In Limbo:

Exploring Transition to Discouragement

Ayça Akarcay Gürbüz
Sezgin Polat
Mustafa Ulus

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**GALATASARAY UNIVERSITY
ECONOMIC RESEARCH CENTER**

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Ayça Akarçay Gürbüz[§], Sezgin Polat[†§] and Mustafa Ulus[§]

[§]Galatasaray University, GIAM

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Abstract

Over the last decade, alongside high unemployment rates, the number of discouraged workers remained high in Turkey indicating a structural problem of the labor market. Moreover, the ratio of men among discouraged workers is particularly important compared to other OECD countries where the discouragement is thought to be related to gender issues. Discouraged worker literature mainly investigates differences in the transition rates from unemployment and discouragement into employment. Few studies, however, explicitly explore who becomes discouraged and why. In the Turkish labor market, the average transition from unemployment into discouragement is important and displays vast inter-regional disparities implying that local labor market (LLM) conditions matter. This paper aims to address factors affecting transition to discouragement in the Turkish labor market using pooled cross-section data from household labor force surveys for the period between 2006 and 2011, considering individual and household characteristics, as well as various LLM conditions. Our findings indicate that low qualifications and poor market conditions both lead to higher discouragement.

JEL codes: J21, J64, R23, C31

Key words: Discouraged workers, Local labor market, Transition, Cross-section data, Job search

1 Introduction

Assessing the true extent of joblessness is not an easy task. Although the unemployment rate is the most commonly used indicator, it gives only partial information about the jobless population, as it merely comprises persons who are not working, immediately available for work, and who are actively seeking a job.[1] Non-employed individuals who are not actively looking for a job are counted as inactive. However, it is now a stylized fact that in many countries, a sizeable number of individuals who are considered as out of the labor force do in fact declare that they would like to work, but are not actively searching. This sub-population of inactivity is referred to as passive searchers or as individuals marginally attached to the labor force. The reasons for declining to search can be various, and might depend on individual and household characteristics as well as on economic conditions. Using the regular question asking individuals their reasons for failing to actively search for a job, it is possible to single out the discouraged workers as those who are not searching in the belief that there are no jobs, either for job market related (no available job) or personal reasons (no suitable job).[2] Other marginally attached individuals who refrain from job search declare reasons such as household chores, family responsibilities, disability, and illness. This paper tries to shed some light on the reasons that might cause some workers to give up searching for work in Turkey, a developing country where the number of jobless persons who are ready to work but are not searching is rather high. By making best use of information available within the Household Labor Force Surveys (HLFSs) we try to test objectively the subjective answers of the survey participant classified as discouraged: is it her (no suitable job), the market (no available job) or both?

Whether the passive searchers should be counted as unemployed or not is a controversial issue. Arguably, drawing the line between activity and inactivity by the seeking-work criterion is even more questionable for developing countries (Hussmanns et al. 1990, Byrne and Strobl, 2004, Hussmanns, 2007, Burns et al. 2010). In developed economies, public and private employment agencies have an active role. Moreover, unemployment benefits conditioned upon active search are much more generous and affect a larger portion of the unemployed. For developing economies where employment agencies still have a limited role and informal employment is high, job search intensity is, in comparison, a more subjective matter. Many job seekers use traditional non-institutional methods of job search, availing themselves of word of mouth and social networks composed of relatives and friends. For discouraged workers in particular, it is highly problematical to use the intensity and methods of job search to define how actively their search is being performed. Accordingly,

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[1]There is a considerable body of work on the sufficiency of the unemployment rate as it is defined by ILO to measure the joblessness problem accurately. Among others see OECD (1995), Murphy and Topel (1997), Juhn, Murphy and Topel (2002), Jones and Ridell (2006), Brandolini, Cipollone and Viviano (2006), Bradbury (2006). Active population also underestimates joblessness in that it comprises underemployment related to involuntary part-time employment. The BLS for instance has developed alternative, extended, measures of unemployment since 1994 (Bregger and Haugen, 1995).

[2]There is not a unique definition of discouragement. It depends on the specific questions asked, differing across countries and over time. OECD (1995) gives a more complete account of the phenomenon for different countries.

compared to a labor market in an advanced economy, the difference between an unemployed and a discouraged worker becomes blurred. Thus, neglecting the population of discouraged workers may lead to an understatement of the unemployment rate.

However, if the definition of unemployment is broadened to include passive searchers, then its accuracy naturally comes into question, as it is more subjective than the widely accepted standard definition of unemployment. How should we assess the individual desire to work if no effort is being put into finding a job? Accordingly, measuring the attachment of these individuals to the labor market becomes crucial. The empirical literature that rests upon the distinction between the inactive and unemployed populations raises two basic issues. The first is to test whether unemployment and out-of-labor-force are behaviorally distinct states, i.e., whether their transition probabilities to employment are different.[3] The second is to test whether passive searchers constitute a distinct state within the inactive population, and the degree to which they actually resemble the unemployed. Although the results are mixed, generally speaking, marginally attached workers are situated somewhere between unemployed and inactive. In other words, their transition probability to employment is higher than that of other inactive individuals, and lower than that of the unemployed.[4] Moreover, among the marginally attached population discouraged workers do not have the highest labor market attachment (Jones and Riddell, 1999 and 2006, and Brandolini et.al., 2006). Nevertheless, discouraged workers have received much attention in the literature due to the economic nature of the problem. For instance, the incidence of non-search due to illness or disability is probably random among the non-employed population, while it can be argued that discouraged workers represent highly excluded individuals with the lowest employment prospects.

Quite a few studies, however, do explicitly explore who becomes discouraged and why. This paper aims at answering this question in the case of Turkey. Existing studies are mainly concentrated on the impact of several personal and household characteristics on discouragement, such as age, educational level, race, marital status, number of children and so on. Some studies have analyzed the impact of very specific factors on discouragement, such as poor local childcare provision (van Ham and Büchel, 2004) or social network effect (Burns et al., 2010). However, the labor market related dimension of the problem has attracted scant interest and has mainly been captured by unemployment or similar variables.[5]

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[3]See Clark and Summers (1979), Flinn and Heckman (1983), Gonul (1992), Jones and Riddell (1999) and (2006), Gray et al. (2005), Garrido and Toharia (2004), Byrne and Strobl (2004), Brandolini et al. (2006), Kingdon and Knight (2006), Pedersen and Schmidt (2011).

[4]Most of the studies are focused on developed countries. Byrne and Strobl (2004) is a notable exception and shows that in Trinidad and Tobago, for some subpopulations unemployed and marginally attached workers can have the same transition probability to employment. This result implies that seeking work criterion is not always necessarily meaningful, especially in a developing country.

[5]For instance Finegan (1981) estimates the sensitivity of the number of discouraged workers in the USA to cyclical variations measured by a predicted unemployment rate using the Federal Reserve Board's Index of Capacity Utilization in Manufacturing. Van Ham et al. (2001) investigate discouragement in the Netherlands and capture the labor market dimension of the problem by a generic variable, namely local underemployment. The underemployment definition includes all jobless persons willing to work, workers having a job of less than 12 hours a week, and workers holding a

In Turkey discouragement has remained high and persistent during the last decade, signaling a structural feature of the market beyond cyclical and gender-based factors. According to HLFSs of the Turkish Statistical Institute (TurkStat), the average number of discouraged workers between 2006 and 2011 amounted to 641,000, which corresponds to nearly 24% of all unemployed workers.

As mentioned, differences in the transition rates from different labor market states into employment has attracted the interest of many researchers. Yet, transitions from unemployment into inactivity are also considerable in many countries, including Turkey. For example, using panel data from the Survey on Income and Living Conditions (SILC) Tansel and Kan (2012) found that for a worker who was unemployed in 2006, the probability of transition into wage employment in 2007 was 41.6% and into self-employment 6.7%, while his transition probability into inactivity was 23.8%. Arguably a significant portion of these transitions into inactivity was composed of discouraged workers.[6] This in turn implies that a sizeable quantity of individuals are excluded from the labor market because they have lost all hope of finding a job, and that not just unemployment but discouragement too contributes to underutilization of the labor force. Consequently, scrutiny of the structural factors influencing discouragement apart from cyclical effects would seem to be quite important in order to understand the nature of the problem and consider the policy options.

From a theoretical point of view, any factor that may influence either the costs of, or the returns to, job search can have a potential impact on discouragement. In this study, using cross-section microdata (2006-2011) from HLFSs , a pooled probit model is estimated to capture the impact of individual, household and local labor market (LLM) indicators on the discouragement of workers, controlling for region and year effects. More specifically we try to answer the following question: "Among non-employed individuals who declared that they were unemployed one year ago, some still desire and are ready to work but have given up searching. Why?" The results indicate that LLM conditions and individual characteristics are both helpful in the effort to identify reasons for transition to discouragement, notably for men.

The article is organized as follows. The next section gives background information about discouraged workers in Turkey. Section 3 provides a conceptual framework that incorporates basic job search theory in order to account for discouraged workers. Section 4 discusses data and factors affecting discouragement in a three-category breakdown: individual characteristics, household characteristics, and local labor market conditions. Section 5 presents and discusses the results of pooled probit estimations for men and women separately. The final section concludes with a discussion of our main results and a sketch of the policy implications.

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job the level of which is too low with respect to their educational level.

[6]SILC data does not include information on discouraged workers, nor regional data at NUTS2 breakdown, which is an important shortcoming given the large inter-regional disparities in terms of labor market characteristics. According to our calculations based on HLFSs, between 2006 and 2011, among the inactive population who declared that they were searching for a job one year ago (unemployed), 48% left the labor force due to discouragement, and their transition probability to inactivity was 19.1%, and 9.2% to discouragment (Table 3). In other words, nearly half of the transition from unemployment to inactivity was due to discouragement during the 2006-2011 period on average.

2 Discouraged workers in Turkey

Over the last decade, alongside high unemployment rates, the number of discouraged and other marginally attached workers remained high in Turkey, indicating an important joblessness problem. Table 1. shows that the unemployment rates according to narrow and extended definitions were quite stable and high in level throughout the period between 2006 and 2011. The incidence of discouraged workers in Turkey is also among the highest within OECD countries. Discouraged workers amounted to 2.5% of the extended labor force and 26% of the unemployed in 2011 (see Table 2 for a comparison with selected OECD countries where data were available for 2010/2011). Moreover, the ratio of men to women among discouraged workers is particularly high compared to the other OECD countries where discouragement is thought to be related to gender issues.[7] The impact of cyclical downturns usually makes itself felt on female labor force participation via collective household labor supply behaviour. The added worker effect may dominate the discouragement effect following a household shock. These effects have also been discussed in the case of Turkey (Polat and Saraceno, 2010; Başlevent and Onaran 2003; Tansel, 2002). However, the persistent level of discouragement and the high share of men point to structural factors which need to be addressed separately.

Another noteworthy dimension of discouragement in Turkey is the substantial regional disparities. Table 3. displays average regional transition probabilities of formerly employed, unemployed and non-participant individuals into different labor market states.[8] For instance, transition from unemployment to employment can be twice as high in some regions compared to others (e.g. 51% in Istanbul, 26% in Mardin). When it comes to transitions from unemployment into discouragement, our population of interest, regional disparities are even more striking, varying between 1.4% (in Bursa) and 37.9% (in Sanliurfa). It is worth noting that transitions from unemployment into discouragement are especially high in the regions where transitions from unemployment into employment are low. These descriptive observations suggest that discouragement is linked to labor market conditions. As for the transitions from employment and from non-participation into other labor market states, we observe a relatively smaller dispersion.

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[7]As previously pointed out, the less clear distinction between active and passive searchers in developing countries also helps to explain the relatively less gendered nature of discouragement in the Turkish labor market. Another reason is the well-known low rate of female labor force participation in Turkey (for a recent study see Ilkkaracan, 2012).

[8]In Turkey there is no panel data set that allows us to compute transition probabilities between different labor market states including discouraged and other marginally attached workers. However, HLFSs give information about individuals' labor market status at the survey time and one year before the survey time. Accordingly, we have used this information to derive backward transition probabilities.

3 Conceptual Framework

Our primary concern is the change in the behavior of individuals who were previously unemployed but have currently given up looking for a job after a period of unsuccessful search. From a theoretical point of view, basic job search theory has considerable explanatory power.[9] To the extent that imperfect information prevails in the labor market, looking for work is a costly, time-consuming activity. In order to hold a paid job, an individual must first take the decision to search. Then, the duration of searching for a job will depend on various factors, including individual characteristics and labor market conditions. The optimal strategy of an unemployed worker would be to collect job (wage) offers and accept any wage offer higher than her reservation wage. The reservation wage is such that being unemployed or working for the reservation wage are equal options. Any change that would increase the value of being unemployed is therefore reflected by a higher reservation wage.

An individual worker associates different utility levels to all three distinct labor market states, namely, employment, unemployment or inactivity. The discounted expected utility of being in one of the labor market states depends on the individual's instantaneous gains as well as her future prospects in that state. Without loss of generality, if direct transitions from inactivity to employment are ruled out, labor force participation decisions are taken by comparing the discounted expected utility levels of being unemployed and being inactive. Non-employed individuals for whom the value of being inactive is higher than the value of looking for a job stay out of the labor force. Yet this inactive population is not homogeneous. For some inactive individuals, the expected discounted value associated with the average available job in the economy is higher than the value of being a non-participant. Hence they would prefer being employed to being inactive. However, the very same workers can find job search too costly if individual employment prospects are poor. In other words, their reservation wage, which is identical to the expected utility of unemployment, is lower than the utility of inactivity. They then prefer to stay out of the labor force even though they are willing to work. These are the individuals who may be classified as discouraged workers.

In a simple manner, this basic theoretical framework allows us to consider the potential impact of any change in the economic environment, individual characteristics, and household-related issues on the decision to cease actively searching. Any change that decreases the returns to (or increases the costs of) job search should decrease the reservation wage and accordingly increase the number of discouraged workers.[10] In this study, no reservation wage equation is estimated, or any kind of link established between the reservation wage and discouragement. The objective here

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[9]For a discussion of discouraged workers in the basic job search framework see Cahuc and Zylberberg, 2004, pp.109-118

[10]Assume that the expected discounted utility of inactivity is stochastically distributed among the population according to a cumulative distribution function. In this case, the individuals for whom this discounted utility is just above the margin between inactivity and unemployment are the discouraged workers. The lower the gains associated with job search, the higher the number of discouraged.

is to take into account the straightforward insights of the search theory, and then relate them to the empirical findings on discouragement for Turkey. A priori, one may expect that a reduced quantity and lowered quality of job offers due to deteriorated economic conditions or insufficient personal skills should bring about a higher incidence of discouragement. The next section discusses in detail the factors which may be supposed to affect discouragement.

4 Data and Identification

HLFSs provide the most comprehensive individual labor market information for Turkey. Moreover, it is the sole data source concerning discouraged workers. Six years of cross-sectional data from 2006 to 2011 are used in this study. We focus on a specific subpopulation of discouraged workers and we consider only those who were previously unemployed (actively seeking a job) but have given up searching in the belief that there is no job available, although they still desire and are ready to work. The reason for this restriction is twofold. First, focusing on this very specific transition enables us to capture the underlying factors leading individuals to change their search behavior. Second, it helps us to overcome (at least partly) the subjectivity of the willingness to work of the discouraged workers, a major issue already mentioned. The U.S. Bureau of Labor Statistics (BLS), for instance, imposes a criterion of labor market attachment (having actively searched in the past 12 months).[11]

In HLFSs, participants are questioned on the survey date about their labor market status one year previously. We use this valuable information and restrict our sample to the individuals who declare having been jobless and having actively sought a job one year before the survey date (making them active searchers, i.e. unemployed in the narrow sense a year ago). Among these individuals, those who gave up searching in the current period because they believed that they would not be able to find a job, although they were still willing to work, constitute our discouraged worker sample. In other words, individual information on past labor market status makes it possible to deduce limited transition from previous to actual year. Ideally, a panel data set allowing direct observation of the transitions from unemployment to discouragement should be used. However, in Turkey no such data are available. It might reasonably be argued that the backward information provided by HLFSs on the past labor market status of individuals is less reliable. Nevertheless, we believe that there is no obvious reason for an individual to falsely report the change in his search behavior.[12]

In the selection of our sample we impose a second constraint and select individuals with past work experience. We initially ran our estimations for both samples (with and without past work ex-

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[11]The BLS defines marginally attached workers (including discouraged workers) as those who "...wanted and were available for work and had looked for a job sometime in the prior 12 months. They were not counted as unemployed because they had not actively searched for work in the past 4 weeks".

[12]For a consistency check, we calculated the unemployment rate according to individual labor status reported for the previous year. We found that the calculated rate based on individual reporting exceeds the official rate by 1.7 point on average on a yearly basis for the period 2006-2010.

perience). The results revealed that individuals not having past work experience were less affected by the explanatory variables considered here compared with those having past work experience. It is thus highly probable that the degree of attachment of the population with past work experience is higher. Our sample of discouraged workers with the previous active search and past work experience constraints represents 29% of total discouraged workers.[13]

In order to account for the impact of individual characteristics and local labor market conditions on discouragement, the following simple linear probability model is estimated:

$$Pr(M_{i,e,r,t} = 1) = \phi \left(\beta_j X_{i,e,r,t} + \beta_k L_{e,r,t} + \gamma_e + \delta_r + \mu_e \right) \tag{1}$$

where the dependent variable $M_{i,e,r,t}$ is a dummy variable that takes the value of 1 if the individual who actively sought a job in the previous year declares her/himself to have ceased actively searching in the current year (unemployed at $t-1$ and discouraged worker at t). It takes the value 0 if the individual who was actively seeking a job in the previous year declares her/himself as continuing active search in the current year (unemployed at both $t-1$ and t). The subscripts indicate education level e, region r and year t, respectively. The matrix $X_{i,e,r,t}$ includes individual characteristics comprising variables such as gender, age, four marital status dummies (married, never married, divorced, spouse died), five household status dummies (head or spouse, child, daughter/son-in-law, grandchild, other), one location of residence dummy (urban, rural), and three educational level dummies (less than secondary, secondary, tertiary).

Household status encompasses individual and other household characteristics. The link between discouragement and the household as a decision unit was initially investigated as a gender issue (Mincer, 1966; Lundberg, 1985). Gender based analyses of discouragement emphasize cyclical aspects and evaluate female labor force participation as an explicit or implicit result of a shock on the market reflected as a shock on the participation of the household (discouragement vs. added worker effect). Here we are concerned only with the discouragement effect (continuing search vs. giving up search), and do not confine ourselves to women's decisions. Household variables are particularly detailed because they indirectly cover household aspects of the discouragement decision. Thus, in addition to household status, we have chosen variables that are likely to affect both men and women members of the household: household dependency rate (where the dependent population is defined as the population below 15 years and past 64 years of age), and the variation in the household employment rate. The variation in the household employment rate allows us to determine the impact of a shock to the household on discouragement. If discouragement is not merely a gendered, or a head/ spouse, issue then a shock to the overall household employment rate is likely to capture the household effect on discouragement better than head employment for

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[13]Additionally, the sample excludes the population over 65 years of age, those for whom past employment and/or occupational status is missing, and households having only one working member over 15 years of age (in order to capture household effects).

instance (a variable that is used in gendered discouragement studies).

Occupational status and employment type dummies are added to control for the last job characteristics. γ_e, δ_r and μ_e stand for education, region and year effect, respectively. $\phi(.)$ is the standard normal distribution function. $L_{e,r,t}$ is a set of LLM indicators (discussed below) specific to education group e in each region r at year t (education by region by year= 3 x 26 x 6 = 468).

Summary statistics from Table 4 reveal a number of characteristics that distinguish the discouraged workers from the unemployed at t (both unemployed at $t-1$):

- the share of discouragement is lower among women (10% discouraged vs 20% unemployed) and urban populations (57% discouraged vs 75% unemployed)

- the discouraged live in households with greater dependency rates (2.2 vs 1.4), and they are less educated (82% vs 70% have less than secondary education)

- the discouraged had worked more in irregular jobs (83% of discouraged vs 92% of unemployed had been regular employees, while 10% vs 4% had been self-employed) and in less qualified jobs in terms of occupational status (46% of discouraged vs 31% of unemployed had worked in elementary occupations, 7% vs 3% had worked as skilled agricultural and fishery workers).

- More interestingly, the regional concentration of discouraged workers is much more important than that of the unemployed: 53% of discouraged workers against only 20% of the unemployed live in the Eastern and Southeastern regions (which confirms our findings from the transition matrix).

4.1   Local Labor Market Indicators

Given large-scale regional disparities, the local conditions of labor markets have gained increased interest in the analysis of labor market decisions. The HLFSs provide the most detailed regional information with a NUTS2 breakdown into 26 provinces. This allowed us to construct variables controlling for LLM conditions, an aspect that is crucial for the analysis of the Turkish labor market where regional disparities are particularly striking. Besides the large inter-regional standard deviations in transitions from unemployment to discouragement (Table 3), the various indicators of labor market slack also reveal wide regional disparities. Table 5. presents the summary statistics for the LLM variables used in the estimations. All LLM indicators are skill-specific variables. Three education levels–namely less than secondary, secondary and tertiary–are chosen for skill proxies in order to control for skill-related heterogeneities on the labor market. Below, we discuss how different variables are likely to capture LLM conditions that affect discouragement. All variables are considered for wage employment in the private sector. Public sector employment is excluded in LLM variables, since firstly, it is a poor indicator for labor market dynamics in general, and second,

the public employment system in Turkey is subject to central competitive examinations. Within the private sector, non-wage employment (unpaid workers and self-employed) is also excluded since it fails to give a reliable account of employment opportunities. As we would expect a labor market with a high share of private sector employment as opposed to a market with a high share of public employment to be more favorable in terms of employment opportunities in relation to market dynamics, we have considered a LLM indicator defined as the share of private sector wage employment in total employment. This is the only LLM variable including total employment (as a denominator).

The conventional LLM variable is the regional unemployment rate, which is presumed to capture the level of market depression.[14] The more the market is depressed, the worse the prospects are for finding a job and the higher discouragement is. Our study accounts for this effect by considering the broad unemployment rate defined as the entire ready-to-work jobless population, comprising both conventional unemployed and all marginally attached, with no further constraints on reason for lack of search, previous status or experience. The educational distribution of joblessness (broad unemployment) seems to be least related to discouragement compared to other LLM variables. Joblessness across educational levels is 18.2%; 22% and 14.5% for less than secondary, secondary and tertiary education levels respectively; whereas a vast majority of the discouraged population has less than secondary education. Joblessness is not necessarily the best indicator of labor market conditions, and the issue depends on the precise nature of joblessness. Obviously joblessness in markets with high turnover, low joblessness durations and a wide range of employment opportunities does not imply depression. In other words, the nature of joblessness may be ambiguous in that it is difficult to capture whether it is conjunctural or structural (flow or stock), and whether it is more or less voluntary.[15] A second indicator that is widely used is the employment rate, which accounts for variations in labor force participation. If it adequately captures labor market conditions, the expected relation between discouragement and the employment rate should be negative.

Informality is an important feature of the Turkish labor market. Informal employment at the aggregate level is 42.1% of total employment and 27.8% of non-agricultural employment in the year 2011.[16] Informality in private sector wage employment reveals heterogeneities both across regions and educational levels. The country average is 50%, 29% and 15% respectively for less than secondary, secondary and tertiary education levels, reaching a rate of around 80% for less than secondary education in eastern regions. Whether informality captures the labor market condition

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[14]Finegan (1981) points out some important shortcomings of using the unemployment rate as an index of labor market conditions while estimating discouraged worker effect. For instance, exogenous shifts of individuals between unemployment and discouragement, or misclassification of persons between these two categories, may imply a negative relationship between these two labor states where one would expect a positive cyclical relationship.

[15]Istanbul for instance accounts for 12% of the unemployed in our sample, against only 2% of the discouraged workers (Table 4 summary statistics)

[16]In conformity to TurkStat, we define informal employment as undeclared employment, i.e., individuals who are not registered with any social security institution due to their main job.

depends on the voluntary or involuntary nature of employment. If it is a sector in which individuals work because no better options are available, then it can be considered as a constrained, segmented sector capturing market tension. Using the recently available panel data from SILCs Tansel and Kan (2012) have shown that mobility from formal to informal employment is quasi nil, whereas there is a significant mobility from informal to formal employment. Also, using Household Budget Surveys (HBSs) Akarcay Gürbüz and Ulus (2011) show that households in lower income deciles have higher rates of informal employment. As informality is partly correlated with low education and income, and since mobility from formal to informal employment is nonexistent, it is reasonable to argue that share of informality in private sector wage employment is a reasonable indicator of market depression, especially where discouraged workers are concerned, given their low levels of education.

Tenure is another LLM variable, a proxy to capture the inverse effect of turnover on the labor market. Given the limited availability of labor market variables at the regional level, we use data on employees' length of tenure. Low turnover (equivalent to low job separation rates) may be the upshot of depressed markets. Hall (2006), for instance, shows that over half a century, the job finding rate is pro-cyclical in the US labor market. Sousa-Poza and Henneberger (2004) reach similar conclusions using cross-sectional data covering 25 countries, correlating job satisfaction, unemployment and quit intentions ("turnover intentions"). If the probability of finding a job decreases in depressed markets, then we would expect the probability of job separation due to voluntary quit to decrease. Naturally the other component of job separation is lay-off. Although the data do not allow us to differentiate between the two, we assume that the impact of tenure reflects the net effect. If tenure is an inverse proxy for turnover and it does has a positive impact on discouragement, we may infer that poor market conditions prevail. Akerlof et al. (1988) provide one of the early empirical pieces of evidence as regards the negative relation between quits and job satisfaction in depressed markets: "Quits increase as opportunities expand; the opportunities for job switching are significantly greater when unemployment is low than when it is high... labor market rationing prevents unhappy workers from changing places." (Akerlof et al, 1988, p. 497, 591). The corollary implies that a market with favorable employment opportunities increases quits (decreases tenure), so we would then expect the relation between tenure and discouragement to be negative.

Besides aggregate labor market conditions, skill and age also influence available opportunities. A strand of literature considers tenure as a proxy for human capital (Mincer, 1966). This human capital may be job- or firm-specific (non-transferable), or sector-specific (subject to obsolescence because of structural change in labor and product demand). Depending on the intensity of human capital and age, turnover may result in either gain or loss. For instance, Topel and Ward (1992) argue that a large share of wage increase is obtained through job mobility in the first ten years of a career, after which the specificity of human capital in terms of non-transferability and obsolescence comes to preponderate, such that mobility decreases. As for unskilled jobs, shorter tenure is

observed (Farber, 1999): the cost of lay-offs (employers) and quits (employees) is low. Education level is the most reliable indicator for observing transferable skills and it increases the probability of reemployment following displacement (Kletzer, 1998).

In other words, higher level diplomas facilitate mobility and decrease tenure length. In constructing LLM variables by educational level, we aim to control for these differentiated effects, such that tenure mainly captures labor market conditions. Indeed, in the same literature, poor labor market conditions decrease gains from mobility: considering the 2008 crisis in a historical perspective using the U.S. Displaced Workers Survey, Farber (2011) shows that under poor market conditions, between 2007 and 2009 job separations have led to losses (non-employment, underemployment and/or lower earnings). In a similar vein, we have considered on-the-job search. Under favorable conditions, on-the-job search, similarly to the quit intention, is motivated by the probability of finding a job. We would then expect it to correlate negatively with discouragement. Symmetrically, if it positively affects discouragement, that implies that on-the-job-search by employees is the result of job dissatisfaction, where workers are not willing (or simply financially unable) to take the risk of searching without working.

Finally, we consider market size. The concept of market externalities (Diamond, 1982) posits that a thick (large) market characterized by a large number of actors on both sides of the market (buyers and sellers) benefits from a large number of interactions that provide positive feedback/ spillover effects on economic activity. The notion of market size has been integrated into job search theory as a factor affecting the matching process and hence search intensity (Petrongolo and Pissarides, 2001): if in thicker markets the probability of finding a job is higher, then labor force participation will be higher. As a corollary, in thin markets the low probability of matching will lead to discouragement, as the individual will anticipate a low pay-off from active search. Complementarily, following the imperfect information argument, search will be less intensive in a thin market where available jobs are more visible. Thus, the thick market externality assumes increasing returns to scale; congestion effects however may lead to decreasing returns to scale.[17] Gan and Zhang (2006) show that there is a negative relation between thick markets and unemployment; whereas Petrongolo and Pissarides (2006) find no evidence of market size externality in terms of unemployment. Although scale (size and not density) has an impact on match quality and wages, it does not increase the number of matches and decrease unemployment; hence they argue for the existence of constant returns to scale. These results suggest that the issue is more of an empirical matter.

For the Turkish case, it can be argued that if discouragement has a predominantly structural aspect, then the thick market externality can be tested in a similar way. The variable controlling for market size varies across studies (considering different types of markets), from size to density of employment and/or population. Basically, the density variables better capture agglomeration ef-

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[17]Di Addario (2011) provides a comprehensive summary of various possible impacts, see Table A1 p. 316 "Agglomeration effects on labor market dynamics".

fects, since density affects interactions. Urban economics and new economic geography approaches privilege the density variables, concentrating on cities and metropolitan areas. Unfortunately our data is not suitable for accounting for agglomeration effects. The HLFSs through which we construct our dependent variable give information at NUTS2 level. This level of aggregation, though, is insufficient to assess agglomeration effects, as densities at NUTS2 regional levels still mask large heterogeneities in terms of urban center densities. Beyond the regional divide, the rural-urban distinction is based purely on population size, defined as over 20,000 inhabitants, which is quite large. Capturing agglomeration effects would ideally necessitate a geographical divide in HLFSs based upon a combination of population size, density, and a distance-to-large-urban-centers criterion, as suggested by the OECD's recent extended regional typology (Brezzi et al, 2011).

5   Estimation and Results

Table 6 gives estimation results for men and women separately. As expected, discouragement increases with age, although the marginal effect is not very strong. Secondary and post secondary education significantly decrease discouragement, with post secondary education having larger marginal effects. Job training (and not other types of training) also decreases the probability of becoming discouraged, although with less significance. Interestingly, education and training variables do not affect women's transition. Living in urban areas decreases the probability of discouragement. This effect might be attributed to the scarcity of search instruments and the magnitude of mobility costs which increase the cost of search in rural areas. However this result is to be treated with caution given that the rural-urban distinction relies upon a very crude population-size criterion.

Being married decreases the probability of discouragement for both men and women. This is due to the fact that the married couple are the primary breadwinners of the household, and as such the pay-off to them of non-participation is low. Widows and divorced women are less discouraged because loss of spouse decreases the pay-off of inactivity. We do not observe any significant effect for widowers or divorced men, which suggests that there is a gendered added worker effect, as a result of survival strategy, for women losing their husbands.

As to household characteristics, significant effects are found only for men. Being a child or another member of the household increases the probability of discouragement, partly because such persons do not bear the responsibility of the household income. Counter-intuitively though, the household dependency rate also increases the probability of discouragement.[18] The combination of both results implies that discouragement is a large-household issue. If discouragement increases despite greater bread-winning pressure (larger dependency rate), it may be argued that discour-

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[18]We have also run the estimation with household size and found similar results. We kept the dependency ratio here because dependency could be expected to decrease discouragement for bread-winning necessities.

aged workers are more reluctant to leave the household. In other words, besides its impact on labor force status determination (cause), the household is also a consequence of labor force status ("household formation"). Though its marginal effect is quasi-nil, a positive variation in household employment rate significantly increases discouragement for women, which provides evidence for the gendered aspect of discouragement following a shock at the household level; this echoes the added worker effect noted above for widows and divorced women.

Turning to past work experience, first, having past work experience decreases the probability of discouragement very significantly for both men and women.[19] Second, the length of inactivity measured in years increases discouragement, confirming the deterioration in qualification which is further likely to negatively affect employer screening.[20] But its marginal effect is smaller compared to the negative effect of past work experience on discouragement. These results stress the importance of one's first work experience in enhancing attachment to the labor force. For men, irregular labor market practices (non-wage employment) increase the probability of discouragement. This suggests that formerly regular (wage) employees face more favorable prospects for finding a new job after separation, and hence have more incentives for pursuing active search. Occupational variables complement these results. Men having previously worked as skilled agricultural and fishery workers, and to a lesser extent, those having worked in elementary occupations (corresponding to skill levels: 2 and 1) are more likely to be discouraged. There is no evidence for less discouragement associated with any of the occupations, including skilled ones; and there is a negative return to low skill occupations. For women, although no specific occupation increases discouragement, those having previously worked as professionals or clerks are less likely to be discouraged (corresponding to skill level: 4 and 2). It would seem that returns to occupations with higher-level skills are greater for women than men, a result that is consistent with the fact that although the female participation rate is low, participation increases with the level of education for women in Turkey.

Regarding LLM variables (constructed by region and educational level), the widely used labor market condition indicator, the unemployment rate, here extended to include the marginally attached, i.e., the joblessness rate, is insignificant. Share of informal jobs and share of private sector employment respectively increase and decrease the probability of becoming discouraged as expected, however their marginal effects are limited. The average number of tenure years also significantly increases discouragement, whereas on-the-job search has no impact on discouragement. Arguably, individuals employed in the types of job for which discouraged workers compete, "stick" to their jobs (significance of the tenure variable) but do not significantly search, given the poor prospects of finding a job. These results are given in Table 7.

Employment variables give interesting results (Table 8). Overall, they are highly significant and their marginal effects are much higher than other LLM indicators. They also appear to capture extremely well regional characteristics, such that a serious issue of multicollinearity has been

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[19]Results including population without past work experience are not reported here, available upon request.

[20]The length of inactivity in years can be captured from the specific question on the date of latest job of the individual.

detected (an issue that is absent with the other LLM indicators). Consequently, we have run estimations with employment indicators both including and excluding regional dummies, and have found that while signs and significance of coefficient do not vary much, their t-statistics deflate when regional dummies are left out (model 5.2, 5.4 and 5.6 Table 8). An interesting observation is that for women, in the model with regional dummies, employment related LLM variables are insignificant, whereas they become significant once regional dummies are dropped. This implies that there are idiosyncratic, non-economic features (aspects not captured by our model) of women's discouragement (and perhaps other types of labor force statuses and transitions) in Turkey; and supports the argument that the female labor force participation rate in Turkey cannot easily be explained by conventional labor supply and demand analyses. Turning to men, all variables are found to have a highly significant negative effect on discouragement, employment size excluding the agricultural sector exhibiting the highest marginal effect, and employment rate (the alternative indicator for joblessness rate) the lowest one. These results support the validity of the thick market hypothesis as a determinant of transition to discouragement: larger markets provide a more favorable wage offer distribution (Petrongolo and Pissarides, 2001 and 2006), and greater employment opportunities (Gan and Zhang, 2006).

6 Conclusions

Compared to other OECD countries, the share of discouraged workers and the share of men amongst discouraged workers are relatively large, and the persistent level of discouraged workers proves to be more of a structural than a cyclical issue in Turkey. This paper aims to assess factors that may affect transition to a state of discouragement in the Turkish labor market, a state which remained high and persistent over the last decade of stable growth, by using cross-section yearly data from household labor force surveys (HLFSs) for the period between 2006 and 2011. Our study strives especially to use to best advantage the information that can be extracted from standard HLFSs. First, in the absence of panel datasets, cross-section data in HLFSs that provide information on previous labor force status is used to account for transitions between labor force statuses. Second, alternative indicators of labor market conditions are explored alongside the unemployment rate, exploiting data available in HLFS, and hunting for proxies. We investigate identification issues, as the definition of discouraged workers is problematic in itself.

While some studies argue that being discouraged is a distinct labor market state situated between inactivity and unemployment, others claim that the labor market attachment of the "discouraged" category is too loose and that they are less likely to be employable as a result of their poor qualifications. Moreover, national and international statistical institutions adopt different definitions. The commonly used definition is based on the ready-to-work criterion and the reason for not searching (no available and/or suitable job). The BLS uses the constraint of having actively

searched in the past 12 months. In this study, the identification strategy is chosen bearing in mind both arguments (attachment and qualification). First, a specific labor transition from unemployment (a year ago) to discouragement is estimated based on a similar definition by BLS. Second, against the employability argument, some controls are introduced for former job characteristics before becoming unemployed which, admittedly, reduces the sample size.

We have estimated three categories of variables susceptible of affecting transition to discouragement: individual characteristics, household characteristics, and local labor market conditions; for three groups: total population, men, and women. Regarding individual characteristics, residence in rural areas and lower educational levels increase discouragement probability. The probability of being discouraged increases for all men having worked in any type of non-wage employment (employer, self-employed, unpaid family worker); and for all men having worked as skilled agricultural and fishery workers, and to a lesser extent in elementary occupations. These findings imply that rural dynamics constitute an important feature of discouragement. However, as mentioned these areas correspond to settlements comprising less than 20,000 inhabitants, hence the policy implication would be to target development in both rural areas and small towns.

None of the employment or occupational statuses increase women's discouragement, whereas having worked as a professional or clerk does decrease their discouragement. Household and marital status variables imply that, first, discouragement is not merely a gender or a "head and spouse" issue: being married decreases discouragement for both women and men. Second, being a child and an "other member" increases the probability of transition to discouragement. Third, household dependency rate increases discouragement. It follows from the two latter points that discouragement is an issue affecting large households, implying causality from labor force status to household formation as a result of survival strategy, an issue beyond the scope of this study which we leave for further research.

Finally, local labor market indicators, controlling for fixed effects, education, region and year, have been found to have a significant effect on discouragement. Among alternative indicators, unemployment, here measured in an extended version– joblessness–does not have a significant effect on discouragement, yielding evidence of the inadequacy of joblessness as an indicator of labor market conditions. Among alternative variables, share of informal employment, and average tenure in years–respectively proxying job quality and low labor turnover–increase the probability of transition to discouragement, underlining the presence of poor job creation dynamics. Most importantly, the significant and large impact of employment size (and to a lesser extent employment rate) confirms the findings on the thick market externality argument. As the size of the market increases, workers are less likely to become discouraged.

Overall, the insights yielded by our study suggest that the data available in cross-section surveys may be exploited more comprehensively and exhaustively than hitherto, and in countries other than Turkey. Further, our study highlights the importance of educational and household factors

that imply a structural–i.e. going beyond gendered and cyclical–and exclusionary dimension of discouragement. Finally, it stresses the crucial role of local labor conditions in the probability of transition to discouragement. Local labor conditions have been best captured by employment opportunities, among other factors, rather than the more conventional unemployment rate, which seemingly fails to apprehend labor market slack.

Tables and Figures

Table 1: Narrow and Broad Unemployment Rates

Year	Unemployment Rate (%) official definition	Unemployment Rate (%) including discouraged workers	Unemployment Rate (%) including all marginally attached workers
2005	10.6	12.5	16.5
2006	10.2	12.6	17.2
2007	10.3	12.6	13.0
2008	11.0	13.2	17.4
2009	14 .0	16.6	20.6
2010	11.9	14.3	18.3
2011	9.8	12.1	15.9

Source: Authors' calculation based on HLFSs

Table 2: Discouraged Workers in selected OECD Countries

	Share of labor force	Share of population	Share of extended labor force (labor force+discouraged workers)	Share of unemployed	Men to women ratio
Hungary	3.05	1.93	2.96	27.81	109.68
Turkey	**2.54**	**1.27**	**2.47**	**25.93**	**149.82**
Chile	1.34	0.88	1.32	18.85	54.29
Spain	1.33	0.99	1.31	6.14	2.34
Estonia	1.12	0.87	1.11	9.22	75.00
Japan	1.04	0.84	1.03	22.89	58.54
Poland	0.90	0.61	0.89	9.35	27.78
Portugal	0.83	0.65	0.83	6.51	20.51
Finland	0.81	0.62	0.80	10.53	100.00
Australia	0.70*	0.55*	0.70*	13.50*	58.50*
United States	0.65	0.50	0.65	7.27	141.89
Ireland	0.64	0.45	0.63	4.60	250.00
Slovenia	0.52	0.37	0.51	5.98	66.67
Netherlands	0.42	0.33	0.42	9.52	24.14
New Zealand	0.24*	0.19*	0.24*	3.90*	66.70*
Greece	0.21	0.14	0.21	1.23	10.00
Belgium	0.17*	0.12*	0.17*	1.90*	60.00*
Czech Republic	0.15	0.11	0.15	2.26	60.00
Germany	0.14	0.11	0.14	2.36	28.26
France	0.12	0.09	0.12	1.10*	78.95
Luxembourg	0.10	0.07	0.10		
Austria	0.06	0.04	0.06	1.12	50.00
Denmark	0.06	0.04	0.06	0.90	0.00
United Kingdom	0.06	0.05	0.06	0.77	26.67
OECD countries	0.47	0.35	0.47	5.9*	66.96

* data not available for 2011, given data for the year 2010.
Source: OECD.Stat

Table 3: Average Transition Probabilities (Pooled Cross-sections 2006-11)

	Employed	Unemployed	Non-participant	Other-jobless	Discouraged
Formerly Employed					
Istanbul	0.902	0.062	0.032	0.003	0.001
Tekirdag	0.912	0.039	0.031	0.011	0.007
Balikesir	0.947	0.018	0.020	0.009	0.006
Izmir	0.900	0.054	0.038	0.006	0.001
Aydin	0.913	0.039	0.031	0.012	0.005
Manisa	0.947	0.024	0.023	0.004	0.002
Bursa	0.903	0.045	0.048	0.004	0.001
Kocaeli	0.911	0.049	0.033	0.006	0.001
Ankara	0.923	0.040	0.030	0.006	0.001
Konya	0.916	0.032	0.027	0.019	0.006
Antalya	0.916	0.037	0.033	0.011	0.002
Adana	0.937	0.036	0.015	0.007	0.005
Hatay	0.897	0.048	0.030	0.014	0.010
Kirikkale	0.930	0.028	0.029	0.009	0.004
Kayseri	0.932	0.037	0.022	0.006	0.003
Zonguldak	0.933	0.026	0.034	0.005	0.001
Kastamonu	0.951	0.017	0.021	0.008	0.003
Samsun	0.942	0.023	0.026	0.007	0.002
Trabzon	0.966	0.014	0.014	0.005	0.002
Erzurum	0.970	0.012	0.013	0.003	0.001
Agri	0.957	0.020	0.014	0.004	0.005
Malatya	0.935	0.033	0.018	0.008	0.006
Van	0.942	0.031	0.010	0.008	0.008
Gaziantep	0.912	0.052	0.025	0.007	0.004
Sanliurfa	0.929	0.026	0.016	0.004	0.024
Mardin	0.917	0.032	0.018	0.010	0.023
Total	0.922	0.040	0.028	0.007	0.004
Formerly Unemployed					
Istanbul	0.510	0.410	0.052	0.011	0.017
Tekirdag	0.466	0.376	0.052	0.023	0.083
Balikesir	0.420	0.305	0.049	0.079	0.146
Izmir	0.425	0.487	0.051	0.021	0.017
Aydin	0.408	0.410	0.054	0.065	0.062
Manisa	0.441	0.351	0.091	0.085	0.032
Bursa	0.494	0.364	0.110	0.017	0.014
Kocaeli	0.435	0.470	0.052	0.022	0.021
Ankara	0.446	0.451	0.052	0.031	0.020
Konya	0.398	0.396	0.032	0.084	0.090
Antalya	0.439	0.394	0.049	0.073	0.044
Adana	0.400	0.478	0.029	0.036	0.057
Hatay	0.367	0.419	0.040	0.054	0.120
Kirikkale	0.346	0.443	0.060	0.054	0.097
Kayseri	0.305	0.468	0.060	0.090	0.077
Zonguldak	0.415	0.452	0.067	0.038	0.027
Kastamonu	0.373	0.410	0.041	0.074	0.102
Samsun	0.393	0.378	0.072	0.065	0.093
Trabzon	0.443	0.353	0.052	0.067	0.085
Erzurum	0.328	0.394	0.058	0.105	0.115
Agri	0.285	0.426	0.044	0.079	0.166
Malatya	0.266	0.461	0.043	0.075	0.154
Van	0.287	0.393	0.030	0.053	0.238
Gaziantep	0.355	0.457	0.071	0.070	0.047
Sanliurfa	0.269	0.251	0.054	0.046	0.379
Mardin	0.260	0.348	0.043	0.082	0.267
Total	0.403	0.406	0.053	0.046	0.092
Formerly Non-participant					
Istanbul	0.031	0.018	0.937	0.013	0.001
Tekirdag	0.073	0.042	0.773	0.076	0.036
Balikesir	0.045	0.024	0.814	0.087	0.030
Izmir	0.046	0.026	0.906	0.020	0.002
Aydin	0.073	0.036	0.794	0.074	0.023
Manisa	0.047	0.015	0.917	0.017	0.004
Bursa	0.062	0.019	0.908	0.010	0.001
Kocaeli	0.046	0.026	0.911	0.014	0.003
Ankara	0.035	0.024	0.919	0.021	0.002
Konya	0.064	0.031	0.761	0.124	0.020
Antalya	0.073	0.042	0.796	0.068	0.021
Adana	0.051	0.046	0.767	0.100	0.036
Hatay	0.054	0.028	0.803	0.083	0.033
Kirikkale	0.038	0.017	0.904	0.029	0.012
Kayseri	0.027	0.021	0.904	0.033	0.015
Zonguldak	0.049	0.024	0.900	0.021	0.006
Kastamonu	0.062	0.029	0.813	0.065	0.031
Samsun	0.056	0.025	0.863	0.048	0.008
Trabzon	0.060	0.026	0.857	0.042	0.016
Erzurum	0.029	0.012	0.903	0.050	0.006
Agri	0.031	0.011	0.893	0.036	0.029
Malatya	0.025	0.024	0.866	0.057	0.028
Van	0.021	0.012	0.851	0.091	0.025
Gaziantep	0.036	0.011	0.930	0.020	0.003
Sanliurfa	0.019	0.003	0.946	0.019	0.013
Mardin	0.019	0.010	0.912	0.030	0.029
Total	0.043	0.023	0.883	0.040	0.012

Each NUTS2 region covers more than one province except Istanbul, Ankara and Izmir.
Other jobless category includes nonparticipants other than discouraged workers and who are ready to work.

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Table 4: Summary Statistics

	Mean	Std. Dv.	Mean	Std. Dv.	Mean	Std. Dv.
Discouraged	0.166	0.372	0.000	0.000	1.000	0.000
Female	0.180	0.384	0.195	0.397	0.103	0.304
Age	33.565	11.447	33.424	11.224	34.268	12.478
Never Married	0.397	0.489	0.402	0.490	0.370	0.483
Married	0.564	0.496	0.556	0.497	0.603	0.489
Divorced	0.033	0.178	0.035	0.185	0.020	0.142
Spouse Died	0.006	0.078	0.006	0.078	0.006	0.079
Urban	0.720	0.449	0.749	0.433	0.573	0.495
Training not Attended	0.991	0.093	0.990	0.098	0.996	0.062
Job Related Training	0.006	0.075	0.006	0.079	0.002	0.046
Other Training	0.003	0.056	0.003	0.059	0.002	0.041
Less than Secondary	0.719	0.449	0.699	0.459	0.820	0.384
Secondary	0.199	0.399	0.210	0.407	0.145	0.352
Post-Secondary	0.081	0.273	0.091	0.287	0.035	0.184
Head or Spouse	0.504	0.500	0.500	0.500	0.520	0.500
Child	0.457	0.498	0.459	0.498	0.443	0.497
Son / Daughter in-law	0.005	0.074	0.006	0.077	0.003	0.054
Grandchild	0.008	0.091	0.009	0.093	0.006	0.079
Other Members	0.026	0.159	0.025	0.158	0.028	0.164
Household Dependency	1.560	1.729	1.438	1.618	2.167	2.097
Household Employment Rate Variation	1.739	19.164	1.724	19.873	1.811	15.119
Regular Employee	0.906	0.291	0.921	0.270	0.833	0.373
Employer	0.012	0.108	0.012	0.110	0.010	0.097
Self-employed	0.051	0.219	0.042	0.200	0.096	0.295
Unpaid Family Workers	0.031	0.174	0.025	0.156	0.061	0.240
Years away from work	1.424	2.135	1.380	1.994	1.640	2.724
Legislators and Executives	0.036	0.186	0.035	0.183	0.040	0.197
Professionals	0.036	0.186	0.039	0.193	0.021	0.144
Technicians and asso. professionals	0.045	0.207	0.049	0.215	0.025	0.156
Clerks	0.063	0.244	0.070	0.255	0.032	0.175
Service and sales workers	0.143	0.350	0.150	0.357	0.106	0.308
Skilled agricultural	0.037	0.188	0.030	0.172	0.068	0.251
Craft and related trades workers	0.216	0.411	0.222	0.416	0.183	0.386
Plant and machine operators	0.094	0.292	0.099	0.299	0.069	0.254
Elementary occupations	0.331	0.471	0.306	0.461	0.456	0.498
1- Istanbul	0.108	0.310	0.124	0.330	0.024	0.152
2-Tekirdag	0.019	0.135	0.018	0.134	0.020	0.138
3- Balikesir	0.026	0.159	0.021	0.145	0.049	0.216
4- Izmir	0.057	0.231	0.066	0.248	0.010	0.099
5- Aydin	0.030	0.169	0.031	0.174	0.021	0.142
6- Manisa	0.036	0.187	0.041	0.197	0.015	0.120
7- Bursa	0.030	0.170	0.034	0.182	0.006	0.077
8- Kocaeli	0.044	0.206	0.051	0.220	0.009	0.097
9- Ankara	0.046	0.209	0.052	0.223	0.012	0.109
10- Konya	0.031	0.174	0.031	0.173	0.033	0.179
11- Antalya	0.021	0.145	0.023	0.151	0.012	0.108
12- Adana	0.074	0.262	0.080	0.271	0.046	0.209
13- Hatay	0.047	0.212	0.045	0.206	0.060	0.237
14- Kirikkale	0.023	0.150	0.024	0.152	0.020	0.140
15- Kayseri	0.023	0.150	0.024	0.154	0.016	0.127
16- Zonguldak	0.011	0.106	0.013	0.113	0.003	0.058
17- Kastamonu	0.014	0.118	0.014	0.118	0.014	0.119
18- Samsun	0.029	0.168	0.030	0.170	0.027	0.162
19- Trabzon	0.029	0.168	0.030	0.169	0.027	0.161
20- Erzurum	0.019	0.135	0.018	0.135	0.019	0.138
21- Agri	0.026	0.159	0.025	0.156	0.031	0.173
22- Malatya	0.027	0.163	0.027	0.163	0.027	0.163
23- Van	0.051	0.220	0.041	0.197	0.104	0.305
24- Gaziantep	0.042	0.200	0.045	0.208	0.022	0.147
25- Sanliurfa	0.096	0.295	0.057	0.231	0.294	0.456
26- Mardin	0.042	0.200	0.034	0.181	0.080	0.271
Year 2006	0.143	0.351	0.143	0.350	0.144	0.351
Year 2007	0.147	0.355	0.143	0.350	0.169	0.375
Year 2008	0.149	0.356	0.147	0.354	0.163	0.369
Year 2009	0.206	0.404	0.208	0.406	0.194	0.395
Year 2010	0.196	0.397	0.199	0.399	0.180	0.385
Year 2011	0.158	0.365	0.160	0.366	0.150	0.357
No.Obs	52927		44122		8805	

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Summary Statistics of Local Labor Market Indicators

	Less than Secondary				Secondary				Post Secondary			
	Mean	Max	Min	Std.Dv.	Mean	Max	Min	Std.Dv.	Mean	Max	Min	Std.Dv.
Employment size (exc. Agriculture)	248737	1819020	28143	312092	128982	822199	15661	150840	108211	795699	13917	137451
Employment size *	244343	1778854	23434	305084	103297	766245	7707	137824	49585	589148	1643	95439
Employment Rate	14.434	27.245	4.657	5.325	25.284	44.610	10.994	7.352	19.923	46.230	6.352	8.448
Av. Tenure Years *	4.168	8.092	1.545	1.336	3.896	6.225	2.085	0.592	3.727	7.406	1.917	0.778
Joblessness Rate	18.176	39.634	4.681	7.681	22.034	38.033	9.730	6.836	14.498	29.102	6.329	3.927
Share of Informal Jobs*	51.521	91.039	29.243	15.924	28.855	75.419	11.261	13.354	14.835	36.506	4.199	5.968
Share of Private Sector Employment	87.714	97.660	57.136	7.639	71.218	93.186	36.994	12.979	32.590	74.042	8.924	14.898
Share of On-the-Job Search*	6.383	22.403	0.202	4.870	6.113	28.504	0.000	5.238	5.537	25.293	0.000	4.726
No.Obs	156				156				156			

Local labor market indicators are constructed by education by region by year using six years of pooled cross-sections between 2006 and 2011.
* Public employment, self-employment, employer and un-paid family workers are excluded. Only inc. private sector wage earners are included.

Table 6: Probit Estimation of the Probability of Transition from Job Seeking to Discouragement (marginal effects)

	Total	Men	Women	Total	Men	Women	Total	Men	Women
		Model 1			Model 2			Model 3	
	1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3
Personel Characteristics									
Female	0.001			0.002			-0.001		
	(0.006)			(0.006)			(0.007)		
Age	0.002***	0.002***	0.001***	0.002***	0.003***	0.002***	0.001***	0.001***	0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Married	-0.037***	-0.034***	-0.031***	-0.027***	-0.025***	-0.029**	-0.025***	-0.021***	-0.031**
	(0.006)	(0.007)	(0.008)	(0.006)	(0.007)	(0.013)	(0.006)	(0.007)	(0.012)
Divorced	-0.021**	0.010	-0.048***	-0.018*	0.011	-0.048***	-0.020**	0.009	-0.045***
	(0.010)	(0.013)	(0.014)	(0.010)	(0.013)	(0.014)	(0.010)	(0.013)	(0.014)
Spouse Died	-0.031	-0.006	-0.045*	-0.022	-0.001	-0.043	-0.026	0.000	-0.047*
	(0.021)	(0.026)	(0.026)	(0.022)	(0.026)	(0.027)	(0.021)	(0.025)	(0.026)
Urban	-0.054***	-0.057***	-0.028***	-0.053***	-0.055***	-0.026***	-0.048***	-0.050***	-0.025***
	(0.006)	(0.006)	(0.007)	(0.006)	(0.006)	(0.007)	(0.005)	(0.005)	(0.007)
Education and Training									
Job Training	-0.049**	-0.077*	-0.028	-0.048**	-0.074*	-0.028	-0.050**	-0.071*	-0.033
	(0.021)	(0.042)	(0.024)	(0.021)	(0.042)	(0.024)	(0.020)	(0.042)	(0.023)
Other Training	-0.018	-0.009	-0.012	-0.017	-0.007	-0.011	-0.019	-0.010	-0.012
	(0.028)	(0.039)	(0.029)	(0.028)	(0.039)	(0.028)	(0.026)	(0.037)	(0.028)
Secondary	-0.017***	-0.018***	-0.008	-0.017***	-0.019***	-0.007	-0.020***	-0.022***	-0.006
	(0.005)	(0.007)	(0.008)	(0.005)	(0.007)	(0.008)	(0.005)	(0.007)	(0.008)
Post Secondary	-0.050***	-0.075***	-0.020**	-0.050***	-0.076***	-0.018**	-0.051***	-0.081***	-0.012
	(0.007)	(0.010)	(0.008)	(0.007)	(0.010)	(0.008)	(0.007)	(0.011)	(0.010)
Household Status									
Child				0.021***	0.022***	0.005	0.014**	0.012*	0.005
				(0.006)	(0.007)	(0.012)	(0.006)	(0.007)	(0.012)
Son / daughter-in-law				0.009	0.008	0.010	-0.001	-0.001	0.008
				(0.021)	(0.041)	(0.018)	(0.020)	(0.042)	(0.018)
Grandchild				0.002	-0.029	0.046*	-0.004	-0.041*	0.050*
				(0.018)	(0.022)	(0.027)	(0.018)	(0.021)	(0.028)
Other members				0.027***	0.029***	-0.001	0.020**	0.019*	-0.002
				(0.009)	(0.011)	(0.018)	(0.009)	(0.011)	(0.018)
Househould Characteristics									
Household Dependency Rate				0.002	0.002	0.003	0.001	0.002	0.001
				(0.001)	(0.001)	(0.003)	(0.001)	(0.001)	(0.003)
Household Employment Rate Variation				0.000	0.000	0.000***	0.000	0.000	0.000***
				(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Past Employment Status									
Employer							0.042**	0.048***	-0.018
							(0.019)	(0.018)	(0.045)
Self-employed							0.104***	0.100***	0.010
							(0.009)	(0.008)	(0.020)
Unpaid family worker							0.046***	0.053***	0.019
							(0.012)	(0.011)	(0.022)
Years away from work							0.013***	0.014***	0.009***
							(0.001)	(0.002)	(0.002)
Past Occupational Status									
Professionals							0.009	0.021	-0.038*
							(0.013)	(0.018)	(0.020)
Technicians and asso. professionals							-0.005	-0.002	-0.032
							(0.013)	(0.017)	(0.021)
Clerks							0.000	0.005	-0.033*
							(0.011)	(0.017)	(0.020)
Service and sales workers							0.002	0.008	-0.027
							(0.010)	(0.012)	(0.021)
Skilled agricultural							0.064***	0.068***	-0.005
							(0.015)	(0.015)	(0.029)
Craft and related trades workers							0.002	0.005	-0.011
							(0.010)	(0.012)	(0.021)
Plant and machine operators							-0.013	-0.012	-0.026
							(0.011)	(0.013)	(0.024)
Elementary occupations							0.021**	0.027**	-0.013
							(0.010)	(0.011)	(0.019)

	Total	Men	Women	Total	Men	Women	Total	Men	Women
		Model 1			Model 2			Model 3	
	1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3
NUTS2 Regions									
2- Edirne	0.131***	0.196***	0.092***	0.133***	0.196***	0.092***	0.132***	0.197***	0.088***
	(0.030)	(0.033)	(0.015)	(0.031)	(0.033)	(0.015)	(0.031)	(0.034)	(0.015)
3- Balikesir	0.260***	0.267***	0.201***	0.262***	0.268***	0.200***	0.253***	0.262***	0.196***
	(0.028)	(0.024)	(0.015)	(0.029)	(0.024)	(0.015)	(0.029)	(0.024)	(0.015)
4- Izmir	-0.007	-0.010	-0.026	-0.007	-0.009	-0.027	-0.007	-0.008	-0.030
	(0.008)	(0.026)	(0.020)	(0.008)	(0.026)	(0.020)	(0.008)	(0.027)	(0.019)
5- Aydin	0.066***	0.118***	0.068***	0.067***	0.120***	0.068***	0.071***	0.125***	0.067***
	(0.010)	(0.017)	(0.020)	(0.010)	(0.017)	(0.020)	(0.011)	(0.017)	(0.020)
6- Manisa	0.030***	0.062***	0.026	0.030***	0.062***	0.027	0.027**	0.057**	0.025
	(0.010)	(0.022)	(0.024)	(0.010)	(0.022)	(0.024)	(0.010)	(0.022)	(0.022)
7- Bursa	-0.001	0.013	-0.064**	-0.001	0.013	-0.065**	0.000	0.021	-0.066**
	(0.013)	(0.036)	(0.029)	(0.013)	(0.036)	(0.029)	(0.013)	(0.035)	(0.029)
8- Kocaeli	-0.002	-0.009	0.008	-0.002	-0.009	0.007	-0.002	-0.005	0.003
	(0.006)	(0.017)	(0.021)	(0.006)	(0.017)	(0.021)	(0.007)	(0.018)	(0.021)
9- Ankara	0.011	0.026	0.021	0.011	0.026	0.021	0.012	0.028	0.019
	(0.010)	(0.024)	(0.016)	(0.010)	(0.023)	(0.015)	(0.010)	(0.025)	(0.016)
10- Konya	0.132***	0.180***	0.117***	0.132***	0.180***	0.115***	0.133***	0.179***	0.114***
	(0.022)	(0.026)	(0.013)	(0.022)	(0.026)	(0.013)	(0.021)	(0.026)	(0.014)
11- Antalya	0.049***	0.090***	0.061***	0.050***	0.091***	0.062***	0.050***	0.094***	0.059***
	(0.013)	(0.023)	(0.013)	(0.013)	(0.023)	(0.013)	(0.014)	(0.024)	(0.013)
12- Adana	0.067***	0.104***	0.100***	0.067***	0.104***	0.098***	0.065***	0.104***	0.093***
	(0.008)	(0.017)	(0.013)	(0.008)	(0.017)	(0.012)	(0.008)	(0.017)	(0.013)
13- Hatay	0.159***	0.192***	0.173***	0.159***	0.192***	0.173***	0.161***	0.195***	0.169***
	(0.027)	(0.027)	(0.019)	(0.027)	(0.026)	(0.018)	(0.027)	(0.026)	(0.019)
14- Kirikkale	0.097***	0.151***	0.055	0.098***	0.151***	0.054	0.097***	0.150***	0.053
	(0.014)	(0.020)	(0.034)	(0.014)	(0.020)	(0.034)	(0.014)	(0.021)	(0.033)
15- Kayseri	0.081***	0.122***	0.111***	0.080***	0.121***	0.110***	0.078***	0.119***	0.102***
	(0.022)	(0.026)	(0.029)	(0.022)	(0.026)	(0.029)	(0.022)	(0.027)	(0.028)
16- Zonguldak	0.011	0.025	0.013	0.011	0.025	0.014	0.014	0.034	0.012
	(0.015)	(0.037)	(0.029)	(0.015)	(0.038)	(0.029)	(0.016)	(0.037)	(0.029)
17- Kastamonu	0.126***	0.178***	0.115***	0.127***	0.178***	0.114***	0.114***	0.165***	0.109***
	(0.016)	(0.018)	(0.023)	(0.016)	(0.017)	(0.023)	(0.016)	(0.020)	(0.023)
18- Samsun	0.121***	0.170***	0.111***	0.120***	0.169***	0.111***	0.120***	0.169***	0.108***
	(0.038)	(0.039)	(0.028)	(0.038)	(0.039)	(0.027)	(0.037)	(0.038)	(0.028)
19- Trabzon	0.108***	0.158***	0.102***	0.108***	0.158***	0.101***	0.096***	0.147***	0.094***
	(0.011)	(0.016)	(0.013)	(0.011)	(0.016)	(0.014)	(0.012)	(0.017)	(0.015)
20- Erzurum	0.131***	0.175***	0.135***	0.130***	0.173***	0.133***	0.121***	0.165***	0.129***
	(0.013)	(0.016)	(0.026)	(0.012)	(0.016)	(0.026)	(0.012)	(0.017)	(0.026)
21- Agri	0.160***	0.194***	0.205***	0.159***	0.192***	0.202***	0.149***	0.183***	0.204***
	(0.048)	(0.044)	(0.014)	(0.048)	(0.045)	(0.014)	(0.045)	(0.043)	(0.015)
22- Malatya	0.119***	0.157***	0.152***	0.119***	0.156***	0.151***	0.112***	0.150***	0.146***
	(0.023)	(0.029)	(0.014)	(0.023)	(0.029)	(0.014)	(0.024)	(0.030)	(0.014)
23- Van	0.287***	0.288***	0.210***	0.281***	0.284***	0.207***	0.282***	0.283***	0.209***
	(0.025)	(0.021)	(0.018)	(0.025)	(0.021)	(0.018)	(0.027)	(0.022)	(0.019)
24- Gaziantep	0.047	0.082*	0.082**	0.047	0.081*	0.080**	0.047	0.081*	0.079**
	(0.032)	(0.048)	(0.036)	(0.032)	(0.048)	(0.036)	(0.031)	(0.047)	(0.034)
25- Sanliurfa	0.462***	0.388***	0.319***	0.459***	0.386***	0.314***	0.449***	0.378***	0.312***
	(0.025)	(0.019)	(0.028)	(0.026)	(0.019)	(0.026)	(0.028)	(0.021)	(0.026)
26- Mardin	0.272***	0.276***	0.230***	0.267***	0.272***	0.226***	0.261***	0.267***	0.224***
	(0.018)	(0.017)	(0.019)	(0.018)	(0.018)	(0.019)	(0.016)	(0.017)	(0.020)
Years									
2007	0.001	0.005	-0.023*	0.001	0.005	-0.023*	0.003	0.008	-0.023*
	(0.013)	(0.014)	(0.013)	(0.013)	(0.014)	(0.013)	(0.015)	(0.013)	(0.013)
2008	-0.007	-0.003	-0.024*	-0.007	-0.003	-0.025*	-0.004	0.001	-0.024*
	(0.013)	(0.014)	(0.014)	(0.013)	(0.014)	(0.014)	(0.013)	(0.014)	(0.014)
2009	-0.014	-0.013	-0.015	-0.014	-0.013	-0.016	-0.007	-0.006	-0.010
	(0.014)	(0.015)	(0.013)	(0.014)	(0.015)	(0.013)	(0.014)	(0.016)	(0.013)
2010	-0.004	-0.001	-0.012	-0.004	-0.001	-0.013	0.004	0.007	-0.008
	(0.011)	(0.012)	(0.013)	(0.011)	(0.012)	(0.013)	(0.011)	(0.012)	(0.013)
2011	0.009	0.015	-0.012	0.008	0.014	-0.013	0.018	0.026*	-0.008
	(0.013)	(0.015)	(0.012)	(0.013)	(0.015)	(0.012)	(0.013)	(0.015)	(0.012)
Pseudo R2	0.197	0.188	0.209	0.198	0.189	0.212	0.186	0.179	0.206
No.Obs	52927	43399	9528	52927	43399	9528	52927	43399	9528

Robust standard errors adjusted for clustering at region by year are reported in parentheses. The asterisk indicates * p< 0.1, ** p< 0.05, *** p< 0.01.
The reference category for personal characteristics is never married, having less than secondary education level and having not attended a training activity in the past month. For household status, it is either the head or the spouse in relation to the household. For the past work experience, the reference category is wage earner and working as executive as occupation. The year 2006 and the region Istanbul are taken as omitted category.

Table 7: Effect of Local Labor Market Indicators on the Probability of Transition from Unemployment to Discouragement(marginal effects)

	4.1	4.2	4.3	4.4	4.5	4.6	4.7
Total							
Share of On-the-Job Search	0.001						-0.001
	(0.001)						(0.001)
Share of Joblessness		0.001					0.001
		(0.001)					(0.001)
Share of Informal Jobs			0.000			0.001**	0.001*
			(0.001)			(0.001)	(0.001)
Av. Tenure Years				0.018***		0.020***	0.020***
				(0.005)		(0.005)	(0.005)
Share of Private Sector Employment					-0.002***	-0.002***	-0.002***
					(0.001)	(0.001)	(0.001)
No.Obs	52927	52927	52927	52927	52927	52927	52927
Men							
Share of On-the-Job Search	0.000						-0.001
	(0.002)						(0.001)
Share of Joblessness		0.001					0.001
		(0.001)					(0.001)
Share of Informal Jobs			0.001			0.002***	0.002***
			(0.001)			(0.001)	(0.001)
Av. Tenure Years				0.021***		0.024***	0.026***
				(0.005)		(0.006)	(0.006)
Share of Private Sector Employment					-0.003***	-0.003***	-0.003***
					(0.001)	(0.001)	(0.001)
No.Obs	43399	43399	43399	43399	43399	43399	43399
Women							
Share of On-the-Job Search	0.002						0.001
	(0.001)						(0.001)
Share of Joblessness		0.001					0.001
		(0.001)					(0.001)
Share of Informal Jobs			0.000			0.000	0.000
			(0.001)			(0.001)	(0.001)
Av. Tenure Years				0.012***		0.012**	0.012**
				(0.005)		(0.005)	(0.005)
Share of Private Sector Employment					0.000	0.000	0.000
					(0.001)	(0.001)	(0.001)
No.Obs	9528	9528	9528	9528	9528	9528	9528

Robust standard errors adjusted for clustering at region by year are reported in parentheses. The asterisk indicates * p< 0.1, ** p< 0.05, *** p< 0.01.
We control for the same set of individual and household covariates as well as education, year and region fixed effects as in the baseline model 3 (3.1, 3.2 and 3.3)

Table 8: Employment Related LLM Indicators

	5.1	5.2	5.3	5.4	5.5	5.6
Total						
Employment Rate	-0.006***	-0.014***				
	(0.002)	(0.001)				
Employment size*			-0.062***	-0.070***		
			(0.015)	(0.007)		
Employment size (exc. Agriculture)					-0.075***	-0.082***
					(0.021)	(0.009)
No. Obs.	52927	52927	52927	52927	52927	52927
Men						
Employment Rate	-0.008***	-0.015***				
	(0.002)	(0.002)				
Employment size*			-0.076***	-0.071***		
			(0.019)	(0.008)		
Employment size (exc. Agriculture)					-0.092***	-0.084***
					(0.024)	(0.010)
No. Obs.	43399	43399	43399	43399	43399	43399
Women						
Employment Rate	0.000	-0.010***				
	(0.001)	(0.001)				
Employment size *			-0.012	-0.059***		
			(0.012)	(0.006)		
Employment size (exc. Agriculture)					-0.019	-0.073***
					(0.020)	(0.008)
No. Obs.	9528	9528	9528	9528	9528	9528
Individual Controls	yes	yes	yes	yes	yes	yes
Region Effects	yes	no	yes	no	yes	no
Year Effects	yes	yes	yes	yes	yes	yes

Local labor market indicators are constructed by education by region by year using six years of pooled cross-sections between 2006 and 2011.

* Public employment, self-employment, employer and unpaid family workers are excluded. Only private sector wage earners are included.

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