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UNDERSTANDING THE NEET IN TURKEY

Z. Bilgen Susanli
Isik University, Turkey. Email: bilgen.susanli@isikun.edu.tr

Abstract

The purpose of this paper is twofold. First, drawing on data from the Household Labor Force Surveys over the period 2004-2013, it examines the determinants of the NEET (Not in Employment, Education or Training) status for the Turkish youth. This is particularly important for Turkey as it has the highest NEET rate among the OECD countries. Second, it describes the movement of the youth across four states: education, employment, unemployment and inactivity. Probit results indicate that gender and educational attainment are key factors for explaining the NEET status. Findings also show that a greater number of household members that are in employment is associated with a lower likelihood of NEET. Transition analyses reveal that the state of inactivity remains highly persistent despite the substantial fall over the sample period. In addition, the rise in the persistence of education between 2007 and 2009 underlines the choice of the youth to stay in education in response to the fall in labor market prospects.

Keywords: Youth, NEET, Turkey

1. Introduction

Labor market experience of the youth has recently been a main concern in both the developed and the developing countries due to the sharp increase in youth unemployment rates throughout the global recession (OECD, 2010). It is well known that youth unemployment is more sensitive to fluctuations in economic activity than adult unemployment.[1] The global youth unemployment rate rose to 12.9 per cent in 2009 from 11.7 per cent in 2007 and 12.7 per cent in 2008. It stagnated around 13 per cent since 2012.[2] Many young individuals experienced long spells of joblessness during the economic recovery from the global recession (European Commission, 2010). During the same period, the rise in unemployment was accompanied by a withdrawal of young people from the labor market. Between 2008 and 2014, the youth labor force participation rate fell steadily from 49.8 per cent in 2008 to 47.3 per cent in 2014. While many young individuals chose to stay longer in education, in many countries the decline in falling youth labor force participation was due to discouragement (ILO, 2015).

Although the unemployment rate is a good measure of the difficulties faced by young people in the labor market, it does not fully reflect the situation of inactive young people who are not in education or training. A measure that captures both unemployment and inactivity is the

[1] Choudry *et al*. (2012) document that the impact of financial crises on youth unemployment is greater than the effect on overall unemployment.
[2] Youth unemployment rates display substantial regional disparities. In the wake of global recession, the youth unemployment rate ranged between 26 per cent and 9.3 per cent in the Middle East and in East Asia, respectively.

share of youth neither in employment nor in education and training in the youth population – the so-called NEET rate. This rate is calculated as the share of individuals aged between 15 and 24 years that are not in employment, education or training, as a percentage of the total population of that age group.[3] Hence, the NEET rate is a more comprehensive alternative to the narrower measures such as unemployment and labor force participation rate. Since it includes the conventionally unemployed group as well as the involuntarily jobless, sick and disabled, and young carers, the NEET definition represents a wider range of vulnerabilities.

Unlike employment and unemployment, the NEET category lacks an international standard definition. Therefore, the definition of this group varies across countries. For example, in the UK the NEETs are defined as the individuals aged between 16 and 18 years who are not in education, employment or training. The age group 16-18 corresponds to the completion of compulsory school education (Coles *et al.* 2002). In Japan, the definition of the NEET status is expanded to include the 15-34 year-olds who are not married; who are not in employment and in education; and who are not searching for a job (Yuji, 2007). In Korea, this definition is broader as it refers to the 15-34 year-old individuals who are not married, not in employment, not attending school or a job training program, not searching for a job, and not handling family responsibilities (OECD, 2007).

Between 2007 and 2012, the number of youth aged between 15 and 29 years in NEET status has increased steeply by 2.5 million (by 7 per cent) to 38.4 million in the OECD amounting to 16 per cent of the youth population (Carcillo *et al*. 2015). The NEET rate peaked in 2010, reaching 13.1 per cent among the 15-24 year-olds. The growth of the NEET category spurred a large body of academic research as well as European Commission and OECD reports (Carcillo *et al.* 2015; Eurofound, 2012; OECD, 2010; O'Higgins, 2012; Scarpetta *et al.* 2010). Evidence from the European Union indicates that the regional NEET rates are persistent, and the persistence rises over the crisis period (Bruno *et al.* 2014). In addition to regional disparities in the size of the NEET category, the NEETs within a country may itself be a heterogeneous group (Finlay *et al.* 2010; Tamesberger and Bacher, 2014; Yates and Payne, 2006). Accordingly, the risk factors for becoming NEET are diverse ranging from low household income and remote living areas to family background and immigrant status (Eurofound, 2012). Research suggests that there are scarring effects from becoming NEET in the sense that exposure to NEET status leads to unfavorable subsequent labor market outcomes (Bynner and Parsons, 2002; Crawford *et al.* 2010). In addition, empirical evidence shows that spells of unemployment while young lead to lower levels of happiness, job satisfaction, wages and health in the future (Bell and Blanchflower, 2010). Due to the high prevalence of the NEETs, the public health literature has recently shown interest in this phenomenon. A number of studies document a positive association between the NEET status and mental health issues (Baggio *et al*. 2015; Benjet *et al*. 2012). Making the direction of causality from NEET status to health unclear, other studies find that individuals with prior mental health problems such as depression and anxiety disorders are more likely to become NEETs (Herbig *et al.* 2013; Waghorn and Chant, 2005). Lastly, at the macroeconomic level, the NEET youth can be considered as an unutilized productive capacity, and hence a constraint to economic growth (Kovrova and Lyon, 2013).

Understanding the determinants of the NEET category is crucial as these individuals are at a high risk of exclusion because they have given up both studying and looking for a job. The growth of the NEET group may present a more difficult policy challenge than unemployment, as it represents disconnection from the labor market as well as the society in general (Bell and Blanchflower, 2015).

While the above mentioned studies focus on developed countries, little is known about the situation of the NEETs in the developing world. In this regard, Kovrova and Lyon (2013) show that the probability of NEET status moves with the business cycle in Brazil and Indonesia. They also find that education, particularly primary school, is an important determinant in both countries. Ranzani and Rosati (2013) document that the NEET status is persistent in Mexico, and persistence is higher for poorer, less educated youth and for women.

[3] Note that the NEET rate is not computed for the labor force and has a different denominator from the youth unemployment rate.

The youth labor market in Turkey is characterized by high levels of unemployment and inactivity. The youth unemployment rate rose steeply from 13.1 per cent in 2000 to 16.2 per cent in 2001 due to the economic crisis of 2001. Between 2002 and 2008 it stagnated around 19 per cent and 20 per cent. In line with the contraction of the economy in 2009, the youth unemployment rate jumped to 25 per cent, well above the OECD average of 16.7 per cent. It declined to 21.7 per cent in 2010 and to 18.4 per cent in 2011. Since 2013, the youth unemployment rate has stagnated around 18 per cent. With persistently higher rates than the OECD average, youth unemployment in Turkey has recently received much attention (e.g., Condur and Bolukbas, 2014; Sayin, 2011; Tas, 2014). However, a less investigated subject is the prevalence of the NEET status which also captures the inactivity. Despite the steady decline from 42 per cent in 2004 to 27 per cent in 2013, in 2014 the NEET rate among 15-24 year-olds was 28.4 per cent - the highest among the OECD countries. This is equivalent to about 3.5 million young individuals considering that there are 12.8 million individuals in the 15-24 age group.

The importance of the NEET problem is better understood if one considers the demographic structure of Turkey. As of 2014, Turkey's population is estimated to be 77.7 million, and 16.5 per cent of this consists of persons between the ages of 15 and 24 years (TUIK, 2015). While Turkey currently has the highest share of youth among the EU-28 and candidate countries, with the increase in life expectancy and the fall in the total fertility rate the population will start ageing in about 10 years (TUIK, 2014). According to the demographic transition process, Turkey will undergo a demographic period called the "Window of Opportunity" from 2000 to 2025. During this period, the working age population is expected to reach its peak, which will provide more suitable conditions for economic growth.[4] Therefore, the youth population amounts to an important resource for the society, and it is crucial that the youth are productively integrated into the labor market.

While many studies investigate the problem of youth unemployment in Turkey, very few of them take into account the NEETs. Two exceptions are Yanik-Ilhan and Tunali (2009) and Kilic (2014). Yanik-Ilhan and Tunali (2009) examine the evolution of the transition from school to first permanent jobs during the 1988–2006 period and document that more than half of the women are NEETs. Similarly, using data from the 2012 wave of the Household Labor Force survey, Kilic (2014) documents that the category of NEET is predominantly female and more likely to have no prior work experience.

This study has two purposes. First, using micro data from the Household Labor Force surveys for the period 2004-2013, it estimates a probit model to examine the determinants of the probability of being in the NEET category. Second, it describes the patterns of movement of the youth across the following states: education, employment, unemployment, and inactivity. Findings from probit estimations indicate that women and individuals aged between 20-24 years are significantly more likely to be in the NEET category. Higher levels of education and a greater number of employed individuals in the household are associated with a significantly lower likelihood of being NEET, and this is stronger for the sample of women. Analyses of transitions reveal useful insights. First, the state of inactivity is highly persistent and persistence is higher for women. Second, the choice of young individuals to stay in education reflects the difficulties with finding employment during the global recession period. Third, the difficulty of finding a job is manifested also by the rise in the persistence of unemployment and the fall in the persistence of employment. Lastly, transitions from education into employment remain below the pre-recession levels even years after the global recession, which highlights the difficulties in the school-to-work transitions.

The structure of the paper is as follows. Section 2 summarizes the dataset and the variables used in the analyses. Section 3 describes the empirical methodology. Section 4 presents the main results. Section 5 draws some conclusions.

[4] See Hosgor and Tansel (2010) and Icduygu (2012) for a more detailed discussion of Turkey's demographic transition.

2. Data

This paper explores micro-level data from Household Labor Force Surveys (HLFS) between 2004 and 2013. HLFS are nationally representative surveys carried out yearly by the Turkish Statistics Institute (TUIK).[5] These surveys are designed to collect information on demographic, economic and occupational characteristics of individuals aged 15 or above. In particular, they contain information on economic activity, earnings, occupation, status in employment, tenure, and hours worked as well as past employment status for employed persons; and information on the duration of unemployment, occupation sought, past work experience, and job search methods for the unemployed. Of particular interest in this study is the labor market status of the individuals that are between the ages of 15 and 24. Among this age group, the focus of this study is the group of individuals that are not employed and not in education or training. The survey distinguishes between three labor market states: employed, unemployed and out-of-labor force. The employed covers all individuals 15 years old or older who were economically active for at least one hour during the reference period.[6] Individuals who are temporarily not working but who have a job attachment are also defined as employed. The unemployed includes all individuals who are not in employment but who report having looked for a job during the reference period and who are available to work within two weeks if a job is found. The remaining individuals aged 15 or above are categorized into out-of-labor force. For this study, individuals aged between 15 and 24 years are grouped into the following four states regarding labor market behavior:

i. Education: students and trainees that are not employed.
ii. Employment: employed individuals, excluding the students.
iii. Unemployment: non-students who report having searched for a job in the reference period, and who are available to work in two weeks.
iv. Inactivity: individuals who are not attending school at the time of the survey, who do not have a job, and who report not having searched for a job in the reference period.

The last two states constitute the NEET group. The variable of interest in this study is a binary variable that takes on the value 1 if the individual is currently in one of the last two states and 0 otherwise.

The sample consists of 738,386 observations with a complete set of variables. Table 1 presents the summary statistics of the variables used in the analyses. Individuals in the NEET category constitute 37 per cent of the sample. About 56 per cent of the individuals in the sample are between the ages of 15 and 19; 54 per cent of the sample are females; and 18 per cent of the sample are married. Around 13 per cent of the sample have less than primary school education; and 47 per cent have secondary education. On average, there is one household member in employment (excluding the respondent).

[5] The surveys employ two-stage stratified sampling methodology. In the first stage blocks which consist of 100 households are sampled. In the second stage addresses are selected within the blocks. Stratification is done at the Nuts 2 and urban-rural level.
[6] This includes unpaid family workers that receive no pay.

Table 1. Summary Statistics

Variables	Mean	Std. Dev.
Labor market status in the current period		
Education	0.37	0.48
Employment	0.26	0.44
Unemployment	0.06	0.25
Inactivity	0.31	0.46
Age		
Age: 15-19	0.56	0.50
Age: 20-24	0.44	0.50
Female	0.54	0.50
Married	0.18	0.38
Education		
Less than primary	0.13	0.33
Primary	0.11	0.32
Secondary	0.47	0.50
High School	0.16	0.36
Vocational or Technical High School	0.09	0.28
University or more	0.05	0.21
Number of other household members in employment	1.23	1.05
Urban	0.70	0.46
Year:		
2004	0.09	0.29
2005	0.11	0.31
2006	0.10	0.31
2007	0.11	0.31
2008	0.10	0.30
2009	0.10	0.30
2010	0.10	0.30
2011	0.10	0.30
2012	0.10	0.30
2013	0.09	0.29
Observations	738,386	

Source: Household Labour Force surveys 2004-2013.

Figure 1 presents the trends in the NEET rate and the four states defined above. Between 2004 and 2013, the share of individuals in the NEET category declined substantially from 42 per cent to 28 per cent. The decline in the NEET category can be attributed to the remarkable increase in the share of individuals in education from 28 per cent in 2004 to 48 per cent in 2013; and to the decrease in the share of individuals in inactivity from 35 per cent to 22

per cent during the same period. The share of individuals in employment decreased from about 29 per cent to 24 per cent over the sample period.

Figure 2 depicts the change in the NEET rates by gender and the region of residence. The NEET rates for both men and women display a downward trend. Given the historically low labor force attachment of women in Turkey, the NEET rates are substantially higher for women than for men in both areas. The resulting gender gap is remarkably high. As of 2013, the gender gap in the NEET rate is 23 per cent and 20 per cent in rural and urban areas, respectively. Despite the prevalence of family enterprises in agriculture in the rural areas, the total NEET rate in rural areas exceeds the NEET rate in urban areas in all years except 2004. Figure 2 shows also that the NEET rates for men in rural areas increased from 24 per cent to 28 per cent between 2007 and 2009 in response to the global recession. In urban areas, it stagnated around 21 per cent during 2007-2009 before declining to 19 per cent in 2010.

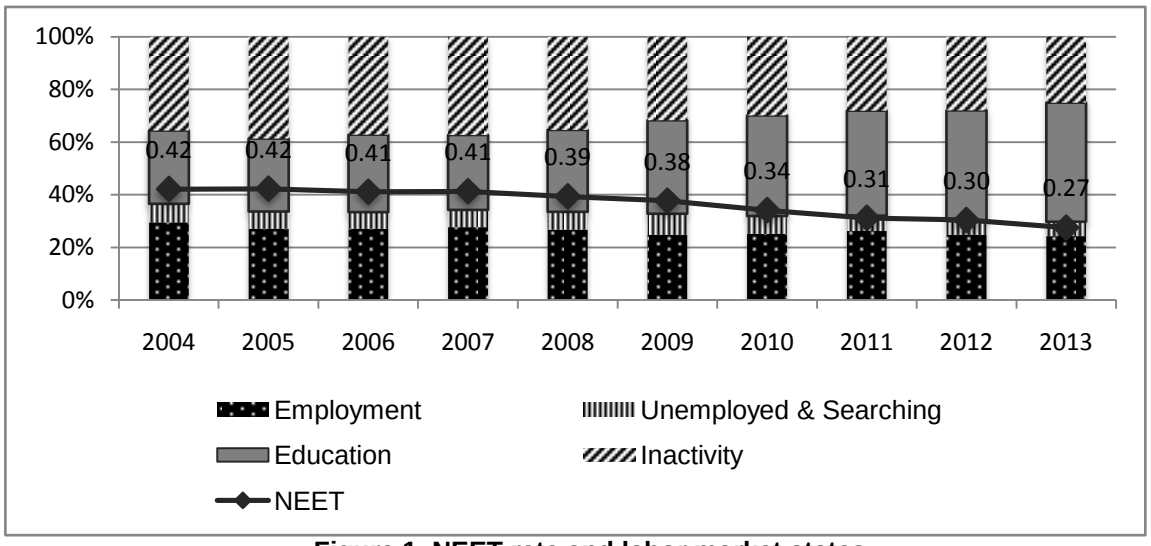

Figure 1. NEET rate and labor market states

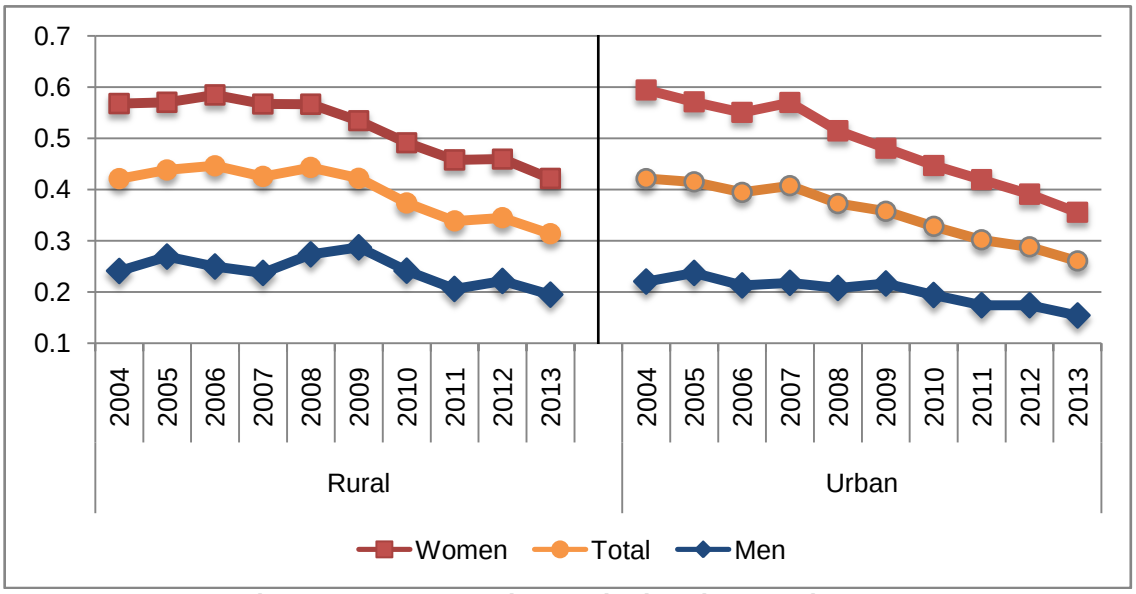

Figure 2. NEET rates by gender in urban-rural areas

3. Empirical Methodology

The following latent variable model explains the outcome of being in the NEET category for individual i. Let y_i^* be the unobserved variable determined by:

$$\begin{gathered} y_i^* = \propto + \beta x_i + u_i, \\ y_i = 1 \; if \; y_i^* > 0, and \; y_i = 0 \; otherwise. \\ P(y_i = 1|x_i) = P(y_i^* > 0|x_i) = P\,[u_i > -(\propto + \beta x_i)] = \Phi(\propto + \beta x_i) \end{gathered} \tag{1}$$

where y_i is the binary outcome variable that takes on the value 1 if individual i is observed in the NEET status, and 0 otherwise; and $P(y_i = 1|x_i)$ is the probability that individual i is observed in the NEET category conditional on x_i. Assuming that the error term u_i follows the standard normal distribution, $\Phi(.)$ is the cumulative distribution function of the standard normal. The vector x_i consists of individual and household characteristics that are expected to influence the probability of the outcome. Among these variables are age, gender, marital status and education. The HLFS provide age data in brackets: 15-19 and 20-24. The base category for age is 15-19 years. Gender is controlled for by using a dummy variable, Female, that equals 1 for females. To control for marital status, a dummy variable, Married, that equals 1 for married individuals, is included. Educational attainment is controlled for by using a categorical variable that is measured in terms of the highest level of education completed, with less than primary school as the reference category. Also included in x_i is the number of other household members are employed. This variable is expected to capture the labor market connections of the household, and hence, to have a positive effect on labor force participation (Ponzo and Scoppa, 2010). A further control variable is the dummy variable, Urban, that equals 1 if the individual resides in an urban area, and zero otherwise. All estimations control for year dummies to account for business cycle effects.

The parameters $\propto$ and β will be estimated using maximum likelihood. The marginal effect of the continuous variable x_m, which captures the effect of x_m on the probability of being NEET, is obtained from the following partial derivative:

$$\frac{\partial P(y_i = 1|x_i)}{\partial x_{im}} = \beta_m \varphi(\propto + \beta x_i) \tag{2}$$

where $\varphi(.)$ is the standard normal density evaluated at $\propto + \beta x_i$. Clearly, this evaluation depends on the particular values of the explanatory variables. Some studies report the marginal effects evaluated at the means of explanatory values. However, this yields nonsensical interpretations when those other controls are dummy variables. Therefore, average marginal effects which are derived from sample averages the will be reported in this study.[7] For a dummy variable, the marginal effect is evaluated by taking the difference in the predicted probability by setting the dummy variable at 0 and 1.

Separate probit regressions are conducted for men and women and for the urban and rural samples to examine differences in labor market behavior across genders as well as across urban and rural areas.

To examine the individual transitions and the role the NEET status plays in the transitions, information regarding the labor market status of the individual in the same month the previous year is exploited by using retrospective questions. In particular, the HLFS include a question “What was your situation in that month one year before the survey?” and the respondents choose from 1: Working, 2: Working at another job, 3: Retired, 4: Looking for a job, 5: Housekeeping, 6: Studying, 7: Ill, 8: Serving in the military, 9: Elderly (for 65+ year-olds), and

[7] See Bartus (2005) for details on marginal effects at the means and average marginal effects.

10: Other.[8] Using this information, the individuals are grouped into the following four states that describe their labor market status in the previous year:

i. Education: individuals that report studying.
ii. Employment: individuals that report working at the same or at another job.
iii. Unemployment: jobless individuals that report searching for a job.
iv. Inactivity: all the remaining individuals except for those serving in the military.

Whether an individual is in education, employed, unemployed or inactive in the current period depends on his or her status in the previous status. For this reason, following Tansel and Kan (2012), a Markov chain model will be used in order to describe mobility across different states using transition matrices. Assuming a homogenous Markov process, S_t is a random variable defined over a discrete state space E={1,..,4}. S_t is called a first-order discrete Markov chain if

$$P(S_t = z|S_{t-1}, \dots, S_1) = P(S_t = z|S_{t-1}) \quad (3)$$

where z={1,…,4}. If S_t is a Markov chain, and x and y are elements of the state space E, the conditional probability

$$P_{xy} = P(S_t = y|S_{t-1} = x) = P(S_{t-1} = x \cap S_t = y)/P(S_{t-1} = x) \quad (4)$$

is called the transition probability of moving from state x to state y and can be estimated by the maximum likelihood estimator $\widehat{P_{xy}}$=N_{xy}/N_x where N_{xy} is the number of individuals who were in state x and moved to state y between t-1 and t; and N_x is the number of individuals who were in state x in period t-1. The states in the current period are as defined in section 2. Each entry in a transition matrix gives the probability of finding an individual in state y at time t given that the individual is observed state x at time t-1. The share of youth in each state at time t is given by P.y. By construction, the sum of elements in each row of the transition matrix equals one. To look at differences in transitions across genders, analyses are conducted separately for men and women. In addition, to uncover changes in movements from one year to the next, transitions are separately estimated for each year.

4. Findings

4.1. Probit Model

Table 2 presents the probit estimation results from the set of equations (1). Estimation results report the average marginal effects. Results in column (1) indicate that individuals aged between 20-24 years are significantly more likely to become NEETs relative to individuals aged between 15-19 years. This finding will remain robust across urban and rural areas as well as across genders. Results also show that females are significantly more likely to be NEETs relative to men. The intuition behind the average marginal effect of the gender dummy is equivalent to comparing the average of the likelihoods of NEET status for two hypothetical populations - one all male and one all female - that have the exact same values of all the remaining independent variables. Accordingly, on average, women are 19.4 per cent more likely to be in the NEET status. As expected, there is a negative and significant association between education and the likelihood of NEET status. Column (2) proceeds by introducing the number of other household members in employment. In all estimations, average marginal effects are computed by setting the number of employed members in the household at the sample median

[8] Information on whether an individual was in training in the same month the previous year is not collected. The share of individuals in training amounts to 6 per cent of the sample. Analyses (not reported) by excluding the individuals in training yields qualitatively similar results.

value, 1. Findings indicate that the number of employed household members has a negative and statistically significant average marginal effect. Results also show that individuals that live in urban areas are on average about 4.3 per cent less likely to be NEETs compared to individuals in rural areas.

Table 2. Determinants of NEET status

	(1)		(2)	
Dependent Variable: Pr(Neet=1)	Avg. Marg. Effect	Std. Error	Avg. Marg. Effect	Std. Error
Age group: 20-24	0.061**	(0.005)	0.059**	(0.005)
Gender	0.194**	(0.012)	0.201**	(0.012)
Marital status	0.210**	(0.016)	0.212**	(0.016)
Education				
Primary	-0.131**	(0.013)	-0.130**	(0.011)
Secondary	-0.276**	(0.014)	-0.282**	(0.013)
General High School	-0.208**	(0.013)	-0.222**	(0.012)
Vocational or Technical High School	-0.196**	(0.018)	-0.206**	(0.017)
University or more	-0.169**	(0.020)	-0.183**	(0.020)
Urban	-0.017+	(0.010)	-0.042**	(0.007)
No of other household members in employment			-0.042**	(0.007)
Observations	735,237		735,237	
Log-likelihood	-4.07e+05		-4.00e+05	
Pseudo R-Squared	0.167		0.194	

Note: Probit estimation results from equation (1) are presented. Standard error in parentheses. All estimations control for year dummies. +p<0.10, *p<0.05, **p<0.01. Omitted categories are 15-19 years old, male, unmarried, less than primary school education, and rural.

Given persistently higher NEET shares among women than among men, one can surmise that the effect of each variable may vary across these groups. For example, it can be expected that marriage or having a child will raise the likelihood of becoming NEET for women, but not for men. Therefore, probit estimations are conducted separately for male and female samples. Results in Table 3 confirm that marital status has opposite effects on the labor market behavior of men and women. While the average marginal effect of being married is negative and significant for men, it is positive and significant for women. Residing in an urban area and more household members in employment are associated with a significantly lower likelihood of being NEET for both men and women.

Table 4 presents the results from estimating equation (1) separately for the urban and rural samples. Results are qualitatively the same for both samples. Findings indicate that age, gender and marriage have positive average marginal effects. The average marginal effects of education levels carry the expected signs. The impact of employed household members is negative and statistically significant in both samples but the magnitude is much larger in the rural sample. This finding may be explained by the prevalence of unpaid family work in rural areas in addition to the labor market connections of the employed members of the household. While a greater number of household members in employment may imply greater household labor earnings in urban areas, it may not necessarily translate into greater household income in rural areas given the prevalence of unpaid family work. Therefore, a higher household income associated with a greater number of family members in employment may generate a stronger income effect and hence less pressure for the jobless youth to find a job.

Table 3. Determinants of NEET status, by gender

	Men		Women	
Dependent Variable: Pr(Neet=1)	Avg. Marg. Effect	Std. Error	Avg. Marg. Effect	Std. Error
Age group: 20-24	0.054**	(0.006)	0.061**	(0.004)
Marital status	-0.089**	(0.003)	0.325**	(0.020)
Education				
Primary	-0.104**	(0.013)	-0.139**	(0.021)
Secondary	-0.197**	(0.010)	-0.333**	(0.024)
General High School	-0.111**	(0.016)	-0.304**	(0.022)
Vocational or Technical High School	-0.114**	(0.009)	-0.267**	(0.027)
University or more	-0.029**	(0.008)	-0.293**	(0.031)
Urban	-0.039**	(0.007)	-0.053**	(0.008)
No of other household members in employment	-0.068**	(0.007)	-0.021**	(0.010)
Observations	341,639		396,747	
Log-likelihood	-1.67e+05		-2.21e+05	
Pseudo R-Squared	0.051		0.194	

Note: Probit estimation results from equation (1) are presented. Average marginal effects are reported. Standard errors in parentheses. All estimations control for year dummies. +p<0.10, *p<0.05, **p<0.01. Omitted categories are 15-19 years old, not married, less than primary school education, and rural.

Table 4. Determinants of NEET status, by urban-rural residence

	Urban		Rural	
Dependent Variable: Pr(Neet=1)	Avg. Marg. Effect	Std. Error	Avg. Marg. Effect	Std. Error
Age group: 20-24	0.059**	(0.005)	0.064**	(0.006)
Gender	0.187**	(0.011)	0.233**	(0.019)
Marital status	0.251**	(0.012)	0.114**	(0.019)
Education				
Primary	-0.116**	(0.010)	-0.147**	(0.018)
Secondary	-0.301**	(0.018)	-0.256**	(0.019)
General High School	-0.237**	(0.014)	-0.169**	(0.019)
Vocational or Technical High School	-0.217**	(0.019)	-0.198**	(0.022)
University or more	-0.192**	(0.021)	-0.179**	(0.026)
No of other household members in employment	-0.008+	(0.005)	-0.081**	(0.008)
Observations	514,621		223,765	
Log-likelihood	-2.67e+05		-1.27e+05	
Pseudo R-Squared	0.199		0.153	

Note: Probit estimation results from equation (1) are presented. Standard errors in parentheses. All estimations control for year dummies. +p<0.10, *p<0.05, **p<0.01. Omitted categories are 15-19 years old, male, not married, and less than primary school education.

4.2. Transitions

Tables 5 to 7 present the movements of the individuals across the four labor market states by using equation (4). Table 5 presents the average flows using pooled data over the sample period for all youth. Inactive youth constitute the majority of the NEET in the sample, and the state of inactivity is highly persistent. About 81 per cent of the individuals that were inactive in the previous year remain in the same state. Employment also displays a high level of persistence: about 86 per cent of the youth employed in the previous year stay in the same state. Individuals in unemployment exhibit a rather slow transition into employment as only about 39 per cent of the individuals that were unemployed in the previous year moved into employment, with 34 per cent continuing to search.

Table 5. Average flows, all youth

			t		
t-1	Education	Employment	Unemployment	Inactivity	Total
Education	82.8	4.7	2.6	9.9	100
Employment	1.9	86.2	5.8	6.2	100
Unemployment	3.2	39.4	34.0	23.4	100
Inactivity	5.1	9.0	4.6	81.3	100
P.y	36.8	26.2	6.3	30.7	100

Source: Household Labour Force surveys 2004-2013.

Table 6. Average flows, male and female youth

Male

			t		
t-1	Education	Employment	Unemployment	Inactivity	Total
Education	82.1	5.7	2.6	9.6	100
Employment	1.7	88.1	6.2	4.0	100
Unemployment	2.9	39.7	32.3	25.1	100
Inactivity	4.7	37.9	19.3	38.0	100
P.y	41.2	37.3	9.0	12.6	100

Female

			t		
t-1	Education	Employment	Unemployment	Inactivity	Total
Education	83.6	3.5	2.6	10.3	100
Employment	2.2	83.0	5.1	9.7	100
Unemployment	4.3	38.6	39.6	17.6	100
Inactivity	5.2	3.9	2.1	88.9	100
P.y	33.1	16.7	4.0	46.3	100

Source: Household Labour Force surveys 2004-2013.

Table 6 displays the average flows by gender. The transitions from unemployment into employment are quite similar for men and women, but persistence of unemployment is higher for women. However, while about 25.1 per cent of the unemployed men quit searching and move into inactivity, this is only 17.6 per cent for women. Persistence of inactivity for women is

about 89 per cent, more than twice of that for men. In addition, men and women differ substantially in the transitions from inactivity into employment. While only about 4 per cent of the women that were inactive in the previous year moved into employment, this is about 38 per cent for men.

Finally, Table 7 displays the annual transitions separately for each year in the sample. Four interesting patterns emerge. First, the persistence of education displays a notable increase starting from 2004-2005. This increase is more pronounced between 2007-2008 and 2008-2009. In addition to this, during the same period the share of outflows from education into inactivity declined from 14.1 per cent to 6.3 per cent. These may indicate the choice of the youth to stay longer in education due to the impact of the global recession. Second, the effect of the global recession is also manifested in lower transitions from education to employment. The transitions from education into employment decreased from 5.6 per cent in 2007-2008 to 4.1 per cent in 2008-2009. Although the outflows from education into employment rose to 4.7 per cent in 2011, they fell to 4.3 per cent between 2011 and 2012, and to 3.8 per cent between 2012 and 2013. Third, the effect of the global recession is also reflected by the rise in the persistence of unemployment. Between 2007-2008 and 2008-2009 the share of the unemployed youth that remained unemployed increased from 34.1 per cent to almost 37.4 per cent highlighting the difficulties faced in finding jobs. Accordingly, between 2007-2008 and 2008-2009 the persistence of employment fell (from about 85 per cent to 81.7 per cent) accompanied by a greater share transitioning into unemployment. From 2010 onwards, as the impact of the global recession faded, the persistence of unemployment started to decline, and transitions into employment rose sharply to 42.5 per cent. Finally, the state of inactivity remains highly persistent despite the considerable decline from about 87 per cent to 74 per cent over the sample period.

Table 7. Annual transition tables

2003-2004

			t		
t-1	Education	Employment	Unemployment	Inactivity	Total
Education	83.4	4.7	4.0	7.9	100
Employment	0.4	89.8	4.6	5.1	100
Unemployment	1.5	35.7	39.1	23.6	100
Inactivity	2.1	6.2	4.7	87.1	100
P.y	28.3	29.4	6.9	35.3	100

2004-2005

			t		
t-1	Education	Employment	Unemployment	Inactivity	Total
Education	78.0	5.0	2.9	14.1	100
Employment	0.7	89.8	4.4	5.1	100
Unemployment	2.4	37.7	37.7	22.2	100
Inactivity	4.6	7.4	4.4	83.6	100
P.y	30.7	26.9	6.4	36.0	100

2005-2006

			t		
t-1	Education	Employment	Unemployment	Inactivity	Total
Education	78.8	5.6	2.8	12.9	100
Employment	1.0	88.5	4.8	5.7	100
Unemployment	2.2	35.1	34.8	27.9	100
Inactivity	3.3	8.0	4.1	84.6	100
P.y	31.7	27.0	6.1	35.2	100

2006-2007

	t				
t-1	Education	Employment	Unemployment	Inactivity	Total
Education	78.0	5.0	2.9	14.1	100
Employment	0.7	89.8	4.4	5.1	100
Unemployment	2.4	37.7	37.7	22.2	100
Inactivity	3.0	7.3	4.2	85.5	100
P.y	31.0	27.5	6.4	35.1	100

2007-2008

	t				
t-1	Education	Employment	Unemployment	Inactivity	Total
Education	80.4	5.6	2.8	11.2	100
Employment	1.7	85.0	6.6	6.8	100
Unemployment	3.0	37.1	34.1	25.8	100
Inactivity	3.8	9.0	4.5	82.7	100
P.y	33.9	26.6	6.6	32.9	100

2008-2009

	t				
t-1	Education	Employment	Unemployment	Inactivity	Total
Education	85.0	4.1	2.6	8.3	100
Employment	2.4	81.7	8.9	7.0	100
Unemployment	3.8	35.7	37.4	23.1	100
Inactivity	5.2	8.8	5.6	80.3	100
P.y	37.6	24.6	7.8	30.0	100

2009-2010

	t				
t-1	Education	Employment	Unemployment	Inactivity	Total
Education	84.7	4.2	2.4	8.7	100
Employment	2.8	83.4	6.9	6.8	100
Unemployment	4.0	42.5	33.0	20.4	100
Inactivity	6.5	10.7	5.3	77.5	100
P.y	40.7	25.0	6.6	27.6	100

2010-2011

	t				
t-1	Education	Employment	Unemployment	Inactivity	Total
Education	84.7	4.7	2.2	8.4	100
Employment	2.9	85.0	5.6	6.6	100
Unemployment	3.6	45.7	29.4	21.4	100
Inactivity	7.5	11.9	4.8	75.7	100
P.y	42.6	26.1	5.7	25.6	100

2011-2012

	t				
t-1	Education	Employment	Unemployment	Inactivity	Total
Education	85.4	4.3	2.0	8.2	100
Employment	3.3	84.0	5.8	6.9	100
Unemployment	4.4	43.6	26.4	25.7	100
Inactivity	8.8	11.2	4.3	75.7	100
P.y	44.9	24.7	5.1	25.4	100

2012-2013

	t				
t-1	Education	Employment	Unemployment	Inactivity	Total
Education	87.8	3.8	2.1	6.3	100
Employment	4.2	82.5	6.3	7.1	100
Unemployment	5.0	44.7	28.5	21.8	100
Inactivity	10.2	11.9	4.5	73.5	100
P.y	48.2	24.2	5.2	22.4	100

Source: Household Labour Force surveys 2004-2013.

5. Conclusion

This paper aims to examine the determinants of the NEET status for the Turkish youth between 2004 and 2013. Findings from probit estimations indicate that higher levels of education and a greater number of household members in employment are associated with a significantly lower likelihood of being NEET; and this is stronger for women. In addition, marriage seems to be a significant determinant of the NEET status for women. The trends in the mobility of the youth across different states over the period of 2004-2013 are also examined. Despite the shortcomings of the available data that allow focusing on movements across two points in time, the transition analyses provide useful insights. First, the majority of the NEET group are the inactive individuals; and the state of inactivity is highly persistent for women. Second, after 2007-2008 the persistence of education rose sharply indicating the choice of the youth to stay in education as their labor market prospects fell. Third, while the outflows from unemployment into employment recovered after the recession period, transitions from education into employment remain below the pre-recession period levels which underscore the need for examining the school-to-work transition experience.

The findings of this study suggest that labor market policies and future research that address the NEET problem should take into consideration the gender dimension of the issue by taking into account the reasons for inactivity. Education is a key factor in lowering the likelihood of NEET status. Nevertheless, while the youth's choice of staying in education is favorable, additional years of schooling will not necessarily translate into better labor market outcomes unless followed by an efficient school-to-work transition. Therefore, understanding the job search behavior becomes essential for developing better policies to address the challenges faced by the youth in the labor market.

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