs between men and women also shows its presence in terms of annual average gross earnings of them.

Literature Review

In the literature, it is found that many issues such as unemployment, young unemployment, employment of business schools' graduates, etc. have been studied in both international and national area. However, regarding the subject of this study, studies in which employment and education were studied together were examined in the literature review part of the study. A list of some of the international and national studies reviewed is presented below respectively.

In one of the international studies done by Nabi (2003), it is found that, instead of the number of graduates employed, quality of employment has become increasingly important for higher education institutions according to the result of a survey with 203 graduates in the UK. In another study, as a result of an in-depth interview with 24 graduates in a UK city university, Moreau and Leathwood (2006) deduced that graduates' social status, ethnic identity, gender, age, disability and higher education participation had an impact on employment opportunities.

In a similar study, Zhiwen (2008) investigated the employment of business students in China in terms of labor market demands and globalization. The author reported that different economic and social actors such as state, industry representatives, entrepreneurs, employees, trade unions and students should be in contact to regulate a proper employment system. Accordingly, in his study of Wilton (2008) in the United Kingdom, examined the personal qualifications and employment in managerial positions of 7814 business graduates of 1999 in the UK. As a result of the study, Wilton (2008) underlined that the undergraduate programs should be designed to improve students' skills such as problem solving, written and oral communication, foreign language, computer use, team work, etc. Winstead et al. (2009) discussed the results of the Leadership and Professional Development Program developed in a course curriculum at South Carolina State University to improve the managerial skills of business students. In another study, Jackson (2013) reviewed the employment of business graduates in terms of work skills of the graduates and assessed their availability for the labor market.

In some studies in the international literature, this issue has been examined from the perspective of employers and their expectations from the graduate school. One of this type of studies is done by Hodges and Burchell (2003) in New Zealand. The authors evaluated 154 employers' thoughts about how business graduates should prepare for labour market. Even the relatively low response rate, their survey results show that employers attach importance to graduates' soft skills and empathy ability to deal with customer and client needs effectively. In a similar study, Singh and Singh (2008) aimed to identify the perception of employers concerning the employability skills needed in the labour market and perception of graduates concerning their current employability skills. To be able to measure perceptions of both employers and graduates, they conducted two different sets of questionnaires with 211 employers and 257 graduates. As a results of the study, the authors indicated that employers usually prefer to hire graduates from public universities.

Along those lines, Andrews and Higson (2008) examined perspectives of graduates and employers about graduate employability in four European countries (UK, Austria, Slovenia and Romania). With their study, they try to identify the key individual and business related skills required by employers of business graduates. In addition, they aim to discover whether business programmes are meeting the needs of the labour market. 30 Business graduates and 20 employers were interviewed across all four countries by using semi-structured interview techniques. As a result of their study, they defined key soft skills to graduate employability as professionalism, reliability, the ability to cope with uncertainty, to work under pressure, and to plan and think strategically, the capability to communicate and interact with others, good written and verbal communication skills, information and Communication Technology skills, creativity and self-confidence, good self-management and time-management skills, a willingness to learn and accept responsibility. Similarly, Wilton (2011) had interviewed with 1060 business and management graduates and found that written communication, ability to work in teams, cerativity, entrepreneurial skills, etc. were some of the employability skills which graduates should be able to find a job.

In the same manner, Azevedo (2012) investigates a conceptual framework and industry-driven approach to identify required competencies of business graduates in Austria, the UK, Slovenia and Romania. As a study method, 39 semi-structured qualitative interviews with employers and a survey with 900 business graduates were conducted in four European countries. As a results of the study, it was suggested that the eight key competencies were influencing and persuading, teamwork and relationship building, being critical and analytical, self and time management, leadership, the ability to see the bigger picture, presentation, and communication to be employable. Jackson and et al. (2013) list similar competencies for employability in business undergraduates in Australia. They indicate key competencies as critical thinking, working with others, self-discipline, leadership, work ethic, etc.

Murat and Şahin (2011) evaluated the Turkish education system in terms of youth unemployment and discussed various statistics related to youth unemployment as an example of studies in the national literature. Likewise, Akça and Ela (2012) examined the relationship between education and income distribution in Turkey in their study. They found that

while education investments in 1995 increased rapidly in Turkey, the quality of education did not increase at the same rate, but increased education level was positively affected the income growth. In a similar study, Aydemir (2013) examined and discussed labor and unemployment statistics in Turkey. In another study, Taş and Bilen (2014) indicated the problem of youth unemployment in both European Union and Turkey, and made some suggestions for solutions of these problems. Kelleci and Türk (2016) compared Turkey and OECD countries in terms of youth unemployment and suggested that higher education should be regulated according to the work-based education system.

Mütevellioğlu et al (2010) conducted a survey with 815 students from different programmes in Akdeniz University to gauge perceptions of students about unemployment and their future plans. As a result of the study, they found that most of the students wanted to work in jobs related to their major, and did not believe that the State support them against unemployment and social risks even though it is state's duty. In another study, Özsoy and Sürmeli (2012) conducted a survey with 342 students graduated from various programmes at Eskişehir Anadolu University between 1999 and 2009. In addition, the authors conducted a cost benefit analysis of the graduates' education. As a result of the study, they determined that faculties with the highest return on education investment were respectively; Law schools, faculties of communication, faculties of economics and administrative sciences, faculties of education and faculties of arts and sciences. Demirer (2016) conducted semi-structured interviews with 24 graduates of Kocaeli University Faculty of Economics and Administrative Sciences in 2014 to measure their perceptions about the labor market in Turkey. It was suggested that some introduction courses such as introduction of higher education might be added the undergraduate curriculums to prepare students both the university and the labour market.

In addition, it was seen that there are many studies about students' career selection process in the literature. In one of these studies, Kuştepe and Gülcan (2002) conducted a survey with 419 students in Departments of Business Administration, Economics, International Relations and Tourism Management in Dokuz Eylül University, Faculty of Business Administration in the 2001-2002 academic year. As a result of the study, the authors found that most of the students consciously preferred their programmes and wanted to work abroad after graduation. In a similar study, Bahar (2002) conducted a survey with 2562 students in the faculties of education, faculties of medicine, and faculties of economics and administrative sciences of 10 different universities. As a result of the chi-square analysis, it was found that there was a meaningful relationship between their career selection and the place of stay during their university period, educational status and occupations of their parents, number of siblings, monthly income and place of residence for both their parents. In addition, the author indicated that the socio-economic level of the faculties of education students was lower than the socio-economic level of the faculties of medicine and economics and administrative sciences students.

In another study, Gavcar et al. (2005) conducted a survey on the reasons for faculty selection of 195 freshmans at the Muğla University Faculty of Economics and Administrative Sciences. As a result of their Chi-square analysis in the study, the authors found that the majority of the students were not satisfied with the quality of education, but students enrolled in daytime education were more satisfied than students enrolled in evening education. Similarly, Sarıkaya and Khorshid (2009) conducted a survey with 1000 students at Ege University. Results of their chi-square analysis showed that almost a quarter of the students selected their programmes to not be unenrolled to any programs. Özer and Çalmaşur (2012) conducted another survey with 900 students at Ataturk University. They found that there was a meaningful relationship between their career selection and the education levels and occupations of their parents, the total number of individuals in their family, the number of individuals studying in higher education in their family, income level, the places of residence and taking private lesson. The authors also pointed out that the probability of selection to faculties of dental medicine, engineering, agriculture and education instead of the faculty of economics and administrative sciences was higher for the students whose father was a primary school graduate than whose father was higher education graduate.

Student Profile at Ordu University Ünye Faculty of Economics and Administrative Sciences

In this part of the study, before describing student profile at Ordu University Ünye Faculty of Economics and Administrative Sciences, the total number of students in higher education in 2013-2014 academic year in Turkey was mentioned briefly in table 5.

Table 5: Total Number of Students in Higher Education in Turkey (2013-2014)

		Associate degree	Undergraduate	Master's Degree	PhD
State University	Male	138252	185635	12234	2233
	Female	130798	184401	10161	2020
	Total	269050	370036	22395	4253
Private University	Male	6642	14221	11833	128
	Female	9458	14792	7614	135
	Total	16100	29013	19447	263
Total	Male	144894	199856	24067	2361
	Female	140256	199193	17775	2155
	Total	285150	399049	41842	4516

Resource: TurkStat (Accessed on 28.03.2017)

According to table 5, 5472521 students are enrolled in higher education programs such as two-year programmes, undergraduate programmes, master's programmes and PhD programmes. When the table is examined in terms of gender, it is seen that the number of total male and female students in higher education is close enough to each other except for graduate students. It can be said that there is not any inequality between male and female in terms of numbers in higher education.

Ordu University Ünye Faculty of Economics and Administrative Sciences was founded by the Law No. 3837 dated 03.07.1992 as a body of Karadeniz Technical University and the first students were enrolled to the Department of Business Administration in 1994-1995 academic year. The Faculty was first transferred to Ondokuz Mayıs University by the decision of the Council of Ministers on 02.05.2001 and then to Ordu University by Law No. 5467 on 17.03.2006. The Faculty, which operates within an open area of 11.700 m² and a closed area of 6.400 m², daytime and evening education are carried out in four departments as Business Administration, Economics, Labor Economics and Industrial Relations and Public Administration. In addition, departments of International Relations and Public Finance are planned to admit students in close future (<http://unyeiibf.odu.edu.tr/>). In table 6, the total number of students enrolled to the Faculty for the 2016-2017 academic year is given. As can be seen, while the number of female is higher than the number of male in the daytime education programs, it is opposite in the evening education.

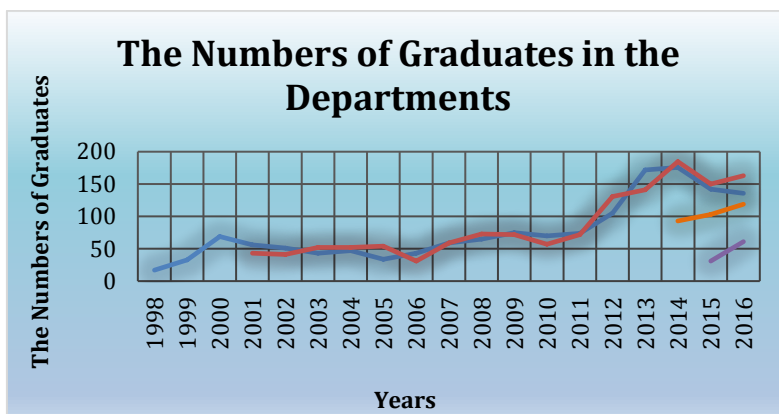
Table 6: The Number of Students at Ordu University Ünye Faculty of Economics and Administrative Sciences (2016-2017)

Departments / Programs	Frequency / %	Female	Male	Total
Business Administration (Daytime)	F	244	192	436
	%	56.00	44.00	100
Business Administration (Evening)	F	195	233	428
	%	45.00	54.40	100
Economics (Daytime)	F	249	159	408
	%	61.00	39.00	100
Economics (Evening)	F	189	219	408
	%	46.30	53.70	100
Labor Economics and Industrial Relations (Daytime)	F	184	80	264
	%	69.70	30.30	100
Labor Economics and Industrial Relations (Evening)	F	139	119	258
	%	53.90	46.10	100
Public Administration (Daytime)	F	113	89	202
	%	55.90	44.10	100
Public Administration (Evening)	F	98	111	209
	%	46.90	53.10	100
Total		1411	1202	2613

Resource: <https://yokatlas.yok.gov.tr/lisans.php?y=108310082> (Accessed on: 05.03.2017)

The Faculty has started to graduate its first graduates since 1998 and has a growing number of graduates over time with the introducing of evening education. The faculty has started to graduates for the department of business administration in 1998, for the department of economics in 2001, for the department of Labor Economics and Industrial Relations in 2014, and finally for the department of Public Administration in 2015. The numbers of graduates in the programs at the faculty is presented in Table 7. The number of graduates has reached to 3250 over 18 years. Increases in the numbers of graduates in the programs are shown in Graph 1.

Graph 1: Graduates at Ordu University Ünye Faculty of Economics and Administrative Sciences



Source: Ordu University, Ünye Faculty of Economics and Administrative Sciences Student Office, 10.03.2017.

Table 7: The Numbers of Graduated Student in Detail at Ordu University Ünye Faculty of Economics and Administrative Sciences

The Numbers of Graduated Student in Detail																								
Year	Business Administration					Economics					Labor Economics and Industrial Relations					Public Administration					Total			
	F		M		T	F		M		T	F		M		T	F		M		T				
	D	E	D	E		D	E	D	E		D	E	D	E		D	E	D	E					
1997-1998	10		7		17																10	7	17	
1998-1999	15		18		33																	15	18	33
1999-2000	29		40		69																	29	40	69
2000-2001	16		40		56	15		28		43												31	68	99
2001-2002	20		31		51	16		25		41												36	56	92
2002-2003	20		23		43	23		29		52												43	52	95
2003-2004	15		32		47	24		28		52												39	60	99
2004-2005	17		17		34	27		27		54												44	44	88
2005-2006	24		19		43	18		13		31												42	32	74
2006-2007	29		30		59	30		29		59												59	51	110
2007-2008	35		30		65	41		32		73												76	62	138
2008-2009	33		42		75	39		33		72												72	75	147
2009-2010	40		30		70	34		23		57												74	53	127
2010-2011	40		34		74	46		26		72												86	60	146
2011-2012	38	21	21	25	105	34	34	32	31	131												127	109	236
2012-2013	48	40	48	36	172	50	40	25	26	141												178	135	313
2013-2014	53	58	36	29	176	59	51	38	37	185	37	33	8	15	93							291	163	454
2014-2015	38	34	32	38	142	42	36	35	37	150	37	35	13	18	103	2		9		31	244	182	426	
2015-2016	46	30	25	35	136	44	45	35	39	163	48	32	17	22	119	2	13	1	14	61	282	197	479	
TOPLA	566	183	555	163	1.467	542	206	458	170	1.376	122	100	38	55	315	4	13	1	14	92	1.77	1.47	3.25	

Source: Ordu University, Ünye Faculty of Economics and Administrative Sciences Student Office, 10.03.2017.

In the table 8, the students who enrolled to Ordu University Ünye Faculty of Economics and Administrative Sciences in the 2016-2017 academic year were examined in terms of their high schools. It is seen that these students mostly graduated from vocational high schools except students enrolled to Labor Economics and Industrial Relations Department. On the other hand, the number of graduates of trade vocational high school is very low within the vocational high school group.

Table 8: High School Groups of Enrolled Students in 2016-2017 Academic Year

Departments	Frequencies / %	High School	Anatolian High School	Teacher Training High School	Private High School with Foreign Dil	High School Program	Private Basic High School	Private Basic High School	Vocational High School	Total
Business Administration (Daytime)	F	34	18	0	3	2	1	0	35	93
	%	36.60	19.40	0.00	3.20	2.20	1.10	0.00	37.50	100
Business Administration (Evening)	F	29	7	0	5	3	5	1	43	93
	%	31.20	7.50	0.00	5.40	3.30	5.40	1.10	46.10	100
Economics (Daytime)	F	28	30	1	0	0	4	0	30	93
	%	30.10	32.30	1.10	0.00	0.00	4.30	0.00	32.20	100
Economics (Evening)	F	30	20	1	1	2	6	0	33	93
	%	32.30	21.50	1.10	1.10	2.20	6.50	0.00	35.50	100
Labor Economics and Industrial Relations (Daytime)	F	15	17	1	3	0	3	0	23	62
	%	24.20	27.40	1.60	4.80	0.00	4.80	0.00	37.10	100
Labor Economics and Industrial Relations (Evening)	F	30	7	0	0	0	4	0	21	62
	%	48.40	11.30	0.00	0.00	0.00	6.50	0.00	33.90	100
Public Administration (Daytime)	F	10	21	2	1	0	1	0	12	47
	%	21.30	44.70	4.30	2.10	0.00	2.10	0.00	25.50	100
Public Administration (Evening)	F	9	15	0	1	2	6	0	14	47
	%	19.10	31.90	0.00	2.10	4.30	12.80	0.00	29.80	100

Resource: <https://yokatlas.yok.gov.tr/lisans.php?y=108310082> (05.03.2017).

The preference statistics of Ordu University Ünye Faculty of Economics and Administrative Sciences in the 2016-2017 academic year were examined in terms of departments and programs and the statistics are presented in table 9. According to the table, the number of students who prefer programs offered at the Faculty is 1500 on average except programs in Labor Economics and Industrial Relations. The order of preference according to the departments is around 11th. However, when the preferences of the students who enrolled to the programs at the Faculty are examined, it is seen that this order is around 6th. While the percentage of students who prefer the 1th order is 26% for the Departments of Business Administration and Economics, this percentage is 10% for the Departments Labor Economics and Industrial Relations and Public Management. In addition to the information in this table, according to a study conducted by the Council of Higher Education (1997) on 80.000 students, the prefers of students on higher education programs are respectively; electrical-electronics, computer and industrial engineering programmes (16.10%), medical and education programmes (13,60%) and economics-business programmes (9,60%) (Özer and Çalmaşur, 2002: 148).

Table 10 shows the geographical regions of the students who enrolled to the Faculty by programs. According to the table, the majority of the students are from the Black Sea Region and Marmara Region is followed.

Table 9: Preference Statistics of Students

Departments	Number of Preferred Candidates	Number of Enrolled Candidates	Average Preferred	Order of Enrolled	Frequency / Percent	Preferred in First Order	First Place Enrolled	Preferred in the first three ranks	Enrolled in the first three ranks	Preferred in the first nine ranks	Enrolled in the first ten ranks
Business Administration (Daytime)	1.494	93	11.7	5.5	F	63	29	177	51	614	75
					%	4.20	31.20	11.80	54.80	41.10	80.60
Business Administration (Evening)	1.587	93	13	6.1	F	29	23	119	44	520	73
					%	1.80	24.70	7.50	47.30	32.80	78.50
Economics (Daytime)	1.552	93	11.9	7	F	40	20	183	40	605	69
					%	2.60	21.50	11.80	43.00	39.00	74.20
Economics (Evening)	1.415	93	12.6	6.4	F	35	25	128	43	476	73
					%	2.50	26.90	9.00	46.20	33.60	78.50
Labor Economics and Industrial Relations (Daytime)	719	62	11.6	7.7	F	20	9	76	21	300	46
					%	2.80	14.50	10.60	33.90	41.70	74.20
Labor Economics and Industrial Relations (Evening)	499	62	11.9	7.6	F	12	5	46	20	210	48
					%	2.40	8.10	9.20	32.30	42.10	77.40
Public Administration (Daytime)	1.938	47	10.9	6.3	F	102	5	276	18	881	38
					%	5.30	10.60	14.20	38.30	45.50	80.90
Public Administration (Evening)	1.281	47	11.3	7.2	F	28	5	57	11	568	38
					%	2.20	10.60	12.30	23.40	44.30	80.90

Resource: <https://yokatlas.yok.gov.tr/lisans.php?y=108310082> (05.03.2017).

Table 10: Geographic Regions of the Enrolled Students to Ordu University Ünye Faculty of Economics and Administrative Sciences in 2016-2017 Academic Year

Departments	Frequency / Percent	Mediterranean	Eastern Anatolia	Aegean	Southeastern Anatolia	Central Anatolia	Black Sea	Marmara
Business Administration (Daytime)	F	3	1	2	1	12	65	9
	%	3.20	1.10	2.20	1.10	12.90	69.90	9.70
Business Administration (Evening)	F	5	3	4	1	11	54	15
	%	5.40	3.20	4.30	1.10	11.80	58.10	16.10
Economics (Daytime)	F	2	2	2	4	9	66	8
	%	2.20	2.20	2.20	4.30	9.70	71.00	8.30
Economics (Evening)	F	8	1	4	3	11	49	17
	%	8.60	1.10	4.30	3.20	11.80	52.70	18.30
Labor Economics and Industrial Relations (Daytime)	F	1	2	1	1	6	43	8
	%	1.60	3.20	1.60	1.60	9.70	69.40	12.90
Labor Economics and	F	8	-	3	-	5	35	11

Industrial Relations (Evening)	%	12.90	0.00	4.80	0.00	8.10	56.50	17.7
Public Administration (Daytime)	F	1	-	1	2	2	37	4
	%	2.10	0.00	2.40	4.30	4.30	78.7	8.4
Public Administration (Evening)	F	1	2	2	-	4	34	4
	%	2.10	4.30	4.40	0.00	8.50	72.3	8.4

Resource: <https://yokatlas.yok.gov.tr/lisans.php?y=108310082> (05.03.2017).

Methodology

In the process of obtaining data of the study, a survey was used as primary data collection method. A small number of qualified questions were asked in the survey and the survey was developed by using related studies conducted Kuştepelı and Gülcan (2002), Gavcar et al (2005) and Mütevellioğlu et al (2010). The research questionnaire consists of three parts. In the first part, 24 questions were asked with the aim of obtaining the demographic characteristics of the graduates and the information about their current profession. In the second part of the study, 6 statements were asked to the graduates by using the 4-point likert scale to find out the thoughts of the graduates about the quality of their higher education. Participants were asked to code each statements on the scale according to their thoughts in the form of "1: Absolutely not agree", "2: Disagree", "3: Agree", "4: Absolutely agree". In the final part of the questionnaire, an open-ended statement was asked to add any notes of the participants.

Graduates of Ordu University, Ünye Faculty of Economics and Administrative Sciences were selected as the sample of the research. The sample size was calculated by using the formula below (Baş, 2010: 40). According to the formula, a population (N) 3250, a degree of confidence 95% ($\alpha = 0.05$), the margin of error ($t = 1.96$), the observed frequency of the event is $p = 0.50$ (Çabuk and Yücel, 2012: 74). As a result of calculation, the sample size was found as 344.

$$N = N t^2 p q / (d^2 (N-1) + t^2 p q) \quad (1)$$

Survey was conducted between 14.02.2017 / 24.02.2017. It was shared in social media groups of graduates via online questionnaire link and sent to e-mail addresses of graduates. It is estimated that approximately 1500 graduates have seen the questionnaire. 174 Questionnaires returned and 9 of them were excluded from the data set because of their invalidity. As a result, 165 questionnaires were evaluated as a survey data. Research analyzes were performed using Statistical Package for the Social Sciences (SPSS. 18). The statistical methods used in the research were descriptive statistics and Chi square analysis.

Findings

Analysis of the data obtained from the surveys in the research started with descriptive statistics such as frequency, percentage and mean values. For the following analysis, Chi square analysis was conducted. Findings were presented and discussed under the following titles.

Descriptive Statistics

The demographic characteristics of the 165 graduates returning to the survey and the information about their current professions were analyzed by frequency, percent distributions and averages. The results were given in table 11.

According to the table 11, the majority of participants of the survey are female, graduated from the department of business administration, have an average of 27.64 years old and graduated from high school. In the study, communicate with the graduates of 2013 and after was easier than to reach previous graduates because of elapsed time. In addition, most of the male graduates served in the army. In Turkey, military duty is mandatory for men and employers usually prefer to employ one who done his military duty. In addition, the grade point average of the graduates is 2.64. Besides,

some of the graduates are keeping going their education through graduate schools (12.70%) or a new bachelor degree (4.80%). Most of the graduates are from Black Sea Region (34.70%) because of the Faculty's location, and Marmara Region is following it. When parents' educational status is examined, most of them have at least primary and junior school education. However, mothers' educational status are usually lower than fathers'. For instance, while %12.10 of fathers of graduates have at least graduate level education, only 0.60% of mothers of graduates have graduate level education.

Table 11: Frequency Distributions According to Demographic Characteristics of Graduates

Gender	F	%	Program	F	%
Female	87	52.70	Daytime	115	69.70
Male	78	47.30	Evening	50	30.30
Age	F	%	Department	F	%
20-25	68	41.20	Business Administration	86	52.10
26-30	64	38.80	Economics	45	27.30
31-35	18	10.90	Labor Economics and Industrial	27	16.40
36 and above	15	9.10	Public Administration	7	4.20
Father's Educational Status	F	%	Mother's Educational Status	F	%
Illiterate	2	1.20	Illiterate	13	7.90
Only literate	5	3.00	Only literate	10	6.10
Primary School	68	41.20	Primary School	87	52.70
Junior School	29	17.60	Junior School	30	18.20
High School	41	24.80	High School	24	14.50
Undergraduate	18	10.90	Undergraduate	1	0.60
Graduate	2	1.20	Graduate	0	0.00
Region	F	%	Marital Status	F	%
Marmara	49	29.70	Single	113	68.50
Aegean	11	6.70	Married	52	31.50
Mediterranean	12	7.30	Military Duty	F	%
Central Anatolia	20	12.10	Free (female)	87	52.70
Blacksea	57	34.50	Served	44	26.70
Eastern Anatolia	8	4.80	Not Served	34	20.60
Southeastern Anatolia	6	3.60	High School	F	%
Abroad	2	1.20	High School	131	79.40
Graduation Year	F	%	Super High School	F	%
1999	3	1.80	Anatolian High School	17	10.30
2001	1	0.60	Trade Vocational High School	2	1.20
2002	8	4.80	Trade Vocational High School	5	3.00
2003	1	0.60	Grade Point Average	F	%
2004	8	4.80	2.00-2.49	61	37.00
2005	2	1.20	2.50-2.99	79	47.90
2007	1	0.60	3.00-3.49	19	11.50
2008	7	4.20	3.50-4.00	6	3.60
2009	5	3.00	Graduate Education	F	%
2010	6	3.60	No	144	87.30
2011	7	4.20	Master's Degree	17	10.30
2012	7	4.20	PhD	4	2.40
2013	21	12.70	Second Undergraduate Program	F	%
2014	13	7.90	Yes	8	4.80
2015	26	15.80	No	157	95.20
2016	49	29.70	Total	165	100.00

As seen in table 12, while the majority of the graduates did not have a job related to their departments during their undergraduate education (81.80%), 1,80% continued to work at the same work place. On the other hand, it was found that most of the graduates (40.60%) worked during their undergraduate education even though that job was not related to their undergraduate programs. However, a small numbers of graduates had an internship experience related to their undergraduate programs during their education (20.60%).

Similarly, it is seen that the majority of the graduates (76.40%) did not take lessons at any Private Teaching Institution for Public Personnel Selection Examination, but some of them took lessons for the B group Exam (12.70%). On the other hand, 44.20% of the graduates took the Exam at least once. Graduates found a job in the first year after graduation

is only 33.30%. In addition, as seen in the table 12, most of the graduates are unemployed (33.30%) and seeking for a job. 53.90% of them indicated that they could not find a job in the first year after their graduation.

According to the table, the income levels of the participants are usually between 1405 and 5000 TL. The average working period in the current job is 2.77 years, and most of the graduates have 1-5 years work experience in their current jobs. When the question “how many jobs do you change before your current job?” was asked to the graduates, most of them answered as once (32.70%). As a result, it can be said that the majority of them continue their business life in their first jobs.

Table 12: Occupational Status of Graduates

Work experience related to the program during undergraduate education	F	%	Work experience not related to the program during undergraduate education	F	%	
Yes	27	16.40	Yes	67	40.60	
No	135	81.80	No	98	59.40	
Working at the same place	3	1.80	Working at the same place	0	0.00	
Internship experience during undergraduate education	F	%	Do you take lessons at any Private Teaching Institution for Public Personnel Selection Examination	F	%	
Yes	34	20.60	No	126	76.40	
No	130	78.80	For A Group	18	10.90	
Working at the same place	1	0.60	For B Group	21	12.70	
Finding job at in the first year after graduation	F	%	How many times do you take the Examination?	F	%	
Yes	82	49.70	Never	28	17.00	
No	83	50.30	1	73	44.20	
Occupation	F	%	2	36	21.80	
Unemployed	55	33.30	3	16	9.70	
Father's occupation	3	1.80	4	5	3.00	
Started my own business	2	1.20	5 ve üzeri	7	4.20	
Academician	5	3.00	Monthly income		F	%
Banker	24	14.50	Less than minimum wage	2	1.20	
Certified public accountant	11	6.70	Minimum wage	7	4.20	
Inspector in government	1	0.60	1405-2000 TL	31	18.80	
Officer	9	5.50	2001-3000 TL	28	17.00	
Manager in private sector	11	6.70	3001-5000 TL	26	15.80	
Private sector	22	13.30	5001-10000 TL	8	4.80	
Police	8	4.80	10001 and above	4	2.40	
Soldier	1	0.60	How many jobs do you change before your current job?		F	%
Others	13	7.90	0	59	35.80	
How many years experience do you have in your current	F	%	1	54	32.70	
0	59	35.80	2	26	15.80	
1-5	76	46.10	3	19	11.50	
6-10	19	11.50	4	5	3.00	
11-15	8	4.80	5 and above	2	1.20	
16 and above	3	1.80	Total	165	100.00	

According to the table 13, the majority of the graduates are generally satisfied with the profession they are doing. Besides, they preferred the program, which they are graduated, with their own wills. Most of them do not believe that the education they receive during their undergraduate is of good and enough to prepare them to be successful in examinations such as Public Personnel Selection Examination, inspector and bank examinations, etc.

Table 13: Descriptive Statistics Results of Statements (N = 165)

Statements	\bar{X}	σ	F	1	2	3	4
I am satisfied with my current profession.	2,449	1,112	F	45	37	47	36
			%	27,3	22,4	28,5	21,
I preferred and completed my program	2,430	1,089	F	40	51	37	37
			%	24,2	30,9	22,4	22,
I believe that my undergraduate education	2,339	0,914	F	34	57	58	16
			%	20,6	34,5	35,2	9,7
I believe that my undergraduate education	2,072	0,941	F	56	52	46	11
			%	33,9	31,5	27,9	6,7
I believe that my undergraduate education	2,054	0,878	F	50	65	41	9
			%	30,3	39,4	24,8	5,5
I believe that my undergraduate education has prepared me to be	1,788	0,756	F	63	79	18	5
			%	38,2	47,9	10,9	3,0

Hypothesis Testing

Before the hypothesis testing, it was checked whether the data provided the normal distribution assumption. The Kolmogorov-Smirnov test results show that data was not normally distributed. In addition, Cronbach Alpha Statistic was used to test the structural reliability of the questionnaire. If Cronbach Alpha Reliability Coefficient is between 0.00 and 0.40, the scale is not reliable; is between 0.40 and 0.60, the scale has low reliability; is between 0.60 and 0.80, the scale is reliable and is between 0.80 and 1.00, the scale has the highest reliability (Kayış, 2010: 405). As a result of the Analysis made in the study, the Cronbach Alpha Reliability Coefficient (α) of all 6 items in the scale was calculated as 0.746 and this result shows that the scale is reliable.

In the hypothesis test part of the study, the relationship among demographic characteristics of the graduates, their professional situations, and statements about their thoughts on their graduate education was examined by discrimination tests. For this purpose, the Chi-square test, one of the non-parametric statistical tests, examines whether there is an important relationship between two or more categorical data sets (Bryman and Cramer, 1990: 123).

In addition, Cramer's V test was used to measure the power of the relationship between the variables. The Cramer's V value can be between 0 and 1, and if this value is between 0-30%, it is considered to be weak; if it is between 31-60%, it shows that the relationship is moderate and if it is between 61-100%, the relationship is considered strong (Özbay, 2009: 461-463). The hypotheses and the results of the analysis are presented and interpreted in the following tables.

• **Hypothesis 1:** Responses given by the graduates to the questions have a meaningful difference according to their gender.

According to the table 14, the majority (54.02%) of the graduated females have an academic average of 2.50-2.99 while the majority of the graduated males (47.44%) have an academic average 2.00-2.49. The results of chi-square analysis show a significant difference between gender and academic average, and the power of this difference was calculated as 20.70%. Similarly, 59.80% of females who participated in the survey did not get a job in the first year after their graduation. On the other hand, only 39.70% of males are facing the same problem. It can be said that male graduates are more likely to find job in the first year after graduation than females. The relationship between gender and this probability is 19.20%, a weak relationship. Similarly, the relationship between the genders of the graduates and their satisfaction of current profession has a significant difference. While the majority of female are currently dissatisfied with their profession (63.20%), the majority of males (65.40%) are satisfied with their profession. The power of the relationship between the gender of the participants and their job satisfaction ratings is 28.10%, a weak relationship. The findings in Table 14 shows that there was a significant difference between the gender and the statements of "whether to find a job within the first year after graduation" and "whether they are satisfied with their current profession" and the hypothesis 1 was partially accepted for this reason.

Table 14: Chi-square Analysis Results of Graduates' Gender and Questionnaire Responses

Variables	Choices	Gender %		Chi Square			Cramer's V
		Female	Male	Value	SD	P	
Grate point average ⁴	2.00-2.49	27.59	47.44	10.400	3	0.015	0.207
	2.50-2.99	54.02	41.03				
	3.00-3.49	14.94	7.69				
	3.50-4.00	3.45	3.85				
Finding job at in the first year after graduation ⁵	Yes	40.20	60.30	8.994	1	0.003	0.192
	No	59.80	39.70				
I preferred and completed my program willingly. ⁶	Absolutely disagree	33.30	20.50	19.242	3	0.000	0.281
	Disagree	29.90	14.10				
	Agree	19.50	38.50				
	Absolutely agree	17.20	26.90				

• **Hypothesis 2:** Responses given by the graduates to the questions have a meaningful difference according to their age.

As shown in the table 15, while the grate point average of graduates have a balanced distribution of age of 31 years and above, it is seen that graduates under-30 age have a grate point average of 2.00-3.00. There was a significant difference between the ages of the participants and the grate point average of them, and the power of difference was calculated as 26.10%. Graduates of ages of 26-30 are more likely have work experience (53.13%) in the jobs, which are not related to their programs than the other groups of age. Especially, those between the ages of 31-35 mostly (88.90%) answered this question as never. The power of the relationship between the age of the graduates and their work experience in the jobs, which are not related to their programs, is 30.70%, which is a moderate relationship.

Likewise, it is observed that the rate of taking lessons at any Private Teaching Institution for Public Personnel Selection Examination among graduates is highest in the group of 26-30 years (32.81%). While the graduates between the ages of 31-35 (77.78%) indicates that they found a job in the first year after graduation, most of the new graduates (61.76%) pointed out that they could not find a job at the first year after graduation. According to the findings in the table 15, it can be commented that it is easier to find a job as soon as graduation, about 10 years ago.

Most of the graduates from the age group of 20-25 responded that they disagree with the statement "I believe that my undergraduate education has prepared me enough to do my profession well". A weak (15%) statistically significant difference was found between the age groups of the participants and the response to this statement. While graduates of age of 31 and above agree with the statement "I believe that my undergraduate education was helpful to find my current profession", those who were 30 years or younger were less likely to agree with this statement. However, it was observed that the power of the relationship between age group and this statement was weak (17.90%).

⁴ 1 cells (12.5%) have expected count less than 5. The minimum expected count is 3.22.

⁵ 0 cells (0.0%) have expected count less than 5. The minimum expected count is 40.81.

⁶ 0 cells (0.0%) have expected count less than 5. The minimum expected count is 18.98.

Table 15. Chi Square Results of Graduates' Ages and Questionnaire Responses

Variables	Choices	Age				Chi Square			Cramer's V
		20-25	26-30	31-35	36 +	Value	SD	P	
Grade point average ⁴	2.00-2.49	44.12	34.38	33.33	20.00	63.422	9	0.000	0.261
	2.50-2.99	52.94	51.56	33.33	26.67				
	3.00-3.49	2.94	10.94	27.78	33.33				
	3.50-4.00	0.00	3.13	5.56	20.00				
Work experience not related to the program during undergraduate education ⁵	Yes	38.24	53.13	11.11	33.33	29.285	3	0.000	0.307
	No	61.76	46.88	88.89	66.67				
Do you take lessons at any Private Teaching Institution for Public Personnel Selection Examination? ⁶	No	80.88	67.19	88.89	80.00	17.845	6	0.007	0.170
	A Group	13.24	12.50	0.00	6.667				
	B Group	5.882	20.31	11.11	13.33				
Finding job at in the first year after graduation ⁷	Yes	38.24	50.00	77.78	66.67	23.654	3	0.000	0.276
	No	61.76	50.00	22.22	33.33				
I believe that my undergraduate education has prepared me enough to do my profession well. ⁸	Absolutely disagree	35.29	32.81	11.11	20.00	20.993	9	0.013	0.150
	Disagree	39.71	34.38	50.00	46.67				
	Agree	20.59	25.00	38.89	26.67				
	Absolutely agree	4.41	7.81	0.00	6.67				
I believe that my undergraduate education was helpful to find my current profession. ⁹	Absolutely disagree	41.18	35.94	16.67	13.33	29.911	9	0.000	0.179
	Disagree	30.88	34.38	27.78	26.67				
	Agree	23.53	23.44	44.44	46.67				
	Absolutely agree	4.41	6.25	11.11	13.33				
I am satisfied with my current profession. ¹⁰	Absolutely disagree	38.24	26.56	0.00	13.33	63.646	9	0.000	0.262
	Disagree	29.41	20.31	11.11	13.33				
	Agree	16.18	37.50	44.44	26.67				
	Absolutely agree	16.18	15.63	44.44	46.67				
I preferred and completed my program willingly. ¹¹	Absolutely disagree	25.00	28.13	11.11	20.00	45.135	9	0.000	0.220
	Disagree	33.82	29.69	38.89	13.33				
	Agree	23.53	26.56	11.11	13.33				
	Absolutely agree	17.65	15.63	38.89	53.33				

As seen in the Table 15, graduates aged 31 and above are satisfied with the profession they are currently doing, while graduates between the ages of 20-25 and 26-30 do not share the same thoughts. The relationship between the age of the graduates and the job satisfaction is calculated as 26.20%. Finally, it is seen that graduates of ages 36 and above indicate that they are mostly strongly agree (53.33%) with the statement “I preferred and completed my program willingly”, but those in other age groups responded the same statement in the same way. This finding shows that former graduates are more successful in enrolling the programs, which they wanted, than the new graduates. The fact that there are more universities now than 20 years ago and almost all of these universities have the Faculty of Economics and Administrative Sciences. For this reason, it is easier for students to choose these faculties only to enroll a program in a university even though they are not willing to enroll that program.

When the relationship between the ages of the graduates and the responses given to the questions is examined, it is seen that there is a significant relationship between marital status, military duty status and their programs and the ages of the graduates. However, these results have not been presented into the table because they are not related to the objective of the research. As the age increases, the likelihood of marriage and serving military will increase. In addition, since the evening education programs at the faculty started to graduate from 2012, the meaningful difference between education programs and age was acceptable. On the basis of all these findings, the hypothesis 2 “Responses given by the graduates to the questions have a meaningful difference according to their age” was partially accepted.

- **Hypothesis 2:** Responses given by the graduates to the questions have a meaningful difference according to their departments.

Table 16: Chi Square Results of Graduates' Departments and Questionnaire Responses

Variables	Choices	Department				Ki Kare			Cramer's V
		B. A	E.	L.E. I. R.	P. A.	Value	S	P	
Do you take lessons at any Private Teaching Institution for Public Personnel Selection Examination? ⁷	No	75.58	80.00	70.37	85.71	18.471	6	0.005	0.180
	A Group	10.47	4.44	22.22	14.29				
	B Group	13.95	15.56	7.41	0.00				
Finding job at in the first year. ⁸	Yes	60.47	42.22	40.74	0.00	31.985	3	0.000	0.335
	No	39.53	57.78	59.26	100.0				
I believe that my undergraduate education has prepared me enough to do my profession well. ⁹	Absolut	33.72	33.33	11.11	42.86	55.590	9	0.000	0.255
	Disagree	32.56	51.11	37.04	57.14				
	Agree	30.23	13.33	33.33	0.00				
	Absolutely agree	3.49	2.22	18.52	0.00				
I believe that my undergraduate education was helpful to find my current profession. ¹⁰	Absolut	27.91	37.78	37.04	71.43	41.179	9	0.000	0.219
	Disagree	27.91	37.78	40.74	0.00				
	Agree	33.72	24.44	18.52	14.29				
	Absolutely agree	10.47	0.00	3.70	14.29				
I believe that my undergraduate education is of good quality. ¹¹	Absolut	2326	20.00	3.70	57.14	75.901	9	0.000	0.298
	Disagree	33.72	46.67	22.22	14.29				
	Agree	39.53	22.22	44.44	28.57				
	Absolutely agree	3.49	11.11	29.63	0.00				
I am satisfied with my current profession. ¹²	Absolut	26.74	22.22	33.33	42.86	32.024	9	0.000	0.285
	Disagree	20.93	20.00	33.33	14.29				
	Agree	30.23	37.78	14.81	0.00				
	Absolut	22.09	20.00	18.52	42.86				
I preferred and completed my program willingly. ¹³	Absolut	27.91	24.44	11.11	28.57	45.135	9	0.000	0.220
	Disagree	26.74	40.00	33.33	14.29				
	Agree	20.93	26.67	25.93	0.00				
	Absolutely agree	24.42	8.89	29.63	57.14				

As seen in Table 16, graduates from the department of Labor Economics and Industrial Relations are more involved in Private Teaching Institution for Public Personnel Selection Examination than those graduated from other departments. The power of relationship was found to be weak (18%). Another statistically significant finding is between the departments and finding a job in the first year after graduation. Graduates of the business administration department (60.47%) find a job in the first year after graduation easier than the other graduates of departments. The power of the significant relationship between departments of the graduates and finding a job in the first year after graduation is calculated as 33.50% as moderate.

⁷ 2 cells (16.7%) have expected count less than 5. The minimum expected count is 3.14.

⁸ 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.08.

⁹ 1 cells (6.3%) have expected count less than 5. The minimum expected count is 1.96.

¹⁰ 23 cells (18.8%) have expected count less than 5. The minimum expected count is 1.57.

¹¹ 1 cells (6.3%) have expected count less than 5. The minimum expected count is 3.64.

¹² 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.29.

¹³ 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.19.

In addition, it is found that while graduates from all departments does not usually agree with the statements of “I believe that my undergraduate education has prepared me enough to do my profession well”, almost all graduates from the department of Public Administration indicate that they are not agree with this statement. Likewise, 71.43% of respondents scaled the statements of “I believe that my undergraduate education was helpful to find my current profession” as absolutely disagree, graduates from the other departmentst are usually response this statements equally. Similar results (57.14%) were found for the statement “I believe that my undergraduate education is of good quality”. It was seen that graduates of the department of Labor Economics and Industrial Relations are mostly did not agree (66.66%) with the statement “I am satisfied with my current profession”, while the others response the same statement equally among choices. Lastly, it is seen that graduates of the Economics department did not agree (64.44%) with the statement “I preferred and completed my program willingly”.

Conclusion

In recent decades in Turkey, many new universities have established and almost all universities have the Faculty of Economics and Administrative Sciences. The number of graduates from this faculty is much higher than the other faculties because of the increase in the number of this faculties, increase in the number of programs in this faculty such as Economics, Labor Economics and Industrial Relations, Public Finance, Public Administration, International Relations etc. and the number of student quotas of these departments.

However, the unemployment rate among higher education graduates is much higher than those of other education levels and even higher educated graduates are exposed to unemployment much more. All of these reasons make the employment profile of graduates from the Faculty of Economics and Administrative Sciences interesting and issue of concern. The period and process of finding a job after graduation, success of the graduates from the Faculty of Economics and Administrative Sciences in various exams, satisfaction degree of graduates with their current professions should be investigated because of to plan future of this faculty, to see success rate of graduates, and to measure whether the higher education accomplish its objectives.

It is believed that the indicators such as unemployment, labor force and labor force rates should be investigated especially in terms of higher education graduates. However, studies prepared for these objectives in the literature are not enough. It is necessary to conduct such studies and to evaluate them in detail to be able to project future plans for the higher education. In this way, programs to be opened or closed by the government in higher education, quotas for student numbers, job opportunities that can be offered to graduate students, etc. can plan in the light of new studies.

In the survey, first of all unemployment issue and unemployment rates by educational status and gender were examined. Afterwards, by using various statistics prepared by the Higher Education Institution about Ordu University Unye Faculty of Economics and Administrative Sciences were evaluated and interpreted. For the objective of the study, the thoughts of the graduates from the faculty on their employment status and undergraduate education were obtained by a survey. Chi square analysis and various descriptive statistics show that the grate point average of the graduates, finding job process, taking private lessons for various exams, and thoughts about their undergraduate quality are affected by their age, gender, and departments. It has also been observed that many graduates respond in a pessimistic manner, expressing that they have problems in finding job and that their education is inadequate for exams such as Public Personnel Selection Examination.

It is expected that the results obtained without this study will be beneficial in providing guidance to university student candidates who are still considering the post-graduation processes of the students who are studying at the Faculty of Economics and Administrative Sciences. In future studies, the samples can be expanded to reach more universities' graduates of the Faculty of Economics and Administrative Sciences, and the prospects and employment profiles of graduates of these graduates can be searched.

It is expected that the results of this study will be useful in providing guidance to university student candidates who are decide to chose a program and students who are already enrolled to the Faculty of Economics and Administrative Sciences considering the post-graduation processes. In future studies, the samples can be expanded to reach more

graduates of the Faculty of Economics and Administrative Sciences. In addition, the expectations and employment profiles of graduates can be searched for different undergraduate programs.

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8

Investigation of Youth Unemployment In Turkey With Spatial Interaction

Ferda Esin GÜLEL
Halil TUNCA

Abstract

According to the general definition of international organizations such as ILO, UN, and OECD, the population formed by individuals aged 18-24 is called the youth population. Individuals who want to work at this age but can not get a job are also called youth unemployed. Various studies have shown that the unemployment rate in the youth population (ages 18-24) is much higher than the general unemployment rate. In Turkey, which has a relatively young population, youth unemployment is a serious problem that can have social and economic consequences. This study examined youth unemployment in Turkey by using spatial regression analysis. Specifically, this study determined the spatial interaction between regions according to youth unemployment, as well as the impact of demographic and economic variables on youth unemployment.

Keywords: regional unemployment, youth unemployment, spatial analysis, Turkey

Introduction

Today, the most fundamental problems facing both developed and developing countries are sustainable economic growth and high unemployment. Some progress has been achieved in economic policies and economic growth because of globalization, but progress has not been made towards reducing unemployment. According to economic reports published by the International Labor Organization (ILO), economic growth at the beginning of the 2000s did not lead to a significant reduction in unemployment rates. Growth was supported by increases in labor productivity and there has been a steady increase in unemployment rates around the world since 2010 (ILO 2008, ILO 2010, ILO 2016). As a result of these developments, the world is beginning to talk about the problem of "global unemployment." The problem of unemployment is becoming increasingly widespread, along with other economic, social, and cultural problems.

Unemployment can be defined as "the state of being in the age of employment in a certain reference period, in the desire and ability to work, and in the fact that the current wage level is accepted but the individual cannot find work." (TurkStat, 2017) Unemployment stands out as a phenomenon that directly affects happiness and can therefore lead to the loss of individual vitality. Unemployment may differentially impact different social groups of a community. The definition of *youth* varies from country to country depending on many factors, such as cultural and social norms. Although the upper limit of the definition of youth does not vary, the lower limit is generally determined as the age when compulsory education ends (Gündoğan 1999). For this reason, youth unemployment, based on definitions made by international organizations such as the UN and the ILO, is "unemployment in the 15-24 age range and the willingness and ability to work in a certain reference period, and in the absence of employment and actively seeking employment" (Karabiyik 2009).

The sections of this study are organized as follows. Section two describes basic youth unemployment indicators in the world and in Turkey and the causes of youth unemployment. In section three we present the model and data set used and in section four we briefly review the national and international literature on youth employment. Lastly we discuss empirical findings and conclude.

The Youth Unemployment Problem in the World and in Turkey

As mentioned earlier, unemployment is a global problem. In countries such as Turkey, where young people make up X% of the population, youth unemployment is a serious problem. The high youth population indicates that while countries have a significant source of human capital, this resource is idle.

According to World Bank data (WB), the average economic growth from 2010-2015 was about 3%, and the unemployment rate was 6%. The youth unemployment rate was about 2.5 times higher than the general unemployment rate.

Table 1: Growth and unemployment rates

	EU-28			OECD			World		
	Growth	Unemp	youth unemp	Growth	Unemp	youth unemp	Growth	Unemp	youth unemp
2010	2.151	9.521	21.025	2.949	8.276	16.715	4.372	6.114	13.785
2011	1.662	9.599	21.675	1.713	7.917	16.261	3.098	5.995	13.715
2012	-0.454	10.417	23.200	1.226	7.921	16.279	2.445	5.995	13.874
2013	0.203	10.814	23.650	1.217	7.865	16.146	2.478	5.993	13.904
2014	1.599	10.207	22.225	1.830	7.350	15.098	2.690	5.932	13.987
2015	2.224	9.391	20.350	2.124	6.766	13.879	2.629	5.963	13.946
MEAN	1.231	9.991	22.021	1.843	7.682	15.730	2.952	5.999	13.868

Source: WB, World Development Indicator, and OECD Databank

In the economic crises experienced in the EU-28 and OECD regions during the 2010-2015 period, there was a fluctuating growth performance, and the unemployment figures showed a more stable structure compare to economic growth and an average of 10% in the EU-28 and 8% in the OECD region. Also, youth unemployment figures were at a much higher level, reaching 22% in the EU-28 and 16% in the OECD region. Table 1 illustrates that unemployment figures show similar responses to economic performance but the rise in youth unemployment in response to declining growth is much more severe than that for the older population. During the period under review, the youth unemployment figures were approximately 2.5-3 times higher than the general unemployment figures.

Table 2 shows the countries with the best and worst performance in youth unemployment in the OECD region, and the same figures in Turkey for comparison.

Table-2: Youth unemployment / overall unemployment rate in selected countries

	2010	2011	2012	2013	2014	2015
South Africa	2.058	2.028	2.078	2.079	2.044	1.976
Spain	2.090	2.160	2.134	2.127	2.177	2.194
Greece	2.595	2.501	2.263	2.123	1.978	2.000
Portugal	---	---	2.440	2.354	2.504	2.563
Italy	---	---	3.314	3.293	3.368	3.388
Turkey	1.853	1.895	1.922	1.934	1.801	1.806
Switzerland	1.716	1.883	2.007	1.937	1.895	1.891
Norway	2.641	2.707	2.690	2.659	2.238	---
Japan	1.842	1.789	1.862	1.689	1.726	1.659
Germany	---	1.459	1.505	1.491	1.566	1.578

Source: Compiled by the authors using the OECD Database.

Countries with the best performances in the OECD area are Germany, Japan, Norway, and Switzerland, which are developed countries. Youth unemployment rates in these countries range from 8% to 10% from 2010-2015 (OECD, 2017). In addition, Germany and Japan seem to be the most successful countries in creating job opportunities for young people. The indicators presented in Table 2 indicate that the ratio of youth unemployment to general unemployment rate is 1.8 in Japan and 1.5 in Germany. Countries with the highest ratios of unemployment and youth unemployment in the OECD area are South Africa, Spain, and Greece. Youth unemployment rates in Spain and Greece have been above 50%, especially in connection with the economic crisis in 2012-2013 and 2014. In South Africa, youth unemployment rates were on average 50% during the period, 40% in Italy, and 35% in Portugal. In these countries, the average youth unemployment / general unemployment rate, except for, Italy is 2.2. In Italy, this ratio is 3.4. This rate shows us that the rate of youth unemployment in Italy is 3.5 times higher than the general unemployment rate. The reason why Spain and Greece are lower than Italy is that the general unemployment rate is very high due to the deep economic crisis in these countries. The average ratio for Turkey was 1.9.

The fact that young people experience more unemployment, with an average rate of nearly two and half times that of overall unemployment rate, warrants attention. There are many factors at the macro and micro levels that affect the formation of youth unemployment. Macro-level factors are factors such as aggregate demand inadequacy, economic crises, demographic characteristics, and minimum wage policies, which also effect the general unemployment rate (Taş and Bilen 2014). The micro factors are mostly the characteristics of the young workforce. According to an ILO report (2010), the level and skill level of the young workforce does not comply with the qualifications sought by the labor market. This mismatch, which depicts technical and non-technical skills, is often caused by the incompatibility of labor markets with the educational policies of countries. However, the fact that the young workforce does not have enough experience also creates some difficulties in the job search and causes the employer to discriminate against the young workforce. The relatively low investments made by employers for the young workforce and the lower cost of redundancy make young people the first to be affected by crises (Murat and Sahin 2013).

According to Turkey and NUTS-2 classification in Table-3, unemployment and labor participation rates (LFPR) were given for the period of 2013-2015. Unemployment rates in Turkey vary between 9.7% and 10.3%. In addition to these high rates, a very low level of 50% in the LFPR is an indication that the damage caused by unemployment is much higher than calculated, as the high unemployment rates do not account for individuals not in the labor force. The youth unemployment rate in Turkey was 18.7% in 2013 but fell to 16.4% in 2015. The change in youth unemployment / general unemployment rate from 1.9 to 1.7 indicates that young people are exposed to unemployment almost twice as high. The fact that these indicators, along with 40% of the LFPR, indicates that most of the young people are not included in the labor market. The main reason for this is that most of the young people are going on to higher education (cite). On the other hand, examining youth unemployment by educational status reveals interesting results. According to the information gathered from the Household Labor Force Data Base, the highest unemployment rate among the young people is seen among those who have higher education diplomas with 28% in 2015 and the decrease in the unemployment rate when the education level is lower. It is the most concrete indication of its basic character.

Table-3: Unemployment and labor force participation (LFP) rates in Turkey and the NUTS-2 regions

	2013				2014				2015			
	15+ population		15-24		15+ population		15-24		15+ population		15-24	
	Unemp rate	LFP	Unemp rate	LFP	Unemp rate	LFP	Unemp rate	LFP	Unemp rate	LFP	Unemp rate	LFP
TR	9.7	50.8	18.7	39.6	9.9	50.5	17.9	40.8	10.3	51.3	16.4	42.0
TR10	11.2	52.2	19.2	42.6	11.9	52.7	18.9	46.6	12.9	54.4	19.1	48.4
TR21	7.5	55.5	15.4	48.7	7.6	56.3	13.4	52.3	7.3	57.4	13	52.3
TR22	6	47.4	16.5	36.7	5.6	48	16.4	38.9	5.3	47.1	10.5	36.8
TR31	15.4	55.9	26.9	49.2	13.9	53.5	22.4	48.2	15	53.5	23.8	47.9
TR32	6.9	56.2	14.7	46	7.2	53.9	14.4	47.3	6.9	54	11.5	48.2
TR33	5.4	54.4	13.2	45.8	3.9	52.3	10.4	40	4.1	52.6	8.2	39.6
TR41	7	50.4	15	42.7	6.2	49.3	11.6	41.3	7.8	50.3	14.2	43.3
TR42	9.8	54.9	21.7	44	10	54.5	20.5	46.8	10.1	55.4	16.5	48
TR51	10.2	49.5	22.9	35.1	11.5	51.6	21.7	38.3	11.2	52.2	20.7	37.9
TR52	4.7	48.6	9.4	40.2	5.6	49.1	11.6	39.3	6.5	51.2	11.2	43.4
TR61	7.9	57.2	16.7	48.1	8.3	56.1	15.5	44.1	9.6	55.5	16.6	43.7
TR62	12.8	50.3	22	42.5	10.7	49.2	17.9	40.2	9.8	50.5	14.6	44
TR63	12.2	45.9	19.5	35.1	15.4	43.3	25.4	35.8	16.4	42.8	27.9	34.8
TR71	6.5	48.3	15.2	34.9	7.7	48.5	14.3	35.5	9.9	51.6	16.4	44
TR72	9.6	50.7	17.9	39	9.6	47.9	17.1	38.2	9.7	48.9	16.3	40.2
TR81	7.4	55.8	18.3	43.7	6	52.6	15.4	42.2	7	51.8	13	39.5
TR82	6.4	46.5	15	42.5	6.5	53.2	16.6	47.5	6.8	53.5	10.6	48.3
TR83	6.5	50.7	16.3	39.1	6.2	49.8	12.6	36.3	6.5	51.1	9.9	39.6
TR90	6.8	51.1	22.2	27.6	6.2	52.9	18.3	33.4	4.8	53.9	9.4	31.3
TRA1	6.6	50.3	12.2	33.3	7.4	50.5	13.8	37.2	5.9	51	8.2	36.8
TRA2	6.7	58.3	11.1	45	3.4	54.8	5.9	42.1	3.9	54.2	5.1	45.5
TRB1	7.7	53.6	15.1	40.7	7.5	46.8	15.2	33	8	48.2	13.6	34.6
TRB2	10.6	46	18.5	32.3	13.5	48.5	20.7	36.5	9.5	47.1	10.4	35.9
TRC1	7.3	45.3	12.7	32.8	8	43.2	16	35	9.9	43.1	15.8	34.9
TRC2	17.5	37.9	21.4	32.1	17.4	42.3	19.4	37.3	17.5	43.7	19.5	38.9
TRC3	21.1	36.9	30.2	29.7	24	37.1	33.3	30.5	24.8	38.2	33.6	32.3

Source: TURKSTAT, Household Labor Force Data Base, compiled by the authors.

When we examine regional classification based statistics the trends are similar to that of the nation on average. The region with the highest youth unemployment rate in 2013 is the TRC3 (Mardin, Batman, Sirnak, Siirt) coded statistical unit. The lowest unemployment rate is in TR52 (Konya, Karaman), with a rate of 9.4%. When the LFPR is examined, the highest rate is seen in TR31 (İzmir) with 49.2% while the lowest rate is in TR90 (Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane) with 27.6%. Similar values are also emerging in 2015. The highest value was observed in TR21 (Tekirdağ, Edirne, Kırklareli) while the lowest rate was observed in TR90, again. While the region with the highest youth unemployment rate is the TRC3 region, the lowest rate is seen in TRA2 (Ağrı, Kars, Iğdır, Ardahan). These observations, which emerged in the classification of İİBS-2, are in line with the social and cultural characteristics and economic potentials of Turkey. A main determinant of youth unemployment in Turkey is the education system, which is far from meeting the needs of the labor market. According to the education level stated above for Turkey general, the employment rates examined for NUTS-2 also show the same results. In addition to educational systems, the social structure of Turkey and the living internal migrations are other important factors determining youth unemployment (Günaydın and Çetin 2015).

Background

The fact that unemployment is defined as the most important macroeconomic problem to be solved, especially high youth unemployment, has given rise to large body of work on youth unemployment both in the national and international literature. Sakaklıla, Hazel, and Buluş (2011) have shown a long-term and statistically significant relationship between youth unemployment and economic growth, fixed capital investments, inflation and productivity in their 2005-2010 study.

Bayraktar and İncekara (2013) stated that entrepreneurship among young people should be given emphasis on promotion, vocational education, and in-vocational education to reduce youth unemployment.

Çondur and Bölükbaş (2014) investigated the causal relationship between youth unemployment, gross domestic product, and producer price index in their analysis with the quarterly data set for the period of 2000-2010 and showed the existence of a one-way causality relationship from explanatory variables to youth unemployment.

Günaydın and Çetin (2015) showed the existence of a long-term relationship between youth unemployment and growth, foreign trade, inflation, and foreign investment for the period 1988-2013. Sertkaya and Okur (2016) showed the existence of a long-term relationship by analyzing cointegration between the youth unemployment rate and the gross domestic product, and higher education rate and inflation for the period 1988-2014.

Akhtar and Shahnaz (2006) showed a relationship between youth unemployment and economic growth and public and private sector investments in Pakistan between 1991-2004 with significant and expected signs. The authors also emphasized that the impact of private investments on youth unemployment is much more significant.

Msigwa and Kipesha (2013) stated that the most important factors affecting the youth unemployment rate in Tanzania are gender, education, personal skills, and marital status. Breen (2005) examined the youth unemployment differential in OECD countries. Employment protection index and educational change (vocational schools and secondary education enrollment rate) were used. Both of them have shown the significant effect on youth unemployment.

Choudhry, Marelli, and Signorelli (2012) used a panel of 75 countries between 1980-2005 to show that global financial crises have had a significant impact on youth unemployment rates.

Göçer and Erdal (2015) analyzed the relationship between youth unemployment and economic growth (Okun's law) in the context of 18 Central and Eastern European countries. The study results show that in the countries experiencing intense youth unemployment, the positive effect of economic growth on youth unemployment is rather limited.

Studies have also conducted time series analysis, both in national and foreign literature, and the impact of a few important macro variables on youth unemployment has been investigated. Only a few studies use spatial econometric techniques.

Perugini and Signorelli (2008) estimated a spatial panel model for the EU region for the period 1999-2006 and identified the existence of strong spatial effects.

Demidova, Marelli, and Signorelli (2015) made spatial model estimates for the period 2000-2009 for regions in Italy and Russia. Regional gross domestic product, regional population density, and regional total unemployment rate were used as control variables. Estimation results indicate the presence of significant and powerful spatial effects.

Kalenkoski and Lacombe (2008) investigate spatial models and determinants of youth unemployment in the United States. Variables such as the minimum wage, education level, average weekly wage and share of rural population were used in the study. Estimation results show that the increase in minimum wage has a positive effect on youth unemployment. Other variables were estimated to have significant and expected signs.

Filiztekin (2009) examined the regional unemployment rates in the period 1980-2000 from the studies using spatial models for the Turkish economy. Variables such as the labor force participation rate, share of agriculture and industry in total employment, education level, and young population share were used, and the existence of a spatial relationship was shown.

Karaalp-Orhan and Gülel (2016) examined the regional unemployment rates for the period 2008-2012 using the İİBS-2 classification and estimated the spatial panel model. Estimation results show the existence of strong spatial effects in the Turkish economy.

Apart from these studies for the Turkish economy, we were not able to find any work in which spatial model estimates made on youth unemployment are included. In this respect, our work is considered to have an original quality.

Dataset and Model

Dataset

In this study, 26 statistics were used in the region based on the İİBS-2 Region classification. We determine the basic determinants of youth unemployment by estimating the horizontal-cross spatial model using the data set for 2015. All variables used in the model were obtained from TURKSTAT, Household Labor Force Data Base. The set of variables

used in the model was determined by following the existing literature. At this stage, macro factors that are more effective on youth unemployment are addressed.

The dependent variable used in this study is the youth unemployment rate. The GDPs and TUFEs of the regions were used to represent the economic performance and potential of the regions. In addition, the net migration rate is included in the model to represent regional demographics. Also, the labor force participation rate of young people (15-24 years old) and of women over 15 years of age are used to reflect the demographic characteristics of the labor market. One of the most important causes of unemployment is the education system and the level of education given (Taş and Bilen, 2014). The education system in Turkey does not prepare young people to find work. The fact that young people graduating from a school are not qualified makes it difficult for them to succeed on the job market. The high unemployment rates of young graduates in secondary and college can be explained by the inadequacy of the education system in a sense (Erdayı 2009). In this context, the model estimates include labor participation rates by education level. Additionally, the vocational high school enrollment rate variable was included in the analysis to see the influence of the vocational high schools on the labor market with qualified staff. While the rate of vocational high school enrollment was calculated, the number of imam preachers and high priests could not be distinguished. According to Ministry of National Education's 2015-2016 organized education reports (URL-1), there are 4090 vocational high schools in Turkey, while the number of imam preachers is 1149. Approximately 72% of the vocational high school students are those who are not in the Imam preacher's high school. The list of variables considered to be influential on youth unemployment is given in the appendix at the end of this study.

The descriptive statistics of the variables used in the study are given in Table 4 below.

Table-4: Descriptive statistics for variables

	Bölge Sayısı	En Küçük	En Büyük	Ortalama	Std Sapma
genc	26	6.5	35.5	17.51	6.15
ikok	26	12.2	40.2	31.19	6.98
ikog	26	31.3	52.3	41.15	5.68
tüfe	26	5.83	8.31	7.46	.64
gdp	26	128362	5453254	480444	1033709
ngoc	26	-25.73	14.41	-2.46	9.57
meslek	26	30.12	50.58	42.54	5.66
lisealt	26	16.17	33.05	24.82	4.16
yukse	26	1.77	9.62	5.22	2.01

There are important differences among regions for all variables. The high standard deviation value in the Gdp parameter indicates economic performance differs significantly between regions. In this case, the dependent variable is consistent with the high standard deviation value. Similarly, the large differences in explanatory variables representing labor participation rates indicate social, cultural and demographic differences among regions. Finally, when the ngoc variable representing the net migration rate is examined, it is shown that some of the regions have net migration and some of them have not net migration. The shift of population to certain regions in this way points to the social fluctuations experienced in Turkey.

Model

Spatial regression analysis or spatial modeling is a method that estimates the relationship between the effect of independent variable (s) on the dependent variable and the locations where the obtained data belongs when the horizontal section data is obtained according to the locations (country, city, province, district, etc.) When the data are obtained according to the locations, there is a relation between the places and the locations of the places. Spatial models are especially important when the assumption that the units in a certain geography affect each other is very strong. In other words, if the spatial relationship is neglected, predictors can lose variability, consistency, or effectiveness. (Anselin, 1988; Anselin et al., 1996). In other words, spatial effects can be seen as spatial differences such as lag, error, both lag and independent variability, and both lag and error terms . For spatial dependence to occur, observations in any

region must be about other observations. Consideration of spatial dependence at the regional level can reveal the relationship between spillover effects and spatial neighbors.

The Spatial autoregressive model (SAR), which is one of the models used in the analysis of spatial effects and is estimated in this study, can be defined as follows.

$$y = \rho W y + X \beta + u$$

In this model, ρ represents the spatial autoregressive coefficient, W represents the weight matrix representing the geographical proximity of regions, β represents the model parameter vector to be estimated, and y and X represent dependent and independent variable vectors. The dependent variable is assumed to be spatially distributed. To express this in the model, the weighted form of the dependent variable is added as a model argument to the weighted neighbors (Elhorst 2014). In the study, the weight matrix is determined by boundary neighborhoods. That is, one if the two regions share the same boundary, and 0 if not.

Empirical Findings

The results obtained by estimating the model above are shown in Table 5 below.

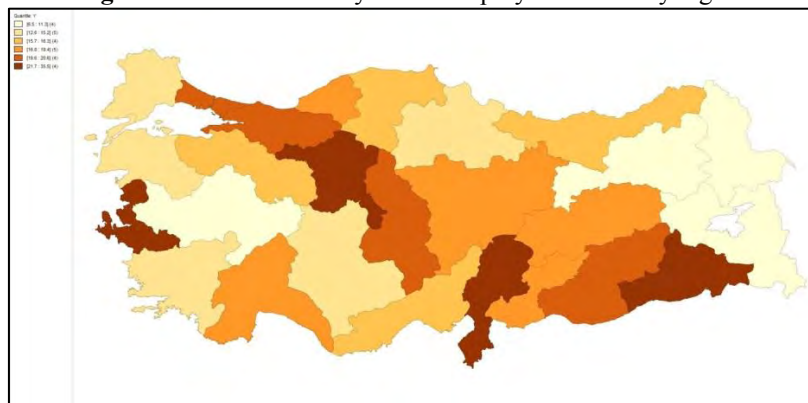
Table-5: Estimation results

Dependent Variable: 15-24 age group unemployment rate						
	Model 1		Model 2		Model 3	
	OLS	SAR	OLS	SAR	OLS	SAR
Sabit	30.427 (0.275)	41.023 (0.067)**	37.954 (0.162)	47.574 (0.029)*	39.218 (0.212)	46.061 (0.064)**
ikok	-0.653 (0.008)	-0.761 (0.000)*	-0.694 (0.008)	-0.755 (0.000)*	-0.598 (0.009)	-0.672 (0.000)*
ikog	0.040 (0.882)	0.091 (0.671)	0.464 (0.486)	0.403 (0.443)	-0.038 (0.881)	0.003 (0.986)
tüfe	-0.482 (0.813)	0.098 (0.951)	-0.282 (0.889)	0.227 (0.887)	-0.301 (0.884)	0.192 (0.906)
ngoc	0.219 (0.247)	0.248 (0.095)**	0.150 (0.513)	0.208 (0.260)	0.249 (0.221)	0.313 (0.052)*
gdp	0.159 (0.933)	-0.355 (0.811)	-0.103 (0.957)	-0.418 (0.788)	-0.014 (0.995)	-0.045 (0.981)
meslek	0.184 (0.502)	0.223 (0.293)				
lisealt			-56.658 (0.424)	-46.138 (0.410)		
yukse					31.128 (0.803)	-0.124 (0.998)
ρ		-0.501 (0.053)*		-0.433 (0.097)**		-0.458 (0.082)**
LM Lag	6.3510 (0.012)		6.833 (0.008)		6.537 (0.011)	
LM Error	4.9529 (0.026)		5.596 (0.018)		5.332 (0.021)	

* %5 significance level, ** %10 significance level

Table 5 presents results for both the relationship between covariates and youth unemployment as well as the spatial effects of youth unemployment. To determine whether there is a spatial effect, LM delay (lag) and LM error (error) tests were applied by including the neighborhood relationship between EKK and estimated model locations. As a result of these tests, spatial delay effect was observed in all three models, and spatial autoregressive model was estimated in the second stage. If the spatial lag coefficient ρ is positive, the cluster of high-valued dependent variables is interpreted as a cluster of low-valued dependent variables if negative. All of the ρ coefficients in the estimated models are clustered together with negative sign and regions with low youth unemployment rate if they are meaningful. When we look at Figure 1 below, which shows the distribution of the youth unemployment rate by region, this cluster clearly appears:

Figure-1: Distribution of youth unemployment rates by region



GDP and CPI variables, indicators of economic performances, do not have a statistically insignificant relationship with youth unemployment, although they have the expected signs in all three forecasted models. The variable representing the net migration rate is significant in Model-1 and Model-3 and has a positive coefficient, as expected. This suggests that domestic migrants have a negative influence on the youth unemployment rates of migrant areas. The results of the variables showing labor participation rates by the training levels significant and suggest interesting findings. Increased participation in the workforce by individuals with lower secondary education levels is an indication of the need for low-

skilled labor in the labor market as a means of reducing youth unemployment rates. Nevertheless, the fact that the increase in education levels cannot create a positive effect on the unemployment rate can be interpreted as a sign that the education system in Turkey cannot respond to the needs of the labor market.

In sum, it is seen that “many” of the variables in the model are statistically insignificant but have the expected relationship with youth unemployment. Although they have expected signs. These results may indicate that perhaps important determinants of youth unemployment are largely micro factors rather than macro factors. Confirming this theory, however, requires more detailed microdata. The lack of microdata will continue to be an important issue for future researchers in Turkey, where the collection and publication of data sets at the micro level is quite difficult.

Conclusion

The young population is one of the major production factors that national economies have. The presence of the young population indicates the existence of a dynamic and active social group. Fully capitalizing on this population will increase human capital for the nation as a whole and support stable economic growth. However, young people are most affected by unemployment. The average worldwide youth unemployment rate today is 2.5 times higher than the overall unemployment rates (Worldbank, 2017). The high rates of youth unemployment and unemployment continue to mean that the problems of economic prosperity, happiness or optimism are being passed on to future generations and negatively affect the peace of future generations.

Countries with the highest youth unemployment rates in the EU are Greece, Spain, Portugal, and Italy. The high rates of unemployment that these countries have are related to the economic crises and contractions that they are experiencing. In addition, the countries with the lowest youth unemployment are Germany, Switzerland, and Norway, which are relatively more developed countries as expected. But even in these countries, youth unemployment is on average two times higher than overall unemployment. While the unemployment rate in Turkey is between 9% and 10%, the youth unemployment rates are between 18% and 17%. The regional statistics show that the participation rates of young people in the labor force are relatively low. In this case, it is pointed out that the young people leave the education system, especially in the higher education system, from the labor market. While the lowest labor force participation rates are observed in eastern and north-eastern regions of the country, the highest rate is in the western regions such as İzmir and Edirne. Similarly, the highest youth unemployment rates are seen in TRC3 (Mardin, Batman, Siirt) regions. More importantly, it is at a very low level of 32% of the workforce participation rate in the region. All these indicators are in harmony with the social and cultural social structure of Turkey.

Unemployment rates in this way followed a high course all over the world, leading to some policies in the fight against unemployment. In the type of policy called passive policies, there are payments made as aid to the unemployed. These policies aim to prevent the economic and social problems that unemployment will create. Another type of policy are active policies, which are policies for creating employment and preventing unemployment. There are many types of active policies, from vocational education policies to investment policies. As a result, unemployment policies are called active policies and passive policies are called policies that mitigate unfavorable conditions created by unemployment. Countries implement both policy alternatives in a harmonious manner and emphasis is given to education policies, taking into consideration the qualities of youth unemployment.

The results of the model we have predicted show that the spatial effects of youth unemployment in Turkey are extremely strong. This result implies that the regions with high and low unemployment rates are in a cluster. However, many of the variables considered to represent macroeconomic stability included in the model were not found to be statistically significant, although they had expected direction. Moreover, the model results indicate that the education system in Turkey is far from meeting the needs of the labor market. As a matter of fact, the highest youth unemployment rates are seen among the young people with higher education level. The most important finding that the worker reveals is that the effect of basic macroeconomic factors on youth unemployment is limited. The basic determining factors are the knowledge-abilities possessed by the young people, that is, the subjective qualities. In future work, we will expand the cross-sectional analysis above and examine similar models with spatial panel methods.

Appendices

Table1-1A: İBBS-2 District Codes and Cities included in the Classification by Region Classification

TR10	İstanbul	TR71	Kırıkkale, Aksaray, Niğde, Nevşehir, Kırşehir
TR21	Tekirdağ, Edirne, Kırklareli	TR72	Kayseri, Sivas, Yozgat
TR22	Balıkesir, Çanakkale	TR81	Zonguldak, Karabük, Bartın
TR31	İzmir	TR82	Kastamonu, Çankırı, Sinop
TR32	Aydın, Denizli, Muğla	TR83	Samsun, Tokat, Çorum, Amasya
TR33	Manisa, Afyon, Kütahya, Uşak	TR90	Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane
TR41	Bursa, Eskişehir, Bilecik	TRA1	Erzurum, Erzincan, Bayburt
TR42	Kocaeli, Sakarya, Düzce, Bolu, Yalova	TRA2	Ağrı, Kars, Iğdır, Ardahan
TR51	Ankara	TRB1	Malatya, Elazığ, Bingöl, Tunceli
TR52	Konya, Karaman	TRB2	Van, Muş, Bitlis, Hakkari
TR61	Antalya, Isparta, Burdur	TRC1	Gaziantep, Adıyaman, Kilis
TR62	Adana, Mersin	TRC2	Şanlıurfa, Diyarbakır
TR63	Hatay, Kahramanmaraş, Osmaniye	TRC3	Mardin, Batman, Şırnak, Siirt

Table-2A: Variables used in model

genc	Youth unemployment rate : 15-24 age group
ikok	Labor force participation rate [15 years and older -%] : Women
ikog	Labor force participation rate : 15-24 age
tüfe	TÜFE (%) 2003=100
ngoc	Net Migration Rate
meslek	Vocational school enrollment rate
lisealt	Labor participation rate lower than high school
yukse	Participation rate in higher education
gdp	Gross domestic product

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9

Youth Unemployment Hysteresis in the Cemac Region: Evidences From Suradf and Panel Data Analysis with Multiple Structural Breaks Under Cross-Sectional Dependence

*Gülten DURSUN
Habibou YAKITE*

Abstract

In this study, we investigate whether country-specific youth unemployment in CEMAC countries is explained by natural rate of unemployment or hysteresis hypothesis. We employ youth unemployment rate in six CEMAC countries covering the period 1991-2014 and the stationarity test of youth unemployment rates. For the test we use a recently developed panel unit root test which allows for different number of structural breaks in youth unemployment series in different dates. Our empirical findings provide significant evidence in favour of youth unemployment rate stationarity for 5 countries. The results of panel unit root tests show the existence of youth unemployment hysteresis hypothesis in the presence of cross dependence and structural breaks only for Cameroon. Also the results show that youth unemployment hysteresis hypothesis is strongly rejected for Congo Rep., Central African Rep., Gabon, Equatorial Guineau and Chad.

Keywords: Hysteresis, Youth Unemployment, Central African Countries, Panel KPSS unit root test.

1. Introduction

Youth unemployment represents one of the most serious problems of the most African region. Africa is the continent with the highest population of young people in the world. In 2015, 19 per cent of the global youth population lived in Africa and the number of youth is 226 million youth aged 15-24 years (UN, 2015). In recent years, despite strong economic performance in the oil producing Central African Economic and Monetary Community (CEMAC), it faces significant development challenges such as poverty, income inequality and youth unemployment (IMF, 2013).

The youth unemployment rate in Sub-Saharan Afrika is closely related to the level of education. Especially young workers in underdeveloped countries are three times less educated than young workers in upper middle income countries. Young people with the lowest level of education are the most difficult to find jobs (ILO, 2015). In the case of CEMAC countries as in most developing countries, the majority of workers have very low incomes, with limited health and social protection. To survive this problem, many young people and women are obliged to work in the informal economy. According to the International Labor Organization, nine in ten workers are in the informal sector and this concerns the young population in particular (ILO, 2009). Many African countries do not have a basic consideration of the employment expectations of young people. While education levels are rising in many Sub-Saharan African (SSA) countries, the cognitive skills of young people living in poor families have not improved. This situation limits the participation of young people in the labor force.

The persistence of unemployment rates in the applied macroeconomic literature is called as unemployment hysteresis. In recent years, whether or not the hysteresis effect on the unemployment rate has been one of the most studied topics, especially after the 2008 global crisis. Theoretically, the relationship between unemployment and business cycles is based on two basic hypotheses. The first is so-called the natural rate of unemployment (NAIRU), suggested by Friedman (1968) and Phelps (1968). Accordingly, in the long run, the unemployment rate will revert to its equilibrium level. Also the second hypothesis is the unemployment hysteresis proposed by Blanchard and Summers (1986), Barro (1988) and Layard et al. (1991), which reflects that cyclical fluctuations will have permanent effects on the unemployment rates. Because there are rigidities in the labor market.

The more flexible approach proposed by Phelps (1994), the structuralist view, considers that curious shock probabilities will cause a change in the unemployment regime. The issues of youth unemployment like the unemployment reflects the social, political and economic problem in the long run. Azeng and Yogo (2015) confirmed that the large youth unemployment affect on political violence positively. They found that the level of education decrease the magnitude of the effect. Thereby, if the hysteresis hypothesis of youth unemployment is valid, it will be useful for policy implications in unemployment fighting (Chou and Zhang, 2012).

One of the most effective procedure used to measure the effect of hysteresis is the unit root methodology. The existence of unit root means that unemployment rate do not return to its natural level after shock. The majority of studies on the dynamics of unemployment focus on developed countries such as the OECD and the EU. Most of empirical evidence has find unemployment hysteresis in several countries. Nevertheless, little work has been undertaken about youth unemployment in labor markets of underdeveloped African countries. The limited availability of data for underdeveloped African countries except for South Africa has resulted in very limited study on this area.

In this study we investigate whether country-specific youth unemployment in CEMAC countries is explained by natural rate of unemployment or hysteresis hypothesis. This empirical study contributes twofold. First, we assume a two different unit root tests in the presence of cross-sectional dependence and structural breaks, which is main contribution to literature on youth unemployment hysteresis. The study investigates whether hysteresis in youth unemployment rates of six CEMAC countries, Cameroon, Gabon and Equatorial Guineau, Congo Rep., Central African Rep. and Chad. Therefore, current study expects to fill the existing gap in the youth hysteresis literature on the African countries.

The remainder of this study is organized as follows. Section 2 presents empirical literature, Section 3 describes methodology and the data used, Section 4 report the empirical findings. Finally, Section 5 presents concluding remarks.

2. Empirical Literature

While empirical evidence on the stationarity of the unemployment rate is abundant in developed countries, the literature dealing specifically with the Sub-Saharan African or CEMAC countries and categorically related to youth unemployment is rather unused. In relation to developed countries, in these studies, traditional unit root tests were conducted on the unemployment data of univariate and panel groups and it was investigated whether the series were stationary or not. For instance, Blanchard and Summers (1986) showed that the hysteresis hypothesis is valid in France, Germany and England. The some of the studies under the assumption of linearity are applied by using univariate unit root test (Brunello, 1990; Mitchell, 1993; Roed, 1996; Fève, 2003; Gray, 2004) and panel unit root tests (Song and Wu, 1997, 1998; Smyth, 2003 and Chang et al., 2005).

Recent studies have focused on the analysis of unit root processes in the presence of one or multiple structural breaks in the unemployment series. Khraief et al. (2015) investigates hysteresis hypothesis using linear and nonlinear unit root tests with and without structural breaks as well as cross-sectional dependence in 29 countries from OECD unemployment rates over the period 1980-2013. Authors is rejected unemployment hysteresis almost in 86% of sampled countries. León-Ledesma ve McAdam (2004) analyzed unemployment hysteresis hypothesis by account of structural break and nonlinear dynamics of unemployment with methods of the time series and the panel unit root test for 12 Central and Eastern European countries and 15 European Union members. The hysteresis hypothesis is rejected in this study, high and low unemployment balances were detected and the adaptation speeds of the EU countries were found to be slower than the other groups.

Unfortunately, there is no comprehensive literature on youth unemployment. Ghoshray et al. (2016) used the AR(1) model in examining the unit root properties of adult and youth unemployment rate in European countries and reports that youth unemployment rate is more sensitive to business cycle waving than adult unemployment. Njoda and Ulrich (2015) examines the time series behavior of informal employment rate for six CEMAC countries using autoregressive fractionally integrated moving average (ARFIMA) model for the period 1981-2012. They proved the existence of hysteresis hypothesis for all the CEMAC countries, except for Gabon and the Republic of Congo. Olanipekun et al. (2017) indicates that accounting for structural break produce the unemployment rate series stationary for Nigeria. Contrarily, authors suggested that shocks to the unemployment rates have persistence effects for South Africa. Falco and Teal (2012) examined the nature of unemployment in urban labor markets and the transition mechanism for young people to work in Ghana by used survey data between 2004-2010. Findings are that young people have less paid jobs than they can find jobs. Moreover, they have not obtained empirical evidence to provide better employment opportunities.

Caporale and Gil-Alana (2017) performed ARFIMA techniques to model unemployment in eleven African countries for the period of 1960-2010. They found very strong evidence hysteresis characteristics unemployment in all series. Also, the authors suggest that hysteresis models are the most suitable models for the African experience. Fox et al. (2016) argued Sub-Saharan African's youth employment challenges and opportunities. Accordingly, young people who can enter the labor market in Africa are the best trained people. While globalizing media bring high expectations to the future of these young people, the slowdown of recent economic growth, the continuation of commodity export dependency, did not create enough demand for urban workers. Also, the education that young people receive is not well adapted to globalization. In other words, this means that critical skills have not been created.

3. Data and Methodology

This study empirically examines the unemployment hysteresis using panel data of six countries in CEMAC countries, including Cameroon, Gabon and Equatorial Guinea, Congo Rep., Central African Rep. and Chad over the period of 1991-2014. The data on youth unemployment rates were obtained from the World Bank *World Development Indicators* database. Relating countries are selected with regard to the available data on youth unemployment. Appendix Figure 1 consists of a plot of unemployment rate for the CEMAC countries.

In this study, we used newly developed Panel SURADF tests of Breuer et al. (2001) and Panel KPSS tests of Carrion-i Silvestre et al. (2005) and Carrion-i Silvestre (2005), which allow for multiple structural breaks and taking into account the cross-sectional dependence.

3.1. SURADF Panel Unit RootTest

The SURADF test is augmented Dickey-Fuller methodology developed by Breuer et al. (2001), taking cross-section dependency, which is based on the “seemingly unrelated regressions” (SUR) panel prediction model proposed by Zellner (1962). The most important difference of this test from the MADF test proposed by Taylor and Sarno (1998) is that the null and alternative hypothesis are tested separately for each panel in the SUR system. Also, the SURADF test is more robust than estimated single equation ADF tests (Holmes, 2000:6). The SURADF test is based on the following equation:

$$\Delta y_{it} = \alpha_i + \beta_i y_{it-1} + \theta_{it} + \sum_{j=1}^{p_i} \delta_{ij} \Delta y_{it-j} + \varepsilon_{it} \quad (1)$$

$$cov(\varepsilon_{it}, \varepsilon_{jt}) \neq 0, \quad i \neq j, \quad t = 1, 2, 3 \dots, T$$

where ρ_i is the autoregressive coefficient for series i . Hereby the optimal lag length (ρ) is different for each country. Equation (1) shows that the ADF unit root tests are performed separately for each panel. The system of the conventional ADF equations that we describe for each panel as follows:

$$\Delta y_{1t} = \alpha_1 + \beta_1 y_{1t-1} + \theta_{1t} + \sum_{j=1}^{p_1} \delta_{1j} \Delta y_{1t-j} + \varepsilon_{1t}, \quad i = 1$$

$$\Delta y_{2t} = \alpha_2 + \beta_2 y_{2t-1} + \theta_{2t} + \sum_{j=1}^{p_2} \delta_{2j} \Delta y_{2t-j} + \varepsilon_{2t}, \quad i = 2$$

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$$\Delta y_{Nt} = \alpha_N + \beta_N y_{Nt-1} + \theta_{Nt} + \sum_{j=1}^{p_N} \delta_{Nj} \Delta y_{Nt-j} + \varepsilon_{Nt}, \quad i = N \quad (2)$$

The N null and alternative hypotheses are tested individually in the SURADF method:

$$H_0: \beta_i = 0$$

$$H_A: \beta_i < 0 \quad i = (1, 2, 3 \dots, N) \quad (3)$$

where the test statistics are computed from the SUR estimates of equation (2).

Breuer et al. (2001) stated that the identical lag length to be determined between panel members would affect the test statistics negatively. Therefore, in this study, we have chosen the approach of Perron (1989) in determining the lag structure for each equation. For SURADF, the bootstrap critical values obtained from the Monte Carlo simulations with 10,000 replication were used. If the SURADF test value is greater than the critical value, the null hypothesis is rejected, and it is decided that the relevant series belongs to the stationary, in other words, it does not contain the unit root. In addition, $T > N$ should be applied to this method.

3.2. Carrion-i Silvestre et al.’s (2005) Panel Stationary Test With Structural Breaks

The standard unit root tests under the existence of structural breaks in the time series exhibit a tendency to reject the null hypothesis of a unit root because of misspecification of the deterministic trend (Perron, 1989). Zivot and Andrews (1992) developed a unit root test that allowed for endogenous a one time break, then Lumsdaine and Papell (1997) extended the Zivot and Andrews (1992) model with a test allowing two structural breaks. Furthermore, Breitung and

Pesaran (2008) argued that the assumption of cross-section independence was not appropriate when panel data were used. Indeed, the assumption of independence does not valid in particular to the analysis of macroeconomic or financial data due to the mutual interaction between economies (Urbain and Westerlund, 2006).

The panel unit root test (PANKPSS) developed by Carrion-i Silvestre (2005) is the panel extension of the time series KPSS (Kwiatkowski et al., 1992). This test consider both multi-structural breaks in the level and/or the slope of individuals time series and cross-sectional dependence. With this test, efficient results can be obtained even in small samples and the stationarity of panel-forming series is tested jointly and individually (Carrion-i Silvestre et al, 2005 and Carrion-i Silvestre 2005). The developed null hypothesis is stationary as in Hadri (2000). In that case, data- generating process (DGP) is as following:

$$y_{it} = \pi_{it} + \beta_i t + \mu_{it} \quad \text{with } i = 1, \dots, N \text{ and } t = 1, 2, \dots, T$$

$$\beta_{it} = \sum_{k=1}^{m_i} \theta_{ik} D(T_{bk}^i)_t + \sum_{k=1}^{m_i} \gamma_{ik} DU_{ikt} + \beta_{i,t-1} + \varepsilon_{it} \quad (4)$$

where $\varepsilon_{it} \sim i.i.d(0, \sigma^2_{\varepsilon,i})$ and $\beta_{i0} = \beta_i$ let it to be constant. $D(T_{bk}^i)_t$ and DU_{ikt} are expressed as dummy variables in Eq. (4). Also, this model could be written $D(T_{bk}^i)_t = 1$ for $t = T_{bk}^i + 1$ and 0 elsewhere, $DU_{ikt} = 1$ for $t > T_{bk}^i$ and 0 elsewhere, T_{bk}^i denotes k th break dates (i.e. $k=1, \dots, 5$) for i th individuals.

Null hypothesis of model could be expressed as:

$$H_0 = \sigma^2_{\varepsilon,i} = 0 \quad (i = 1, 2, \dots, N)$$

Under this assumption the Eq. (4) could be rearranged as:

$$y_{it} = \pi_{it} + \sum_{k=1}^{m_i} \theta_{ik} DU_{ikt} + \beta_{it} + \sum_{k=1}^{m_i} \gamma_{ik} DT_{ikt}^* + \mu_{it} \quad (5)$$

where $(DT_{ikt}^* = t - T_{bk}^i$ for $t > T_{bk}^i$ and elsewhere).

Under the assumption that the long-run variance is constant null hypothesis can be tested through LM_{Hom} statistic:

$$LM_{Hom}(\lambda) = N^{-1} \sum_{i=1}^N \hat{\omega}^{-2} T^{-2} \sum_{t=1}^T S_{it}^2 \quad (6)$$

where $S_{it} = \sum_{j=1}^t u_{ij}$ and $N^{-1} \sum_{i=1}^N \hat{\omega}_i^2 \hat{\omega}_i^2 = \lim_{T \rightarrow \infty} T^{-1} S_{i,T}^2$

if long-term variance is allowed to change across cross-sectional units, then LM statistics is can be written as:

$$LM_{Het}(\lambda) = N^{-1} \sum_{i=1}^N (\hat{\omega}^{-2} T^{-2} \sum_{t=1}^T S_{it}^2) \quad (7)$$

LM statistics is normalized as follows:

$$z(\lambda) = \frac{\sqrt{N}(LM(\lambda) - \bar{\xi})}{\bar{\zeta}} \sim N(0,1) \quad (8)$$

$\bar{\zeta}$ and $\bar{\xi}$ represent expected value and arithmetic mean of variances for each cross-sections.

4. Empirical Findings

4.1. Testing the Cross-sectional Dependency

This empirical study employs the youth unemployment rates for six CEMAC countries over the period 1991-2014. Before applying unit root tests is needed to examine to test cross- section dependence using the approaches developed by Breusch and Pagan (1980) and Pesaran et al. (2008). When the existence of the cross sectional dependence is

rejected we use First Generation Panel Data Unit. In case of acceptance of the existence of the cross-sectional dependence on panel data use of 2nd generation unit root tests will entail more consistent, effective and strong predictions.

In an examination of the existence of cross section dependence when time dimension is greater than the cross sectional size ($T > N$) Breusch-Pagan (1980) Lagrange Multiplier (LM) CDLM1, when both large Pesaran (2004) CDLM2 test and in the case $T > N$ and T and N to be big enough conditions are provided.

Also CDLM1 test group average is zero and biased cause individual average differs from zero. Pesaran et al. (2008) corrected this deviation by adding the variance and average into test statistics. Therefore the name of the test is expressed as Deviation Corrected LM Test (LMadj). Lagrange Multiplier (LM) test is presented as follows (Breusch and Pagan, 1980):

$$CDLM1 = T \sum_{i=1}^{n-1} \sum_{j=i+1}^n \rho^2 ij \sim X^2 \frac{N(N-1)}{2} \quad (8)$$

LM_{ADJ} test as follows:

$$LMadj = \left(\frac{2}{N(N-1)} \right)^{1/2} \sum_{i=1}^{n-1} \sum_{j=i+1}^n \rho^2 ij \frac{(T-K-1)}{v_{Tij}} \rho ij - \frac{\mu_{Tij}}{v_{Tij}} \sim N(0,1) \quad (9)$$

μ_{Tij} is the average and v_{Tij} is the variance. According to LMadj test, the results are standard normal distribution. The hypothesis of the test is:

H_0 : There is no cross section dependency

H_1 : There is cross section dependency

If the probability values is less than 5% significance level, we conclude that, then null hypothesis will be rejected. CD tests and t-statistics are given in Table 1. Table 1 indicates that the probability value of CD tests converges to zero. In other words, the null hypothesis of no cross-sectional dependency is rejected at the 1% significance level. Thus, this finding indicates the importance of taking into account cross-sectional dependence when analysing the stationarity of CEMAC countries. Therefore we must apply second generation unit root tests instead of first generation unit root tests.

The existence of horizontal section dependency is confirmed by the Breusch-Pagan (1980) Lagrange Multiplier (LM) test when the time dimension of the panel is larger than the horizontal section size; when both are large, can be investigated by Pesaran (2004) cross-section dependence (CD) test. In this study, LM test was used for 6 countries and 24 years. However, this test deviates when the group mean is zero and the individual mean is different from zero. Pesaran et al. (2008) corrected this deviation by adding the variance and the mean to the test statistic. For this reason, the test deviation of the test is expressed as corrected LM test (LMadj).

Table 1 indicates that the probability value of CD tests converges to zero. In other words, the null hypothesis of no cross-sectional dependency is rejected at the 1% significance level. Thus, this finding indicates the importance of taking into account cross-sectional dependence when analysing the stationarity of CEMAC countries.

Table 1: Cross-sectional dependency tests results

CD Tests	With Trend		Without Trend	
	Stat.	Prob.		
CDLM1 (Breusch, Pagan, 1980)	30.896	0.009	40.204	0.000
CDLM2 (Pesaran 2004 CDLM)	2.902	0.002	4.602	0.000

Bias-adjusted CD Test	8.166	0.000	7.743	0.000
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Therefore we must apply second generation unit root tests instead of first generation unit root tests. Furthermore, we need to consider cross-sectional dependence with the bootstrap procedure.

4.2. Stationarity Analysis

In this study, stationary property of series has been tested by two recently developed panel unit root tests which are the SURADF and the PANKPSS tests. The results of applying the SURADF unit root test are presented in Table 2. The results indicate that the SURADF test with constant model fails to reject the null of non-stationary youth unemployment rates for Cameroon, Central African Rep., Eq. Guinea and Chad except Congo Rep., and Gabon. In other words, the results from the SURADF tests indicate that youth unemployment in the CEMAC region, with the exception of Congo Rep. and Gabon, could be characterized as a non-stationary process in levels. We observed that the country-specific critical values are different. The smallest (in absolute value) at 10% significance level is -3.126 (Central African Rep.) while the largest is -4.150 (Equatorial Guinea) for the model without trend.

Table 2. SURADF estimation and the critical values (youth unemployment rates)

Country	Test statistics SURAF (constant)	Critical values			Test Statistics SURAF (constant and trend)	Critical values		
		0.01	0.05	0.10		0.01	0.05	0.10
Cameroon	-1.606(2)	-4.527	-3.795	-3.718	-6.382(1)**	-7.007	-5.683	-4.833
Congo Rep.	-4.765(1)**	-7.078	-4.397	-3.470	-6.833(1)**	-10.20	-6.248	-6.451
Central African Rep	-1.582(1)	-4.605	-3.862	-3.126	-1.491(1)	-7.209	-5.949	-5.048
Equatorial Guinea	-1.919(2)	-6.539	-5.158	-4.150	-5.538(2)*	-6.481	-6.125	-5.345
Gabon	-4.478(1)*	-6.858	-4.534	-3.873	-4.799(1)	-13.97	-10.77	-7.711
Chad	-2.883(1)	-4.212	-3.675	-3.150	-2.873(1)	-6.787	-6.198	-4.980

Notes:(*) and (**) denotes statistical significance at the 0.10 and 0.05 level. Figures in parentheses indicate the lag length. Critical values were obtained with 10,000 bootstrap distributions. The lag length for each equation based on the method proposed by Perron (1989).

The results in Table 2 with constant and trend model indicate that the SURADF test is rejected the null hypothesis of a unit root in the youth unemployment rate, except for Cameroon, Congo Republic and Eq. Guinea at the 5% and 10% level of significance, respectively. On the other hand, Central African Rep., Gabon and Chad youth unemployment series are non-stationary. In brief the effect of hysteresis in youth unemployment is valid for Central African Rep., Gabon and Chad.

Results from the panel KPSS tests in the constant are reported in Table 3. The individual KPSS test results indicate that youth unemployment hysteresis does not hold for all CEMAC region. For these six countries, shocks to youth unemployment rates series come out have temporary effects. As a consequence presence of cross-sectional dependence, the bootstrap critical values are employed the instead of asymptotic critical values.

Table 3 indicate that the null hypothesis of stationarity is accepted for the whole panel under the assumption of heterogeneity of long-run variance. Corresponding with break dates, the first break dates correspond to the late 2011s for Central African Rep. and early 1996s for Gabon.

Table 3: Individual and panel KPSS test statistics sample 1991-2014 (t=24) (intercept)

Panel a: The dates of structural breaks and the results of individual KPSS tests										
Countries	KPSS	m	Tb,1	Tb,2	Tb,3	Tb,4	Tb,5	Critical values (%)		
								90	95	99
Cameroon	0.240	1	2003	-	-	-	-	0.459	0.523	0.642
CongoRep.	0.323	0	-	-	-	-	-	0.585	0.876	1.796
Central AfricanRep.	0.071	1	2011	-	-	-	-	0.497	0.769	1.958
EquatorialGuinea	0.082	1	2004	-	-	-	-	0.591	0.699	0.983
Gabon	0.135	2	1996	2009	-	-	-	0.683	1.018	1.661
Chad	0.131	0	-	-	-	-	-	0.619	0.927	1.778
Panel b: Panel stationarity test (assuming cross-sectional independence)										
Model			Test statistics				Probability value***			
LM(λ)(hom)			0.452				0.325			
LM(λ)(het)			1.103				0.135			
Panel c: Bootstrap distribution (allowing for cross-sectional dependence)										
Model			90			95			99	
LM(λ)(hom)			7.104			8.291			10.705	
LM(λ)(het)			8.442			10.307			15.811	

Notes: *** denotes asymptotic probability values. Youth unemployment rate contains a stationary process for all the CEMAC counties. m and Tb denotes the number and dates of breaks, respectively. max. is set at three. The finite sample critical values are computed by means of Monte Carlo simulations using 5000 replications. LM(λ)(hom) and LM(λ)(het) denote the Carrion-i-Silvestre et al. (2005) KPSS test assuming homogeneity and heterogeneity, respectively, in the estimation of the long-run variance.

Table 4 present panel KPSS stationary test results with three endogenous breaks in the constant and slope. The KPSS test results fails to reject the null hypothesis of stationarity for all countries in the CEMAC region, except for Cameroon. This means that the unemployment hysteresis hypothesis in the Cameroon could be a non-stationary process. Corresponding with break dates, the first break dates correspond to the late 2011s for Central African Rep. and early 1993s for Gabon.

Table4: Individual and panel KPSS test statistics sample 1991-2014 (t=24) (intercept and trend)

Panel a: The dates of structural breaks and the results of individual KPSS tests										
Countries	KPSS	m	Tb,1	Tb,2	Tb,3	Tb,4	Tb,5	Critical values (%)		
								90	95	99
Cameroon	0.375***	2	1995	2004	-	-	-	0.099	0.205	0.306
Congo Rep.	0.317	0	-	-	-	-	-	0.350	0.533	0.990
Central African Rep.	0.067	1	2011	-	-	-	-	0.251	0.363	0.705
Equatorial Guinea	0.163	1	1997	-	-	-	-	0.406	0.531	0.765
Gabon	0.309	3	1993	1996	2009	-	-	0.479	0.523	0.595
Chad	0.063	0	-	-	-	-	-	0.329	0.469	0.927
Panel b: Panel stationarity test (assuming cross-sectional independence)										
Model			Test statistics				Probability value ***			
LM(λ)(hom)			6.981				0.000			
LM(λ)(het)			14.148				0.000			
Panel c: Bootstrap distribution (allowing for cross-sectional dependence)										
Model			90			95			99	
LM(λ)(hom)			5.735			10.829			17.026	
LM(λ)(het)			16.992			19.993			26.973	

Notes: *** denotes asymptotic probability values. * and ** indicates significance at the 1% and 5% levels. Youth unemployment rate in CEMAC countries is stationary or contains a stationary process except for Cameroon, Equatorial Guinea and Gabon. m and Tb denote the number and dates of breaks, respectively. max. m is set at three. The finite sample critical values are computed by means of Monte Carlo simulations using 5000 replications. LM(λ)(hom) and LM(λ)(het) denote the Carrion-i-Silvestre et al. (2005) KPSS test assuming homogeneity and heterogeneity, respectively, in the estimation of the long-run variance. unemployment rate in OECD countries is stationary or contains unit root process.

5. Conclusion

This study examines the youth unemployment rates by using panel unit root tests for the CEMAC (Central African Economic and Monetary Community) region over the period 1991-2014. SURADF and Panel KPSS unit root tests are used allow for cross sectional dependence. Otherwise panel KPSS test is take into account for heterogenous structural breaks. This empirical study contributes to the field of empirical research by determining whether or not the unit root process is characteristic of the youth unemployment in the CEMAC region labour markets. Hysteresis hypothesis in youth unemployment is confirmed for most of these CEMAC countries, except Cameroon, Congo Rep. and Eq. Guineau, when Breuer et al. (2001) unit root test was conducted. The Panel KPSS stationary test with a breaks in level and trend employed in this study provided evidence favoring the natural rate of unemployment for all CEMAC countries except only Cameroon. Therefore, our findings suggest that there is evidence of persistence in the youth unemployment rates, reflecting persistent youth unemployment in the Cameroon labour market that policy makers need to adress.

Indeed, youth unemployment in Cameroon is one of the major problems. In Cameroon, in recent years thousands of hopeless young people have been forced to travel clandestinely mostly in the US, Europe and China (Mobit and Mbella, 2016). Despite the fact that business growth has taken place in Cameroon, which exports minerals, the creation of nonfarm employment structure has changed little (Filmer and Fox, 2014). From the findings of this study several important policy decisions can be made for the Cameroon. First, the results suggest that the high youth unemployment rate in the region might persist unless governments take appropriate measures to solve the problem. Since it is unlikely that high unemployment rates will return to natural rate, governments must assume responsibility for creating jobs, especially during periods of economic downturn where declining output leads to an increase in unemployment. Second, fluctuations in the economies of the region could have permanent effects on the unemployment rate. As a result, regional governments may need to be cautious in developing stabilization policies and carefully assess the short and long-term effects of these policies.

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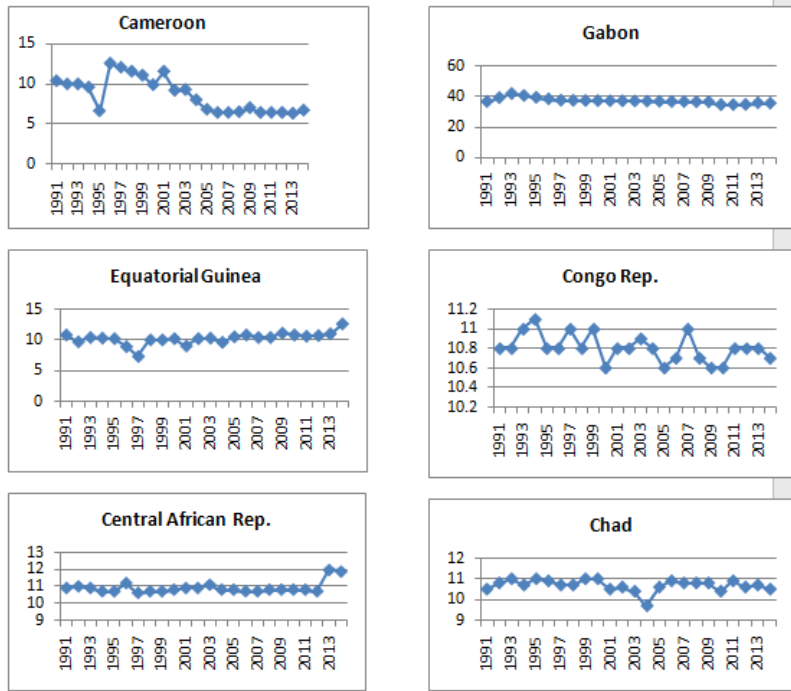
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Appendix: Youth unemployment rates of the CEMAC regions (1991-2014)



10

Effects of Part-Time Working on Female Labor Force Participation and Population Growth Rate: The Example of Turkey

Eylül KABAKÇI GÜNAY

Abstract

The responsibility and maternal role of the woman in home has always been one of the important factors that keep her away from the labor market. According to this, the tasks of housework, being a good wife, being a good mother and fulfilling the duties and responsibilities should be fulfilled. Especially in societies where the weight of patriarchal family regulation is still felt like the Turkish society, being a part of business life for woman is not seen as a necessity and it can be thought that her primary duty is maternity and housewives. However, it is necessary for women to take an active role in the labor market to ensure Turkey's economic growth and development. One of the most influential factors in women's decision to participate in the workforce is child care. Most of time, being a part of work life especially if you are a mother results with being away from the labor market and it is not a surprise. However, in countries where women's participation in labor is already low, such as Turkey, this ratio needs to be raised to speed up the economic growth of the country and increase the level of prosperity. Employment solutions that enable women to take time for childcare after having children, will facilitate the participation of women in the work life and women's employment will be long term. In this sense, part-time work seems to be a useful tool for women to provide work life and private life balance.

This study will discuss possible effects of the widespread use of part-time work in the framework of the regulation, which is enacted in late 2016 in Turkey, and gives civil servant and worker women the right to work part-time and in the case of motherhood. On November 8, 2016, according to the regulation published in the official gazette number 29882, in addition to the existing maternity rights, part-time work was also provided under the condition of both parents

were working. According to the regulation after all rights were used, one of the parents, dad or mother can work as part time. According to the regulation, until the first September when the child arrives in elementary school age (66 months), the civil servant or the worker parent will be able to work part-time. This is one of the very positive step for females who wants to become mother and have doubts to do it. This study will try to make clear expected effects of this new regulation on the decision to become a mother which is given by female workers and civil servants.

Introduction

Gender equality emphasizes that using women's talents and skills in the labor market not only provides families with more economic independence; but also increase women's self confidence and social respectability. Furthermore structure of labor force outlook is related very closely with many components such as economical situation of country, socio-economic situation, religion, enrollment rate of population and culture. So if we try to understand the place of women in the labor market in Turkey, we see that the share of our women in total labor force, their labor participation rate are low; sex-based wage differences are high. Major subject of this unwilling situation is the sexist role in Turkish society. Like all patriarchal societies motherhood, baby care and house works attributes to women. Duties assigned to women in the home are able to break women away from business life, so for females staying away from labor market is an option at some point in their lives. However, the increase in the labor force participation rate of women is a necessity for the Turkish economy to grow faster and be stronger. Women's participation in labor should be increased for turkey. Benefits of increased female labor force participation rate are listed in the 9th development plan which is enforces in 2011, as follows;

- Higher female employment is instrumental in building capacity for economic growth and poverty reduction. International experience indicates that getting women into jobs is associated with poverty reduction, higher economic growth and better governance. Estimation in the 9th Development report suggest that reaching the female labor force participation target which is from 24% to 29% could contribute to reducing poverty by up to 15% if all new entrants would take full time jobs.
- Higher female employment is instrumental in building capacity for economic growth and poverty reduction. International experience indicates that woman into jobs associated with poverty reduction, higher economic growth and better governance. Also higher levels of female employment allow government investment in education to be used more efficiently as woman use their acquired talents productively in the economy. In countries with low levels of female employment, families often under-invest in girl's education. In addition using women's talents and skills in the labor market not only provides families with more economic independence, but also increases women's self confidence and social respectability. On the contrary, working women generally are more involved than non-working women in making decisions in relation to their children's education and health, which are externalities that positively affect the welfare future generations (The World Bank, 2009: 9).

Female Employment and Female's Labor Force Participation in the World at a Glance

Although female labor force participation rates are still lower than men's, they have been increasing rapidly. More than half of women around the world are in the labor force today, and women constitute approximately four out of ten global workers. However, much of the work performed by women is not paid- an outcome of traditional division of labor within the household or the nature of employment in family farms and enterprises. When women are in the labor force, they usually perform different tasks and work in different sectors than men. Sex segregation in the labor force implies that female and male workers work in compartmentalized activities that usually lead to different rewards and different career opportunities even though workers may have otherwise comparable labor market characteristics. The condition of women's employment tend also to be atypical (that is, part-time, temporary, or casual work in the home or in the form of subcontracting) In occupations, for example nearly two thirds of women in manufacturing are categorized as laborers, operators, and production workers, with a small percentage in administrative and managerial positions. Women workers are usually employed in a limited number of industrial sectors: more than two-thirds of the global labor force in garment production is female, accounting for almost one-fifth of the total female labor force in manufacturing. With the respect to employment status, the majority of family workers are female and often unpaid (Tzannatos, 7: 1998). So the "secondary role" of women in the labor market is largely related to the traditional division

of labor. Although this division of labor based on sexism is at different levels in every society; giving birth, growing children and doing housework are among the main tasks of the women from the physiological and sociological aspects and earning money can be seen as a task of man by working in the market. However, this division of labor, which has been adopted since time immemorial, has changed from the 1750s to the beginning of industrialization in England. This process, which was called "Industrial Revolution", first started with the invention of the spinning machine, spread to other sectors and countries, especially iron and steel production after the invention of the steam machine made by James Watt in 1782. In this period, with the mass production that started in European industry, there has been a "revolution" in agriculture and the wasted agricultural labor force migrated to the city and started to join labor markets as a labor force. With the reduced need for arm power, there was no physical obstacle in front of women's business life especially in cities, but this time women had to struggle with traditional roles.

A person basically wants to work to get a financial opportunity that can meet his needs. However, the work of the woman in question is not only aimed at meeting the basic needs of women such as nutrition, dressing, but also for the purpose of having a say in the family, being respected by the society. As a result, the impact of labor force participation on women's position within the home is so complex that it can not be examined only by economic variables, and is closely influenced by societal values, traditional roles and gender ideologies. For example, in some societies, some work is perceived as women's work, and these jobs usually consist of monotonous jobs that pay less (Dedeoğlu,148:2000). At this point, looking at the participation rates of women in the workforce in different parts of the world will help us understand the general picture.

Table 1: Female Labor Force Participations Rates Around the World (%)

	Arab World	Europe & Central Asia	EU	Latin America & Caribbean	Middle East & North Africa	Sub-Saharan Africa	World
1990	20,8	49,2	45,6	40,2	18,1	58,9	52,1
1991	19,9	49,4	46,5	41,6	17,4	59,1	52,2
1992	19,9	48,9	46,2	43,4	17,5	59,5	52,2
1993	19,8	48,1	46,2	43,7	17,5	59,8	52,1
1994	20,4	47,9	46,2	44,4	18,0	60,1	52,2
1995	20,5	47,9	46,3	45,4	18,1	60,3	52,1
1996	20,6	47,8	46,6	45,3	18,1	60,5	52,1
1997	20,6	47,6	46,8	46,6	18,2	60,7	52,0
1998	20,6	47,6	47,0	47,1	18,4	61,0	51,9
1999	20,9	48,5	47,4	48,0	18,9	61,2	52,0
2000	20,9	48,4	47,7	48,1	19,0	61,7	51,9
2001	20,5	48,2	47,7	48,7	18,9	62,1	51,9
2002	20,3	48,5	47,7	49,6	18,8	62,4	51,8
2003	20,8	48,7	48,1	49,9	19,5	62,5	51,9
2004	21,2	48,8	48,5	50,8	20,1	62,6	51,9
2005	21,4	49,0	48,7	51,4	20,6	62,8	51,9
2006	21,5	49,3	49,2	51,5	20,4	63,0	51,6
2007	22,2	49,5	49,4	51,8	20,8	63,0	51,3
2008	22,3	49,8	49,8	52,1	20,4	63,2	51,0

2009	22,4	50,0	50,0	52,6	20,6	63,3	50,7
2010	22,6	50,1	50,2	53,1	20,8	63,3	50,3
2011	22,8	50,4	50,3	53,1	21,0	63,4	50,2
2012	23,0	50,7	50,7	53,6	21,4	63,5	50,2
2013	23,3	50,7	50,7	53,6	21,6	63,6	50,2
2014	23,5	50,7	50,8	53,7	21,8	63,7	50,2

Source: International Labour Organization, Key Indicators of the Labour Market database. <http://www.ilo.org/global/statistics-and-databases/lang--en/index.htm> (Access Date: 25.02.2017)

According to the geographical regions, the labor force participation rate of women is the highest in the Sub-Saharan Africa due to economical issues like lower income level, then Europe and Central Asia, European Union, Latin America & Caribbean, and as the last one is Arab World. World general rates are walk around 50%'s from 90's until today.

According to studies that determine the differences on FLPR's shows that especially in Arab World, religion was the biggest determiner to be a part of labor force for women. Sub-Saharan Africa's result seems like a surprise but if we consider how their GDP is low, it makes sense then. Underdeveloped regions like Sub Saharan Africa, agricultural activities are still main source of income so GDP. Agricultural activities are very common in the rural areas, so female's can work as agricultural worker. So that the labor force participation rate of women is higher in such geography like Sub Saharan Africa. The place where women have the second highest participation rates in the workforce is Latin America & Caribbean especially after 1998. Until 1998, Europe & Central Asia's ratios are higher than Latin America & Caribbean. But after the 1998, Latin America & Caribbean caught Europe & Central Asia's and exceed then. European Union countries follow Europe & Central Asia almost with the same ratios. Where women have the lowest labor participation rates are in the Middle East & North Africa and Arab World. There are many reasons why women's labor force participation in these geographies is low. The first one is religious. Especially in the Islamic geography, the participation rate of women in the labor force is low due to the influence of religion. Because, according to Islamic, there are a number of obstacles for women and men to work together. With this, the patriarchal family is more dominant in the Islamic geography, and the view that the woman's work is not necessary and that the woman's home is the home is adopted as the dominant view.

Historical Background and Place of Woman in Work in Turkish Societies

It will be useful to understand the development stages of women's place in the Turkish society before the structure of the Turkish employment of women. It is known that in the Anatolian Seljuks, women governors served, ambassadors to abroad, madrasas, hospitals and hammams, making important contributions to education and health. The first economic initiative of Muslim women in Abadolu is the Bacıyan-i Rum community. This community can be described as a women's economic initiative emerging in the conditions of the eighth century and continuing the existence of three centuries. In the Ottoman Empire, especially after being the capital of Istanbul, some arrangements were made for the education of the women of the palace. For example, Fatih Sultan Mehmet encouraged activities such as speaking Turkish, reading and learning the necessities of religion in addition to the skills of women.

The working life of women in the Ottoman state shows differences in urban and rural areas. In rural areas, women have become more involved in working life in urban life, even though they are engaged in production as active labor force in the agricultural sector. End of the 19th century and beginning of the 20th century is a period that women effected from structural changes about community and economic situation with respect to their qualification and social class. Women who belong to middle and upper class who attained education and career opportunities by following one or two generations in comparison with urban men have become disadvantaged in terms of modern education facilities which men can easily reach. At this period, women work in public duties like sergeant, customs officer, guardian, intelligence officer, finance officer as well as, telephone, postal and telegraph administration.

Tanzimat Era (Ottoman Reform) has been the years when girls are get educated and primary school and secondary education are started. Through these practices implemented by the state, it is desired to develop women in terms of education and culture. Despite these practices, the education of women in the Ottoman state continued to lag far behind men. Especially with the decreasing male population after the First World War, the education level of the population has generally fallen to a lower point. The Tevhidi Tedrisat and the Turkish civil law, which were carried out after the establishment of the republic of Turkey, are important developments that enable women to have equal opportunities in education and social life with men. Atatürk has been especially careful to have education for women and equal rights with men. Thus, with the increasing in quality of education and increasing the number of teachers and students, the schooling rate increased by 400% compared to the previous 10 years in the education period of 1931-1932. Turkish women have come to be able to work in many branches of their working fields with these applications. In 1934, 18 women deputies entered the parliament in the first elections held after the women's right to vote and the right to be elected (Yumuşak, 2009: 18-23).

The place of women in Turkish society has always maintained its importance. Especially during periods when there is no Arab influence, it is possible to talk about a matriarchal Turkish society and family order. However, in the Ottoman period, the state of the woman who cut the speed of the place in the outside world has started to be considered again with the establishment of the Republic of Turkey. Today, however, women's participation in the labor force seems to be more comfortable than in the past, is still inadequate.

Female Labor Force Structure in Modern Turkey

Turkey's female labor participation rates are the lowest one in comparison with OECD countries. Moreover, over the last 50 years, Turkey's FLFP has been decreasing. A closer examination of the gender gap sub-indices shows that Turkey has the 10th lowest female labour force participation rate and the 12th lowest share of women in ministerial positions among 130 countries. Worst of all, Turkey has the lowest gender gap index ranking in the upper middle income group that it belongs to. It is important to elaborate on the reasons behind this fact in order to determine future policies both for Turkey and for those other developing countries potentially facing similar problems (Göksel, 2012: 42).

Table 2: Turkey's Female Labor Force Statistics

Years	Not in labour force (Thousands)	Labor Force (Thousands)	Labor Force Participation Rate	Employment Rate	Unemployment Rate
1990	11731	6387	35,3	32,6	7,6
1991	12380	6355	33,9	31,4	7,4
1992	12999	6284	32,6	30	7,8
1993	14371	5441	27,5	24,7	10
1994	14222	6143	30,2	27,5	8,8
1995	14438	6489	31	28,6	7,9
1996	14797	6655	31	29,1	6,1
1997	15905	6062	27,6	25	9,4
1998	15639	6828	30,4	28,4	6,6
1999	16621	6351	27,6	25,4	8
2000	17018	6188	26,6	24,9	6,3
2001	17318	6451	27,1	25,1	10
2002	17455	6760	27,9	25,3	9,4
2003	18098	6555	26,6	23,9	10,1
2004	18624	5669	23,3	20,8	11
2005	18936	5750	23,3	20,7	11,2
2006	19165	5916	23,6	21	11,2

2007	19464	6016	23,6	21	11
2008	19526	6329	24,5	21,6	11,6
2009	19466	6851	26	22,3	14,3
2010	19357	7383	27,6	24	13
2011	19414	7859	28,8	25,6	11,3
2012	19581	8192	29,5	26,3	10,8
2013	19523	8674	30,8	27,1	11,9

Source: Turkish Statistical Institution Gender Statistics, Labor Force Statistics, http://www.tuik.gov.tr/PreTablo.do?alt_id=1007
Access Date: 05.03.2017

There are several reasons for the declining trends in the labor force participation rates in Turkey. Especially from 1990 to 2000's there is approximately 8% decreasing in female labor force participation rate. Structural changing composition of the labor force away from agricultural towards nonagricultural activities and consequently rural-urban migration has rightly been considered as the main reasons for this decline. This is why the withdrawal of women from traditional agricultural activities in which they formerly engaged (Ecevit, 2003:). Second, recently, younger populations have been staying in school longer. This contributes to the declining trends in the participation rates of the young. Third, the early retirement scheme introduced in the early 1980s is another factor that contributed to the declining participation rates of the middle to older age groups (Tansel, 2001:).

Table 3: Reasons Of Not Being In Labour Force By Years For Females (Thousand)

Years	Population Not in Labor Force	Discouraged	Other	Working Seasonally	Housewife	Education	Retired	Disable	Other
2005	18.936	194	651	310	12.703	1.472	584	1.966	1.056
2006	19.464	261	758	259	12.409	1.553	651	2.096	1.179
2007	19.464	229	706	207	12.124	1.598	695	2.029	1.875
2008	19.526	241	778	243	12.186	1.670	682	2.144	1.582
2009	19.466	310	854	67	12.101	1.832	763	2.143	1.397
2010	19.357	300	835	49	11.914	1.912	730	2.156	1.461
2011	19.414	271	821	50	11.872	2.043	772	2.174	1.410
2012	19.581	212	840	51	11.992	2.153	836	2.182	1.316
2013	19.523	237	956	37	11.463	2.221	831	2.360	1.419

Source: Turkish Statistical Institution Gender Statistics, Labor Force Statistics, http://www.tuik.gov.tr/PreTablo.do?alt_id=1007
Access Date: 26.02.2017

For example we consider about female population not in labor force, we come across some reasons. In Turkey, the biggest reason why women are not included in the labor force in Turkey seems to be housewives. Although there has been a decline in the number of women who are not included in the workforce due to being a housewife, there are still more than 10 million women. Then education comes. Education is not negatively associated with the reasons for not participating in the workforce. However, due to the fact that they are housewives, women who are not included in the workforce should be attracted to the labor market and contribute to economic growth. Another category that attracts attention is the existence of discouraged workers. The “discouraged worker” effects, and prevailing cultural norms that

exclude participation in market work may also play a role in the low participation rates of women in urban areas. In addition, the failure of official labor statistics to cover workers in the informal sectors needs to be taken into account when analyzing the patterns of the female labor force participation rate in urban areas where uneducated and unskilled women work in informal sectors (Palaz 2005). Women's personal and family characteristics include age, years of schooling and their marital status, number of children and children's age group also affect female participation rates (Dayıoğlu-Kasnakoğlu 1997). As we have already mentioned, environmental factors also play a role in the woman's decision to work. When society's view of women's work becomes positive, it will be easier for women to increase their participation in the workforce. Because the woman is obliged to get permission from her father, her husband, her brother in order to start working. In this context, it is important to understand how a woman is considered in her decision to work. In Table 4, yes or no answers given to the question whether women's work in Turkey is appropriate are categorized according to the level of education and the level of development of regions and regions.

Table 4: Attitudes towards women in the workforce throughout by sex, educational status and SR Levels, 2016

	Yes (%)	No (%)		Yes (%)	No (%)
Turkey	84,9	15,1	TR2 West Marmara	89,0	11,0
Male	78,1	21,9	TR3 Aegean	90,6	9,4
Female	91,5	8,5	TR4 East Marmara	86,8	13,2
No School Completed	78,2	21,8	TR5 West Anatolia	86,9	13,1
Primary School	83,0	17,0	TR6 Mediterranean	85,2	14,8
Primary Education	82,8	17,2	TR7 Central Anatolia	83,5	16,5
High School or Vocational High School	88,5	11,5	TR8 West Black Sea	85,8	14,2
Higher Education School, Faculty, Master/Doctorate	93,2	6,8	TR9 East Black Sea	85,4	14,6
			TRA North East Anatolia	76,8	23,2
			TRB Central East Anatolia	79,6	20,4
			TRC South East Anatolia	71,5	28,5

Source: TÜİK, Social Structure and Gender Statistics, http://www.tuik.gov.tr/PreTablo.do?alt_id=1068 Access Date: 10.03.1017

The answers to the questionnaire by TÜİK regarding the suitability of women's workability in Turkey are also very interesting. According to this survey, 84% of Turkish people think that women can work, while 15% do not find it appropriate for women to work. The proportion of those who found it to be appropriate was 78,1% for males and 91,5% for females. There is also a relationship between the level of education and the answer given to this question. No school completed participants' answers are 78,2% appropriate, the answer of the rest was not. But higher educated people answer this question as yes 93.2%. When we look at the geographical regions according to the level of development, the Aegean region is the region where the highest yes answer is given to this question. The region, which is the least suitable for women to work, is South East Anatolia region with 71.5%. These ratios suggest that in Turkey women's participation in the labor force is still assessed with a social and cultural point of view and that the value proposition is

preliminary to women's participation in the workforce.

Another factor that effects of woman's labor force participation rate is marital status. When we look at the table 5, we can see employment rate of both sexes according to marital status. As can be seen, the employment rates of single and married men differ between men and women. Married men were employed at a higher rate than single men while single women were employed at a higher rate than married women. Thus, it is seen that there is an inverse relationship between the attitudes of women to employment according to their marital status and their attitudes towards employment according to the marital status of men.

Table 5: Employed Rate by Marital Status, Female and Male (2005-2015)

	Years	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Female	Single	27,5	27,6	28,2	27,6	28,3	29,1	28,9	30,2	30,7	32,1
	Married	20,2	20,3	20,9	22,1	24,2	26,1	27,3	28,0	27,6	28,6
	Divorced	32,9	32,9	34,2	34,2	37,5	39,8	41,2	41,3	39,7	39,5
	Widowed	8,3	7,7	8,2	8,4	8,6	9,5	9,0	8,5	7,8	7,4
Male	Single	46,2	46,6	46,8	44,8	47,0	50,4	50,5	51,7	53,1	53,6
	Married	71,2	70,6	70,3	68,7	70,7	72,8	72,8	72,6	72,1	72,1
	Divorced	52,5	55,2	55,2	53,1	58,3	58,4	61,1	62,1	63,2	63,2
	Widowed	19,2	19,9	18,4	18,6	17,6	20,0	19,2	18,5	16,4	15,9

Source: TÜİK, Social Structure and Gender Statistics, http://www.tuik.gov.tr/PreTablo.do?alt_id=1068 Access Date: 10.03.1017

Woman's Decision to Work: Common Obstacles and Hesitations for Females

If it is seem incontrovertible that the structure of the family is shaped by history, custom and law, so much has not usually been granted regarding the feminine abilities of care and nurturance that define woman's role within family structures of widely differing types. In many different types of families, women overwhelmingly do the child rearing and housekeeping, and are expected to give care and support to men, often without return in kind. It is frequently alleged that this traditional function is itself "natural" in one or more of the senses mentioned earlier, and it is often inferred in consequence that there would be something wrong with any attempt to shake up traditional patterns of care giving (Nussbaum, 2000: 264). So the working woman's responsibility continues at home, and the woman is responsible for both domestic and child care. The woman's work does not exempt her from domestic affairs. This means that women work both outside and at home. While the male is only tired outside, the woman tries to carry responsibility both for her profession and to come from above the household. In this context, the burden of the woman is heavy. This is also confirmed by the results of the survey study, which shows who owns domestic responsibility in Turkey.

Table 6: Person Responsible for Household Chores in Turkey (2016) (%)

Person Responsible for Household Chores in Turkey (2016) (%)					
Cooking	Total	96,9	Daily ordering/cleaning the house	Total	97,1
	Male	8,8		Male	8,7
	Female	91,2		Female	91,3
Painting the house	Total	49,0	Weekly/monthly cleaning of the house	Total	90,9
	Male	80,4		Male	8,0
	Female	19,6		Female	92,0
Laundry	Total	97,0	Daily shopping for food and beverage	Total	96,8
	Male	8,8		Male	45,5
	Female	91,3		Female	54,5
Paying monthly bills	Total	95,1	Dishes (even if dishwasher available)	Total	97,5
	Male	77,7		Male	9,2
	Female	22,3		Female	90,8
Basic needlework	Total	93,7	Basic maintenance and repair	Total	80,6
	Male	7,6		Male	88,9
	Female	92,4		Female	11,1
Serving tea in the evenings	Total	97,8	Ironing	Total	89,6
	Male	10,7		Male	10,3
	Female	89,3		Female	89,7

Source: TÜİK, Social Structure and Gender Statistics, http://www.tuik.gov.tr/PreTablo.do?alt_id=1068 Access Date: 10.03.1017

According to Table 6, household chores division between men and women points women mostly. Only in paying monthly bills, basic maintenance and repair and painting the house belongs to men's responsibility most of time.

As can be seen, there is a clear distinction between domestic responsibilities of women and men in Turkish society. While male dominates the work requiring financial strength and physical strength, female is dominant in domestic work such as cooking, ironing, washing, washing. In this context, it can be said that in the Turkish society, the domestic duty share is entirely based on classical gender roles. The fact that women take so much responsibility in domestic reproduction can lead to difficulties in establishing work life and private life balance.

Also Blau and Kahn (2000) investigate married women's labour supply from 1980 to 2000 in America. In addition, at least some of the remaining pay gap is surely tied to the gender division of labor in the home, both directly through its effect on women's labor force attachment and indirectly through its impact on the strength of statistical discrimination against women. Women still retain primary responsibility for housework and child care in most American families. However, this pattern has been changing as families respond to rising labor market opportunities for women that increase the opportunity cost of such arrangements. Further, policies that facilitate the integration of work and family responsibilities, both voluntary and governmentmandated, have become increasingly prevalent in recent years. Employers are likely to continue to expand such policies as they respond to the shifting composition of the work force and a desire to retain employees in whom they have made substantial investments. In the longer run, the increasing availability of such policies will make it easier for women to combine work and family, and also for men to take on a greater share of household tasks.

Under this conditions a woman who gets a working decision may think that she will encounter some difficulties both in her work life and in her private life. Especially if the woman is married or has children, she is hesitant to carry out her

current responsibilities and business life together. Because, as we have already mentioned, the roles that women assume in the home are too much to ignore. This situation puts the difficulties of establishing private life and work balance on the woman's back. There has been a wealth of previous studies attempting to provide a conceptual definition of the construct of work/life balance. For instance, Felstead, et al. (2002) define work/life balance as "...the relationship between institutional and cultural times and spaces of work and non-work in societies where income is predominantly generated and distributed through labour markets". In another study conducted by Greenhaus and Beutal (1985), it was reported that work and non-work integration is seen by many employees as an occupational stressor that includes elements of time, behaviour (eg goal accomplishment), and strain. Similar to the work/life balance definition provided by Greenhaus and Beutal (1985), Fisher-McAuley, Stanton, Jolton and Gavin (2003) define work/life balance as an occupational stressor based on lost resources of time and energy, lack of goal accomplishment, and strain between work and personal role demands. These researchers concluded that work/life balance can mean different things to different employees, and conceptualisation of the construct requires consideration of both interference and enhancement of the work and non-work domains (Hayman & Rasmussen, 2013: 46).

Even if women decide to go to work, they earn less income than men of the same educational level. This is called gender pay gap. Turkey's situation can be analyzed by looking at Table 7. As we can easily, almost in every education level, women earns less than men in Turkey. The biggest difference seems at the Vocational High school education and the least difference seems at the high school education.

Table 7: Gender Pay Gap by Educational Level in Turkey, 2014

Education level	Annually average gross wage (TL)			Annually average gross earnings (TL)			Gender pay gap
	Total	Male	Female	Total	Male	Female	(%)
Primary school and below	17.943	18.691	15.321	18.602	19.417	15.748	18,0
Primary education and secondary school	17.879	18.433	15.593	18.476	19.081	15.981	15,4
High school	20.207	20.712	18.831	21.222	21.758	19.760	9,1
Vocational high school	26.217	27.342	22.010	28.143	29.561	22.842	19,5
Higher education	46.729	50.468	41.490	51.405	55.633	45.483	17,8

Source: Social Structure and Gender Statistics, http://www.tuik.gov.tr/PreTablo.do?alt_id=1068 Access Date: 11.03.2017

Also Tzannatos examines the level of and changes in female and male participation rates, employment segregation and female wages relative to those of male wages across the world economy. He finds sufficient evidence to support the view that labour markets in developing countries are being transformed relatively quickly in the sense that gender differentials in employment and pay are narrowing much faster at present compared to the corresponding processes that occurred previously in industrialised countries (Tzannatos; 1998: 1).

In the case of education especially in urban areas, woman without university education can only access jobs with low wages with long and hard working hours and without social security. On the other hand working woman especially under the condition of vulnerability which is the result of poor viewpoint that tended women have to take care of her baby or child. Because in many societies child care is seen as a task attributed to the mother. So this situation can take into consideration as an obstacle for working women because of high salaries of babysitters. So for working mothers taking the decision of keep working not only related with education, self esteem, or level of salary but also child care. Even the salary is enough, psychological factors also effected mothers. Even if mother's revenue can afford a nanny's salary, the mother may want to look after her baby herself. If we summarize what we are talking about, we can determine the difficulties women face before they are put into business as in the Table 8.

Table 8: Business Life, Private Life and Half Breed Obstacles for Women

Business Life Obstacles	Private Life Obstacles	Half Breed Obstacles
Lower salary despite having the same job as a man (Gender Pay Gap)	Not have enough time with her husband and children	Unable to take enough time for work due to child care;
Separation of jobs as business of men and women	Disabilities on house works like ironing, laundry, cooking, house cleaning	The difficulty of entering a business life originating from a patriarchal family order
Mobbing by the employer to the women	Not have enough time to social network (Friends, Relatives, Hobbies)	Employer-induced intimidation of a woman's motherhood decision
Working without insurance and unregistered working	Psychological disability about motherhood, feeling of not being a good mother	Obligation to purchase professional services for babysitting during full-time work

Source: Table is created from the author.

Motherhood and Child Care: Most Sensitive Point Between Women and Business Life

The woman who is working and especially the mother for the first time is in the process of making new decisions about motherhood, baby care and work. On the one hand, the fact that daycare facilities are inadequate in terms of quantity and quality, the possibility of being looked after by a caregiver at home, the caregivers are unqualified and uneducated and this service is not provided in an institutionalized way; Conflicts to be experienced for various reasons in relation to the grandmother, grandmother or close relatives (without paying a price); If the mother leaves her job to look after the baby, the economic problems or the problem of finding a job again affect the mother's own job, profession, mother's role, woman's work and beliefs and attitudes about where to look best (Sayıl et al., 2009: 2) .

According to study who is done by Hewlett & Luce (2005), 44% of the women stated that they had left their job to share more time with the family and their children. This suggests that women are basically separated from their work for home responsibilities. Again, according to this study, women who left their jobs and returned to work were found to lose an average of 18% of their power to earn money. It has been observed that the longer you stay apart from your work, the lower your power to earn money. For example, a woman who has been separated from her job for 3 or more years has lost 37% of her ability to earn money. Again, according to this study, women's flexible work or reduced

working hours recognized by workplaces are seen by women as an even more motivating factor for their work (Harvard Business Review, 2006: 18).

Table 9: Day care of kids by SR Level 1 and three major provinces, 2016 (Age of 0-5)

%	Total	Mother	Grand-mother	Nursery or kindergarten	Nanny	Other close relatives or neighbor	Having more than one day care
Turkey	100,0	86,0	7,4	2,8	1,5	1,3	1,0
TR1 İstanbul	100,0	83,2	9,6	4,3	1,3	0,8	0,9
TR2 West Marmara	100,0	79,0	10,1	7,6	2,8	0,5	-
TR3 Aegean	100,0	75,8	11,5	4,8	3,7	1,8	2,4
TR4 East Marmara	100,0	85,6	7,3	2,8	2,3	1,1	0,9
TR5 West Anatolia	100,0	80,7	10,4	3,5	0,9	3,2	1,3
TR6 Mediterranean	100,0	85,3	9,2	2,7	1,2	1,1	0,6
TR7 Central Anatolia	100,0	91,8	4,1	0,5	1,0	0,8	1,7
TR8 West Black Sea	100,0	86,9	7,2	0,8	2,6	1,8	0,9
TR9 East Black Sea	100,0	86,7	8,9	1,1	0,3	2,9	-
TRA North East Anatolia	100,0	93,0	1,4	1,6	2,6	0,9	0,5
TRB Central East Anatolia	100,0	94,1	3,2	1,0	0,8	0,5	0,5
TRC South East Anatolia	100,0	96,7	0,8	0,4	0,3	1,3	0,6
TR100 İstanbul	100,0	83,2	9,6	4,3	1,3	0,8	0,9
TR510 Ankara	100,0	77,7	12,9	4,4	0,9	3,3	0,8
TR310 İzmir	100,0	76,5	11,4	6,1	1,9	2,1	2,0

Source: Social Structure and Gender Statistics, http://www.tuik.gov.tr/PreTablo.do?alt_id=1068 Access Date: 11.03.2017

As you can see on the table 9, the responsibility for child care is on the mother very much. Due to the lack of statistics on the number of working mothers who receive help in child care, the statistics covering all women were taken into account in the study. According to this statistic, the mother is the first responsible person of the childcare, the second is the grandmother and the third is the kindergarten or nursery. While the region where the mother's responsibility is the highest is the South East Anatolia, this ratio is 80% in Marmara, Aegean and Mediterranean regions where the number of working women is high. When we look at cities like İstanbul, Ankara and İzmir, this ratio occur as 83,2%, 77,7 %; 76,5%.

It will not be realistic to expect that mother will get easily into the working life in the Turkish society where responsibility of childcare belongs to mother. For this, the stakeholder institutions such as kindergarten and kindergarten which share the responsibility of child care with the mother should be increased and their mothers should have access to these institutions.

Maternity Rights of Working Mothers in Turkey

As mentioned so far, motherhood is a very important concept for women. The main reason why a woman can leave her working life is often giving birth. For this reason, it may become possible to protect the physical and mental health of the woman as well as to increase the participation of the woman in the labor force by providing pre-natal and post-natal

rights to working women. In accordance with Law No. 4863 on the Amendment of Income Tax Law No. 6663 published in the Official Gazette dated 10/02/2016 and numbered 29620 and Law No 4857 amending the Law on Other Laws and Articles 5 and 6 of the Unemployment Insurance Law No. 4447 in Articles 13 and 74 of the Labor Law, changes were made in the article. After the changes, the workers will be able to work part-time until the age of primary education, pay half the work allowance for the mother, and give birth to a baby that the mother can not use. The "Regulation on Partial Time Work to be done after maternity leave or unpaid leave" published in the Official Gazette dated 08/11/2016 and numbered 29882 has set forth the procedures and principles for determining the work that the worker can do part-time work after birth or adoption. When we look at the pre-natal and post-natal leave granted to a woman who is a mother in labor law, we see:

- It is a fact that women workers should not be employed for a total of sixteen weeks, eight before birth and eight weeks after birth. In case of multiple pregnancy, an eight-week period will be added for two weeks before birth. However, if the health status is documented by a doctor's report, a female worker may work in the workplace for up to three weeks before birth. In this case, the periods worked by the female worker are added to the postpartum period.
- 60 days / 2 months for the first birth, 120 days / 4 months for the second birth, 180 days for the second birth, in case of wishes for the female or male workers who adopt the child who has not completed the age of three with the female worker for the purpose of caring and raising the child from the conclusion of the maternity leave / 6 months free of charge up to half of the weekly working time. During which time female workers and civil servants receive full salaries despite part-time employment. In the case of multiple births, this period is added to 30 days. If the child is handicapped and certified by a doctor's report, this period will be 360 days.
- Female workers' unpaid leave is given up to 6 months after the maternity leave, upon request. In this context there is a difference between workers and civil servants. Civil servants can take unpaid leave up to 24 months after the maternity leave. A unpaid leave is granted to one of the spouses or adoption in the case of adopting the child who is not 3 years old. The period of unpaid leave is not considered in the calculation of the annual paid leave.
- The worker may request part-time work at any time up to the beginning of the month following the date of maternity leave or half of the period of work up to the date on which the child's compulsory primary school age starts from (66 Months) the end of her unpaid leave or unpaid leave for up to 6 months.
- In addition If a female employee wishes to return to work after the end of her maternity leave, she will be allowed three hours daily for the first 6 months after birth and 1.5 hours a day for the first 6 months and up to 12 month for breast-feeding leave.

This part time working has some conditions to be applied. If one of the parents does not work, the spouse can not request partial working. This rule is not valid under this conditions;

- If one of the parents has a patient who needs continuous care and treatment and this disease is documented by a doctor's report from a full-fledged hospital or university hospital,
- If a parent with a child's parent is present in the case of a parent who is given to the court by a witness,
- Adoption of a child who is not three years old.

Partial working requirements are only sought during application. If these conditions are lost during the partial period of work, the right in question remains. These rights recognized by women working in the latest legislation are likely to make it easier for women to enter labor markets. However, the 16-week maternity leave, which is the period when salary is paid full is behind some OECD countries.

Table 10: Length of Maternity Leaves in OECD Countries

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Australia	0	0	6	6	6	6	6	6	6	6	6	6
Austria	16	16	16	16	16	16	16	16	16	16	16	16
Belgium	15	15	15	15	15	15	15	15	15	15	15	15
Canada	17	17	17	17	17	17	17	17	17	17	17	17
Chile	..	..	..	..	..	..	..	..	..	..	18	18
Czech Republic	28	28	28	28	28	28	28	28	28	28	28	28
Denmark	18	18	18	18	18	18	18	18	18	18	18	18
Estonia	..	..	..	..	..	..	..	..	20	20	20	20
Finland	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5	17,5
France	16	16	16	16	16	16	16	16	16	16	16	16
Germany	14	14	14	14	14	14	14	14	14	14	14	14
Greece	17	17	17	17	43	43	43	43	43	43	43	43
Hungary	24	24	24	24	24	24	24	24	24	24	24	24
Iceland	13	13	13	13	13	13	13	13	13	13	13	13
Ireland	26	26	34	42	42	42	42	42	42	42	42	42
Israel	..	..	..	..	..	..	..	..	..	..	26	26
Italy	21,7	21,7	21,7	21,7	21,7	21,7	21,7	21,7	21,7	21,7	21,7	21,7
Japan	14	14	14	14	14	14	14	14	14	14	14	14
Korea	12,9	12,9	12,9	12,9	12,9	12,9	12,9	12,9	12,9	12,9	12,9	12,9
Latvia	..	..	..	..	..	..	..	..	..	..	..	..
Luxembourg	16	16	16	16	16	16	16	16	16	16	16	16
Mexico	12	12	12	12	12	12	12	12	12	12	12	12
Netherlands	16	16	16	16	16	16	16	16	16	16	16	16
New Zealand	12	13	13	14	14	14	14	14	14	14	14	16
Norway	9	9	9	9	9	9	9	9	9	9	17	13
Poland	16	16	16	18	18	20	22	22	24	26	26	26
Portugal	17,1	17,1	17,1	17,1	17,1	6,4	6,4	6,4	6,4	6,4	6,4	6
Slovak Republic	28	28	28	28	28	28	28	34	34	34	34	34
Slovenia	..	..	..	..	..	..	..	..	15	15	15	15
Spain	16	16	16	16	16	16	16	16	16	16	16	16
Sweden	15,6	15,6	15,6	15,6	15,6	15,6	15,6	15,6	15,6	15,6	15,6	15,6
Switzerland	8	8	14	14	14	14	14	14	14	16	16	16
Turkey	16	16	16	16	16	16	16	16	16	16	16	16
United Kingdom	52	52	52	52	52	52	52	52	52	52	52	52
United States	0	0	0	0	0	0	0	0	0	0	0	0
OECD - Average	16,8	16,8	17,5	17,9	18,7	18,4	18,5	18,7	18,8	18,9	19,2	19,1

Source: OECD, <http://stats.oecd.org/index.aspx?queryid=54760#> Access Date: 12.02.2017

As you can see, the country that granted the longest leave in this regard is the UK. Maternal leave period is 43 weeks is Greece, followed by Ireland with 42 weeks. The period of maternity leave has increased in Turkey but is still not enough. The reason why maternity leave periods are more important than other additional permits is that the woman continues to receive full wage during this period. Part-time work or unpaid leave provided by law is not popular in families where women are forced to work.

Population Growth Rate in Turkey

Turkey has a productive and dynamic appearance with its young population. However, concern has been expressed about the recent decline in fertility rates by policy makers. Therefore, it will be useful to look at Turkey's population growth rate. In 2016, total population of Turkey is 79.814.871. But when we look at the annual growth rate, there is a decrease according to 2000 and before.

Table 11: Turkey's Population and Population Growth Rate

Census Year	Total Population	Male	Female	Annual Growth Rate %	Total Fertility Rate
1985	50.664.458	25.671.975	24.992.483	24,9	NA
1990	56.473.035	28.607.047	27.865.988	21,7	NA
2000	67.803.927	34.346.735	33.457.192	18,3	NA
2007	70.586.256	35.376.533	35.209.723	-	2,16
2008	71.517.100	35.901.154	35.615.946	13,1	2,15
2009	72.561.312	36.462.470	36.098.842	14,5	2,10
2010	73.722.988	37.043.182	36.679.806	15,9	2,08
2011	74.724.269	37.532.954	37.191.315	13,5	2,05
2012	75.627.384	37.956.168	37.671.216	12,0	2,11
2013	76.667.864	38.473.360	38.194.504	13,7	2,10
2014	77.695.904	38.984.302	38.711.602	13,3	2,18
2015	78.741.053	39.511.191	39.229.862	13,4	2,14
2016	79.814.871	40.043.650	39.771.221	13,5	NA

Source: TÜİK, http://www.tuik.gov.tr/PreTablo.do?alt_id=1068 Access Date: 14.02.2017

The total fertility rate is the most important of the precursor indicators indicating that the population will increase or decrease. It is expected that this ratio should be over 2 in order for a population to be able to stay in the increase. This rate is currently over 2 in Turkey. It is not true that there will be a decline in Turkey's young and dynamic population in the short term, but measures should be taken to ensure the continuity of this rate in the long run. The extension of maternity leave to women workers is an important step in this path.

We can also say that one of the obstacles to the continuation of Turkey's population growth will be abolished with policies that will support working women to have children. Therefore, it is promising that the working women should support the child care and the working woman should not sacrifice her work or family life.

Result and Suggestions

Entry into the business life of a woman has never been as comfortable as men. As mentioned in the study, the place of woman in business life has encountered various obstacles. The most important of these are the domestic work assignment of a patriarchal family order, maternal role, unregistered employment, gender role of woman, wage inequality. In this study, the role of motherhood was more emphasized than these difficulties. As mentioned, a woman often does not want to enter the business life after being a mother, and even if she is working, she is leaving her job because she can not find a solution, especially at the point of the child care. However, in emerging countries like our country, the total labor force participation rate of the population needs to be increased. This is one of the causes of economic growth and eventual economic development. This situation is also desired by our country. A work-life conception that pays the price of being fertile women away from work is certainly not desirable. In this respect, a law that would facilitate the participation of women in the labor force has entered the runway in November 2016. With this regulation in the labor law, it is aimed to ensure the continuity of women's participation in the labor force. The taken step when you think that the biggest problem of women is the baby's care is quite good and promising.

However, with 16 weeks of paid maternity leave between OECD countries, Turkey has not yet shown sufficient development. The increase in the number of children who are paid as paid maternity leave will be a good land. These regulations, which are made in order to be happy and productive in the family as well as in the business life, will make a significant contribution to women's employment. It is also an important step in the way that future generations can be trained without being deprived of physical resources such as maternal milks and spiritual sources such as the mother's interest, which is a basic requirement for a healthy growth.

In addition to improving the postpartum leave of the parents, public institutions and organizations should take care to ensure that the places where children, such as nursery or day nursing home, can entrust their children to construction and operation. Because, as mentioned in the study, the prevalence of nurseries in the care of children in turkey is not at the desired level.

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11

Youth Employment and Sustainable Development

Taner GÜNEY

Abstract

The purpose of this study is to analyze the impact of youth employment on sustainable development in EU member countries, including Turkey. According to the estimation results which obtained with OLS (Ordinary Least Squares) and IV(2SLS) methods, used data covering the 1990-2014 periods, youth employment has a positive and significant effect on sustainable development. The higher youth employment level of countries has the higher sustainable development level they have. Therefore, it is important to reach sustainable development based youth employment level in Turkey and EU member countries, for the sustainability of the development.

Keywords: Youth Employment, Sustainable Development, EU Member Countries

Introduction

The employment of young people (15-24 years of age) on the labor market is characterized by having a very fragile and generally low employment rate (O'Higgins, 1997). Especially work on developed countries such as the United Kingdom and the United States shows that health care levels and income levels fall if unemployed young people are more likely to become unemployed in the future and eventually move away from what they hope to achieve in the future (Kletzer and Fairlie 2003; Burgess et al. Bell and Blanchflower 2011). According to Kahn (2010), in the case of a recession, even young graduates from college are affected by rising unemployment and their future income levels are falling. Those who have experienced global unemployment after the 2008 crisis support this situation. The 2008 crisis has led to a significant increase in the level of youth unemployment in the world, particularly in Southern Europe (Eichhorst and Rinne, 2016).

While the emergence of the 2008 crisis prompted EU member states to seek new ways to do so, it also had a very bad economic impact on young people in those countries (Cinalli and Giugni, 2013; Lahusen et al., 2013; Berlingier et al., 2014). However, the employment of young people is also of great importance in terms of ensuring social justice, catching of equality of opportunity and achieving the level of prosperity the society needs, as well as maintaining the economic and social structure (Kılıc and Bulbul, 2012). In other words, in EU member states, increasing youth employment should be one of the necessary policies to move the present welfare level to the future.

Young employment and sustainable development are two concepts closely related. Sustainable development also includes future society and economic development as much as it does today's society and economic construction. According to the report of Our Common Future, prepared by the World Commission on Environment and Development (WCED, 1987), sustainable development means that the amount of resources the present society uses to meet its needs is at a level that will not deprive future generations of their ability to meet their needs. Therefore, the need to achieve sustainable development goals, that is to maintain the welfare of present and future societies, also needs to increase

youth employment. For this reason, the aim of this study is to analyze the impact of youth employment on sustainable development in Turkey and the EU member countries. According to the estimation results obtained by the method of OLS and IV (2SLS) in the period of 1990-2014, young employment has positive effect on sustainable development and has a considerable influence. In other words, in Turkey and EU member countries, the level of sustainable development also increases as the level of youth employment increases.

The parts of this work are organized as follows. In the second part of the study, the relationship between youth employment and sustainable development and its relevance to the EU and Turkey, and the literature on the impact of young employment on sustainable development in the third chapter. While the data and methods are included in the fourth section, the estimation results are given in the fifth section. In the sixth section, the conclusion part is included.

Youth Employment, Sustainable Development, EU and Turkey

The Millennium Development Goals (MDGs) and the 2030 Sustainable Development Goals (SDGs) established by the United Nations (UN) demonstrate that the world has given the world a positive edge in the concept of sustainable development. The MDGs were adopted at the Millennium Summit of the United Nations in New York in 2000. The aim here is to abolish poverty and hunger in a universal sense, to prevent illnesses and to expand educational opportunities for all children. The MDGs are 8 goals planned to be implemented by 192 member countries of the UN until 2015. Eighty of these targets have been set for youth employment, which has highlighted the importance of sustainable development for youth employment. According to this goal, in cooperation with developing countries, it is planned to provide smooth and productive job opportunities for youth. 2030 Sustainable Development Goals (SDG) have been set up to ensure that all the countries in the MDGs will be implemented to fulfill the planned 8 targets by 2015, especially in order to cope with environmental challenges such as climate change and to work better in terms of sustainable development in terms of peaceful societies. It emerged at the United Nations Conference on Sustainable Development in SDG 2012. When it comes to 2030, SDG consists of 17 objectives that will guide the policies and funds created to permanently remove poverty from the global periphery and achieve the goals set in SDG. These 17 goals include 169 objectives.

All countries are actively involved in policy making at national level in order to achieve these goals. SDG 2030 targets include factors such as to end all kinds of poverty, wherever they are; Ending hunger, ensuring food security, improving nutritional opportunities and supporting sustainable agriculture; Ensuring that people live a healthy life and that everyone is prosperous at all ages; To promote gender equality and to strengthen the social position of women and girls; Ensuring access to aquatic and healthy life for all and sustainable management of the aquatic and healthy life; To provide accessible, reliable, sustainable and modern energy for all; Building durable infrastructure, promoting sustainable and inclusive industrialization and new discoveries; To reduce inequalities within and between countries; To make cities, towns and human settlements safe, strong and sustainable; To ensure sustainable consumption and production; Protecting and sustainably use the oceans, seas and marine resources for sustainable development; Conserving, restoring and ensuring sustainable use of terrestrial ecosystems, to ensure the sustainable use of forests, to combat desertification, to stop and reverse the loss of productivity of the land and to stop the loss of biodiversity; To encourage peaceful and all-embracing societies for sustainable development, to provide access to justice for everyone, to build effective, accountable and inclusive institutions at all levels, to strengthen the tools of global partnership for sustainable development and to revitalize the global partnership.

There are three other objectives of SDG besides the ones mentioned above, which set a key role for young people in achieving sustainable development goals. SDG's first goal for young people is to take urgent measures to combat climate change and its effects. In this objective, it is aimed to encourage mechanisms for increasing planning and management capacity in the least developed countries, small island countries and developing countries in relation to effective climate change. These plans, which are related to climate change, cover women, marginalized communities and young people. SDG's second target for young people is to uncover jobs that are worthy of producer employment and human dignity to support sustainable and inclusive economic development. This includes ensuring access to decent work for all individuals, including young people, and adopting the principle of equal pay for equal work. It is also aimed to reduce the number of unemployed and uneducated young people by 2020. The ultimate goal of SDG for young people is to provide quality education at an equal level for everyone and to provide life-long education for all. These objectives include: increasing the number of young people and adults with skills that include technical and vocational skills in employment and entrepreneurship; Ensuring that a large proportion of all young people and adults, men and women, are literate.

SDG's last two goals for young people are very important in terms of sustainability of development and it is a matter that the EU has to deal with seriously. In the calculation of Adjusted Net Saving (ANS), which is a sustainable

development indicator published by the World Bank (WB), there is a decrease in the rent from natural capital resulting from the use of natural capital from the national net savings, and the expenditure made by the public for education after deduction of carbon dioxide emissions. Therefore, it is understandable that the EU attaches importance to education. As seen in Figure 1, the level of youth unemployment in countries in Europe is around 20% in countries like Hungary, Spain, Croatia and Greece. According to the figure, in almost all countries, the unemployment rate for 2014 is between 2008 and 2013 or 2013.

Figure 1: Youth Unemployment Rates in European Countries: 2008, 2013 and 2014 (%)



Source: Eurostat

The average of EU member countries is close to 20% and in Turkey about 17%. Moreover, by 2014, one out of every three young unemployed are seeking jobs for over a year (ILO, 2015). The length of time that a job search is so long is closely related to the education system according to ILO (2010). According to the ILO (2010), the qualifications and skills of young unemployed youth with supply-side reasons are not suitable for the labor market. The education system in the country is inherently inadequate, as it is the educational system in the countries that provides these qualities and skills that young people have (Schmid, 2013). The EU and European countries tend to allocate more resources to the transition from school to work and vocational education and training as a remedy for this inadequacy. Studies in this regard have shown that regulations in Europe such as the minimum wage (Abowd et al., 2000; Kramarz and Philippon, 2001; Neumark and Wascher, 2008) and the employment protection law (Eichhorst, 2014), as well as vocational education and training (Zimmermann et al. 2013; Eichhorst et al., 2015; Eichhorst and Rinne 2016) have shown that young people will increase their employment levels. In Turkey, the Turkish Employment Agency (İŞKUR) has played an important role in enabling young people to participate in employment. The labor training courses organized by İŞKUR, vocational training of employees, occupational training (internship) programs, job and vocational counseling are aimed to ensure the employment of the aimed young people (İŞKUR, 2011).

Related Literature

The impact of youth employment on sustainable development is one of the neglected issues in the literature. Rather, it is seen in the literature that the effects of young employment on various economic, social and cultural variables are investigated. Frey and Stutzer (2002) and Camfield (2006), for example, have shown that the increase in youth employment is influential on variables such as economic growth, health, civil disturbance in the country, demographic characteristics, environmental sustainability, personal happiness and life satisfaction. The result of these efforts is to invest in young people and to direct youth towards productive employment, helping countries to develop more healthier and more inclusive development. Siegrist et al. (2011) and Robone et al. (2008) addressed the effects of youth unemployment on the level of health and happiness. Accordingly, an increase in youth unemployment can have a negative impact on the level of health and happiness. On the other hand, the effects of youth employment on the civil disturbance in the country have also been examined by Eurofound (2012), ILO (2015) and MercyCorp (2015). In particular, MercyCorp (2015) has shown that young people are not unemployed, the only variable that drives political violence, unemployment as well as the perception of malpractice and injustice are more likely to lead young people to frustration and anger.

Data and Method

In this study, the following multivariate model will be estimated with the unbalanced panel data method:

$$ANS_{it} = \beta_1 Young_{it} + \beta_2 Population_{it} + \beta_3 Language_{it} + \beta_4 Income_{it} + \beta_5 Politic_{it} + \varepsilon_{it} \quad (1)$$

where, i is the number of units, t is the time interval, ε is the error value. As reported in the second part of this study, ANS is the sustainable development variable and shows the ratio of adjusted net saving to GNP. Young is the ratio of youth employment to total employment, Population is the rate of change in population, Language is the level of linguistic diversity in the countries, Income is the logarithm of the GDP per person and Politic is the political stability of the countries. The data covering the 1990-2014 period of the Young, Population and Income variables are taken from the World Bank (WB). The data covering the 1990-2014 period of the language variable were obtained from Alesina et al. (2003). The data covering the 1990-2014 period of the political variable was taken as ‘Political Risk Services International Country Risk Guide’ (PRS).

The above equation is estimated by the least squares (OLS) method. The OLS method is able to provide consistent and efficient predictors even in cases of varying variance and auto-correlation problems. While the above equation is estimated by IV (2SLS) method is also used to overcome the problem of potential internalization between young employment and ANS. The literature has been followed to find the appropriate vehicle variable. For this reason, the legal structure used in the literature (Common Law) is used as a tool variable (Aidt, 2010, South, 2017). The legal structure data is taken from La Porta vd. (1997). In addition to these variables, the trade openness ratio (the proportion of the sum of exports and imports to GDP) is used as an instrumental variable. Data covering the period 1996–2012 are obtained from the WB.

For the unit root tests of the variables, the Levin, Lin and Chu test (LLC), Im, Pesaran and Shin test (IPS), ADF-Fisher Chi-square test (ADF-F) and PP-Fisher Chi-square test (PP-F) were performed. White section weights are used for heteroscedasticity and autocorrelation problem. In the IV (2SLS) estimates, the Hausman test was used to determine whether the youth employment variable was endogen, the Anderson Canon LM test to determine whether the instrumental variables were related to the endogen variable, the Cragg-Donald Wald F test to determine whether the instrumental variables were weak or strong and the Sargan test to determine whether valid instrumental variables were used.

Table 1 shows summary statistics and correlation coefficients for the variables used in this study. Three different employment alternatives are used in the study. Young is the total youth employment rate, $Young_{woman}$ is the young female employment rate, and $Young_{man}$ is the young male employment rate.

Table 1: Summary Statistics and Correlation Matrix

	Mean	Max.	Min.	Std. Dev.			
ANS	8.980	48.190	-22.850	6.770	656		
Young	45.079	75.000	24.600	11.624	725		
$Young_{woman}$	41.113	73.000	19.500	12.512	725		
$Young_{man}$	48.891	80.000	26.300	11.403	725		
Population	0.261	3.732	-5.814	0.860	664		
Language	0.233	0.643	0.019	0.182	725		
Income	4.162	5.055	3.041	0.428	651		
Politic	0.734	1.668	-1.301	0.533	406		
ANS	1						
Young	0.291	1					
$Young_{woman}$	0.304	0.980	1				
$Young_{man}$	0.265	0.975	0.914	1			
Population	0.397	0.227	0.212	0.234	1		
Language	0.224	-0.119	-0.110	0.122	0.013	1	
Income	0.541	0.355	0.431	0.254	0.513	0.012	1
Politic	0.378	0.287	0.387	0.160	0.041	0.033	0.446

According to the correlation coefficients of the variables, the variables Young, Young_{woman} and Young_{man} indicating young employment rates are positively related to ANS. Young_{woman}, which represents the rate of young women's employment, is the variable with the highest correlation coefficient among the youth employment variables. The Young_{man} variable, which indicates the young male employment ratio among the young employment variables, has the lowest correlation value among these variables. The other independent variables, Population, Language, Income and Political, have a positive correlation with ANS which is a sustainable development indicator. As seen in Table 1, there is not a high correlation of 0.75 between the variables, except for the correlation coefficient between the variables of the youth employment.

Estimation Results

Table 2 shows the results of the unit root test for the variables used in this study, except for the Language variant. The level of the Language variable, ie the level of linguistic diversity of the countries, has not been included in the stationarity tests since it has not changed for a long time. According to the results of LLC, IPS and ADF-F tests, all variables are at Level. According to PP-F test results, Young and Young_{man} variables 1. Difference, other ANS, Young_{woman}, Population, Income and Political variables are still in the level.

Table 2: Unit Root Test Results

	LLC	IPS	ADF-F	PP-F	
	Level	Level	Level	Level	1.Difference
ANS	-3.6016 (0.0002)	-2.1075 (0.0175)	83.8786 (0.0148)	92.3819 (0.0027)	
Young	-5.4544 (0.0000)	-2.8738 (0.0020)	93.2992 (0.0023)		360.562 (0.0000)
Young _{woman}	-5.2348 (0.0000)	-2.9869 (0.0014)	90.7455 (0.0039)	79.2421 (0.0334)	
Young _{man}	-5.2287 (0.0000)	-2.5373 (0.0056)	89.9375 (0.0023)		386.753 (0.0000)
Population	-2.9196 (0.0018)	-3.8591 (0.0001)	116.672 (0.0000)	111.649 (0.0000)	
Language	-11.3480 (0.0000)	-10.2108 (0.0000)	213.233 (0.0000)	226.592 (0.0000)	
Income	-6.2876 (0.0000)	-2.6986 (0.0000)	93.0260 (0.0024)	121.097 (0.0000)	

Note: Values in parenthesis are *p*-estimations.

Table 3 shows the estimation results obtained by the pooled panel data method of model (1). In the table, the first column shows the effects of ANS on the variables of Young, which shows the total youth employment, the effects of other arguments on the ANS, the second column the effects of Young_{woman} and other independent variables on the ANS and the last column, young female employment variable Young_{man} and the other independent variables.

In the first column according to Table 3, the young variable has a positive effect on the ANS and statistically significant effect on the level of 5% significance. As a result, the total level of youth employment increases the level of sustainable development. Young_{woman} showing a young female employment level in the second column has a positive effect on the ANS and statistically significant effect on the level of 5% significance. As a result, when the level of employment of young women increases, the level of sustainable development also increases. In the third column, Young_{man}, which indicates the level of young male employment, has a positive effect on the ANS and a statistically significant effect below the 5% significance level. According to this finding, the level of sustainable development also increases when the employment level of young men increases. Therefore, the increase in the level of youth employment, both young women and young men, raises the level of sustainable development in Turkey and the EU member countries. As can be seen in Table 3, all of the other independent variables included in the analyzes have a positively significant statistically significant effect on sustainable development in the three columns. These estimates show that the increase in Population, Income, Language and Political variables also increases the ANS.

Table 3: Young Employment and ANS: OLS

	1	2	3
Young	0.0564*** (0.0232)		
Young _{woman}		0.0423*** (0.0215)	
Young _{man}			0.0767** (0.0232)
Population	1.6726* (0.3816)	2.1606* (0.3640)	1.5825* (0.0904)
Language	4.9450* (0.8917)	4.8271* (0.8798)	5.0364* (0.8765)
Income	8.3658* (1.4000)	7.7253* (1.3513)	8.5250* (1.3914)
Politic	2.5549* (0.5478)	2.5887* (0.5401)	2.6314* (0.5384)
Constant	-18.9820* (3.5363)	-17.6232* (3.4311)	-20.6171* (3.5736)
R ²	0.408	0.440	0.416
Adj.R ²	0.401	0.432	0.408
F	52.85*	60.83*	54.51*
N	388	388	388
Countries	29	29	29

Note: Values in parenthesis are standard error estimations. * $p < 0.001$, ** $p < 0.01$, *** $p < 0.05$

As mentioned in the data and method section of this study, the problem of potential endogeneity between young employment variables and ANS may arise. The IV (2SLS) estimates that take into account the potential endogeneity problem between the youth employment variables and the ANS are shown in Table 4. In the table, the Hausman test shows that the variables of young employment are endogen. According to Anderson Canon LM test results, instrumental variables are related to internal variables.

The Cragg-Donald Wald F statistics show that the instrumental variables used are very strong, according to Stock and Yogo (2005). If the Cragg-Donald F statistic exceeds the 10% maximum IV reported in Stock and Yogo (2005) the instrumental variables used are very strong, between 10% and 15% strong, between 15% and 20% moderate, and between 20% and 25% is considered weak. The values of these percentiles are 19.93, 11.59, 8.75 and 7.25, respectively. According to the table, the three column Cragg-Donald Wald F statistic is well above 19.93. Finally, according to the Sargan test in Table 4, valid instrumental variables are used to solve the problem of endogeneity.

Table 4: Young Employment and ANS: IV(2SLS)

	1	2	3
Young	0.1666* (0.0362)		
Young _{woman}		0.1615* (0.0355)	
Young _{man}			0.1715* (0.0369)
Population	1.4949* (0.3922)	1.6237* (0.3952)	1.3588** (0.3923)
Language	4.1934* (0.9296)	3.7320* (0.9761)	4.6740* (0.8950)
Income	9.2156* (1.4451)	9.1711* (1.4661)	9.2597* (1.4274)
Politic	2.1148* (0.5699)	1.7991** (0.6003)	2.4471* (0.5485)
Constant	-20.3944* (3.6281)	-17.3489* (3.6611)	-23.5329* (3.7259)
R ²	0.374	0.353	0.391
F	52.95*	51.33*	54.40*
Anderson Canon LM	165.804*	163.958*	158.282*
Cragg- Donald Wald F	142.152	139.412	131.260
Sargan <i>p</i>	0.4493	0.5056	0.4016
Hausman	17.106*	23.664*	11.645**
Instruments	Openness, Common Law	Openness, Common Law	Openness, Common Law
<i>N</i>	388	388	388

Note: Values in parenthesis are standard error estimations. * $p < 0.001$, ** $p < 0.01$, *** $p < 0.05$

The IV (2SLS) estimation results in Table 4 are quite close to the OLS results shown in Table 3. IV (2SLS) estimates also have a positive effect on employment change on the ANS. This positive effect is statistically a percentage of 1% below the bile, contrary to the OLS estimates. Accordingly, rising levels of young female employment and young male employment increase the level of sustainable development in Turkey and the EU member countries. The other independent variables, as in the estimates of the OLS, have a positively significant statistically significant effect on the ANS over all columns. Thus, in Turkey and EU member countries, the increase in population growth rate, per capita income level, linguistic diversity and political stability raise the level of sustainable development.

Conclusions

The aim of this study is to analyze the impact of young employment on sustainable development. Two variables that are closely related to youth employment and sustainable development. Sustainable development, aimed at achieving the needs of today's society while trying to meet the needs of future generations, minimizing sources of pollution to the future, has goals for the Millennium Development Goals (MDGs). The Millennium Development Goals consist of 8 goals, and one of them is planned to provide smooth and productive employment opportunities for the youth in cooperation with developing countries. The 2030 targets consist of 17 goals, and the three targets are closely related to the young people. According to the 2030 targets, youth must also be focused on taking urgent measures to combat climate change and its effects. In addition to this, it should be planned to ensure that all the individuals who are among the young people have access to decent jobs for the purpose of producing producers and providing jobs worthy of human dignity. Finally, by 2030, it is aimed to increase the number of young people and adults with the skills to cover technical and vocational skills for employment and entrepreneurship, as well as to ensure that a large proportion of women, men and young people are literate. Therefore, the increase in the number of individuals among young people who are knowledgeable about climate change, have sufficient educational level and can work in productive work is

highly valuable in terms of sustainable development goals. From this point of view, according to the estimates obtained for the period of 1990-2014 with the data from 28 countries in Turkey and the EU, the increase in the level of young employment increases the level of sustainable development in Turkey and the EU member countries. On the other hand, youth employment has been included in the analyzes by dividing into two, male and female. Estimation results for the effect of the level of employment of young men and young women on the level of sustainable development show that these variables have a positive and statistically significant effect on sustainable development. Therefore, the increase in the level of youth employment, both young women and young men, increases the sustainable development in Turkey and the EU member countries. In this case, it can be said that long-term planning and implementations that will facilitate the employment of young people in Turkey and EU member countries and further increase the level of younger employment will contribute to the sustainability of development in these countries. While there are plans and programs for young people in both the EU and Turkey to guide education and employment, there seems to be a need to coordinate efforts in this direction, especially in line with the needs of younger generations in the future. For example, plans should be made to ensure that future jobs and future younger generations are in line with the level of education and skills so that the biggest obstacle to employing young people today is that the jobs in the market and the level of education and skills of young people do not overlap.

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12

The Micro Determinants of Informal Youth Employment in Turkey

Ayhan GÖRMÜŞ

Abstract

This paper uses Turkish Household Labor Force Survey micro data obtained from Turkish Statistical Institute, employing logistic regression modelling, to investigate differential impacts of socio-economic determinants on informal employment by age. The results suggest that informal employment is significantly affected by a range of workplace characteristics, flexible work and work-related nominators used in the study. Additionally, manufacturing industries, micro and small sized establishments, flexible works, lower or minimum levels of education and lower-ranked occupations are predicted as the determinants raising informal employment for youth due to display higher likelihood of informal employment. However, it is worth to mention that service industries, medium and large sized establishments and higher educational attainments assist to reduce informal youth employment.

Keywords: Informality, Informal employment, Youth, Micro determinants

1. Introduction

Informality is one of the most considerable problem fields for policymakers and the business world. Its effects on productivity, growth and working life cause a loss of fiscal and social security revenues for governments, unfair competition among firms and the lack of social security and health-care protection for workers (Angel-Urdinola and Tanabe, 2012:1). There are many drivers for informal employment differing from country to country. Nevertheless, it is well-known that high tax burden and labour costs, red tape, the lack of inspections on the labour market and the lack of trust in government exacerbate this phenomenon (EU, 2014:10). Admittedly, labour inspectorates play a key role to struggle with informal employment problem; however they do not commonly have enough resources, tools, procedures and coordination with other relevant authorities (ILO, 2013:iv). Therefore, government, employers, unions and employees should take joint action to deter from informal employment.

In many empirical studies, it is stressed that young workers are more influenced than their counterpart-adults by informal employment. In addition, informal employment is significantly affected in various forms by socio-economic determinants that involve deeper dynamics in the labour market. In this context, dynamics of informal employment comprising demographic factors and specific economic contexts must be analysed to understand clearly the social and economic challenges facing young people. The question to be answered here is what the micro determinants behind informal youth employment are. There are some studies in literature investigating informal youth employment by using demographic and socio-economic contexts. In the scale of international, for example, Shehu and Nilsson (2014)

searched empirical evidence to confirm informal employment that had been standardised among young workers in 2012 or 2013 across 20 countries, covering the main regions of the developing world. They analysed characteristics of informal youth employment by age, sex, area of residence, education level and health status, by using data from surveys. Similarly, Angel-Urdinola and Tanabe (2012), in their study they looked at informality in aspect of the human development, examined the main micro-determinants of informal employment consisting of age, gender, education level, employment sector, marital status, employment status, and geographic area in a selected group of Middle East and North Africa (MENA) region.

There are some empirical studies on informal employment in the scale of Turkey. For example, Doğrul (2012) examined the determinants of formal and informal employment in the urban areas of Turkey over the sex, marital status, household-headship, and education variables, by applying a multinomial logit model to household budget survey. Also, Fidan and Genç (2013), in their study which aims to estimate the micro-factors of informal employment in Turkey, employed logistic regression models over the 10 exogenous variables comprising age, gender, educational, marital status, main activity, work status, number of employees in workplace, mode of working, regions and rural-urban. Additionally, Başlevant and Acar (2015); in their study which reviews informal employment trends by years in Turkey, by using micro data from 2000, 2006, and 2012 Turkish Household Labour Force Surveys (HLFS); explored the incidence of informal employment across broad categories such as sectors, occupations and age groups by gender differences, by following an econometric approach to reveal the main determinants of informality status.

This paper focuses on informal youth employment in Turkey, which is a model and a critical case with lower labour force participation rate and higher unemployment and informal employment rates among youth, compared to adults. Although there is a considerable amount of empirical and theoretical research about informal employment for Turkey, systematic and specific analysis on the determinants of informal youth employment by demographic and socio-economic contexts is in a limited number. To fill empirically the gap in the literature, using data from HLFS, the paper presents a logistic regression analysis exploring the effects of demographic factors and workplace characteristics, flexible work, education and professions considered on informal employment varying by youth and adults. In this study, the predictors of informal employment are designed into three broader categories: workplace characteristics (industries and establishment sizes), flexible work (part-time/full-time and temporary/permanent jobs) and work-related nominators (education and occupation) and rendered separately for youth and adults in a single block. Thus, the study tries to investigate the effects of demographic, workplace, flexible work variables and work-related nominators on informal employment for young and adult workers and predict the determinants increasing informal youth employment.

The rest of the paper is organized as follows: Section 2 presents the literature review and definitions related to informality. Section 3 reviews labour market trends for youth in Turkey. Section 4 gives method, descriptive and logistic regression statistics and presents the statistical results. Finally, section 4 discusses about the results and concludes the paper.

2. Literature review

Before 1950s, economic activities in outside of the formal economy had not been paid attention by economists. However, informal activities of economic life became increasingly an important topic for research in the 1950s and 1960s. In this line, this phenomenon was given an accurate academic meaning, after report of the International Labor Organisation (ILO) which was named as “informal sector” in 1972. In the report on employment in Kenya, informality was mainly qualified in the meaning of the avoidance of government regulations and taxes by ILO (1972). In fact, academically, the informal sector concept was derived from a study in Third World context by Hart (1972) (Gërxhani, 2004:268-270). And then, dualist school following Hart’s studies dealt with informal businesses as inferior subsistence activities. The legalist school following De Soto (1989) reviewed informality as a rational decision of employers to avoid the bureaucratic procedures and the high employment costs. The structuralist school (Moser, 1978; Portes, Castells and Benton, 1989) considered that informality formed from the cost-reduction strategies of multinational companies by employing unsecured local workers (Shehu and Nilsson, 2014:4). Finally, Gërxhani (2004) analysed to the size, dynamics and shape of the informal sector as a marginal phenomenon.

Informal economy is closely related to the development level of a country and proportion of informality in an economy reflects to the size of informality (Ay, 2008: 367). Informal economy consists of both the informal sectors and informal employment. Additionally, the informal sector and informal employment are the concepts which are closely related to each other. Actually, the informal sector broadly comprises of firms, workers and economic activities that run outside of the legal and regulatory frameworks, while informal employment is a reflection of informal economy to labour market. In this regard, informal employment emerges with two main components: employment in the informal sector and unprotected employment in the formal sector (Shehu and Nilsson, 2014:3). In this aspect, informal employment results from violating the law rules and regulations adjusting the labour market and making it obligatory to enter the social security umbrella. It may not only be in the form of declaring the employed people to legal authorities concerned, but also it may be in the form of underreporting in terms of the number of days worked and wages (Ay, 2008:366-367).

Informal employment is also used as synonyms with illegal work, irregular work, illegal employment, unregistered employment, hidden unemployment, black labour, etc.. However, the term “informal employment” is more frequently used in researches and reflects to the number of people employed in the informal sectors and workers employed without a job contract in formal sectors where laws which regulate labour relations are violated (ILO, 2013, p.2). Besides, “undeclared work, which is used by ILO, is a form of social dumping that introduces unfair competition between firms on the basis of low wages and the non-payment of social security benefits”. Also, the term “hidden employment” of the Organisation for Economic Co-operation and Development (OECD) refers to work, “which although not illegal in itself, has not been declared to one or more administrative authorities” (OECD, 2004). Goldin et al, (2015) defined informal employment as “employment in informal establishments that are usually untaxed and unmonitored economic activities, as well as informal employment arrangements in a formal establishment”. Actually, the lack of protection against social and health risks for workers is the main characteristic of informal employment. In addition to social insecurity, informal employment points out income gaps between informal and formal sectors (Acharya et al., 2012; Wagstaff, 2010, cited by Shehu and Nilsson, 2014:5). Consequently, all of definitions for informal employment point out a working condition that ignores the fundamental working rights and human dignity (ILO, 2013:v).

Informal employment is the most unpleasant side of informal economy and generates negative social and economic effects on workers employed and their families. Because, its effects leave workers vulnerable against the social risks and limit their human capital development, by undermining access to pension and health-care (ILOa, 2015:6). Also, it often brings with the lack of severance payment, lower wages and unsafe or hazardous working conditions for workers (Goldin, et al, 2015:52; Angel-Urdinola and Tanabe, 2012:1), while providing a perfect employment way for employers to increase their profits. Also, negative outputs of informal employment on workers show the point where informal economy reaches (Bülbul, 2012:376).

Undoubtedly, young people are placed on the top among age groups who are the most affected by informal employment. Fundamentally, youth concept is used to refer to a certain group of population in range of 15-24 year-olds just entering to labour market by following education (OECDa, 2017). Also, United Nations (UN) defines youth as “people between the 15 and 24 years old”. For UN, “youth is period of transition from the dependence of childhood to adulthood’s independence” and often refers to a person between the ages of leaving compulsory education and finding their first job (UN, 2013:1). The level of informal youth employment echoes an increase in vulnerability to unsecured working conditions among young people.

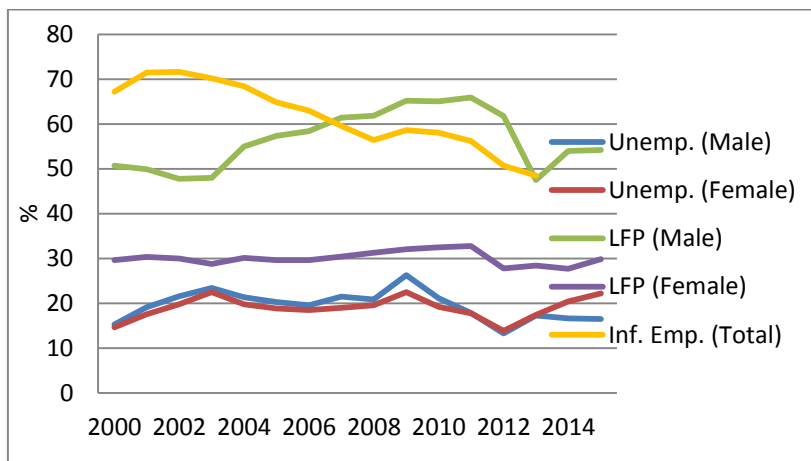
In this case, the question is why we focus on informal youth employment. It is because socio-economic development of youth is highly important to build future of a country. Recently, youth problems have become one of the most discussed issues in the global community. In this line, many researches focusing on youth employment and development, skill development, empowerment, health and inclusion are explored by international organisations, notably ILO, OECD, UN and World Bank (WB). The reason for this, employment of next generations is closely related to next economic growth and sustainable development. It means that the more we drive youth towards productive employment, the more we are sure and hopeful about future (ILO, 2015:5). However, factors influencing employers’ decisions to hire and keep young workers are very crucial topics. In this sense, it is generally argued that labour laws such as minimum wage regulations, collective agreement provisions, contribution to social security and employment protection legislation considered to boost labour costs affect employers’ decisions on youth employment (OECD, 2007:71). In this regard, when considering global youth labour market trends between 1991 and 2014 view, although educational attainment for youth increased, the labour force participation rate and the share of the working-age population in employment for youth kept on declining. Also, the youth unemployment rate reached at %13.0 in 2014 by increasing rapidly in period of 2007 and 2010 (ILOb, 2015:6). These figures display pretty worrying for future.

The fundamental conditions of creating new employment areas for all require a growing economy and a stable macroeconomic and political environment. Yet, even if growth is positive, youth employment rates are considerably lower than adult rates due to the fact that youth have more disadvantages than adults in the labour market. One disadvantage is that employers do not approach positively to youth employment owing to their inexperience at work and imperfect information of young applicants. Moreover, youth are more undecided about what kind of job they want to do (Begg and Blanchflower, 2000 cited by The World Bank. 2013). As a result of all these, youth have a higher job turnover rate and spend longer time than adults to find a job. Second disadvantage is that the working poverty is a more widespread phenomenon among youth than adults and youth are more likely to be unemployed, underemployed, or worker with low-wage. Besides, entering to labour market of youth at early age emerges the other employment problems for them such as informal employment and working-poverty and interrupts their human capital development in future (The World Bank, 2013:2). Hence, as mentioned above, youth employment issue is a major interest area for governments and there are substantial challenges to tackle it.

3. Labour Market Trends for Youth in Turkey

This research explores informal youth employment in the case of Turkey. Before passing on to quantitative part of the research, it will be worth to review youth employment trends in Turkey, where labour market trends for youth appear far more behind, compared to the global trend, as it is showed in Figure 1.

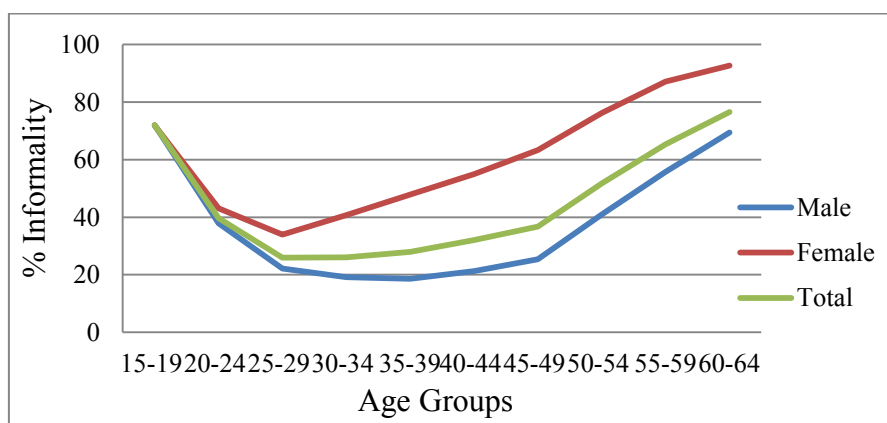
Figure 1: Labour Market Trends for Youth, Turkey, (2000-2015)



Source: TSI, Householder Labour Force Survey Results, 2000-2015

In spite of decrease in the shares of young people to total population by years, especially after 2011, youth labour force participation rates tend to fall down by years, while there are significant increases in youth unemployment rates. In this sense, notably unemployment rate for young female reached by 22% in 2014. Informal employment rate is frequently monitored in higher rates among youth, as opposed to adults, as it is many developing countries. In this regard, although there is a general downward trend by years in informal employment rates for young people, nearly half of young workers still have to work informally. Unsurprisingly, the proportions of informal employment illustrate that youth are penalised in terms of wages, job satisfaction and underemployment by making them vulnerable to precarious working conditions. This figures indicate that young people have significant problems in entering labour market, even if they are hired, they will be at higher risk for informality and dissatisfaction, and have to work in unsecured jobs with low-wages, low-skills, and the lack of social security coverage (Shehu and Nilsson, 2014:2).

Figure 2: Informal Employment Rates by Age Group and Gender (Turkey, 2014)



Source: Calculated from 2014 HLFS micro data

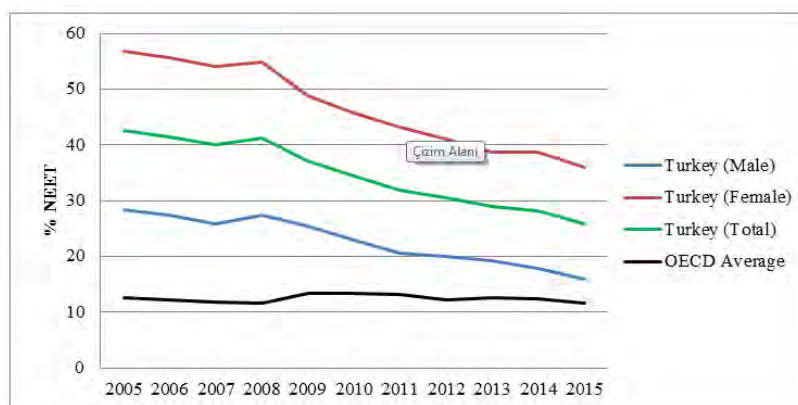
Age and gender distribution of informality is an important indicator to analyse. Referring to Figure 2, informal employment is more likely to be very widespread phenomenon among youth. Also, young people are the age group that is far more suffered from informal employment than other age groups. As indicated in Figure 2, informal employment is

observed to be significantly higher for female than male in every age group. Informal employment rates are far higher among young people in range of 15-19 years old and keep falling down sharply up to range of 25-29 years old. This result confirms Angel-Urdinola and Tanabe's study. After reaching its minimum point for youth between ages of 25 to 29, informality graphic for female starts to rise after this point in direct proportion to age. Informal employment for male is relatively lower in range of 25-49 years old and climbs up rapidly for male after 45-49 years old until retirement age. The probable reason for this is that workers prefer to retire in early ages and then, older workers at above 50 years old have to enter labour market again because of insufficient retirement pension to live by (Angel-Urdinola, Reis and Quijada, 2009: 35), but they do not request social security coverage from their employer owing to fact that they have already benefited from retiring pension and health-care (Salem et al, 2011:71; Başlevent and Acar, 2015:82).

Transition from school to work of youth is one of the most discussed issues, as well as the fact that education and training systems is highly significant to gain job-skill requirements to youth. It is because transition from education to labour market for all young people is a very important step to gain their socio-economic independences and stand on their own feet. When passing on this phase, most of young people face challenges to find a decent work and suffer especially from the risks of social exclusion and poverty (Vertot, 2009:10).

Other substantial indicator about youth employment is the proportions of youth who are not in education, employment or training (NEETs). It refers to youth who are both inactive and out of education and unemployed. NEETs are at risk of being left permanently behind in the labour market. This risk is relatively higher for low-skilled NEETs. Majority of this sub-group live in households being dependent on their families and in case their parents are unemployed, they are also at risk of poverty. Special programs and effective policies should be followed to integrate NEETs with the labour market and develop their careers (OECD, 2016).

Figure 3: NEETs (Neither Employed nor in Education or Training) rates, range of 15-24 age, Turkey, 2005-2015



Source: OECD, 2017

In Figure 3, it displays that more than 25% of youth in range of 15-24 years old in Turkey are NEET. It traces rapidly a downturn trend by years, but still above of the OECD average. The lack of skills is the most considerable obstacle to getting better labour market opportunities in Turkey: nearly 1 in 5 young people in Turkey are low-skilled NEETs, compared to around 1 in 20 in OECD countries (OECD, 2016). Admittedly, NEET rates for young women are systematically higher than for young men, however, in Turkey, gender gap is more than twice larger for female youth (36.01%), compared to young men (15.83%) (Carcillo, et al. 2015:10).

4. Methods

4.1. Data

Data for the research is obtained from HLFS, which is regularly published a large household-based survey and performed by Turkish Statistical Institute (TSI). The HLFS is a study comprising of a data resource on the basis of the employment and unemployment, and is applied in sample houses chosen around Turkey every month to achieve a probability sample of households and individuals in Turkey (TSI 2016). This paper uses 2014 Turkish HLFS micro data. And the survey form with 105 questionnaires was filled out by 393,822 respondents. In this line, our dependent variable, informal employment, was generated from 13,409 youth (out of 25,285 youth employed) and 52,449 adults informal employed (out of 142,147 adults employed).

The methodology for the study fundamentally depends on analysis of the Turkish HLFS, using binary logistic models. Our approach is based on standardised definition of informal employment in HLFS and tries to understand the micro determinants of informal youth employment in terms of demographic factors and workplace characteristics, flexible work, education and job position held.

4.1.1. Dependent Variable

In the HLFS, in order to define informal employment, respondents are asked the question: “Have you been registered to Social Security Institution due to your main work in reference week?” Respondents can only reply as “Yes or No” for the question. Those who have replied as “No” are defined as informal employment statistically (TSI 2014), as it is compatible with hidden employment term of OECD (OECD, 2004). The study aims to explore comparatively informality situations of youth and adults employed, by using demographic and workplace, flexible work, educational attainment and occupational related variables. Therefore, in the study, youth refer to population in range of 15-24 year-old, like youth concepts of UN, ILO, OECD and WB, as for adults it refers to population in range of 25-64 year-old. Those over 64 years old are executed because of small cell size.

4.1.2. Independent Variables

In broader terms, the models in this study that control the differences between youth and adults in terms of informal employed previously emphasized four main categories: demographic profiles, workplace characteristics, flexible work and work-related nominators (education and occupation).

Demographic profiles consisting of gender, marital status and regions have been taken from respondents’ self-reports. Gender, among the demographic variables, aims to measure the decomposition of genders on youth and adults informally employed. Other demographic variable, marital-status, refers to respondents who are widowed or divorced, single (never married) and married (TSI 2014). Regions, the last demographic variable, are collapsed into 7 main regions: Istanbul, West and East Marmara, Aegean, West and Middle Anatolia, Mediterranean, Black Sea, Middle-East and Southeast Anatolia. Istanbul is separated from Marmara region, because it has different characteristics as the most populated city of Turkey and Europe.

Workplace characteristics comprising of industries and establishment size are based on the main jobs. Industries, which are derived from the classification of NACE2 (Nomenclature of Economic Activities), are recoded to 5 main categories to reach more reliable results: agriculture, forestry and mining; manufacturing, energy and construction; sales, repairing, hotel and restaurant; transport, communication; public administration, education and health. Establishment size refers to the number of employees at workplace and it is categorized as three bands in order to control the impacts of micro, small, and medium and large sized enterprises on informal employment by age. The number of employees at workplace was collapsed into three bands: micro (≤ 10), small (11-49) medium and large ($50 \geq$) companies, as it is compatible with establishment size definitions of TSI, Eurostat and WB. In this paper, sizes of enterprises are determined by only based on the number of employees by ignoring annual turnovers of enterprises. In this respect, ranges for establishment size are taken from definition of TSI.

Flexible work category consisting of part-time/full-time and temporary/permanent jobs, have been taken from respondents’ self-reports, in order to control differences in terms of flexible work of youth and adults informally employed.

Education, first work-related nominator, is obtained with five main categories from “degree and postgraduate” to “no qualification”. Education refers to the highest qualification attained (Cam, 2014:537). Occupation, second work-related nominator, is compatible with their major level (single-digit) international classification (SOC-2010). In the study, educational attainments and existing positions at work have been used to shed more light onto the impacts of education and occupation status at informal employment on youth and adults.

4.2. Analytical Technique

Logistic regression, which is widely employed when modelling binary outcomes and for predicting the probability of an event, is used by the analysis. The dependent dichotomous variable is people who are registered and unregistered to Social Security Institution for their existing works. The binary response is yes/no. The logistic models predict separately the probability of informality at existing works for youth and adults.

Separate and joint logistic regression models are specified for youth and adults in Table 2 in order to analyse differential effects of workplace characteristics, flexible work and work-related nominators. In logistic models, all independent variables are applied to logistic models for youth and adults in a single block. In Table 2, this block is designed into 3 broader categories of independent variables: workplace characteristics (industries and establishment sizes), flexible work (part-time/full-time and temporary/permanent jobs) and work-related nominators (education and occupation).

Meanwhile, marital status could not be added to model for adults due not to give the goodness of fit (Hosmer and Lemeshow Test) for model. Also, other demographic variables (except marital status for youth model) were tried to be included to models, however model for both failed to provide the goodness of fit.

4.3. Research Results

4.3.1. Descriptive Analysis

Table 1 illustrates proportions and chi-square results for informal employment variations between youth and adults. This section views descriptive analysis of informal employment in Turkey in terms of demographic profile, workplace characteristics, flexible work and work-related nominators.

Referring to demographic profile in the table, there are significant relationships between youth and adults in terms of gender, marital status and regions. Overall, demographic variables display that youth are far more at risk than adults in terms of informal employment. However, surprisingly, figures show that 54.1% of young females are less likely to be informally employed, as opposed to adult females (55.9%). Basically, in sense of marital status, youth have far more disadvantaged than adults and the most salient gap between youth and adults occurs in single (never married). Proportion of never married single for youth (53.2%), for instance, demonstrates significantly higher than adults (23.4%) in terms of informal employment, while there is no significant difference among widowed or divorced people. In regards of regions, proportion of informal employment for youth and adults in their categories appears less likely for Marmara region, where it contains Istanbul as well, depending on the fact that it is the most developed region of Turkey. The most substantial gap between youth and adults informally employed is observed among respondents who live in East and Southeast Anatolia region. 75.5 % of youth informally employed, for example, are significantly more likely to be placed in East and Southeast Anatolia, compared to adults informally employed (53.8%).

As for workplace characteristics, figures display that there are significant differences between youth and adults in terms of industries and establishment size. In aspect of industries, proportions of the highest informal employment for youth (93.3%) and adults (78.6) in their categories occur in agriculture, forestry and mining industries. The most salient gap between youth and adults is observed in sales, repairing, hotel and restaurant services. 45.0% of youth in sales, repairing, hotel and restaurant services are significantly more likely to work informally, compared to adults (27.2%). When looking at establishment size, those who work in micro sized entrepreneurs are significantly more likely to be informally employed, as opposed to those who work in small, medium and large sized entrepreneurs. In this line, 71.3% of youth who are employed by micro sized entrepreneurs are more likely to work informally, compared to adults (57.1%). In the table, it is obviously appeared that there is an inversely proportional relationship between informal employment and establishment sizes. In other words, as establishment sizes grow up, percentages of informal employment gradually drop down.

Table 1: Informal employment

		Youth (15-24)		Adults (25-64)	
		N ^a	% ^b	N ^a	% ^{b,c}
<i>Gender</i>	<i>Female</i>	4,457	54.1	24,761	55.9***
	<i>Male</i>	8,952	52.5	27,688	28.3**
<i>Marital Status</i>	<i>Widowed or divorced</i>	37	41.1	2,721	46.9
	<i>Single (never married)</i>	11,635	53.2	3,737	23.4***
	<i>Married</i>	1,737	52.0	45,991	38.2***
<i>Regions</i>	<i>Istanbul</i>	722	28.0	2,121	16.7***
	<i>West and East Marmara</i>	1,159	35.0	6,831	29.6***
	<i>Aegean</i>	1,102	41.7	6,231	33.6***
	<i>West and Middle Anatolia</i>	1,874	46.7	7,295	29.5***
	<i>Mediterranean</i>	1,437	56.8	5,670	36.9***
	<i>Black Sea</i>	1,485	54.0	9,769	47.2***
	<i>East and Southeast Anatolia</i>	5,630	75.5	14,532	53.8***
<i>Industries</i>	<i>Agriculture, forestry and mining</i>	6,294	93.3	30,730	78.6***

	<i>Manufacturing, energy and construction</i>	2,883	39.0	7,943	23.7***
	<i>Sales, repairing, hotel and restaurant</i>	2,693	45.0	6,323	27.2***
	<i>Transport and communication</i>	280	37.7	1,687	24.5***
	<i>Public administration, education and health</i>	473	15.6	3,530	10.9***
<i>Establishment size</i>	<i>Micro sized establishment (≤ 10)</i>	11,506	71.3	49,361	57.1***
	<i>Small sized establishment (11-49)</i>	1,427	29.6	2,341	9.9***
	<i>Middle and large sized establishment ($50 \geq$)</i>	476	11.0	747	2.3***
<i>Flexible Work</i>	<i>Part-time Jobs</i>	3,705	83.7	16,006	84.1
	<i>Full-time Jobs</i>	9,704	46.5	36,443	29.6***
	<i>Temporary Jobs</i>	2,944	63.2	6,392	59.0***
	<i>Permanent Jobs</i>	3,683	28.3	8,516	11.5***
<i>Education</i>	<i>Degree and postgraduate</i>	475	16.4	1,355	5.0***
	<i>High school</i>	2,037	35.3	4,491	17.2***
	<i>Secondary school</i>	8,746	61.9	5,082	30.3***
	<i>Primary school</i>	192	85.0	30,458	51.5***
	<i>No qualification</i>	1,959	86.5	11,063	86.1
<i>Occupation</i>	<i>Managers</i>	52	26.3	977	12.7***
	<i>Professional positions</i>	94	9.1	405	2.9***
	<i>Assoc. professional and technical positions</i>	209	18.6	530	7.8***
	<i>Office services</i>	298	18.1	342	4.2***
	<i>Sales and customer services</i>	2,530	45.1	7,431	31.8***
	<i>Qualified agricultural, forest and fishing workers</i>	4,461	94.9	24,833	78.0***
	<i>Artisanship and art-related jobs</i>	1,865	44.9	5,566	30.7***
	<i>Process, plant and machine operators</i>	426	27.2	2,180	17.8***
	<i>Elementary positions</i>	3,474	66.2	10,185	51.1***

Source: Author's analysis from Turkish Household LFS, 2014

a Sample size is weighted and grossed out.

b Distributions as (column) % of all in each category.

c Chi-square results are for the gap between youth and adults in each line: * $p < .05$, ** $p < .01$, *** $p < .001$

In point of flexible work, part-time jobs are more likely to offer informal employment for youth (83.7%) and adults (84.1%) and there is no significant difference between both. The most salient gap between youth and adults occurs among those who work in full-time jobs and permanent jobs. Accordingly, 46.5% of youth in full-time jobs, for instance, are significantly more likely to be informally employed, compared to adults (29.6%).

As for education, the table demonstrates significant differences between youth and adults ($p < .001$) in terms of informal employment. The most remarkable gap between youth and adults is observed among those who held primary and secondary school degree. In this regard, proportion of youth who had primary school degree (85.0%), for example, is significantly more likely to work informally than adults (51.5%). Figures imply that as education levels of workers

increase, probabilities of their informality reduce. It is worth to mention that enhancing educational attainments makes probability of informal employment fallen down.

Finally, when considered the occupations, there are significant relationships between youth and adults ($p < .001$) in terms of workers informally employed in existing positions. From the point of occupations, the table display that higher-ranked positions are less likely to work informally, while lower-ranked positions are far more at informal employment risk. While the lowest proportions of informal employment for both are being observed in professional positions (9.1% for youth, 2.9% for adults), qualified agricultural, forest and fishing workers appear the highest likely to work informally (94.9% for youth, 78.0% for adults). The most substantial gap between youth and adults is seen in artisanship and art-related jobs. For example, 44.9% of youth working in artisanship and art-related jobs are significantly more likely to be informally employed, as opposed to adults (30.7%).

Overall, figures display that informal employment for youth (53.0%) are significantly higher than adults (36.9%), confirming previous studies (Angel-Urdinola and Tanabe (2012) Shehu and Nilsson (2014)) and youth face far more informal employment than adults with a varying degree of influence across the demographic profiles, workplace characteristics, flexible work and work-related benchmarks used in Table 1.

4.3.2. Logistic Regression Models

Both separate and joint logistic regression models to explore the differential impacts of the demographic profiles, workplace characteristics, flexible work, and work-related nominators on informal employment for youth and adults are given in Table 2. Reference categories are defined in the last category of bivariate analysis for each predictor variable.

Models involve workplace characteristics (industries and establishment sizes), flexible work (part-time/full-time and temporary/permanent jobs) and work-related nominators (education and occupation). Marital status, one of the demographic variables, was used in only the model for youth to provide the goodness of fit (Hosmer and Lemeshow Test). Therefore, models aim to measure the effect of independent variables fitting for the analysis on the analysis. Models prove that independent variables used in Table 2 are strong predictors regardless of youth and adults ($p < 0.001$).

When starting our analysis with the marital status, we can see that it has a significant impact on informal youth employment ($p < 0.001$). Singles illustrate significantly more than two times higher likelihood of being informally employed for youth ($OR = 2.10$, $p < 0.001$), as opposed to married couples.

As for workplace characteristics, industries and establishment size are strong predictors for youth and adults ($p < 0.001$). Referring to Table 2, the likelihood of informal employment in manufacturing, energy and construction industries is significantly higher for youth ($OR = 1.43$) than public administration, education and health-reference category, however it is not significant for adults, compared to reference category. Also; sales, repairing, hotel and restaurant industries present significantly greater likelihood for youth ($OR = 1.51$) in terms of informal employment, whilst displaying significantly lower likelihood for adults ($OR = 0.71$). Agriculture, forestry and mining industries, however, is a stronger determinant, as it means six times higher likelihood of informal employment for young workers ($OR = 6.04$) and almost more than three times for adults respondents ($OR = 3.83$), as opposed to public administration, education and health industries. In regard of establishment size, growth in establishment size makes the likelihood of informal employment decreased in a linear mode. However, the most salient results are seen in micro sized establishments for youth and adults. In this line, the likelihood of informal employment is significantly nine and half times greater in micro sized establishments for youth ($OR = 9.50$, $p < 0.001$) than it is in the medium and larger ones, while monitoring significantly more than thirteen times higher for adults ($OR = 13.83$, $p < 0.001$).

Table 2: Informal employment

	Odds Ratios for Youth (15-24)	Odds Ratios for Adults (25-64)
Marital Status	***	
<i>Widowed or divorced</i>	1,59	
<i>Single (never married)</i>	2,10***	
<i>Married</i>	I	
Industries	***	***
<i>Agriculture, forestry and mining</i>	6,04***	3,83***
<i>Manufacturing, energy and construction</i>	1,43***	1,07
<i>Sales, repairing, hotel and restaurant</i>	1,51***	0,71***
<i>Transport and communication</i>	1,77***	1,37***
<i>Public administration, education and health</i>	I	I
Establishment size	***	***
<i>Micro sized establishment (≤ 10)</i>	9,50***	13,64***
<i>Small sized establishment (11-49)</i>	3,14***	3,49***
<i>Middle and large sized establishment ($50 \geq$)</i>	I	I
Flexible Work		
<i>Part-time Jobs</i>	2,08***	8,16***
<i>Temporary Jobs</i>	2,79***	3,94***
Education	***	***
Degree and postgraduate	0,10***	0,05***
High school	0,16***	0,11***
Secondary school	0,37***	0,18***
Primary school	1,56	0,29***
No qualification	I	I
Occupations	***	***
Managers	0,28***	0,53***
Professional positions	0,29***	0,26***
Assoc. professional and technical positions	0,39***	0,40***
Office services	0,40***	0,46***
Sales and customer services	0,63***	1,90***
Qualified agricultural, forest and fishing workers	0,73	0,96
Artisanship and art-related jobs	0,70***	0,83***
Process, plant and machine operators	0,56***	0,72***
Elementary positions	I	I
Δ df	8	8
Hosmer and Lemeshow Test	0,127	0,157
-2 LLR	15370,8	42446,3

Source: Author's analysis from Turkish Household LFS, 2014
Significance of difference from the reference category: * $p < .05$, ** $p < .01$, *** $p < .001$

Models prove that flexible works have a strong effect on informal employment regardless of youth and adults ($p < 0.001$). Part-time job is a stronger factor, as it displays more than eight times higher likelihood of informal employment for adult workers (OR=8.16) and more than two times higher for young workers (OR=2.08), compared to full-time jobs. Likewise, temporary jobs demonstrate significantly nearly four times higher likelihood of informal employment for adults (OR=3.94) than it is in permanent jobs, while illustrating nearly three times higher likelihood for youth (OR=2.79).

When considered from the point of work-status nominators, educational attainments and working positions are strong predictors to explain informal employment for youth and adults ($p < 0.001$). Referring to Table 2, increase in educational

attainments for youth and adults makes the likelihood of informal employment fallen down in a linear mod. In this situation, having degree and postgraduate, for example, drops down significantly the likelihood of informal employment for youth and adults (in turn OR=0.10 and OR=0.05), compared to having no qualification. As for occupations, higher-ranked positions such as managerial, professional and technical positions display a lower likelihood of working informally for notably youth. Also, the likelihood of informal employment in sales and consumer service positions is significantly lower for youth (OR=0.63, $p<0.001$) than elementary positions, while being significantly higher for adults (OR=1.90, $p<0.001$). Additionally, considering the figures, a rise in occupational positions for youth means lower likelihood of informal employment.

5. Conclusion

In order to address the lack of systematic research in Turkey, we tried to examine the micro determinants of informal youth employment and understand the differences between youth and adults. Research shows that the likelihood of working informally for youth is significantly affected by a range of components used in the research. Our analysis using logistic regression models reached considerable evidences on the basis of age (youth and adult) nature of informal employment in terms of workplace characteristics, flexible work and work-related nominators.

The logistic analyses highlighted a strong relationship between informal employment and some commonly used variables to understand labour standards including industrial variations, establishment size, flexible work, education and occupations. In this line, logistic models prove that the micro determinants of informal youth employment are as follows:

- Industries creating the highest informality in employment are predicted as agriculture, forestry and mining which are verified by previous studies (Salem et al, 2011:65). Service industries appear more effective in mitigating of informal employment, compared to manufacturing industries. Jobs in, for example, sales, repairing, hotel and restaurant industries strengthen the likelihood of informal employment for youth, whilst weakening that of informal employment for adults. Similarly, manufacturing, energy and construction industries predict higher levels of informal employment for youth, however there is no significant difference for adults between manufacturing, energy and construction; and public administration, education and health industries.
- As size of establishments become smaller, informal employment is predicted in higher levels, as it was reported by previous studies (Salem et al, 2011:65). It is important to keep in mind that middle and large sized establishments are more likely to offer better prospects for creation of formal employment.
- In addition, flexible works raise informal employment. However, the effect of flexible works on informal employment is anticipated lower for youth than adults. This difference is mainly due to the fact that young workers prefer mostly to work in part-time and temporary jobs because of reasons like school, which corresponds with the international research findings over the impacts of flexible work on informal youth employment (ILOb, 2015:67).
- Increasing in education generates a positive result on informal youth employment. This result confirms previous studies (Saavedra and Chong, (1999); Packard, (2007); Angel-Urdinola and Tanabe, (2012); Shehu and Nilsson (2014)) which reported that “*the youth informally employed were more likely to be in lower or minimum levels of education than the formally employed*”.
- Finally, the inverse relation of informal employment to occupations implies a work-status consistency. The reason for this is higher-ranked occupations provide to reduce informal youth employment. It may be a reflection of education, because higher-ranked occupations demand higher educational attainments. Hence, this result confirms also the impact of education on informal employment.

Specific policies and some public interventions to encourage the transition of youth to the formal economy can produce better results. There are countries taking some measures to facilitate the labour market integration of youth. These measures have mainly focused on labour market training, work-experience and transition from school to work programmes, job-search assistances, career consultancy, as well as incentives for employers to recruit young people (ILOb, 2015:66).

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Financial Development and Shadow Economy in Turkey

*Yılmaz BAYAR
Levent AYTEMİZ*

Abstract

Shadow economy has been an ongoing problem for nearly all the countries in the world. Therefore, countries try to decrease the size of shadow economy by institutional, educational and economic measures considering its economic and social harms. In this study, we investigate the interaction between financial sector development and the size of shadow economy in Turkey during the period 1960-2009 using Maki (2012) cointegration test and Hacker and Hatemi-J (2006) bootstrap causality test. We found that financial development had negative impact on the size of shadow economy in the long run and there was unidirectional causality from financial development to shadow economy.

Keywords: Financial development, shadow economy, time series analysis

Introduction

The shadow economy have been termed with different expressions such as underground economy, informal economy, unrecorded economy, black economy and hidden economy in the literature. The main factors behind the shadow economy are been documented as heavy burdens of tax and social security contributions, insufficient tax morale, insufficient institutional and regulatory infrastructure and heavy regulations (Schneider and Williams, 2013). On the other hand diverse methods have been developed to estimate the size of shadow economy. The approaches for the estimation of shadow economy generally may be classified as direct and indirect approaches. Direct approaches use surveys and samples with voluntary responses or tax auditing and other methods, while indirect approaches use diverse indicators related to the shadow economy over time and the major methods are transactions approach, currency demand approach, physical input (electricity consumption) method and model approach such as MIMIC (Multiple Indicators, Multiple Causes Estimation) and dynamic general equilibrium model (Schneider and Buehn, 2016).

Shadow economy has different negative social and economic implications for the national countries. First shadow economy complicates the determination of right policies by governments to achieve economic and social development, because the formal statistics misrepresent the true social and economic situation of a country in case the size of the shadow economy increases. Secondly governments cannot collect the sufficient taxes to fulfil its obligations such as educational and infrastructure investments, because shadow sector usually do not pay taxes. In this case, governments may increase to tax rates to meet the budget deficits and this in turn may cause increases in tax evasion and lead social unrest. Thirdly shadow economy lead an unfair competition between official firms and unofficial firms and may direct the firms to work underground. Fourthly shadow economy may lead violence, crimes and corruption by causing unrest in the society through unequal tax burden especially on the working class (Schneider and Enste, 2000; Mara,

2011). Therefore, countries try to keep the shadow economy in reasonable limits by various institutional, educational and economic measures and regulatory and legal arrangements taking notice of its social and economic losses.

There have been no countries with a zero shadow economy in the world. However, the size of shadow economy changes significantly from country to country. For example the size of shadow economy was 9.5% of national income in Austria in 2007, while the same rate was 62.7% of national income in Zimbabwe in 2007 (Schneider and Williams, 2013). So shadow economy is a never ending problem, which harms the economic and social structure of the societies, for all the nations, but its size differs greatly among the countries. In this regard, it exhibits importance to determine the causes behind the differences among the countries.

In this paper, we focus on the impact of financial sector on the size of shadow economy, because financial sector has made enormous strides in recent years. International capital movements have increased considerably especially as of 1980s, because many countries liberalized their economies together with the third globalization wave. The increasing transnational capital flows have contributed to the development of financial sectors through increasing its efficiency, improving institutional infrastructure and reducing the power of interest groups, although raising frequency and severity of the crises and abrupt capital inflows and outflows harm the economies and well-functioning of the financial system. In this regard, domestic credit to private sector as a percent of GDP raised from 48.971% in 1960 to 128.845% in 2015 in the world and stock market capitalization as a percent of GDP raised from 29.324% in 1975 to 97.403% in 2015 (World Bank 2017a and 2017b).

Turkish Republic has pursued contrary economic policies since its establishment in 1923. In our study period, Turkey followed a policy of planning and import substitution policy during 1960-1980 period, then has followed a direct opposite policy of export oriented growth since 1980s. During the period 1923-2017, Turkish Republic experienced an institutionally, economically and socially transformation in despite of the frequent serious political and economic crises. Financial sector also has expanded significantly after transition to market economy and financial liberalization together with the accelerating globalization process as of 1980s in Turkey and the domestic credit to private sector as a percent of GDP raised from 17.65% in 1960 to 80.04% in 2015 (World Bank, 2017a). At the same time a considerable decrease in the size of shadow economy (27.68% in 2009 from 60.98 in 1960) accompanied this transformation in Turkey. However, there have been very few studies on the interaction between expanding financial sector and the size of shadow economy in Turkey in the literature. Therefore, our study will be one of the early empirical studies which investigates the interaction between financial sector development and the size of shadow economy during 1960-2009 period employing Maki (2012) cointegration test and Hacker and Hatemi-J (2006) bootstrap causality test. The rest of the study is structured as follows: Section 2 gives theoretical and empirical literature review and Section 3 gives data and econometric methodology employed in the paper. Then empirical analysis and major findings are given in Section 4 and the study is concluded with Section 5.

Literature Review

Financial sector may pull the economic units into formal economy with its services such as supplying the credit with better economic conditions and maturities, investment consultancy and different investment instruments suited for the preferences of the each person. So financial sector development can contribute to the reductions in the size of shadow economy to facilitate the monitoring and taxing the transactions. In this regard, many researchers have begun to investigate the interaction between financial sector development and shadow economy during the recent years and they have revealed that development of financial sector has reduced the size of shadow economy (e.g., see Blackburn et al., 2012; Bose et al., 2012; Capasso and Jappelli, 2013; Bittencourt et al., 2014; Berdiev and Saunoris, 2016; Bayar and Ozturk, 2016; Din, 2016; and Habibullah et al., 2016).

Gobbi and Zizza (2007) examined the relationship between shadow economy and financial development in Italian debt markets over the period 1997-2003 and revealed that financial sector development had no significant effect on the size of shadow economy, but shadow economy inhibited the financial sector development. In another paper, Bose et al. (2012) investigated the interplay between shadow economy and banking sector development in 137 countries during the period 1995-2007 using panel regression and found that banking sector development reduced the size of shadow economy. On the other side, Blackburn et al. (2012) established a theoretical model consisting of tax evasion and financial intermediation and the theoretic model proposed that the economies with lower development of financial sector experiences higher rates of shadow economy and tax evasion. Elgin and Uras (2013) analyzed the interaction between financial sector development and the size of shadow economy in 152 countries during 1999-2007 period and revealed that on one hand informal economy impedes the development of financial sector by raising financial repression

resulting from tax evasion, on the other side rising informal economy eases the development of financial sector by reducing capacity limitations on the sector.

In another study, Capasso and Jappelli (2013) established a theoretical model on the interaction between shadow economy and financial sector development and the theoretic model predicted that financial sector development may reduce the size of shadow economy and tax evasion by supplying cheaper financing opportunities for the firms. They also investigated the projections of the theoretic model using Italian microeconomic data and the findings verified the propositions of the theoretical model. Bittencourt et al. (2014) also formed a theoretical model on the relationship among shadow economy, financial sector development and inflation and the model proposed that financial sector development decreases the size of the shadow economy. They also proved the propositions of the model by a dataset including 150 countries over the period 1980-2009. Raj et al. (2014) analyzed the relationship between prevalence of banking resources and establishment of new firms in India over the period 1994-1995 to 2010-2011 using regression analysis and found that the existence of local banks was connected with the increases in the number of enterprises in the informal economy.

Berdiev and Saunoris (2016) investigated the interaction between shadow economy and financial sector development in 161 countries during 1960-2009 period employing panel vector autoregression model and they revealed that financial development decreased the size of the shadow economy. Also they found some findings supporting that shadow economy prevents financial development. On the other side, Bayar and Ozturk (2016) examined the relationship between shadow economy and financial development in EU transition economies during 2003-2014 period using Basher and Westerlund (2009) cointegration test and revealed a negative relationship between financial development and shadow economy. Din (2016) also conducted a similar study for Malaysia during 1971-2013 period using regression analysis and found a negative relationship between financial development and shadow economy. Finally Habibullah et al. (2016) researched the same relationship for Malaysia in the same period and reached the same results with Din (2016).

Data and Econometric Methodology

We researched the relationship between the size of shadow economy and financial sector development in Turkey during 1960-2009 period employing Maki (2012) cointegration test and Hacker and Hatemi-J (2006) bootstrap causality test.

Data

In this study, we used the data of shadow economy calculated with a two-sector dynamic general equilibrium model by Elgin and Oztunali (2012) as a proxy for the size of shadow economy. Furthermore, we used domestic credit to private sector as a percent of GDP as a proxy for financial development considering the higher share of banking sector in financial sector. The data description was described in Table 1.

Table 1: Data description

Variables	Symbol	Source
Shadow economy (% of GDP)	SHA	Elgin and Oztunali (2012)
Domestic credit to private sector (% of GDP)	DCRD	World Bank (2017a)

We benefited from E-views 9.0 and Gauss 11.0 programs for the econometric application. The descriptive statistics and correlation matrix was displayed in Table 2. The correlation between shadow economy and financial development indicated that there was a negative correlation between two series.

Table 2: Data summary

Variables	Observations	Mean	Std. Dev.	Maximum	Minimum
SHA	50	41.78520	9.548371	60.98000	27.68000
DCRD	50	18.82669	4.957360	39.17503	12.67313
		SHA		DCRD	
SHA		1		-0.4673	
DCRD		-0.4673		1	

Econometric Methodology

Maki (2012) cointegration tests investigates the cointegration relationship considering maximum 5 structural breaks and determines the dates of structural breaks endogenously. Maki (2012) considers each period as a possible structural break

and calculates t statistics and accepts as structural break where t statistic is minimum. In the context of the test, there are four models (Model 0 allows structural breaks only in the constant with no trend, Model 1 allows structural breaks in constant and slope with no trend, Model 2 enables structural breaks in constant and slope with trend and Model 3 enables structural breaks in constant, slope and trend). The null hypothesis represents there is no cointegrating relationship under structural breaks and the critical values of the test are calculated with Monte Carlo simulation by Maki (2012).

On the other hand Hacker and Hatemi-J (2006) causality test is based on causality test of Toda and Yamamoto (1995) and VAR ($p + d_{max}$) process of the series are estimated as in the following equation.

$$y_t = v + A_1y_{t-1} + A_2y_{t-2} + \dots + A_{p+d}y_{t-(p+d)} + \mu_t \quad (1)$$

In this equation y_t represents the vector of k independent variables, v represents constant vector and μ_t represents error term vector, A represents parameter matrix. On the other hand p is optimal lag length of VAR model and d_{max} is maximum integration level among the variables. So the variables are not required to be stationary (Hacker and Hatemi-J, 2006). Hacker and Hatemi-J (2006) causality test uses bootstrap distribution instead of chi square distribution unlike from Toda and Yamamoto (1995) causality test and the critical values of the test are provided by bootstrap simulation. Bootstrap method resamples the dataset to estimate the distribution of test statistics and thus decreases the deviations by obtaining more accurate critical values. Also this method is not sensitive to normality assumption and regards autoregressive conditional heteroscedasticity (Hacker and Hatemi-J, 2006)

Empirical Analysis

Results of Zivot-Andrews Unit Root Test

We applied Zivot and Andrews (1992) unit root test, which locates and regards the structural break in the series endogenously, to determine the integration of the variables and the results were displayed in Table 3. Both SHA and DCRD are not stationary at their levels, but they became stationary after first-differencing.

Table 3: Results of Zivot and Andrews (1992) unit root test

Variables	Chosen lag length	Model A (Chosen break point)	Model C (Chosen break point)
SHA	1	-2.922076 (1969)	-5.828119(1975)***
d(SHA)	0	-5.365052 (1978)***	-5.372579 (1978)**
DCRD	1	-1.528189 (1978)	-4.990803 (2001)*
d(DCRD)	0	-5.955470 (2001)***	-8.537565 (1998)***

Note: Critical values were provided from Zivot and Andrews (1992)
 ***, **, * indicates that it is significant at 1%, 5% and 10% respectively.

Maki (2012) Cointegration Test

We employed Maki (2012) cointegration test, which can specify maximum 5 structural breaks endogenously, and the results were presented in Table 4. The results showed that there was cointegrating relationship between the series in Model 1, Model 2 and Model 3.

Table 4: Results of Maki (2012) cointegration test

Model 0	Model 1	Model 2	Model 3
-3.715561	-5.9560218***	-5.81**	-6.7783217*
Dates of Structural Breaks			
Model 0	Model 1	Model 2	Model 3
1971, 1983, 1987, 1997, 2004	1966, 1980	1977, 1997	1971, 1980, 1987, 1999

Note: Critical values were obtained from Maki (2012)
 *, ** and *** indicates there was cointegrating relationship between variables at 10%, 5% and 1% significance level respectively.

The cointegrating coefficients were estimated with FMOLS method and the results were given in Table 5. The results denoted that 1 unit increase in financial sector development decreased the shadow economy in 1.054481 units. So improvements in financial sector contributes to the decreases in the size of shadow economy. Furthermore negative and

significant error correction term (-0.019152) pointed out the existence of the mechanism which eliminates the disequilibrium between short and long run.

Table 5: Estimation of cointegrating coefficients

Dependent variable: SHA				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DCRD	-1.054481	0.449997	-2.343308	0.0234
C	61.32245	8.770841	6.991627	0.0000

Hacker and Hatemi-J (2006) bootstrap causality test

We also employed bootstrap Granger causality test of Hacker-Hatemi-J (2006) to determine the causality between shadow economy and financial development and the results were presented in Table 6. The results indicated that there was unidirectional causality from financial development to shadow economy.

Table 6: Results of Hacker and Hatemi-J (2006) bootstrap causality test

Null hypothesis (no causality)	Test Statistics	Critical values		
		1%	5%	10%
<i>DCRD → SHA</i>	6.146*	11.508	6.699	5.057
<i>SHA → DCRD</i>	0.138	11.758	6.970	5.193

* indicates that it is significant at 10% significance level.

Conclusion

Shadow economy is one of the serious problems having which nearly all the countries face at the present time and therefore countries struggle with the shadow economy by institutional, economic and educational measures. In this study, we investigated the impact of substantially expanding financial sector on the size of shadow economy in Turkey over the period 1960-2009 employing Maki (2012) cointegration test and Hacker and Hatemi-J (2006) bootstrap causality test. The results indicated that development of financial sector decreased the size of shadow economy in the long run. Furthermore, there was unilateral causality from financial sector development to shadow economy. So financial sector development affected the size of shadow economy in both short and long run and our findings were found to be consistent with the general trend in the theoretic and empirical literature.

Consequently policy-makers should consider the development of financial sector as an instrument for fighting with shadow economy considering the findings of theoretical and empirical literature. Future studies can be conducted on the role of institutions in the interaction between financial sector development and shadow economy.

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14

The Determinants of Regional Unemployment in Turkey: A Spatial Panel Data Analysis

Burcu TÜRKCAN
Utku AKSEKİ

Abstract

The aim of this study is to analyze spatially the main determinants of regional unemployment in Turkey covering the period of 2008 – 2015 in terms of NUTS2 level. Following this aim a balanced panel data set with 8 years and 26 regions has been used. Spatially lagged dependent variable with spatial fixed effects model results suggests that the main determinants of the regional unemployment are the lagged values of both dependent and independent variables. Moreover all these statistically significant variables affect the dependent variable in positive ways. Also a spatial clustering inclination of regional unemployment in NUTS2 regions has been detected.

Keywords: Regional Unemployment, Regional Migration, Regional Inflation, Spatial Panel Data

Introduction

Regional unemployment rate is one of the most important indicators used in analyzing regional economic issues. It is quite important to analyze the main determinants of regional unemployment rates as regional competitiveness and regional economic growth directly affect the national growth and development, (Elhorst, 2001). Also, the determinants of regional unemployment might provide important data for policy makers.

Recent developments in empirical research on the determinants of regional unemployment imply that internal migration and regional inflation rate may have an important effect on regional unemployment disparities. Because of that, in this study, we will focus on the impact of migration and inflation on regional unemployment disparities. Migration is one of the important variables affecting the labor market in Turkey. The relation between unemployment rate and migration are frequently one of the topics investigated in the literature. The most recent data on this subject in Turkey is in Population and Housing Census made by Turkstat in 2011. According to this census, 12 percent of participants stated that they migrated to find a job. The rate of those who stated that they migrated to change their business is 13.4 %. Immigration of 41.4 percent of the sample relates to any member of the household. Assuming that significant portion of 41.4 per cent of the sample is considered to have migrated to be employed, it can be considered that majority of the sample migrates due to lack of employment opportunities.

Besides, one of the most important variables that is considered to have affected regional unemployment is inflation in the literature (Gozgor, 2013). Thus, inflation might be a crucial variable in determining reasons of regional unemployment.

In this study, employing spatial econometric methods for Turkish NUTS2 regions during 2008 – 2015, we attempt to shed light on the main determinants of regional unemployment and hence produce some policy recommendations to decrease regional unemployment rates. In this respect, the main contribution of this paper is that the most recent regional data are used to analyze the determinants of Turkish regional unemployment levels. In this context, after a brief introduction, empirical analysis is explained by method, model and evidences. Then, empirical results are interpreted and finally some policy recommendations are developed as a conclusion.

Empirical Literature and Analysis

There exist lots of studies in the literature analyzing these determinants with different approaches and methods. It can be seen that empirical studies in the literature indicate that there are lots of determinants of regional unemployment such as labor force participation rate, migration, urbanization, wage rates, employment rates and regional income¹. In this study, we give brief overview of literature examining the relationship between internal migration, inflation and unemployment.

Regional unemployment has been a critical concept analyzed by numerous researchers from different countries. Especially, it has become one of the most discussed economic issues after the emergence of New Economic Geography Paradigm. Consequently, there are many studies in both empirical and theoretical literature². Since the focus of this study is the spatial analysis, then the empirical studies with spatial methods are given in this section.

Chalmers & Greenwood (1985) employs simultaneous equation estimation for US counties for the 1960 – 1970 period. The authors suggest that the effect of net in-migration on regional unemployment is an important empirical question due to the fact that it causes both regional labor supply and demand to increase; the former directly and the latter indirectly. Hofler & Murphy (1989) estimates the effect of net migration on the unemployment rate for 50 regions covering the period of 1960 – 1979. Findings suggest positive impact of migration on the dependent variable. Badinger & Url (2002) applies spatial filtering technique for 72 Austrian regions in 1991. Results show that there is some interactions between regions (up to 180 km) in labor market that indicates labor mobility in terms of migration. Hence migration has been found as an important determinant of regional unemployment. Moreover, Overman & Puga (2002) employs OLS estimation procedure for 147 European NUTS2 regions for the period 1986 – 1996. They find a clustering inclination across European regions. Results suggest that regional in-migration as policy enhancing regional labor supply. Niebuhr (2003) analyses 359 NUTS2 and NUTS3 European regions for 1986 – 2000 period. This study suggests that there is no significant impact of regional migration on regional unemployment and also geographical distribution of unemployment exhibits clustering behavior. Patacchini & Zenou (2007) applies spatial methods for a dynamic panel data model. They examine clustering behaviour of regional unemployment and regional labor migration for 288 UK regions for the time period of 1985 – 2003. Also, they detect that regional migration and lagged value of regional unemployment are important determinants of regional unemployment. Vega and Elhorst (2016) applies simultaneous equations model for 1973 – 2013 period and they find that regional unemployment exhibits clustering behavior in Netherland's provinces. Additionally, Lopez-Bazo et al (2013) for Spain, Lottman (2012) for Germany and Cracolicia et al (2007) for Italy employ spatial econometric methods to examine the reasons of regional unemployment differences.

There are also some empirical studies investigating this topic for Turkey. Filiztekin (2008) applies spatial parametric and nonparametric methods at province level and indicates that the regional unemployment rate differences increase between 1980 and 2000. This study finds that there exist unemployment clusters especially in South-East of Turkey. Also, in this study, it has been stated that the determinants of regional unemployment rate are different in 1980 and 2000. In 1980, employment growth rate is the main determinant but in 2000, human capital becomes to be the main determinant of regional unemployment rate. As another study, Gozgor (2012) analyzes the regional inflation rates and regional unemployment rates with panel unit root tests for the 2004 – 2011 period. He finds some evidences in favor of the existence of hysteresis impacts on regional unemployment rates. Karaalp and Gulel (2016) examine regional unemployment differences for Turkish NUTS2 regions during 2008 – 2012 by the use of spatial autocorrelation techniques. Findings suggest that labor force participation rates for males, young population, the share of agriculture in regional economy and education level are the main determinants of regional unemployment rates.

¹ For an extensive literature analysis please see Elhorst (2003).

² For a comprehensive literature analysis, the study of Elhorst (2003) can be seen.

Spatial Panel Data Analysis

Spatial econometrics is a subfield of econometrics that takes into consideration the existence of spatial effects (Anselin, 1988). Spatial effects mainly occur as a result of spatial dependence or spatial heterogeneity, and they directly affect the development of economic procedures. In this context, the main determinants of regional unemployment are examined by the help of spatial methods in this study. In this respect, spatial analysis includes 26 NUTS2 regions of Turkey during 2008 – 2015. Accordingly, a balanced panel data set including 8 years and 26 regions is used for estimations. In estimated econometric model, the dependent variable is regional unemployment rate and the independent variables are net regional migration rate, regional inflation rate, one-year lagged values of net regional migration rate, one-year lagged values of regional inflation rate, one-year lagged values of regional unemployment rate and the spatial weight matrix. Consequently, a spatial panel data model which has both properties of autoregressive and distributed lag models is estimated. In the process of variable selection, the related empirical literature has been followed and all the data used in estimations have been collected from TSI (Turkish Statistical Institute).

Empirical Method and Model

For spatial estimation process, first of all a spatial weight matrix for 26 NUTS2 regions, has been formed. Aforesaid matrix has been constructed in the light of neighborhood relationship and queen method. In this context, the matrix consists of ‘1’s showing border neighbors and ‘0’s showing no neighborhood relationship. This matrix is a symmetrical matrix is of 26*26.

After forming the spatial weight matrix, the model below has been formed to estimate:

$$Unemp_{it} = \beta_1 Mig_{it} + \beta_2 Inf_{it} + \beta_3 LMig_{it} + \beta_4 LUnemp_{it} + \beta_5 LInf_{it} + \beta_6 W*Unemp_{it} + e_{it} \quad (1)$$

In this model *Unemp* is the dependent variable and it shows the regional unemployment rate. *Mig* is the net regional migration rate³; *Inf* is the regional inflation rate in terms of CPI (Consumer Price Index); *LMig* is the one-year lagged value of regional migration rate; *LUnemp* is the one-year lagged value of regional unemployment rate; *LInf* is the one-year lagged value of regional inflation rate and *W*Unemp* is the spatial weight parameter. Lastly, *e* is the error term and it reflects the possible impacts of all other determinants on the dependent variable. The expressions of *it* at the end of all the variables show that the data is a panel data having *i* regions and *t* years. The reason why a panel data set is used in estimations is the superiority of panel data sets over cross section and time series data sets. A panel data set consists of both cross sections and time series and hence gives more information. Moreover, panel data sets provide more efficient estimation results with higher degrees of freedoms (Baltagi, 2001).

Estimation Results

Table 1 below includes the estimation results. In order to find the most proper model for the estimations, three different versions of spatial models as pooled, fixed effects and random effects are estimated and LR test results are compared. As a result of this comparison, for this study it has been found that pooled model with spatially lagged dependent variable and spatial fixed effects is the best fitted model for our model.

Table 1: Spatial Panel Data Estimation Results

Pooled model with spatially lagged dependent variable and spatial fixed effects	
Variable	Coefficient
Mig	0.031963
Inf	-0.059370
LMig	0.069337*
LUnemp	0.505594***
LInf	0.287481**
W*Unemp	0.245999***
R-square	0.7916
LR-test	50.8790 (p value=0.0025)
Significance rates	***%1; **%5; *%10

Note:

³ It includes only domestic immigration to NUTS2 regions.

Estimation results indicate that the main determinants of regional unemployment rate are regional migration, the lagged values of dependent and independent variables and also spatial weight matrix. Spatial weight parameter underlines that there is a spatial clustering inclination of regional unemployment rate and this result shows that geographically close regions exhibit similar regional unemployment figures.

Conclusions

New Economic Geography Paradigm has become to be popular since the second half of the 20th century and hence the importance of regions at national and international scales has been underlined more frequently. Nowadays, it's widely accepted that if regions put their competitive capabilities in action, they can directly increase national economic growth rates and also they can bring nations competitive advantages in international platform. Consequently, regional policies affecting regional competitiveness and development process are seen as key factors for both regional and national economies. In this context, it's quite important to analyze regional economic issues and to find good policies to resolve important regional problems. Based on this approach, the main determinants of regional unemployment rates in Turkey are examined during 2008 – 2015. Empirical results indicate that the main determinants of regional unemployment rate in NUTS2 regions of Turkey are regional migration rate, regional inflation rate, lagged values of regional unemployment rate, lagged values of regional inflation rate, lagged values of regional migration rate and spatial weight matrix. Findings suggest that current regional unemployment rate is affected positively by regional net migration rate, one-year lagged values of regional unemployment rate and one-year lagged values of regional inflation rate. Moreover spatial clustering evidence indicates that geographically close regions express similar unemployment rates. These results imply that Turkish regional authorities should decrease regional migration and inflation rates in order to decrease regional unemployment rates. Also, if the spatial clustering inclination is taken into account, then it can be said that if regions with high unemployment rates begin to decrease their unemployment rates, then their neighbors would also benefit from this result. However, since it is quite hard to achieve declining unemployment rates for regions by themselves, it could be a good policy option to form some regional platforms and policy actions in those geographically close regions could work together. In this respect, the first thing that comes to mind is the regional development agencies in the regions. Regional development agencies can be used to construct a platform for regions and effectively apply national policies at regional levels.

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15

The Role of Social Investments in Reducing Unemployment and Poverty

Ruhal SAMANLI

Abstract

The aim of this study is reduce to unemployment and poverty through social investments. While preparing the work, the literature was searched and the sources were scanned. The study was formed by data collection methods in qualitative researches. It was emphasized that social investments can be considered as a solution to reduce unemployment and poverty while starting to work. Actually, at the end of the study, the importance and role of social investments could be expressed clearly. It is stated that social investments are important for employability in the labor force market

Labour markets have deeply affected from the winds of changes along with the transformation of universal economic system. The consequences of these changes experienced have brought about unemployment first and later poverty. The presence of working poverty is thought to be the different dimension of the transformation of universal economic system. The existence of unemployment, poverty, and working poverty entails expenses from social policy implementations to the social investment programs. In other words, social investments are regarded to be solution for the eradication of unemployment, poverty, and working poverty. Therefore, some sorts of programs are developed within the framework of social investment programs and employment strategies are formed on the basis of developed social investment programs.

Keywords: Unemployment, Poverty, Social Investment

Introduction

With the replacement of agriculture-based production relations with new systems, changes were observed in production cost and efficiency. Consequently, the changes in labor market have facilitated the widespread applications of new global economic system. This system is referred to as globalization. New economic system is correlated with the ever increasing amount of technical and technological advancements and the mental labor force as a substitute for physical labor force. Therefore, individuals with poor qualifications, who only have physical labor value cannot be involved in

the global economic system. These people are alienated from the system through social and economic exclusion and as a result, they are deprived of an income necessary for living and an honorable life.

Dishonorable living conditions reveal out poverty. While people who need to work are deemed to be poor in a sense, people who cannot work despite the fact that they have to are directly described to be poor. Poverty of people cause personal problems and lead to social problems, as well. Individuals described as poor are unable to fulfill their own needs and they fail to contribute to the social structure. The situation might change depending on the development level of the states.

Developed states offer job opportunities for the unemployed and support individuals who experience difficulties in surviving. On the other hand, being poor is deemed to be a destiny in underdeveloped countries. A state's efforts to improve the lives of its citizens raise the issue of social policy practices. At this point, social investments among the social policy practices come to the forefront. Social investments intend to improve personal competency. Poor people need to improve their personal competencies in order to survive. Yet, an individual who cannot even fulfill one's vital needs cannot be expected to make investments for the improvement of their competencies. Therefore, states will increase the amount of expenses on social investments, which are among the social policy practices and thus, personal development of individuals will be achieved. In this way, individuals can find jobs more easily and can recover from poverty. In order to make sure that every educated and knowledgeable individual finds a job, the states may need to review the structure of labor force and to improve employment capacities depending on the needs of the labor market. Then, social investments among the social policy practices can be planned in parallel with the needs of the market. Thus, it would be easier for the individuals who would become knowledgeable and experienced to have an honorable job. The things done for the interests of individuals are indirect investments for the benefits of the society, indeed. It is necessary for peaceful and prosperous societies to create individuals who work, earn, who can fulfill their needs with their earnings and who are economically independent, who are in high spirits and who have things to do. In order to create prosperous societies through training self-sufficient individuals, employment plans shall be made by taking the needs of the labor market into consideration. If employment plans is considered to be the independent variable, the dependent variable can be considered to be the vocational training and human resource development activities carried out within the scope of the social investment programs which are implemented by taking the needs of the labor market into consideration. In other words, the structure of the labor force will be taken into consideration for the arrangement of the education system and as a component of social investment, education will be considered in parallel with the employment strategies. Human resource development activities, which are the tools for social investment programs and active employment policies, are believed to take responsibility in the prevention of poverty.

Poverty and Unemployment Prevention Programs

There are programs designed to prevent the exploitation of the global economic structure. These programs are generated by states that wish to improve the welfare of their citizens and to avoid economic problems caused by change in economic systems. These national programs are called social investments. With social investments, the quality of life and family incomes will be increased while welfare is being improved. Social investments take into account both people who are left unemployed by cruel economic systems and people who have difficulty managing their lives despite having jobs. In fact, social investments can be expressed as an umbrella concept because these programs are intended to rehabilitate all people in disadvantageous situations and excluded by the system. Such people can damage social structures indirectly because social problems are widespread in the environments where social investments are lacking. Social investments should not be considered to be related only to economic structures. But if we begin to think from the individual perspective, people must first be self-sufficient. It is possible that people who do not work experience problems because of the significance of work to people and societies. In this respect, social investments cover principally those people who are involved or will be involved in economic systems (Harrison, 2006: 8).

With the aim of increasing employment and worker wages, social investments related to education need to be increased. Despite cruel economic structures, there are many reasons for people to take part in working life. Work allows people to achieve self-actualization, gain prestige and have a sense of belonging. It also provides income for health, education, transportation, shelter, heat, food, clothing and many other needs. The ability to work is indispensable to people's lives and depends on their self-enhancement. Self-enhancing, self-sufficient and conscious people can help societies to attain high welfare levels.

The ongoing relationship between consumption and work forces people to work. The only and most effective way to get involved in working life is to be well-supported so as to compete with other people who are considered rivals. Due to the dissemination of consumption and production, the global economic system causes people to buy things whether they need them or not and to spend more than their income. In addition to the difficulty of being able to take part in working life, with low wage levels, even the employed face challenges. Low incomes and high consumption further increase their poverty. Indeed, there is cutthroat competition in the current economic system. Individuals compete with other

individuals, and states compete with other states. This cruel competition is shaped by the advent of technological developments because technology increases competition for employment, making it even more difficult to find jobs (Lelkes&Gasior, 2008: 3-15).

As a result of rapid changes in technical developments, globalization has a positive effect on developed people in developed nations. On the other hand, globalization has increased injustice, unemployment, inequality and poverty for the people of underdeveloped and developing nations. Therefore, Asia, as a main part, Eastern Europe, Latin America, the Caribbean, Central Asia, and North Africa are regions where inequality and poverty progress together. Unlike former times, poverty has partially fallen in these regions. However, satisfactory developments have not been recorded. Some people in these regions are maintaining their lives with on a few dollars a day for food. This type of poverty is more common in rural areas where people work for free on family-owned farms (SPO Development Report, 2007-2013: 8; Princová, 2010: 131-137).

A company, at the other end of the world, with advanced technology can manage companies that operate in other countries to reduce costs. Coordination is no longer provided within the company, but internationally. While this improvement is a welcome progression of technological and technical developments, it reduces the number of people who work and have the potential to work. The will and desire to supply people's labor is not sufficient to be capable of working because the skill of dominating current technological and technical systems negates the demand for labor. The importance of physical labor has also been significantly reduced. Today, physical power is negligible compared to the power of information. We are in an era in which knowledge, technique and technology are dominant and control all systems. As a matter of fact, unemployment is rising among people who supply physical labor, and the type of unregulated employment that is sought by those who have only physical power has become widespread. The difference between high-skilled and low-skilled people, like the difference between developed and underdeveloped nations, has increased dramatically. People who are described as low-skilled lack information and are unaware of technological developments. On the other hand, high-skilled workers are equipped with technical knowledge that can adapt to the knowledge-intensive systems by attributing importance to mental development. In this way, the system in which the low-skilled person cannot live or even cannot show its existence is formed. People with low income levels and no qualifications have low wages and are vulnerable because their place can be quickly filled, and they risk being dismissed at any time (Wade, 2004: 567-589).

The Importance and the Role Of Social Investments

Today, social investments are more important than they were last century. Social investments and developed social security systems are needed in all nations. Social and political polarization is manifesting itself in societies where there are no social investments and social programs are not effective. As a matter of fact, social and political polarization is a barrier to the creation of a homogeneous holistic society. It is obvious that new prescriptions are needed, mastermind products that will ensure the preservation of homogeneous societies (Yüceol, 2005: 503; Palme &Palier: 20-21). Setting policies by creating alternative ideas with social investment perspective is regarded as a good step to ensure unity by protecting integrity. Humanistic investment strategies in line with objectives (human capital activities) focus on those who are in difficult situations, especially children and young people. Social investment is a keyword in changing lives by improving them. If social investments are associated with other policies, despite the implications of positive meanings, they can reinforce social investments. At the same time, the social investment perspective ensures that ideas are spread over a wide range. With this situation, the regulations that people know, are familiar with and are forced to live tend to change. By increasing competition, social investments associated with social learning allow people better opportunities and give them self-confidence (Palme &Palier, 2012: 21).

The social investment perspective, which allows poverty to be assessed from different angles and is the product of a different logic, is the concept that is accepted as the future of societies and economies. These programs can withstand the problems that may occur in the future. These are essential programs that nations can use to overcome problems and create equal conditions among people. In fact, social investments can eliminate hereditary and context-based inequalities. Therefore, social expenditures for social investment programs are being considered by governments, national and international organizations. Today, implementations that provide equal opportunity to people today may prevent future inequality. As a result, people's self-esteem, respect for the environment and self-confidence will increase (Palme &Palier, 2012: 27).

Social investment programs that are social policy implementations have attracted the interest of governments, national and international organizations since the dawn of the welfare state. This interest increased further with economic development in the twentieth century. Social investment programs are paramount items on the agenda their supporters, whose final goal is to establish welfare state. At the same time, with economic developments, maintaining a mode of production in which production and knowledge dominate is among their goals (Andersen: 2002).

These policies were intended to increase people's competence and capabilities starting in pre-school. They were also intended to increase the employment of housewives, a disadvantaged group, by paying attention to child care. Increasing women's employment is considered the first step towards women's freedom. However, the employment of women is a key step that could have a positive effect on the employment of other women (Palme &Palier, 2012: 12-14). The social investment perspective that values children, women and business, has been quickly adopted in liberal and social democratic welfare states in Western nations. In Latin America, Western nations and international organizations, social investment discourses have also hitted and been adopted because social investments have been recognized as the system of the future when social policy adopts a different perspective. On the other hand, social investments involve some of the legal roles of states. It is believed that people's exclusion from economic life can be eradicated by jobs. However, there is reason for some skepticism about social investments. Will all people have jobs? Will having jobs solve all of society's problems? Will social exclusion be eradicated by job? In fact, social and economic problems can only be partially resolved by jobs. But the aim of social investments is to improve the entire society. So, based on perfection, the existence of some questions is to be expected (Mahon, 2012: 421-423; Palme &Palier, 2012: 354).

Social investments create a different perspective that leads people to think that work is a right and reduces competition and struggle. The different understanding of its purpose should not lead to the abandonment of social investment. However, regulations need to be made. Social investments have both a social rights dimension and the desire to offer jobs to all people. To invest with the aim of providing job opportunities can improve long-term quality of life. Thus, the transition between generations of poverty and lack of opportunities can finally be ended (Palme &Palier, 2012: 2).

Social investments, which are social policy practices that develop people in a personal sense, provide the best use of nations' human capital because labor markets have changed along with the global economic structure. Employees who can adapt to change were needed. Nations' economic development should be ensured along with the development of the people involved in it by social expenditures for social investments. The problem of unqualified labor is an obstacle to employment to be eliminated like the removal of barriers to women's employment with childcare and similar practices (Jenson, 2010: 67).

Individuals who have not completed their individual development put up with the consequences of being deprived of educational opportunities, while being exposed to poverty, which is both a cause and result of unemployment. Inadequate education causes the labor market to be unable to employ workers and to fail to achieve production goals. Thus, the social investment perspective gives more to the state than to the individual. On the other hand, people are exposed to poverty as a result of not having access to educational opportunities. In this respect, attention is given to social investment programs include educational activities. The only way to create jobs and provide employment is educational activities because physical power has left its place to information and technological developments. Therefore, information can be expressed as the most important factor in the new labor market. Obtaining and transmitting information requires education. As a result, social investments and the social security system have accepted the people with the least chance of being employed as a target group. This group includes long-term jobseekers or those forced to earn a livelihood even if they have a job, those who have the will and desire to work, but have some obstacles to work, the handicapped, housewives and young people. In addition, children have been regarded as special target groups of social investments because of their long-lasting value to society (Yüceol, 2005: 507).

Social Investments and Social Policy Applications Will Be Employed in the Future

Social investments, which are considered long-term investments, are efforts to build a happy and healthy future by mainly focusing on children. Children, young people, women, the unemployed and those who struggle with poverty although they have jobs can benefit social investments. Social investments are intended to help people to work in nations' economic systems and to overcome problems stemming from unemployment. Political structures should pay attention to projects that support the workforce in order to keep the economy alive. In this respect, social expenditures for social investments support political structures and the peaceful unity of social structures. International organizations such as UNICEF, ILO, the World Bank, UN funds and others support the implementation of social investment programs. These social investment programs are intended to improve quality of life by increasing education levels. Social investment programs focus on education because there is no other way of getting information. Social harmony can be achieved when information is obtained through education. Change in global economic systems and making the labor market flexible have caused unemployment, poverty and even poverty for those it employs. The reduction of unemployment, poverty and worker poverty is due to social expenditures for social investment programs (Palme &Palier, 2012: 353-354; Vandembroucke; Vleminckx, 2011: 451-458).

Educational activities within the scope of social investment will be able to provide the fastest way for children, young people, women and other disadvantaged groups to obtain employment. Providing scholarships from pre-school to

university, free transportation, free meals, free education in public schools and training in professional skills makes it possible for disadvantaged people to find jobs more easily, but the needs of the market are also important. Otherwise, well-trained people will be less likely to find jobs. We can consider professional education as a dependent variable in social investment programs that consider the needs of the labor market and employment plans as an independent variable. In other words, regulating the educational system should be evaluated according to employment strategies and the structure of the workforce. Increasing knowledge of technical issues must be the objective of education assessment. Therefore, the fact that nations pay attention to social investments can increase nation's employment rates while increasing the quality of the labor force. In other words, it is possible for nations that are concerned about social policy, especially social investments, to become nations with high welfare levels. Thus, social investment programs that are social policy applications constitute one of the components of the welfare state. Globalization's imposition of flexibility on labor markets leaves people either unemployed or are working for inadequate incomes, and they face poverty whether they work or not. This situation can be eliminated by social investment programs that are social policy applications. Humane (human) capital development activities and active employment policies, which are considered the tools of social investment programs, will ensure that poverty is prevented before it occurs. Indeed, the market's needs make it necessary to pay attention to social investment programs. The intergenerational transmission of poor living conditions can be ended by social investments. Exclusion from social environments and socioeconomic structures can be prevented. With professional training programs, reintroducing people to society who desire to work, especially young people who will be working for the first time, is a social investment that will ease employment because the labor market has difficulty finding people with professional qualifications. In this case, we can say that with active employment policies, the final objectives of social investments can be achieved. In other words, active employment policy studies to raise employment are the tools of social investment programs. In addition, the university educational system, the terminal educational institution, should be able to provide people with occupations. Having a university degree must show that an individual has professional skills with certain qualifications. Otherwise, both the limited financial resources of families and the resources of the country will be wasted. The cost of the time spent may be heavy for the young, for families and for states (Palme &Palier, 2012: 354).

Granting scholarships to students may be seen as social investment. The granting of and the increasing the amount of scholarships moderately are considered a support for families struggling with unemployment and poverty. Its indirect objectives guarantee the future of society. Being deprived of education impoverishes people. In this respect, to ensure sustainable social welfare, the role of education in social investments is undeniably important. In other words, education is indispensable to social investments, but to attain long-term gains and to raise people with open minds, it may be possible to give more attention to the human educational system than necessary. For this reason, social investments for children and young people are primarily related to the educational system. Thanks to the importance of education, unemployment, the problems brought by unemployment and poverty will stop being the destiny of people. Getting out of this vicious cycle will provide better opportunities and meet basic needs like health care , transportation, food, housing and clothing. At the same time, the necessary facilities for socialization will be established. Otherwise, it will not be possible for the individual to go to the cinema with the aim of socializing instead of buying fruit, vegetables and bread (Aktan&Vural, 2002: 10).

Developing Human Capital as a Social Investment Instrument

The knowledge, skills and abilities possessed by the workforce are described as human capital. Today, it is a reality that all economic agents attribute importance to knowledge and qualified human power as a source of competition. In addition to infrastructure and physical capital, the contribution of qualified human power to the current welfare levels in advanced economies cannot be denied. As a matter of fact, the wealth of nations is measured by human capital rather than physical capital. This means that information is seen as an economic resource. Innate abilities and acquired knowledge and abilities constitute the human capital of the individual. In developed nations, a great improvement is achieved in acquired skills, while in underdeveloped nations only innate skills matter. This indicates the efforts of people living in developed nations to develop human capital. On the other hand, people in underdeveloped nations are content with their existing knowledge and skills and do not improve themselves. Thus, the progress of nations' economic development parallels that of their human capital (Yumuşak, 2008: 10).

There are two types of capital, human and physical. Physical capital is stored and used when it is deemed necessary, while human capital cannot be stored. Human capital, one of the tools of the social investment, is lost every moment it is not used. Human capital is dynamic capital that cannot be stored and disappears when it is not used. Expenditures for education and health are human capital investments. In this case, it is necessary to consider human capital is the product of minds that target the human and see the human as valuable. For this reason, professional education is an important

component of human capital. Providing people with occupations should be the aim of universities. Indeed, societies with high welfare levels spend on social investment programs, giving support to humanitarian politics, and attribute importance to educational policies. National educational records, education, financial and physical conditions and literacy rates are considered steps towards human capital development, one of the tools of social investment programs. Social investment programs designed to develop human capital can also facilitate employment in the labor market while developing people's abilities (Eser&Gökmen, 2009: 45).

Active Employment Policies as Other Tools for Social Investment

Active employment policies were first used in Sweden to reach full employment and regulate inflation after World War II. Although at first, active employment policies were ignored, the changing structure of the labor market during globalization emphasized active employment policies. With the impact of globalization, structural changes in the labor force caused unemployment. In this process, active employment policies are seen as a way to prevent unemployment and poverty due to unemployment. The changing structure of the labor force now necessitates social investment programs that are social policy programs. One leg of social investments is human capital, while the other leg is active employment policies. Human capital equips people by providing them with skills through education and forms resilient individuals for changing labor markets. Active employment policies targets people of working age who will be most affected by unemployment. In other words, active employment policies are intended to help risk groups and the unemployed to earn an income (Sanal: 3-10). Professional training and incentives that enable the employment of the workforce help people to find jobs and start businesses. By facilitating the employment of those who cannot find jobs, people are employed and those who are not producers, but consumers, can become producers. While this positively changes people's lives, it also makes nations become prosperous societies (Ay, 2012: 331).

Conclusion

In the paper titled as poverty and social investment with the changes in labor market, the labor market is depicted as a system in between the global economic system and unemployment and the poverty caused by such unemployment. It was tried to be explained in detail through qualitative research methods that, unemployment and poverty caused by unemployment made it impossible for the individual and his/her dependents to sustain an honorable life and that, this situation could be prevented by investing on social programs. The basic reason for poverty is depriving an individual of income. The reason for being deprived of income is the lack of necessary qualifications to adapt to knowledge and technological advancements. The global economic system ensures its globalism through the world-wide-web and it employs individuals who are aware of the technical advancements. The labor market makes use of technical systems in its relations of production. Knowledge has a significant effect on the relations of production. Companies wish to work with individuals who would be able to have control over the whole production mechanism. Therefore, individuals who can manage, plan, produce, supervise and control every stage of the job are more appealing. So, it is necessary to possess relevant knowledge and skills in order not to be excluded from the economic system and to acquire a job. In states where unemployment and poverty show parallelism, governments canalize their resources to social investments with the aim to encourage employment and reduce poverty.

The current economic system is claimed to be intensifying inequality and injustice, thus making the rich much richer and making the conditions worse for the poor. States intending to protect their people invest on social programs and secure their citizens against social risks. Otherwise, rational people seeking for their benefits would have the worst of the cruel global economic system.

In order to use human resources more efficiently, it is necessary to focus on active employment policies as well as human development programs and teach individuals how to fish. Otherwise, they would always wait for someone to give them the fish. In this sense, we can consider human resources development programs and active employment policy practices as the tools for accessing to social investments, which are the ultimate target. The relation between them could help overcoming any potential problem. Through social investments, money is spent on social expenditures with the intention to develop human resources and the individuals could be saved from depending on others throughout their lifetime. Furthermore, inequalities among the individuals can be eliminated. With the opportunities offered to the individuals, they will be enabled to feel secure both now and in the future. Social investment programs, which are among the social policy practices brought up by neo-liberal systems in 1990s, were used as an umbrella term intending to improve the life quality of all disadvantaged people. Among the people described as disadvantaged are housewives, individuals who cannot find a job as they cannot adapt to changing economic systems, kids, young people and other people who are trying to survive under unfavorable conditions. It was needed to make investments in order to empower these people in the economic system. Otherwise, they would not be able to take part in work life and they would fail to protect themselves and their family against the risks faced in life. Social investment program tools among the social

policy practices and strategies indenting to develop human resources are now prioritized and individuals are tried to be subjected to practices that will provide them with occupational technical information to help them adapt to the work life. So thinking on micro-scale, there can be changes that would help the individuals have better lives.

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16

The Effects of The Minimum Wage on Youth (Un)employment in OECD Countries

Erhan ÖRUÇ

Abstract

Youth unemployment or employment has been one of the most complex problems both developed and developing countries due to the fact that the solution of this phenomenon is not straightforward. Many complex models are not enough to explain why youth unemployment is high. In this study, it is tried to explain how to explain high youth unemployment rate by combining macroeconomic variables and institutional variables in OECD countries by employing static panel data analysis. The data set covers 1990-2014 for 25 OECD countries. It is found that real GDP and real interest rate have significant effects on youth employment. Furthermore, the proxy variables representing constitutional effects are statistically significant both random effects model and fixed effects model. It can be concluded that the solution is not only macroeconomic but also institutional. Therefore, authorities should consider development of law, institutional structure of the country, etc in order to decrease the rate of youth unemployment.

Keywords: *Unemployment, Youth, Minimum Wage, Random Effect Model, Fixed Effect Model*

Introduction

Youth employment or unemployment has been one of the major problems both developing and developed countries, specifically OECD countries. Recent data are pointed out that this trouble is more serious than adult unemployment problem due to its characteristics features. Even though this problem has continued over three to four decades, more researchers whose interested area is labor economics try to draw attention to this topic, specifically European countries due to the reliable data.

Almost all countries have high rate of youth unemployment. There are two main theoretical approaches that explained high youth unemployment rate differently. The first theoretical approach is that incorrect depiction of the economy. “The picture of a hard core of unemployment persons unable to find jobs in an inaccurate description of our economy. ... a more accurate description is an active labor market in which almost everyone who is out of work can find his usual type of job in a relatively short time. ... The current structure of unemployment is not compatible with the traditional view of a hard core of unemployment who are unable to find jobs”(Freeman and Wise, 1982;199). Therefore, unlike the solution is not creation of new job, the real solution of this problem is new correct definition of the economy.

On the other hand, the second approach focuses of the inadequate jobs in the market. This view is called job availability problem in the youth labor market. Creation new position is difficult which makes it hard to find new jobs for youth workers. Thus, a large portion of youth worker are unemployed significant of time (Freeman and Wise, 1982;199).

More recent empirical papers try to explain high rate of youth unemployment rate by employing several macroeconomic data as well as microeconomic data. Perugini and Signorelli (2010) focused on financial crises. Low human capital may be another factor. Mismatching skills and job requirements is used another explanatory variable.

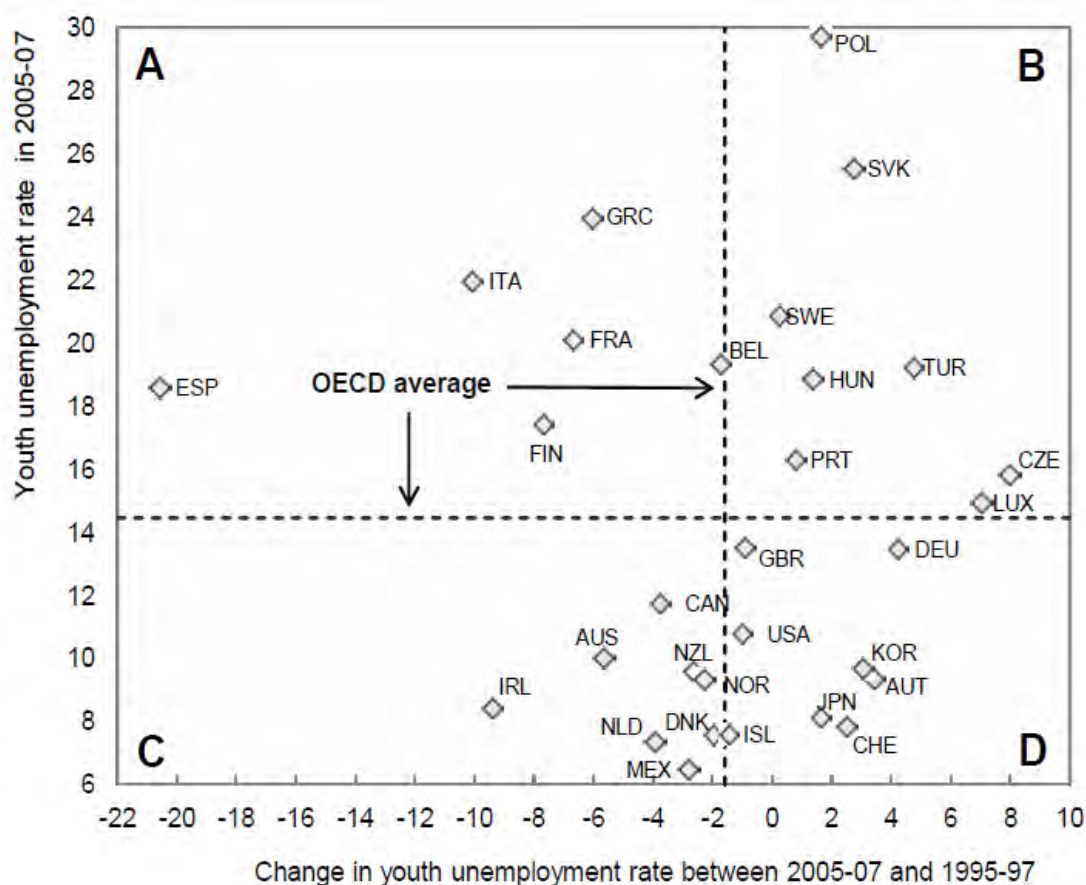
The structure of the paper is as follows. The youth employment problems in OECD countries are presented in Section 2. The literature for this topic is evaluated in Section 3. The dataset is explained in Section 4. Section 5 covers econometric models. The results are interpreted in Section 6. Finally, this study finishes conclusion and discussion the scope for future improvement.

Youth Employment Problem in OECD Countries

Youth employment problems have been one of the hardest problems for all countries. Having high GDP or GDP capita is not solution even it makes worse. Some countries, which their GDP are not higher as much as G7 countries show better performance in the youth labor market. Some researchers focus on the institutional effect, others point out the less experience that young people have. Less researchers try to explain young unemployment by young people behavior especially expectation in the future or life.

Scarpetta et al (2010) call attention the effects of the economic crisis (2007) and its effects on young unemployment rate. In the Figure 1, the rate of youth unemployment from 2005 to 2007 is in the vertical axis, while the difference between 2005-2007 and 1995-1997 is in the horizontal axis.

Figure1. Comparison the Youth Unemployment in 2005-07 with Its One Decade Before



Source: Scarpetta et al (2010: 10)

Note: **Quadrant A** means higher than OECD average in 2005-07 but decreasing more than the OECD average

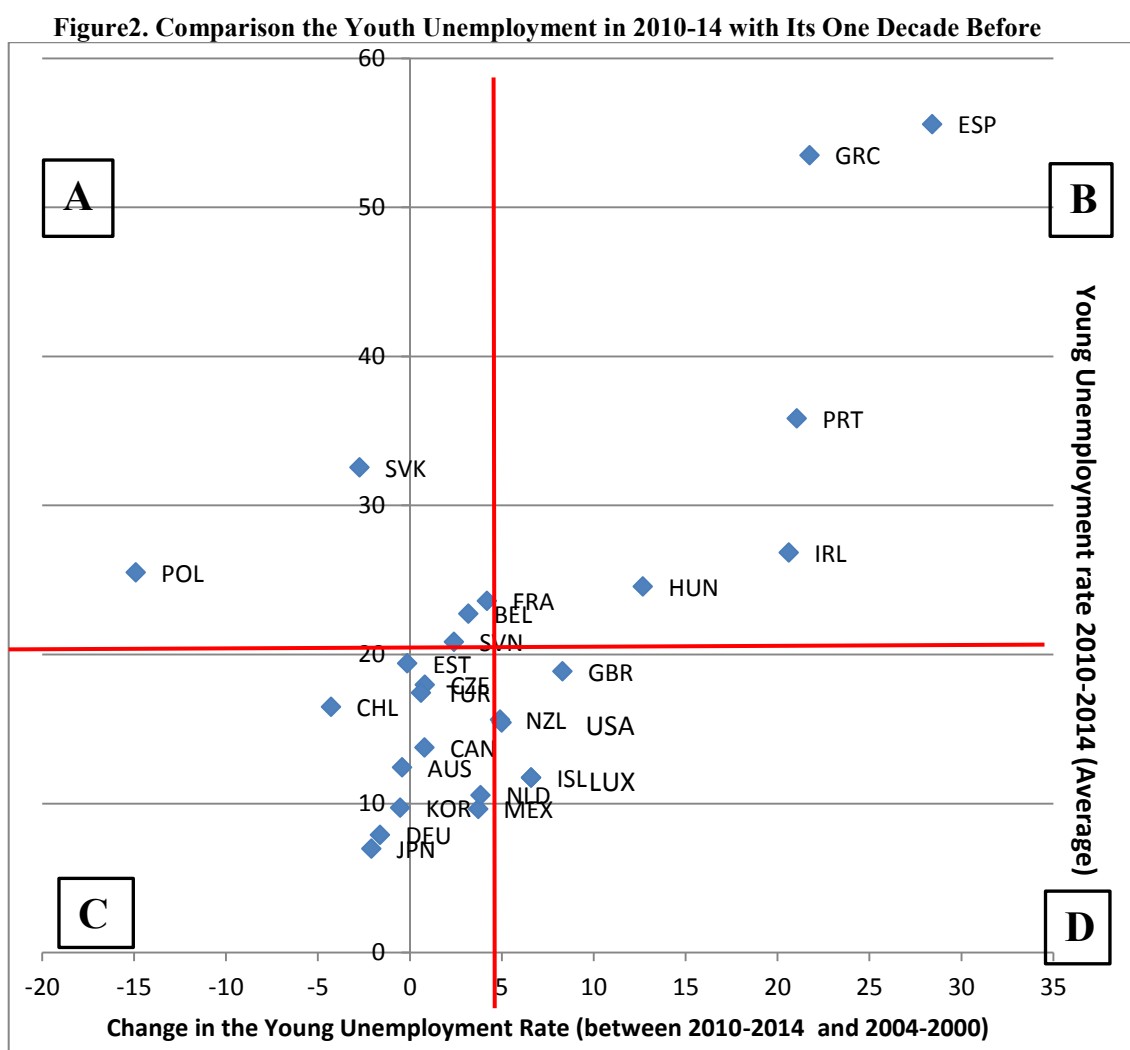
Quadrant B Higher than OECD average in 2005-07 and increasing more than the OECD average

Quadrant C Lower than OECD average in 2005-07 and decreasing more than the OECD average

Quadrant D Lower than OECD average in 2005-07 but increasing more than the OECD average

In the Quadrants A and C show that young unemployment rate declined over a decade. Even though some countries have higher young unemployment rate compared to OECD average, Spain, Italy, Ireland and Finland did good job on young unemployment. Countries in the quadrants C, such as Canada, Ireland, New Zealand, Denmark and Netherland both have lower young unemployment rate than OECD average and a decreasing trend compared to ten years ago.

In Belgium, Sweden, Turkey, Hungary, Portugal, Luxembourg and Czech Republic unfortunately most young people do not have any job. Even worse, those countries not only have a higher young unemployment rate but also increasing trading in the rate of youth unemployment.



Source: Worldbank Database

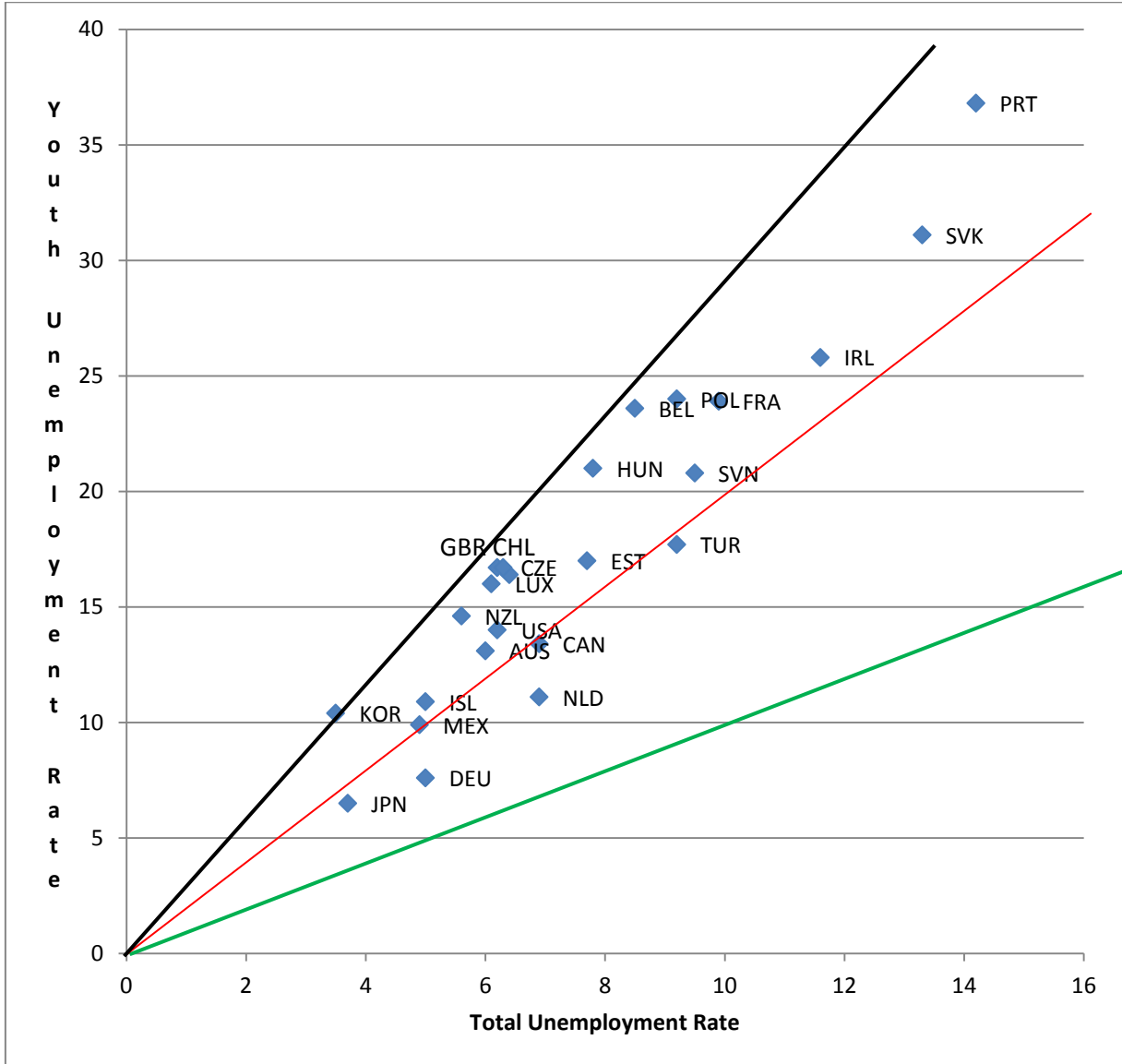
In the Figure 2, previous figure is redrawn with the recent data and countries that are included in this paper. It can be seen from the Figure.2 that recent European economic crisis hurt young people very much specifically Greece, Ireland, and France. Probably, Ireland experienced most dramatical change. Because it has lower young unemployment and the change is unemployment over a decade was negative but now, the rate of unemployment is over OECD average and the unemployment rate is increased more than % 25.

On the other hand, some countries such as Turkey and Czech Republic experienced such an amazing performance on youth unemployment. Compared with previous figure, now those countries have both lower youth unemployment than OECD average and decreasing youth employment rate with respect to previous decade.

Moreover, the structure of the youth unemployment rate have remained in the two countries, the US and England. Even if those countries have lower youth unemployment rate than average but they have experienced increasing youth unemployment rate. It is known that those countries are considered in G-7 countries, so the problem cannot solve with income only. Even worse, since those countries have one of the top in intuitional structure in their management and economic system, so this may give some clue that the solution for this problem may deeper.

Furthermore, Slovakia, Slovenia, Poland France and Belgium have the rate of youth unemployment than OECD average but those countries have experienced decreasing rate. That means even though youth unemployment rate is really high in those but decreasing rate of youth unemployment is hope for future.

Figure 3. Unemployment Rate for Adults and Youth



Source: Worldbank Database

The relation between adult and youth unemployment rate is in the Figure 3. This figure tells us unfortunately, young people do not have more chance to find a job in the labor market. The green line shows one to one relation between youth unemployment and total unemployment rate. No countries have total unemployment rate is equal to youth unemployment rate. Japan, Germany, Netherland, and Canada are better than other countries even though youth unemployment rate less than 2 times of total unemployment rate. In Korea, the youth unemployment rate is three times higher than total unemployment rate. In all other countries in this study, the youth unemployment rate is higher than adult unemployment rate but this rate is more than two times of the adults.

According to the Figure 3, young people suffer more than adults in the labor market. There are some reasons for the consequence. First of all young people have less experience in the market. So, many employers offer low wage to young people. Second, many young people may not develop with

themselves to find good paid job. Human capital is one of the most important features in the job market. Young people may not get good or qualify education. Adding with wrong guidance, young people have less chance in the job market. Furthermore, some young people are so lazy or they do not want work hard but they want to earn more money. So this also makes contribution to the high rate of youth unemployment.

Even though some countries are developed, the problem of young employment is severe than developing countries according to the Figure 2 and Figure 3. Some countries like Japan, Germany performs better than other countries to fight this problem. However, some countries such as Greece, Spain and Portugal etc must focus on youth employment. Many scholars have tried to explain how to reduce it for more than forty years but there is no agreement how to solve it. In the following section, some of studies are mentioned and what researches are found.

Literature Review

Even though many researchers have studied on the youth unemployment but there is no consensus what causes it. Some of empirical studies tend to discover some effects of the variables but their results are not convincing.

Perugini and Signorelli (2010) studied on Europe countries. The data set covered 1999-2006. The dynamic spatial panel techniques were employed. They separated countries as a western and eastern European. It was found that some structural factors and institutional and policy settings were most significant but their effects changes with gender and geography. Abowd et al (2000) focused on minimum wage effects on the youth un employment in France and the U.S. This study covered between 1951 and 1994. The real minimum wage had a significant effect on youth employment in both the U.S. and France. Real minimum wage had increased between 1982 and 1989, while it had remained constant in other periods.

Marelli et al (2013) studied on several developing countries. The fixed effect panel analysis was employed, covered form 1980 to 2009. According the empirical results, the availability of part time job and labor market policies as well as increasing income and economic freedom caused decreasing the youth unemployment rate. Bell and Blanchflower (2011) used microdata. They analyzed OECD countries with in great recession. They pointed out that the rate of young unemployment in most OECD countries has risen during the recession. It was stressed that indicators such as part-time working, working-time preferences and increased migration has more effects to explain excess supply in the youth labor market.

Choudhry et al (2012) investigated the effects of financial crises on the rate of youth unemployment. They included 70 countries from 1980 to 2005 by employing fixed effect panel model. It was concluded that the effects of the financial crises are statistically significant especially in high income countries. The effects of financial crises have continued five years. Moreover, the dynamic panel (Arellano-Bond) estimation was used, the coefficient for lagged dependent variable and financial crisis were still statistically significant. Carling and Larsson (2005) studied on early intervention effects of the youth unemployment rate in Sweden. They concluded that even if this guaranteed program seemed to be successful in the short term, since it caused low search activities, this early intervention does not have any significant role in the labor market.

Breen (2005) tried to explain cross-national variation in youth unemployment market. All OECD countries were covered and the data set was between 1995 and 1999. It is pointed out that signaling of education and employment protection have a substantial effects on youth employment. Another explanatory variable could be countries' demography. Iden(1980) studied on black youth unemployment problem in the U.S. This paper covered between 1970 and 1979. According to the recession results, if minimum wages increases one percent then youth unemployment decreased 0.22 percent. Moreover, it discovered that military reductions, population share other substantial explanatory variables that makes more difficult black youth labor market problem.

Neumark and Wascher (1982) tried to figure out the effects on minimum wage on the rate of youth unemployment. The data set form 12973 to 1989. According to the panel data analysis, if minimum wage went up %10 percent then there was a %1-2 percent increase in the rate of unemployment rate. Card

(1992) studied on California between 1984 and 1990. It is found that a %10 raised in minimum wages caused 1.2 new young people employed. Therefore, to reduce the rate of young employment, authority might increase minimum wage.

Card and Kruger (1995) analyzed the minimum effects on youth unemployment for the New Jersey and Pennsylvania. If minimum wage increases %10, then the employment rate of the young people increases about %0.4. After that they extended their analysis to cross-state data. According to the result, the effects of the minimum wages declines slightly.

O'Higgins (2001) provided wide range of empirical studies about minimum wages. Rosa (1980), Martin (1983), Ducos and Plassard (1991), Benhayoun (1990, 1993), and Skourias (1992, 1995) analyzed the effects of minimum wage on the young employment in France. All of them found negative relation between minimum wage and young employment rate. In other words, if there is any increase in minimum wages, then more young people are unemployed or lose their jobs (O'Higgins, 2001:99). Moreover, the author reported that the paper for Canada find negative relation like French case. Also, some studies on developed countries such as Greece, New Zealand and Portugal indicated that rising minimum wage could cause increase the young unemployment rate. At that time, there are few author just focused on developing countries since their data was not reliable (O'Higgins, 2001:99-100).

Some researchers just focus on macroeconomic variables; however, some of them touch other areas such as institutional problems, labor market problem, education, gender, etc. Those are mentioned some studies above. The dataset will be discussed in the following section.

Data

This section focuses on the variables that are employed in the econometric model. The unbalanced cross-sectional time series data covering 25 OECD countries are used in the model¹⁷. The data set covers 1991-2014. Real GDP, real interest rate, real minimum wage, inflation rate (from CPI index) are used as a macroeconomic variables. Also, infant mortality or life expectancy rate are included as a proxy variable for the institutional effect. The rate of unemployment for the young people is the key variables in the model.

The dependent variable is TUYR(total youth unemployment rate). Total unemployment rate (TUR) are used persistency variables in the model but previous year value is used in order to reveal whether or not there is any persistence effect of unemployment. Real GDP for each country is employed. Inflation is calculated as a percentage change of previous year. Real minimum wage is also important variable for this study. It is calculated at price 2014, which is drawn from OECD Database. Life expectancy and mortality rate will show the instructional effects for countries¹⁸.

Table 1. Variables and Their Resources

Variable Code	Variable Name	Resource
TYUR	Total Youth Unemployment Rate (% of total labor force ages 15-24) ILO	Worldbank Database
TUR	Total Unemployment Rate (% of total labor force) ILO	WorldBank Database
LGDP	Real GDP (US Dollar, 2010) in Logarithmic	OECD Database

¹⁷ Even if there is more than 25 countries in OECD but the real minimum wage are not available for all countries. Also, the time series are restricted according to the availability for minimum wage. Countries are employed in this study can be found in Appendix.

¹⁸ Real GDP and real minimum wage are logarithmic in the estimation.

LRMW	Real Minimum Wage (constant prices at 2014 US Dollar) Logaritimic	OECD Database
INF	Inflation Rate (Consumer prices - Percentage change on the same period of the previous year)	OECD Database
MOR	Infant Mortality Rate (per 1,000 live births)	Worldbank Database
LIEX	Life expectancy at birth, total (years)	Worldbank Database

Since it is introduced dataset and countries which is included in this study, the next step is what econometric models are employed. In the following section, the models; pooled OLS, random effect model, fixed effect model is used in this study will be explained.

Empirical Approach

Since cross-sectional data is employed in this study, pooled OLS, random effect and fixed effects model is used. Those panel models are for static analysis. The econometric model is stated in Equation 1. Dependent variable is youth unemployment rate, i stands for time and j represents cross section.

$$YUR_{it} = \alpha_{it} + \beta_1 \log(GDP_{it}) + \beta_2 \log(RMW_{it}) + \beta_3 inf + \beta_4 (mor_{it}/liex_{it}) + \beta_5 (TUR_{it-1}) + u_{it} \quad (1)$$

Polled OLS can be expressed in Equation 2. This model is the most restrictive in the static panel models. It is assumed that there is no unobserved individual heterogeneity. Contemporaneous exogeneity is one of the strict assumptions. Also, there should not be perfect collinearity, no serial correction in the residual. Variance of the estimation should be homoscedasticity. Y stands for dependent variables and X represents independent variables. C is constant and u is residuals.

$$y_{it} = X_{it}\beta + c_i + u_{it} \quad (2)$$

Equation 3 gives the mathematical explanation for random effect model. Now, there exists individual heterogeneity in the panel model however c_i is not correlated with independent variables. Random effect model considers information from residual.

$$y_{it} = X_{it}\beta + c_i + u_{it} \quad (3)$$

The fixed effect model is in the equation 4. Actually, the equation of the random effect model is identical with fixed effect model, however, now the model is assumed that constants are partially correlated with independent variables.

$$y_{it} = X_{it}\beta + c_i + u_{it} \quad (4)$$

How to decide which panel models should be selected is another point. The Hausmann test gives a statistical indicator that random effects or fixed effects is appropriate. The Hausman test is given in equation 5. The test indeed tries to calculate what the difference is between random effect model and fixed effect model. As much as constant is uncorrelated with independent variables in each time, then the difference between random effect model and fixed effect model is going to much small value. If the test statistic goes to small value then random effect model should be chosen (Grab, 2006:2-12). In the following section, results from static panel models are interpreted.

Results

As before mentioned, it is used cross-sectional data so panel econometric approaches are employed in this study. Since econometric approach are introduced, next step is evaluation of estimations. First approach is Pooled OLS. Real GDP and Real minimum wage are in logarithmic form. However, since all other variables are ratio, they are in level.

In the first column of the Table 2, real minimum wage and mortality rate are not statistically significant. However, estimation result tells if there is an increase in the real income then more young people will find jobs so the rate of unemployment will going decline. If real income increases 100% then the young unemployment rate will decrease approximately 70%. In other words, an increase in real GDP means, the country produces more than before. Rising production level causes open new factories or firms which lead to open new jobs positions in the labor market, so more people can be hired in the market by employers that increases the change of finding a job for the unemployed young people.

Inflation and real interest rate have negative effects on the young unemployment rate. Both are statistically significant. And, real interest rate affects two times more than inflation rate. Those sign of the coefficients actually is reasonable. For example, if there is a rise in real interest rate, some entrepreneurs will give up or postpone new investment which causes not opening new job positions in the market or decreasing open position. So, unemployed people do not have change to find a job in the labor market as much as before, which can cause rising the young unemployment rate.

In the second column of the Table 2, the dependent variable is the same as before. Now, life expectancy is a used proxy variable for the institutional effect instead of mortality rate. The effects of the real GDP is still high but the magnitude declines more than 25%. Now, if real income increases 100% then the rate of young unemployment will decrease 50%. Real minimum wage is still statistically insignificant. Also, now inflation rate is statistically insignificant, either. The effect of real interest rate decreases 40% from approximately 50%.

On the other hand, the effect of the constitutional variable, LIEX, is statistically significant and the magnitude is pretty good. If countries' institutional structure are going to be better, then the rate of young unemployment will decrease. Also, institutional effect is more than any other variables. Real GDP and real interest rate are other key variables that explain how to reduce young unemployment rate.

In the third and fourth columns of the Table 2, the one period lagged variable of the total unemployment rate is added previous two models. This proxy will reveal persistency effect of the unemployment rate on young unemployment rate. The lagged of the unemployment rate (TUR1) is statistically highly significant in both models. If mortality rate is chosen for the institutional variable than, the persistency effect is almost 59%. In the other case, this effect reduces to 54%. According to the last two estimations; the persistency effect should be included in the model. Also, the value of the R^2 is more times higher than the model that persistency effect is ignored. So, adding one period lagged variable of the total unemployment makes significant improvement in the models.

In the Table 3, both random effect model and fixed effect model estimate four times. The lagged total unemployment rate is employed as a control variable to catch up persistency effect. First four columns are not included persistency variable. In the estimation results of random effect model, included mortality rate, the coefficients for inflation and mortality rate unfortunately are not statistically significant; however, real GDP, real minimum wage and real interest rate are statistically significant. Real GDP affects young unemployment rate positive, while real minimum wage not. If real GDP increases 1%, than youth unemployment will decreases 2.4%, whereas if real minimum wage rises 1% than youth unemployment increases 4.5%. Also, rising real interest rate causes increasing youth unemployment.

Table 2. Pooled OLS Results

VARIABLES	(1) PooledOLS M	(2) PooledOLS L	(3) PooledOLS M-U	(4) PooledOLS L-U
lgdp	-0.6915*** (0.252)	-0.5090** (0.232)	-0.6375*** (0.222)	-0.5075** (0.211)
lrnw	-1.0519 (0.638)	1.0524 (0.654)	-1.4900*** (0.571)	0.5532 (0.560)
inf	0.1020** (0.048)	-0.0468 (0.029)	0.0238 (0.056)	-0.1124*** (0.034)
rir	0.4819*** (0.102)	0.3924*** (0.100)	0.4698*** (0.101)	0.3927*** (0.094)
mor	-0.1520 (0.106)		-0.1645 (0.103)	
liex		-0.7146*** (0.143)		-0.6338*** (0.141)
tur1			0.5839*** (0.100)	0.5363*** (0.102)
Constant	42.4196*** (6.572)	73.4139*** (10.005)	40.9480*** (5.955)	67.8745*** (9.322)
Observations	437	437	425	425
R-squared	0.0959	0.1270	0.1856	0.2081
Adj. R-squared	0.0854	0.1169	0.1739	0.1968

* Robust standard errors in parentheses (***) $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

** M, stands that in that estimation mortality rate is used for the institutional variable. L means that life expectancy is chosen. U represents lagged value of total unemployment rate.

In the second column of the Table 4, the fixed effect model is estimated. According to this model, real interest rate is not statistically significant, anymore in addition the inflation rate. But mortality rate is statistical significant, and its magnitude relatively high. Improvement of the institution in a country leads to declining young unemployment rate. In this model, the effects of real GDP is negative, too, but its magnitude is more than four times when it is compared to random effect model. Furthermore, real minimum wage has increasing effects on young unemployment rate, too. And, it is two times greater than before.

Adding control variable, TUR, causes inflation rate is statistically significant. The sign of the coefficients do not change but the effects of the real interest rate and real minimum wage decreased a little bit. But the effect of the real interest rate rises from 0.11 to 0.15. If UR is added in the fixed effect model, like previous fixed effect estimation both real interest rate and inflation rate are insignificant. The sign of the coefficient remain the same but magnitude of the real GDP and real minimum wage are decreased.

If LIEEX is chosen for the instructional effect, then only LIEEX is not statistically significant. All other variables are statistical significant in random effect model. An increase Real GDP and inflation lead to young people find more jobs. However, rising real interest rate and real minimum wage

Table 3. Estimation Results of Random Effect Model and Fixed Effect Model

VARIABLES	(1) RE M	(2) FE M	(3) RE M-U	(4) FE M-U	(5) RE L	(6) FE L	(7) RE L-U	(8) FE L-U
lgdp	- 2.3781*** (0.895)	-9.5911*** (1.655)	-2.1188** (0.898)	-8.8425*** (1.736)	- 2.7447*** (1.017)	- 16.7871*** (2.339)	- 2.8457*** (1.010)	-17.5548*** (2.357)
lrmw	4.5628* ** (1.214)	9.9838*** (1.522)	4.4418*** (1.202)	9.3608*** (1.531)	3.7540** (1.499)	5.8622*** (1.598)	3.1785** (1.487)	5.1895*** (1.582)
inf	-0.0330 (0.039)	0.0170 (0.039)	-0.0767** (0.038)	-0.0258 (0.039)	-0.0487** (0.024)	-0.0575** (0.023)	-0.0610** (0.024)	-0.0712*** (0.023)
rir	0.1133* * (0.056)	0.0478 (0.056)	0.1582*** (0.056)	0.0919 (0.057)	0.1161** (0.056)	0.0272 (0.055)	0.1732*** (0.056)	0.0786 (0.055)
mor	-0.0888 (0.115)	-0.3893*** (0.127)	0.0200 (0.114)	-0.2623** (0.130)				
turil			0.3733*** (0.073)	0.3082*** (0.073)			0.3808*** (0.072)	0.3772*** (0.069)
liex					0.2027 (0.199)	1.4682*** (0.283)	0.2702 (0.198)	1.5746*** (0.280)
Constant	38.2766 * (22.056)	185.7222*** (37.472)	28.8143 (22.275)	167.9212*** (39.618)	39.3436* (21.839)	302.0426** * (46.166)	38.9931* (21.838)	317.5057*** (46.817)
Observations	437	437	425	425	437	437	425	425
R-squared		0.1517		0.1903		0.1862		0.2428
Number of counkod	25	25	25	25	25	25	25	25
Adj. R-squared	)	0.0913	)	0.1286	)	0.1282	)	0.1852

* Standard errors in parentheses (***) p<0.01, ** p<0.05, * p<0.1)

** M: mortality Rate, L: Life Expectancy, U : TUR, RE: Random Effect Model, FE: Fixed Effect Model

cause reducing chance to find job for the young. The effect of the real income increases a little bit but the effect of the real minimum wage declines substantially. When fixed effect model is run, then now, the coefficient for the LIEX is statistically significant. And, its effect is greater than one. Real income effect jumps incredibly. The magnitude for the real minimum wage is half times more than random effects model. The coefficient of the real interest rate is statistically insignificant.

When TUR is included both models, the magnitude for real interest rate, real income and inflation rate rises. But the coefficients of the real minimum wage and LIEX decrease. That means the effects of those explanatory variables are much less than before. In the fixed effect model, the coefficient showed instructional effects are statistically significant. However, that coefficient is not statistically significant in the random effect model. If a countries institutional structure is going to be better position, then young people have a more chance to find a job.

To sum up, both real income and real interest rate have significant effects on young employment. If both increase then the rate of young unemployment tends to decline significantly. The coefficient of real interest rate is estimated positive means there is a positive relation between real interest rate and young unemployment rate. And it is only statistically significant in the random effect models. However, the effect of the inflation is usually negative, which makes it hard to explain economical sense. Specifically, fixed effect models perform better than random effect model in all cases.

Table 4. Hausman Test

INSTITUTIONAL VARIABLE	MOR		LIEX	
	FE \ RE	FE-UR \ RE-UR	FE \ RE	FE-UR \ RE-UR
MODEL				
χ^2	35.1	25.32	51.6	53.63
PROB	0.0000	0.0003	0.0000	0.0000

* (-UR) means that the lagged value of total unemployment rate is added to the model.

Finally, the Hausman Test is run for the determination of the model statistically. The null hypothesis of the Hausman Test is that difference in coefficients is not systematic. In other words, if the test result is going to small value then null hypothesis cannot be rejected. Actually, if the random effect model is rejected then it cannot be said that the fixed effect model is good. The test gives signals for the no enough evidence to use random effect model.

According to the Table 4, calculated of the test statistics are relatively high, their probabilities for four comparisons are less than 0.05, which means the null hypothesis of the Hausman Test is rejected at 5% level. There is no sufficient reasons for using random effect model in all four models. Therefore, authorities and researchers should interpret fixed effects model rather than random effect model.

Conclusion

This study examined the effect of real minimum wage on youth unemployment rate from 1990 to 2014 for the OECD (25) countries. Static panel data models are employed in order to reveal the relation between real minimum wage and youth employment. Also, other macroeconomic variables; real income, inflation rate and real interest rate are used for as explanatory variables. Mortality rate or life expectancy from birth are added model in order to investigate whether or not institutional development can alter the change of young people to find a job in the labor market.

Three main results can be concluded. First of all, real minimum wage has substantial effects on youth employment. The second, there is a positive relation between real income and youth employment. Even if inflation is statistically significant, its effect is flimsy. There is no statistical evidence that real interest rate directly affects young unemployment rate. If LIEX is chosen as a proxy variable for the determination of impact for institutional effect, the coefficient is significant. The third, its impact on young unemployment is notable. Therefore, politicians and authorities have to focus on institutional development as much as macroeconomic conditions to raise the chance for young people to find a job.

In the future, this study may extend three different ways. First of all, the economic conditions of countries can be consider, crises year can be determined, than it may be added econometric model, so more accurate results can be

obtained. Because economic crises may distort time series included in the models. The second way is that some other variables may use for the reveal institutional effect. But, since this topic is new for economists, it is hard to find proxy variables for all countries which are started from 1990. The last way, since there is persistency effect, the dynamic panel models may be employed.

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Appendix

Table 5. List of Countries

CODE	COUNTRY NAME	CODE	COUNTRY NAME	CODE	COUNTRY NAME
AUS	Australia	ISL	Iceland	PRT	Portugal
BEL	Belgium	IRL	Ireland	POL	Poland
CAN	Canada	JPN	Japan	SVK	Slovak Republic
CHL	Chile	KOR	Korea, Rep.	SVN	Slovenia
CZE	Czech Republic	LUX	Luxembourg	ESP	Spain
EST	Estonia	MEX	Mexico	TUR	Turkey
FRA	France	NZL	New Zealand	USA	United States
GRC	Greece	NLD	Netherlands	GBR	United Kingdom
HUN	Hungary				

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