The Uncounted Who Wish to Work – Distinct to the Unemployed or Similar?

Seçil KAYA BAHÇE   Emel MEMİŞ
sabahce@politics.ankara.edu.tr   ememis@politics.ankara.edu.tr

İş Aramayıp Çalışmaya Hazır Olanlar ve İşsizler: İşsizlik Tanımı Genişletilmeli mi?

Abstract

In this study, we examine whether the job search criterion is appropriate for defining the unemployed in Turkey or an alternative standard such as wish to work should be used instead of the conventional criteria. For this purpose, we explore transition probabilities between different labor states particularly of those who express their will for work although they are not looking for a job. Using the four year rotational panel data from Survey of Income and Living Conditions (SILC) we test whether they form a distinct group to the officially defined unemployed or not. We re-classify the population out of labor force according to their degree of attachment to labor market as marginally attached and not attached/inactive. Evidence obtained shows that the marginally attached are a distinct group to the unemployed however we've also found that they are distinct to the not attached group as well. The latter result is stronger for women at prime age. These findings hold for one, two and three-year transitions between different labor force states over the period 2006-2009 in Turkey.

Keywords   :   Turkish Labor Market, Flow Approach to Labor Markets, Unemployment, Marginally Attached, Transition Probabilities.

JEL Classification Codes   :   J01, J64, J82.

Özet

Bu çalışmada Türkiye işgücü piyasasında işsizliğin tanımında kullanılan iş arama kriterinin geçerliliği incelenmiş ve mevcut iş arama kriteri yerine çalışmak isteme gibi alternatif bir kıstas kullanılmalı mıdır sorusuna cevap aranmıştır. Bu amaçla, özellikle iş aramayıp çalışmak isteyenlerin farklı işgücü durumları arasında geçiş olasılıkları hesaplanmıştır. TÜİK'in Gelir ve Yaşam Koşulları Anket verisinden derlenen dört yıllık panel veri kullanılarak iş aramayıp çalışmak isteyenlerin resmi olarak işsiz sayılan gruptan farklı bir gruba karşılık gelip gelmediği test edilmiştir. Nüfusun işgücünde yer almayan kesimi işgücü piyasasına yakınlığına göre iş aramayıp çalışmak isteyen ve aktif olmayan olarak yeniden sınıflandırılmıştır. Elde edilen bulgular iş aramayıp çalışmak isteyenlerin hem aktif olmayanlardan hem de işsizlerden farklı bir gruba karşılık geldiğini göstermektedir. Özellikle çalışma yaşındaki kadınlar için, iş aramayıp çalışmak isteyenler ve aktif olmayanlar farklı işgücü durumlarına karşılık gelmektedir. Bu sonuçlar 2006-2009 yılları arasında Türkiye işgücü piyasasında farklı işgücü durumları arasında bir iki ve üç yıllık geçişler incelendiğinde geçerlidir.

Anahtar Sözcükler   :   Türkiye İşgücü Piyasası, İşgücü Piyasasına Akım Yaklaşımı, İşsizlik, İş Aramayıp Çalışmak İsteyenler, Geçiş Olasılıkları

Acknowledgement

Beyan

1. Introduction

Unemployment rate is one of the most important indicators for evaluating the macroeconomic stance of a country. Despite being helpful for understanding the general trends in labor markets, aggregate unemployment rates calculated by conventional definition of joblessness fall short of explaining the whole world of work which is more so for developing countries. Current job search criteria might serve well in identifying the unemployed in developed countries where majority of the population engages in regular paid employment and information about available jobs is easier to obtain. However, in many developing countries, the labor market information channels are weak or do not exist, thus the official unemployment rates may not display the extent of actual joblessness in these countries and Turkish labor market is a case in point.

Similar to other developing countries, the rural sector and agricultural employment are relatively significant in Turkey[1]. Given high seasonality and large size of unpaid family work in agricultural employment, a significant part of the population stays invisible in labor force statistics[2]. On the other hand, the existing unemployment insurance system is highly inadequate in reaching out to all individuals who need this support, due to the relatively weak channels of the labor market information. In Turkey, in 2009, only 7.4 per cent were covered by the unemployment insurance, with the amount of the payment corresponding to around 80 per cent of the minimum wage – which was set at approximately 350 US dollars/month that same year. Together with the tendency of the population to stay out of the formal labor market (as shown by low employment rates and participation rates), these factors, describing the underlying situation in most developing countries, point to the inadequacy of the official definition of unemployment in displaying the state of joblessness fully. Thus, here, we seek to answer the research question: *should the definition of the unemployment be kept as is officially published or rather be expanded by incorporating another standard, for example the desire for work?*

According to the Turkish official statistics, the distinction between unemployed and not attached depends on the job search criterion. A non-employed person who wants to

---

[1] *By 2012, 38 percent of employed women and 23 percent of total employment are in agricultural sector.*

[2] *For instance the research in sociological literature on Turkey shows that many women who are considered as 'economically inactive' in fact wish to work in the market although they do not qualify as active job seekers. Thus, the actual unemployment rates for women based on this argument may significantly differ from officially reported low rates (Özbay, 1990). In 2011, rural unemployment rate is as low as 3.6 percent for women whereas for men this figure is 7 percent in Turkey. Corresponding figures in urban areas are 16.5 and 10.2 respectively (TurkStat, 2012).*

work and is eligible for work is counted as unemployed if she/he is currently looking for a job using the conventional methods specified in the labor force survey questionnaires. Otherwise the respondent is counted as out of labor force/not attached to the labor market. The not attached may correspond to a highly heterogeneous group of individuals including those who want to work but do not actively search for a job for any reason (discouraged workers are as such) and who prefer to stay outside the labor market (the true not attached). In other words, among the not attached, degree of attachment to the labor market may significantly vary. Then a distinction depending on the search criterion would be problematic as a person who wants to work and is eligible for work might be closer to being unemployed although she/he stopped looking for a job.

For our purpose here, we explore whether i) those who express their will for work but not looking for a job and ii) the officially defined unemployed behaviorally correspond to distinct labor force states or not. We define the former group of individuals as marginally attached and re-classify the population out of labor force according to their degree of attachment to the labor market as marginally attached and not attached. We use the data derived from Income and Living Conditions Survey (SILC) compiled by Turkstat that covers the period 2006-2009 and depends on panel survey methodology in which individuals are followed for four years. Based on a Markov model of labor market states and transitions, we first construct the Markov transition matrix, in each entry of which independent transition probability between different labor market states exists. Then we explore whether the two groups correspond to distinct labor force states comparing their rate of transition to work by formal tests, i.e. the unconditional means tests as well as conditional equivalence test performed through multinomial logistic estimations for one, two and three year estimations.

The main results obtained show that the marginally attached group defined as the persons who wish to work, although not currently searching, is a distinct labor market state, lying between the unemployed and the non-attached. The tests of equivalence of marginally attached and unemployed and the not attached reject the equivalent behavior. Our interpretation is that these results indicate that there is a need to go back to the conventional definitions of different labor market states and check whether the marginally attached are best grouped as out of labor force. This is particularly important for certain subgroups. Test results for women at prime age show stronger evidence for the need to consider the marginally attached state as separate.

Following a brief background in section 2, we discuss how we define the marginally attached and present the potential impact on the extent of joblessness in case they are included in the unemployment measurements in Section 3. Section 4 presents the

data and methodology used in empirical analysis. Section 5 provides empirical analysis evaluating the transition dynamics of the marginally attached looking at their distribution by employment statuses in two consecutive periods. Here we calculate the unconditional transition probabilities between different labor force states and check for any statistical similarity of the marginally attached with the unemployed and the not attached. Then, we estimate the conditional transition probabilities through a multinomial logistic regression. Finally, the last part concludes with summary results.

2. Background

The flow approach to labor markets introduces "productive waiting for new work" in identifying the unemployed, instead of the "job search criterion" assessing the productivity during the non-employment period by the rate of transition from non-employment to work. Unemployment duration dependence, defined as the adverse effects of a long unemployment spell, results in heterogeneity in labor market attachment; following a period of sustained high unemployment, the pool of low intensity searchers widens because of the decreasing returns to search activity on the one hand and decreasing labor market prospects of the long term unemployed on the other. Hence waiting is more relevant than searching for describing the unemployment spell. As Blanchard and Diamond stated, "…endogenous search, while surely present, is not of the essence. What is of the essence is that there is an endogenous delay in finding another job. This is what matters for the determination of unemployment and for the determination of wages" (Blanchard and Diamond, 1992). The rate of transition to work measures the degree of attachment to labor market among the not attached. A proposed way to classify labor market statuses is to compare transition probabilities between different states. Some part of the population out of labor force may look like more the unemployed than the not attached in terms of the rate of transition to work and can be considered as marginally attached to the labor market.

The theoretical literature relates marginal attachment to labor market with the debates on job search costs. This line of research emphasizes the importance of search costs assuming that an individual engages in job search activity if the expected benefit of finding a job outweighs the search costs. According to this view, if there are search costs, the search reservation wage will be higher than the labor supply reservation wage and one would stop seeking paid work even though he/she wishes to work (Blundell, Ham and Meghir, 1998). Search costs include both actual monetary costs (i.e. transportation costs) as well as the opportunity cost of time spent looking for a job. In some cases, the monetary cost consists of the cost of substituting market purchases for the forgone unpaid work during the job search period. This is especially valid for individuals who indicate care

work responsibilities as the primary reason for not looking for a job. For them, in order to engage in active job search, expectations of finding a job should surpass all costs including the provision of care work through markets.

There is a line of literature which focuses on whether or not unemployed and not attached behaviorally correspond to distinct labor force statuses. Earlier studies propose a statistical framework for testing the behavioral similarities between different labor force states (Flinn and Heckman, 1983, Gönül, 1992, Tano, 1991). Drawing upon these studies, an empirical literature on the 'marginally attached', which discusses mainly whether the marginally attached individuals look more like the unemployed than not attached has been developed. These studies mostly addressed the developed country cases. Among others, in their research regarding the Canadian labor market, Jones and Riddell conclude that the marginally attached are closer to the unemployed in terms of their degree of labor force attachment than to the not attached although they are distinct from the unemployed: their rate of transition to work is lower compared to the unemployed but still, it is four times greater than the transition rate of the not attached. Their findings provide supporting evidence for not aggregating passive searchers with those classified as out of the labor force (Jones and Riddell, 1999). In line with these findings, for the Australian labor market, Gray et. al. show that the marginally attached have a similar attachment to the labor force as the unemployed (Gray et. al, 2005). Similarly, Brandolini et. al. (2006), in their study about the EU countries, conclude that the transition probabilities to employment of the marginally attached are much greater than those of the other not attached population and are generally closer to those of the unemployed.

In the literature, analysis of the marginally attached in developing countries is quite limited. In their study regarding the South African economy, Kingdom and Knight (2000) conclude that the broadly defined unemployment rate which includes the marginally attached is substantially higher than the narrowly defined rate[3]. Depending on a cross sectional data, they cannot measure the probabilities of transition to work; however, they compare the unemployed and the marginally attached in terms of the incidence of poverty, perceived quality of life etc. and find out no behavioral distinction between these two states. In another study, Bryne and Strobl (2004) focus on the Trinidad and Tobago economy and conclude that marginally attached men are behaviorally similar to the unemployed men but seem to be distinct from other not attached men. On the other hand, the marginally attached women are behaviorally different from both the unemployed and the not attached women.

---

[3]   *Kingdon and Knight (2000) use "non-searching unemployed" instead of "marginally attached".*

Previous studies for the Turkish economy that provide analysis of the flows between different labor force states do not take into account being marginally attached as a distinct labor force status (Tansel and Taşçı, 2005; Tansel and Kan, 2012). However, especially in recessionary periods and crises time the flows from and into different states increase while the measurement of joblessness becomes more complicated. Taking into account that, especially in times of economic crises the size of the marginally attached individuals is quite relevant regarding the extent of joblessness. Further to that, here we present additional information on the impacts of the crisis on joblessness providing evidence from Turkey. In fact marginally attached represents a part of the potential labor supply and plays a significant role in changing the labor supply over the business cycle. Barnichon and Figura explain the downward trend of unemployment rate in US economy during the 90s with the contraction of labor supply as a result of declining fraction of the marginally attached (Barnichon and Figura, 2012). During the 2007-2008 economic crises, like the number of the unemployed, the marginally attached substantially increased in size in Turkey (Kaya Bahçe and Memiş, 2014). Studies on the US economy display similar patterns regarding the marginally attached labor force; among those who are not in the labor force, the number of marginally attached individuals increased between the last quarters of 2007 and 2008 (Borbely, 2009).

This study seeking for empirical evidence with regards to the official definition of the not attached state. We ask should that definition include the marginally attached or not? The study aims to contribute to the literature with evidence from a developing country that supports the implementation of ILO's proposals on marginal attachment and points to the need for revision in the current definitions of the not attached or out of labour force group.

3. Alternative Definitions of Joblessness

According to 1954 ILO guidelines, a person is unemployed if she/he is (a) not working, (b) currently available for work and (c) seeking work. ILO broadened the definition of unemployment in 1983, allowing for partial or full relaxation of the active job search requirement in situations ''where the conventional means of seeking work are of limited scope, where labor absorption is, at the time, inadequate, or where the labor force is largely self-employed…''. This definition of unemployed, which is currently used in almost all countries as the official definition, refers to the individuals aged between 15 and 65 who did not work during the seven days prior to the interview, want to work and are available to start work within a week after the interview and have taken steps to look to work or start some forms of self employment in the four weeks prior to the interview. The expanded definition excludes the last criterion allowing for the passive search for work.

There are several developing countries[4] that report the rate either by fully or partially relaxing job search criteria and expand narrow definition of unemployment. However, this does not necessarily indicate that expanded definition includes all the marginally attached who are not currently searching for work either actively or in a passive way.

Based on ILO guidelines, Turkish Statistical Institute (TurkStat) defines the unemployed as all persons 15 years of age and over who were not employed during the reference week and who had used at least one channel[5] for seeking a job during the last three months and were available to start work within two weeks. Persons employed are defined as those who are at work, who are economically active during the reference week for at least one hour[6]. The out of labor force includes all persons 15 years of age and over who are neither unemployed nor employed. This group includes discouraged workers, who are the persons who were available to start a job but are not seeking a job either because they had looked for before, but were not able to find or those believe that could not find a job with his/her qualifications. The persons who were not seeking a job for reasons such as being seasonal workers, busy with household chores; being student, property income earner, retired, or disabled are also counted in this group.

We reclassify the individuals out of labor force depending on their desire for work and obtain two distinct states: marginally attached who express their will for work although not searching for one and the not attached who neither look for work nor have desire for work. Accordingly, when we reclassify the labor market states based on Labor Force Survey (LFS) questionnaire and identified the persons marginally attached who are neither employed nor unemployed but would like to work if a job opportunity exists; we

---

[4] *Out of 55 developing countries 22 of them use more flexible definition of unemployment (Bryn and Strobl, 2004).*

[5] *The channels for seeking a job include applying directly to an employer, asking friends and relatives, contacting with Turkish Employment Office (İŞKUR) and/or private employment agencies, studying, inserting or answering advertisements in newspaper or journals, seeking a job through internet, taking a test, interview or examination, looking for land, premises or equipment to establish own business, looking for permits, licenses and financial resources to establish own business, waiting a call from Turkish Employment Office, awaiting the results of an application for a job and/or competition for recruitment to the public sector, using any other methods to find a job.*

[6] *Employed group includes all regular employee, casual employee, and employer, self employed or unpaid family worker who worked in the reference week at least 1 hour. All self-employed and employers who have a job but were not at work in the reference week for various reasons are also considered as employed. Regular employees with a job who did not work during the reference period for various reasons are considered as employed only if they have an assurance of return to work within a period of 3 months or if they receive at least 50 percent of their wage or salary from their employer during their absence. The members of producer cooperatives and apprentices or stagers who are working to gain any kind of benefit (income in cash or in kind, social security, travelling cost, pocket money etc.) are also included as employed.*

obtain a fourfold classification of labor force. Figure 1 summarizes how we construct the new labor force classification as *1.employed, 2.unemployed, 3.marginally attached* and *4. not attached.*

Figure: 1
Construction of the Four-State Classification of Labor Force
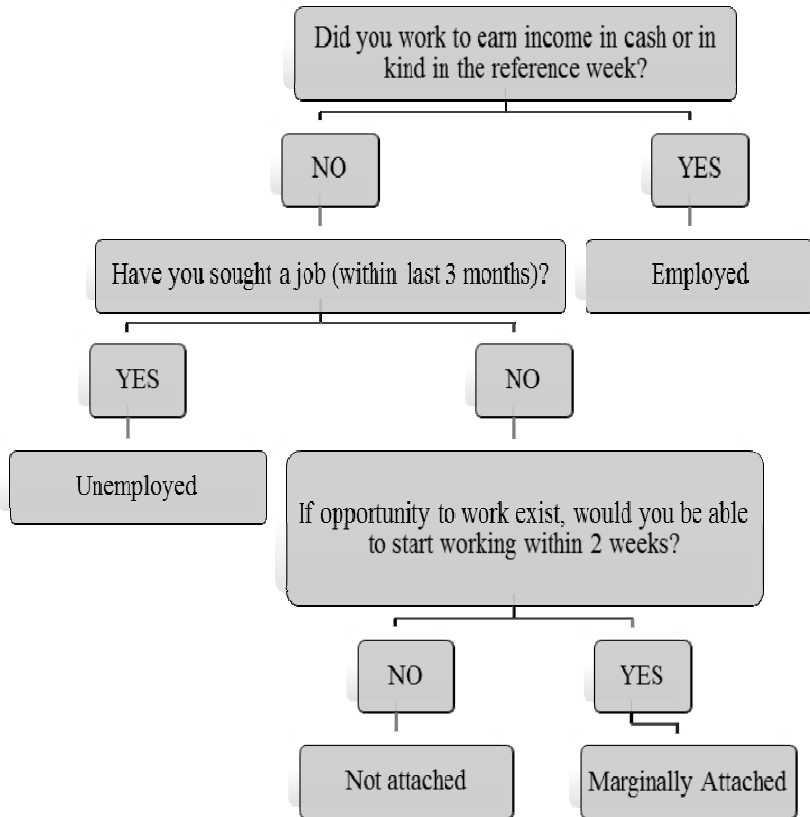
Turkish Statistical Institute (TurkStat) reports only the narrowly defined unemployment rate. Statistics on discouraged workers are also published in monthly reports but they are not counted as unemployed in official definition and no alternative unemployment rates are provided. The literature, though very limited, provides a couple of country cases that publish alternative definitions and measures of unemployment. For example, for the Unites States, Bureau of Labor Statistics (BLS), in addition to the official

unemployment rate, reports five alternative measures of labor underutilization[7]. Among others, South Africa singles out as the country reported the expanded unemployment rate as the official rate though for a limited period of time. The Statistics South Africa (SSA) reported the expanded unemployment rate, which includes those who are not actively searching job as the official unemployment rate between 1993 and 1998 when they went back to the narrow definition. The main reason behind South Africa's switch to the narrow measure in 1998 was the compatibility with the main ILO definition. ILO recommended the narrow definition on the grounds that it is more objective involving no judgments about a person's relative need for work or personal circumstances and it overstates the labor supply. However, especially in the case of developing countries, unemployment rates based on these two definitions diverge substantially; the narrow definition might highly underestimate the actual rate; for example, according to the South African official statistics, broadly defined unemployment rate is 38 percent while the rate which depends on the narrow definition is about 23 percent in 1997 (Kingdon and Knight, 2000).

Despite the insistence on the narrow definition of unemployment in official statistics, research on the issue has continued to question this definition and provided alternative measurements of unemployment rates more in developed countries but also in developing countries as well. Taking insights from earlier research, here first assuming that the unemployed and marginally attached could be pooled in one group, we provide two alternative unemployment rates in Turkey: u_d and u_m. The former is defined as the ratio of the sum of unemployed and discouraged to the sum of the official labor force and the discouraged. The latter (u_m) is the ratio of the sum of unemployed and all of the marginally attached to the redefined labor force (i.e. the sum of official labor force and all of the marginally attached), where the discouraged workers are a subset of marginally attached[8].

---

[7] *Among these, U-1 corresponds to the persons unemployed 15 weeks or longer, as a percent of the civilian labor force, U-2 includes job losers and persons who completed temporary jobs, U-3 is the official unemployment rate, which refers to total unemployed as a fraction of labor force. The three others correspond to more broadened definitions; U-4 includes discouraged workers with the other unemployed, U-5 incorporates the other marginally attached as well and finally U-6 includes all persons covered by U-5 plus persons employed part time for economic reasons, those who want and are available for full-time work but have had to settle for a part-time schedule.*

[8] *U_d corresponds to the U-4 in the US case. On the other hand, u_m is similar to U-5; the BLS definition of marginally attached differs from ours'; persons who are marginally attached are those who have looked for a job sometime in the prior 12 months (or since the end of their last job if they held one within the past 12 months), but were not counted as unemployed because they had not searched for work in the 4 weeks preceding the survey (BLS, 2012). However, with LFS data, it is not possible to identify the marginally attached who looked for work over the last 12 months although currently not searching in the US case. The previous empirical literature on the 'marginally attached' includes studies with different definitions of the*

Figure: 2
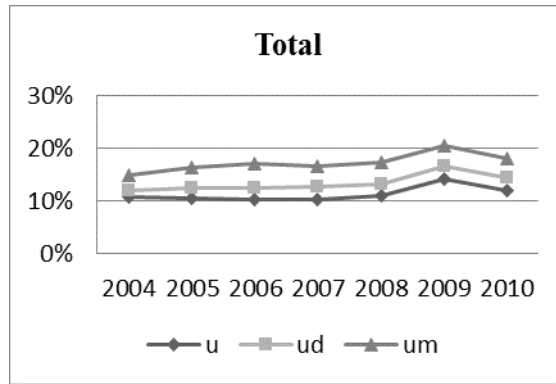**Alternative Unemployment Rates: Turkey 2004-2010**

Figure 2 shows that, the redefined unemployment rates have been systematically higher than the official rate; u_d is approximately 2 percentage point higher than the official rate (u) throughout the period. Incorporating the marginally attached widens the difference remarkably: between u_m and u it is around 6 percentage point on average over the period. Disaggregation by sex shows that the expanded rates substantially surpass the official rate in case of women; u_d is about 3 percentage point higher than u, while the difference between these two rates is 2 percentage points on average for men. On the other hand, the inclusion of the marginally attached leads to a drastic divergence of u_m from the official rate for women; u_m is approximately 11 percentage point higher than u whereas this difference is just around 4 percentage point in case of men. During the years when the

---

marginally attached. In their research on the Canadian labor market, Jones and Riddell classify those who are not searching for work but state that they want to work as marginally attached (Jones and Riddell, 1999). This is the definition we use here. Similarly, for the Australian labor market, Gray et. al. define the marginally attached as the people who are not in the labor force although they want to and available for work (Gray et. al, 2005). On the other hand there are studies that use the definition with a time constraint. For example, Brandolini et. al. (2006), discuss the four week criterion for job search and call all job seekers whose last search action occurred more than four weeks before the interview as potentials (or potential labor force). In their study about the EU countries, potentials and the unemployed differ only in terms of the time passed since the last search action. On the other hand, Bryne and Strobl refer to the group of individuals who looked for work sometime in the last three months prior to the interview, are willing and able to work although they are not looking for a job at the time of the interview as marginally attached (Bryne and Strobl, 2004). Discouraged workers are, by definition, a subset of the marginally attached and in order to keep compatibility with the official statistics for the discouraged workers, we used the broadest definition of the marginally attached with a time constraint with respect to the time passed after the last search activity like Jones and Riddell (1999) and Gray et al. (2005).

crisis impacts are more severely observed in Turkish economy (2008-2009), the difference between u and u_m is as high as 12 percentage point for women[9].

Figure: 3
Alternative Unemployment Rates by Sex, Turkey 2004-2010
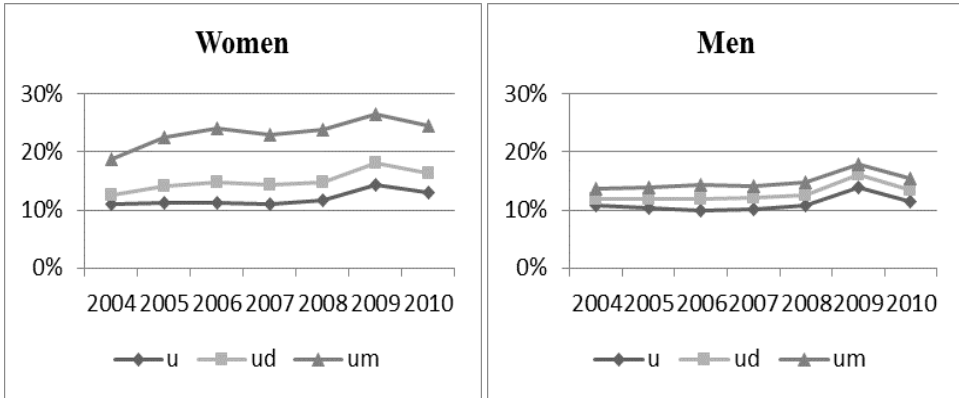
When only the official rates are considered the difference between women and men is not very significant (less than 1 percent point). However as the broader measure (u_m) shows, the gender gap widens drastically and the difference becomes 9 times more of the officially identified gap. In case the test results we obtain show that the marginally attached are not a distinct group to the unemployed, then the striking degree of underestimation of the official unemployment rates would be established by these figures, particularly when it comes to women's joblessness. If we look at the ratio of the marginally attached to the working age population in order to see the extent of potential underestimation of the official rates, we see that approximately 4 percent of the women at working age are marginally attached. For men the figure is around 3 percent. As a ratio to the unemployed the figures are much higher. Throughout the period, the marginally attached corresponds to around 41 percent for men on average, while for women in every

---

[9] *Note that u_d results here are similar with the findings provided by İlkkaracan et. al. (2013). This study, aiming to explore the differences in wage elasticity of unemployment measures alternative unemployment rates one of which includes the marginally attached. The definition of marginally attached used in their study differs from our definition. The marginally attached category constructed by İlkkaracan et. al. (2013) does not cover the discouraged workers. The results they obtain when marginally attached are included are lower in that study when compared to the rates with discouraged workers. Nevertheless, as in other studies, where marginally attached are measured, discouraged workers are taken as a subset of the marginally attached group. Therefore our definition here uses the measure applied in other developing country cases in the literature.*

year it is more than a hundred percent (marginally attached number are on average 1.16 times higher than the unemployed women)[10]. As all these figures show the significance of the marginally attached relative to the unemployed if the marginally attached are more similar to the unemployed, then, not counting them could have important consequences in terms of the analyses of actual unemployment in Turkey.

4. Data and Methodology

We use the data derived from Survey of Income and Living Conditions (SILC) conducted by the Turkish Statistical Institute (TurkStat) since 2006. The rotational panel nature of this data allows for tracking the individuals for four consecutive years between 2006 and 2009 and helps us to observe transitions between states. Data covers the non-institutionalized population living in all geographic regions in Turkey and provides information about the demographic characteristics, labor force states, employment statuses and working conditions (hours of work, social security coverage etc.) of individuals. For the purpose of this study, we include individuals aged 15 years and over and followed at least two consecutive years. Among 7,921 individuals interviewed in the first survey year, 6,981 individuals are tracked for two years between 2006 and 2007, 6,290 individuals for three years between 2006 and 2008 and 5,751 individuals for four years between 2006 and 2009. This is a unique data set with a panel structure that allows us to explore labor market outcomes from 1 year to 4 years beyond the initial survey year. Table 1 presents the summary statistics.

---

[10] *Empirical studies in the literature show that the number of the marginally attached is quite significant compared to the unemployed in other country cases as well but the numbers are not as high as in the Turkish case; 25-30 percent of the unemployed in Canada, two-thirds of the unemployed in the USA (Jones and Riddell, 1999) and in Portugal, between 1992 and 2003, they represent 30 percent of the unemployed for men and 50 percent for women (Centano and Fernandes, 2004).*

Table: 1
Summary Statistics

		2006				2007			
		Employed	Unemployed	Marginally Attached	Not Attached	Employed	Unemployed	Marginally Attached	Not Attached
Sex									
	Women	22%	1%	6%	71%	23.4%	1.5%	3.8%	71.3%
	Men	69%	6%	2%	23%	71.0%	5.3%	1.6%	22.2%
Marital Status									
	Single	32.9%	6.9%	3.3%	56.9%	35.9%	6.4%	3.4%	54.3%
	Married	49.2%	2.5%	4.2%	44.2%	50.0%	2.2%	2.5%	45.3%
Education									
	No School	24.2%	1.7%	2.3%	71.9%	24.3%	1.7%	1.3%	72.7%
	Primary	47.2%	3.7%	4.2%	45.0%	48.2%	3.5%	3.0%	45.2%
	Secondary	48.3%	5.6%	4.9%	41.2%	52.3%	4.3%	3.2%	40.2%
	University	69.3%	4.4%	4.1%	22.1%	71.4%	3.4%	3.5%	21.8%
Children									
	With	49.6%	3.8%	4.0%	42.6%	51.0%	3.5%	2.8%	42.7%
	No	36.5%	3.6%	3.8%	56.2%	38.1%	3.0%	2.7%	56.2%
Eldery									
	With	34.3%	3.8%	2.1%	59.7%	34.6%	3.5%	1.0%	60.9%
	No	48.5%	3.6%	4.6%	43.3%	50.4%	3.2%	3.4%	43.0%
Mean	Age	39	33	36	45	39	33	35	45
		2008				2009			
		Employed	Unemployed	Marginally Attached	Not Attached	Employed	Unemployed	Marginally Attached	Not Attached
Sex									
	Women	23.9%	1.5%	4.7%	70.0%	23.8%	2.3%	5.6%	68.3%
	Men	71.0%	5.4%	1.3%	22.3%	66.8%	8.3%	1.7%	23.3%
Marital Status									
	Single	39.6%	6.1%	2.9%	51.4%	38.4%	9.3%	3.3%	49.0%
	Married	49.3%	2.3%	3.1%	45.2%	46.9%	3.7%	3.9%	45.6%
Education									
	No School	24.5%	1.4%	1.4%	72.7%	22.8%	1.4%	1.9%	73.9%
	Primary	48.8%	3.4%	3.3%	44.6%	46.1%	5.6%	3.7%	44.5%
	Secondary	52.9%	5.1%	4.3%	37.8%	52.7%	8.0%	5.4%	34.0%
	University	71.5%	4.3%	3.0%	21.3%	68.3%	5.6%	4.0%	22.1%
Children									
	With	52.1%	3.3%	3.5%	41.1%	49.9%	4.9%	3.9%	41.3%
	No	37.4%	3.5%	2.3%	56.7%	35.7%	5.7%	3.4%	55.3%
Eldery									
	With	34.7%	2.4%	1.7%	61.3%	31.8%	4.2%	1.9%	62.0%
	No	51.0%	3.7%	3.6%	41.7%	49.2%	5.6%	4.3%	40.9%
Mean	Age	38	34	35	46	38	33	39	46

Figures in table 1 show significant differences between women and men in Turkey by their employment status and degree of attachment to the labor market. Three out of four women are either not attached or marginally attached whereas three out of four men are either employed or unemployed. Share of unemployed is higher among men with higher labor force participation of men. Majority of the respondents with no school are not attached, the share of employed by education level shows that employment rate increases by years of schooling. The share of employed respondents is higher among married when compared to single respondents. Average age of the respondents is highest for not attached whereas it is lowest for the unemployed respondents compared to other states. This latter is supported by the high youth unemployment rates over the recent period in Turkey.

The methodology applied in empirical analysis has two parts. First, we construct a Markovian transition matrix which consists of unconditional transition probabilities between different labor force states given by:

$$P = \begin{bmatrix} p_{EE} & p_{EU} & p_{EM} & p_{EN} \\ p_{UE} & p_{UU} & p_{UM} & p_{UN} \\ p_{ME} & p_{MU} & p_{MM} & p_{MN} \\ p_{NE} & p_{NU} & p_{NM} & p_{NN} \end{bmatrix}$$

(1)

Here, we assume that, at each period, individuals are in one of the four different labor force states; employed (E), unemployed (U), marginally attached (M) and not attached (N). P_{ij} is the probability of moving from state i at the initial period to state j in the following period. P_{ij} is defined as the ratio of the number of people who were in state i at time t and moved to state j at time $t+1$, to the total number of people in state i at time t. Accordingly, P_{EU} represents the probability of being unemployed at time $t+1$ while being employed at time t. There are supposed to be 16 transition probabilities in total as we assume four different labor force states. Thus we have a 4x4 matrix.

If the probability of transiting from M to E is equal to the probability of transiting from U to E and the probability of transiting from M to N is equal to the probability of transiting from U to N, then "marginally attached" and "unemployed" can be taken as behaviorally identical labor force states. In other words, the necessary and sufficient conditions are as follows;

$$p_{UE} = p_{ME}$$
$$p_{UN} = p_{MN}$$

(2)

Similarly, if the probability of transiting from M to E is equal to the probability of transiting from N to E and the probability of transiting from M to U is equal to the probability of transiting from N to U, then "marginally attached" and "not attached" can be taken as behaviorally identical labor force states;

$$p_{NE} = p_{ME}$$
$$p_{NU} = p_{MU}$$

(3)

If conditions in (2) and (3) are rejected but the conditions regarding the order of the transition probabilities in (4) cannot be rejected, then one may conclude that the marginal attachment to be taken as a distinct labor force state:

$$p_{UE} > p_{ME} > p_{NE}$$
$$p_{UU} > p_{MU} > p_{NU}$$
$$p_{UN} < p_{MN} < p_{NN}$$

(4)

Secondly, we estimate the conditional transition probabilities through a multinomial logistic regression model where the dependent variable is the probability of being marginally attached relative to other states. A formal expression of the logistic regression used can be shown by the following equation (5):

$$\Pr(Y_{k,t+1} = j | Y_{k,t} = i) = \frac{\exp(\beta_j, X_k)}{\sum_i \exp(\beta_i, X_k)}$$

(5)

Accordingly, the right hand side of the equation shows the probability of transiting to state j at time $t+1$ of the individual k, who is in state i at time t. X is a vector of variables including key individual (age, sex, education, marital status) and household (location, number of children and elderly) characteristics. We interpret the results calculating the marginal effects based on the estimates.

Table: 2
Transition Probabilities between Labor Force States

From 2006	Employed	Unemployed	Marginally Attached	Not attached
	Labor force status at the end of the period			
1-year transitions (2006 to 2007)				
Employed	89.8%	3.3%	0.6%	6.9%
Unemployed	54.8%	29.1%	1.2%	13.9%
Marginally Attached	16.5%	3.8%	13.0%	66.7%
Not attached	7.7%	1.4%	3.9%	86.8%
2-year transitions (2006 to 2008)				
Employed	85.6%	3.7%	1.4%	9.3%
Unemployed	61.3%	23.7%	2.3%	12.6%
Marginally Attached	19.6%	6.9%	12.8%	60.7%
Not attached	11.1%	1.4%	3.9%	83.6%
3-year transitions (2006 to 2009)				
Employed	81.1%	6.3%	1.7%	11.0%
Unemployed	50.5%	33.0%	2.3%	14.1%
Marginally Attached	22.9%	1.0%	14.7%	61.4%
Not attached	11.9%	2.5%	4.7%	80.9%

Source: Author's calculations.

Figure: 4
The Probability of Transiting to Employment
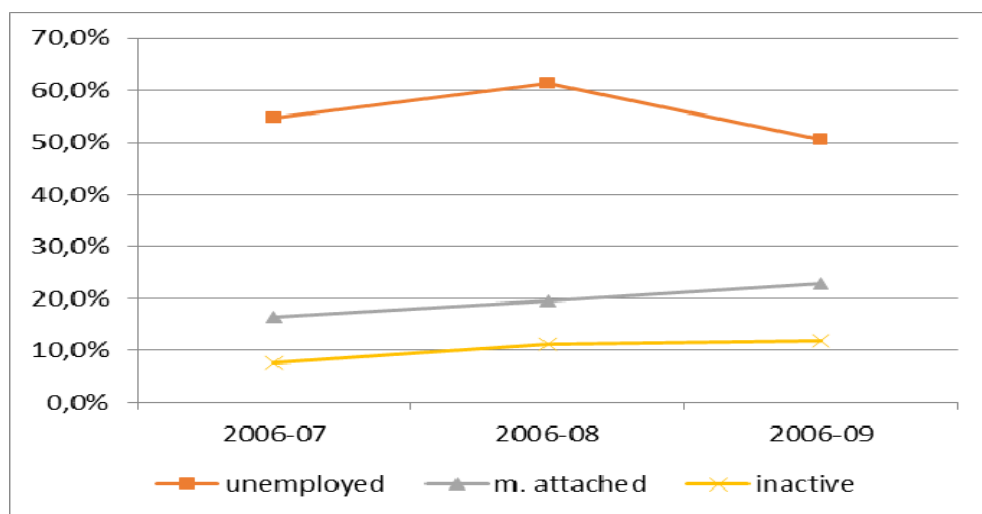
5. Empirical Analysis

The unconditional transition probabilities are shown by the figures in Table 2. The longer the transition period the lower is the probability of staying in the same labor force state, yet, it is considerably high for the employed and the not attached (i.e. higher than eighty percent) to stay in the same state over the whole period. Looking at the transition probabilities to employment (Figure 4), we observe that, P_{UE} is greater than P_{ME} and P_{NE} irrespective of the length of the transition period. The difference between P_{UE} and P_{ME} is greater than the difference between P_{ME} and P_{NE}, which suggests that the behavior of the marginally attached is closer to that of the not attached than the unemployed. On the other hand, P_{ME} is greater than P_{NE} regardless of the length of the transition, which signals for potential heterogeneity among the not attached group with respect to the degree of attachment.

In order to compare whether the unemployed and the marginally attached correspond behaviorally similar labor force states, we apply a t-test of the null hypothesis of no difference in the means of annual transition probabilities. According to the test statistics, we reject (2) indicating that the unemployed and the marginally attached are significantly different in terms of their transition to work and inactivity. However, t test results (Table 3) show that the marginally attached individuals are also behaviorally different than the not attached individuals; the equality of the means of transitions to work is significantly different as conditions in equation 3 are rejected as well.

Table: 3
T-Test Statistics of Equality of Means

	2006-2007	2006-2008	2006-2009
pME = pUE	-0.39***	-0.42***	-0.28***
pUN = pMN	-0.53***	-0.48***	-0.47***
pME = pNE	0.09***	0.08***	0.11***
pMU = pNU	0.03	0.06	-0.01

Notes: p-values are reported here.
***significant at 1 percent significance level.

These results may vary by different subgroups classified particularly by their reason for not looking for work. However, data in hand does not provide the information about reason for not looking for work for the respondents who are neither employed nor unemployed. Thus it is not possible to check whether the test results above are as valid for all subgroups under the marginally attached. Based on earlier findings by Bahce and Memis (2013), respondents who report unpaid care work in the household and who report being discouraged due to adverse labor market conditions as the primary reason for not

looking for work, hold specific individual characteristics. The entire former group corresponds to women at prime age and majority of the latter are men at their prime age. As an approximation to that group, here we limited our sample to prime age respondents and rerun the test separately for women and men. By this way at least we expected to derive some implications for different subgroups whose degree of attachment show variations by the reason for not looking for work.

As shown in tables 4 and 5, we cannot reject the null hypothesis of no difference between the marginally attached and not attached men at prime age, whereas for women in the case of one year transition we find that marginally attached significantly differ from not attached with respect to their transition to employed state. We also see that marginally attached women at prime age behave similar to the unemployed in transiting to the employed state when two and three year transitions are taken into account. Men at prime age appear to be closer to the not attached in comparison to their female counterparts.

Table: 4
T-Test Statistics of Equality of Means – Prime Age Women

	2006-2007	2006-2008	2006-2009
$pME = pUE$	-0.20*	-0.16	-0.14
$pUN = pMN$	-0.33***	-0.23*	-0.31***
$pME = pNE$	0.077**	0.063	0.05
$pMU = pNU$	0.001	0.021	-0.005

Notes: p-values are reported here, *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table: 5
T-Test Statistics of Equality of Means – Prime Age Men

	2006-2007	2006-2008	2006-2009
$pME = pUE$	-0.42***	-0.47***	-0.18
$pUN = pMN$	-0.51***	-0.48***	-0.48***
$pME = pNE$	0.006	-0.047	0.10
$pMU = pNU$	0.013	0.14	-0.04

Notes: p-values are reported here, *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

In order to explore whether the marginally attached state is different both from the unemployed and the not attached, no matter what the characteristics of individuals are, we estimated the conditional transition probabilities. We first pooled the marginally attached with not attached then pooled the marginally attached with unemployed and perform the estimations for three labor states based on one, two and three year transitions. The dependent variable here takes values from 1 to 3.

In order to capture the impacts of the individual characteristics, applying a multinomial logistic regression; we condition the transition probabilities on the individual characteristics and calculate the conditional transition probabilities. Results obtained are presented in Appendix in Tables A1-6. We test the statistical equivalence of the unemployed, the marginally attached and the not attached labor force states using the likelihood ratio statistics where we compare the restricted (without interaction terms) and unrestricted estimation (with interaction terms) results. Our regressions control for several individual characteristics like age, age squared, sex, marital status, education level and the presence of dependent children or elderly in the household.

The LR test shows that the marginal attachment corresponds to a labor force state distinct from both the unemployed and the not attached and the difference between these labor force states is significant even when different characteristics of the respondents are controlled for (Table 6). These results underline the need for the marginally attached to be identified as a separate labor market state. This is particularly true for certain subgroups such as women at prime age. The inclusion of marginally attached within the not attached group i.e. not participants in the labor market, which is currently done in Turkey is not supported by the empirical evidence established in this study.

Table: 6
LR Test Statistics

	2006-2007	2006-2008	2006-2009
Marginally Attached and Unemployed	313.61	248.00	241.83
Marginally Attached and Not attached	210.11	257.22	168.51

6. Conclusion

In this paper we seek to answer whether the job search criterion used in official measures is appropriate for distinguishing the unemployed from out of labor force group in Turkey. For this purpose, we explored whether those who express their will for work although they are not looking for a job are behaviorally a distinct group to the officially defined unemployed or not by using 2006-2009 rotational SILC panel data provided compiled by TurkStat.

Evidence obtained presents that the marginally attached are a distinct group both to the unemployed as well as to the not attached group in Turkey. This holds for one, two and three-year transitions between different labor force states over the period 2006-2009. The result is obtained even when several individual characteristics of the respondents are controlled for. Our results suggest that marginally attached need to be identified as a

separate labor market state particularly when women at prime age are taken into account. Official measures consider the marginally attached among the not attached group out of labor force, however this is not supported by the empirical evidence established in this study. Thus there is a need for an alternative standard such as wish to work instead of the conventional criteria currently used.

References

Antonopoulos, R. & I. Hirway, (2010), *Unpaid Work and the Economy: Gender*, Time Use and Poverty in Developing Countries. Palgrave Macmillan.

Bahce, S.A. & E. Memis, (2013), "Estimating the Impact of 2008-09 Economic Crisis on Work Time in Turkey', *Feminist Economics*, 19 (2) Special Issue on Critical and Feminist Perspectives on Financial and Economic Crises, April.

Bahce, S.A. & E. Memis, (2014), "The Impact of the Economic Crisis on Joblessness in Turkey", *The Economic and Labour Relations Review*, Vol. 25(1), 130–153.

Bittman, M. & T. Hill & C. Thomson (2007), "The Impact of Caring on Informal Carers' Employment, Income and Earnings: A Longitudinal Approach", *Australian Journal of Social Issues*, Vol. 42(2), 255-277.

Bora, A. & I. Ustun & N. Erdogan & T. Bora (2011), *Boşuna mı Okuduk? Turkiye'de Beyaz Yakalı Işsizligi*, Iletisim Yayinevi: Ankara.

Borbely, J.M. (2009), "U.S. Labor Market in 2008: Economy in Recession" in The 2008 Employment Story, *Monthly Labor Review*, Vol.132(3), 3-19, <http://www.bls.gov/opub/mlr/2009/03/mlr200903.pdf>, 28.08.2011.

Bulutay, T. & Enver Taştı (2004), "Informal Sector in the Turkish Labor Market", *Turkish Economic Association Discussion Papers*, No: 2004/22.

Byrne, D. & E. Strobl, (2004) "Defining Unemployment in Developing Countries: The Case of Trinidad and Tobago", *Journal of Development Economics*, Vol. 73, 465– 476.

Centeno, M. & P.A. Fernandes (2004), "Labor Market Heterogeneity: Distinguishing between Unemployment and Inactivity", *Banco de Portugal Economic Bulletin*, March 2004, 61-68.

Centeno, M. & J.R. Maria & A.A. Novo (2010), *The NAIRU and the Marginally Attached*, <http://www.aiel.it/bacheca/PESCARA/papers/Centeno_Maria_Novo.pdf>, 15.07.2012.

Elson, Diane (1993), "Gender-aware Analysis and Development Economics", *Journal of International Development*, 5(2): 237-247.

Gray, M. & A. Heath & B. Hunter (2005), "The Labor Force Dynamics of the Marginally Attached", *Australian Economic Papers*, Vol. 44(1), 1-14.

Gürsel, S. (2009), "Krizin Türkiye'de İşgücü Piyasalarına Etkisi, presented at Küresel Ekonomik Kriz ve Türkiye Ekonomisi'nin Geleceği", *Uluslararası İktisatçılar Zirvesi*, 22 Mayıs 2009.

Hunter, B.H. & M.C. Gray (2012), "Determinants of Indigenous Labor Supply Following a Period of Strong Economic Growth", *CAEPR Working Paper*, No. 81/2012.

ILO (2012), *World of Work Report*, <http://www.ilo.org/public/english/bureau/inst/download/wow2012.pdf>, 19.12.2013.

Ilkkaracan, İ. & S. Polat & H. Levent (2013), "Exploring different measures of wage flexibility in a developing economy context: The case for Turkey", *International Review of Applied Economics*, Vol. 27 (3).

Jones, S.R.G. & W.C. Riddell (1999), "The Measurement of Unemployment: An Empirical Approach", *Econometrica*, Vol. 67(1), 147-162.

Jones, S.R.G. & W.C. Riddell (2002), "Unemployment and Non-Employment: Heterogeneities in Labor Market States", *Department of Economics Working Paper Series*, 2002-05, McMaster University, Hamilton, Ontario, Canada.

Kingdon, G. & J. Knight (2000), "Are Searching and Non-Searching Unemployment Distinct States when Unemployment is High? The Case of South Africa", *Centre of African Economies Working Paper Series*, 2000/2.

Kızılırmak, A.B. (2008), "Labor Market Participation Decisions of Married Women: Evidence from Turkey," in A. Deshpande (ed.), *Globalization and Development: A Handbook of New Perspective*, Oxford University Press.

Memiş, E. & U. Öneş & A.B. Kızılırmak (2011), "Housewifisation of Women: Contextualising Gendered Patterns of Paid and Unpaid Work", in: Saniye Dedeoğlu & Adem Y. Elveren (eds.), *Gender and Society in Turkey: The Impact of Neoliberal Policies, Political Islam and EU Accession*. I.B. Tairus.

Milkman, R. (1976), "Women's Work and Economic Crisis: Some Lessons of the Great Depression", *Review of Radical Political Economics*, 8 (1): 71-97.

Ministry of Development and the World Bank (2009), *Social and Economic Benefits of More and Better Job Opportunities for Women in Turkey*.

Özbay, F. (1990), "Kadınların Ev İçi ve Ev Dışı Uğraşlarındaki Değişme", in Ş. Tekeli (ed.), *1980'ler Türkiyesi"nde Kadın Bakış Açısından Kadınlar*, İstanbul: İletişim Yayınları, 115-140.

Tansel, A. & H.M. Taşçı (2005), "Unemployment and Transitions in the Turkish Labor Market: Evidence from Individual Level Data", *IZA Discussion Paper*, No: 1663.

Tansel, A. & E.Ö. Kan (2012), "Labor Mobility across the Formal/Informal Divide in Turkey: Evidence from Individual Level Data", *TEK Discussion Paper*, No: 12/1.

APPENDIX

Table: A1
Multinominal Logit Estimation Results (2006 to 2007 Transition)

Variables	Marginally Attached and Not Attached Pool			
	U	E	U	E
Sex	-0.764***	-1.246***	-0.788***	-1.160***
	(0.099)	(0.076)	(0.090)	(0.072)
Marital Status	-0.413***	0.010	-0.393***	0.001
	(0.123)	(0.092)	(0.111)	(0.087)
University	0.576***	0.153	0.554***	0.126
	(0.186)	(0.189)	(0.164)	(0.169)
No school	-0.820***	0.092	-0.737***	0.039
	(0.144)	(0.106)	(0.132)	(0.099)
Primary	-0.366***	-0.163*	-0.239***	-0.132
	(0.101)	(0.092)	(0.091)	(0.085)
Age	0.083***	0.072***	0.095***	0.070***
	(0.020)	(0.013)	(0.019)	(0.012)
Age^2	-0.001***	-0.001***	-0.002***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Child	0.076	0.430***	-0.072	0.340***
	(0.096)	(0.077)	(0.086)	(0.072)
Elderly	-0.408***	-0.008	-0.505***	-0.056
	(0.122)	(0.085)	(0.112)	(0.080)
M	1.251	1.054		
	(0.877)	(0.839)		
M*Married	-0.214	-0.357		
	(0.310)	(0.307)		
M*University	-0.605	-0.436		
	(0.414)	(0.432)		
M*No school	0.844**	-0.434		
	(0.362)	(0.352)		
M*Primary	0.788***	0.398*		
	(0.247)	(0.241)		
M*Age	0.005	-0.036		
	(0.053)	(0.047)		
$M*Age^2$	0.000	0.001		
	(0.001)	(0.001)		
M*Child	-0.743***	-0.735***		
	(0.233)	(0.231)		
M*Elderly	-0.670**	-0.463*		
	(0.322)	(0.276)		
M*Sex	-0.242	0.819***		
	(0.265)	(0.266)		
Constant	-2.259***	-2.399***	-2.256***	-2.283***
	(0.331)	(0.233)	(0.303)	(0.221)
Observations	13,789	13,789	13,789	13,789

*Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1*
Note: The dependent variable takes values 1, 2 and 3 for three different states whose origin state is common which is the pooled group (marginally attached and non-attached) but destination state is different unemployed, employed and the pooled group respectively. The base outcome is staying in the origin state i.e. the marginal and non-attached pool.

Table: A2
Multinominal Logit Estimation Results (2006 to 2007 Transition)

Variables	Marginally Attached and Unemployed Pool			
	E	N	E	N
Sex	-1.355***	-1.623***	-1.804***	-2.426***
	(0.249)	(0.228)	(0.137)	(0.127)
Marital Status	-0.971***	-0.483	-1.041***	-0.751***
	(0.345)	(0.321)	(0.201)	(0.188)
University	1.377***	1.883***	0.213	0.392*
	(0.477)	(0.442)	(0.261)	(0.236)
No school	0.168	-0.281	0.207	0.028
	(0.347)	(0.314)	(0.227)	(0.209)
Primary	1.151***	0.999***	0.645***	0.472***
	(0.275)	(0.249)	(0.164)	(0.149)
Age	0.261***	0.241***	0.195***	0.219***
	(0.058)	(0.054)	(0.034)	(0.033)
Age^2	-0.003***	-0.003***	-0.003***	-0.003***
	(0.001)	(0.001)	(0.000)	(0.000)
Child	0.350	0.530**	-0.221	0.084
	(0.253)	(0.235)	(0.154)	(0.145)
Elderly	-0.085	-1.040***	-0.077	-0.535***
	(0.246)	(0.241)	(0.156)	(0.152)
M	3.260**	1.834		
	(1.309)	(1.246)		
M*Married	0.343	0.136		
	(0.447)	(0.434)		
M*University	-1.406**	-2.166***		
	(0.603)	(0.589)		
M*No school	-0.143	-0.061		
	(0.480)	(0.460)		
M*Primary	-0.730**	-0.763**		
	(0.356)	(0.334)		
M*Age	-0.173**	-0.205***		
	(0.076)	(0.071)		
$M*Age^2$	0.002*	0.002***		
	(0.001)	(0.001)		
M*Child	-1.018***	-0.834***		
	(0.331)	(0.320)		
M*Elderly	-0.992**	0.568		
	(0.386)	(0.356)		
M*Sex	0.349	1.196***		
	(0.350)	(0.342)		
Constant	-4.269***	-3.179***	-2.380***	-2.228***
	(1.026)	(0.950)	(0.596)	(0.566)
Observations	2,086	2,086	2,086	2,086

*Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1*

Table: A3
Multinominal Logit Estimation Results (2006 to 2008 Transition)

Variables	Marginally Attached and Not Attached Pool			
	U	E	U	E
Sex	-0.422***	-1.141***	-0.408***	-1.116***
	(0.110)	(0.070)	(0.100)	(0.066)
Marital Status	-0.119	-0.114	-0.153	-0.159**
	(0.133)	(0.083)	(0.116)	(0.078)
University	1.202***	0.650***	0.873***	0.669***
	(0.186)	(0.168)	(0.174)	(0.149)
No school	-1.105***	0.027	-0.975***	-0.022
	(0.164)	(0.101)	(0.143)	(0.096)
Primary	-0.253**	0.094	-0.127	0.123
	(0.107)	(0.086)	(0.095)	(0.081)
Age	0.000	0.034***	0.027	0.036***
	(0.022)	(0.011)	(0.019)	(0.011)
Age^2	-0.001**	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Child	0.295***	0.533***	0.211**	0.538***
	(0.106)	(0.070)	(0.093)	(0.066)
Elderly	-0.493***	0.011	-0.349***	0.007
	(0.137)	(0.077)	(0.115)	(0.074)
M	0.097	0.652		
	(0.865)	(0.830)		
M*Married	-0.516*	-0.791***		
	(0.309)	(0.296)		
M*University	-2.570***	-0.190		
	(0.660)	(0.383)		
M*No school	1.029***	-0.738*		
	(0.350)	(0.392)		
M*Primary	0.797***	0.376		
	(0.246)	(0.245)		
M*Age	0.034	-0.054		
	(0.051)	(0.046)		
M*Age^2	-0.000	0.001**		
	(0.001)	(0.001)		
M*Child	-0.064	0.337		
	(0.241)	(0.233)		
M*Elderly	0.697**	0.087		
	(0.279)	(0.265)		
M*Sex	-0.018	0.441*		
	(0.292)	(0.246)		
Constant	-1.177***	-1.446***	-1.463***	-1.457***
	(0.352)	(0.209)	(0.314)	(0.200)
Observations	12,907	12,907	12,907	12,907

Table: A4
Multinominal Logit Estimation Results (2006 to 2008 Transition)

| Variables | Marginally Attached and Unemployed Pool | | | |
	E	N	E	N
Sex	0.414*	1.823***	0.991***	2.574***
	(0.225)	(0.263)	(0.133)	(0.138)
Marital Status	-0.957***	-0.617	-0.436**	0.642***
	(0.253)	(0.381)	(0.196)	(0.197)
University	-0.859**	-2.141***	-1.003***	-0.783***
	(0.336)	(0.457)	(0.287)	(0.245)
No school	0.694**	-1.104**	0.509**	-0.103
	(0.296)	(0.446)	(0.238)	(0.227)
Primary	0.054	-1.405***	0.064	-0.722***
	(0.211)	(0.275)	(0.166)	(0.157)
Age	0.064	-0.098*	0.040	-0.083***
	(0.046)	(0.059)	(0.034)	(0.032)
Age^2	-0.000	0.002**	-0.000	0.001***
	(0.001)	(0.001)	(0.000)	(0.000)
Child	-0.467**	-0.841***	-0.538***	-0.873***
	(0.192)	(0.256)	(0.154)	(0.152)
Elderly	-0.023	-0.422	-0.080	-0.481***
	(0.191)	(0.301)	(0.155)	(0.164)
M	1.451	0.089		
	(1.261)	(1.333)		
M*Married	1.227***	1.523***		
	(0.425)	(0.475)		
M*University	-0.969	1.680***		
	(0.756)	(0.572)		
M*No school	-0.059	1.815***		
	(0.537)	(0.585)		
M*Primary	0.020	0.935***		
	(0.350)	(0.358)		
M*Age	-0.010	0.117		
	(0.072)	(0.074)		
M*Age^2	-0.001	-0.002**		
	(0.001)	(0.001)		
M*Child	-0.173	-0.030		
	(0.333)	(0.339)		
M*Elderly	0.129	0.324		
	(0.359)	(0.393)		
M*Sex	-0.154	-1.123***		
	(0.377)	(0.353)		
Constant	-1.736**	0.706	-1.157*	0.327
	(0.804)	(1.064)	(0.597)	(0.574)
Observations	1,936	1,936	1,936	1,936

Table: A5
Multinominal Logit Estimation Results (2006 to 2009 Transition)

Variables	Marginally Attached and Not Attached Pool			
	U	E	U	E
Sex	-0.552***	-1.066***	-0.481***	-1.089***
	(0.099)	(0.073)	(0.095)	(0.069)
Marital Status	-0.601***	-0.107	-0.335***	-0.094
	(0.114)	(0.087)	(0.108)	(0.083)
University	0.149	0.398**	-0.019	0.440***
	(0.188)	(0.167)	(0.177)	(0.146)
No school	-1.512***	-0.252**	-1.396***	-0.280***
	(0.144)	(0.102)	(0.130)	(0.096)
Primary	-0.673***	-0.094	-0.643***	-0.099
	(0.097)	(0.086)	(0.089)	(0.080)
Age	0.072***	0.029**	0.059***	0.032***
	(0.018)	(0.012)	(0.017)	(0.012)
Age^2	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Child	0.150	0.259***	0.130	0.231***
	(0.094)	(0.072)	(0.087)	(0.068)
Elderly	-0.264**	-0.018	-0.360***	-0.058
	(0.113)	(0.079)	(0.107)	(0.076)
M	0.276	0.825		
	(1.041)	(0.816)		
M*Married	1.719***	-0.088		
	(0.378)	(0.300)		
M*University	-1.244**	-0.348		
	(0.606)	(0.377)		
M*No school	1.130***	-0.040		
	(0.359)	(0.338)		
M*Primary	0.382	-0.036		
	(0.255)	(0.242)		
M*Age	-0.075	-0.028		
	(0.065)	(0.045)		
M*Age^2	0.001	0.001		
	(0.001)	(0.001)		
M*Child	-0.073	-0.081		
	(0.278)	(0.227)		
M*Elderly	-0.955**	-0.368		
	(0.428)	(0.267)		
M*Sex	0.659	-0.059		
	(0.413)	(0.252)		
Constant	-1.654***	-0.712***	-1.453***	-0.694***
	(0.306)	(0.221)	(0.290)	(0.211)
Observations	12,142	12,142	12,142	12,142

Table: A6
Multinominal Logit Estimation Results (2006 to 2009 Transition)

Variables	Marginally Attached and Unemployed Pool			
	E	N	E	N
Sex	-0.910***	-1.861***	-1.801***	-2.535***
	(0.269)	(0.283)	(0.147)	(0.144)
Iarital Status	-0.037	0.292	-0.150	-0.075
	(0.372)	(0.366)	(0.205)	(0.202)
University	0.662	0.202	-0.296	-0.359
	(0.488)	(0.485)	(0.294)	(0.264)
No school	0.112	-0.634*	0.083	-0.567**
	(0.369)	(0.364)	(0.227)	(0.228)
Primary	1.221***	0.611**	0.189	-0.183
	(0.313)	(0.299)	(0.170)	(0.161)
Age	0.126**	0.185***	0.144***	0.121***
	(0.062)	(0.064)	(0.037)	(0.034)
Age^2	-0.002**	-0.003***	-0.002***	-0.002***
	(0.001)	(0.001)	(0.000)	(0.000)
Child	-0.073	0.337	0.119	0.245
	(0.303)	(0.299)	(0.163)	(0.157)
Elderly	-0.386	-0.163	-0.160	-0.064
	(0.280)	(0.275)	(0.174)	(0.164)
M	0.007	-0.011	-1.150*	-0.154
	(0.015)	(0.015)	(0.644)	(0.604)
M*Married	0.944	1.000	-1.801***	-2.535***
	(1.546)	(1.432)	(0.147)	(0.144)
M*University	0.887*	-0.461	-0.150	-0.075
	(0.524)	(0.469)	(0.205)	(0.202)
M*No school	-2.055***	-0.124	-0.296	-0.359
	(0.764)	(0.594)	(0.294)	(0.264)
M*Primary	-0.206	0.302	0.083	-0.567**
	(0.502)	(0.490)	(0.227)	(0.228)
M*Age	-1.516***	-0.744**	0.189	-0.183
	(0.392)	(0.374)	(0.170)	(0.161)
$M*Age^2$	-0.132	-0.184**	0.144***	0.121***
	(0.087)	(0.078)	(0.037)	(0.034)
M*Child	0.002	0.003***	-0.002***	-0.002***
	(0.001)	(0.001)	(0.000)	(0.000)
M*Elderly	0.567	-0.218	0.119	0.245
	(0.424)	(0.382)	(0.163)	(0.157)
M*Sex	-0.789	-0.236	-0.160	-0.064
	(0.504)	(0.375)	(0.174)	(0.164)
Constant	-0.067***	0.019	-1.150*	-0.154
	(0.026)	(0.020)	(0.644)	(0.604)
Observations	1,790	1,790	1,790	1,790