LOW PAY DYNAMICS IN TURKEY BEFORE AND DURING THE 2009 ECONOMIC CRISIS

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DENİZ PLEVNELİ

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_____

Prof. Dr. Meliha ALTUNIŞIK
Director

I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Science.

_____

Prof. Dr. Nadir ÖCAL
Head of Department

This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Science.

_____

Assoc. Prof. Dr.Meltem DAYIOĞLU TAYFUR
Supervisor

Examining Committee Members

Assoc.Prof.Dr. Meltem D. TAYFUR (METU, ECON) _____

Assoc.Prof.Dr. Hakan ERCAN (METU, ECON) _____

Prof.Dr. Ayşe Gündüz HOŞGÖR (METU, SOC) _____

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Name, Last name : Deniz PLEVNELİ

Signature :

ABSTRACT

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PLEVNELİ, Deniz

M.Sc., Department of Economics

Supervisor: Assoc. Prof. Dr. Meltem DAYIOĞLU TAYFUR

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The impact of the 2009 crisis on employment and low pay dynamics is yet to be analyzed in Turkey. In this study, we attempt to understand how employment status has changed over the crisis period with particular emphasis on wage earners and the low paid among this group. We study entry into and exit from low pay, the correlates of these transitions, composition of the low paid and persistence in low pay both before and during the crisis period. The analysis is done by using the panel component of the Statistics on Income and Living Conditions, which allows us to follow the same individuals for a period of four years. Using two separate panels belonging to pre-crisis and crisis periods, we are able to observe the labor market effects of the 2009 crisis. We start our analysis by examining the transitions between different employment states. Then, conditional transitions between low and high paid states and composition of low paid individuals are investigated both before and during the crisis to see if there is a change in transition rates or of its composition during the crisis. Lastly, the degree of low pay persistence is examined. It is observed that the incidence of low pay increased after the crisis, and this is primarily due to the lower exit rate from low pay. However, persistence in low pay does not show an increase over the crisis period, which we attribute to the rapid recovery of the labor market in 2010.

Keywords: Low pay, low pay dynamics, persistent low pay, economic crisis, labor market transitions

ÖZ

2009 EKONOMİK KRİZİ ÖNCESİNDE VE SIRASINDA TÜRKİYE'NİN DÜŞÜK GELİR DİNAMİKLERİ

PLEVNELİ, Deniz
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Türkiye'de 2009 ekonomik krizinin işgücü ve düşük gelir dinamikleri üzerindeki etkisine ilişkin bir çalışma henüz bulunmamaktadır. Bu çalışmanın amacı, düşük gelirli kişiler üzerine yoğunlaşarak kriz dönemi boyunca düşük gelir dinamiklerinin ne yönde değiştiğini görmektir. Çalışmada temel olarak düşük gelir grubuna giriş ve çıkışlar ile bu geçişleri yapan kişilerin karakteristikleri, düşük gelir ve kalıcı düşük gelir grubunun kompoziyonu ve krizle beraber bunlarda meydana gelen değişimler incelenmektedir. Bu amaçla kullanılmış olan ve aynı kişilerin dörder yıl boyunca takip edilmesini mümkün kılan iki Gelir ve Yaşam Koşulları panel veri setinin biri kriz öncesi dönemi kapsamaktayken ikincisi kriz dönemini kapsamaktadır. Çalışmada ilk önce farklı istihdam durumları arasındaki geçişler incelenmiştir. Ardından krizden önceki dönemde ve krizi kapsayan dönemde düşük gelir ile yüksek gelir arasındaki koşullu geçişler ile düşük gelir grubunun kompozisyonu incelenmiş ve krizin bir değişime neden olup olmadığı ortaya çıkarılmaya çalışılmıştır. Son olarak kalıcı düşük gelirin derecesine bakılmıştır. Tüm bu analizler sonucunda görülmüştür ki krizden sonra düşük gelirden çıkış oranında meydana gelen azalma nedeniyle düşük gelirli olma durumu artmıştır. Bununla beraber kalıcı düşük gelir oranlarında kriz döneminde anlamlı bir artış gözlemlenmemektedir. Çalışmada bunun nedeni 2010 yılı ile başlayan toparlanma sürecine bağlanmıştır.

Anahtar kelimeler: Düşük gelir, düşük gelir dinamikleri, kalıcı düşük gelir, ekonomik kriz, işgücü piyasası geçişleri

To my mother İnci Plevneli and my father Fahrettin Plevneli

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CHAPTER 1

INTRODUCTION

What affects the distribution of earnings is an important question. For instance, if the impact of an economic crisis affects some people more than others in terms of the wages they earn, the impact of the crisis on earnings distribution is unlikely to be neutral. The economic crisis may also make it harder for certain people to leave low pay so that they may get stuck in low pay for long periods of time even after the crisis ends. In such situations, it becomes crucial to understand why some people earn lower incomes than others so that we can find out what these people can change to earn higher incomes. There are several explanations for this situation in the literature; low pay is usually associated with characteristics such as low education or lack of experience. It is believed that by improving these characteristics a person can move up to higher income groups. However, this movement might become harder during crises since an economic crisis itself can be a cause of low pay: in an environment where firms reduce the number of their employees, people might be more willing to accept lower paying jobs. Also, people may not be able to quit their jobs voluntarily because they do not want to lose their earnings during the ongoing crisis period. The crisis can also cause other factors that trigger low pay to be more wide-spread and long-lived. There may be a movement towards informal sector, for instance, which causes people to be paid poorly. Deterioration of skills during the time that people are laid off from their work may also take its toll by making it harder for individuals to find well-paying jobs following the end of economic crisis. Therefore, understanding the link between the effect of economic crises and individual characteristics become important.

An important rationale for studying low pay is that the majority of individuals' livelihoods depend on what they earn in the labor market. Hence, the link between low pay and poverty is a very close one. Recognizing this in 1960s, economists tried to understand the low pay phenomena in order to come up with policies that could reduce poverty. They used cross-section data (because panel data was hard to come by then) to figure out the causes of poverty. They found several explanations. Yet, there were some extreme conjectures.

One such extreme conjecture is *complete income stratification*. In this case, it is assumed that the status in any given time t-1 is a perfect predictor of the status in time t. For this reason, it was believed that a person could not move out of low pay unless government helps him/her and government policies were shaped around this belief. Another extreme case is *complete income mobility*. In this case, it is assumed that there is no relation between an individual's position in the previous period and in this period (Lillard and Willis, 1978: 986). None of these explanations were enough to shed light on low pay entirely.

It is clear that movements into and out of low pay in a given period explain more about low pay than just a glimpse of low pay at a given time. Fortunately, analyzing and understanding low pay became easier due to recent availability of panel data. Panel data allows us to follow the same persons for extended periods of time and capture their movements between employment or income statuses. In this way, we can understand if any employment group is more prone to become low paid than other groups. "Static" analysis, on the other hand, cannot capture the spread and intensity of the low pay group as good as dynamic analysis does.

In this study, we try to understand the low pay dynamics in Turkey and how it has changed with the global economic crisis of 2009. We do this using two different sets of panel data; one, pertaining to the period just before the crisis and the other that includes the crisis year. The first question that this study asks is the extent of low pay in Turkey and its persistence over time. Are individuals who are in low pay in year t-1 more likely to be in low pay in year t than any other employment

group? In order to study low pay dynamics, we first divide wage earners (i.e. regular and casual employees) into low and high pay and then study transitions between these two states. However, we have to take into account that the wage earner status may include selected group of individuals, which may bias our results. To avoid that, aside from wage-earners we also look at transitions between various employment states. If the results we obtain from the full sample are close to the results obtained from the wage-earner sample, then it means that we are not obtaining a distorted picture of low pay dynamics by concentrating on the wage-earner group only.

The questions we try to answer in the study can be summarized as follows:

- How big are the transition rates into and out of low pay?
- How do the transition rates into and out of low pay change after the 2009 crisis?
- Is there a difference in the effect of 2009 crisis on transition rates between men and women?
- Who moves into low pay? Who moves out of low pay?
- How persistent is low and high pay?
- How do the rates of persistent low pay and persistent high pay change with the 2009 crisis?
- Who gets stuck in low pay? What are the characteristics that are most likely to cause persistent low pay?
- What is the role of informality in this persistence?

By providing answers to these questions, it is aimed that this study will not only show the low income transitions, but also reveal the effect of 2009 crisis on Turkish labor market by showing how low pay transitions changed. An additional contribution of this study is that it tries to figure out what obstructs mobility leading to persistency in low pay.

This study is comprised of six chapters. Chapter 1 gives a brief introduction to the study. Following this introduction chapter, Chapter 2 provides a review of relevant theoretical and empirical literature. Chapter 3 gives information about the data used, which is the Statistics on Income and Living Conditions (SILC) of TurkStat, This chapter also explains how the low pay threshold is constructed, which is used for determining high pay and low pay groups. At the end of this chapter, the methodology that is followed in this study is described. Chapter 4 covers the event analysis. In this chapter, the aim is to identify the movements into and out of low pay by using the panel feature of SILC data. Following that, we investigate the characteristics of low paid and low pay dynamics by making use of multivariate probit models. In Chapter 5, we focus on persistent low pay. Transitions and persistence rates are compared for periods before and after the crisis. After that, the changes in characteristics of individuals in persistent low pay and persistent high pay are compared between both periods. The final section of this chapter is about informality in the Turkish labor market and its relation with persistent low pay. Chapter 6 concludes the study.

CHAPTER 2

LITERATURE REVIEW

2.1. THEORETICAL LITERATURE REVIEW

Poverty and unemployment are two important issues that have been the subject of much discussion among economists and social scientists. In 1960s, however, as USA was facing persistent poverty and was trying to eliminate it, more and more economists started to focus on labor market issues and its relationship to poverty. Two main theories, the human capital theory that was formed and shaped by classics and neo-classics; and the Segmented Labor Market theory have been put forward to explain the link between labor markets and poverty. Different economists had their own versions or explanations of this link; however it is possible to claim that recent explanations have evolved from these two theories.

The neo-classical theory of human capital is based on the marginal productivity theory where firms maximize profits and labor maximizes utility. Human capital is a stock[1] in which individuals can invest so that they can increase their future productivity and be attractive in the labor market to firms. Wages that workers earn are determined by their levels of human capital. There are several sources of unequal human capital. First one of these sources is innate ability. Certain skills or characteristics may be owned by birth. IQ levels, for instance, may be different for different people. If this is the case, human capital heterogeneity may occur even if

[1] The definition of human capital as a stock (h) relates mostly with Becker. Unlike him, there are other economists who rejects this unidimensional object (h), but claims that there are more than one type of skills that a person can have (such as cognitive skills and physical skills).

individuals have the same opportunities. Second source of human capital differences is schooling. Skills and knowledge can also be gained through schooling or training, meaning that it is a matter of investment. School quality and the efforts shown in school are also important here. Two people with identical genetics who went to the same school may have different human capital if one choses to work harder than the other one. The third source is training. Individuals can gain skills and knowledge after school via training. Training might be related with a certain industry or with a certain technology (Acemoğlu, 2011).

Wage differences have their roots in the decision to invest as it results in productivity differences. However, different economists have different ideas as to what these investments are. One of the most influential economists in this area is Gary Becker who wrote "Human capital: a theoretical and empirical analysis" in 1964. In this book, he explains two kinds of investments in human capital. The first one of these is "on-the-job" training and the other one is schooling. With on-the-job training, productivity of a person increases with the years spent on the job. Therefore the job itself affects the productivity of the worker. There are two types of on-the-job training: general training and specific training. If a worker receives general training, it is beneficial for all firms including the firm providing it since the future marginal productivity of the worker increases. As Becker (1993) explains, marginal productivity is the determining factor of wages in a competitive market so the firm will also have to pay higher to the employee to whom it provided funds for training. As a result, higher future marginal productivity will cause higher future wages. If these increases are in the same amount, the firm that provided the training will get no return from that investment. Then, a rational firm would not provide any general training so long as it is obliged to pay for it. Therefore, the cost of general training is usually paid by the worker who wants to invest in his/her future. The second type of on-the-job training is specific training. This type of training increases a worker's productivity only in the firm that is giving the training. If this person was to work in a different firm, his/her productivity would not increase and he/she would earn a lower wage

in another firm than he/she earned in the firm providing the training. This decreases the turnover risk of the employee, which is why it may be preferred by firms. In specific training the cost of training is typically shared by the worker and the firm and so are the returns.

The second kind of investment is schooling. As Becker explains, there are two approaches when it comes to schooling. First one of these is the "Egalitarian" approach. According to this view, everyone has about the same ability to benefit from human capital investment, but everyone in the labor market invests themselves differently. This is not because some people "deliberately" choose not to invest, but because they differ in their family wealth, luck, or other environmental factors, so that they cannot invest in the same amount. Others that do invest, however, increase their marginal productivity and thus firms prefer these people so that they can maximize their profits. The amount of funds that one has becomes the most crucial element. Becker explains that this approach has been internalized by the public schools in US. It became more and more important for the schooling system that all students have access to same opportunities. The other approach is the "Elite" approach, which is quite the opposite of the first one. In this view, everyone has the same opportunities, but they do not possess the same skills. Some people are abler or they can benefit more from the opportunities open to them than the others. So, human capital stock of these "elite" people grows more rapidly than others. There is an objective selection method used in order to find out those people and the "objective" standards used are exam scores and grades. The schooling system in UK is more related with this approach. Investment is made on abler persons, which in turn allows these abler persons to find better jobs that pay better and so earnings become more unequal (Becker, 1993).

Becker explains that people may face various difficulties in acquiring human capital. Due to high costs of training and schooling (for college education), individuals may prefer other short term solutions rather than making the costly

investment of schooling. He claims that a short-term solution might be preferable to college education even though the return of college education is higher, if the person cannot easily afford college. Children of wealthier families might be luckier in such a situation, but still internal financing would not be possible for everyone (Becker, 1993).

Nelson and Phelps (1966) carries Becker's explanations one step further and claims that individuals who receive higher education can understand and interpret any information better than those who receive lower education. In their view, jobs are ranked according to the level of adaptation or learning they require in cases of disequilibrium where workers' environment changes. At lowest ranks, there are jobs that are highly routinized since these jobs require very little or no adaptation to changes. The high ranked jobs, on the other hand, require more adaptation to technological advancements. In order to place individuals in these ranked jobs "effective labor" had been utilized and a certain weight is given to every individual. They claimed that *"highly educated men are perfect substitutes for less educated men"* (Nelson-Phelps, 1966: 69) only if the technology level is constantly improving.

A Marxian critique to the neoclassical human capital approach had been made by Bowles and Gintis (1975). They claim that *"market imperfections, monopoly and labor unions in particular, drive a wedge between marginal products and wages"* (Bowles and Gintis, 1975: 74). According to them, schooling is important only for the wellbeing of the capitalist system since it delivers "good" employees to the system. [2] The source of income differences is not human capital investments, but different amount of power held by different classes.

Neo-classical labor market theories assume that there is a wide range of jobs in the market from which people can choose freely by evaluating their human capital. The wage that they earn is determined due to their investments in their

[2] Human capital is the capacity to work in a hierarchical workplace where individuals need to obey their superiors' orders. (Bowles and Gintis, 1975)

human capital, so all people that own the same skills would get the same level of income. They also assume that there is mobility in the labor market. If an individual made an investment in his/her human capital by training, for example, he/she would earn more income in the future since he/she has higher productivity now.

The Human Capital theory assumes a large unified labor market in which the focus is on the supply side of the labor market. The main criticism of the Segmentation Theory to the Human Capital theory is related to its inability to explain wage distribution and unemployment under this single labor market. The Segmentation Theory, unlike neo-classical human capital theory, focuses on the demand side of the labor market. As the focus shifts to the demand side, firms become more important in employment structure in the economy. There are a number of non-competing sectors in the economy and in each one of them; the returns to investments in human capital are different. Therefore, it is questionable that every worker is paid proportional with their productivity.

Concerning low income theories and how the segments are formed within the economy, there are several approaches. The first one of these is the Dual (Market) Theory developed by Piore in 1969. In Dual Theory, there is a duality in the labor market in the sense that there is a primary sector and a secondary sector in the labor market. The jobs in the primary sector are the "good" jobs, in which there is *"high wages, good working conditions, employment stability, chances of advancement, equity, and due process in the administration of work rules"* (Piore and Doeringer, 1971: 165). The jobs in the secondary sector, on the other hand, have *"low wages and fringe benefits, poor working conditions, high labor turnover, little chance of advancement, and often arbitrary and capricious supervision"* (Piore and Doeringer, 1971: 165).

Later, Piore and Doeringer developed the Internal Labor Market (ILM) Theory. According to them, the reason for such dual structure is twofold. Firstly, primary sector provides protection to employees and employers against uncertainties. For

this reason, the importance of training increases for workers in this sector and eventually employers start to invest more in these workers in order to lower the turnover rates. Secondly, past experiences create an understanding of "equity" which becomes a custom law for these firms. The *"stable and loyal core personnel" that* work in ILMs are encouraged by career ladders lying in front of them, they get on-the-job training and they work under a reward system. In return, employees agree to work under a set of administrative rules which reduces turnover costs of the firms (Leontaridi, 1998: 70-71). Therefore, mobility is low in this sector. In the secondary sector where there are higher turnover rates, however, mobility is higher (although still limited). Having worse working conditions than in primary sector, secondary sector jobs are rarely in ILMs. Even if they are in ILMs, the entry and exit rates are higher (Piore and Doeringer, 1971).

All explanations so far are still unable to explain differences that could be observed within the primary sector. Employees who earned the most in primary sector, or the employees who are ranked highest in the hierarchical order, show more mobility than their peers in the same sector. In 1975, Piore redefined his theory of ILMs. In this new view, primary sector is divided into two sub-segments. In the upper segment of the primary sector there is a higher chance of advancement due to career ladders, but like secondary sector jobs, mobility rates are higher too. Employees who work under these managers and professionals in the high tier form the lower tier of primary sector. These blue-collar workers earn less than their managers and their chances of advancement are lower, but the mobility in this sector is also lower (Piore, 1975).

In order to this explain immobility (or limited mobility) among sectors, Piore (1975) described "mobility chains". According to this class based segmentation model, movement along the mobility chain implies both a socio-economic change and a change in the nature of jobs. Workers who are employed in a certain job mostly came from similar backgrounds and if they were to change their social background (changing schools, moving to another place, etc.); their jobs would

also change due to this movement. Then, the reason of immobility is not due to a set of skills but the role that each sector played in the society.

The second approach concerning the division of segments is the Radical Theory. Developed by Edwards, Reich and Gordon (1975), this theory is similar with dual market theory apart from the source it takes for the segmentation. According to Edwards, *"(…) segmentation arises from not from market forces themselves but rather from the underlying uses of labor power"* (Edwards, 1979: 165). There is a historical explanation for this difference. With the mass production and development of factories in the nineteenth century, craftsmanship slowly ended. People who were mostly identical in their skills got employed in firms that required low skill levels. As these national and international corporations that these people were employed grew larger, the hierarchical order in these corporations got tighter. The "bureaucratic control" of white-collar workers in *core corporations* assured that employment was stable. In the *peripheral corporations*, however, mobility was higher and wages were lower due to absence of a bureaucratic organization. Eventually ILMs (formed by corporations in the core) emerged and wage gap between core and periphery widened. This resulted in stratified working class.[3]

The third approach is the Queue Theory. Thurow, who developed the job competition model, describes two types of queues. The first of these queues is made up of jobs in the market. The second queue is made up of people who wish to apply to these jobs, ranked accordingly due to their background. Individuals are given a certain level of "trainability" according to their skills or education. In the labor market, the best available jobs in the first queue are filled by highest ranked applicants from the first queue. These people are preferred because of their ability

[3] According to Edwards, there is a further division in the core which is similar with the division in Dual Theory. The primary sector is divided "independent primary" and "subordinate primary" segments. Nevertheless, workers are still highly differentiated. (Leontaridi, 1998: 74)

to learn fast, which means lower training cost for the firms that employ them[4]. As a result, these workers earn more wage than those who were ranked lower in the queue (Thurow, 1975).

Finally, in 1981, Okun proposed the Career Labor Markets (CLM) notion. Like Thurow, Okun suggested that firms employ workers that would minimize the costs of training. However, firms also try to increase the supply of applicants by building reputation. To have this sort of reputation, firms try to decrease the turnover rate of the employees who are career oriented and in order to do so; firms provide better working environment and protection to these employees.[5] This "invisible handshake" between firms and employees determines the responds of both parties if anything goes wrong. By this way, both firms and employees minimize their risk and wage levels remain stable for the career sector by this way (Okun, 1981; Leontaridi, 1998: 78).

2.2. EMPIRICAL LITERATURE REVIEW

Labor market theories diverge in many aspects, but one of the central themes is earnings mobility, which is of great importance for policymaking. Many scholars examine if a person can move up the income ladder by acquiring more human capital. If not, it means that people are stuck in the secondary sector and are unable to move up even if they invest in themselves. These types of findings are in conflict with the Human Capital theory, which claims that investment (schooling, training, etc.) causes upward mobility but increases the relevance of

[4] These firms are ranked high in the first queue and they still want to maximize their profits. In this way, there's a similarity with orthodox labor market theories. However, in the job competition model the rank of the job itself determines the level of income that the worker gets instead of worker skills.

[5] As a result, labor market is divided into two segments which are the "casual sector" and the "career sector".

SLM theories that claim that there is either no or limited mobility in the labor market.[6]

In 1987, McNabb tested for labor market segmentation in Britain by looking at male employees.[7] He identified seven occupation groups[8] and showed that education was more important in determining wages in core occupations. If workers in periphery occupations were to stay within that segment, higher education would not cause higher wage levels. Therefore, McNabb claimed that the labor market was segmented in Britain and these segments were formed due to education and work experience (McNabb, 1987).

In 1990s, low income became a significant problem in Britain. As a result, the focus of researchers shifted to the low paid; those who stayed poor and those who became non-poor became more and more important. In 1997, Jarvis and Jenkins analyzed low income dynamics in Britain.[9] Focusing on those that were employed in all years that their study covered, they found that there was a high state persistency in high and low paid groups for Britain. After that, they analyzed the effect of the duration spent in low pay on state persistence. If a person spent two years in low pay, the probability that she will move out of low income was lower than those who spent only one year in low income. Finally, they characterized low income escapers and entrants. They found that most of the escapers were without children and most of the entrants were elderly people (Jarvis and Jenkins, 1997).

Sloane and Theodossiou (1996) also focused on earnings mobility in Britain and tried to distinguish between permanent and transitory low pay.[10] They used

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[6] SLM theories emerged from the need to explain low income labor markets. What makes people stuck in the secondary sector is an important question which can be answered by looking at those that could move from the secondary to the primary sector.

[7] The data used is 1975 General Household Survey. Employees between ages 16-64 are taken.

[8] These are: professional, managerial, intermediate non-manual, junior non-manual, skilled manual, semi-skilled manual and unskilled- personal service.

[9] The data used is first four waves of BHPS.

[10] The data used is first and third waves of BHPS.

multinomial logistic regressions to find out the probability of being low paid (in 1993) given that (1) the individual was also low paid (in 1991); and (2) given that the individual was high paid (in 1991). They found out that low paid men were more likely to become high paid when compared with low paid women. As a matter of fact, women "*not only appear(ed) to be disadvantaged in escaping from the low-pay group but (were) also more likely to fall into it"* (Sloan and Theodossiou, 1996: 664). They also found that individuals with lower education levels and young individuals (aged 20-23) were more likely to fall into low pay.

In 1996, Steward and Swaffield analyzed low income dynamics and transition probabilities in Britain.[11] Different than Jarvis and Jenkins, they thought that focusing only on the employed group and looking their income transition rates would not show the whole picture because *"(…)transitions are made not just into and out of low pay, but also into and out of the employees-in-employment group"* (Stewart and Swaffield, 1996: 27). For example, low paid people may drop out of the labor force in the next period and if the analysis is limited with those that are employed in all years of the survey, these people would be left out. In order to avoid this, they used six status categories[12] and calculated transition rates separately for men and women. Their results showed that there was considerable state persistency in low pay, high pay and out of the labor force statuses and there was a significant difference between transition rates of men and women. Another important aspect of the Steward and Swaffield study is that it addresses the initial conditions problem[13] by using an endogenous selection model that utilizes parental variables as instruments[14]. Stewart and Swaffield constructed a method to

[11] The data used is first four waves of BHPS.

[12] These are: low paid employee, higher paid employee, missing earnings, self-employed, unemployed, out of the labor force.

[13] Heckman's initial conditions problem: Simple probit models assume exogeneous initial low pay state. If that is the case, persistance in low pay must be because of observed explanatory variables. If there's correlation between unobservables the result will be sample selection bias. (Steward and Swaffield, 1996: 32)

[14] These variables explain individuals' socioeconomic backgrounds.

separate heterogeneity[15] and state dependence[16] effects. According to them, if some characteristics of individuals persisted for a long time, these could be considered as state dependence by researchers. For this reason, it was necessary to distinguish this effect and find the effect of "structural" state dependence. The result they found is that state dependence effect is higher in their endogenous selection model than in standard probit model with exogenous selection. In other words, the effect of heterogeneity on mobility is overstated if endogenous selection is ignored (Steward and Swaffield, 1996)[17].

Capellari and Jenkins (2005) combined earnings mobility analysis and unemployment dynamics and focused on the so-called "low pay-no pay cycle" in Britain.[18] If low paid individuals were more likely to lose their jobs than high paid individuals and if unemployed individuals were more likely to be low paid when they found a job, then there could be labor market segmentation.[19] In order to find out if such a cycle (or segmentation) exists, they modeled transition rates between high pay, low pay and unemployment. They found that raw transition rate from unemployment to low pay was 17.8% while this transition rate is 4.14% from high pay to low pay. Also *"(...)the probability of being unemployed in one year was three times more likely among those who were low-paid rather than high-paid previous year"* (Capellari and Jenkins, 2005: 3). They claimed that this evidence suggested the existence of low pay-no pay cycle in the British labor market. After that, they focused on the heterogeneity in characteristics and like Stewart and Swaffield (1996) they tried to distinguish between heterogeneity and state

[15] Heterogeneity among individuals causes *"Certain individual characteristics (to) increase the probability of an individual to be low paid."*(Stewart and Swaffield, 1996: 30)

[16] State dependence means that *"(...) the probability of being low paid at t is considerably higher among those who were low paid at t-1 than among those who were higher paid at t-1."* (Stewart and Swaffield, 1996: 30)

[17] See Capellari and Jenkins (2004) for further explanation of the methodology to model low income transitions and to measure state dependence.

[18] The data used is first ten years of BHPS, men only.

[19] In that case, the primary sector would consist high paid workers and secondary sector would consist those who are trapped in the "low pay-no pay cycle".

dependence. [20] The results they found about employment showed that (1) married individuals were more likely to be employed, (2) better educational qualifications increased the probability of employment, (3) health problems lower the probability of being employed. The estimates they found on low pay probabilities, on the other hand, showed that (1) age had a U-shaped relation with low pay probabilities, (2) higher education levels lowered the probability of being low paid (3) if an individual is employed, being married means a lower probability of being low paid (Capellari and Jenkins, 2005).

Uhlendorff (2006) focused on the existence of low pay-no pay cycle in West Germany.[21] He used a multinomial logit model with random effects, controlling for the initial conditions problem and attrition. The results showed that although there was evidence that low pay-no pay cycle existed in the German labor market, being low paid at time t-1 did not decrease the probability of being employed at time t, but increased it. Therefore these low paying jobs could be considered as stepping stones. Also the model estimates showed that being an immigrant reduced the probability of being high paid while being married increased this probability. Similar with the results of Capellari and Jenkins (2005), Uhlendorff found a U-shaped relation between age and probability of being low paid.

These studies show us that heterogeneity and state dependence both have an effect on state persistence. Segmentation with respect to gender, age, work experience, education and existence of dependent children are all contributing factors in labor market dynamics. Still, evidence from Turkey shows that the division of labor market into formal and informal sector might be a very important factor that affects low pay dynamics in Turkey. Even though informal sector is considered a stepping stone into the labor market by young adults in Turkey, it may be possible once they enter informal sector they got stuck in this state for a long time as

[20] Capellari and Jenkins estimated a multivariate probit model controlling for all sources of endogeneity. These are (1) initial conditions, (2) panel attrition, (3) selection.

[21] The data used is German Socio-Economic Panel Study (SOEP) between 1998-2003, men only.

employers might have prejudices that workers in this sector are low in productivity (Taymaz, 2009; Tunalı, 2003).

One last point that should be mentioned here is the effect of economic crises on income mobility. Although there is a lack of literature on the effects of 2009 global economic crisis on income dynamics, one would expect the effect of this crisis would be different than other short-lived domestic economic crises. Labor market composition might have become different after 2009 crisis and individuals with certain characteristics might be affected more severely from the crisis than others. It is the aim of this study to find out if there is such an effect of 2009 crisis on the Turkish labor market.

There is very little research on low pay dynamics in Turkey due mainly to the lack of panel data until very recently. In this study, I hope to contribute to this literature on low pay dynamics by providing a case study from Turkey. I will not only look at low pay dynamics through transition rates but try to explain what individual and household level characteristics explain these dynamics and persistence of low pay. Different from other studies, which have focused mainly on transition rates across employment-unemployment states, I will look at how a crisis such as the 2008/9 crisis affects mobility both in terms of employment transitions as well as pay. Also, I will analyze how certain characteristics that affect income mobility change with the crisis. It is the aim of this study to show if the composition of wage earners changed with this crisis and if so, how does this change affect persistence in low pay.

CHAPTER 3

DATA AND METHODOLOGY

3.1. DATA

The data used in this study come from the Statistics on Income and Living Conditions (SILC) of Turkey. SILC is conducted by the Turkish Statistical Institute (TurkStat) and its first application dates back to 2006. Similar surveys are conducted in 27 countries using very similar survey instruments across Europe. Turkish SILC is representative of Turkey and urban and rural settlements. It has both a cross-sectional component and a longitudinal component. Since in this study we study movements in and out of employment and income changes across years we only use the longitudinal component of the survey.

The SILC Panel is a true panel in that it follows the same individuals for four consecutive years. There are four sub-samples in each panel set that rotates out each year. This rotation can be seen in Figure 3.1. The first sub-sample that is obtained in the first year of the panel is followed for four years and then dropped out of the sample. The second sub-sample joins the panel in the second year of the panel, and by the time the first sub-sample drops out, it completes three years. This process is the same for all four sub-samples. Therefore, in any given four-year period there is one group that is followed for four years, one group that is followed for three years, one for two years and one for one year. Although the fourth sub-sample is followed for three more years, it is not possible to compare them with the previous groups as one panel set covers only four years. When the panel set changes, so does the id numbers given to individuals in the set.

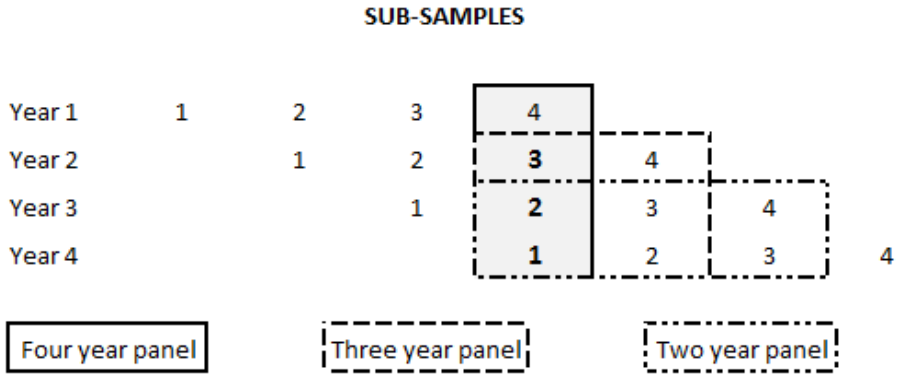

Figure 3. 1 : The Panel Design of SILC

Since 2006, six panel data sets are completed. This study uses two different sets of panel data in order to compare the labor income dynamics before and after the global economic crisis of 2008/2009. These sets are 2009 SILC Panel Data and 2011 SILC Panel Data. The first panel covers the years from 2005 to 2008 which shows the situation before the economic crisis, and the second panel covers the years from 2008 to 2010 which shows the situation after the economic crisis. Although same individuals are followed in the same panel, these two panels do not include the same samples. So, there are two different sets of individuals who are followed. However, as will be demonstrated shortly on the basis of observable individual and household level characteristics, the samples in each of the panels are similar to each other. We use these two sets to compare the change in the low income dynamics due to the global crisis.

SILC provides detailed information on basic socio-economic and demographic characteristics of the individuals who are followed as well as detailed information about their labor market outcomes including labor market earnings. Information on earnings and other non-wage income is collected retrospectively and refer to the previous calander year. Information on employment, unemployment and inactivity status on the other hand are collected in reference to the week preceding the survey.

In 2009 SILC Panel Data, there are 887 households and 15,424 individuals. 5,868 of these individuals are followed for four years, 7,353 are followed for three years, 1,509 are followed for two years and 694 are followed for one year. In 2011 SILC Panel Data, there are 812 households and 16,189 individuals. Of these, 6062 individuals followed for four years, 8244 individuals for three years, 1459 individuals are for two years and 424 individuals for one year. The survey was fielded in the month of April-June in each year of the survey. In this study, we only focus on those who were followed for four years. All individuals in the household who are aged 15 and above answer the questionnaire every year. Individuals who are younger than 15 are also included in the sample but they are not part of the target group of SILC. In this study, this data is used only to find out the number of children in the household. After that, the group below 15 years is excluded.

When it comes to linking labor market earnings with employment status, we had to use information from two consecutive years. As noted earlier, while income information is collected retrospectively, employment status is collected at the time of the survey. For instance, the 2007 SILC (part of the 2009 SILC Panel) collects information about the person's employment status in the reference week in 2007 (at the time of the interview) but his/her income (collected during the interview in 2007) refers to the 2006 calendar year. Hence, if an individual is categorized as a wage earner in 2006, the wage that he/she earns is calculated from the information collected in 2007. This process of trying to match the employment status of the individual in any calendar year with his/her labor market earnings essentially means that we lose a year in a four-year panel.

Considering the fact that income information and employment state information come from different years in a given panel, this study uses the first sub-sample that is followed for four years. However, from that sub-sample, only last three years are used for income information. It can be seen from Figure 3.1 that the sub-samples that are shown in bold are not the actual sub-sample that is followed for

three years, but they make up the sub-"sub-sample" group in the actual four year sub-sample.[22] The reason for this situation is that, although there is income information for 2005, there is no employment status information since it would be coming from year 2004 and the panel does not cover 2004. This situation can be seen in Table 3.1. The actual three year sub-sample is not used as only two periods could be analyzed due to this same reason. The three year weights constructed for four year sub-samples allows this kind of usage of the panel data and so they are used in all calculations in this study.

SILC includes longitudinal weights in each panel, constructed separately for the sample observed for two, three and four years. For the group followed for four years, three and two year sampling weights are also available. There is a similar case for other subgroups as well. These sampling weights take into account non-response as well. The sample size is adjusted accordingly and it is very large, so there is no substitution between years.

Table 3. 1: Source of Different Information for EU SILC Panel Data

Panel Years	**2005**	**2006**	**2007**	**2008**
The year of data required to find the income information for the panel year	*2005*	2006	2007	2008
The year of data required to find the employment state information for the panel year	*2004*	2005	2006	2007

Income is the net annual income that is earned in the reference period (which is the previous calendar year) through the main job. In this study, both in cash and in-kind incomes are considered as individual income. The group that is employed is defined via a set of questions, i.e. it does not depend on the subjective evaluation of the person in question but rather his/her response to a set of three

[22] In Figure 3.1, the part that is shaded grey shows the sub-sample followed for three years. The years shown in bold (2,3 and 4) are the years that are used.

questions that aim to establish his/her employment status. Once the employment status of the individual is set, further questions regarding his/her nature of employment follow. One of these questions is on status in employment, which defines five categories of workers. These are regular employees, casual employees, employer, self-employed and unpaid family workers. The first two groups are categorized as "wage earners", while the latter ones are categorized as "non-wage earners".[23] Furthermore, we define four employment states as follows: wage earners, non-wage earners, unemployed, and persons out of the labor force.[24] As income is earned through the main job, and return on capital might be effective on incomes of own account workers, only wage earners are included in income transition analysis. Wage earners with zero income reported are excluded from the analysis.[25]

Although income levels that are found in the panel data set are annual incomes, we convert them into monthly and hourly income levels using the information on months worked per year and hours worked per week. The SILC panel data sets include monthly employment status information for the reference period (one year), and by making the same categorization that is explained before, total months that are worked as a wage earner are calculated. By using the total number of months worked as a wage earner, it is possible to find monthly income levels of wage earners by dividing annual income to total months spent at main job. For hourly incomes that are used in this analysis, another variable is used which gives the total number of hours spent in main job in one week. Taking one month to be approximately 4.33 weeks, the total hours spent at work in one month is calculated. After that, the total hours spent at work in the year is calculated by

[23] Unpaid family workers are included in non wage earners group, however it does not cause a problem since in the rest of the analysis, income calculations are made by only taking wage earners.

[24] In some parts of this study, notation used for wage earners is W, for non wage earner workers is S, for unemployed is U and for out of the labor force is OLF.

[25] There are 142 wage earners in 2009 SILC and 138 wage earners in 2011 SILC who reported zero income. These individuals constitute 2.4% and 2.3% of the sample respectively.

multiplying total number of months worked in that year and total hours worked in a month. Finally, annual income is divided with this number and hourly income levels are found. In this analysis, only wage earners that work full time are taken into account. These individuals worked for at least 30 hours per week for all 12 months.

Table 3. 2: Proportion of Full Time Wage Earners in Wage Earners Group

Table 3.2.A: 2009 SILC Panel Data

	2006	**2007**	**2008**	**Total**
Not full time	453	462	494	1409
Full time	967	1044	1007	3018
Total	1420	1506	1501	4427
% of full time workers in wage employment group	68.10%	69.32%	67.09%	68.17%

Table 3.2.B: 2011 SILC Panel Data

	2008	**2009**	**2010**	**Total**
Not full time	491	427	418	1,336
Full time	1086	1098	1156	3340
Total	1577	1525	1574	4676
% of full time workers in wage employment group	68.86%	72.00%	73.44%	71.43%

The proportion of full time wage earners in all wage earners group was 69.32% in 2007 and 72% in 2009 (Table 3.2). For full time wage earners, average total annual income was 13220TL in 2007 and 12182TL in 2009. When we take total months spent at work in the given year, we find that average (real) monthly income was 1100TL in 2007 and 1016TL in 2009. However, these monthly wages do not take the total hours spent at work in a month into account. By using weekly

total hours spent at work, we calculate hourly mean income, which was 5TL per hour in both 2007 and 2009.

Figure 3.2.A: Hourly incomes below 10TL/hr. [26]

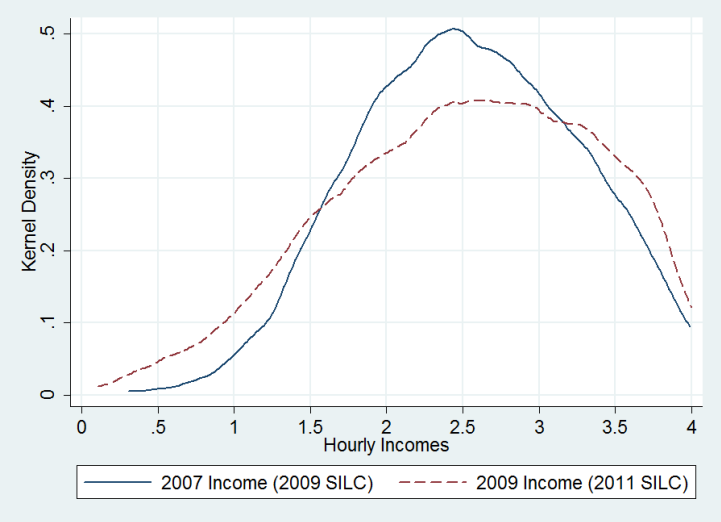

Figure 3.2.B: Hourly incomes below 4 TL/hr.

Figure 3. 2: Kernel Distribution Plots for Hourly Incomes

[26] The first Kernel plot shows the distribution for wages below 10TL/hour and the second Kernel plot shows the distribution of wages below 4 TL/hour. The income levels from these two data sets are adjusted using CPI values and are in 2007 prices.

To be able to compare income levels from different years, all incomes are adjusted for cost of living using CPI reported by TurkStat. In the analysis of the 2009 SILC panel data set, 2006 prices are used. In the analysis of 2011 SILC panel data set, 2008 prices are used. Since the surveys are conducted during the month April, CPI rates are taken for this month. When two panels are being compared, all prices are converted into 2007 prices. This adjustment is made for all comparisons in this study.

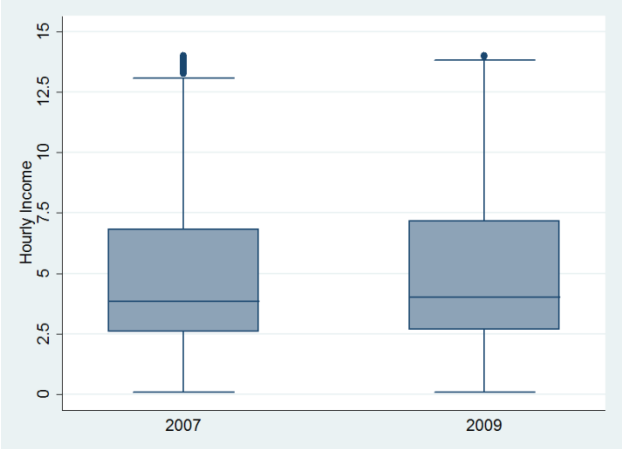

Figure 3. 3: Boxplot for Hourly Wages for Each Panel Data Set [27]

Note: Includes wage earners only.

Of these two panel data sets, one sample represents pre-crisis period and the other one represents crisis period, so it is expected that there would be a certain degree of difference between income distributions between the two panel data sets. In Figure 3.2, Kernel plots for income distributions in both panels are shown. It can be seen that income distribution was more compact before the economic crisis and it became more dispersed after the crisis. As it would be expected, the proportions of individuals with lower incomes are higher after the crisis. The same situation

[27] Figure 3.3: The line at the bottom shows lowest level. The one above that is the lower quartile (25th percentile). Above that there is the median, which is followed by the higher quartile(75th percentile) and highest lever. The box that is shaded shows the interquartile range (=Q3-Q1). The range is the gap between highest and lowest values. The mean is between the median and 75th percentile but not shown in the figure.

could be seen from the box plot in Figure 3.3. The income range is wider after the crisis. The Kernel density function also shows that incomes are skewed to the right. Another way to look at the income differences between two periods is through cumulative distribution functions (Figure 3.4). The cumulative distribution of 2009 first degree dominates the distribution in 2007 for hourly wages above 1.8TL. However, at the bottom of the distribution (i.e. for hourly wages less than 1.8 TL/hour) 2007 distribution dominates the 2009 distribution. In other words, persons earning low wages are worse off in 2009 than in 2007.

Figure 3. 4: CDF Graph for Hourly Wages for 2007 and 2009

Note: Includes wage earners only.

This brings us to the main focus of this study, which is the distinction between low and high (or *not low*) income earners among the wage earner group. There are several different cut-off points used for these kinds of analyses; however the two most frequently used cut-off points are half the mean income and half the median income. One important aspect is that the distance between mean and median points increase when wage dispersion increases. Since the two panel sets differ from each other due to the crisis that took place in between, the gap between the

mean and the median is larger in one of the data sets as compared to the other. The decision in regards to the choice of the cut-off essentially rests on the referene group. Who do individuals compare themselves to in judging their position in the wage distribution? We have made the decision to use half the mean income since we conjecture that individuals judge their position against the mean.

Table 3. 3: Threshold Levels and Monthly Minimum Wage Levels*

2009 SILC Panel

	Threshold for Yearly Wages	Threshold for Monthly Wages	Threshold for Hourly Wages	Minimum Monthly Wage***
2006	6189	516	2.4	410.90
2007	6610	550	2.5	411.09
2008	6297	525	2.5	445.90

2011 SILC Panel

	Threshold for Yearly Wages	Threshold for Monthly Wages	Threshold for Hourly Wages	Minimum Monthly Wage***
2008	6334	528	2.6	445.90
2009	6091	508	2.5	457.38
2010	6234	520	2.5	461.29

Notes: * Yearly, monthly and hourly wage thresholds are half mean thresholds calculated individually. Transition analysis in following sections are done by using hourly wage and threshold levels.

** All prices are converted into 2007 price level

Source: Authors calculations from SILC 2009 and SILC 2011. Minimum monthly wages are taken from Ministry of Labour and Social Security (Adjusted with annual CPI rates taken from Turkstat).

All threshold values are calculated separately for each year by using three year panel weights. In Table 3.3 half the mean values of yearly incomes, monthly incomes and hourly incomes are shown. However, in this study, only hourly wages are taken as the threshold level. The main reason is the following. Incomes reported for the whole year or even for the whole month may not be very

explanatory as the individual may have stopped working during that period. For example, if an individual worked for two months in a certain year and reported the income that she earned during that period as her annual income, she may be classified as a low paid wage earner even if she would be classified as a high paid wage earner if she had been classified by her monthly income. The same situation applies for monthly income case. An individual may have worked for 30 hours (which is the lowest possible hours to be accounted as a full time wage earner in this study), and still be classified as a low paid wage earner even if she earned an hourly income high enough to be classified as high earner based on hourly wages. As can be observed from Table 3.3 the cut-of based on hourly wages is very similar across years.

The other key variable used in the study is formal vs. informal employment. The distinction between formal and informal workers is made through the registration status with the social security institutions. An individual is considered a formal worker if he/she is a wage earner who is registered with a social security institution. An individual is considered an informal worker if she is a wage earner who is not registered with a social security institution. As unpaid family workers are lumped with non-wage earners, they are neither formal nor informal workers. Any individual below age 15 is taken as a child and excluded from the rest of the study. Any individual above age 64 is considered an elder but not excluded from the study as some of them might still be economically active. Children and elders constitute the potential dependents. The number of dependent family members may have an effect on the employment decisions of individuals, like causing more people to start looking for work after the crisis if the number of dependent household members in the household is high.

3.2. METHODOLOGY

The aim of this study is to investigate the dynamics of low pay. Data given at a point in time would not be useful for a dynamic analysis as it is impossible to

track the transitions that take place over a period of time. For this reason, cross-section data cannot be used in a dynamic analysis unless it also includes retrospective data about past labor market history that includes levels of pay from employment. However, such data are scant and prone to measurement error as the respondent would need to remember what his/her pay level was at different points in the past. To understand movements into and out of low pay and persistence in low pay, panel data that encompass an event history is required. An event history is *"a record of when events occurred to a sample of individuals"* (Allison, 1982: 62). "Events", such as transitions into informal sector, may coincide with movements into low pay. Given the transitions that individuals make, it also becomes possible to find out whether there is a persistency in low pay for a sample of individuals.

The data used in this study, the SILC Panel data, follows individuals for four consecutive years. As it is explained in the previous section, this means that for each data set we can calculate two "two year" transitions and one "three year" transition. One drawback of such data sets is censoring. *"Censoring means that the individual is not observed beyond* t_i*, either because the study ends at that point or because the individual is lost to follow-up for some reason"* (Allison,1982: 66). This is what is referred to as *right censoring*. In addition, there is the problem of *left censoring*. The study starts at a point in time, which may not necessarily be a natural starting point for the event in question. In our case, we are interested in the event of low pay, which may start with the first job held. The natural starting point of a study such as ours would be the first time the person had his/her first job. Unfortunately, this is not the case for SILC. As noted earlier, the data started to be collected in 2006 and the employment history is collected over a four year period. Hence, we do not know what the employment situation of the person was prior to the date of the first interview.

What types of difficulties arise as a result of censoring? In our case, when analyzing three year transition rates, we consider that only those who spent three

years in low pay are persistently in low pay (LLL). We do not classify individuals that have the "LLH" sequence as persistently in low pay because they only have two periods of low pay. If the data set covered a longer period such as five years (instead of four), we would be able to calculate four year transition rates and given that we consider three years of low pay as low pay persistency, any group that included three years of low pay (such as LLLH, HLLL, LLLL) would be included in persistence analysis. In other word, the fact that we do not know the state in the year before the period begins may cause an underestimation of the effect of the variable that we are analyzing. For example, if the period was prolonged for one more year we could see that what we labeled as LLH was actually LLLH and we did not include the person who was actually persistently poor into persistency analysis. A similar logic applies to cases where we observe "HLL". According to our classification these individuals are not in persistent low pay group. However, they are surely potential candidates. If we could observe them one more year, we would probably categorize some of these as persistent low pay.

Censored data is one drawback that can cause biased results. Another drawback is to do with the period over which low pay is measured. In this study, for example, the information on labor market earnings is given on a yearly basis. If we had monthly income data, we could have seen more low paid individuals in the data set. This is because there may be movements into and out of low pay within a year. If the person reported an annual income that is higher than our threshold we defined that person as not in low pay. Perhaps this person was low paid in a given month, but moved into another status the next month, yet monthly movements are not analyzed due to lack of data because there is no monthly income information corresponding to the monthly employment information.

Despite its weaknesses, event analysis is still the most resourceful tool as it can provide explanations to researchers such as the causes of transitions into low pay.

To put it in another way, event histories may include data on relevant independent variables which would shed light on the causes of the events (Allison, 1982: 62).

In the chapter on event analysis, conditional transition rates between employment statuses (i.e. wage employment, non-wage employment, unemployment, OLF) and conditional transition rates between pay statuses (i.e. low pay and high pay) are calculated. Some of these transitions took place between two years. These transitions are shown as "AB". There is also three year transition rates used in this study. The notation used for three year transitions is "ABC".

Assume that there are four possible states: a, b, c and d. The proportion of individuals who were in category "a" in year t-1 that moved to category "b" in year t is shown with the two year transition rate AB (for ex; LU or HL). The method for calculating these transition rates is as follows: Given that the dummy variable A takes the value 1 in year t-1[28], AB dummy takes the value 0 or 1. If the state in year t is "b", then AB dummy gets the value one. If the state in year t is anything but "b", then AB dummy gets the value zero.

$$AB=\begin{cases} 1 & \text{if} \quad \text{state}_{t-1} = A \text{ (or } A_{t-1}=1) \text{ and state}_{t} = B \text{ (or } B_t = 1) \\ 0 & \text{if} \quad \text{state}_{t-1} = A \text{ and state}_{t} = A, C \text{ or } D \text{ (or } B_t = 0) \\ . & \text{if} \quad \text{state}_{t-1} = B, C \text{ or } D \text{ (or } A_{t-1}=0) \end{cases}$$

For two year transitions, the years that a transition takes place can be given (for ex. LH0708 represents the transition rate from low pay to high pay between 2007 and 2008). If years are not given (for ex. LH), this means that transitions are pooled within a sample set. For instance, transition rate LH calculated for 2009 SILC is the pooled transition rate between years 2006-2007 and 2007-2008.

$$ABC=\begin{cases} 1 & \text{if} \quad A_{t-1} = 1 \text{ and } B_t = 1 \text{ and } C_{t+1} = 1 \\ 0 & \text{if} \quad A_{t-1} = 1 \text{ and } (B_t = 0 \text{ or } C_{t+1} = 0) \\ . & \text{if} \quad A_{t-1} = 0 \end{cases}$$

[28] Dummy A takes the value 1 at time t if the state in time t is "a".

Three year transition dummies are constructed in a similar vein. The dummy ABC takes a value between 1 and 0 if state in time t-1 is "a". ABC dummy has the value 1 if state in time t is "b" and state in time t+1 is "c". If last two states are anything different, than ABC dummy gets the value 0.

Low pay is defined by thresholds calculated for each year. If income of a wage earner is lower than this threshold, then he/she is in low pay category. If income of a wage earner is higher than this threshold, he/she is considered high (or not low) paid.

In multivariate analysis sections of this study, correlates of low pay and persistent low pay are investigated.[29]. Purpose of this multivariate analysis is to see if characteristics that determine (persistent) low pay changes between the two data sets. The dependent variables in these analyses are dummy variables that take the value of 1 for the state of low pay (persistent low pay) and 0 otherwise. Because the dependent variable is a dummy, the appropriate estimation strategy is a probit or logit analysis. *"The multivariate probit is an appealing model (…) because it allows a flexible correlation structure for the unobservable variables"* (Huguenin, et al, 2009: 2). Therefore, under multivariate normal distribution, probit model is preferable.

[29] Persistent low pay shows LLL transition, where an individual is stuck in low pat status for three consecutive years.

CHAPTER 4

EMPLOYMENT AND INCOME DYNAMICS

4.1. THE GREAT RECESSION

In the labor market, the first change that comes to mind after an economic crisis is an increase in the unemployment rate. The shift to unemployment can be seen through the extensive margin. A working person can get fired due to cost cutting practices of employers and firms and start looking for other jobs, which would cause a transition from the employed to the unemployed state. Firms might also stop hiring new personnel, causing unemployed to stay unemployed unless they get discouraged. Both of these situations imply a higher unemployment rate and a lower employment rate. However, after the 2008 global economic crisis the employment rate stayed more or less the same while unemployment rate increased in Turkey. Adjustment of firms or employers to the economic crisis may not be limited to changes in their hiring and firing decisions. For instance, an employee might keep working in his/her job even if hourly wages fall due to the impact of economic crisis. If that is the case, the employment rate would not be affected as much as it would be before the crisis. Also, government intervention through active labor market policies might have been effective in keeping the employment rate close to pre-crisis period.

Therefore, increased unemployment itself is not enough to show the whole picture after the economic crisis. A firm can decrease wage costs by decreasing the hours of work and reducing fringe benefits and bonuses given to employees or they may

cut the hourly wages of their employees. They can also postpone wage payments due to financial problems they face.[30] The extent of the firms' ability to engage in such practices depends on institutional structures in the economy. The bargaining power of labor unions, the effectiveness of government policies and the nature of the crisis itself are all important factors.[31] Still, the problem of smaller paychecks might be an important indicator of the crisis in Turkey. In this case, if hourly wages of employees are reduced in order to cope with the effect of the crisis, this would not cause a shift between labor market states but a shift within the employment state i.e. a certain individual who is a wage earner might be a high paid employee one year, but a low paid employee next year. Another possibility is change of jobs. If a high paid person loses his/her job and moves to a low paying job in the informal sector, for instance, the same situation would be observed. Also, low paid individuals might not be able to move to high pay jobs as much as they used to before the crisis. Altogether, these effects might deepen the smaller paychecks problem.

Smaller paychecks may prevent more people from getting unemployed, but at the same time it means deterioration in the economic standing of working individuals. Naturally, households react to these smaller paychecks by taking several measures themselves. If they are already working, they may try to increase their work hours by taking up an additional job. This means that even if hourly wages fall, these people are trying to increase their total income by working more though this may be quite difficult in a downturn. If they are not working, they may enter the labor market to find a job and contribute to their family incomes. This is the so-called "added worker effect". This means a fall in the proportion of inactive individuals. Hence, the composition of the labor market may change as a result of the

[30] Firms can also switch personnel from permanent to temporary contract; however this is not legally possible in Turkey.

[31] Of course, there might be some differences in these institutions if there is a primary sector and a secondary sector in the economy.

economic crisis. This change may also explain why the employment rate did not change while the unemployment rate went up in Turkey.

In order to see if paychecks got smaller or transitions into low pay got faster and to understand who got affected worse from the crisis, a dynamic analysis is necessary. Movements between employment states and high and low pay within wage-earners might be elucidative for understanding why employment rates remained more or less the same. In addition to transition rates, dynamic analysis allows us to find out if and how labor market composition changes with the crisis. This means that transition rates are not the only result that we deduce from this analysis. It also becomes possible to see who enters or leaves the labor force and what characteristics these individuals own might have caused these transitions.

4.2. THE DISTRIBUTION OF EMPLOYMENT AND WAGES

Before going into movements between different employment states, it is beneficial to present the structure of the Turkish labor market. In Table 4.1 (a-b), we divide the working age population into various labor market states: wage earners, non-wage earners that include employers, own account workers, and unpaid family workers, unemployed and inactive (OLF). Wage earners and non-wage earners together make up the employed section of the population; however, we pay particular attention to the wage-earner group throughout this study. The proportions of employed are similar in 2009 SILC and 2011 SILC panels for men, women and the whole sample. (Here, 2009 SILC represents pre-crisis period and 2011 SILC represents crisis and post-crisis periods.) However, on the basis of the dual categorization of wage earners vs. non-wage earners, it is seen that after the crisis wage earners are a lower and non-wage earners a higher in proportion of the working age population. The same situation applies for both men and women; however it must be kept in mind that the proportion of men who are wage earners is almost four times more that of women. Also, the proportion of men who are non-wage earners are twice the proportion of that of women.

It was expected that during the crisis the percentage of people in OLF status would decrease. Although the percentage for the whole sample remained about the same level, it can be seen from this table that the people who are inactive are not the same. The proportions of women who are inactive are lower as expected, however inactive men is at the same level. This might be explained with the added worker effect, inactive women enter the labor force to support their family in crisis periods. Even though there are fewer women that are inactive after the crisis, it is not certain yet that they have become wage earners. Had they became wage earners, they might have settled for jobs that are easier to find or paying low or they may have found informal jobs. If that is the case, it would be harder to say that they have become better off after they got employed.

Table 4. 1: Proportions of Samples in Employment Statuses

4.1.A: 2009 SILC Panel Data

ALL	**2006**	**2007**	**2008**
Employed	44.53%	46.59%	46.55%
Wage earners	27.28%	28.89%	28.82%
Non-wage earners	17.25%	17.70%	17.73%
Unemployed	3.55%	2.95%	2.81%
OLF	51.92%	50.46%	50.64%
Total	100.00%	100.00%	100.00%

WOMEN	**2006**	**2007**	**2008**
Employed	22.12%	23.72%	24.01%
Wage earners	10.37%	11.71%	12.22%
Non-wage earners	11.75%	12.01%	11.79%
Unemployed	1.72%	1.74%	1.61%
OLF	76.16%	74.54%	74.38%
Total	100.00%	100.00%	100.00%

MEN	**2006**	**2007**	**2008**
Employed	69.06%	71.63%	71.28%
Wage earners	45.79%	47.71%	47.00%
Non-wage earners	23.27%	23.92%	24.28%
Unemployed	5.55%	4.28%	4.07%
OLF	25.39%	24.09%	24.65%
Total	100.00%	100.00%	100.00%

Table 4.1 (Continued)

4.1.B: 2011 SILC Panel Data

ALL	2008	2009	2010
Employed	45.74%	45.70%	46.25%
Wage earners	26.50%	25.81%	26.53%
Non-wage earners	19.24%	19.89%	19.72%
Unemployed	3.97%	4.39%	3.68%
OLF	50.29%	49.91%	50.07%
Total	100.00%	100.00%	100.00%

WOMEN	2008	2009	2010
Employed	24.51%	24.77%	25.72%
Wage earners	10.52%	10.51%	11.50%
Non-wage earners	13.99%	14.26%	14.22%
Unemployed	2.73%	3.06%	2.46%
OLF	72.76%	72.17%	71.82%
Total	100.00%	100.00%	100.00%

MEN	2008	2009	2010
Employed	69.28%	68.93%	69.03%
Wage earners	44.23%	42.78%	43.22%
Non-wage earners	25.05%	26.15%	25.81%
Unemployed	5.34%	5.85%	5.03%
OLF	25.38%	25.22%	25.94%
Total	100.00%	100.00%	100.00%

In order to find out about the smaller paychecks issue, percentile points of hourly wage distributions are needed.[32] In Table 4.2, this data is shown. For the whole sample, it can be seen that the lowest paid 10% and the highest paid 10% became worse-off after 2008 global economic crisis while the mid-section of the sample got better-off. A similar conclusion is reached for men as well. For women, however, the lowest 5% became worse-off after the crisis rather than the lowest 10%. After the crisis, wages of women in the lowest 1% fell to about half the value of pre-crisis level. Also, it can be seen that men in lowest 1% earns about

[32] Hourly wages and all comparisons that are done using these wages are limited to wage-earners group only.

three times of women in the lowest 1% in 2009. These show that although the proportion of women in wage-earner status did not change at all after the crisis, the amount of money earned by the poorest decreased significantly. The mid-sections of the sample are better-off after the crisis for men. Also, another interesting outcome is that men in highest 1% earned lower wages after the crisis where women in highest 1% started earning significantly higher than those who were in highest 1% before.

Table 4. 2: Percentile Points of Hourly Wage Distributions

	All Wage-earners		**Men**		**Women**	
	2007	**2009**	**2007**	**2009**	**2007**	**2009**
Mean	5.507	5.463	5.492	5.401	5.583	5.711
St. Dev.	4.409	4.349	4.434	4.248	4.303	4.727
1%	1.396	1.007	1.400	1.047	1.139	0.392
5%	1.830	1.571	1.830	1.576	1.853	1.528
10%	2.131	2.012	2.131	2.095	1.189	1.940
25%	2.735	2.763	2.752	2.819	2.681	2.540
50% ***Median***	3.996	4.075	4.065	4.097	3.934	3.798
75%	6.887	7.265	6.669	7.095	7.526	8.014
90%	10.195	10.165	10.195	9.656	11.004	11.090
95%	14.099	12.167	14.099	11.732	15.409	12.677
99%	*22.517*	*22.705*	22.517	21.482	*24.706*	*30.565*

How do we interpret the changes in hourly wages observed in Table 4.2? Since it would be highly unlikely for real hourly wages to increase during the crisis, the improvement in wage levels in the middle of the distribution and deterioration at the bottom and top can be explained by compositional changes. If the least productive lose their jobs, then in a world where every wage earner is paid proportionally with his/her productivity, this would cause an improvement in average wages.

4.3. EMPLOYMENT DYNAMICS

The movement of individuals from one employment state to another is helpful to understand how individuals in each employment state got affected from the crisis. Although we do not divide wage earners as high-low pay or formal-informal sector just yet, these transitions are a good starting point as they show the main tendency in the labor market. In Table 4.3, these transitions can be seen.

Of the people who were wage earners in 2006, 85.9% remained as wage earners in 2007, 3.9% became non-wage earners, 4.0% became unemployed and 6.3% became inactive. In 2008, 76.4% of the people who were wage earners during 2006 still remained wage earners. These rates show us that there is a high state persistence for wage earner status before the crisis. If there is a movement out of wage employment, it can be seen that most likely this movement will be towards OLF status (WOO with about 4.4% and WWO with about 4.1%). So, given that a person left wage employment, the highest possibility was that he/she dropped out of the labor force.

The tendency to stay in wage employment is still high during and after the crisis. Of the people who were employed in 2008, 82.9% remained as a wage earner in 2009, 6.5% became non-wage earners, 5.9% became unemployed and 4.7% became inactive. This means that after the crisis, the ratio of people who moved from wage earner status to non-wage earner status (mostly self-employment) or unemployment status became larger than the ratio of people that moved from wage earner to OLF. Note that these rates are higher than recorded during the pre-crisis period. In 2010, 75.2% of the people who were wage earners during 2008 still remained as wage earners. This shows that the persistence in wage employment showed only a small drop (from 76.4% to 75.2%) following the crisis. However, the movement out of wage employment showed a different pattern. Persons who moved out of wage employment, instead of dropping out of the labor force, they became non-wage earners or searched for work before returning to employment in the recovery period (WSS and WUW).

Table 4. 3: Transition Rates Between Employment States

4.3.A. 2009 SILC Panel

2006		2007		2008	
W (27.28%)	100.00%	**WW**	85.86%	www	76.42%
				wws	2.58%
				wwu	2.75%
				wwo	4.12%
		WS	3.86%	wsw	0.52%
				wss	3.07%
				wsu	0.03%
				wsu	0.23%
		WU	3.95%	wuw	2.82%
				wus	0.13%
				wuu	0.32%
				wuo	0.68%
		WO	6.33%	wow	1.11%
				wos	0.37%
				wou	0.49%
				woo	4.36%

2006		2007		2008	
S (17.25%)	100.00%	**SW**	6.88%	sww	5.33%
				sws	1.05%
				swu	0.19%
				swo	0.32%
		SS	82.14%	ssw	3.45%
				sss	71.30%
				ssu	0.74%
				sso	6.65%
		SU	1.29%	suw	0.47%
				sus	0.05%
				suu	0.37%
				suo	0.40%
		SO	9.69%	sow	0.64%
				sos	0.82%
				sou	0.04%
				soo	8.19%

Table 4.3.A (Continued)

2006		2007		2008	
U (3.55%)	100.00%	**UW**	46.59%	uww	35.36%
				uws	2.61%
				uwu	6.06%
				uwo	2.56%
		US	9.12%	usw	1.20%
				uss	6.76%
				usu	0.00%
				uso	1.16%
		UU	17.19%	uuw	4.11%
				uus	1.10%
				uuu	6.79%
				uuo	5.19%
		UO	27.10%	uow	6.42%
				uos	0.79%
				uou	3.82%
				uoo	16.07%

2006		2007		2008	
O (51.92%)	100.00%	**OW**	5.05%	oww	3.43%
				ows	0.17%
				owu	0.22%
				owo	1.23%
		OS	4.15%	osw	0.06%
				oss	3.20%
				osu	0.00%
				oso	0.89%
		OU	2.01%	ouw	0.42%
				ous	0.07%
				ouu	0.42%
				ouo	1.10%
		OO	88.79%	oow	2.66%
				oos	2.40%
				oou	1.15%
				ooo	82.57%

4.3.B: 2011 SILC Panel

2008		2009		2010	
W (26.50%)	100.00%	**WW**	82.9%	www	75.19%
				wws	1.74%
				wwu	2.40%
				wwo	3.56%
		WS	6.5%	wsw	0.81%
				wss	4.94%
				wsu	0.28%
				wsu	0.47%
		WU	5.9%	wuw	3.65%
				wus	0.20%
				wuu	1.42%
				wuo	0.64%
		WO	4.7%	wow	1.30%
				wos	0.16%
				wou	0.20%
				woo	3.03%

2008		2009		2010	
S (19.24%)	100.00%	**SW**	3.4%	sww	2.57%
				sws	0.48%
				swu	0.36%
				swo	0.00%
		SS	88.0%	ssw	1.76%
				sss	79.82%
				ssu	0.53%
				sso	5.90%
		SU	0.8%	suw	0.30%
				sus	0.19%
				suu	0.06%
				suo	0.25%
		SO	7.8%	sow	0.38%
				sos	1.53%
				sou	0.00%
				soo	5.89%

Table 4.3.B (Continued)

2008		2009		2010	
U (3.97%)	100.00%	**UW**	37.3%	uww	26.26%
				uws	1.42%
				uwu	6.49%
				uwo	3.13%
		US	5.7%	usw	0.87%
				uss	3.36%
				usu	1.05%
				uso	0.42%
		UU	27.2%	uuw	9.85%
				uus	0.00%
				uuu	11.04%
				uuo	6.31%
		UO	29.8%	uow	2.59%
				uos	1.52%
				uou	6.08%
				uoo	19.61%

2008		2009		2010	
O (50.29%)	100.00%	**OW**	3.4%	oww	1.96%
				ows	0.17%
				owu	0.36%
				owo	0.91%
		OS	3.0%	osw	0.08%
				oss	2.05%
				osu	0.03%
				oso	0.85%
		OU	2.8%	ouw	0.66%
				ous	0.21%
				ouu	0.89%
				ouo	1.05%
		OO	90.8%	oow	2.09%
				oos	1.82%
				oou	1.45%
				ooo	85.44%

State persistence in non-wage employment is again high both before and during the crisis. Totally, 71.3% of those who were non-wage earners in 2006 remained in that category until 2008. This rate is slightly lower than the state persistence rate for wage earners. The only difference that happened with the crisis is that persistence in non-wage work increased such that it surpassed the persistence in wage employment. During the crisis in 2009, 88% of those who were non-wage earners kept their jobs. State persistence in non-wage earner status (SSS) increased to 79.8% with the crisis. Before the crisis the total rate of moving into OLF (SSO and SOO) was 14.9%, after the crisis this rate fell to 11.8% meaning that less people who were non-wage earners dropped out of labor force after the crisis. 1.5% of those who were self-employed in 2008 dropped out of labor force in 2009, but became self-employed again in 2010. This rate was 0.8% before the crisis.

Still, the strongest state persistence is observed for those who are inactive. Of those who were out of the labor force in 2006, 82.6% stayed inactive until 2008. This rate is even higher in the second data set. Totally, 85.4% of the inactive in 2008 remained inactive until 2010. If they were to leave OLF group, the possibility that they got employment also fell with the crisis. Totally, 6.1% of the OLF group moved into wage employed from 2006 to 2008 (OWW and OOW combined) while this rate is 4.1% from 2008 to 2010. 5.6% of OLF moved into non-wage employment before the crisis (OSS and OOS combined), the rate for moving into non-wage employment from 2008 to 2010 is 3.9%. This means that if the inactive were to enter the labor market, their chances of getting employed fell and both the rates for staying inactive and becoming unemployed increased with the crisis.

One would expect the state persistence for unemployment to be low. The idea behind this expectation is that unemployment is an undesirable state where people only wish to stay for short period of time. This is indeed what we observe in the data. The lowest persistency rate of all states is observed for the unemployed.

Nonetheless, we also observe that state persistence in unemployment (UUU) increased from 6.8% to 11% after the crisis despite the unattractiveness of this state. The rise in the state dependence in unemployment shows that the average duration that people unsuccessfully look for jobs increased with the crisis.

The movement out of unemployment and into wage employment also fell with the crisis. Of the people who were unemployed in 2006, 46.6% became wage earners in 2007. However, if we were to look at the crisis period, 37.3% of those who were unemployed in 2008 transited to wage employment. This trend continued in proceeding years. Of those who were unemployed in 2006, 39.5% transited to wage employment by 2008 (UWW and UUW). This rate is 36.1% between 2008 and 2010. That the gap in the transition rates from unemployment to wage employment was greater between the two panel data sets in the first year of the move as compared to the overall change implies that the negative effect of the crisis diminished in 2010. Between 2006 and 2008, 16.7% of unemployed people became non-wage earners (UOO). Between 2008 and 2010, this rate increased to 19.61%. It can be claimed that more unemployed people who were unable to find a job as a regular or casual employee became own account workers after the crisis.

4.4. MOVEMENTS INTO AND OUT OF LOW PAY

Although movements across employment states are informative, they are not descriptive enough to reveal the changing economic well-being of individuals. The fact that a person remains as a wage-earner does not mean that he/she is not affected negatively from the crisis. Therefore, it is necessary to look at the changes that take place in the proportion of wage earners who are high and low paid. These rates are given in Table 4.4. The average proportion of low paid individuals in wage earners group was 22.5% before the crisis. During crisis this rate increased to 27.4%. This means that this rate increased by 4.9% points with the crisis. When we take men and women separately, we see that the proportion of low paid man among men wage earners is lower than the sample rates while

proportion of low paid women among women wage earners is higher than sample rates. With the crisis, the proportion of low paid men increased by 3.5% points and the proportion of low paid women increased by 9.5% points.

Table 4. 4: Proportion of Low Paid Wage Earners

	2009 SILC Panel	2011 SILC Panel
	2006-2007-2008	2008-2009-2010
ALL	22.50%	27.40%
MEN	21.69%	25.21%
WOMEN	25.59%	35.10%

In Table 4.5, we look at transition rates out of low/high pay to different income and employment states during pre-crisis, crisis and post-crisis periods conditional on income status a year earlier. Before the crisis, 74.7% of the low paid men and 85.59% of the low paid women left low pay for higher pay or for other employment states. During the crisis, this rate went down to 50.7% for men and 58.1% for women. In the recovery period, a similar situation more or less prevailed for both men and women. Before the crisis, 61.7% of men who were low paid in 2006 transited to high pay in 2007. Between 2008 and 2009, the rate of low paid men who succeeded in transiting to high pay was half of what it was before the crisis (29.2%). The same situation applies for women, too. The rate of those who transited from low to high pay fell from 46.3% to 19.4% with the crisis. Again, in the recovery period, this rate continued to fall for men but rose by 10% points for women. Hence, it is possible to say that men's position worsened in 2010 while it got a little bit better for women.

The crisis lowered the possibility of women to go from low pay to unemployment. They shifted more to non-wage employment. The rate of men going from low pay to unemployment doubled with the crisis. This shows that women kept working for low pay instead of quitting work to look for a better paid job. This might be

because male persons in their household lost their jobs and they needed to compensate the drop in family income.

Table 4. 5: Two Year Conditional Transition Rates

	Pre-crisis		Crisis		Post-crisis	
	2006-2007		2008-2009		2009-2010	
	Men	Women	Men	Women	Men	Women
LL	25.30%	14.41%	49.35%	41.91%	53.91%	37.14%
LH	61.73%	46.31%	29.21%	19.37%	26.62%	29.00%
LS	1.73%	0.00%	3.00%	3.53%	1.99%	0.81%
LU	6.17%	12.68%	13.25%	10.82%	9.98%	8.14%
LO	5.07%	26.60%	5.19%	24.37%	7.50%	24.91%
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
HL	4.44%	3.60%	9.33%	9.52%	7.67%	10.22%
HH	83.51%	83.30%	77.54%	76.27%	83.88%	78.14%
HS	5.54%	1.50%	6.08%	1.66%	3.01%	3.69%
HU	2.69%	1.91%	4.26%	3.24%	2.54%	2.07%
HO	3.82%	9.69%	2.79%	9.31%	2.90%	5.88%
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

The movement out of high pay tells a similar story. The rate of those who transited from high to low pay doubled for men and tripled for women with the crisis. Also, the negative effect of the crisis on wage earner men seems to have lasted longer. About 83-84% of men and women managed to stay high paid before the crisis. This rate fell to 77.5% for men and %76.3 for women. In the recovery period, a larger proportion of high paid men as compared to women kept their status. In the pre-crisis period, larger proportions of high paid men as compared to women shifted to self-employment and unemployment and a smaller proportion to OLF. This pattern prevailed in the crisis period as well though the proportion of men moving out of high pay to non-wage work and unemployment went up, while the proportion moving to OLF went down. In the case of women, the move was

again primarily towards OLF though the proportion unemployed also went up. Those moving to self-employment hardly changed. It can be concluded that non-wage employment was not seen much of an option for high paid women wage earners. In the recovery period, the shift out of high paid to unemployment went down for both men and women. Interestingly, the shift to OLF dropped significantly for women as well and transition to self-employment for women went up.

Table 4. 6: Conditional Transition Rates into Low Pay

	Low pay at time t given pay state in t-1	
Pay state at t-1	**2006-2007-2008**	**2008-2009-2010**
All	*Low at t*	*Low at t*
Low at t-1	40.35%	64.34%
High at t-1	13.71%	9.88%
Men		
Low at t-1	41.07%	64.89%
High at t-1	13.44%	9.55%
Women		
Low at t-1	37.20%	62.54%
High at t-1	14.87%	11.34%

Note: Includes wage earners only.

So far, we analyzed two year transitions separately and included all five employment statuses. What we do next is to pool the two year transitions in both data sets and treat 2009 SILC as comprising the pre-crisis and 2011 SILC as comprising the crisis period. In Table 4.6 we present conditional transition rates for wage earners. Given that the individual is in high or low pay in year t-1, what is his/her status in year t? We already know from previous analyses that being in low pay in year t-1 increases the chances of being in low pay in year t. The interesting question here is whether this state dependence in low pay increases with the crisis and if so, could we explain this with the characteristics of the low paid individuals.

Of the wage earners who were low paid in year t-1, 40.4% were still low paid a year later. This ratio increased to 64.3% in the period that includes the 2009 crisis. The ratio of wage earners who were high paid in year t-1 but low paid in year t, on the other hand, fell from 13.7% to 9.9% with the crisis. Hence, the transition into low pay and the transition out of low pay decreased with the crisis. It was found earlier that the proportion of low paid individuals in wage earners group increased with the crisis. For this increase in the proportion of low paid wage earners to occur, the transitions into low pay must have decreased less than the transitions out of low pay.

During the period before the crisis, 41.1% of men and 37.2% of women wage earners who were low paid in year t-1 were still low paid a year later. With the crisis, this ratio increased to 64.9% for men and 62.5% for women. Hence, the chances that low paid men and low paid women remain low paid in the following year increased in the period that includes the 2009 crisis. Before the crisis, of the wage earners who were high paid in year t-1, 13.4% of men and 14.9% of women became low paid a year later. When we analyze the period which includes 2009 crisis, we see that this rate goes down to 9.6% for men and 11.3% for women. Hence, for both men and women, the transition out of low pay and the transition into low pay decreased over time.

There are similar empirical analyses in the literature that have been carried out for other countries as well. For Britain, Stewart and Swaffield (1996) showed that 59% of low paid men in year t-1 stayed low pay in year t while 4.9% of high paid men in year t-1 moved into low pay in year t. For women, these rates were found as 79.8% and 7.8% respectively. This shows that before the 2009 crisis, the proportion of low paid men and women who exit low pay were higher in Turkey, while the proportion of low paid men and women who enter low pay were also higher in Turkey. With the crisis, the proportion of low paid men who exit low pay became 35% while the proportion of high paid men who entered low pay became 9.6% in Turkey. Although entries remain to be higher in Turkey than in

Britain, exit rates from low pay became higher in Britain. No such change is observed for women. This means that men became relatively more prone to be stuck in low pay in Turkey after the 2009 crisis, should they chose wage employment.

Another similar study is done for Germany by Mosthaf et al. (2006). Their calculations of transition rates between labor market states showed that 6.8% of high paid employees in year t-1 entered low pay category in year t. This shows that both in Germany and in Britain, entries into low pay are lower than in Turkey. They also found that 27.3% of low paid individuals in year t-1 moved into high pay category in Germany. Therefore, both before and during the 2009 economic crisis, exit rates from low pay were higher in Turkey although the gap between two countries narrowed down after the crisis. This shows that it is less likely for a high paid individual to become low paid in Turkey than other two countries while it became less likely that a low paid Turkish wage earner left low pay after the crisis than a low paid British wage earner.

We might actually be underestimating the effect of the crisis by only considering persons who are wage earners before and after the crisis. If more low paid persons moved out of wage-employment, we could be underestimating the negative effect of the crisis on the chances of remaining or moving into low pay. Therefore, next, we consider the full-five employment states.

The conditional transition rates for both samples are given in Table 4.7. It can be seen that after the crisis, a smaller proportion of the low paid managed to leave this status. Of the people who left low income, the portion of those who became high paid dropped by half after the crisis and the portion of those who became unemployed almost doubled. When we look at initial high pay state, we can see that even more high paid individuals managed to keep their jobs and less fell to low pay despite the crisis. However, of those who were wage-earners at t-1 a larger proportion moved to low pay after the crisis than before. Before the crisis,

18.6%[33] of wage-earners moved to low pay while this figure increased to 23.5% [34] after the crisis.

Table 4. 7: Transition Rates Between Five Employment Statuses

Table 4.7.A: All samples

2009 SILC: ALL		Probabilities of final (t) states (%)				
Initial state (t-1)	**Distribution of the state at t-1**	**L**	**H**	**S**	**U**	**O**
L	4.86%	33.79%	49.95%	1.06%	6.67%	8.53%
H	20.74%	11.84%	74.50%	4.39%	3.26%	6.01%
S	17.77%	1.09%	4.62%	83.57%	1.19%	9.53%
U	3.29%	14.20%	29.87%	6.79%	18.77%	30.37%
O	53.33%	1.43%	3.08%	3.58%	1.87%	90.04%
All	100.00%	5.37%	20.98%	18.02%	2.91%	52.72%

2011 SILC: ALL		Probabilities of final (t) states (%)				
Initial state (t-1)	**Distribution of the state at t-1**	**L**	**H**	**S**	**U**	**O**
L	7.25%	48.35%	26.80%	2.44%	11.08%	11.33%
H	18.47%	8.77%	80.01%	4.23%	3.27%	3.72%
S	19.65%	1.32%	1.82%	87.83%	0.97%	8.06%
U	4.19%	15.18%	24.71%	5.13%	28.67%	26.31%
O	50.45%	1.74%	1.61%	2.85%	2.42%	91.38%
All	100.00%	6.85%	18.85%	19.89%	4.05%	50.36%

[33] = (33.79*0.0486+11.84*0.2074)/ (33.79*0.0486+11.84*0.2074 +49.95*0.0486+74.50*0.2074)

[34] = (48.35*0.0725+8.77*0.1847)/(48.35*0.0725+8.77*0.1847)+(26.80*0.0725+80.01*0.1847)

Table 4.7 (Continued)

Table 4.7.B: Men

2009 SILC: MEN		Conditional transition rates of final (t) states (%)				
Initial state (t-1)	**Distribution of the state at t-1**	**L**	**H**	**S**	**U**	**O**
L	8.19%	36.44%	52.29%	1.38%	5.17%	4.72%
H	36.44%	11.70%	75.37%	4.98%	3.51%	4.44%
S	24.54%	1.39%	6.39%	86.03%	1.67%	4.52%
U	5.11%	17.16%	32.66%	8.63%	22.03%	19.52%
O	25.73%	2.40%	6.58%	5.49%	3.70%	81.83%
All	100.00%	8.91%	36.24%	25.11%	4.35%	25.39%

2011 SILC: MEN		Conditional transition rates of final (t) states (%)				
Initial state (t-1)	**Distribution of the state at t-1**	**L**	**H**	**S**	**U**	**O**
L	11.25%	51.61%	27.93%	2.50%	11.63%	6.33%
H	31.99%	8.52%	80.65%	4.58%	3.41%	2.85%
S	25.72%	1.71%	2.53%	89.77%	1.23%	4.77%
U	5.62%	16.02%	29.83%	6.18%	29.84%	18.13%
O	25.42%	3.10%	3.43%	3.52%	4.12%	85.83%
All	100.00%	10.61%	32.05%	26.13%	5.47%	25.74%

Table 4.7 (Continued)

Table 4.7.C: Women

2009 SILC: WOMEN		Conditional transition rates of final (t) states (%)				
Initial state (t-1)	**Distribution of the state at t-1**	**L**	**H**	**S**	**U**	**O**
L	2.06%	25.05%	42.29%	0.00%	11.60%	21.06%
H	7.54%	12.44%	70.99%	1.99%	2.24%	12.34%
S	12.07%	0.54%	1.41%	79.11%	0.31%	18.63%
U	1.76%	6.52%	22.63%	2.04%	10.32%	58.49%
O	76.56%	1.14%	2.02%	3.01%	1.32%	92.51%
All	100.00%	2.39%	8.14%	12.07%	1.70%	75.70%

2011 SILC: WOMEN		Conditional transition rates of final (t) states (%)				
Initial state (t-1)	**Distribution of the state at t-1**	**L**	**H**	**S**	**U**	**O**
L	3.66%	39.71%	23.81%	2.27%	9.59%	24.62%
H	6.36%	9.88%	77.25%	2.72%	2.63%	7.52%
S	14.20%	0.69%	0.66%	84.67%	0.55%	13.43%
U	2.91%	13.72%	15.80%	3.32%	26.62%	40.54%
O	72.86%	1.32%	1.02%	2.65%	1.88%	93.13%
All	100.00%	3.48%	7.06%	14.32%	2.77%	72.37%

Probabilities of moving from all other statuses into high pay dropped with the crisis as well. This higher state persistency and lower entry rates in high pay shows that the high paid group is possibly a more homogenous group (i.e. with similar characteristics) than it was before the crisis.

Movements out of unemployment show that the chances of getting stuck in this state t increases by 10.1% points after the crisis. Again, the state persistency in unemployment increased showing that finding a job became harder. After the crisis, entries into unemployment are mostly from low pay. There is also the group that has already been looking for work. This shows that unemployed people, who were most likely to be low paid or unemployed before, remained unemployed over the crisis period. Also, fewer unemployed people become inactive and high paid after the crisis. This means that although these people are unlikely to find a high paying job, they still cannot afford to quit looking and become inactive. Of those who were unemployed at t-1 but were employed at t as wage earners, 32.2% [35] got a low paying job. This was before the crisis. After the crisis, this rate increased to 38.1%[36]. As noted above, this rate was substantially lower for individuals who were wage earners at t-1 both before and after the crisis.

Non-wage earners at t-1 tended to preserve their status a year later as well, with 83.6% preserving this status before the crisis, and 87.8% after the crisis. Interestingly, of those who became wage earners in year t, 19.1%[37] got a low paying job before the crisis, while this rate increased substantially to 42%[38] after the crisis. So the move to wage employment mostly meant a move to low pay.

The situation for inactive people, on the other hand, did not change too much with the crisis. Fewer of them were able to find high paying jobs and the shift to unemployment increased slightly. Of those who chose wage employment in year

[35] = 14.2/(14.2+29.87)

[36] = 15.18/(15.18+24.71)

[37] = 1.09/(1.09+4.62)

[38] = 1.32/(1.32+1.82)

t, 31.7%[39] got low paying jobs before the crisis. This proportion increased to 51.9%[40] after the crisis. It should also be remembered that the OLF group makes up almost half the sample so even a slight increase in the transition from OLF to low pay or to unemployment has the potential of significantly changing the size of both groups.

To sum up, irrespective of employment status, the probability of obtaining a high paying wage employment went down with the crisis. While before the crisis, the unemployed and OLF group fared worse than wage earners and the non-wage earners in obtaining a high paying job upon choosing wage employment a year later, unemployment status a year before did not prove to be such a disadvantageous status. This is probably to do with the unemployed group becoming more heterogeneous with the increase in its rate. The worse group in succeeding landing on a high paying job proved to be the OLF group.

As one would guess, the picture changes when men and women are analyzed separately. For women, the probability of staying in low pay or moving from low pay to high pay is lower as compared to men both before and after the crisis. The chances that low paid women move to OLF are four times larger than that of men both and after crisis, too. This means that a low paid woman is less likely to stay a wage earner in the next year and more likely to become inactive than a low paid man. Another point is that a low paid woman was twice likely to become unemployed than a low paid man before the crisis, however this situation changed completely after the crisis. The probability of low paid men to become unemployed is almost the same with that of low paid women as this probability for low paid man doubles with the crisis.

The movement out of high pay is not very different for men and women apart from the fact that high paid women have a higher tendency to become OLF. This may be because women might be reaching high levels of income at an older age

[39] = 1.43/(1.43+3.08)

[40] = 1.74/(1.74+1.61)

and then retire soon after that. This rate for women was higher before the crisis. So if this explanation is actually correct, high paid women might be postponing their retirement because of crisis. Another point is that high paid men are more likely to become own account workers than high paid women and this decision does not seem to be affected from the crisis. Although this transition is less likely for women, it gets affected from the crisis positively.

When the movements out of unemployment are observed, it can be seen that the conditional transition rates of unemployed women to become low paid doubles. The likeliness of unemployed men to become low paid, on the other hand, does not change at all after the crisis. It is likely that before the crisis women preferred staying unemployed to taking a low paying job. However with the crisis, some of these women decided to accept these low paying jobs. As a result, the proportion of women who transited from unemployment to low pay doubled with the crisis. Conditional probability of unemployed women to become high paid drops by 7% points with the crisis. For men, this rate falls by 2% points. Also, unemployed men were twice more likely than unemployed women to find high paying jobs after the crisis. Given that an unemployed woman could not find a job, it is most likely that he/she will become inactive. This situation applies for both before and after the crisis. However, this probability fell by about 18% points and more unemployed women stayed unemployed after the crisis looking for jobs.

Finally, it would be possible to claim that movement out of OLF fell with the crisis. State persistency had always been high for this inactive group both before and after the crisis. Still, this persistency is higher for inactive women than for inactive men.

When we look at the wage earner men or wage earner women separately, there is again the possibility of underestimating the effect of crisis. When we consider the group where all men are wage earners in both periods, we see that 53.9% of them leave low pay before the crisis and 35.1% of them leave low pay after the crisis. This means that the proportion of men who leave low pay increases by 18.8%

points with the crisis. If we were to make the same calculation by taking all employment states into account, we would see that 63.3% of low paid men left low pay before the crisis and 11.3% of low paid men left wage earner group. These rates are 48.4% and 20.5% respectively after the crisis. In this case, the difference between the ratios of those who leave low pay becomes 14.9% (=63.3-48.4) points. Repeating the same exercise for women, we see that out of the low paid women, 62.8% left low pay before the crisis while 37.5% left low pay after the crisis. This is the case where all women are wage earners in both years. The difference between two periods is 25.3% points. When we take all women in the sample, we see that 75% of them became non-low pay and 32.7% left wage earner category before the crisis while 60.3% of them left low pay and 36.5% left wage earner category after the crisis. This time, the difference between the ratios of those who leave low pay between two periods is 14.7% points (=75-60.3). Both for men and women, the difference between ratios in two periods are larger when we take wage earners group only.

There is also a movement into low pay that should be considered. If we only take wage earners, we see that 13.4% of high paid men and 14.9% of high paid women moved into low pay before the crisis while 9.6% of high paid men and 11.3% of high paid women moved into low pay after the crisis. The differences between these ratios are -3.9% points for men and -3.5% points for women. When we consider all states, we see that for women the transition rate from high pay to low pay is 12.4% before the crisis and 9.9% after the crisis. These rates for the two periods are 11.7% and 8.5% for high paid men, respectively. This time, differences between two periods is -2.5% points for women and -3.2% points for men. (These results are interesting because the proportion of high paid wage earners that become low paid a year later falls with the crisis.) These figures indicate that the difference in transitions rates between pre-crisis and crisis periods obtained using the wage earner sample is very similar to the difference obtained when the full sample is used.

Movements into low pay from other states should also be analyzed. Let's start with men first. Out of those who were wage earners in year t-1 and kept this status a year later, 18.5%[41] moved into low pay in year t before the crisis. This rate is 22.8%[42] after the crisis. Therefore, given that a person is wage earner in year t-1, the risk of being low paid wage earner a year later increases with the crisis. Out of non-wage earners in year t-1, of those who chose wage employment a year later 17.9%[43] became low paid before the crisis, while 40.3%[44] became low paid after the crisis. Out of those who were unemployed at t-1 but chose wage employment a year later 34.4%[45] became low paid before the crisis and 34.9%[46] became low paid after the crisis. Also, 26.7%[47] of those who were inactive in year t-1 but chose wage employment a year later became low paid before the crisis while this rate increased to 47.5%[48] after the crisis. Hence, it is clear from these calculations that being in low pay wage employment increased for all groups. Note however the large increase observed for those in an employment state other than wage employment.

When we make the same analysis for women, we see that out of those who were wage earners in t-1 and kept this status a year later, 19%[49] of them became low paid in year t before the crisis and 26.5%[50] of them became low paid after the crisis. There is a 7.5% point increase in this rate. This difference was 4.3% points for men. Out of non-wage earner women who chose wage employment a year later, 27.7%[51] became low paid before the crisis and 51.1%[52] of them became low

[41] = (36.44*0.0819+11.70*0.3644)/(36.44*0.0819+11.70*0.3644+52.29*0.819+75.37*0.3644)
[42] = (51.61*0.1125+8.52*0.3799)/(51.61*0.1125+8.52*0.3799+27.93*0.1125+80.65*0.3799)
[43] = 3.39/(3.39+6.39)
[44] = 1.71/(1.71+2.53)
[45] = 17.16/(17.16+32.66)
[46] = 16.02/(16,02+29.83)
[47] = 2.40/(2.40+6.58)
[48] = 3.10/(3.10+3.43)
[49] = (25.05*0.0206+12.44*0.0754)/ (25.05*0.0206+12.44*0.0754+42.29*0.0206+70.99*0.0754)
[50] = (39.71*0.0366+9.88*0.0636)/(39.71*0.0366+9.88*0.0636+23.81*0.0366+77.25*0.0636)
[51] = 0.54/(0.54+1.41)

paid after the crisis. Out of unemployed women at t-1 who chose wage employment a year later, 22.4%[53] moved into low pay in year t before the crisis. This rate increased to 46.5%[54] after the crisis, which is more than twice of what it was before the crisis. Out of inactive women in year t-1 who chose wage employment a year later, 36.1%[55] became low paid in year t before the crisis and 56.4%[56] became low paid in year t after the crisis. After the crisis, there is 20.3% point increase in the risk of being low paid for a woman who is not in the labor force at t-1 but chose wage employment a year later.

These results show that there was not a significant difference between men and women wage earners in terms of low pay employment but that this gender gap went up with the crisis. In other words, in the period covering the crisis, a higher proportion of women wage earners than men settled for low paying jobs. Before the crisis, a higher proportion of women in non-wage employment choosing wage employment a year later became low paid. This was also the case after the crisis with the gender gap increasing by less than 1 percentage point in favor of men. Before the crisis, the proportion of men who left unemployment to become wage earners and ended up in low paying jobs was substantially higher than the corresponding proportion of unemployed women. However, after the crisis, while the proportion of men experiencing such a change did not change significantly, the proportion of unemployed women who chose to be wage earners but ended up in low paying jobs substantially increased. It seems from these figures that unemployed women became less choosy over jobs after the crisis and therefore, a larger proportion of them ended up being in low paying jobs. After the crisis, the proportion of inactive women and inactive men who became low paid between t-1 and t increased by the same amount. However, this rate is higher for women both

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[52] = 0.69/(0.69+0.66)

[53] = 6.52/(6.52+22.63)

[54] = 13.72/(13.72+15.80)

[55] = 1.14/(1.14+2.02)

[56] = 1.32/(1.32+1.02)

before and after the crisis. Overall then, the effect of the crisis seems to have pushed a larger proportion of women into accepting lower paying jobs than men.

Conditional transition rates are an interest in themselves. However, they are of interest in terms of judging how transition rates in and out of low pay change as well when all five employment states are taken into account. Does the practice of limiting the data to persons who were wage earners in both periods causes under(over)estimation in transition rates in(out) of low pay and therefore, underestimation of the effect of the 2009 crisis? Looking at the pre-crisis period, of the low paid individuals in year t-1 who were wage earners in both periods, 40.3% were still low paid the following year, while 59.7% moved up in the earnings distribution. When all states are taken into account, we find that 33.8% remained low-paid, 16.3% moved to another employment state and a half could move up in the earnings distribution. In regards to the transition rates from high pay to low pay, on the basis of wage-earner only sample and before the crisis period, we find the transition rate to be on the order of 13.7% but 11.8% when all employment states are taken into account.

How do the transition rates derived from all wage and all employment samples compare in the period covering the crisis? We have found the exit rate from low pay to be 35.7% on the basis of wage earner only sample but 26.8% on the basis of the full sample. The entry rate into low pay, on the other hand, is estimated at 9.9% on the basis of wage earner sample only but 8.8% on the basis of the full sample. Hence, we can conclude that both before the crisis and in the period covering the crisis, the transition rate into low pay and the transition rate out of low pay are over-estimated.

As a result, we estimate the drop in movement out of low pay due to the crisis as 23.9% points when only the wage-earner sample is used, but 23.2% points when the full sample is used. On the basis of these two sets of calculations, we can assert that the movement out of low pay drops significantly with the crisis. Entry into low pay from high pay decreases as well but by a smaller magnitude: when

the wage earner sample is used the decrease is on the order of 3.8% points but it is 3% points when the full sample is taken into account. In sum, the use of the wage-earner sample does not lead to significant biases regarding the effect of the crisis.

4.5. CHARACTERISTICS OF LOW PAY

The transitions of high paid men and women into low pay fell with the crisis. This finding along with the finding that transitions of low paid men and women into high pay fell with the crisis, it becomes possible to claim that there is some sort of segmentation in wage employment and the mobility between primary and secondary sectors decreased with the crisis. In this section we are interested in identifying the correlates of low pay.

Characteristics of the samples that were observed for four years in 2009 SILC and 2011 SILC give some insight about some explanatory variables. Table 4.8 shows the characteristics of high and low paid wage earners in 2007 (before the crisis), 2009 (during the crisis) and 2010 (after the crisis) for both men and women and for the whole sample. As it can be seen from the table, men constitute 82.5% of the low pay wage-earners before the crisis. After the crisis, this ratio fell to 77.4% indicating that women's presentation among low paid wage earners went up. Following the crisis, women's share went down slightly from 22.6% to 21% but remained above the pre-crisis level of 18.2%.

Wage earners are mainly composed of young (i.e. individuals between ages 21 and 34) and middle aged persons (i.e. individuals between ages 35 and 49) both before and after the crisis. The proportion of middle aged individuals before the crisis is higher for high paid women but lower for low paid women when compared with the period covering 2009 crisis. Women who are high paid are mostly young before the crisis. After the crisis, the proportion of high paid women in their middle ages becomes higher than proportion of young women in high paid group. This shows that due to the crisis, young women accepted low paid jobs that they did not used to accept.

Table 4. 8: Characteristics of Low and High Paid Wage Earners

Table 4.8.A: All samples

	2007		2009		2010	
	H	**L**	**H**	**L**	**H**	**L**
Gender						
F	18.17%	17.50%	18.05%	22.59%	19.16%	21.05%
M	81.83%	82.50%	81.95%	77.41%	80.84%	78.95%
Age						
<20	2.33%	6.16%	0.68%	6.16%	0.89%	3.83%
21-34	43.23%	47.86%	35.16%	45.64%	34.95%	39.96%
35-49	42.87%	37.79%	53.00%	36.66%	32.68%	40.07%
50-64	10.99%	8.19%	10.90%	11.54%	11.00%	15.91%
>65	0.58%	0.00%	0.26%	0.00%	0.48%	1.23%
Education						
Illiterate	1.02%	0.65%	0.08%	3.11%	0.00%	5.37%
Literate but not a graduate	1.51%	7.11%	0.90%	5.70%	1.22%	5.61%
Primary school	31.86%	55.86%	29.35%	52.20%	29.51%	41.77%
Secondary school	11.51%	15.11%	11.16%	22.03%	12.20%	18.65%
High school	13.23%	12.16%	15.24%	14.54%	15.14%	14.51%
Vocational or Technical HS	16.48%	9.11%	14.99%	9.82%	14.48%	9.97%
University or higher	24.39%	0.00%	28.28%	2.61%	27.45%	4.13%
Social Security						
Formal	79.76%	51.59%	91.83%	48.11%	91.38%	49.22%
Informal	20.24%	48.41%	8.17%	51.89%	8.62%	50.78%
Sector						
Agriculture	1.88%	1.72%	0.76%	2.11%	0.42%	2.45%
Non agricultural	98.12%	98.28%	99.24%	97.89%	99.58%	97.45%
Marital Status						
Married	78.90%	76.21%	81.85%	66.19%	81.58%	71.68%
Single	21.10%	23.79%	18.15%	33.81%	18.42%	28.32%
Dependent children						
None	28.00%	18.92%	25.11%	26.44%	26.10%	28.28%
1	28.80%	28.24%	32.75%	29.90%	31.90%	28.17%
>1	43.20%	52.84%	42.14%	43.66%	42.00%	43.55%
N	1044		1108		1098	

Table 4.8 (Continued)

Table 4.8.B: For men

MEN	2007		2009		2010	
	H	L	H	L	H	L
Age						
<20	1.01%	8.48%	0.54%	4.37%	0.60%	4.64%
21-34	41.08%	47.57%	34.21%	44.32%	33.99%	35.31%
35-49	46.80%	32.62%	53.41%	36.67%	52.80%	40.02%
50-64	10.84%	10.48%	11.53%	14.64%	12.01%	19.45%
>65	0.27%	0.85%	0.31%	0.00%	0.60%	0.59%
Education						
Illiterate	0.20%	1.52%	0.00%	2.04%	0.00%	3.06%
Literate but not a graduate	1.19%	3.91%	0.75%	5.55%	0.99%	6.18%
Primary school	32.98%	56.28%	32.83%	45.94%	33.09%	45.99%
Secondary school	13.21%	18.54%	12.81%	21.19%	13.77%	18.60%
High school	13.21%	9.89%	14.05%	12.83%	14.52%	12.05%
Vocational or Technical HS	16.12%	9.35%	16.76%	9.92%	15.97%	11.01%
University or higher	23.09%	0.51%	22.79%	2.52%	21.66%	3.11%
Social Security						
Formal	84.02%	51.41%	91.81%	47.74%	90.61%	53.96%
Informal	15.98%	48.59%	8.19%	52.26%	9.39%	46.04%
Sector						
Agriculture	0.45%	2.76%	0.82%	2.46%	0.52%	3.11%
Non agricultural	99.55%	97.24%	99.18%	97.54%	99.48%	96.89%
Marital Status						
Married	85.80%	75.21%	86.70%	74.35%	86.79%	79.63%
Single	14.20%	24.79%	13.30%	25.65%	13.21%	20.37%
Dependent children						
None	21.00%	25.04%	22.19%	21.96%	22.81%	24.39%
1	25.93%	26.88%	30.74%	29.78%	29.52%	28.03%
>1	53.07%	48.08%	47.07%	48.26%	47.67%	47.58%
N	908		831		886	

Table 4.8 (Continued)

Table 4.8.C: For women

WOMEN	2007		2009		2010	
	H	L	H	L	H	L
Age						
<20	0.67%	18.61%	1.32%	12.29%	2.12%	0.80%
21-34	57.22%	46.51%	39.51%	50.15%	39.00%	52.65%
35-49	32.66%	28.91%	51.14%	36.64%	52.16%	40.29%
50-64	9.44%	5.96%	8.03%	0.92%	6.73%	2.62%
>65	0.00%	0.00%	0.00%	0.00%	0.00%	3.65%
Education						
Illiterate	0.00%	3.41%	0.47%	6.78%	0.00%	14.01%
Literate but not a graduate	0.00%	5.60%	1.58%	6.20%	2.23%	3.46%
Primary school	12.43%	37.66%	13.55%	29.39%	14.42%	25.96%
Secondary school	4.63%	16.89%	3.68%	24.88%	5.55%	18.83%
High school	13.64%	26.82%	20.62%	20.38%	17.74%	23.73%
Vocational or Technical HS	15.36%	9.62%	6.91%	9.46%	8.22%	6.09%
University or higher	53.94%	0.00%	53.19%	2.91%	51.84%	7.92%
Social Security						
Formal	89.02%	52.21%	91.93%	49.18%	94.63%	37.53%
Informal	10.98%	47.79%	8.07%	50.82%	5.37%	62.47%
Sector						
Agriculture	1.07%	1.78%	0.47%	0.92%	0.00%	0.00%
Non agricultural	98.93%	98.22%	99.53%	99.08%	100.00%	100.00%
Marital Status						
Married	67.87%	44.07%	59.82%	38.23%	59.64%	41.88%
Single	32.13%	55.93%	40.18%	61.77%	40.36%	58.12%
Dependent children						
None	41.82%	36.75%	38.33%	41.81%	39.97%	42.89%
1	30.49%	33.58%	41.88%	30.29%	41.45%	28.70%
>1	27.69%	29.67%	19.79%	27.90%	18.58%	28.41%
N	136		267		270	

Note: Includes wage earners only.

In the period covering 2009 crisis, average education levels seem to become higher both for high paid and low paid wage earners. The proportion of individuals in secondary school, high school and university becomes higher after the crisis for both low paid and high paid groups. This shows that wage earners group became more selective in terms of education after the crisis. Another observation is that although the weight of university graduates in high pay jobs did not change at all, university graduate women got employed in low pay jobs after the crisis. (Before the crisis no university graduate women were low paid.)

The biggest change in the composition of low and high pay sectors occurred with respect to informality. Before the crisis, 79.8% of the high paid group and 46.4% of low paid group was composed of formal sector workers. After the crisis these rates increased to 92% and 61% respectively. In other words, the likelihood of being classified as a high pay wage earner dropped drastically for informal sector wage-earners with the crisis. The share of informal sector wage earners among low paid group also increased, indicating that it also became less likely for formal sector workers to be classified as low pay. Similar patterns of change are observed for both men and women. In the low pay group, however, the proportion of women in formal sector increased in 2010 as well while the ratio of informal workers among low paid men fell in 2010. Therefore it is possible to claim that women working in informal felt the effect of the crisis for a longer time.

The proportion of married individuals in high pay increases after the crisis. This is also consistent with out earlier finding that this group of wage earners are made up of older individuals after the crisis. In contrast, the share of single individuals in low pay group is higher in the period that covers 2009 crisis. The proportion of individuals in low pay who do not have a dependent child increases after the crisis as well. Given that low wage earners are generally young, these are not contradictory to our findings. It seems that more single young individuals (without children) became employed in low pay jobs after the crisis. This is the case when

we focus only on women as well. Yet, proportion of men with one or more children in low pay increased after the crisis.

4.6. MULTIVARIATE ANALYSIS ON LOW PAY

In this section, we investigate the correlates of low pay in a multivariate framework. The purpose of the multivariate analysis is to see whether the crisis has changed the role individual and household level characteristics play in determining the low pay status. In order to do so, a low pay dummy is created and a probit model is run by using this dummy as the dependent variable. By this way, it becomes possible to see how individual characteristics affect the low pay probability. In order to compare the effect of crisis on these probabilities, two samples are pooled and interaction variables are created for all explanatory variables separately. If the coefficients of these interaction variables are found to be statistically significant, it means that the change in probabilities is significant, too.

Explanatory variables used in this section are gender, age, education level, informal sector employment, marital status and the size of household. These are similar with the variables used in the literature (see for instance, Capellari and Jenkins (2004). The first one of these variables is gender. In the literature, women usually have higher probability of being low paid than men (see Elson, 2010). Other variables such as age and education determine the potential productivity of individuals. In the literature, a U-shaped relation is found between age and low income. Proportions of young and old wage earners in low income group are usually higher when compared with middle aged wage earners in this group. This relation might be getting more visible after 2009 crisis. (We expect younger individuals in low pay to increase after the crisis, making this U-shaped relation between age and low pay become more visible.) We also expect that individuals with higher education levels will receive higher wages and the wage gap between higher educated and lower educated individuals will expand after the crisis. If

there is segmentation with respect to informal/formal sectors, then it is more likely that wage earners who work in formal sector will be in high pay group. In terms of marital status, it is generally expected that married individuals are those with higher wages where single individuals have higher risks of being low paid. Capellari and Jenkins (2005) claims that for employed persons, being married implies *"the presence of family responsibilities which favour employment stability"* (Capellari and Jenkins, 2005: 11). Therefore, these persons have a lower risk of turnover which means that employers are generally more willing to invest in them. Under normal circumstances, larger household size decreases the risk of being low pay because *"(...) the additional financial burden makes low-paid employment more unsatisfactory"* (Sloane, 1996: 664). However, this might change with crisis if other wage-earners in the household lose their jobs because of the crisis.

We consider five educational groups: Less than primary school, primary school graduates, secondary school graduates, high school graduates and above high school. For each category under education a dummy is created and when running the model, 'above high school' group is treated as a reference group. In the case of age, we have created four groups: age less than 20, age between 21 and 34, age between 35 and 49 and age above 50. The group that is composed of individuals above 50 years old is treated as the reference group. The idea behind creating various age and education groups is to allow the estimated coefficients to differ along these lines. Household size is the only variable that is not binary and left as a continuous variable in the model. After the probit model is run, marginal effects of all variables are calculated to see the contribution of each factor to the probability of low pay. We run two sets of probit equations, one for the period covering the pre-crisis period and the other covering the crisis period. By comparing the marginal effects derived from these two probit estimations we try to see the effect of the crisis.

Table 4.9 shows the coefficients coming from the probit model. The results show that one of the determining factors of low pay is education. Both before and after the crisis people with the lowest education level (below primary school) were the group most likely to be low paid than those in any other education groups. Primary school graduates and secondary school graduates follow this group. High school graduates have lower risks of low pay as compared to primary and secondary school graduates but not as compared to university graduates. The least likely group to be in low pay is university graduates. These results are not surprising and are predicted by both the human capital model and the segmented labor markets theory. Degrees and diplomas are the main determining factors when getting a job. A person may not be able to apply to a "good job" without owning a university diploma. This may be the reason why, even when he/she is a high school graduate, a person is still likely to be in low pay. Statistical tests reveal that the role education plays in changing the risks of low pay did not change with the crisis.

As unappealing as it is, informal sector is still regarded as a safety net in Turkey. Being in the informal sector is not something that anyone hopes for. This sector pays low, but yet, low income is better than no income. People may be in need of money without having too much time to search for a better job. As a result, they may take jobs in the informal sector because these jobs are easier to find when people do not have much time. Another problem is not having any appealing qualifications. People may look for jobs as long as they want but they still might not be able to find a job in the formal sector. This may be because some of their characteristics don't exactly attract employers. If education level of a person is low, for instance, this gives a bad signal to the employer and therefore lowers the possibility to be employed.

Table 4. 9: Correlates of Low Pay

	Variables	2007 Coefficients (standard errors)	2009 Coefficients (standard errors)	Sign. Level of Interaction Variable
Gender	Female	0.102	0.237*	
		(0.162)	(0.142)	
Age	Age(<20)	0.448	0.537	
		(0.385)	(0.409)	
	Age(21<&<34)	0.429*	0.214	
		(0.205)	(0.162)	
	Age(35<&<49)	0.247	-0.121	
		(0.199)	(0.150)	
	Age (ref. Age>50)			
Education Level	Below Primary School	1.332***	1.308***	
		(0.315)	(0.315)	
	Primary School	1.051***	0.854***	
		(0.166)	(0.136)	
	Secondary School	0.802***	0.863***	
		(0.214)	(0.161)	
	High School	0.687***	0.560***	
		(0.209)	(0.150)	
	Edu (ref. Above high school)			
Formality	Informal Sector	0.498***	0.803***	*
		(0.131)	(0.128)	
Marital Status	Single	0.099	0.366*	
		(0.172)	(0.144)	
Household size	Total household	-0.016	0.108***	***
		(0.032)	(0.305)	
	Constant	-2.315***	-2.146***	
		(0.242)	(0.199)	
Number of Observations		1,044	1,098	
Log Pseudo Likelihood		-354.080	-470.176	

Note: Numbers in parentheses are robust standart errors. (*** p<0.01 ** p<0.05 *p<0.1)

Another problematic issue is work experience, which we proxy using age dummies. In the job market, many job advertisements include a work experience requirement. A younger person with no experience might find it more difficult to find a job and try informal sector as a stepping stone (so that he/she can earn that experience required by better jobs). This time, however, former work experience becomes problematic. When employers (or HR departments) take a look at this person's resume and see that he/she was employed in the informal sector before, they might reconsider because of their prejudices. Consequently, the "stepping stone" can become a trap for these people.[57] This is a bigger problem for younger individuals with no work experience. For instance, for a young university graduate who does not have any experience, it might be harder to find a job in the formal sector than in the informal sector. If he/she was to accept a job in informal sector just to gain this experience, than it might be harder for him/her to step into formal sector despite the experience earned in informal sector.

Although most age groups are not significant determinants of low pay, one group shows significance. Young wage earners were more likely to be low paid before the crisis. Although the coefficients of age dummies still show that younger persons are more likely to be in low pay, their effect becomes insignificant after the crisis. Gender, on the other hand, showed no significance before the crisis, but after the crisis the coefficient became significant at 10% significance level showing that it was now more likely for women to be in low pay.

The model coefficients also show that informality is another main determinant of low pay, as it was suspected. It can be seen that both before and after the crisis informal wage earners are more likely to be low paid. However this time interaction variable is also statistically significant. This means that informal sector workers are even more likely to be low paid after the crisis. To show how the predicted value of low pay has changed with the crisis for the informal sector

[57] If and how people get trapped in informal sector will be covered in next chapter.

workers we conduct the following exercise. We predict the low pay probability for a man holding a secondary school diploma aged 40 who is married and has 4 persons in his household in both 2007 and 2009. In 2007, while the probability of low pay for this reference person working in informal sector was 20.56%, it increased to 48.21% in 2009.

In a similar vein, while the risk of low pay did not change with marital status and household size before the crisis, after the crisis single persons and those from larger households had a higher likelihood of low pay.

Controlling for individual and household level characteristics, the crisis itself is not of course a determining factor. In Table 4.10 it can be seen that the crisis year itself makes it more likely for wage earners to be low paid. However, this result is not observed when individual characteristics are controlled for. It can only be seen if the probit model is run with the year dummy showing the pre-crisis period only. The result is statistically significant at 1% level.

Table 4. 10: Crisis Coefficient and (Robust) Standard Error

Variable	Coefficient
Crisis year	-0.428***
	(0.07)

Note: Number in paranthesis is the robust standard error. *** p<0.01

An important caveat with the above model is that we consider individuals who chose to be wage earners in both years. As discussed in an earlier part of this chapter, the pool of wage earners has changed with the crisis. The analysis in this section ignores this selection mechanism and investigates how low pay status changes with the given characteristics of wage earners. A more thorough investigation would require the modeling of the choice of sector before looking at the determination of low pay. This is not a straightforward exercise as it requires the use of an instrument that determines the choice of wage employment but not low pay. We hope to extend this part of the thesis in future work.

4.7. MULTIVARIATE ANALYSIS ON LOW PAY ENTRY AND EXITS

Individual and household level characteristics help determine who moves in and who moves out of low pay. In order to find out about the role these characteristics play and how this role has changed over time, two multivariate probit models are estimated. These models differ only in their dependent variables and have the exact same explanatory variables. One important note to make at this point is that the sample we use is restricted to those who were wage earners in two consecutive years. As a result, entry and exits take place between high pay and low pay states only.

The first model looks at the correlates of entry into low pay. The dependent variable "entry" is a binary variable which describes the movement from high pay to low pay. A person who was high paid in year t-1 and low paid in year t has entered the low pay group. Therefore, the dummy takes value 1 for these wage earners. The rest of the high pay group remained in the high pay group in year t, thus the "entry" dummy takes the value 0 for these wage earners. The second model, on the other hand, describes movements out of low pay. This type of movement is represented with an "exit" dummy. If a low paid wage earner in year t-1 moves into high pay in year t, the "exit" dummy takes 1 as a value. If the low paid wage earner stays low paid in the following year, the "exit" dummy becomes 0.

Explanatory variables used in these multivariate probit models are the same with those in previous probit models. These are gender, age, education level, marital status, informality and size of the household. In terms of gender, it is expected that being a woman may be disadvantageous. In the literature, Sloane and Theodossiou (1996) show that low paid men are more likely to exit low pay and high paid men are less likely to enter low pay than women in Britain. Second explanatory variable is age. In the literature, it has been shown that younger and elderly individuals are more likely to enter the low pay group (See Sloane and

Theodossiou, 1996; Jarvis and Jenkins, 1997). The third explanatory variable that is used is education level, and this is one of the characteristics that are expected to affect the low pay dynamics the most. The expectation is for individuals with higher level of education to have lower entry rate into but higher exit rate from low pay Sloan and Theodossiou (1996) show that this is indeed the case for individuals with lower education levels in Britain. The fourth explanatory variable that we use is marital status. Given that an individual is employed, it is shown that being married lowers probability of being low paid (Capellari and Jenkins, 2005). Therefore, we expect married individuals to have a higher exit rate from and a lower entry rate into low pay. Informality, which we use as an indicator of segmentation in the labor market, is expected to lower income mobility rates. The last explanatory variable that is used is the total household size. In the literature, it has been found that individuals without children are more likely to exit low pay whereas individuals with dependent children are more likely to enter into low pay (Jarvis and Jenkins, 1997). Therefore, larger household size would imply a higher probability of entry and a lower probability of exit from low pay.

The results for the probit regressions on entry into low pay are shown in Table 4.11. The first two columns gives the coefficient estimates for the first panel that covers the pre-crisis period, while the second column gives the results for the second panel covering the crisis period. In the third column of the table, we present the significance levels of interaction variables derived from the pooled sample.

Gender is not a significant determinant of low pay dynamics either before or after the crisis. Although women are usually expected to be disadvantaged as they are more likely to move into low pay, this does not seem to be the case for the Turkish labor market –at least in the sample used in this study. Age is not a significant correlate of movement into low pay before the crisis. After the crisis, younger persons between the ages 15 and 34 became significantly more likely to enter into low pay. As it was mentioned before, age is a proxy used for work

experience. Therefore, individuals with less work experience seem to become more likely to be low paid after the crisis.

Table 4. 11: Correlates of Low Pay Entry

ENTRY	**Variables**	**2006-2007-2008 Coefficients (standard errors)**	**2008-2009-2010 Coefficients (standard errors)**	**Sign. Level of Interaction Variable**
Gender	Female	0.112	0.215	
		(0.148)	(0.159)	
Age	Age (15<&<34)	0,072	0.397*	
		(0.152)	(0.215)	
	Age(35<&<49)	-0.217	0.031	
		(0.150)	(0.207)	
	Age (ref. Age>50)			
Education Level	Primary School	0.961***	0.501**	**
		(0.136)	(0.157)	
	Secondary School	0.753***	0.689***	
		(0.167)	(0.180)	
	High School	0.397**	0.316*	
		(0.188)	(0.171)	
	Edu (ref. Above high school)			
Formality	Informal Sector	0.931***	0.840***	
		(0.121)	(0.170)	
Marital Status	Single	0.277**	0.162	
		(0.148)	(0.174)	
Household size	Total household	0.067**	0.092**	
		(0.029)	(0.040)	
	Constant	-2.317***	-2.602***	
		(0.182)	(0.263)	
Number of Observations		1549	1595	
Log Pseudo Likelihood		-462.114	-332.176	

Note: Numbers in parentheses are robust standard errors. (*** p<0.01 ** p<0.05 *p<0.1)

Education is one of the main determining factors of entry into low pay. Lower education level (i.e. primary school) causes a higher risk of entry into low pay whereas higher education level (i.e. university) causes a lower risk of entry. However, the effect of education in determining movements into low pay decreased after the crisis. Therefore, individuals shifted more towards low paying jobs regardless of their education levels after the crisis. This might be because employees might find it harder to pay as high as they used to when there is an economic crisis that affects the business negatively as well. Individuals with higher education might accept lower wages in an environment where finding new jobs are much more difficult if their employers promise to compensate for their losses as soon as the effect of the crisis fades out.

Moving on to informality, we see that working in the informal sector increases the risk of entering into low pay significantly. After the crisis, informality continued to increase the probability of entering into low pay after the crisis. Due to the nature of this sector where there is no proper unionization, this situation is not a surprise.

In line with the literature, it is found that being single increased the risk of entering into low pay significantly before the crisis. After the crisis, this effect became insignificant. Also, larger household size also increased the risk of entering into low pay both in the period before the crisis and in the period that covers the crisis. These findings are also consistent with the literature if we consider larger household size to be the result of higher number of dependent persons in the household.

Table 4. 12: Crisis Coefficient and Standard Error for Entry into Low Pay

Variable	Coefficient
Crisis Period	0.334***
	(0.07)

Note: Number in parenthesis is the robust standard error. *** p<0.01

The effect of the crisis is found to be insignificant when we take individual and household characteristics into account. However, when we analyze the effect of the crisis alone, we see that the probability of entering into low pay increased with the crisis. This effect is shown in table 4.12. That this effect becomes insignificant when we include in the regression individual and household level variables show that the periods before and after the crisis are not intrinsically different from each other but that the group of wage earners in the two periods differed and this is the reason why we observed a significant coefficient in the bivariate model.

Next, we analyze exits from low pay. In table 4.13, the results of the second multivariate probit model are given. There is no significant factor that increases the chances of exit from low pay before the crisis. During the second period that covers the 2009 crisis, gender, education, marital status, informality and total size of household became significant factors that affect low pay exits. This shows that before the crisis, movement out of low pay was a more random process than the movement out of low pay after the crisis. Age, on the other hand, is found to be an insignificant factor during the second period where the 2009 crisis takes place.

In the period that covers the 2009 crisis, women are more likely to exit low pay than men. This is not very surprising since the group that consists of women who are high-paid full-time wage earners is very selective group. Primary school graduate and high school graduate individuals become less likely to exit low pay as compared to university graduates whereas the effect of being a secondary school graduate is still insignificant after the crisis.

Informality is insignificant in the period before the crisis. However, in the second period covering the crisis, informality significantly decreases the chances of moving out of low pay. This shows that informal sector became more likely to become a trap after the crisis took place.

Single people became significantly less likely to exit low pay after the crisis. This may be because married individuals are considered to have a lower turnover risk

than single individuals and therefore, employers might have invested more in these individuals in the pre-crisis period and therefore, would like to keep employing them at their current wages (Uhlendorff, 2006). Larger household size also decreases the chances of moving out of low pay significantly after the crisis. Again, larger household size might mean taking more responsibility if some individuals in the household are dependent on the wage earner (see Jarvis and Jenkins, 1997).

Table 4. 13: Correlates of Low Pay Exit

EXIT	**Variables**	**2006-2007-2008 Coefficients (standard errors)**	**2008-2009-2010 Coefficients (standard errors)**	**Sign. Level of Interaction Variable**
Gender	Female	0.113 (0.224)	0.360* (0.169)	
Age	Age (15<&<34)	-0.010 (0.304)	0.277 (0.253)	
	Age(35<&<49)	-0.126 (0.300)	0.252 (0.251)	
	Age (ref. Age>50)			
Education Level	Primary School	-0.183 (0.297)	-0.365* (0.191)	
	Secondary School	-0.095 (0.310)	0.269 (0.220)	
	High School	-0,197 (0.352)	-0.493* (0.243)	
	Edu (ref. Above high school)			
Formality	Informal Sector	-0.123 (0.162)	-0.336** (0.154)	
Marital Status	Single	0.155 (0.219)	-0.428** (0.178)	**
Household size	Total household	0.029 (0.051)	-0.066* (0.034)	
	Constant	0.157 (0.451)	0.0745 (0.327)	
Number of Observations		378	473	
Log Pseudo Likelihood		-258.951	-270.767	

Note: Numbers in parentheses are robust standard errors. (*** p<0.01 ** p<0.05 *p<0.1)

The effect of the crisis itself on low pay exits is found to be insignificant when we take individual and household characteristics into account, too. However, when we analyze the effect of the crisis alone, we see that the probability of moving out of low pay increased. Table 4.14 shows this effect. That this effect became insignificant when individual and household level variables are controlled for shows that crisis and pre-crisis periods are not intrinsically different from each other and that what is different is the characteristics of wage earners considered. Indeed, we have observed that moving out of low pay was random before the crisis whereas a more selective group moved out of low pay after the crisis.

Table 4. 14: Crisis Coefficient and Standard Error for Exits from Low Pay

Variable	Coefficient
Crisis period	0.574***
	(0.103)

Note: Number in parenthesis is the robust standard error. *** p<0.01

CHAPTER 5

STATE PERSISTANCE

5.1. THE DEGREE OF PERSISTENCE IN LOW PAY

People might be able to keep their jobs and stay in the wage earner category after the crisis, but there is still the risk of being low paid. Even worse, these low paid people can be stuck in that state for a number of years because moving into high pay may get harder for them every year. There may be several reasons behind this situation. On the demand side, employers may think that a person who was low paid in another firm before might have low productivity and therefore they may not employ the person. Employers might also think of it as an indicator of high turnover propensity. On the supply side, longer periods of low pay may reduce human capital accumulation, which causes lower levels of productivity. This lower productivity may also result in a fall in the probability to move out of low pay. Also, a low paid person can get discouraged and think that he/she cannot get a higher wage, so he/she might not apply to a job which pays higher. *"Being in a low paid job may also alter workers' preferences or motivation in such a way as to make them more likely to remain in that segment of the labour market"* (Stewart and Swaffield, 1996: 30). The effect of the 2008 crisis might be reflected on certain people by this way; although these people stay employed, the wages they earn might be low and worse, if there is true state dependence, may reduce their chances of escaping poverty at a later date. If that is the case, who gets stuck in low pay becomes an important question.

There is also the possibility that persistence in high pay might increase. Although this looks like good news, it is actually not so good for those who are not high

paid to begin with. Low paid wage earners might find it more and more difficult to become high paid because some of their characteristics might be reducing their chances of finding a high paid job. With the crisis, low paid people might be less willing to take risks or they might not even try to find better paying jobs in case they lose what little they already have.

Table 5.1 shows the income mobility rates in two panel data sets. It can be seen that the degree of state persistence in high pay is higher after the crisis and this difference is statistically significant. State persistence in low pay, on the other hand, seems to be lower after the crisis. However, this fall in persistent low pay is not significant. State persistence rate in high pay is nearly six times larger than the state persistence rate in low pay before the crisis and it is nearly seven times larger after the crisis. The total percentage of people who stay in the same state also increases with the crisis. This increased immobility shows us that segmentation in the labor market might be getting more visible after the crisis.

Table 5. 1: Income Mobility Rates

Table 5.1.A: All Samples

All	**2006-2007-2008**	**2008-2009-2010**
HHH	67.95%	74.46%
HHL	2.40%	1.84%
HLH	3.23%	2.04%
HLL	2.92%	0.67%
LHH	5.17%	4.40%
LHL	1.95%	1.58%
LLH	4.33%	3.87%
LLL	12.05%	11.13%
Total	100.00%	100.00%

Table 5.1 (Continued)

Table 5.1.B: Men

Men	2006-2007-2008	2008-2009-2010
HHH	68.09%	75.62%
HHL	2.34%	1.89%
HLH	3.24%	1.84%
HLL	2.81%	0.81%
LHH	5.24%	3.89%
LHL	2.11%	1.18%
LLH	4.04%	3.38%
LLL	12.13%	11.38%
Total	100.00%	100.00%

Table 5.1.C: Women

Women	2006-2007-2008	2008-2009-2010
HHH	66.97%	68.78%
HHL	2.86%	1.59%
HLH	3.17%	3.04%
HLL	3.67%	0.00%
LHH	4.66%	6.93%
LHL	0.83%	3.55%
LLH	6.37%	6.25%
LLL	11.49%	9.87%
Total	100.00%	100.00%

Note: Includes wage earners only

For men, state persistence rates for high pay become significantly higher after the crisis. State persistence rate for low pay does not change significantly after the crisis. This is what we observed for the whole sample. However, the situation is not different for women. The state persistence rate is significantly higher for high paid women after the crisis, but there is no significant change for low paid women.

One other point that should be mentioned at this point is again the randomness of low pay and high pay. Being high paid year after year cannot be a coincidence when the persistent rate of high pay is around 67%. The rate of high paid people in wage earners group in 2009 is slightly lower than the rate of high paid people in wage earners group in 2006[58]. Also, high pay state persistence rate is higher in 2009 than in 2006. These two facts combined show us that there is a certain group of wage earners who get to be high paid every year.

Table 5. 2: Characteristics of People Who are Persistently Low Paid (LLL)

	2006-2007-2008		2008-2009-2010	
Gender	**Men**	**Women**	**Men**	**Women**
%	88.16%	11.84%	85.03%	14.97%
Age				
<20	3.67%	0.00%	5.47%	8.10%
21-34	55.93%	42.26%	46.20%	74.12%
35-49	27.54%	57.74%	32.99%	17.78%
50-63	12.86%	0.00%	15.34%	0.00%
>65	0.00%	0.00%	0.00%	0.00%
Education				
Illiterate	1.10%	0.00%	2.69%	8.88%
Literate but not a graduate	7.73%	15.75%	8.24%	8.18%
Primary school	56.78%	41.99%	42.86%	28.09%
Secondary school	16.66%	22.09%	25.58%	32.33%
High school	9.79%	20.16%	11.74%	22.52%
Vocational or Technical HS	7.93%	0.00%	7.58%	0.00%
University or higher	0.00%	0.00%	1.04%	0.00%
Social Security				
Formal	65.02%	68.98%	55.29%	63.78%
Informal	34.98%	31.02%	44.71%	36.22%
Marital Status				
Married	82.07%	41.99%	74.74%	7.51%
Single	17.93%	58.01%	25.26%	92.49%
Dependent children				
None	17.76%	60.65%	17.03%	60.95%
1	27.82%	15.75%	25.67%	18.91%
>1	54.42%	23.60%	57.30%	20.14%

[58] Proportion of high pay in wage earners group is 72.96% in 2006 and 71.32% in 2009 (see Table 4.4).

Under these circumstances, it would be naïve to assume that being low paid or high paid is a random event. There must be a reason behind this selection in the labor market, and this selection might be due to certain characteristics that these people have. Table 5.2 shows the characteristics of people who are low paid for three consecutive years in two separate panel data sets. Low pay became more feminized, yet it is still very low compared with the persistently low paid men. After all, there are fewer wage earner women in all three years than men.[59]

When we focus on age groups, we can see that before the crisis all women who are persistently low paid are in between 21 to 49 years old. Again, all men in this category are below 65 years old during periods before and after the crisis. Another interesting point is related with marital status. Although there is no radical change for men, it can be seen that 93.49% of women in persistent low pay group are single after the crisis while this rate was 58.01% before the crisis. Single women seem to be accepting to work for low pay more after the crisis.

It is generally those who have lower education that got stuck in low pay. Before the crisis, there were no university graduate men in this category. Yet, after the crisis, some university graduate men got included in persistent low pay category. The weight of primary school graduate men and women decreased after the crisis, and the proportion of men and women with secondary school or high school education increased after the crisis. This means that more educated people become persistently low paid. Also, illiterate women were not in persistent low pay category before the crisis but they got included in this group after the crisis. These women were most likely to be low paid anyway, but after the crisis they kept on working for low wages.

Before the crisis, 65.02% of men and 68.98% of women in persistent low pay group worked in the formal sector. The proportion of men and women in informal sector jobs was close to each other, but the main point here is that even though

[59] See table 4.1.a and 4.1.b.

some people worked in the formal sector, they could still got stuck in low pay. These rates may be due to the fact that informal sector jobs are not as secure as formal sector jobs and three consecutive years of employment could be harder if you are working in the informal sector. After the crisis, 55.29% of men and 63.78% of women were working in the formal sector. The proportion of persistently low paid men and women working in the informal sector increased after the crisis. Yet, the increase in informal sector rate was larger for men. It might be because the persistent low paid group might be getting less homogeneous in the sense that the proportion of wage earners in formal and informal sectors are getting closer to each other.

Although the main focus of this study is low paid wage earners, analyzing characteristics of persistently high paid wage earners might also be useful in understanding the possible segmentation in the labor market. Table 5.3 shows the characteristics of people in this group. Again, the majority of the group with persistent high pay is men. However, the proportion of women in persistent high pay increases after the crisis. When we look at the age groups, we can see that the proportion of young women is higher after the crisis whereas the proportion of middle aged women is lower after the crisis. For men, the proportions with respect to age do not change radically. It is possible to claim that men who persistently receive higher wages are generally in the same age group and middle aged men are higher in proportion than men in other age groups. Majority of this persistently high paid group is also married and the rate of those who have more than one dependent child is 53.75% before the crisis and 49.63% after the crisis. It seems that these men are usually middle aged married man, where most of them have more than one child. The proportion of married women in persistent high pay is not as high as that of men and the proportion of women with more than one child is 21.85% before the crisis and 22.74% after the crisis. Therefore, when we compare these women with persistently high paid men, we could say that more of the high paid women are single and more of them also do not have children.

Before the crisis women possessing various levels of schooling - except for the illiterate women - could be high paid persistently. However, after the crisis, women with primary school degrees or lower disappeared from the persistent high pay group. The persistent high pay group becomes more selective in terms of education. Illiterate men who could enter persistent high pay group before the crisis were unable to join this group after the crisis. Also the weight of university graduates in this group became higher both for men and women after the crisis.

Table 5. 3: Characteristics of People Who are Persistently High Paid (HHH)

	2006-2007-2008		2008-2009-2010	
Gender	**Men**	**Women**	**Men**	**Women**
%	87.76%	12.24%	84.56%	15.44%
Age				
<20	0.00%	2.49%	0.00%	1.31%
21-34	40.50%	68.26%	33.73%	34.10%
35-49	52.08%	20.21%	57.35%	59.14%
50-63	7.42%	9.04%	8.92%	5.45%
>65	0.00%	0.00%	0.00%	0.00%
Education				
Illiterate	0.34%	0.00%	0.00%	0.00%
Literate but not a graduate	0.58%	1.31%	0.37%	0.00%
Primary school	32.40%	8.69%	29.30%	0.00%
Secondary school	9.62%	2.30%	10.19%	10.37%
High school	12.29%	18.34%	15.80%	13.67%
Vocational or Technical HS	23.68%	5.96%	17.02%	8.29%
University or higher	21.09%	63.40%	27.33%	67.67%
Social Security				
Formal	92.50%	94.17%	96.52%	97.49%
Informal	7.50%	5.83%	3.48%	2.51%
Marital Status				
Married	93.35%	62.45%	89.75%	62.47%
Single	6.65%	37.55%	10.25%	37.53%
Dependent children				
None	20.55%	46.35%	20.39%	38.28%
1	25.70%	31.80%	29.98%	38.98%
>1	53.75%	21.85%	49.63%	22.74%

The majority of men and women in persistent high pay are employed in formal sector jobs and their proportions become even higher after the crisis. Also proportions of women in persistent high pay are higher than men both before and after the crisis. Although it was harder to make such a claim for persistent low pay group, it feels safer now to suggest that persistent high pay is a privilege held by formal sector workers. The informal sector is either riskier because the possibility of losing jobs are higher or the wages are more volatile so a person could still become low paid even when he/she is employed in the same job.

5.2. MULTIVARIATE ANALYSIS ON PERSISTENT LOW PAY

In this section, we investigate the correlates of persistent low pay in a multivariate framework. This time, the aim of multivariate analysis is to see if characteristics that determine persistence in low pay changed with the crisis. In order to do so, a dummy variable for persistent low pay is taken as the dependent variable.[60] The samples that cover the periods before and after the crisis are pooled and interaction variables are created again to see whether the effect of characteristics changed significantly after the crisis.

The explanatory variables defined in the multivariate probit model are gender, age, education level, formality, marital status and household size. [61] Age category consists of four groups: age less than 20, age between 21 and 34, age between 35 and 49 and age above 50. For each of these categories, a dummy variable is created. Similarly, there are five categories under education variable. These are: below primary school, primary school, secondary school, high school and above high school. Again, a dummy variable is created for each category under education. Household size is left as a continuous variable in the model.

[60] {D=1 if LLL; =0 otherwise}

[61] The expected effects of these variables on low pay are explained in section 4.6.

Table 5.4 shows the coefficients coming from the probit model. The persistence of low pay does not differ between men and women. In other words, women wage earners are as likely as men wage earners to be consistently in low pay. This conclusion holds for both 2007 and 2009. The interaction variable for gender is not statistically significant; therefore we can conclude that the risk of low pay does not change with the crisis for either men or women.

The age dummies are not statistically significant. In other words, there is no evidence that age matters for low pay persistence. The interaction variables for age dummies are not statistically significant either; so the risk of low pay that individuals of different ages bear does not change after the crisis.

All education dummies are statistically significant both before and after the crisis. Therefore, a higher education level implied a lower risk of being stuck in low pay both before and after the crisis. The group that was most likely to be in persistent low pay category is individuals with an education level below primary school. The risk of persistent low pay reduces with more years of schooling and attains the lowest value for individuals with more than high school education.[62] This pattern holds both before and after the crisis. Interaction variables for education dummies are generally statistically insignificant with the exception of primary school graduates. Holding all variables at their mean values but education, primary school graduates had a 18.0% probability of being persistently in low pay as compared to 8.7% of high school graduates before the crisis. After the crisis, these probabilities became 12.3% for primary school graduates and 8.8% for high school graduates. Hence, the risk of persistent low pay dropped somewhat for primary school graduates following the crisis but not for others.

[62] Although it seems like primary school graduates became less likely to be persistently low paid than secondary school graduates in 2009, when we test the coefficients of "primary school" and "secondary school" categories, we can see that the difference between these coefficients is statistically insignificant.

Table 5. 4: Correlates of Persistent Low Pay

	Variables	2006-2007-2008 Coefficients (standard errors)	2008-2009-2010 Coefficients (standard errors)	Signifincance level of Interaction Variable
Gender	Female	0.158	-0.111	
		(0.309)	(0.225)	
Age	Age(<20)	0.071	0.232	
		(0.927)	(0.690)	
	Age(21<&<34)	0.009	0.103	
		(0.357)	(0.233)	
	Age(35<&<49)	-0.254	-0.169	
		(0.359)	(0.214)	
	Age (ref. Age>50)			
Education Level	Below Primary School	2.152***	0.987**	
		(0.494)	(0.468)	
	Primary School	1.136***	0.861***	*
		(0.275)	(0.221)	
	Secondary School	0.951***	1.013***	
		(0.329)	(0.237)	
	High School	0.691*	0.671***	
		(0.377)	(0.238)	
	Edu (ref. Above high school)			
Formality	Informal Sector	0.710***	1.171***	*
		(0.269)	(0.198)	
Marital Status	Single	0.214	0.516**	
		(0.324)	(0.226)	
Household size	Total household size	-0.053	0.129***	**
		(0.064)	(0.045)	
	Constant	-1.837	-2.700	
		(0.436)	(0.293)	
Number of Observations		360	776	
Log Pseudo Likelihood		-119.909	-204.786	

Note: Covers wage earners only. Robust standard errors are in parentheses. Significant at: (*** p<0.01 ** p<0.05 *p<0.1)

The informality dummy and the interaction variable for informality dummy with the crisis period are statistically significant. This shows that holding an informal sectors job caused a higher risk of facing persistent low pay in both periods. Furthermore, the probability of an informal sector worker to be stuck in low pay increased with the 2009 crisis. Holding all variables at their mean values but informality, informal sector workers had a 21.9% probability of being persistently in low pay before the crisis but 32.6% probability of being persistently in low pay after the crisis.

The marital status dummy is not significant for the pre-crisis period, but it become statistically significant in the period covering the 2009 crisis. However, the interaction dumy created for marital status is not significant. So, there is no change in the risk of being persistently low paid for these individuals. Lastly, household size dummy is statistically significant only for the period covering the 2009 crisis. Before the crisis, the effect of this variable was insignificant and negative. Still, the interaction dummy for household size is statistically significant. Therefore, after the crisis, individuals living in more crowded household became more likely to be in persistent low pay category.

5.3. INFORMAL SECTOR

Results of the multivariate analysis show us that there are three significant reasons why a person gets stuck in low. The first one of these is education level. Lower education level implies a higher probability of being in persistent low pay group. Therefore, schooling and training can cause a movement out of this group. The second one is informality. The negative effect of informality on persistent low pay increased after the crisis. The last significant factor is total household size. The effect changed sign after the crisis and getting larger as a household started to increase the risk of being low paid.

In this part, the focus is on informal/formal sector. In previous sections, we found that formal sector workers constituted 79.8% of high pay group in 2007 while this

rate increased to 91.8% in 2009 and fell slightly to 91.4% in 2010. This does not come as a surprise since in Turkey, monthly wages of informal sector employees are 47.8% of monthly wages of formal sector employees (Dayıoğlu and Ercan, 2009). In low pay group, the proportion of informal sector employees were 48.4% in 2007, 51.9% in 2009 and 50.8% in 2010. This means that the proportion of informal sector employees in low pay group increased in the year of the crisis.

Due to 2009 crisis, the share of formal sector workers in high pay and informal sector workers in low pay increased. Also, the risk of informal sector workers to become low paid increased with the crisis while the risk of formal sector workers to be stuck in low paid fell with the crisis. For instance, a primary school graduate holding an informal sector job had a 38.4% probability of being persistently poor in 2007. This probability increased to 46.1% in 2009. If this primary school graduate held a formal sector job, on the other hand, he/she would had a 15.7% probability of being persistently poor in 2007 and this rate would fall to 10.2% in 2009. This shows that even for lower educated employees in formal sector, the risk of being persistently poor decreases with the crisis. A high school graduate employed in informal sector had a 22.9% probability of being persistently poor in 2007. This rate increased to 38.7% in 2007. For a high school graduate who is employed in the formal sector, this probability was 7.3% in 2007 and 7.2% in 2009. Even though the crisis did not increase the risk of being persistently low paid for a formal sector worker with a high school diploma, the proportion of high school graduates employed in the informal sector went down by 15.8% points from 38.7% to 22.9%.

Given these results, we could consider the possibility of segmentation in the labor market with respect to informality, where informal sector workers are under higher risk of being persistently poor after the crisis and formal sector workers have lower risk of being persistently poor after the crisis.

Table 5. 5: Informal Sector Mobility Rates

Table 5.5.A: All samples

All	2006_2007_2008	2008_2009_2010
FFF	81.43%	88.48%
FFI	0.81%	0.73%
FIF	0.61%	0.56%
FII	0.76%	1.08%
IFF	5.41%	1.29%
IFI	0.00%	0.12%
IIF	5.20%	0.72%
III	5.79%	7.02%

Table 5.5.B: Men

Men	2006_2007_2008	2008_2009_2010
FFF	80.95%	88.27%
FFI	0.93%	0.68%
FIF	0.70%	0.00%
FII	0.87%	1.14%
IFF	4.78%	1.21%
IFI	0.00%	0.14%
IIF	5.74%	0.88%
III	6.04%	7.67%

Table 5.5.C: Women

Women	2006_2007_2008	2008_2009_2010
FFF	84.78%	90.96%
FFI	0.00%	0.99%
FIF	0.00%	1.77%
FII	0.00%	0.80%
IFF	10.00%	1.50%
IFI	0.00%	0.00%
IIF	1.26%	0.00%
III	3.96%	3.96%

Note: Wage earners only.

In table 5.5, informal sector mobility rates are given. These ratios are calculated by taking those who are wage earners in all periods into account. We can see that the ratio of persistence in formal sector is 81.4% for the period before crisis and 88.5% for the period covering the 2009 crisis. These persistence rates in sectoral ownership are even higher than high-pay persistence rates both before and after the crisis. Therefore, persistent employment in formal sector does not necessarily imply persistent high pay. The ratio of persistent employment in the informal sector is 5.8% before the crisis and 7% after the crisis. The persistence in informal sector is a lot less than persistence in formal sector. However, state persistence becomes more obvious with the crisis meaning that informality, like low pay, is not a random event. We have demonstrated that employment in the informal sector increases the likelihood of being persistently in low pay. In this subsection, we have further demonstrated that there is significant persistency in both formal and informal sector ownership. Hence, it is no surprise that this persistence or immobility across sectors contributed to persistency in low pay.

CHAPTER 6

CONCLUSION

Does the risk of being low paid increases with an economic crisis? If that is the case, then does an economic crisis affect everyone the same way? These questions are not easy to answer, yet there are several attempts made by scholars to figure out who becomes low paid and who stays low paid. There are no studies on the effect of an external shock such as a global economic crisis so far. Different than previous studies, the main purpose of this study is to see how low pay, low pay dynamics and persistent low pay in Turkey has been affected by the 2009 global economic crisis.

Before we began our analysis on low paid group, we focused on whole labor market and considered all employment states to see how the transition rates between wage earners group and other groups (i.e. non-wage earners, unemployed, out of the labor force) changed with the crisis. It is found that with the 2009 crisis, state persistence rates increased in all employment states except wage earners state. For non-wage earners, transitions into wage earners category decreased with the crisis. Also, the proportion of non-wage earner who became unemployed or inactive fell with the crisis. This means that while the chances of moving into wage earners group fell for non-wage earners, they became less likely to look for another job or to move out of the labor force. This can be tied to longer durations of unemployment observed in the period that covers the 2009 crisis. Longer persistence rates in unemployment shows that finding a job required a longer search period during the crisis. Also, the proportion of those who were unemployed or inactive in year t-1 but became a wage earner or a non-wage

earner in year t dropped with the crisis. This means that it would become less likely for a person to become a wage earner (or a non-wage earner) after the crisis once he/she left his/her current job. In such an environment, one would expect that fewer wage earners would leave this status. Yet, the persistence level in wage employment fell with the crisis. There may be two reasons behind this; either more people leave wage employment voluntarily (due to retirement, etc.) or more people lose their jobs due to the ongoing economic crisis. The first one is less likely; people tend to postpone their retirement or they do not take the risk to quit their jobs to look for another one during crisis periods. Therefore, transitions between employment statuses mean that although employment rates are more or less the same, it is not the same people who are categorized as wage earners each year.

Although these findings are important, the main focus of this study is on low paid wage earners. For this reason, a further distinction is made between high paid and low paid wage earners. We see that although wage employment rates remained more or less the same after 2009 crisis, the proportion of low paid wage earners among all wage earners increased after the crisis. This is an important issue because a higher proportion of low pay group implies a higher poverty rate since wages usually constitute about 70% of a person's income.

The first two questions that we are asking is how big the conditional transition rates into and out of low pay are and how these transitions change after the 2009 crisis. First we focus on wage earners group alone. In Turkey, exit rates from low pay are about four times larger than entry rates both before and during the 2009 crisis. Also it is found that both entries into low pay and exits out of low pay fell after the 2009 crisis. Knowing that low pay proportion increased in the samples, it is possible to claim that the increase in proportion of low paid wage earners is due to the lower exit rate from low pay.

Next, we consider the full-five employment states and repeat our analysis. The reason behind this analysis was to see if we are underestimating the effect of the

crisis by only considering wage earners group. It is found that a smaller proportion of low paid individuals managed to leave this status after the crisis. Entry into low pay from high pay also fell with the crisis. These findings are parallel with our previous findings (with wage earners alone). We further see that entry rate from unemployment into low pay almost doubled with the crisis.

Earlier we found that persistence in wage employment actually fell after the crisis. At this point, we see that state persistence in low pay increased with the crisis. We also see that state persistency in high pay increased while entries into high pay from all other states fell. Therefore, the fall in conditional transition rates from low pay to high pay (exits) and high pay to low pay (entries) is the cause of lower state persistence in wage employment. Although more low paid wage earners stayed low pay, the remaining low paid wage earners usually failed to become high paid and became unemployed, inactive or non-wage earner instead. Increasing persistency in all categories suggests that these categories might have become more homogeneous than they were before the crisis.

Next the differences in the effect of the 2009 crisis on transition rates between men and women are investigated. It is seen that regardless of the sample taken (wage earners alone or full-five categories), entries into and exits out of low pay decreased over time for both men and women. Men are more likely to exit low pay and less likely to enter low pay than women. Women who exit low pay are more likely to become inactive and less likely to stay a wage earner than low paid men after the crisis. Also, low paid women were twice likely to become unemployed than low paid men before the crisis. However, the probability of low paid men to become unemployed surpassed the probability of low paid women to become unemployed after the crisis.

Multivariate analysis on the characteristics of individuals in the Turkish labor market enabled us to point out which characteristics lead to lower levels of

earnings before and after the crisis.[63] We see that gender was not a significant determinant of low pay before the crisis. However, women became significantly more likely to be low paid after the crisis. Multivariate analyses on low pay entry and exits show that gender is not a significant determinant of low pay entry before or during the crisis. However, women were significantly more likely to exit low pay after the crisis compared to men.[64]

There are other characteristics that make individuals more vulnerable to external shocks in the labor market. When the correlates of low pay before and during the crisis are examined, it can be seen that individuals with lower education levels are more likely to be low paid in a certain year, more likely to enter low pay and less likely to exit low pay. Individuals employed in informal sector also have a higher risk of being low pay, becoming low pay and staying low pay. This risk is increased even further after the 2009 crisis. Same goes for individuals living in more crowded households. They are significantly more likely to be low paid and significantly less likely to exit low pay in the period covering the crisis.

It is found that lowest 10% and highest 10% became worse off after the crisis in terms of real hourly wages while the mid-section of the sample got better off. The fact that wage earners group became more selective after the 2009 crisis explains this situation. The composition of wage earners group became more homogeneous and therefore the difference between their wages is lower. Since the threshold remains almost the same, this means that individuals who were not categorized as low pay before the crisis are falling into low pay category after the crisis.

The crisis itself also has an effect on low pay dynamics. When we add a crisis dummy to multivariate analysis with all other variables, we see that crisis is not a significant factor contributing low pay. However when we take the crisis year

[63] Multivariate probit analyses are done with wage earners only.

[64] As the multivariate analyses on entry and exits are done with individuals who were wage earners in two consecutive years, it is not very surprising to see that full-time high paid wage earner women have a lower probability of moving into low pay since they are usually well educated middle-aged women.

dummy alone, we see that the 2009 crisis increases the likeliness of being low pay, entering low pay and exiting low pay. These results show us that there are no intrinsic changes in low pay group. The composition of low pay group changed due to changes observed at the levels.

The following question that is asked is the degree of persistence in high pay and low pay and how these changed with the 2009 crisis. We also investigate the characteristics that increase the probability of being stuck in low pay. We see that persistence in high pay increased significantly after the crisis while persistence in low pay did not change significantly for both men and women. Also, persistence in high pay is about six to seven times higher than persistence in low pay. These high persistence rates imply that being high paid or low paid cannot be coincidental. Therefore, we investigate the characteristics that may cause an individual to be stuck in low pay. It is found that individuals with lower education levels and individuals who are employed in informal sector are more likely to be stuck in low pay both before and during the crisis. This risk increased even further for those who are employed in informal sector with the crisis. Also, being single and living in larger households increased the probability of being stuck in low pay significantly in the period covering the 2009 crisis.

The final question that is asked in this study is the role of informality in the persistence in low pay. Informal sector mobility rates show that persistence rate in formal sector is very high (81.4% before the crisis and 88.5% during the crisis) while degree of persistence in low pay is relatively lower (5.8% before the crisis and 7% during the crisis). For women, persistence rate in formal sector is higher and persistence rate in informal sector is lower than men in both periods. When the time spent in informal sector is lengthened, women become less likely to be employed in formal sector (IIF and IFF). It is also possible that in the informal sector women are more likely to lose their jobs than men.

The scope of this thesis study is finalized at this point. However, there are some possible further additions to this study. Firstly, events could be analyzed to see

what has triggered the move in and out of low pay. In this study, only the effects of the state variables are analyzed. Secondly, in later work, we hope to separate out true state dependence from heterogeneity. This requires the use of an instrumental variable. Although there is no variable in the data that gives information about parental backgrounds of individuals – variables that are used often in the literature as instruments- , there may be some other variables that can be used as proxies in an instrumental variables set up. By this way, initial conditions problem can be handled.

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APPENDICES

A. TURKISH SUMMARY

Bu çalışmanın birincil amacı, Türkiye'de düşük gelir dinamikleri ile düşük gelire sahip kişilerin kompozisyonunun 2009 küresel krizinden nasıl etkilendiğini ortaya koymaktır. Bu çalışmada cevap aranan temel soru, bu krizin Türkiye'deki düşük gelir grubunu nasıl etkilediğidir. Düşük gelir geçişlerinin (düşük gelirli değilken düşük gelire geçiş ile düşük gelirli iken bu gruptan ayrılma) incelenmesinin, bu etkinin açıklanmasına yardımcı olacağı düşünülmektedir. Düşük gelir geçişleri kadar düşük gelir grubunun kompoziyosunda meydana gelebilecek değişimler de önem teşkil etmektedir. Türkiye'de emek piyasasındaki bireylerin niteliklerinin bir analizi yapıldığında krizden önce ve sonra hangi niteliklerin düşük gelir seviyelerine yol açtığı görülebilmektedir. Bunlara ek olarak, düşük gelir durumunun kalıcılığı da çalışmada incelenmektedir. Kalıcılığın seviyesi ve düşük gelir durumundan çıkamayan bireylerin özelliklerinin incelenmesi, çalışmanın bir başka odak noktasını oluşturmaktadır.

Dinamik veri setlerinin artması ile emek piyasasının dinamik olarak incelenmesi olanaklı hale gelmiştir. Uluslararası literatürde yapılmış olan pek çok ampirik çalışma esasen kişilerin işgücü piyasasındaki hareketleri ile bu hareketleri tetikleyen nedenleri araştırmaktadır. Statik analizlerden farklı olarak dinamik analizler bize kişilerin farklı istihdam grupları veya farklı ücret grupları arasındaki hareketlerini gösterir. Aynı zamanda bu kişilerin sosyo-ekonomik durumlarıyla ilgili eklenmiş olan veriler ise bu kişilerin hangi niteliklerinden dolayı hangi geçişlere maruz kaldıklarını gösterir. Bu da bize teorik literatürde düşük geliri açıklamak için geliştirilmiş teorileri tartma olanağı sağlar. Bu nedenle bu

çalışmada düşük gelirin dinamik bir analizi yapılmakta ve bunun için panel veri setlerinden faydalanılmaktadır.

Bu çalışmada kullanılan veriler iki farklı "Gelir ve Yaşam Koşulları Araştırması" (SILC) panel veri setinden elde edilmiştir. Bu veri setlerinde ilki olan2009 SILC Panel verisi – 2006-2009 yıllarını kapsamaktadır. İkinic veri set olan 2011 SILC Panel verisi ise 2008-2011 yıllarını kapsamaktadır. Bu iki veri sayesinde kriz öncesi ve kriz sırasında düşük gelir dinamiklerini incelemek ve karşılaştırmak mümkün olmuştur. TÜİK tarafından uygulanan SILC, aynı bireylerin dört yıl boyunca gelir ve istihdam durumlarını incelemeye olanak tanıması itibariyle oldukça geniş ve özgün bir veridir. Dolayısı ile, bu veriyi kullanarak düşük gelir durumu üzerindeki geçişlerin dinamik bir analizini yapmak mümkün olmaktadır. Bu çalışmada veri setinde dört yıl boyunca takip edilmiş kişiler alınmış ve tüm analizler bu kişiler ile yapılmıştır. Bu kişiler aynı zamanda tüm sene boyunca haftada en az 30 saat çalışmış olan tam zamanlı çalışanlardır. 2009 SILC Panel veri setinde dört yıl takip edilen 5868 kişi varken 2011 SILC Panel veri setinde dört yıl takip edilen 6062 kişi bulunmaktadır. Verinin yapısı itibariyle gelir ile istihdam bilgilerinin referans dönemleri farklılık göstermektedir.Kişilerin gelir bilgileri anketten önceki takvim yılı için alınırken, istihdam bilgileri anketin yapıldığı tarihe ilişkindir. Örneğin, 2007 mayısında örneğe çıkan kişiye 2006'daki geliri sorulurken, işgücü soruları 2007 mayısındaki referans haftasına dairdir. Bir diğer deyişle, kişiler geriye dönük olarak gelir bilgisi verirlen, istihdam durumları ziyaret edilen yıla aittir. Gelirin ve istihdam durumunun eşleştirilmesi sonucu dört yılı kapsayan her iki panel veri setinde de birer gözlem yılı (ve dolayısı ile iki yıllık birer geçiş) kaybedilmektedir.

Bu çalışmanın düşük gelir durumuna odaklanması itibariyle yapılan analizin ilk adımı, düşük gelir durumu için bir eşiğin belirlenmesidir. Ücret, çalışan kişilerin gelirlerinin önemli bir kısmını meydana getirmektedir. Düşük gelir grubundaysa ücretler kimi zaman kişi gelirlerinin tamamını oluşturur. Dolayısı ile, düşük gelir grubunu belirleyecek olan eşik değeri, aynı zamanda ülkedeki yoksulluğun

belirlenmesiyle de ilintilidir. Çalışmada bu eşiğin değeri mevcut saatlik reel gelir ortalamasının yarısı olarak alınmaktadır. Bu seviyenin altında gelire sahip olan bireyler "düşük gelir" grubunu oluşturmaktadır. Literatürde bu eşiğin belirlenmesi birkaç farklı şekilde olmaktadır. Düşük gelir seviyesini tanımlayacak eşiğin belirlenmesi için bir yol, belirli bir gelir seviyesini her dönem için düşük gelir sınırı olarak almaktır. Bir diğer yol ise eşik değerini her sene için ortalama veya medyan gelirin belli bir oranı olarak tanımlamaktır. Ortalama gelir değerini kullanmak bireylerin bütün çalışanlar arasındaki nispi konumunu ön plana çıkaracağından, bu şekilde bireylerin gelir durumlarındaki iniş ve çıkışlar daha anlaşılır bir şekilde görülebilmektedir.

Çalışmada düşük gelir üzerindeki geçişlerin analizini yapmadan önce, ücretli kişilerin istihdam durumuna göre nasıl hareket ettiğinin bir incelemesi bulunmaktadır. Bunun için çalışma çağındaki nüfus dört ana kategoriye ayrılmıştır: Ücretli çalışanlar (maaşlı veyhut yeğmiyeli olarak çalışanlar), ücret dışı çalışanlar (kendi hesabına çalışanlar, işverenler ve ücretsiz aile işçileri), işsizler ve iktisadi olarak faal olmayanlar. Ücretli çalışma durumunda kalma eğiliminin her ne kadar krizin hem öncesinde hem de sonrasında yüksek olduğu görülse de, krizle beraber bir miktar azaldığı görülmektedir. 2008 yılında ücretli çalışanların %82.9'luk bir kısmının 2009 yılında da ücretli olmaya devam ettikleri gözlemlenmiştir. 2006 ve 2007 yılları arasında bu oran %85.9'dur. Bunun yanında, 2009 yılından sonra ücretli çalışanların bu kategoriden çıkmaları durumunda işsiz ya da kendi hesabına veyahut ücretsiz aile işçisi olma olasılıklarının artığı görülmektedir. Bir başka önemli bulgu da kriz döneminde işsizlik durumunun kalıcılık oranının iki katına çıkmasıdır. 2006 yılında işsiz olan kişilerin %17.2'sinin 2007 yılında da işsiz olmaya devam ettikleri görülmektedir. 2008 ve 2009 yılları arasındaysa bu oran %27.2'ye yükselmiştir. Dolayısıyla işsiz kişilerin iş bulması krizle beraber zorlaşmaktadır. İş gücü dışında yer alanlar için ise istihdam edilme olasılığı krizden sonra düşmektedir.

2008 ve 2009 yılları arasında örneklem içerisindeki ücretli grubun oranı %26.5'ten %25.8'e düşmüştür. Bu sebepten dolayı, ücretli kesimin çalışma çağındaki nüfus içindeki payının krizle beraber pek az değiştiği söylenebilir. Ancak, bu grubun gelir durumu açısından krizle beraber nasıl bir değişikliğe uğradığı da bu grubun büyüklüğündeki değişiklik kadar önem taşımaktadır. Bu çalışmada düşük gelir üzerine yapılan analizlerin ilkini, düşük gelir durumunun Türkiye'deki kapsamının soruşturulması oluşturmaktadır. Düşük gelir eşiğini kullanarak her veri seti için düşük gelir ve yüksek gelirlilerin oranı hesaplandığında, 2009 krizinde düşük gelirlilerin bütün ücretliler içindeki oranının %27'den %28.7'ye çıktığı görülmektedir. Sadece erkeklere baktığımızda ücretlilerin %25.7'si 2006'da düşük gelirli iken bu oran 2009'da %25.9 olmaktadır. Kadınlar için ise bu oranlar daha yüksektir. 2006 yılında düşük gelirli olan kadınların oranı ücret geliri elde eden kadınlar içinde %32.5 iken bu oran 2009'da %39.4'e yükselmektedir. Dolayısıyla her ne kadar örneklemde ücretlilerin oranı iki dönem için de aynı gibi gözükse de, bazı ücretlilerin durumunun krizden sonra kötüleştiği anlaşılmaktadır.

Dinamik analizin ana temasını düşük-yüksek gelir ve yüksek-düşük gelir geçişleri oluşturmaktadır. Kriz öncesini kapsayan dönem için düşük gelire giriş ve düşük gelirden çıkış oranları hesaplanmıştır. Benzer bir eksersiz krizi içeren dönem için de tekrarlanmıştır.Buradaki amaç düşük gelire giriş ve çıkışların krizle nasıl değiştiğinin tebittir. Bu yapılırken iki ayrı örneklem kullanılmıştır. Bunlardan ilki verideki tüm yıllarda ücretli olan bireyleri içerirken, ikincisinde ücretli statüsünden bağımsız olarak bütün bireyler bulunmaktadır. Tek başına ücretliler örnekleminin kullanılmamasının sebebi, tam zamanlı ücretliler arasından seçilmiş bir grup üzerinden analiz yapmanın krizin etkileri açısından yanlı sonuçlar doğurma ihtimalidir. Gerçekten de belirgin bir yanlılığın oluşup oluşmadığını görmek için aynı çalışma tam örneklem üzerinde de tekrarlanmıştır.

Düşük-yüksek ücret geçiş matrisi oluşturulurken ilk etapta yalnızca ücretli kişiler incelenmiştir. Bu kişilerin krizden önceki dönemde düşük ve yüksek gelire

(koşullu) geçiş oranları hesaplanmış ve düşük gelire geçiş hızı %13.7 olarak bulunurken düşük gelirden çıkış hızı %59.7 olarak bulunmuştur. Krizden sonrası için aynı oranlar hesaplandığında bunlar sırasıyla %9.9 ve %35.7 olarak bulunmuştur. Yani yalnızca ücretli kişilere bakıldığında, düşük gelir grubuna giriş ve çıkış oranlarının krizle birlikte azaldığı gözlemlenmektedir. Kriz sırasında düşük gelire girişlerin artması beklenen bir durum olmakla beraber, düşük gelirden çıkma oranının artıyor olması ilgi çekicidir. Bunun nedeninin örneklemin ücretli grup olarak sınırlandırılmış olup olmadığını anlamak için aynı eksersiz bütün örneklem ile tekrar edilmiştir.

Beş işgücü kategorisi için tekrarlanan eksersiz sonucunda düşük gelire giriş ve çıkış oranlarının krizle beraber azaldığı bulgusu teyit edilmiştir. Diğer birtakım bulgular şu şekildedir: (1) t-1 yılında ücretli çalışan bireylerin ücretli kalmak şartı ile t yılında düşük gelirli olma olasılıkları krizden önce %18.1 iken bu oran krizden sonra %23.5'e yükselmiştir. Bir diğer deyişle, kişi ücretli olarak çalışmaya devam etmesi durumunda dahi düşük gelirli olma olasılığı krizden sonra %4.9 puan artmıştır. (2) t-1 yılında işsiz olan kişilerin t yılında düşük gelirli olma olasılıkları krizden önce %32.3 iken bu oran krizden sonra %38.1 olmuştur. (3) t-1 yılında işsiz olan kişilerin t yılında işsiz olmaya devam etme olasılıkları %10.1 puan artmıştır. Bu da göstermektedir ki krizden sonra işsizlerin yalnızca iş arama süreleri uzamamış, aynı zamanda ücretli iş buldukları takdirde düşük gelirli olma riskleri de artmıştır. (3) Kendi hesabına veya ücretsiz aile işçileri için de durum çok farklı değildir. Bir önceki yıl bu statüde olan kişilerin bir sonraki yılda ücretli çalışmaları durumunda düşük gelirli olma ihtimalleri krizden önce %19.1 iken bu oran krizden sonra %42'dir. Bu da göstermektedir ki ücretli çalışanlar dışındaki çalışanların oluşturduğu grup daha homojen hale gelmiştir. (4) İşgücü dışında kalan kesimin (iktisadi olarak faal olmayanların) bir sonraki yıl ücretli olmaları durumunda düşük gelirli gruba geçme oranı krizden önce %31.7 iken krizden sonra %51.9 olmuştur. Bu da yüksek gelirli gruba girişlerde en başarısız grubun iktisadi olarak faal olmayan grup olduğunu göstermektedir.

Kadın ve erkeklere ayrı ayrı bakıldığında ücretli kadınların düşük gelire geçme risklerinin ücretli erkeklerinkinden daha yüksek olduğu görülmektedir. Kendi hesabına veya ücretsiz aile işçisi olarak çalışan kadınların bir sonraki yıl düşük gelire geçme ihtimalleri erkeklerinkinden daha yüksek olmaktadır. Bu durum diğer işgücü grupları için de gözlenmektedir. Bunun tek istisnası işsiz gruptur. Ücretli bir iş bulmaları durumunda işsiz kadınların düşük gelirli olması ihtimali krizden önceki dönemde ve kriz sırasında erkeklerden daha düşüktür.

Tüm bu sonuçların yanında ulaşılan bir diğer önemli sonuç ise krizin düşük-yüksek gelir grupları arasındaki geçişe olan etkisini anlamada yalnızca ücretli grup alarak yapılan bir analizin anlamlı bir yanlılığa neden olmadığıdır. Bu sonuca, iki farklı şekilde tekrarlanan analizin krizden sonra benzer oranlarda değişiklik göstermesi sonucunda ulaşılmıştır. Yalnızca ücretli kişilerin oluşturduğu durumda düşük gelirden çıkış oranında krizle beraber % 23.9 puanlık bir düşüş gözlemlenirker tüm örneklemdeki düşük gelirden çıkış oranında bu düşüş %23.2 olarak bulunmuştur. Düşük gelirden çıkış oranlarına baktığımızdaysa yalnız ücretlilerden oluşan grup için %3.8 puan düşüş görülürken tüm örneklem incelendiğinde bu oran %3 olarak bulunmıştur.

Tezin izleyen bölümünde düşük gelirli kişiler ile düşük gelire giriş ve çıkış yapan kişilerin bireysel düzeyde ve hanehalkı düzeyindeki karakteristikleri her iki dönem için incelenmiştir. Düşük gelire sahip kişilerin karakteristikleri incelenirken alınan açıklayıcı değişkenler cinsiyet, yaş, eğitim düzeyi, medeni durum, enformal çalışma ve hanehalkı büyüklüğüdür. Bunlar uluslararası literatürde de sıkça kullanılmakta olan değişkenlerdir. Cinsiyet değişkenini ele aldığımızda, beklenen sonuç kadınların düşük gelirli olmaları ihtimalinin erkeklerden daha yüksek çıkmasıdır (Elson, 2010). Yine literatürde genç ve yaşlı kişiler ile düşük eğitim seviyesindeki kişilerin düşük gelirli olmaları olasılıklarının diğerler gruplara göre daha yüksek olduğu bulunmuştur (Capellari ve Jenkins, 2005). Evli olmak da aile sorumluluklarını beraberinde getirmesi nedeniyle daha istikrarlı bir istihdam göstergesidir. Evli olmaları dolayısıyla bu

kişilerin işi bırakma ihtimalleri daha düşük olacağından firmaların bu kişilere yatırımı daha yüksek olacak ve sonuçta da bu evli kişiler yüksek gelirli olmaya daha yakın olacaklardır (Capellari ve Jenkins, 2005). Sloane (1996), daha kalabalık hanehalkına mensup olmak düşük gelirli işleri daha az cazip yapacağından daha kalabalık ailelerde yaşayan kişilerin düşük gelirli olma ihtimallerinin daha düşük olacağını savunmuştur. Buna rağmen krizle birlikte "ek çalışan etkisinin" (*added worker effect*) görülmesi ihtimali de artmaktadır.

Bu değişkenlerle yapılan çok değişkenli probit analizinin sonuçları şu şekildedir: (1) Cinsiyet değişkeni krizden önce anlamlı değilken krizden sonra kadın olmak düşük gelirli olma ihtimalini istatistiksel olarak %10 seviyesinde anlamlı olarak arttırmaktadır. (2) İş tecrübesini temsilen kullanılan yaş değişkeni her iki dönemde de anlamlı bir etki göstermemektedir. (3) Eğitim seviyesi beklendiği gibi her iki dönemde de %1 seviyesinde istatistiksel olarak anlamlı bulunmuştur. Düşük eğitim seviyesinde olmak (ilkokul ve altı) düşük gelirli olma olasılığını arttırırken yüksek eğitim seviyesine sahip olan grup (üniversite ve üstü) düşük gelirli olma olasılığı en düşük olan gruptur. (4) Enformal sektörde çalışmak hem krizden önce hem de kriz sırasında düşük gelirli olma riskini arttırmıştır. Bu risk, krizden sonraki dönemde (istatististiksel olarak anlamlı olarak) daha yüksek bulunmuştur. Literatürde de bu sektör genellikle düşük gelirin ve yüksek mobilitenin olduğu bir sektör olarak tanımlandığından bu bulgu şaşırtıcı değildir.Nitekim bir enformal sektör işçisinin düşük gelirli olması ihtimali 2007 yılında %20.6 iken aynı özelliklerdeki bir enformal sektör işçisinin düşük gelirli olma ihtimali 2009 yılında %48.2 olarak bulunmaktadır. (5) Medeni durum krizden önce anlamlı bir değişken olmazken kriz döneminde bekar bir kişinin düşük gelirli olması ihtimali evli kişilere göre daha yüksek bulunmuştur. Bu da evli kişilerle ilgili literatürde bulunan bulgularla örtüşmektedir. (6) Hanehalkı büyüklüğü krizden önce anlamlı bir değişken değilken krizden sonra daha kalabalık bir aileye mensup olmak düşük gelirli olma olasılığını anlamlı olarak arttıran bir değişken olmuştur.

Düşük gelir grubuna giriş ve çıkış yapan kişileri belirlememize yine kişilerin ve hanelerin karakteristikleri kullanılmaktadır.. Cinsiyet hakkında beklenen sonuç kadınların işgücü piyasasında düşük gelire giriş ve çıkışlar açısından dezavantajlı olmasıdır. Kadınların düşük gelir grubuna dahil olma olasılığı erkeklere göre daha yüksekken düşük gelirden çıkma olasılığı erkeklere göre daha yüksektir (Sloane ve Theodossiou,1996). Ampirik çalışmalarda iş tecrübesini temsilen kullanılan yaş değişkeninin de düşük gelire giriş ve çıkışta önemli olduğu bulunmuştur. Genel olarak gençlerin düşük gelirli işlere girişlerinin daha yüksek ancak çıkışlarının daha düşük olması beklenir (Jarvis ve Jenkins, 1997; Sloane ve Theodossiou, 1996). Belki de en sık kullanılan bir diğer değişken de eğitim seviyesidir. Düşük eğitim seviyesi düşük gelire giriş riskini arttırırken düşük gelirden çıkış şansını da azaltmaktadır (Sloan ve Theodossiou, 1996). Benzer durum bekar kişiler için de geçerlidir. Evli kişilerin tutukları iş bakımından daha istikrarlı olmaları beklenirken bekar kişilerin düşük gelire grubuna geçmeleri veya düşük gelirden kolaylıkla çıkamamaları beklenir (Capellari ve Jenkins, 2005). Hanehalkı büyüklüğü veya bağımlı çocuk sayısı da literatürde sıkça kullanılmaktadır. Burda da beklenen hanehalkı büyüklüğü ile düşük gelire geçme ve düşük gelirden çıkamama riskinin artmasıdır (Jarvis ve Jenkins,1997).

Nitekim bu çalışmada yapılan analizler de benzer sonuçlar vermektedir. Bir önceki dönem yüksek gelirli gruptayken bu dönem düşük gelir grubuna geçiş yapanlar düşük gelire girenler olarak tanımlanır. Krizden önceki dönemde düşük eğitim seviyesi, bekar olmak ve daha kalabalık bir haneye mensup olmak düşük gelire geçiş olasılığını istatistiksel olarak anlamlı bir şekilde yükseltmektedir. Enformal sektörde çalışmak yine istatistiksel olarak anlamlı bir artışa neden olmaktadır. Yaş ve cinsiyet krizden önce anlamlı birer değişken olarak bulunmamaktadır. Bunlar arasından krizden sonra istatistiksel olarak anlamlı bir etki gösteren tek grup genç yaş grubudur. 15 ve 34 yaşları arasındaki grubun krizden sonra düşük gelire giriş yapma riski artmıştır. Eğitim, enformalite ve hane büyüklüğü önemini korurken bekar olmanın krizden sonraki dönemde düşük gelire geçme riskini anlamlı olarak yükseltmediğini görürüz.

Bir önceki dönem düşük gelirli olup bu dönem yüksek gelir grubuna dahil olan kişiler düşük gelirden çıkanlar olarak tanımlanır. Krizden önce hiçbir karakteristik düşük gelirden çıkışı istatistiksel olarak anlamlı olarak etkilemezken krizle birlikte cinsiyet, eğitim seviyesi, enformal sektörde çalışma, medeni durum ve hane büyüklüğü değişkenleri anlamlı birer değişken haline gelmişlerdir. Cinsiyete baktığımızda düşük gelirli kadınların düşük gelirden çıkış olasılığının düşük gelirli erkeklerden daha yüksek olduğunu görürüz. Bu beklenmedik bir sonuç olmakla beraber örneklemi iki dönem üst üste tam zamanlı ücretli çalışanlarla sınırladığımız düşünüldüğünde o kadar şaşırtıcı olmadığı görülebilir. Eğitim durumu ise beklendiği şekilde düşük seviyelerdeyken düşük gelirden çıkma ihtimalini düşürmektedir. Enformal sektörde istihdam, bekar olmak ve kalabalık hanelere mensup olmak da krizden sonraki dönemde düşük gelirden çıkma olasılığını anlamlı olarak azaltan diğer etmenlerdir. Bütün bu sonuçlar üzerine denilebilir ki düşük gelirden çıkışlar krizden önceki dönemde daha rassalken krizle birlikte bu çıkışlar daha seçici olmaya başlamıştır.

Bütün bunların yanısıra krizin etkisine baktığımızda, kişisel ve hane özellikleri kontrol edildiği zaman kriz yılı değişkeninin istatistiksel olarak anlamlı olmadığı görülmektedir. Regresyondaki diğer değişkenleri çıkartarak yalnız kriz yılı değişkenini bırakmamız halindeyse bu değişkenin düşük gelire girme olasılığını anlamlı olarak arttırdığı görülür. Bu da krizin etkisinin düşük gelire girişlerde yapı olarak bir değişime neden olmadığını, ancak kompozisyonel olarak düşük gelir grubundakileri değiştiği göstermektedir. Düşük gelire giriş durumunda olduğu gibi çıkışları incelediğimiz durumda da kriz yılı değişkeninin etkisi diğer değişkenler eklendiğinde istatistiksel olarak anlamlı çıkmamaktadır. Tek başına kullanıldığında ise krizin düşük gelirden çıkma ihtimalini anlamlı olarak arttırdığı görülmektedir. Bu da krizin etkisinin yapısal olmadığını göstermektedir. Bu noktada yapılacak bir diğer önemli analiz kalıcı düşük gelirin incelenmesi olacaktır. Bu amaçla örneklem üç dönem üst üste ücretli çalışan kişiler ile sınırlanmış ve ardından üçer yıllık geçiş oranları hesaplanmıştır. Üç yıl üst üste düşük gelir grubuna dahil olan kişiler kalıcı düşük gelirli olarak tanımlanırken üç

yıl üst üste yüksek gelir grubuna dahil olan kişiler kalıcı yüksek gelirli olarak tanımlanmıştır. Bulunan sonuçlar göre kalıcı yüksek gelir oranı krizden önce %69.9 iken kriz sırasında bu oran %72.8'e yükselmiştir. Kalıcı yüksek gelir oranında krizle birlikte görülen bu artış istatistiksel olarak anlamlı bulunmuştur. Diğer taraftan, kalıcı düşük gelirin oranı krizden önce %7.1 iken bu oran krizden sonra %11 olarak bulunmuş, fakat kalıcı düşük gelir oranında görülen bu %2.9 puanlık değişim istatistiksel olarak anlamlı çıkmamıştır.

Kalıcı düşük gelir grubunda bulunmanın ardında bu kişilerin beşeri sermayelerinin düşük olduğu ve buna bağlı olarak beceri seviyelerinin de düşük olacağı algısı bulunabilir. Düşük gelirde sıkışmış olan kişilerin hangi nitelikleri nedeniyle bu durumda olduklarını anlamak için çok değişkenli bir probit analizi yapılmıştır. Bu analiz sonucunda krizden önce düşük eğitim seviyesi ile enformal sektörde çalışmanın kalıcı düşük gelir riskini istatistiksel olarak anlamlı olarak arttırdığı görülmüştür. Krizden sonra da düşük eğitim seviyesine sahip olanlar ile enformal sektördekiler dezavantajlı durumdayken enformal sektörde bulunmanın krizden önceye oranla kalıcı düşük gelirde olma riskini istatistiksel olarak anlamlı olarak daha da arttırdığı görülmektedir. Kriz öncesi dönemden farklı olarak krizden sonraki dönemde bekar olmak anlamlı olarak kalıcı düşük gelir olasılığını arttırmaktadır. Kalabalık hanelerde yaşayan kişilerin kalıcı düşük gelirli grupta bulunma olasılıkları da kriz sırasında anlamlı olarak yüksek bulunmuştur. Tüm bu sonuçlar literatüre paralel olmakla beraber cinsiyet ve yaşın krizden önce ve kriz sırasında anlamlı bulunmamış olması literatürden farklı bir sonuçtur. Esasen çok değişkenli analizde yaş değişkeninin anlamlı bulunmamasının muhtemel bir nedeni örneklemin tam zamanlı çalışan ücretli kişilerle sınırlanmış olmasıdır. Aynı sınırlama cinsiyet değişkeninin de anlamsız çıkmasına yol açmış olabilir zira üç dönem üst üste ücretli çalışan kadınlar niteliksel açıdan daha homojen bir grup meydana getirmektedir.

Tüm çok değişkenli analizlerde istatistiksel olarak anlamlı çıkan ve Türkiye ile ilgili literatürde de sıkça bahsedilen enformal sektör bu çalışmanın son odak

noktasıdır. Yapılan analiz enformal sektördeki kalıcı istihdam oranın krizden önce %5.8 iken krizden sonra %7'ye yükseldiğini göstermiştir. Formal sektördeki kalıcı istihdam ise krizden önce %81.4 iken krizden sonra %88.5'e yükselmiştir. Eğer kalıcı düşük gelirli olmanın nedeni kişilerin kalıcı olarak enformal sektörde istihdam edilmiş olmaları ise, krizden sonraki ayrışmanın enformaliteden kaynaklandığını düşünmek mümkün olabilir.

Tüm bu analizler tamamlandığında 2009 krizi sonucunda Türkiye'deki ücretli istihdam içerisinde düşük gelirli grubun ağırlığının arttığı ve bu artışın düşük gelirden çıkış oranlarındaki düşüşten kaynaklandığı söylenebilir. Düşük gelire giriş oranları da düşmesine rağmen bu düşüş düşük gelirden çıkış oranlarında meydana gelen düşüşten daha az olmalıdır. Bunun yanında belirli karakteristiklere sahip kişilerin düşük gelir grubuna dahil olma risklerinin arttığı da görülmektedir. Krizin kendisi yapısal bir değişikliğe neden olmasa da krizden sonra düşük gelir grubunun kompozisyonu değişmektedir. Türkiye'de tam zamanlı olarak çalışan kişiler için yaş ve cinsiyet çok belirleyici etmenler olmazken düşük eğitim seviyesi ve enformal sektörde istihdam edilme düşük gelirde bulunma riskini arttıran faktörler olarak bulunmaktadır. Enformal sektörde istihdam edilmek aynı zamanda kalıcı düşük gelir grubunda bulunma olasılığını krizden önce ve kriz sırasında arttıran temel faktörlerden biridir. Kriz sırasında enformal sektörde bulunmak kalıcı düşük geliri daha da arttırmaktadır. Bunun yanı sıra krizden sonra medeni hal de önem kazanmakta ve bekar kişilerin düşük gelirli olma riski artmaktadır. Bekar kişilerin krizden sonra düşük gelirden çıkma olasılıkları da daha düşüktür. Benzer şekilde daha kalabalık hanelerde yaşamak kişilerin krizden sonra düşük gelir grubuna girme olasılıklarını arttırırken düşük gelirden çıkma risklerini azaltmaktadır. Bu kişilerin düşük gelire girme olasılıkları hem krizden önce hem de kriz sırasında daha yüksek bulunmaktadır. Kalıcı düşük gelir oranında krizden sonra anlamlı bir değişiklik görünmemekle beraber kalıcı yüksek gelir grubuna baktığımızda krizden sonra bu grubun oranında anlamlı bir artış olduğu görülür. Kalıcı düşük gelir grubuna baktığımız zaman bu kişilerin genel olarak düşük eğitime sahip kişiler olduğu görülmektedir.

B. TEZ FOTOKOPİ İZİN FORMU

ENSTİTÜ

Fen Bilimleri Enstitüsü ☐

Sosyal Bilimler Enstitüsü ■

Uygulamalı Matematik Enstitüsü ☐

Enformatik Enstitüsü ☐

Deniz Bilimleri Enstitüsü ☐

YAZARIN

Soyadı : Plevneli
Adı : Deniz
Bölümü : İktisat

TEZİN ADI (İngilizce) : Low Income Dynamics in Turkey

TEZİN TÜRÜ : Yüksek Lisans ■ Doktora ☐

1. Tezimin tamamından kaynak gösterilmek şartıyla fotokopi alınabilir. ■
2. Tezimin içindekiler sayfası, özet, indeks sayfalarından ve/veya bir bölümünden kaynak gösterilmek şartıyla fotokopi alınabilir. ☐
3. Tezimden bir (1) yıl süreyle fotokopi alınamaz. ☐

TEZİN KÜTÜPHANEYE TESLİM TARİHİ: