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Abstract

Understanding the nature of unemployment has been a key research goal for economists since the inception of modern macroeconomics. One key feature of unemployment is that the social impact of unemployment differs depending on the duration of unemployment spells. However, the very policies that were created to protect workers from the harm associated with unemployment were found to lengthen the duration of unemployment. While unemployment has generally been recognized as an important issue in the Arab countries of the Middle East, very little research has been done on unemployment duration. This paper examines the basic coverage rates of the main form of social protection for Palestinian workers: the Palestinian Labor Law of 2000. We then examine the impact of this law on men and women separately, with a special focus on the impact of maternity benefits on women's unemployment duration. This paper finds that the services sector receives substantially more benefits than any other sector, and that service sectors workers are the slowest to find work after becoming unemployed.

ملخص

لقد أصبحت عملية إدراك طبيعة ظاهرة البطالة هدف رئيسي لدى علماء الاقتصاد في أبحاثهم منذ نشأة علم الاقتصاد الكلي الحديث. ومن السمات الرئيسية لظاهرة البطالة هي أن اختلاف تأثيرها الاجتماعي يعتمد على مدة نوبات البطالة. وعلى الرغم من ذلك، فقد وُجد أن العديد من السياسات التي تم وضعها لحماية العمال من الأضرار التي تصاحب البطالة أدت إلى زيادة فترة البطالة. وفي الوقت الذي تم فيه إدراك مدي أهمية قضية البطالة، على وجه العموم، في الدول العربية بمنطقة الشرق الأوسط، إلا أنه تم إجراء عدد ضئيل جدا من الأبحاث بشأن مدة البطالة. ويقوم هذا البحث بفحص معدلات التغطية الأساسية للأسلوب الرئيسي الذي يقدم الحماية الاجتماعية للعمال الفلسطينيين: قانون العمل الفلسطيني لعام 2000. ومن خلال هذا البحث، فإننا نقوم بفحص تأثير هذا القانون علي الذكور والإناث كلا على حدة، مع إعطاء المزيد من التركيز على أثر مزايا الأمومة على المرأة خلال فترة البطالة. ويستنتج هذا البحث أن قطاع الخدمات يستفيد بصورة جوهرية من هذه المميزات أكثر من أي قطاع آخر، كما أن عمال قطاع الخدمات يعتبرون اقل الأفراد الذين يمكنهم إيجاد عمل بطريقة سريعة بعد فقد وظيفتهم.

1. Introduction

Understanding the nature of unemployment has been a key research goal for economists since the inception of modern macroeconomics. One key feature of unemployment is that the social impact of unemployment differs depending on whether or not unemployment is long term. While unemployment has widely been recognized as an important issue in the Middle East, scant research has been done on unemployment duration. This paper will begin to fill the gap in the literature by examining the relationship between employment regulations, gender and unemployment duration in the Palestinian territories of the West Bank and Gaza Strip.

Labor market regulations are widely considered to affect unemployment duration. This phenomenon has been widely studied throughout the world, but especially in continental Europe. While the US had higher unemployment than Europe during the 1960s and early 1970s, since that time Europe (more precisely, Southern Europe) has witnessed persistently high unemployment, even when the economy had been growing. Most of the literature attempts to get a better understanding of the precise role that labor market rigidities have had in explaining these high unemployment rates. Nickell (1997) attempts to address the differences in the US and European experiences directly. He reviews the role of a whole series of institutional differences (not merely employment protection legislation) on the divergent experiences of the US and Europe. Saint-Paul (2004) focuses more directly on the role of labor market reforms undertaken by some European countries to explain why they have been able to decrease their unemployment rates, while other European countries remain mired in high unemployment.

These socioeconomic characteristics can also have a differential impact on unemployment duration for women and men. Once a person is unemployed, the duration of the unemployment spell depends on those socioeconomic characteristics. The differential impact—if it exists—has not been studied in Palestine. Aranki and Daoud (2006) studied unemployment duration in Palestine, however, their study stopped short of identifying gender differences. In general, median duration has ranged from a low of five months in early 2000 to a high of nearly 16 months in 2002. This is quite a high figure, but since it is a weighted average with a small weight for females, the duration for females might be even higher. Schooling, age, ability, gender, locality type, and political stability are all but a few of the variables that affect unemployment duration, and their impact will be studied for males and females separately.

The second *Intifada* has increased unemployment incidence and duration; the increase came as a direct consequence of closing off the Israeli labor market to Palestinian workers, and indirectly as a result of reduced domestic demand for workers resulting from reduced economic activity. The downturn in economic activity was cushioned by international assistance and donor aid. A program for female headed households was started in 2005 to aid those individuals who lost their jobs. However, this program came to an end soon after the elections which brought Hamas to take control of the government. The developments that took place in 2006 dealt a severe blow to living conditions, more so for women than for men. Previous spells have been directly related to access to Israeli labor markets where women are under-represented; the 2006 spell was different in the sense that most females were public sector workers and they were the greatest sufferers from the suspension of wage payments.

Duration dependence is typically thought to be negative, and this was the case for unemployed Palestinians in general (Aranki and Daoud 2006). It is not clear whether this would be the case for both sexes. Tansel and Tasci (2004) found that the probability of finding a job does not change with elapsed time in unemployment for females, but that the hazard function is u shaped for men. There are several reasons why duration dependence is found to be positive or negative; Serneels (2001) points to unemployment benefits, active

labor market policies, segmented labor markets, and business cycle effects as possible explanations for duration non-dependence.

The findings of this study will help policy makers identify the factors that are responsible for reducing unemployment durations. The study will also answer whether women have lower or higher exit rates from unemployment. If lower, then targeted policies should help females rejoin the ranks of the employed. In order to examine theses issues, the paper will utilize labor force surveys of the Palestine Central Bureau of Statistics covering the entire span from 1999–2004. Specifically, the analysis of unemployment duration will focus on the period from 2001 to 2004.

We limit the study to the al-Aqsa intifada period in order to prevent any biases being introduced by this seismic shift in labor market dynamics. Aranki and Daoud (2006) show that exit rates from unemployment were cut in half during the intifada. By only including this time period, we will avoid contaminating the changes of time with changes that happened due to the labor market changes that happened at the beginning of the al-Aqsa Intifada.

The paper is organized as follows. Section 2 reviews the relevant empirical literature concerning the effects of labor market regulations on unemployment duration and how duration differs by gender. Section 3 discusses the empirical approach employed in this paper and highlights the source of the data used to test the empirical model. Section 4 presents the results from the estimated model and section 5 concludes.

2. Literature Review

Empirical research on the determinants of the duration and occurrence of unemployment began to expand in the 1970s with the diffusion of micro-level household and firm data. These studies are generally of one of two types. The first examines the impact of specific labor market shocks that lead to dismissals. The effects of these dismissals on unemployment by demographic differences are then examined to understand how different workers are affected by aggregate and sectoral shocks. See (Ewing, et al. 2002; Katz 1986; Fallick 1993) for examples.

The second examines how specific policies affect unemployment duration. These studies use both variation in policies between regions (e.g. US or European countries) and how these policies affect different types of workers based on coverage rules. For example, Meyer (1990) examines the impact of Unemployment Insurances (UI) benefits on the duration of unemployment by looking at benefit recipients in eight states. Tatsiramos (2006) and Bover, Arellano and Bentolila (2002) use data on the generosity of different European benefit systems and their reforms to understand how UI affects unemployment duration. These studies generally find that more generous UI benefits lead to less intensive search efforts, resulting in a lower probability of leaving unemployment during the early time-period. However, as the benefits become close to being exhausted, those with generous benefits work more aggressively to find a job vis-à-vis those with less generous benefits (Meyer 1990). Recent research has extended these studies to focus on not only the frequency of finding a job, but also on the type of job found by different job seekers over their unemployment spell (McCall 1997). Additionally, these studies have been extended beyond simply the two-state model mentioned earlier to estimate the effects of UI and other policies on entry, exit and even dropping out of the labor force, and how these impacts change over time (Hasan and De Broucker 1982; Corak 1996).

Some studies have found important differences in unemployment duration by gender. The earliest studies of gender differentials focused on demonstrating and understanding how women were more susceptible to labor market shocks that result in unemployment than men were (Barret and Morgenstern 1974). Specifically, Maxwell and D'Amico (1986) found that

women in the US were three times as likely to still be unemployed after a job separation eight months later, when compared to men. Likewise, these authors find that women are likely to stay unemployed for up to three times longer than men. In the late 1980s, unemployment duration research began employing the proportional hazard model and began to discover that the traditional finding about men and women was changing. Specifically, women are found to not have longer unemployment spells than men (De Boer and Seeborg 1989).

To understand why this could have occurred, it is useful to consider two of the sources for differences in unemployment duration by gender. First, women and men still work in very different occupations and often, industries. If there is a differential impact of a shock across industries (in other words, it is not a true aggregate shock, but rather a sectoral shock), then there could be a different impact on men and women. Additionally, it has been noted (Maxwell and D'Amico 1986) that women may have a tendency to invest more in general training while men would invest more in firm specific training. If this is the case, it means that a firm is less likely to separate a male worker from his job, but also that female workers will spend less time unemployed if they are separated since their skills are more easily transferable. Thus, women could possibly no longer have a differentially long unemployment duration for a combination of factors related to both of these issues. First, the transformation of the US economy has generally been away from male-dominated industries and towards job and occupations that are more female dominated. Second, women are becoming more like men in the sense that they plan on having longer careers and more continuous work histories, thus they are more likely to invest in specific human capital. Ewing et al. (2002) confirms these trends in that for a given output shock, unemployment is both more pervasive and of longer duration for men than for women.

Because the particular factors that affect this differential impact are specific to US structural changes and changing gender roles within the US society, it is useful to consider the experience in other countries to better understand the general phenomenon. In Australia, for example, Carroll (2006) uses the baseline hazard model to examine the factors affecting unemployment duration. The study finds that nearly all factors that increase wage offers (such as education) increase the probability of leaving unemployment. Using more detailed data Ollikainen (2003) uses a piecewise constant hazard model and a competing risk model to examine the factors that change the length of unemployment spells. Ollikainen stresses the importance of examining evidence from Nordic countries as they tend to be even more occupationally segregated than the US and the UK, where the bulk of this research had taken place. Ollikainen finds that while education shortens spells for women, the presence of young children increases unemployment duration. Ahn and Ugidos-Olazabal (1995) examine the factors determining transitions both between unemployment and employment and unemployment and dropping out of the labor force in Spain. They find that while men have a higher probability of transitioning to work from unemployment, women have a higher probability of transitioning to being out of the labor force. They find that female-headed households have significantly longer unemployment spells and that unemployment benefits increase the likelihood that these women eventually transition out of the workforce and not into employment.

There is also a relatively small literature that looks at unemployment duration in transition and developing countries. In a study that looks at unemployment in the Czech and Slovak Republics, Poland and Slovenia, Herzog (2000) examines the determinants of the probability of being made redundant by the transition reforms and the probability of exiting the work force. Using data from Poland and the Czech and Slovak Republics, Herzog finds that women were significantly more likely to suffer from the market-oriented reforms of the 1990s. Ham et al. (1999) also finds differentials by gender. Specifically, they find that while differences in characteristics by gender exist, the differences in outcomes arise from the differences in the

way these characteristics are treated by employers rather than the differences in the characteristics themselves.

Drastic reforms were also taking place in developing countries at the time. Specifically, Galiani and Hopenhayn (2003) examine the differential effects of the structural reforms in Argentina during the 1990s. While not examining differential effects by gender, they did find that the reforms had unexpected effects on the occurrence of unemployment as the length of employment spells was substantially shortened. Finally, in one of the few studies on the Middle East, Sahin and Kizilirmak (2007) examine a new unemployment insurance benefit system that was implemented in Turkey in 2000. They find that men have shorter durations of receiving these benefits, as do workers with more experience and more schooling. In another study of unemployment duration in Turkey, Tansel and Tasci (2004) also find that women experience longer unemployment duration, but find that older women have longer unemployment duration, while more educated women have shorter spells. The effect of age and schooling are similar for men and women, but not identical. They also find that there is no duration dependence for women, while for men there is.

In a rare study of unemployment duration in an Arab country Tunali and Assaad (1992) study workers in the construction sector in Egypt. They find there is a trade-off between wage expectations and unemployment duration for these workers—that those with higher wage expectations are likely to suffer longer unemployment spells. Aranki and Daoud (2006) examine unemployment duration from 1999 to 2003 in Palestine. They find that unemployment duration is longer in the Gaza Strip than in the West Bank, and that demographic characteristics affect workers' duration differently in the two regions. For example, education does not affect duration in the Gaza Strip, while more education actually lengthens unemployment spells in the West Bank.

Beyond these few studies on Palestine, Egypt and Turkey, practically nothing is known about unemployment duration in the Middle East. This current project will partially fill that gap by providing a detailed analysis of unemployment duration by individual characteristics. Furthermore, since this paper will use data from the Palestinian labor market, we will be able to better measure the effect of shocks to an economy on unemployment duration. Previous studies have suffered from possible simultaneity issues since truly exogenous shocks are relatively rare. Those in Palestine, since they come in the form of external political restrictions, are not affected by firms hiring and firing decisions, and thus are truly exogenous. Furthermore, this is the first study of its kind to examine the gender aspects on unemployment duration for an Arab country. Because low labor force attachment and participation for women is more of an issue in Arab countries than the rest of the Middle East, this paper will provide key insights to the factors that affect labor market dynamics for men and women. For example, many studies have found that factors that increase expected wage offers (more schooling, better training, etc.) have a negative effect on the duration of unemployment. However, since women in the labor force tend to be more educated than the average man in the labor market, it is not clear whether more educated women will have longer or shorter spells. Additionally, no one currently knows how the importance of these factors will change when macroeconomic conditions change dramatically, as they did in Palestine from 2000 to 2004.

3. Methods and Data

3.1 Hazard Models

The job search model provides the framework through which unemployment duration will be analyzed (Kiefer 1988; Lancaster 1990). Let T_i be individual i's duration, and f(t) be the probability distribution of realizations t; the cumulative distribution function is

$$F(t) = Pr(T_i \leq t) \tag{1}$$

which gives the overall probability that the spell will last until t.

$$F(t) = \int_0^t f(s)\, ds \tag{2}$$

Alternatively, one would be interested in the survival function which gives the probability that the spell (s) is of at least length t; that is

$$S(t) = 1 - F(t) \tag{3}$$

The hazard rate is the rate at which spells are completed after a certain duration:

$$\lambda(t) = \frac{f(t)}{S(t)} \tag{4}$$

A number of hazard functions were fit to the data to check robustness of the results. The survival and hazard functions below are estimated using semi-parametric and non-parametric methods for the various groups.

3.2 Employment Benefits in Palestine

The primary labor market regulations for the West Bank and Gaza Strip are found within the Palestinian basic Labor Law of 2002. Although the economy was in a dire condition due to Al-Aqsa intifada and the corresponding macroeconomic slump, the Palestinian Authority fulfilled a promise to have a basic law that contained labor market regulations. Some of the regulations contained within the law are: mandated workweek of 45 hours (not stated as a maximum or a minimum), that would be reduced by one hour per day for jobs classified as hazardous (Articles 69-70); 12 hour maximum overtime with an overtime premium of time and a half (Article 71); two weeks mandatory paid leave (Article 74); fourteen days of sick leave at full pay, another fourteen at half pay (Article 79); minimum wages by industry set by a wage committee composed of union representatives, employers and government members (Articles 86–87); ten weeks of paid maternity leave (Article 103). Although these are codified as part of the basic law, coverage is not universal. In addition to their being informal sector work (casual selling, working off the books, etc.), many employers simply do not provide the mandated benefits.

The 2004 Work Conditions Survey conducted by the Palestinian Central Bureau of Statistics contains information on benefits provided by employers as well as potential hazardous conditions in the work place. This survey is a supplement to the Fourth Quarter 2004 Labor Force Surveys and contains the same identifying variables as the labor force surveys. Table 1 shows the occurrence of employee benefits and union membership according to three occupational categories. These are fairly coarse occupational categories. This was necessary because of the relatively small sample size for many of these questions. While the overall survey contains 15,000 observations, most of the survey questions were answered by less than 1,000 workers. The three occupational categories are managers and professionals, semi-skilled or skilled craftsmen, and elementary occupations.[1] Over the nearly 1,000 respondents to questions about benefits, roughly one third are in each of these three categories.

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[1] The Palestinian Labor Force Survey (PLFS) contains two different occupational categories. The first is based upon international standard occupational categories and the other is a one-digit category specific to the PLFS. The second variable is coded as follows 1=Legislators, Senior Officials and Managers, 2=Professionals, Technical, Associates, and Clerks, 3=Service, Shop and Market Workers, 4= Skilled Agriculture and Fishery Workers, 5=Craft and Related Trade Workers, 6= Plant and Machine Operators and Assembly workers, 7=Elementary Occupations. For the categories in this paper. Professionals=1 and 2; 3-6= Skilled and Semi-Skilled; 7= Elementary Occupations.

Table 1 shows that there is a wide disparity between occupations concerning benefits. While over 80% of professionals have annual paid vacation and sick leave, less than 30% of semi-skilled occupations and basic occupations have these benefits. When it comes to women's specific benefits that are mandated in the 2004 Labor Law, the distinction is just as great. While nearly half of professional women have paid maternity leave, only 6% of semi-skilled and 14% of basic occupations have this benefit. Not surprisingly, there is a greater degree of job stability for professional occupations, wages are paid more regularly and there are more incentives related to productivity. The main difference in many of these occupations comes from the fact that while over three quarters of professional jobs are covered by a written contract, this is true for only 15% of semi-skilled work and only 28% of basic work. Not surprisingly, professionals are also more likely to be a union member, but the difference is not great enough to explain all of the difference in benefits.

Table 2 shows employee benefit coverage by industry group. The five industry groups included in this table are agriculture, manufacturing, construction, commerce and other services. The bulk (80%) of the final group is made up of workers for the Palestinian National Authority and UNRWA. This table shows dramatically different rates of receiving employee benefits. While only 8% of agricultural and construction workers receive paid vacation nearly 80% of services workers do. Likewise, there is nearly 50% coverage for maternity benefits in the services sector compared to less than 10% in most other sectors. This is largely correlated with the much higher incidence of a formal contract (80%) that we observe in the services sector. Besides, services, manufacturing and commerce workers receive relatively more benefits than do either agricultural or construction workers. This is despite the fact that construction workers tend to have the greatest rate of unionization (46%) of all the sectors of the economy.

3.3 Labor Force Survey Data

The primary data used to analyze unemployment duration is the Palestinian Labor Force Survey (PLFS) in the West Bank and Gaza Strip. While labor force data is available going back to 1995, this study covers the time-period from 1999 to 2004. The shortened period of the study is to be able to link households and individuals between quarters. Since the survey uses a quarterly rotating structure where each household is in the survey for two quarters, out of the survey for two quarters and then back in, these short panels can be used to develop better measures of the length of unemployment spells.

3.4 Labor Force Trends 1999-2004

Figures 1–3 show the quarterly trend in several labor market aggregates for men in the West Bank and Gaza Strip from 1999 to 2003. Figure 1 shows the unemployment rate. The advent of Al-Aqsa intifada in September 2000 led to a sharp rise in the unemployment rate in both the West Bank and Gaza Strip between the 3rd and 4th quarters of that year—increasing by more than 20 percentage points. For most of these years, the unemployment rate of the two regions track each other fairly closely, with only a couple of exceptions. The first is that from 2001 through 2002 the unemployment rate leveled off in the West Bank, while rising in 2002 in the Gaza Strip. Second, in 2003, West Bank unemployment rose sharply while unemployment in Gaza remained the same, resulting in West Bank unemployment rising higher than Gaza Strip unemployment for the only time during these years.[2]

Figure 2 shows the change in labor force participation in the West Bank and Gaza Strip for men from 1999 to 2003. One of the main points of this paper is to see to what degree workers

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[2] Personal communication with Palestine Central Bureau of Statistics (PCBS) officials and a researcher hired to examine this anomaly indicates that this is not due to an error in the data. The data's validity has been checked internally and appears to be consistent with stated PCBS methodology.

and households drop out of the work force during economic crises. The first issue to note is that the labor force participation in Gaza decreased rapidly after the beginning of the intifada. In the West Bank the decline was much more gradual until 2002, when labor force participation fell from 67% to 61% of the population. During this time, the West Bank's labor force participation rate fell as low as Gaza's for the only time during this period.

Figure 3 depicts the employment to population ratio of these Palestinian men from 1999 to 2003. Since this measure is not biased by discouraged workers (as is the unemployment rate), and is not affected by added workers (as is the labor force participation rate), this measure gives a cleaner overall snapshot of the health of the labor market. While there was a clear decrease in employment in both regions during this time, the volatility of this measure is less than that of the unemployment rate and the labor force participation rate. Employment dropped by over 20 percentage points during the first months of the intifada in both regions. In 2001 employment then leveled off, only to fall briefly in 2002. After that time, employment rose unsteadily for another year and a half.

Figures 4 and 5 show the labor force trends for Palestinian women from 1999 to 2004. Two trends are particularly worth noting. First, while there was initially a sharp rise in unemployment among Palestinian women, this dissipated fairly quickly. Second, since 2001, the labor force participation rate for Palestinian women has been growing fairly steadily. It is worth noting that recent releases of preliminary results from the 2007 Palestinian census has noted a fall in Palestinian fertility rates, and the two events may be related to one another.

4. Results

4.1 Non-Parametric Survival Functions

This section describes how survival functions differ by economic and background characteristics of workers during the 2001 to 2004. Years 1999 and 2000 were excluded from the remainder of the analysis because of the change in unemployment from the intifada. Figures 6-12 depict Kaplan Meier survival functions, which show the probability of not leaving unemployment after a given amount of time. The functions presented in this section will not control for any other characteristics of the workers, so they should be seen as somewhat descriptive, but they highlight how the duration of unemployment differs by worker characteristics. Since one of the primary issues that we are examining in this paper is the difference by gender, figure 6 shows the survival function for men and women. As seen in this figure, women have a much higher probability of remaining unemployed. For most of the period, the survival rate (still being unemployed) is nearly 25 percentage points higher for women than for men.

Figures 7-9 look at specific economic and demographic variables of men and the degree to which they help determine survival rates. Figure 7 shows survival rates of men by occupation, where occupations are defined as Managers/Professionals, Semi-Skilled and Basic Occupations. These are the same groupings that were used for defining benefit coverage rates above and will be used throughout the rest of the paper. Figures 7 shows that survival rates for Basic Occupations are significantly higher than those of both Semi-Skilled and Professional occupations. While 75% of unemployed men in basic occupations are still unemployed one year later, nearly all unemployed men from other occupations have been reemployed. Figure 8 shows a similar graph for industries. In this graph, the only industry that stands out is the services industry which has a much greater survival rate compared to any other sector of the economy. Finally, figure 9 shows the survival rate by marital status. Married men are somewhat more likely to exit unemployment sooner than single men, but divorced and widowed men are very slow to be reemployed.

Figures 10-12 show the Kaplan Meier survival estimates for women by occupation, industry and marital status. Figure 10 shows how unemployment duration is related to major occupational groups of Professional, Semi-Skilled and Basic occupations. In this figure, we can see that unemployment duration is considerably longer for Basic occupations. Managers are the quickest to leave unemployment, with only slightly quicker exit rates than Semi-Skilled workers. Figure 11 shows survival rates by industry. In this figure, we see that workers formerly employed in agriculture and services showed much slower exiting from unemployment than those in any other industry. After 20 months, 60% of workers from agriculture and industry were still unemployed while only 30% of those from other sectors were still without employment. Figure 12 shows how marital status affects unemployment duration. Married women are more likely to remain unemployed compared to single women, though the difference is not as great as the differences by occupation or industry. Some 75% of married women had not yet found work by 20 months, while only 60% of never married women were still unemployed at that point.

4.2 Cox Proportional Hazard Models

Table 3 presents results from the Cox proportional hazard regression models. These are maximum likelihood models that estimate the effect of covariates on the probability of leaving unemployment relative to some baseline hazard. While the baseline hazard is not actually estimated, one can get a sense of the covariates' effects by comparing the hazard ratios to one. If the dependent variable is categorical—as most of the variables in table 3 are—then being in that category increases the probability of leaving unemployment compared to the omitted category if the value is greater than one, and decreases the probability of leaving unemployment if the value is less than one. For example, a value of 0.9 implies that being in that category (say, aged 20 to 24) reduces your probability of leaving unemployment by 10% compared to being in the omitted category (15 to 19 years old).

The findings from this table imply that economic and demographic factors affect survival rates and that the effects of these factors differ, in some cases, between men and women. While hazard rates get smaller for older age groups for both men and women, the age at which they begin to decline differs by gender. For women, the youngest age group (15 to 19 year olds) is more likely to leave unemployment than are 20 to 24 year-olds or any other group. In fact, the youngest women are twice as likely to leave unemployment than women who are 45 and older. For men, workers aged 20 to 44 are more likely to leave unemployment than the very youngest workers. However, the 20 to 24 year olds are more likely to have their unemployment spells end than are the 25 to 29 year-olds and older workers. Education has a similar effect on duration for men and women. Specifically, each additional year of education decreases the probability of leaving unemployment when educational rates are low. In results not reported here, we find that women with less than 9 years of schooling had the shortest duration and women with a college degree had the longest unemployment duration. For men, those with 9 to 12 years of schooling had the longest unemployment spells while those with college degrees had the shortest spells.

Unemployment duration differs substantially by occupation, but the effects of occupation are fairly similar for men and women. Managers and Professionals (the omitted occupational category) had the shortest spells as both Semi-Skilled and Basic occupations workers had a lower probability of leaving spells. Specifically, Semi-Skilled occupations workers were less than 50% as likely to leave an unemployment spell in any period compared to Managers. Basic occupations workers were less than 25% as likely to leave unemployment compared to Managers. These findings are similar between men and women with women more adversely affected by being in a basic occupation.

Unemployment duration also differs by industry. In table 3, the agricultural sector is the omitted category. For men, each occupation, except for services, had shorter unemployment duration than agriculture. Workers from the services sector were less than one tenth as likely to leave unemployment as workers from other sectors. Women in the services sector also had longer unemployment spells, but those in agriculture had the longest spells.

Despite the relatively harsher economic conditions in Gaza compared to the West Bank, workers from Gaza were more likely to leave unemployment than West Bank workers. The effect of being a Gaza resident was similar for men and women. Finally, while women were less likely to leave unemployment compared to men, the effect of gender was not dramatic, and most of the effect (seen in figure 6) is due to differences in occupational and demographic factors.

When plotting these fitted hazard rates, one can see that there is u-shaped duration dependence. At first the probability of leaving unemployment increases as time spent unemployed increases. At twenty months, however, the probability of leaving unemployment at that time reaches a maximum and every month afterwards, the probability of leaving unemployment decreases. This u-shaped duration dependences (inverted U-shaped hazard function) is similar to that found in Turkey by Tansil and Tasci (2004).

5. Conclusions

This paper has examined unemployment duration in Palestine during Al-Aqsa intifada, from 2001 to 2004. Non-parametric approaches show that duration patterns differ considerably based upon labor market and demographic characteristics. Specifically, women are significantly less likely to leave unemployment compared to men, and the difference grows over time. Additionally, unemployed men from basic occupations have longer unemployment spells, as do men in the services industry. Finally, single men have longer unemployment spells than single women. Women who worked in basic occupations and in both services and agriculture experienced longer unemployment spells. Unlike men, women who were married had longer spells than single women did.

Cox proportional hazard models results are presented to demonstrate the relative effect of a large number of covariates. Estimates are presented separately for men and women and in a pooled sample. These estimates find that older men and women are less likely to leave unemployment compared to younger workers. More schooling decreases the probability of leaving unemployment up to a point, but after which more schooling increases the probability of leaving unemployment. Similar to the descriptive survival rates, we find that while married men are more likely to leave unemployment, married women are less likely to leave unemployment compared to single women. While being in a basic occupation decreases the probability of leaving unemployment for both men and women, workers from the services sector leave unemployment more rapidly for women, but less rapidly for men.

The patterns of these hazard rates do not relate clearly to benefit coverage rates by industry and occupation. While managers and professionals are most likely to receive employment benefits, they are also the ones to leave unemployment most quickly, even when controlling for human capital measures. Based upon industries, however, unemployment survival rates are somewhat more in line with the pattern of employment benefits. Specifically, the services sector receives substantially more benefits than any other sector. Likewise, workers from the services sector are the slowest to find work after becoming unemployed. While this pattern is merely suggestive, it does warrant further research into the importance of the relationship between benefits coverage and unemployment duration in Palestine.

References

Acemoglu, D. and R. Shimer. 1999. "Efficient Unemployment Insurance." *The Journal of Political Economy* 107 (5): 893–928.

Ahn, N. and A. Ugidos-Olazabal. 1995. "Duration of Unemployment in Spain: Relative Effects of Unemployment Benefit and Family Characteristics." *Oxford Bulletin of Economics and Statistics* 57 (2): 249–260.

Aranki, T. and Y. Daoud. 2006. "Unemployment Duration in the Palestinian Territories: An Analysis of Personal and Political Factors." Unpublished manuscript.

Barrett, N.S. and R.D. Morgenstern. 1974. "Why Do Blacks and Women Have High Unemployment Rates?" *Journal of Human Resources* 9 (4): 452–464.

Bergström, R., and Edin, P.A. 1992. "Time Aggregation and the Distributional Shape of Unemployment Duration." *Journal of Applied Econometrics* 7(1): 5–30.

Bover, O, M. Arellano and S. Bentolila. 2002. "Unemployment Duration, Benefit Duration and the Business Cycle." *Economic Journal* 112: 223–265.

Carroll, N. 2006. "Explaining Unemployment Duration in Australia." *Economic Record*, 82 (258): 298-314.

Corak, M. 1996. "Measuring the Duration of Unemployment Spells." *The Canadian Journal of Economics* 29: s43–s49.

Daoud, Y. 2005. "Gender Gap in Returns to Schooling in Palestine." *Economics of Education Review* 24 (6): 663–649.

De Boer, L and M. C. Seeborg. 1989. "The Unemployment Rates of Men and Women: A Transition Probability Analysis." *Industrial and Labor Relations Review* 42 (3): 404–422.

Diamond, P. 1982. "Wage Determination and Efficiency in Search Equilibrium." *Review of Economic Studies* 49: 217–227.

Elbers C., and Ridder, G. 1982. "True and Spurious Duration Dependence: The Identifiability of the Proportional Hazard Model." *Review of Economic Studies* 49 (3): 403–409.

Ewing, B.T., W. Levernier and F. Malik. 2002. "The Differential Effects of Output Shocks on Unemployment Rates by Race and Gender." *Southern Economic Journal* 68 (3): 584–599.

Fallick, B. 1993. "The Industrial Mobility of Displaced Workers." *Journal of Labor Economics* 11 (3): 302–323.

Galiani, S. and H. A. Hopenhayn. 2003. "Duration and Risk of Unemployment in Argentina." *Journal of Development Economics* 71**:** 199–212.

Garibaldi, P. and E. Wasmer. 2005. "Equilibrium Search Unemployment Endogenous Participation and Labor Market Flows." *The Journal of the European Economic Association* 3 (4): 851–882.

Ham, J.C. and J. Svehnar and K. Terrell. 1999. "Women's Unemployment During Transition: Evidence from Czech and Slovak Micro–Data." *Economics of Transition* 7 (1): 47–78.

Hasan, A. and P. De Broucker. 1982. "Duration and Concentration of Unemployment." *The Canadian Journal of Unemployment* 15 (4): 735–56.

Herzog, H. 2000. "Employment Uncertainty and the Incidence of Job Loss in Transition Economies: The Case for Central Europe." *Southern Economic Journal* 66 (3): 567–589.

Hogan, V. 2004. "Wage Aspirations and Unemployment Persistence." *Journal of Monetary Economics* 51: 1623–1643.

Hopenhayn, H. and J.P. Nicolini. 1997. "Optimal Unemployment Insurance." *Journal of Political Economy* 105 (2): 412–438.

Katz, L. 1986. "Layoffs, Recall and the Duration of Unemployment." NBER Working Paper #1825, January 1986.

Kiefer, N.M. 1988. "Economic Duration Data and Hazard Functions." *Journal of Economic Literature* 26 (2): 646–679.

Lancaster, T. 1979. "Econometric Methods for the Duration of Unemployment." *Econometrica* 47 (4): 939–956.

Lancaster, T. 1990. *The Econometric Analysis of Transition Data*. Cambridge: Cambridge University Press.

Machin, S. and Manning, A. 1999. "The Causes and Consequences of Long-Term Unemployment in Europe." In O. Ashenfelter and D. Card (eds.) *Handbook of Labor Economics*, 3rd Edition**, Amsterdam: Elsevier Publishers.

Maxwell, N.L. and R.J. D'Amico. 1986. "Employment and Wage Effects of Involuntary Job Separation: Male-Female Differences." *The American Economic Review* 76 (2): 373–77.

McCall, B.P. 1997. "The Determinants of Full-Time versus Part-Time Reemployment Following Job Displacement." *Journal of Labor Economics* 15 (4): 714–734.

McCall, J. 1970. "Economics of Information and Job Search." *Quarterly Journal of Economics* 84 (1): 113–126.

Meyer, B. 1990. "Unemployment Insurance and Unemployment Spells." *Econometrica* 58 (4): 757–782.

Mortensen, D. and C.A. Pissarides. 1994. "Job Creation and Job Destruction in the Theory of Unemployment." *The Review of Economic Studies* 61 (3): 397–415.

Mortensen, D.T. 1977. "Unemployment Insurance and Job Search Durations." *Industrial and Labor Relations Review* 30 (4): 505–517.

Nickell, S.J. 1997. "Unemployment and Labor Market Rigidities: Europe vs. North America," *Journal of Economic Perspectives*, 11 (3): 55-74.

Ollikainen, Virve. 2003. "The Determinants of Unemployment Duration by Gender in Finland." Vatt–Keskustelualoitteita, Vatt Discussion Papers #316, Helsinki.

Precntice, R. And Gloeckler. 1978. "Regression Analysis of Grouped Survival Data with Application to Breast Cancer Data." *Biometrics* 34 (1): 57–67.

Ridder, G. 1990. "The Non-Parametric Identification of Generalized Accelerated Failure-Time Models." *Review of Economic Studies* 57 (2): 167–181.

Roed, K. and Zhang, T. 2003. "Does Unemployment Compensation Affect Unemployment Duration?" *The Economic Journal* 113: 190–206.

Sahin, A. and Kizilirmak 2007. "Determinants of Unemployment Benefits in Turkey. Applied." *Economics Letters*. 14 (8): 611-615.

Saint Paul, G. (2004). "Why are European Countries Diverging in their Unemployment Experience?" *Journal of Economic Perspectives*, 18 (4): 49-68.

Serneels, P. 2001. "Explaining Non-Negative Duration Dependence among the Unemployed." EconWPA Development and Comp Systems Series, Working Paper 0409013.

Shimer, R. and I. Werning. 2007. "Reservation Wages and Unemployment Insurance." *Quarterly Journal of Economics* 122 (3): 1145–1185.

Sueyeshi, G. T. 1995. "A Class of Binary Response Models for Grouped Duration Data." *Journal of Applied Econometrics* 10 (4): 411–431.

Tansel, A. and Tasci H.M. 2004. "Determinants of Unemployment Duration for Men and Women in Turkey." IZA Discussion Paper 1258.

Tunali, I. and R. Assaad. 1992. "Market Structure and Spells of Employment and Unemployment: Evidence from the Construction Sector in Egypt." *Journal of Applied Econometrics* 7: 339–367.

Tatsiramos, K. 2006. "Unemployment Insurance in Europe: Unemployment Duration and Subsequent Employment Stability." IZA Discussion Paper #228.

Von Leuvensteijn M. and P. Koning. 2004. "The Effect of Home-Ownership on Labor Mobility in the Netherlands." *Journal of Urban Economics* 55: 580–596

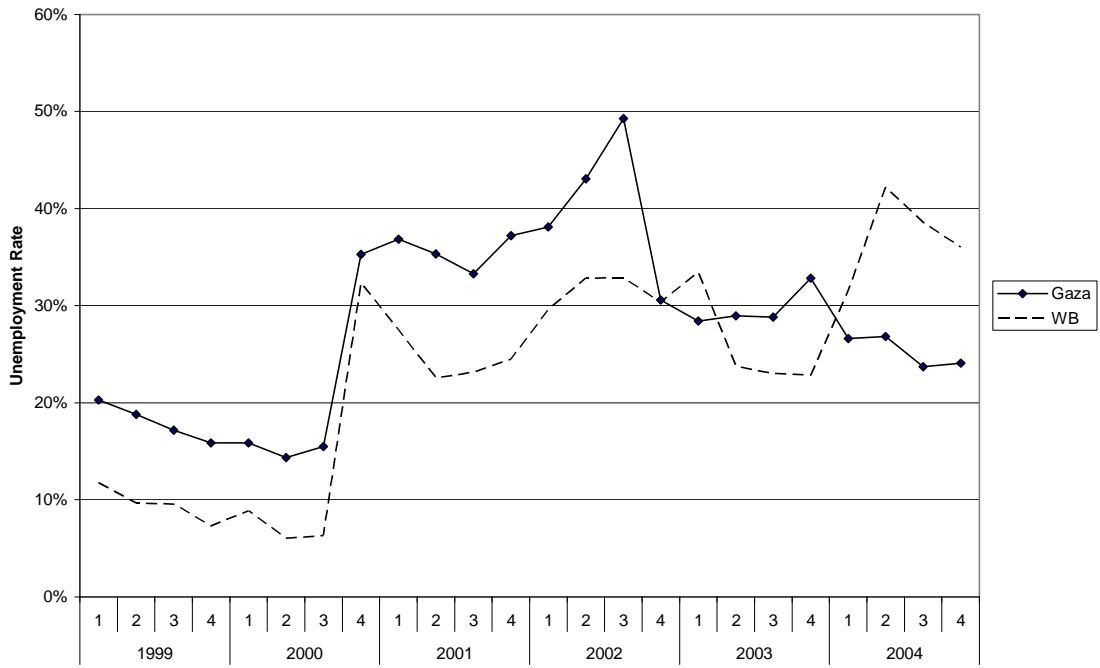**Figure 1: Unemployment for Men in the West Bank and Gaza Strip: 1999-2004**

Figure 2: Labor Force Participation for West Bank and Gaza Men, 1999-2004
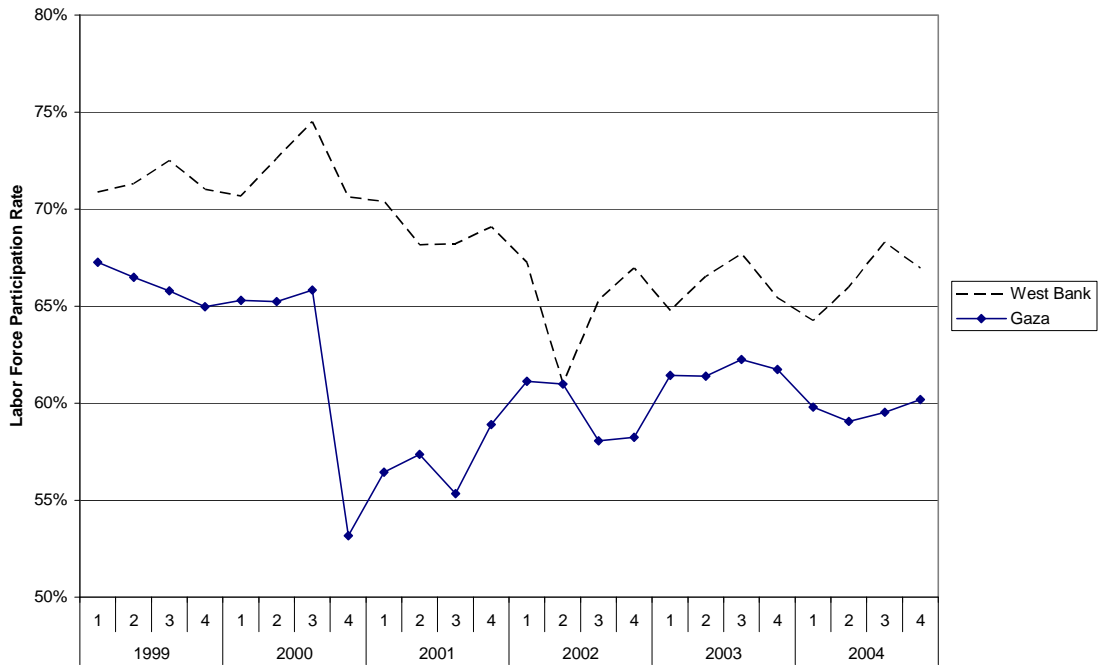
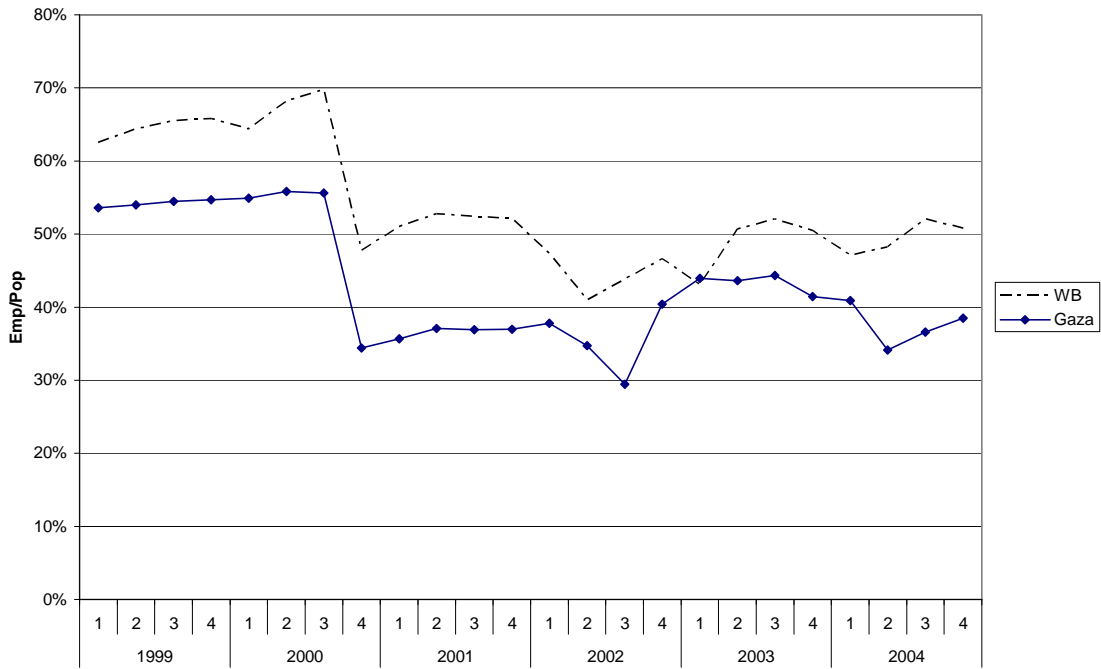**Figure 3: Employment to Population Rate, West Bank and Gaza Men, 1999-2004**

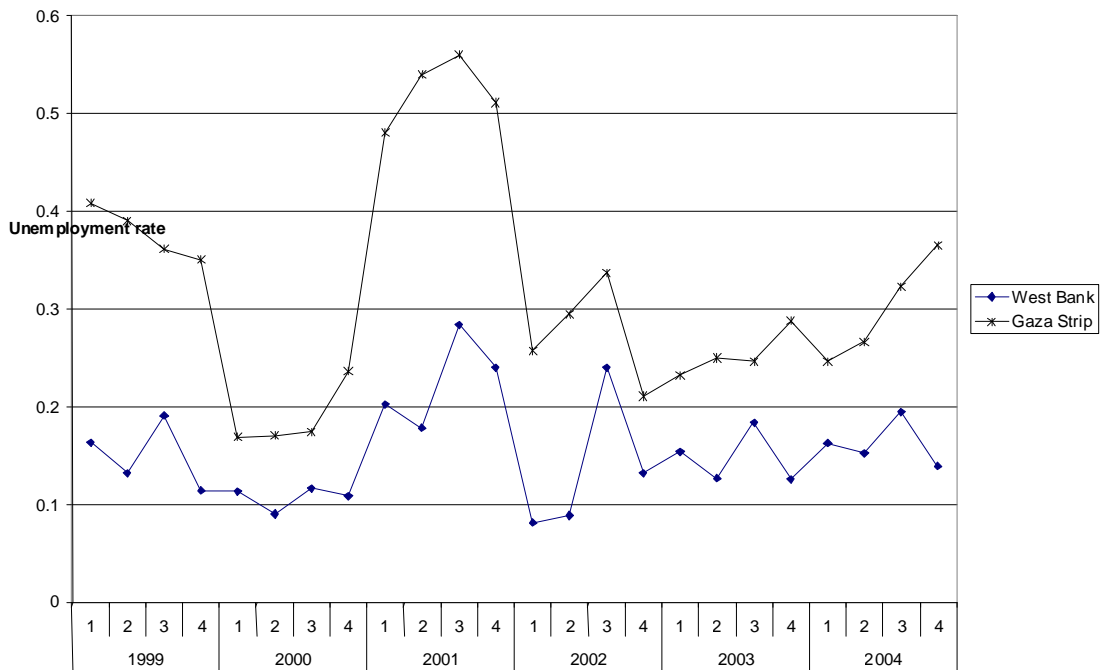**Figure 4 Unemployment for Palestinian Women: 1999-2004**

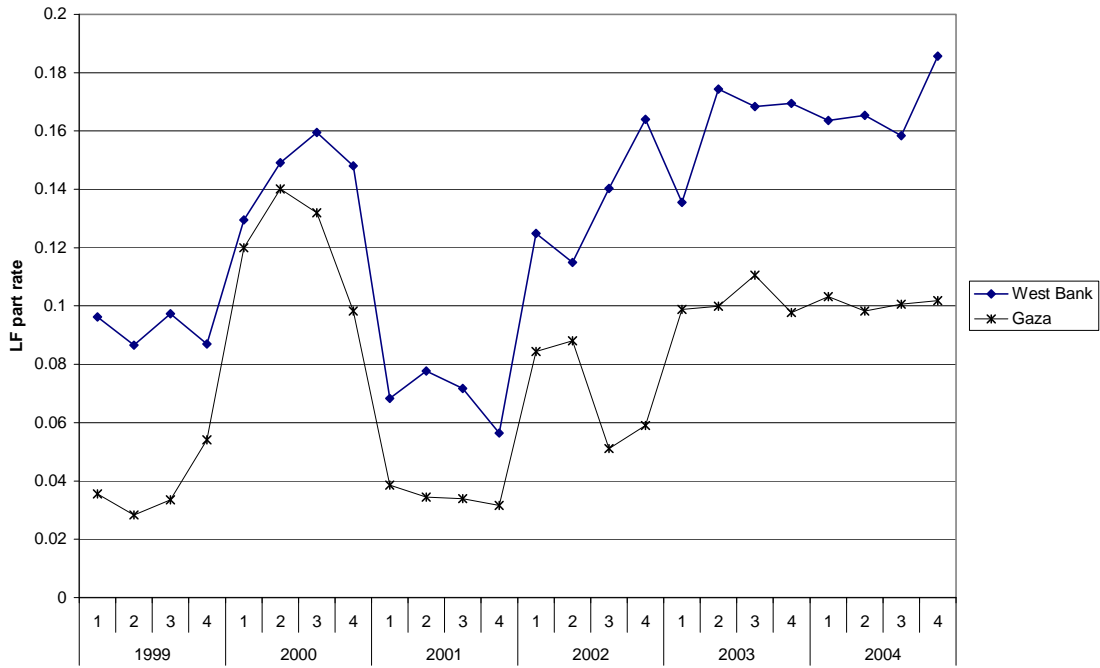**Figure 5: Labor Force Participation for Palestinian Women: 1999-2004**

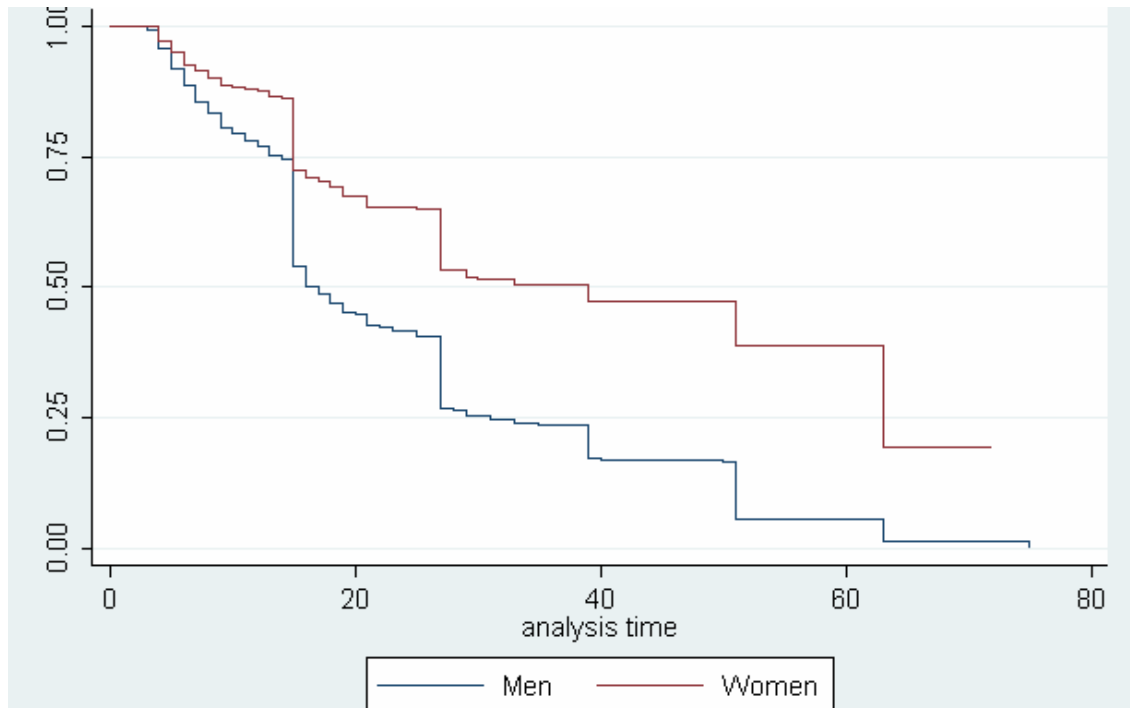**Figure 6: Kaplan-Meier Survival Estimates by Gender**

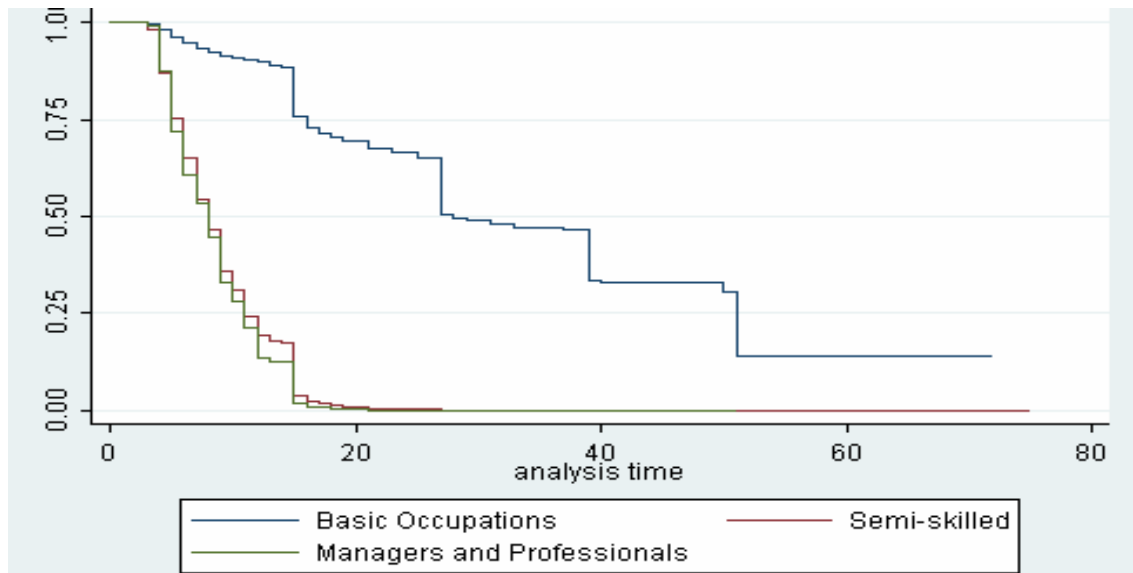**Figure 7: Survival Estimates by Occupation (Men)**

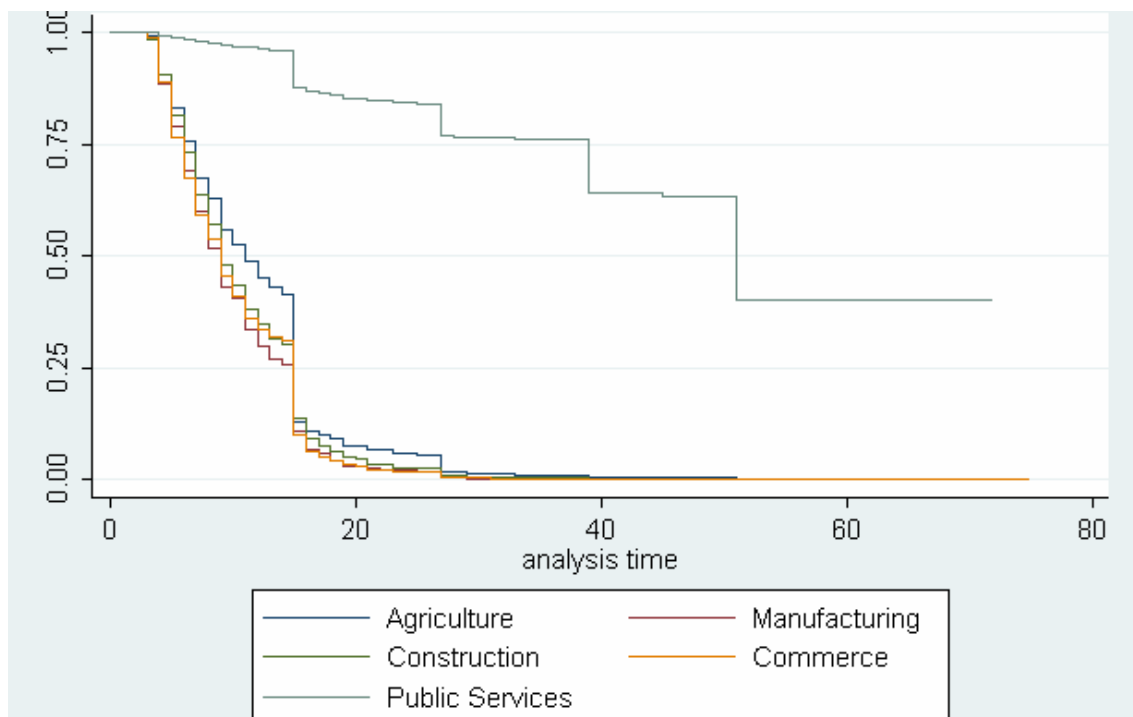**Figure 8: Survival Estimates – Men by Industry**

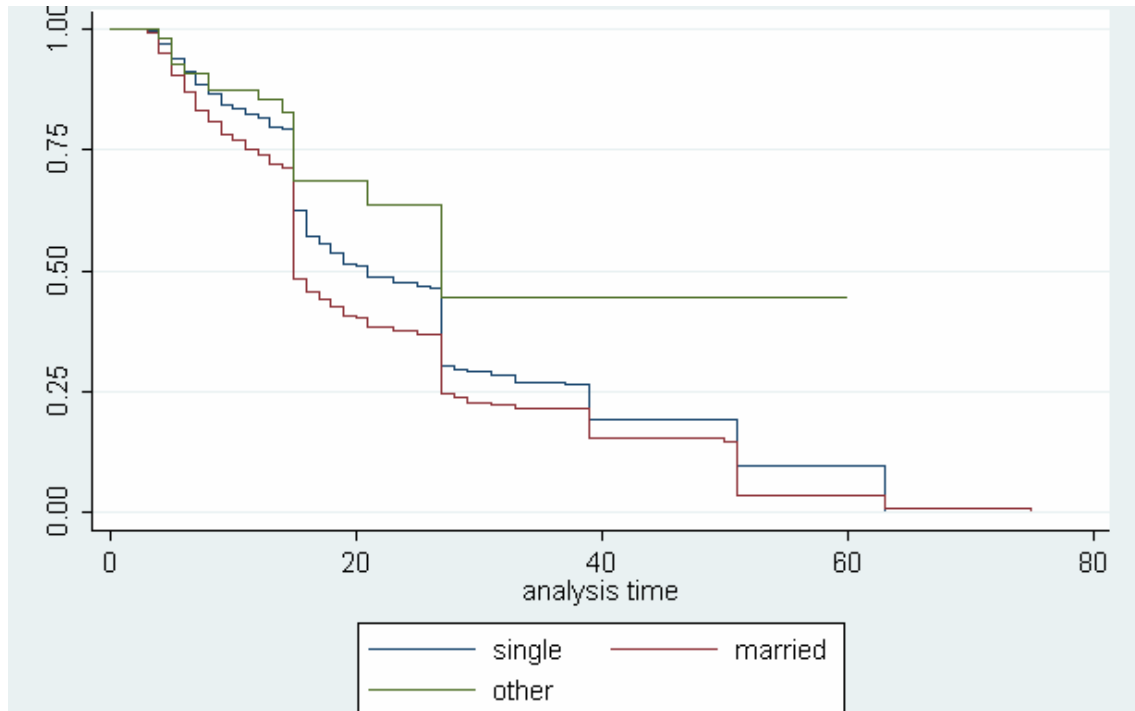**Figure 9: Survival Estimates by Marital Status (Men)**

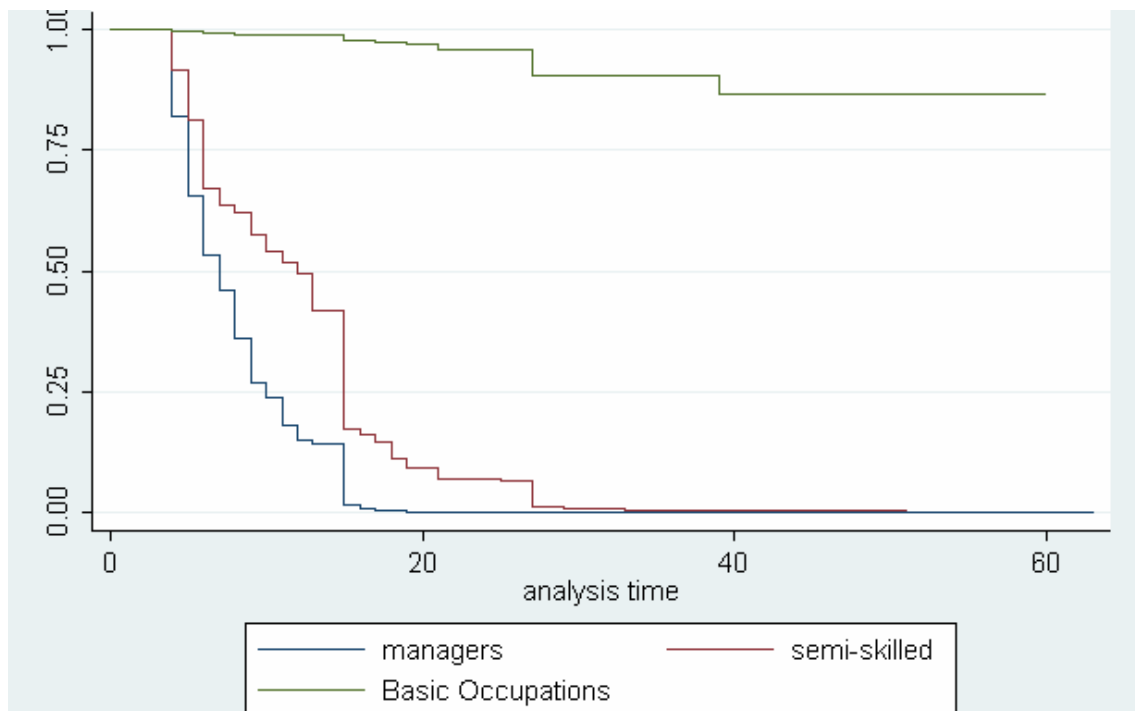**Figure 10: Survival Estimates by Occupation (Women)**
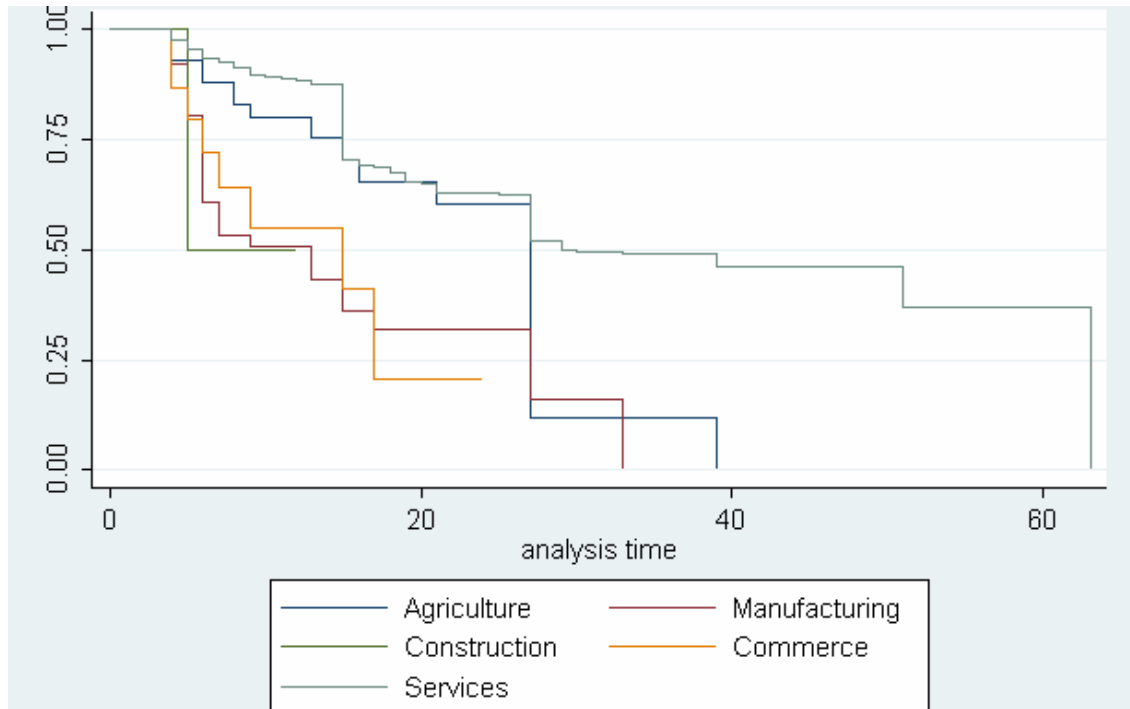
Figure 11: Survival Estimates by Industry (Women)
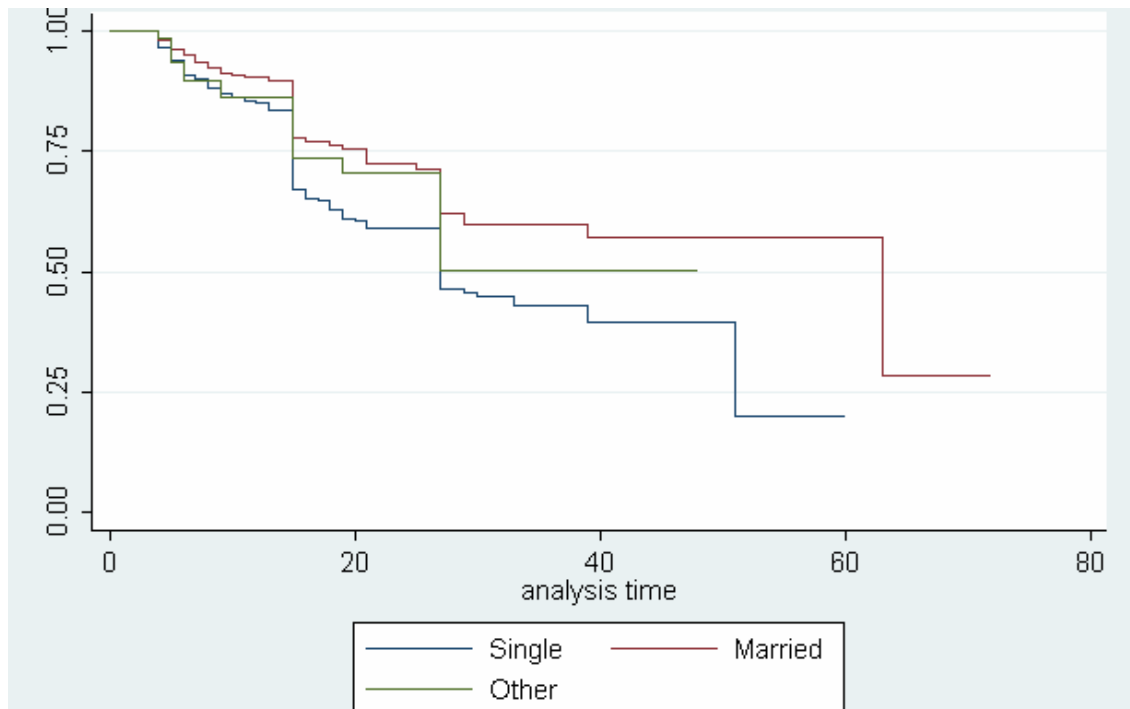

Figure 12: Survival Estimates by Marital Status (Women)

Table 1: Employment Benefits by Occupational Group

	Professionals %	Semi-skilled %	Basic Occupations %
Annual Paid Vacation	80	20	27
Paid Sick Leave	85	25	31
Paid Emergency Vacation	80	21	23
Paid Maternity Leave	45	6	14
Grief Leave	81	28	30
Breast Feeding Hour	30	5	8
Weekly Day Off	95	69	63
Rest Period	77	78	73
Paid in Time	77	57	67
Regular Wages	89	78	79
Educational Opportunities	59	14	10
Stability	77	33	37
Cash Incentives	43	13	13
Moral Incentives	71	47	41
Decision Making	56	32	21
Written Contract	76	15	28
Trade Union Member	41	27	31
Minor Union Member?	14	6	6

Table 2: Employment Benefits by Industry Group

	Agriculture %	Manufacturing %	Construction %	Commerce %	Services %
Annual Paid Vacation	8	25	8	25	78
Paid Sick Leave	16	27	5	36	83
Paid Emergency Vacation	4	18	7	35	76
Paid Maternity Leave	0	6	2	8	45
Grief Leave	20	28	10	41	78
Breast Feeding Hour	0	5	2	5	29
Weekly Day Off	24	80	48	68	95
Rest Period	6	81	77	71	79
Paid in Time	72	54	49	65	79
Regular Wages	88	78	70	80	89
Educational Opportunities	0	12	4.8	19	54
Stability	8	34	12	49	77
Cash Incentives	8	14	6	21	38
Moral Incentives	16	51	35	49	68
Decision Making	8	27	27	44	49
Written Contract	4	14	6	16	79
Trade Union Member	19	36	46	31	32
Minor union Member?	3	8	6	8	10

Table 3: Cox Proportional Hazard Models of Unemployment Spells

	Full Sample (fail= spell end)	Men (fail= spell end)	Women (fail= spell end)
Age 20-24	1.333***	1.050***	0.972*
	(0.056)	(0.053)	(0.51)
Age 25-29	1.174***	0.901***	0.771*
	(0.051)	(0.052)	(0.41)
Age 30-34	1.175***	0.870***	0.715*
	(0.055)	(0.057)	(0.38)
Age 35-39	1.163***	0.831***	0.913*
	(0.055)	(0.055)	(0.49)
Age 40-44	1.023***	0.743***	0.817*
	(0.051)	(0.051)	(0.45)
Age 45+	0.976***	0.651***	0.499*
	(0.056)	(0.043)	(0.29)
Yrs of Schooling	0.973***	0.964***	0.772***
	(0.014)	(0.015)	(0.054)
Schooling^2	1.001***	1.002***	1.009***
	(0.00079)	(0.00084)	(0.0032)
Married	0.993***	1.168***	0.631***
	(0.033)	(0.047)	(0.082)
Semi-Skill Occupation	0.327***	0.404***	0.453***
	(0.015)	(0.022)	(0.098)
Basic Occupation	0.157***	0.228***	0.00983***
	(0.0080)	(0.013)	(0.0025)
Manufacturing	1.133***	1.178***	1.421***
	(0.051)	(0.054)	(0.46)
Construction	1.335***	1.284***	1.325
	(0.048)	(0.046)	(1.39)
Commerce	1.148***	1.178***	1.107**
	(0.043)	(0.044)	(0.52)
Services	0.0993***	0.0764***	1.140***
	(0.0048)	(0.0040)	(0.34)
Gaza	1.285***	1.269***	1.046***
	(0.037)	(0.037)	(0.15)
Female	0.993***		
	(0.061)		
No. Obs	29,780	2,367	27,422

Notes: *,**,*** indicate significance at the 10, 5 and 1 percent level.