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2012

# working paper series

**GENDER AND THE JORDANIAN LABOR MARKET**

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and Chaimaa Yassine**

**Working Paper No. 701**

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**Working Paper 701**

**July 2012**

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First published in 2012 by  
The Economic Research Forum (ERF)  
21 Al-Sad Al-Aaly Street  
Dokki, Giza  
Egypt  
[www.erf.org.eg](http://www.erf.org.eg)

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## Abstract

Using data from the Jordanian Labor Market Panel Survey 2010 (JLMPS), this paper aims at investigating the differences in labor force participation among men and women. Not only is female labor force participation rate in Jordan very low, but it also appears to have been relatively stagnant over the past decade. This is a seemingly paradoxical finding given the rapid rise in female educational attainment in Jordan. The only way to resolve such a paradox is to have dropping participation rates among educated women over time, that are counteracted by an improving educational composition to produce flat participation rates. We argue in this paper that this is in fact what is happening in Jordan and that the decline in participation among educated women is due to a deteriorating opportunity structure in the Jordanian labor market. With the curtailment of public sector hiring in Jordan since the mid 1980s, opportunities for educated women are becoming scarcer. The main contribution of this paper is therefore to document these trends with recent data and show through careful analysis the way in which women's employment prospects are shaped by education and marriage and the way in which these prospects have narrowed dramatically in recent years.

**JEL Classification:** C25, J16, J21

**Keywords:** Gender, Employment, Labor force Participation, Middle East, Jordan

## ملخص

باستخدام بيانات من المسح التتبعي لسوق العمل في الأردن 2010 (JLMPS)، تهدف هذه الورقة إلى التحقيق في الاختلافات في المشاركة في قوة العمل بين الرجال والنساء. ليس فقط أن نسبة القوى العاملة المشاركة من اناث في الأردن منخفضة جدا، ولكن يبدو أيضا أنها ظلت راكدة نسبيا على مدى العقد الماضي. هذه هي الحقائق التي تبدو متناقضة نظرا للارتفاع السريع في مستوى التحصيل العلمي للإناث في الأردن. والطريقة الوحيدة لحل مثل هذه المفارقة هي الحصول على معدلات مشاركة منخفضة بين النساء المتعلّقات على مدى الوقت، والتي يتم مواجهتها عن طريق تحسين التكوين التعليمي لإنتاج معدلات مشاركة مستوية. نحن نجادل في هذه الورقة أن هذا هو في الواقع ما يحدث في الأردن وأن التراجع في المشاركة بين المرأة المتعلمة يرجع إلى وجود تدهور في بنية الفرص في سوق العمل الأردني. فمع الحد من التوظيف في القطاع العام في الاردن منذ منتصف الثمانينات، أصبحت فرص النساء المتعلّقات أكثر ندرة. المساهمة الرئيسية لهذه الورقة هو بالتالي توثيق هذه الاتجاهات مع البيانات الحديثة، وإظهار من خلال التحليل الدقيق كيفية تشكيل فرص العمل للمرأة من خلال التعليم والزواج وكيفية تقلص هذه الفرص بشكل كبير في السنوات الأخيرة.

## **1. Introduction**

It is by now well established that Jordan has one of the lowest female labor force participation rates (LFPR) in the world (Kalimat and Al-Talafha 2011 & Mryyan 2012). According to the World Bank, Jordan, with an LFPR of 15.3%, has the fifth lowest female participation rate among 185 countries and territories that report such data (World Development Indicators). The countries with lower reported LFPR's are Syria, Iraq, Algeria and the West Bank and Gaza. Not only is female LFPR in Jordan very low, but it also appears to have been relatively stagnant over the past decade. This is a seemingly paradoxical finding given the rapid rise in female educational attainment in Jordan and the strong gradient of participation with rising educational attainment, especially above the secondary level (Mryyan 2012). The only way to resolve the paradox is to have dropping participation rates among educated women over time, that are counteracted by an improving educational composition to produce flat participation rates over time. We argue in this paper that this is in fact what is happening in Jordan and that the decline in participation among educated women is due to a deteriorating opportunity structure in the Jordanian labor market for these women. Educated women in Jordan are employed primarily in the education and health fields, two areas in which public sector employment is dominant. With the curtailment of public sector hiring in Jordan since the mid 1980s, opportunities for educated women are becoming more scarce. Although private sector employment has been growing fairly rapidly, this employment is increasingly temporary and precarious in nature and is generally perceived to be inhospitable to women, especially married women. In fact, women working in the private sector tend to quit the labor force at marriage, whereas those working in the government are much more likely to stay on, as government employment is seen as more family friendly. Our primary argument is therefore that female labor supply in Jordan is being constrained by changes that are occurring on the demand side of the Jordanian labor market. Faced with a more inhospitable labor market, women in Jordan are opting to stay out altogether or to leave at marriage.

Much of the literature on female participation in Jordan is concerned with the barriers Jordanian women face in the labor market, either from prevailing social norms about women's mobility and the sorts of jobs deemed acceptable for them or from the discrimination they face in the private sector (Miles 2002; Peebles et al. 2007 & Kalimat and Al-Talafha 2011) . Miles (2002) attributes the constraints to women's participation in employment in Jordan to the "gender system" by which she means the interplay between cultural and family-level factors and those associated with the state and employers to shape women's job search and employment strategies. Miles cites the rapid increase that occurred in women's labor force participation from the mid-1970s to the early 1990s supported by state policies to increase employment for educated women in the public sector. These policies were intended to reduce the conflict between reproductive and productive responsibilities by providing a generous maternity leave and requiring institutions that hired a certain number of women to provide day care. With the introduction of economic adjustment policies in the mid 1980s, the expansion of public sector employment, as we will see below, came to an abrupt halt, leading to a significant narrowing of employment opportunities for educated women. A more recent study done under the auspices of Al-Manar Project of the National Center for Human Resources Development in Jordan (NCHRD) explored in more detail the barriers facing women in the private sector (Peebles et al. 2007). The study concludes that some of the barriers facing women in the private sector are related to a number of factors, including highly protective legislation on women's working conditions and maternity leave that lead employers to avoid hiring married women, employers discriminating against married women out of a conviction that their marital responsibilities would prevent them from being as committed to their jobs as men or young unmarried women, social insurance legislation that treats women as dependents rather than independent workers even when they work, and

practices that confine women to occupations that are closely associated with their more traditional roles in the household such as education and health care. Another more recent study sponsored by Al-Manar explored barriers to women pursuing self-employment through small and micro enterprises (Kalimat and Al-Talafha 2011). Based on focus group discussions, the study concludes that women were neither aware of opportunities to set up their own enterprises nor enthusiastic about the prospect. This is supported by the very low levels of self-employment observed among Jordanian women in labor force data.

This paper agrees with the general thrust of the literature that it is the interplay between conservative social and cultural norms about gender roles in the household and in society, on the one hand, and economic and policy-related factors, on the other, that shapes the prospects for female employment in Jordan. In particular that the shift away from public sector employment in recent decades has severely restricted the employment prospects of educated married women, which had expanded significantly in the previous era. Our main contribution is to document these trends with recent survey data and showing through careful analysis the way in which women's employment prospects are shaped by education and marriage and the way in which these prospects have narrowed dramatically in recent years.

The outline of the paper is as follows: section 2 presents the data we use, section 3 discusses the structure of opportunity for women in the Jordanian labor market and the way it has changed in recent years, section 4 examines the determinants of female participation in the labor force and in different kinds of employment in Jordan and section 5 concludes.

## **2. Data**

This paper relies for the most part on data from the Jordan Labor Market Panel Survey 2010, which is supplemented with quarterly data from the Employment and Unemployment Survey (EUS). The JLMPS 2010 is the first wave of a panel survey carried out by the Economic Research Forum (EFR) in cooperation with the National Center for Human Resource Development (NCHRD) and the Jordanian Department of Statistics (DOS),(JLMPS 2010). The survey was carried out on a nationally representative sample of 5,102 households containing 25,969 individuals of all ages. The JLMPS 2010 contains a wealth of data on individuals aged 6 and above, including full job histories based on retrospective questions, which we use to conduct our dynamic analyses.

The EUS is the official labor force survey of Jordan collected quarterly by the Jordanian Department of Statistics. We use a harmonized dataset containing quarterly data from the first quarter of 2000 to the fourth quarter of 2010. The EUS was carried out on a nationally representative sample of about 9,000 households per quarter from 2000 to 2006, and about 12,000 households per quarter from 2007 to 2010. The sampling and stratification scheme of the EUS was modified in the first quarter of 2007 when the sample frame from the 2004 census was used for the first time.

## **3. The Structure and Evolution of Female Participation in the Jordanian Labor Market**

### ***3.1 Issues in the measurement of female labor force participation in Jordan***

Although Jordan has one of the lowest rates of female labor force participation in the world, a quick look at the data would suggest that participation has increased rapidly over the past two decades from 8.9% in 1990 to 12.5% in 2000 to 15.3% in 2010, a rate of increase of 40% per decade in the 1990s and 22% per decade in the 2000s. However a more careful look at the data in the 2000s belies the notion that female LFPR in Jordan has been rising, at least in the past decade. Figure 1 shows the quarterly LFPR rates as estimated by the Employment and Unemployment Survey, the source of official labor force statistics in Jordan. The figure also shows the annual estimates from the World Development Indicators. As is clear from the figure, there is a major break in the data just before the first quarter of 2007, where LFPR

suddenly jumps from around 12% to 15%. This break happens to correspond to the round of the survey in which there was a switch in the sampling frame of the EUS to the 2004 population census data and the introduction of a new stratification system. It is therefore highly probable that this break is due to differences in sampling strategy. The data from before and after the break clearly suggests that female LFPR was stable in Jordan throughout the decade. On the assumption that the new sample frame is a more accurate representation of the Jordanian population, we can assume that the more correct estimate is closer to 15%.

### ***3.2 The structure of employment by gender in Jordan: a static analysis***

As stated in the introduction above, Jordan not only has relatively low female participation rates but this participation is strongly shaped by both educational attainment and marital status. It is also characterized by high levels of occupational and job segregation, with women being generally concentrated in very specific segments of the labor market. Our main objective in this section is to describe the structure of employment in Jordan by gender in terms of these powerful structural factors as a way to set the stage for the subsequent dynamic analysis.

We begin our analysis by examining the way education shapes women's participation in employment in Jordan as compared to men's (see table 1 and table 2). We first note that while male participation in employment rises somewhat with education, the association between participation in employment and education for women is much stronger. While male participation rises from about 61% for those with below secondary education to 80% for those with university education and higher, it rises from 5% to 46% for women, more than a nine-fold increase. The biggest increase occurs as education rises from the secondary to the university level. Unemployment as a reflection of the readiness for work also rises strongly with education for women, going from 1% of the working age population at the below secondary level to 14% at the university and above level. In contrast, the association between education and unemployment is almost non-existent for men (see also Mryyan 2012).

The pattern of employment is also more strongly associated with education for women than for men. While the more educated groups are more likely to be employed in government for both genders, the increase in the share of government in employment by education is much sharper for women than for men. Going from below secondary to university and higher, the share of employment in government rises from 21% to 57% for women, i.e. nearly tripling, whereas it goes up only from 28% to 41% for men. Employment in the formal private sector also increases with education, but in a fairly similar manner for women and men. Informal wage employment declines significantly with education for both women and men, but the decline is somewhat steeper for women. Self-employment and unpaid family labor are relatively rare statuses among Jordanian women, and their prevalence declines sharply with education. Thus the fundamental reason educated women have a higher employment rate than their less educated counterparts is their differential ability to obtain work in the government and to a lesser extent in the formal private sector.

We now move to the impact of marriage on employment for women and its interaction with education. Table 1 shows that generally and for all levels of educational attainment, there is a drop in female participation in employment once they get married. In contrast, as shown in table 2 male employment rates rise significantly with marriage, in accordance with the predominant gender roles in Jordanian society of men as breadwinners and women as homemakers. The decline in employment with marriage is larger in relative terms for less educated women, but is larger in absolute terms (from 53% to 43%) for university educated women who have higher participation rates to start with. Married women, like married men, are much less likely to be unemployed than their unmarried counterparts, but in the case of

women, it is not necessarily because they eventually find work, but because they tend to stop seeking work after marriage and withdraw from the labor force altogether.

The pattern of employment also differs strongly by marital status for women in sharp contrast to men whose patterns of employment are not strongly associated with marital status. Employed married women at all education levels tend to be more concentrated in government work and in self-employment, two employment statuses that are more compatible with their marital responsibilities than private sector wage work. This pattern may result in part from migration to these employment statuses with age, but is more likely to be due to the higher persistence in the workforce of women employed in these statuses after marriage relative to those employed in private sector wage work. For instance, 61% of never married university graduates were employed for wages in the private sector in 2010 as compared to only 26% of their ever married counterparts.

We finally deduce from the above tables that unmarried university graduates have the highest participation rates among females in the Jordanian labor market (79%). They have both the highest participation in employment (53%) and in unemployment (26% of the working age population, which translates into an unemployment rate of 33%.) When employed, this group tends to be concentrated in formal private wage employment (51%). They are not too different in this regard from unmarried male university graduates who also have similar levels of concentration in private wage work (52%). Marriage is what tends to drive a wedge between the labor market experiences of educated males and females. Married female university graduates not only have much lower overall participation rates than their male counterparts, but also have very different patterns of employment when employed. Married female university graduates are predominantly concentrated in government employment (71%), while less than half of their married male counterparts are (42%). The increasing concentration of university-educated married women could either be due to the fact that educated women increasingly move to that family-friendly sector over time or to the fact that women in that sector are less likely to leave the labor force after marriage than women in other types of jobs. We will explore these two pathways further in the dynamic analysis. As for the less educated women who work (i.e with an education below secondary), it seems easier for them to access informal private jobs (38% for the never married and 35% for the ever married).

To further investigate the constraints and barriers that the Jordanian labor market imposes on women's wage and salary employment, we examine the distribution of such employment by sector of economic activity and occupation. We can immediately see from table 3 the dominant role that the education and health services sectors play in the wage and salary employment of Jordanian women, with 51% of female employment concentrated in these two industries. Similarly, more than half of the employment in these sectors is female. The next highest industry groups in terms of prevalence of female employment is the "other" category with 28% female employment followed by the agriculture industry with 19%<sup>1</sup>. All other industry groups have a female prevalence that is lower than the average prevalence of 17%, with the highest among them being information, finance and insurance services at 16%.

When industry groups are further broken up in three broad occupational categories, we note that the category "Managers and Professionals" has the highest female prevalence (39.9%), especially in education and health. It is followed by "White Collar and Service Occupations" (13.7%) and then by "Blue Collar Occupations". The greatest concentration of females in blue collar work is in educational services and agriculture.

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<sup>1</sup>The "other" category is mostly made up of personal services and probably dominated by foreign women in domestic services.



To abstract away from the higher female prevalence in government employment, we limit the analysis in table 4 to the private sector. Although the overall female prevalence in the private sector at 14.7% is lower than that for the economy as a whole at 17%, roughly the same patterns are observed. Education and health services continue to be the top two industries in terms of female prevalence, with 63% and 59% female prevalence in the private sector employment respectively. Similarly, these two sectors together make up 37.5% of total female employment in the private sector. They are followed in importance by the manufacturing sector (16.6%), which has lower than average female prevalence and by the "Information, finance and insurance" (12.6%), which has higher than the average female prevalence in all sectors. Similar conclusions apply to the concentration of female employment by occupation in the private sector as for the economy as a whole.

The main conclusions of the static analysis on the structure of the Jordanian labor market along gender lines is that the market appears relatively closed to less educated women and that married women, even if educated, find it hard to reconcile working for wages in the private sector with their family responsibilities. Moreover, employed women tend to be highly segregated in a few industries and occupations. Education and health are the two most feminized industry groups that together account for over half of female employment. Within the private sector, education and health continue to be the most important sectors for women followed by manufacturing and information, finance and insurance. The high level of gender segregation is most probably due to prevalent norms about what kind of employment is socially acceptable for women rather than simply to discrimination on the part of employers. If female participation in employment is to rise significantly in Jordan, other segments of the labor market will have to gradually open up to them.

### **3.3 A dynamic analysis**

This section aims at analyzing the differences between female and male workers in Jordan in terms of their progression through the labor market over time. The adopted method portrays the new flows of workers into the labor market and then follows these new entrants several years into their careers. Such a dynamic analysis allows us to highlight the evolution of the Jordanian labor market more precisely than when just dealing with stocks and cross-sectional data. As discussed in Assaad (2012), the JLMPS dataset provides a detailed characterization of jobs, which allows us to distinguish between five types of employment, namely: (i) Government Employment, (ii) Permanent Formal Private Wage Work, which includes all wage and salary work in the private sector or state-owned enterprises with indefinite duration contracts and social insurance coverage, (iii) Temporary Formal Private Wage Work, which includes all wage and salary work in the private sector or state-owned enterprises with either definite duration contracts or no contracts but with social insurance coverage, (iv) Informal Private Wage Work, which is made up of wage and salary work in the private sector or state-owned enterprises with neither a contract nor social insurance coverage, (v) Non-Wage Workers, which includes employers, self-employed individuals and unpaid family workers.

We use these categories to look at the distribution of jobs obtained by new entrants into the Jordanian labor market every year since the early 1970s. This allows us to trace the change in the structure of the labor market facing new entrants of each sex over time. As shown in figure 2, female new entrants were much more reliant on government jobs in the 1970s and 1980s than their male counterparts, with over 60% of new female entrants going into the government until 1985. The share of government jobs among new female entrants fell dramatically after the mid 1980s going from 60% to 25% in the late 1990s, only to recover slightly to 30% in the 2000s. Not only were new female entrants more affected by the slowdown in government hiring, they were affected earlier than their male counterparts, who continued to be hired by the government at relatively higher rates until the early 1990s. The

recovery in government hiring in the 2000s is also more pronounced for new male entrants than for new female entrants.

The decline in government hiring for women appears to have initially been counteracted by a sharp increase in informal wage employment, which increased significantly from the mid 1980s to the mid 1990s. Subsequent declines in government employment were counteracted by formal but temporary wage employment, which increased from 10% of first jobs for new female entrants to 20% from 1990 to 2000. Permanent formal employment increased as well in the early 1990s, but slowed down considerably in the 2000s. Trends for males were similar, with one main exception. While temporary formal wage employment continued to rise in importance for women in the second half of 2000, its share fell for men during that period when government employment recovered. We can conclude from this discussion that as government curbed its hiring of new female entrants, their employment became much more precarious, first in the form of informal wage employment and later in the form of temporary wage employment in the private sector. Together, these two categories constituted nearly 50% of new jobs for women in 2010. The share of formal permanent private wage employment remains relatively low for both men and women at about 10-12% of first jobs in 2010, after having risen to over 15% for women in the early 2000s. Non-wage employment, which is mostly made up of unpaid family labor remains a fairly small and somewhat stable share of first jobs for both women and men.

Limiting the above analysis to new entrants with secondary education and above provides a better comparison of labor market prospects along gender lines because a much larger proportion of female employment is made up of such educated workers. In fact, workers with secondary education or above made up 70% and 83% of the total female entrants in 1970 and 2010 respectively and only 40% and 56% of the total male entrants in 1970 and 2010. As shown in figure 3, the observed decline in the share of government employment appears to be larger and more accentuated for these educated workers, but the pattern for females are very similar to those discussed in figure 2, however, it is worth noting that the recovery in government employment observed in the early 2000s in figure 2 is no longer apparent for the educated workers. The share of new entrants in government employment tends to stabilize after 1995 at around 30% for both female and male new entrants.

In figure 4, we replicate the above analysis for new entrants with below secondary education, showing that the share of government employment for these workers rises rapidly in the 2000s to make up for its earlier decline, with this being especially apparent for less educated new male entrants. Going back to the data to investigate this trend, we find that this “recovery” mainly involves higher levels of recruitment in the military after the sharp reductions of the 1990s.

To further understand the changing structure of the Jordanian labor market along gender lines, we follow new female and male entrants up to ten years into their careers to see if the changes in employment prospects at entry are attenuated by subsequent job mobility. In this analysis we observe how the share of employment in each sector at entry, and five and ten years after entry changes according to year of entry into the labor market. The idea is to examine changes over a person's life cycle and over time for the same point in the person's life cycle. In the leftmost panel of the figures, we show the evolution of these employment shares for all female new entrants, i.e. including those who exited the labor market within five and ten years. In the middle panel we show the shares for only those who stayed in the labor market at least ten years, who constitute about 63% of those who entered between 1995 and 2000. The rightmost panel shows the shares for the male new entrants who stay for at least ten years, but since exit is not as much of an issue for males, there is no need to repeat them for all new entrants.

We begin by examining in figure 5 the evolution of the share of new entrants employed in government at entry, after five and ten years of entry by year of entry. We first note the sharper decline in the government share of employment for new female entrants than for new male entrants that we noted above. Comparing the rightmost and middle panels shows that before 1985 female employees in government used to withdraw from the labor force after a short period of employment, but this does not seem to be happening any more after 1985. In fact, from the late 1980s onward the government share among new entrants tends to increase somewhat over the life cycle at the same time as it declined over time. This suggests that women tend to move out of other sorts of employment and into government as they advance in their careers. This appears to be the case for men as well, but only since 1995. Prior to that, the tendency for men was to move from the government to the private sector.

Next, we shift our focus to formal private wage employment. As shown in figure 6, although the fraction of women who enter formal private wage employment over time in Jordan rose much faster than that of men, this tended to be a temporary employment state for most women. Comparing the rightmost panel to the center panel shows that most women who leave this state within ten years of entry leave the workforce altogether. For instance, among women who entered the labor market in 2000, over 35% got formal private sector jobs, but only 25% were still in these jobs after five years and 20% were still in them after ten years. Of those who stayed in the workforce at least ten years, those who moved out of formal private sector wage work in the first ten years after entry appear to be heading primarily to the more family-friendly government sector as there appears to be very little movement into the other two states, namely informal wage work and non-wage work (figures 9 and 10). For male workers, mobility into and out of formal private sector work appears to be more limited than for female workers and exhibits variable patterns over time. From 1985 to 1995, the tendency was for people to join the formal private sector from other sectors, mostly government, but from 1995 onward, the mobility was in the opposite direction.

In figures 7 and 8 we decompose formal private sector wage work into permanent and temporary components to better understand the observed trends. We first note the trend toward slower growth of permanent formal work starting in the 1990s with the continued rapid growth of temporary formal work. Nonetheless, both have risen much more rapidly for women than for men. Next, we see that exit from temporary formal work is much more pronounced than exit from permanent formal work and much of this exit is to leave the workforce altogether (by comparing the right most panel in figure 8 with the center panel). Since 1995, there appears to be more chance of transitioning from temporary to permanent private sector work over the life course for both male and female workers. This suggests that employers are hiring workers in temporary positions first and then switching them to permanent positions as time goes on. Using the same data, Amer (2012) has shown that there is very little mobility between formal and informal jobs in Jordan, so that most transitions are between temporary and permanent formal jobs in the private sector and between these and the government sector.

We now move to an examination of the remaining segments of employment of the female new entrants, namely the informal private wage employment segment and non-wage employment (figures 9 and 10). As shown in the figures, informal wage employment increased its share of first employment for women from 1985 to 1993 or so, a time characterized by sharp declines in government employment. Non-wage employment, on the other hand, does not exhibit any clear trends over time. We also observe that women in informal wage employment tend to exit the labor market at high rates during the first ten years of employment. For the cohort entering from 1995 to 2000, 30% were informal wage workers at entry, but only 15% remained so employed after ten years, with much of the drop occurring within five years of entry. Among those who remain in the labor market for ten or

more years, there is very little mobility from informal wage employment. In contrast, for males, there has been some mobility out of the sector in recent years, mostly to self-employment.

The life cycle patterns of non-wage employment for women are similar to those of informal wage employment, but more attenuated. The degree of exit over the life cycle is lower. Most of these women are probably working as unpaid workers in family farms and enterprises, an employment state that is more compatible with starting a family and child bearing than wage employment. Unlike males though, women are less likely to move into this state over time since they are less likely to start their own businesses.

To sum up, this paper shows that even though female workers enter the Jordanian labor market in different segments of employment, a significant group fails to remain in employment and exits the labor force in the first ten years after entry. This phenomenon is more important within formal and informal private wage employment where jobs tend not to be flexible and family-friendly enough. As for those who stay in the labor force, their employment tends to exhibit greater rigidity and lack of mobility, relative to what is observed for their male counterparts, especially within the informal private wage sector and the non-wage segment. There is some mobility for women who remain employed from formal private wage employment to government employment, which is deemed more family friendly, but little mobility in other directions.

#### **4. The Determinants of Females Participation: An Empirical Analysis**

As discussed in section 2.1 above, female participation in the labor force in Jordan is quite low by international standards and has not been increasing in the past decade despite significant increases in female educational attainment. We determined in section 2.2 that female participation in employment depends strongly on educational attainment and marital status. We would therefore expect that as both educational attainment and the age at marriage rise, we should see increases in female labor force participation. However, we also saw that educated women tend to be concentrated in the public sector, and, in particular, in the education and health sectors. The curtailment of public sector hiring that accompanied structural adjustment in Jordan contributed to limiting the employment possibilities for educated women. These two opposing trends may account for the stability of female participation in Jordan. In this section we examine in more detail the determinants of female and male participation in the Jordanian labor market in an effort to ascertain the other forces that determine participation. We first begin by estimating a simple probit model for a binary participation variable (working or not) and then move to a multinomial model that distinguishes between working in the public sector, working for wages in the private sector, self-employment (which includes employers and unpaid family workers) and not working.<sup>2</sup>

Tables 5 and 6 show the marginal effects from the dichotomous model determining the probability of working versus not working. We first estimate a model on the pooled male and female sample with a female dummy variable to detect the effect of gender on participation and then estimate separate models for females and males. We control for a number of characteristics such as age, marital status, the level of education, urban/rural residence, parental level of education, parental work status, and whether the household owns or cultivates agricultural land. The reference probability and marginal effects shown are for a reference individual whose continuous variables are set at the mean and whose dummy variables are set to zero. Thus the reference individual in table 5 is a never married 32 year-old male with above secondary education living in a rural area. His father and mother both have above secondary education and were not working when he was 15. His household

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<sup>2</sup>See also Spierings et al.(2008) for a similar analysis for Jordan and Egypt.

neither owns nor cultivates agricultural land. In table 6 the reference individual is defined similarly in the male and female samples.

As shown in table 5, Jordanian women have a significantly lower probability of employment compared to their male counterparts. A reference female's probability of working is 66.2 percentage points (p.p.) below that of a reference male, giving her an estimated probability of 21.6% based on the coefficients for the pooled sample. The probability of employment for the reference female is significantly higher at 46.9% when the estimation is run separately for females and males, because the reference individual has above secondary education, and education has a much larger effect in the female regression than in the pooled regression. In fact, the marginal effect of going from above secondary to secondary education in the pooled sample is a 28 p.p. reduction in the probability of working, whereas it is a 35 p.p. reduction in the female sample (compare results in table 5 with results in the first column of table 6).

Age has the expected inverse U-shaped effect on participation, which is shown in figure 11. Interestingly the dichotomous model shows a slightly higher peak age for female employment than for male employment, which is reached at about age 41. Again, as a reflection of the consolidation of gender roles at marriage, being married has a positive and significant effect on participation for men and an even larger negative and significant effect on women's participation. Marriage is associated with a 13 p.p. increase in participation for men and a 27 p.p. decline for women. If widowed or divorced women's participation rises by 14 p.p., but is still 13 p.p. lower than that of never married women.

The education of either parent does not have a significant effect on participation in work in either the pooled sample or for each sex separately. On the other hand, if the mother was working when the individual was 15, there is a small positive effect on participation in the pooled sample, which turns out to be exclusively due to its effect on women's participation. Women whose mothers were working when they were 15 are 13.5 p.p. more likely to work than those with similar characteristics whose mothers were not working. This probably proxies for the cultural norms of the family and its degree of acceptance of women's work. Finally, ownership and cultivation of agricultural land has no significant effect on participation.

Because participation in employment takes different forms that can be differentially compatible with women's domestic and reproductive responsibilities, we move next to a model that breaks down participation into four states: employment in the public sector, employment for wages in the private sector, self-employment or unpaid family labor, and non-employment. We use a multinomial logit equation to model this polychotomous dependent variables. The marginal effects from this model for a reference female and male are shown in tables 7 and 8, respectively, controlling for the same explanatory variables used in tables 5 and 6.

The probability of working for wages in the public and private sectors by age has the same inverse U-shape detected in the dichotomous model, but the peak for private sector work is reached at close to age 36 and that for public sector work at age 40 (see figure 12), pointing to the lower compatibility of private sector wage work with women's marital responsibilities. Participation in self-employment also has an inverted U-shaped, but the predicted probabilities of such work for the reference university-educated female is very low indeed.

We can also see from the marginal effects shown in table 7 that being currently married increases the probability of not working for the reference woman by about a third from 61% to 82%. Currently married women have a 10p.p. lower probability of not working in government and for wages in the private sector than never married women, but these translate in very different relative effects because the base probabilities are different. In relative terms,

marriage results in a 40% decline in the probability of working in government, but a 79% decline in the probability of working for wages in the private sector. In contrast, there is an insignificant difference in the probability of working between divorced or widowed women and never married women, except in the private sector, it is lower by 5.3 p.p. These results are illustrated in figure 13, which clearly shows how the probability of work on both the private and public sectors recovers upon divorce or widowhood. In contrast, being currently married for males reduces the probability of not working for males by 12 p.p., which results from an increased probability of public sector employment (by 11.5 p.p.) and of self-employment/unpaid work (by 3.8 p.p.) and a reduced probability of working for wages in the private sector (by 2.9 p.p.). The only predicted probability of work for males to be significantly affected by divorce or widowhood is a reduction in the probability of working for wages in the private sector by 10 p.p. (see table 8).

As discussed above, educational attainment is one of the strongest determinants of women's employment and the kind of work they perform. As shown in table 7 and in figure 14, the probability of not working is reduced by 31 p.p. or nearly one third as women move from the secondary to the above secondary level. The probability of working for wages in the private sector increases by 10 p.p. or more than quadruples and the probability of working in government increases by 21 p.p., virtually increases six fold. The difference between secondary and below secondary is not very large, suggesting that it is the acquisition of higher education that is important for women's employment status in Jordan. Men's employment patterns are also affected by education, but to a lesser extent. Going from secondary to above secondary raises men's predicted probability of employment in government by 20.6 p.p., which is less than double, and raises the probability of being employed for wages in the private sector by 1.4 p.p.

Once own education is controlled for, parents' education does not have much of an additional effect on women's probability of employment. The main exception is when the mother has below secondary education, the daughter is less likely to work by 7 p.p. and, in particular, is less likely to work for wages in the private sector. Interestingly, having a mother with below secondary education has the opposite effect for men. It raises their probability of working, but this increased probability is spread over both the government and the private sector. Similar to education, parental work status when the woman was 15 does not have a strong influence on her employment probability again with one exception: if the mother was working, the woman's probability of working for wages in the private sector rises by about 9 p.p. In contrast, men's employment patterns are not affected by their parents' employment status when they were 15. These results suggest that the impact of mother's work is a proxy for the cultural norms of the family about women's work. When there is a history of women working in the family, it is easier for the daughter to do so.

Living in an urban area slightly reduces the probability of not working compared to residing in a rural area, but has contradictory effects on the probability of government and private sector employment for women. It tends to reduce the probability of working in government by about 10 p.p. but increases the probability of working for wages in the private sector by 14 p.p. (see figure 15). There appears to be similar effects for males. Residing in an urban area reduces the probability of working in the government for males by 18 p.p. and increases the probability of working on the private sector by 16.5 p.p. compared to a male residing in rural areas. Urban males are also 2.2 p.p. more likely to be self-employed compared to rural males.

We turn next to the effect of the household owning and cultivating agricultural land on women's and men's work status and type of employment. Simply owning agricultural land does not affect the probability or pattern of employment for women, but cultivating land does. It reduces the probability that a woman will be employed for wages in the private sector

by 4.6 p.p. and increases the probability that she will be self-employed or an unpaid family worker by 1.3 p.p., which is a very significant relative increase for this low prevalence activity for women. In contrast, ownership and cultivation of land has a much stronger effect on men's work patterns. Surprisingly, merely owning but not cultivating land raises men's probability of employment in government, by 12 p.p. and reduces the probability of employment for wages in the private sector by nearly 9 p.p., without a significant effect on the overall probability of employment. Owning and cultivating land has an even larger positive effect on the probability of employment in government and a larger negative effect on the probability of private sector employment, but an additional positive effect on being self-employed. The net effect is an increase in the probability of working by 6.2 p.p.

We turn finally to the effect of husband's education and employment status on women's probability of employment. Correcting for own education, husband's education has not significant effect on women's probability and pattern of employment. However, husband's employment status does. Women whose husbands work for the public sector have an 18.5 p.p. increase in their probability of working in the public sector themselves, and therefore a similar increase in the probability of working. This could either be because government employees tend to meet other government employees at work and get married to them or because husbands help provide opportunities for their wives in the public sector. When husbands are either employers or self-employed, women's probability of employment declines by 11.5 p.p., with the decline distributed equally over the probability of employment in the public and private sector.

To illustrate the combined effect of the different determinants of employment for women, we carry out a simulation to estimate the employment probabilities of the woman that is least likely to work in both urban and rural areas and one that is most likely to work also in each of the two settings. Based on the signs and sizes of the coefficients in the multinomial logit equation, we define the least likely woman to work as a woman who is 18 years old, currently married, has a below secondary education, has parents who have below secondary education and who were not working when she was 15. Her household does not own or cultivate land and her husband has below secondary education and is an employer or self-employed. The most likely woman to work is 32 years old, with above secondary education, never married. Her parents have above secondary education and were both working when she was 15. The predicted probabilities of not working, working in the government, working for wages in the private sector and being self-employed are shown in figure 16. The first result here is that the woman with the "least likely to work" profile has a probability of not working of virtually one and this is the same in either urban or rural areas. The "most likely to work" profile has a probability of not working of 21% in urban areas and 27% in rural areas. If she lives in rural areas she has a higher probability of working in government than in the private sector, but if she lives in an urban area, her probability of working in the private sector is more than two and a half times as high as her probability of working in government. Her probability of being self-employed is still very low.

So far we have analyzed the determinants of work by gender in a static fashion using data from the JLMPS 2010. To get a more dynamic picture of how the probability of work has changed for women over time in Jordan keeping key characteristics constant, we ran a series of models on the quarterly EUS data. The explanatory variables used in these models were age, age squared, own education specified in the same way as above, marital status specified as above, and urban dummy variable. We estimated a separate model for each quarter from the first quarter in 2000 to the last quarter in 2010<sup>3</sup>. We then used these models to predict the employment probability of a reference woman in each quarter; the reference woman being a

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<sup>3</sup>EUS quarterly data was not available for 2004.

32-year old never married woman with above secondary education, living in an urban area. These predicted probabilities are plotted in figure 17 together with trend lines for the 2000-2006 period and the 2007-2010 period<sup>4</sup>.

As is clear from figure 17, there is a declining trend in the female rate of participation in employment from 2000 to 2006 once compositional issues have been controlled for. This is in contrast to the much shallower declining trend seen in Figure 2, when no characteristics were held constant. This suggests an explanation for the apparent paradox of participation rising with educational attainment, increasing educational attainment over time for Jordanian women, but flat overall female participation levels. This figure suggests that participation for educated women has actually been falling between 2000 and 2006, a period that corresponds as we have seen above to a sharp curtailment of government employment opportunities. The stability in participation for educated women after 2007 corresponds to the most recent period of stabilization in government employment shown in figure 2.

## **5. Conclusion**

Much of the literature on women's participation in Jordan is concerned with why female participation in paid employment in Jordan remains so low despite rising educational attainment among Jordanian women to levels that now exceed those of men (Mryyan 2012), delaying in the age at first marriage (Salem 2012) and falling fertility rates. In fact we argue that participation rates are not only low, but declining once we correct for educational attainment, suggesting that the labor market opportunity structure for educated women is deteriorating over time. As we clearly demonstrate, this deterioration can be directly attributable to the diminishing role of the family-friendly public sector in the Jordanian labor market in general. Although formal private sector employer has risen significantly in Jordan during the period of shrinking public sector opportunities, the private sector has not provided a hospitable environment for women in general and for married women in particular. Much of the recent increase in private sector employment for women has been in temporary positions that women either leave of their own accord or are induced to leave by their employers upon marriage. Further restraining employment opportunities for women is their high levels of concentration in education and health jobs, and to a lesser extent in insurance and finance, and their inability to expand their presence in other segments of the labor market. Given that a return to an expansionary public sector in Jordan is unlikely due to the fiscal unsustainability of such a strategy, Jordan must find a way to reduce the cost to private employers to hire women and to support married women with child care and other interventions to allow them to better reconcile their marital responsibilities with work in the private sector. Recent changes in social insurance laws to socialize the cost of maternity leave go some way in achieving this, but much more is needed. Over the long run, gender norms about the division of labor within the household will have to shift to accommodate women's growing professional roles. Jordan risks wasting a significant portion of the considerable investment it has made in women's education if its participation rates remain so low and continue to decline for educated women as has been happening in the recent past.

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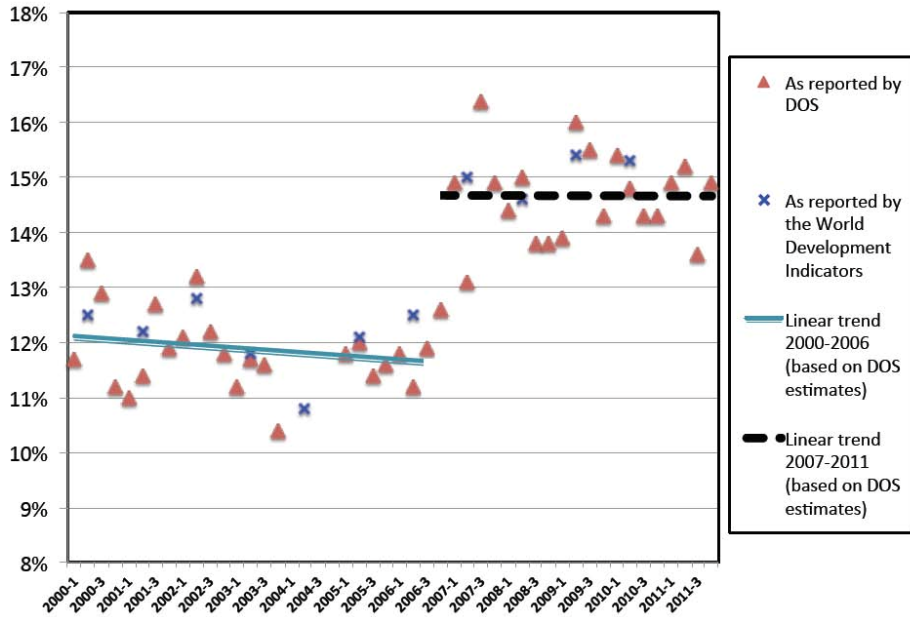
<sup>4</sup>As noted in section 2.1 above, there is a break in the data between the last quarter of 2006 and the first quarter of 2007 due to a change in the sampling methodology.



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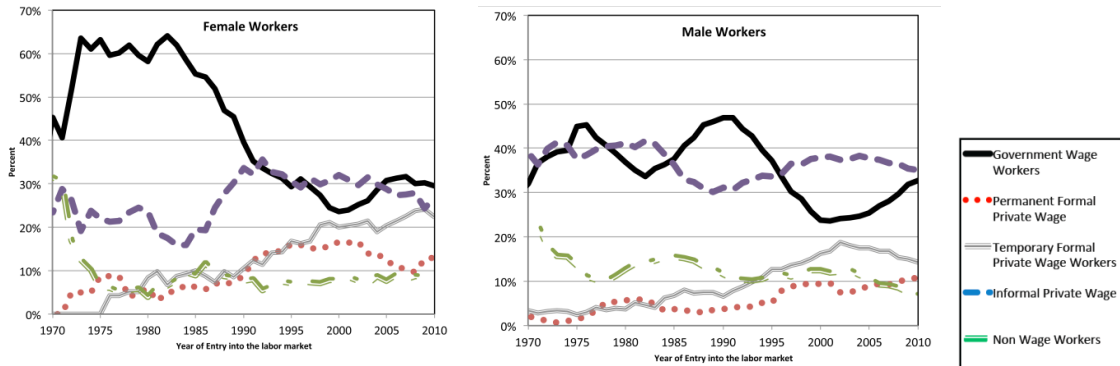
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**Figure 1: Evolution of Female Labor Force Participation in Jordan, Quarterly Data 2000-2011, Ages 15+**



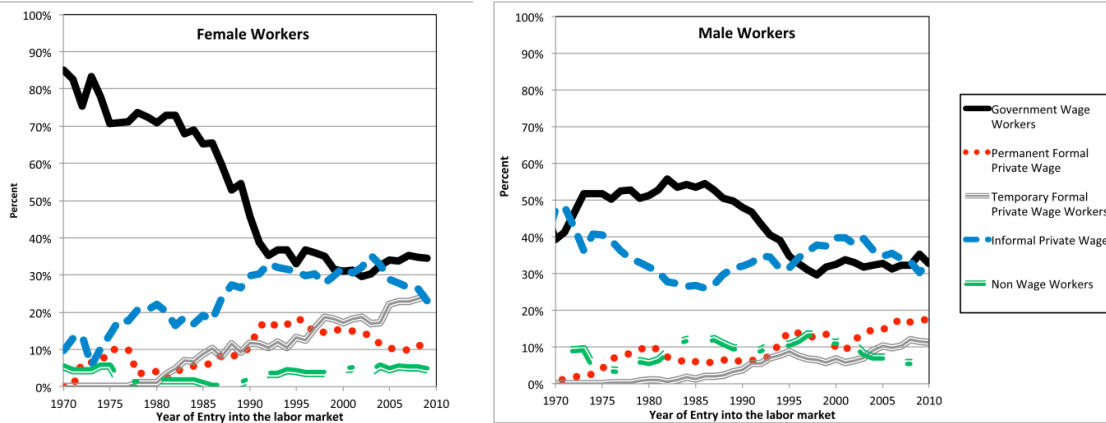
Source: DOS, Employment and Unemployment Survey (EUS).

**Figure 2: Distribution of Employment of Female and Male New Entrants by Type in First Job and Year of Entry into the Labor Market, 1970-2010, Ages 15-64.**



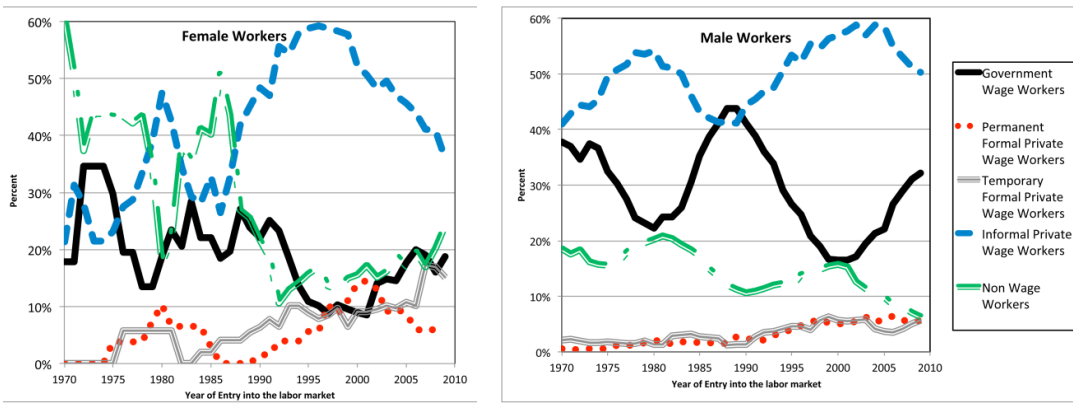
Source: Jordan Labor Market Panel Survey 2010.

**Figure 3: Distribution of Employment of Educated (i.e Secondary and Above) Female and Male New Entrants by Type in First Job and Year of Entry into the Labor Market, 1970-2010, Ages 15-64**



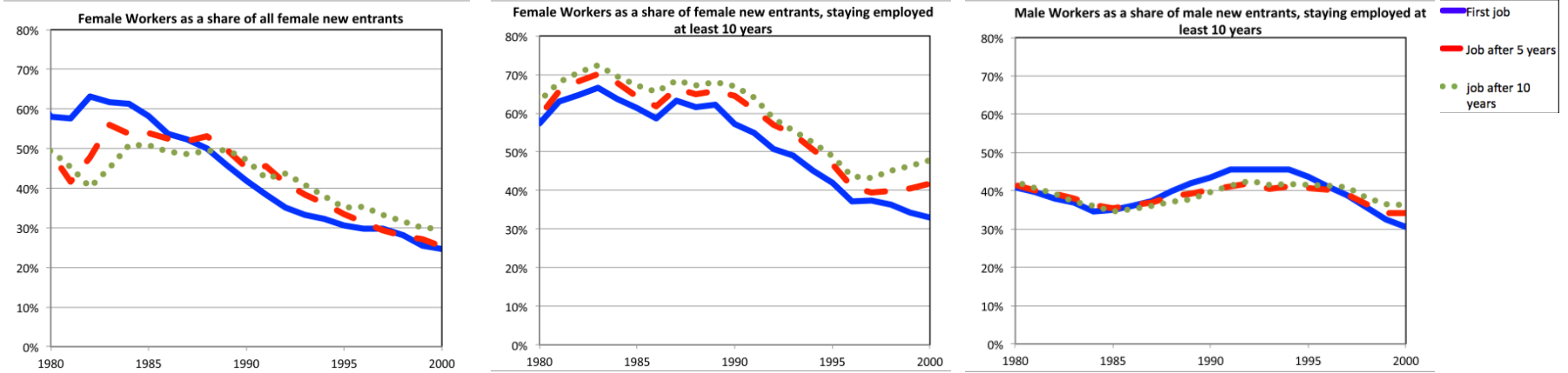
Source: Jordan Labor Market Survey 2010.

**Figure 4: Distribution of Employment of Less Educated (i.e Below Secondary) Female and Male Entrants by Type in First Job and Year of Entry into the Labor Market, 1970-2010, Ages 15-64**



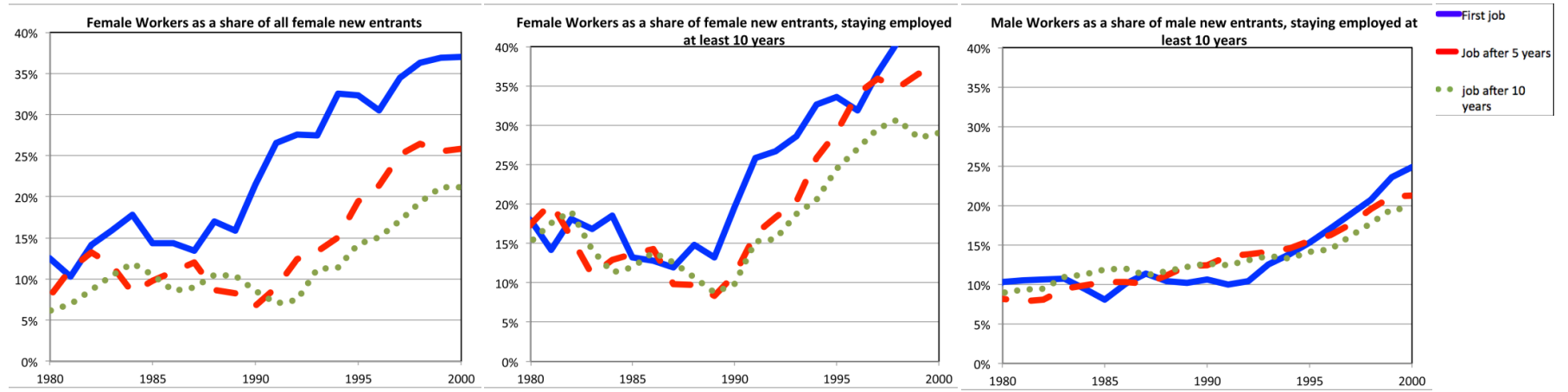
Source: Jordan Labor Market Panel Survey 2010.

**Figure 5: Evolution of the Share of New Entrants Employed in Government in their First Job, 5 Years and 10 Years after Entry by Year of Entry into the labor market**



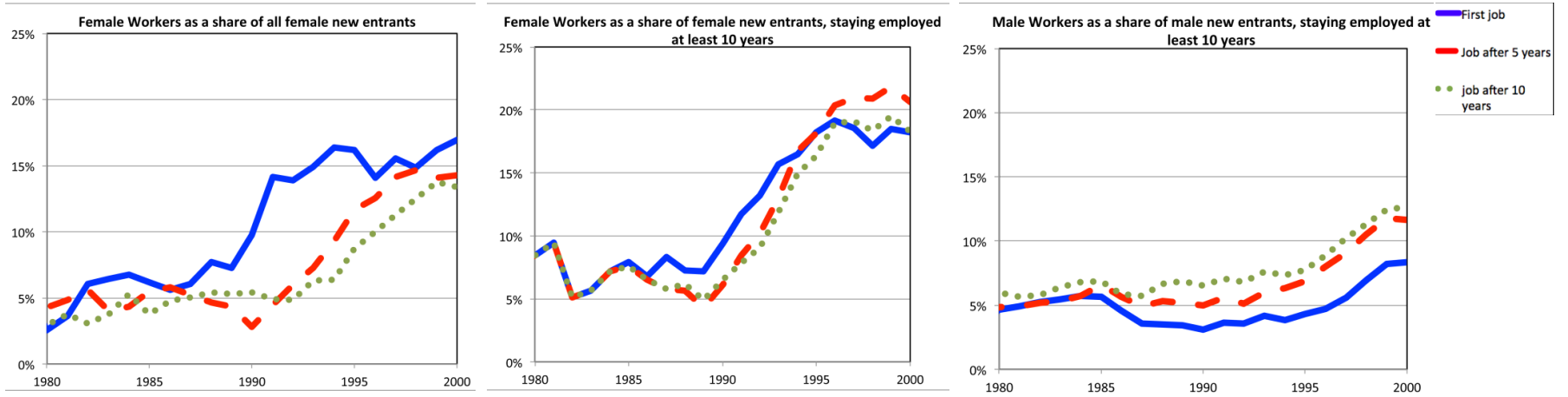
Source: Jordan Labor Market Panel Survey 2010.

**Figure 6: Evolution of the Share of New Entrants Employed in Formal Private Wage Employment in their First Job, 5 years and 10 years after Entry by Year of Entry into the Labor Market**



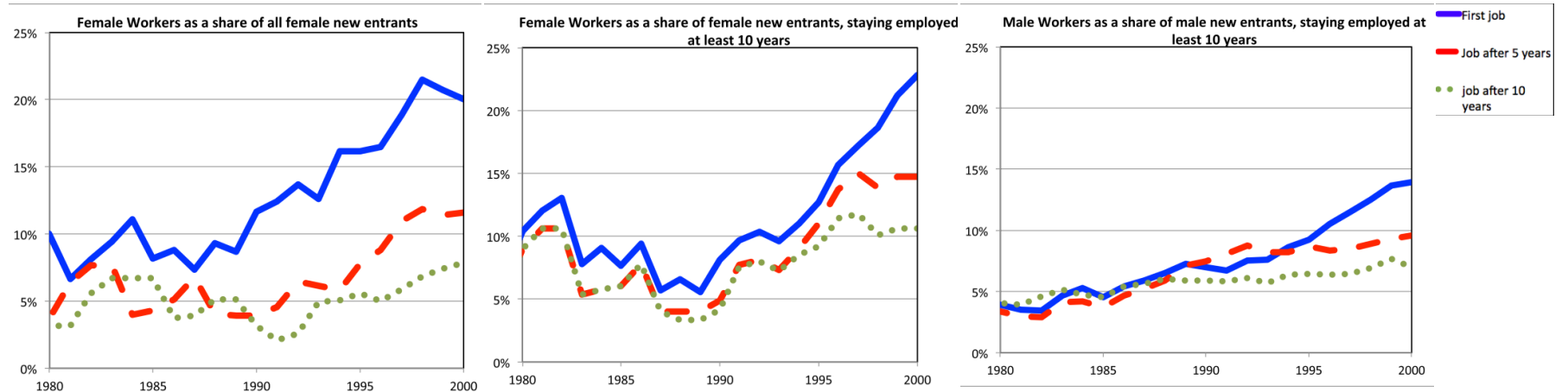
Source: Jordan Labor Market Panel Survey 2010.

**Figure 7: Evolution of the Share of New Entrants Employed in Permanent Formal Wage Employment in their First Job, 5 years and 10 years after Entry by Year of Entry into the Labor Market**



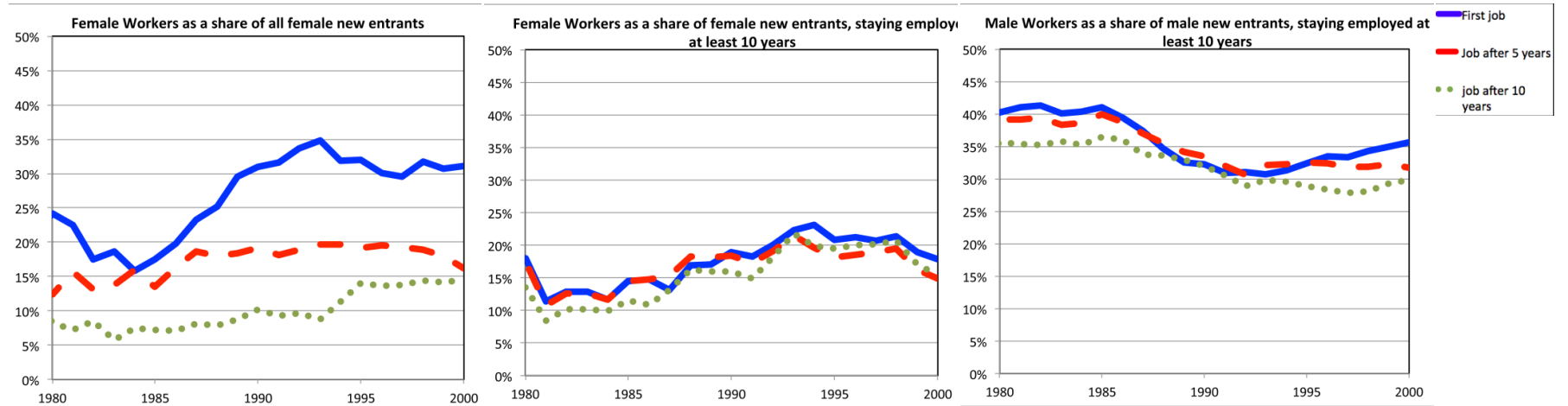
Source: Jordan Labor Market Survey 2010.

**Figure 8: Evolution of the Share of New Entrants Employed in Temporary Formal Wage Employment in their First Job, 5 Years and 10 Years after Entry by Year of Entry into the Labor Market**



Source: Jordan Labor Market Panel Survey 2010.

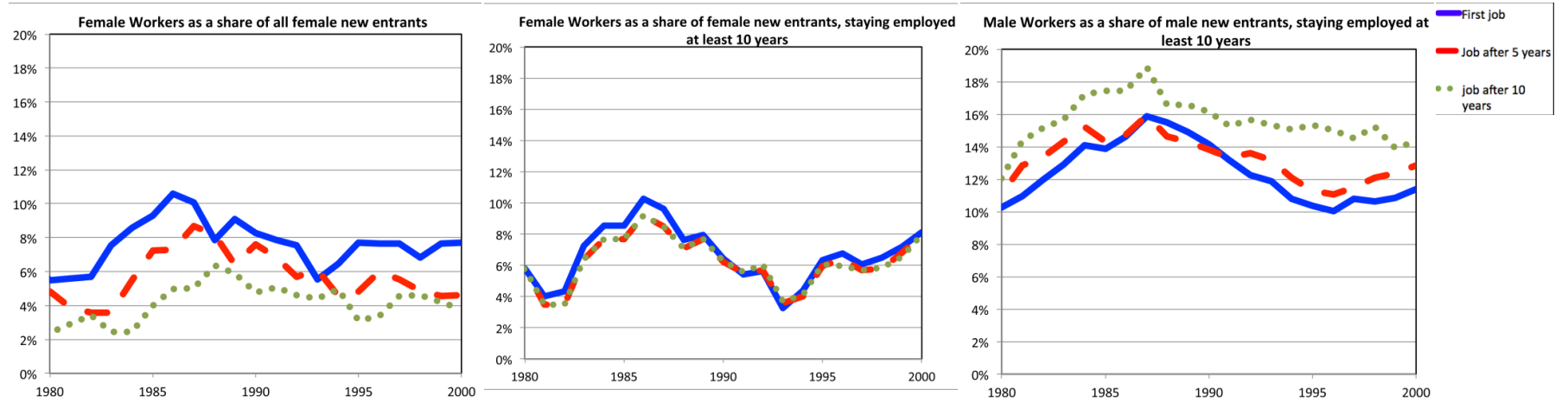
**Figure 9: Evolution of the Share of New Entrants Employed in Informal Private Wage Employment in their First Job, 5 Years and 10 Years after entry by year of entry into the labor market**



Source: Jordan Labor Market Survey 2010.

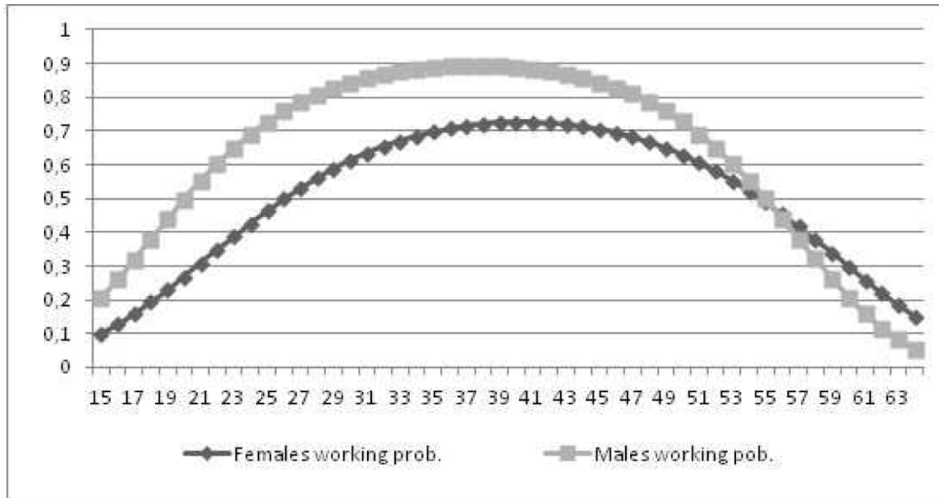


**Figure 10: Evolution of the share of new entrants employed in Non-wage Employment in their first job, 5 Years and 10 Years after Entry by Year of Entry into the Labor Market**



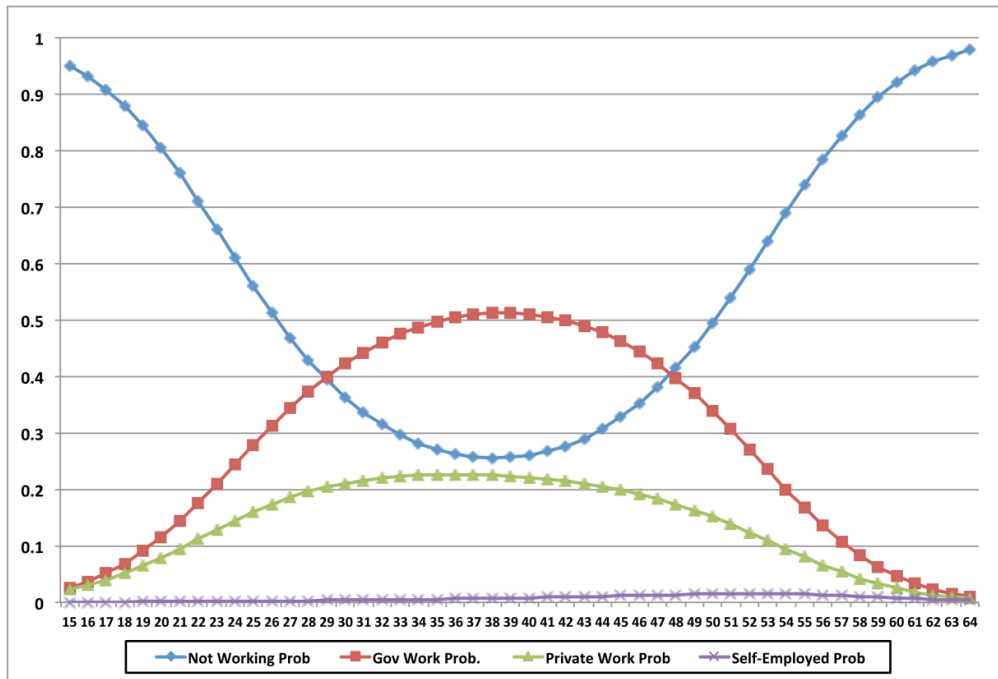
Source: Jordan Labor Market Panel Survey 2010.

**Figure 11: Predicted Probability of Working by Age and Gender**



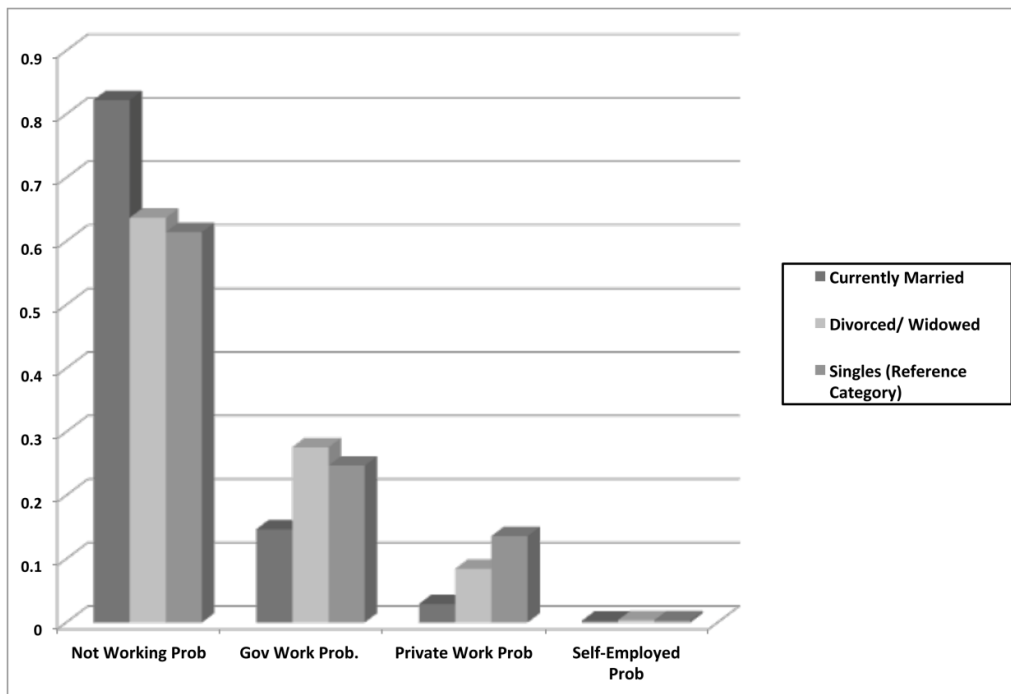
Source: Simulations based on Probit model results using data from Jordan Labor Market Panel Survey 2010.

**Figure 12: Predicted Probability of Female Employment by Employment State by Age**



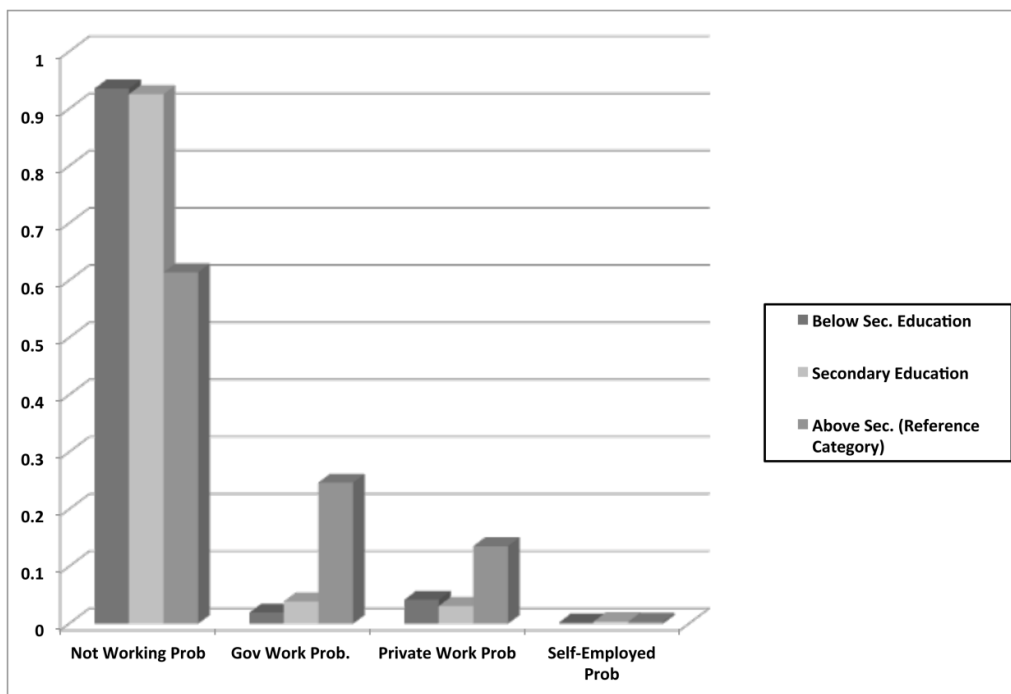
Source: Simulations based on Multinomial Logit model results using data from Jordan Labor Market Panel Survey 2010.

**Figure 13: Predicted Probability of Female Employment by Employment State and Marital Status**



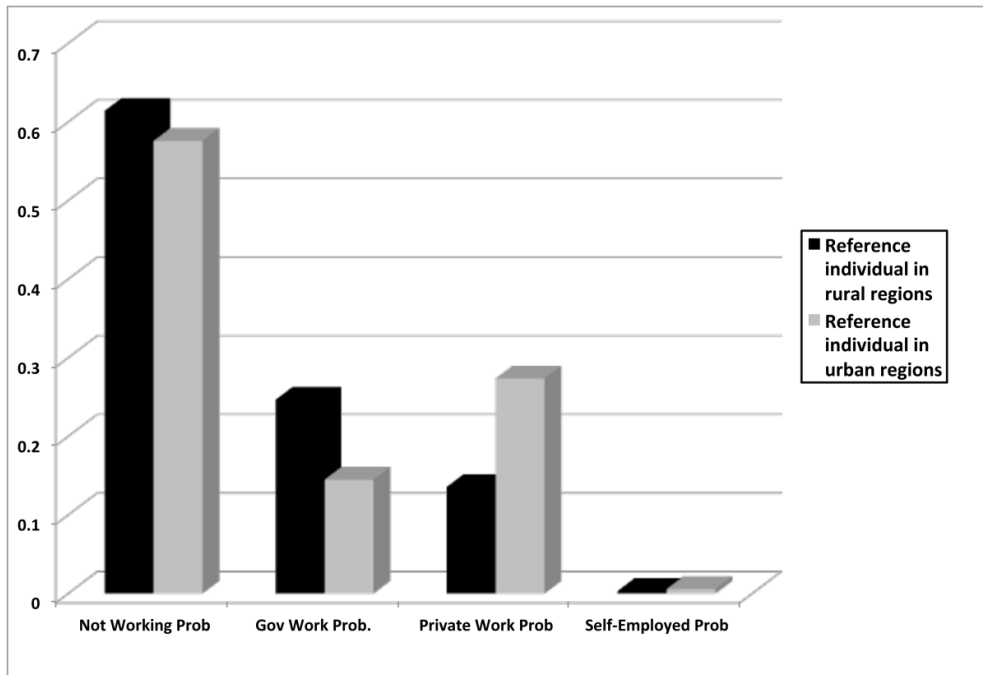
Source: Simulations based on Multinomial Logit model results using data from Jordan Labor Market Panel Survey 2010.

**Figure 14: Predicted Probability of Female Employment by Employment State and Level of Education**



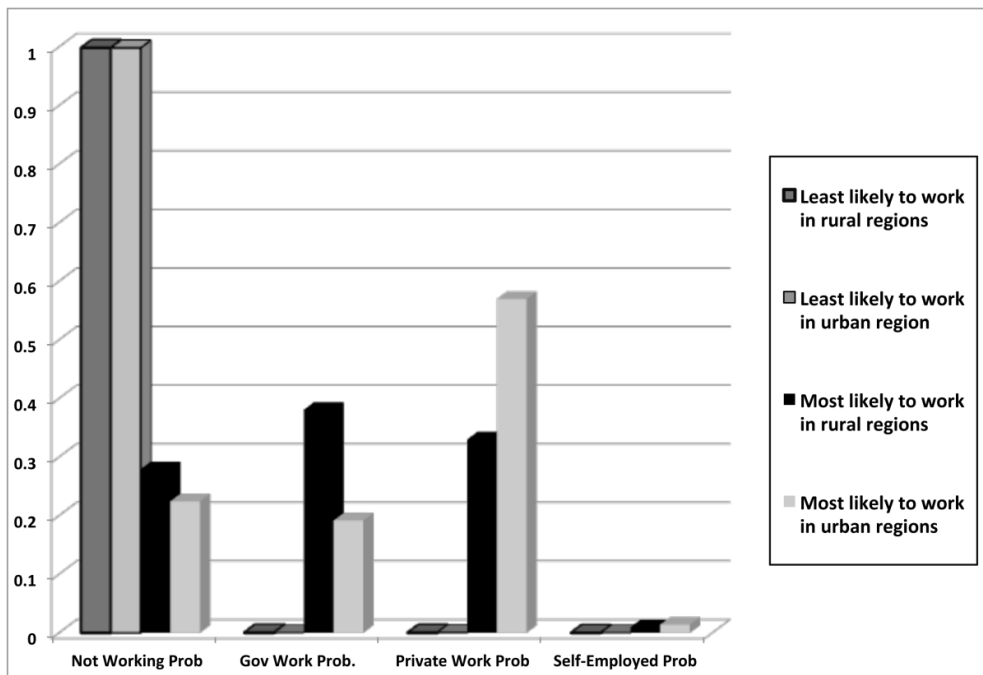
Source: Simulations based on Multinomial Logit model results using data from Jordan Labor Market Panel Survey 2010.

**Figure 15: Predicted Probability of Employment by Employment State and Urban/Rural Region for the Female Reference Individual**



Source: Simulations based on Multinomial Logit model results using data from Jordan Labor Market Panel Survey 2010.

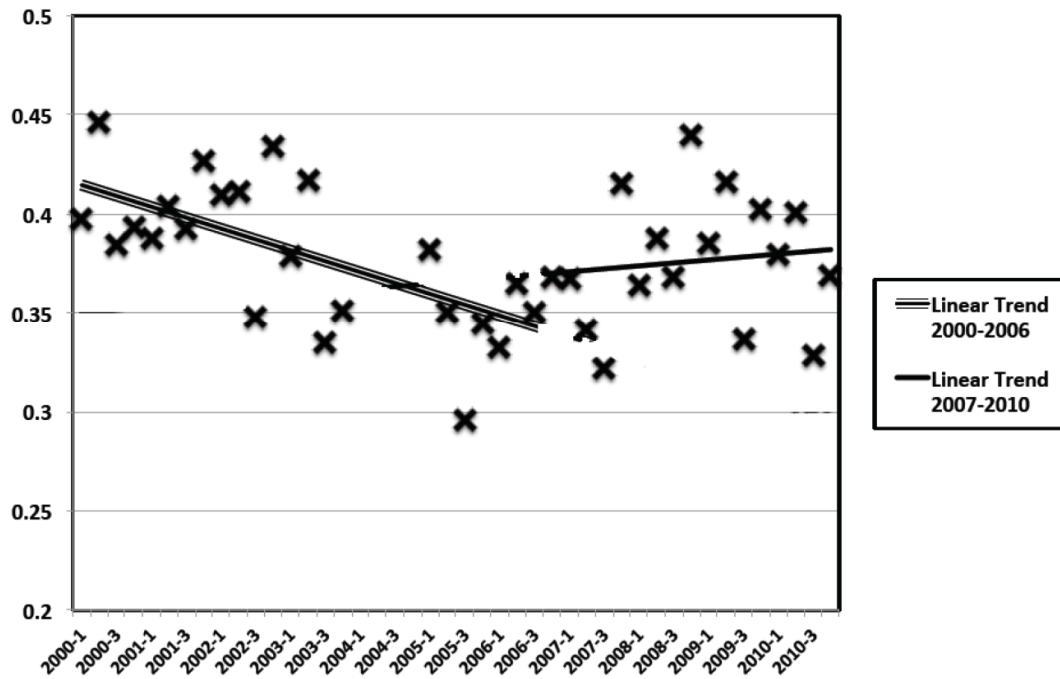
**Figure 16: Predicted Probability of Employment by Employment State and Urban/Rural Region for the Female Profile that is Least and Most Likely to Work**



Notes: (i) The profile that is least likely to work is an 18-year-old woman who is currently married, has below secondary education, has parents who have below secondary education, lives in a household that does not own or cultivate land, and has a husband who has a below secondary education and is an employer or self-employed. (ii) The profile that is most likely to work is a 30-year-old woman who was never married. Her parents have above secondary education and were both working when she was 15.

Source: Simulations based on Multinomial Logit model results using data from Jordan Labor Market Panel Survey 2010.

**Figure 17: Predicted Probability of Female Employment in Jordan for a Reference Woman by Quarter from First Quarter 2000 to Fourth quarter 2010**



Note: The reference woman is 32 years old, she has above secondary education, has never been married and lives in an urban area.  
 Source: DOS, Employment and Unemployment Survey (EUS).

**Table 1: Distribution of Female Working Age Population by Employment Status, Education and Marital Status, 2010, (%)**

	Below Secondary			Secondary and above			University and higher			Total		
	Never Mar.	Ever Mar.	Total	Never Mar.	Ever Mar.	Total	Never Mar.	Ever Mar.	Total	Never Mar.	Ever Mar.	Total
Gvt WW	11	29	21	28	49	40	35	71	57	27	55	43
Formal PRWW	36	12	23	38	27	32	51	20	33	43	20	30
Informal PRWW	38	32	35	28	8	17	10	6	8	23	12	17
Emp./Self-emp.	7	18	13	1	15	9	2	3	2	3	10	7
Unpaid workers	8	9	8	4	1	2	1	1	1	4	3	3
Total Emp.	100	100	100	100	100	100	100	100	100	100	100	100
Emp.	7	5	5	15	12	13	53	43	46	15	12	13
Unemp.	2	1	1	7	2	4	26	8	14	6	2	4
Out of labor force	92	95	94	78	85	82	21	50	40	78	86	83
Total	100	100	100	100	100	100	100	100	100	100	100	100

Source: Constructed by the authors using the JLMPS 2010.

**Table 2: Distribution of Male Working Age Population by Employment Status, Education and Marital Status, Jordan 2010, (%)**

	Below Secondary			Secondary and Intermediate			University and higher			Total		
	Never Mar.	Ever Mar.	Total	Never Mar.	Ever Mar.	Total	Never Mar.	Ever Mar.	Total	Never Mar.	Ever Mar.	Total
Gvt WW	30	27	28	37	34	35	38	42	41	33	31	32
Formal PRWW	14	16	15	22	20	21	38	28	32	21	20	20
Informal PRWW	47	30	36	35	19	24	14	10	11	38	23	28
Emp./Self-emp.	7	27	20	4	27	20	7	19	15	6	26	19
Unpaid workers	2	0	1	2	0	1	3	0	1	2	0	1
Total Emp.	100	100	100	100	100	100	100	100	100	100	100	100
Emp.	42	80	61	41	84	64	72	85	80	45	82	65
Unemp.	10	5	7	6	4	5	16	3	8	10	4	7
Out of labor force	48	15	32	53	13	31	12	12	12	45	14	29
Total	100	100	100	100	100	100	100	100	100	100	100	100

Source: Constructed by the authors using the JLMPS 2010.

**Table 3: Percentage of Females in Employment by Industry Group and Major Occupational Class, Jordan 2010, (%)**

	Managers & Professionals	White Collar & Services	Blue Collar	Total	Distribution of Female Emp. (column percent)
Agriculture, forestry, fishing, mining	--	--	22.3*	19.0*	4.5
Manufacturing	17.8	--	12.5	13.2	9.7
Utilities	--	11.7	0.0	4.4	0.3
Construction	--	--	0.0	2.0	0.7
Wholesale & retail trade	18.5	6.3	1.0	5.8	5.2
Transportation & storage	--	21.5*	0.0	3.7	1.7
Restaurants & hotels	--	5.5	5.8	5.0	0.7
Information, finance, etc.	23.2*	10.8	19.6*	16.3	7.9
Public admin & defense	24.4*	7.3	5.8	9.0	11.6
Education	59.8*	42.6*	27.0*	54.2*	38.5
Human health and social work	45.1*	57.8*	--	52.3*	12.6
Other	30.8*	33.2*	16.9*	28.2*	6.5
<b>Total</b>	<b>39.9</b>	<b>13.7*</b>	<b>8.1</b>	<b>17.0*</b>	<b>100</b>

Notes: \* represents cells that have more than 20 observations in the unexpanded sample and above average female percentages.

Source: Constructed by the authors using the JLMPS 2010.

**Table 4: Percent Female in Private Employment by Industry Group and Major Occupational Class, Jordan 2010, (%)**

Private Sector Only	Managers & Professionals	White Collar & Services	Blue Collar	Total	Distribution of Female Emp. (column percent)
Agriculture, forestry, fishing, mining	--	0.0	22.4*	19.1*	7.9
Manufacturing	17.0*	13.4	12.3	13.0	16.6
Utilities	--	7.7	0.0	3.3	0.3
Construction	--	11.5	0.0	1.6	1.0
Wholesale & retail trade	19.1*	6.1	0.8	5.6	8.8
Transportation & storage	--	7.4	0.0	0.8	0.5
Restaurants & hotels	--	5.5	5.8	5.0	1.3
Information, finance, Insurance	22.8*	9.4	21.0*	15.4	12.6
Public admin & defense	--	9.6	--	21.4*	2.0
Education	67.8*	61.7*	20.6*	62.8*	26.8
Human health & social work activities	53.0*	70.5*	27.8*	58.9*	10.7
Other	--	40.5*	--	33.3*	11.3
<b>Total</b>	<b>36.0*</b>	<b>14.0</b>	<b>7.8</b>	<b>14.7</b>	<b>100</b>

Notes: \* represents cells that have more than 20 observations in the unexpanded sample and above average female percentages.

Source: Constructed by the authors using the JLMPS 2010.

**Table 5: Results of the Probit Model of Labor Market Participation (population aged between 15 and 64 years old)**

	<b>dy/dx</b>	
<b>Reference: Not Working State</b>	<i>0.878</i>	
<i>Probability for the reference individual:</i>		
Age	0.062	***
	(0.003)	
Age Squared/100	-0.079	***
	(0.004)	
Currently Married	-0.030	**
	(0.014)	
Divorced/ Widowed	-0.009	
	(0.020)	
Below Secondary Education	-0.227	***
	(0.011)	
Secondary Education	-0.280	***
	(0.014)	
Female	-0.662	***
	(0.009)	
Urban Location	0.008	
	(0.006)	
Father's Education: Below Sec	0.015	
	(0.010)	
Father's Education: Secondary	0.006	
	(0.014)	
Mother's Education: Below Sec	-0.011	
	(0.012)	
Mother's Education: Secondary	0.016	
	(0.018)	
Mother Working when 15	0.028	**
	(0.014)	
Father Working when 15	-0.006	
	(0.010)	
HH Cultivates Land	0.01	
	(0.010)	
HH Owns but Does Not Cultivate Land	-0.011	
	(0.010)	
<b>Number of Observations</b>	<b>15170</b>	

Notes: i. Calculations are for a reference individual with means for the continuous variables and zeros for dummy variables. ii. Age and Age squared are continuous variables. iii. The reference for the educational level is the above secondary education. iv. Rural are the reference for regions. v. The reference level for parental level of education is the below secondary one. vi. The reference for the land-holding variable is "not having land".



**Table 6: Results of the Probit Model of Labor Market Participation by Gender**

	Females		Males	
	dy/dx		dy/dx	
<b>Reference: Not Working State</b>				
<i>Probability for the reference individual:</i>	0.469		0.670	
Age	0.094	***	0.110	***
	(0.006)		(0.004)	
Age Squared/100	-0.117	***	-0.147	***
	(0.007)		(0.005)	
Currently Married	-0.236	***	0.103	***
	(0.032)		(0.025)	
Divorced/ Widowed	-0.100	**	-0.107	
	(0.043)		(0.083)	
Educ. Below Secondary	-0.363	***	-0.109	***
	(0.020)		(0.019)	
Educ. Secondary	-0.347	***	-0.207	***
	(0.020)		(0.021)	
Urban Location	0.006		0.030	**
	(0.019)		(0.014)	
Father Educ. Below Sec	0.041		0.008	
	(0.031)		(0.028)	
Father Educ. Secondary	0.048		-0.022	
	(0.041)		(0.041)	
Mother Educ. Below Sec	-0.083	**	0.057	**
	(0.036)		(0.024)	
Mother Educ. Secondary	-0.019		0.068	
	(0.053)		(0.053)	
Mother Working when 15	0.075	*	0.048	
	(0.042)		(0.050)	
Father Working when 15	-0.025		0.003	
	(0.031)		(0.025)	
HH Cultivates Land	0.017		0.032	
	(0.033)		(0.023)	
HH Owns but Does not Cultivate Land	-0.005		-0.009	
	(0.030)		(0.021)	
Husband Below Sec.	-0.038			
	(0.026)			
Husband Sec	-0.042			
	(0.032)			
Husband Working in Government	0.137	***		
	(0.024)			
Husband Employer/ Self-Empl.	-0.069	**		
	(0.032)			
<b>Number of Observations</b>	<b>7636</b>		<b>7534</b>	

Notes: i. Calculations are for a reference individual with means for the continuous variables and zeros for dummy variables. ii. Age and Age squared are continuous variables. iii. The reference for the educational level is the above secondary education. iv. Rural are the reference for Regions. v. The reference level for parental level of education is the below secondary one. vi. The reference for the Land holding variable is "Not having land".

**Table 7: Results of the Multinomial Logit Model for Females**

	Not Working dy/dx	Government/ Public Wage Work dy/dx	Private Wage Work dy/dx	Employers/ Self Emp./ Unpaid Work dy/dx
<b>Reference individual</b>	<b>0.609</b>	<b>0.247</b>	<b>0.136</b>	<b>0.009</b>
Age	-0.136*** (0.009)	0.093*** (0.011)	0.041*** (0.007)	0.001 (0.001)
Age Squared	0.178*** (0.012)	-0.122*** (0.014)	-0.055*** (0.009)	-0.001 (0.001)
Currently Married (d)	0.211*** (0.036)	-0.100*** (0.034)	-0.107*** (0.018)	-0.004 (0.003)
Divorced/Widowed (d)	0.028 (0.057)	0.027 (0.058)	-0.052** (0.023)	-0.003 (0.003)
Educ. Below Secondary (d)	0.321*** (0.026)	-0.227*** (0.027)	-0.094*** (0.017)	-0.001 (0.002)
Educ. Secondary (d)	0.311*** (0.026)	-0.208*** (0.025)	-0.104*** (0.018)	0.002 (0.003)
Urban Location (d)	-0.037 (0.026)	-0.102*** (0.021)	0.138*** (0.023)	0.002 (0.002)
Father Educ. Below Secondary (d)	-0.026 (0.035)	0.007 (0.033)	0.016 (0.026)	0.002 (0.005)
Father Educ. Secondary (d)	-0.035 (0.047)	0.016 (0.044)	0.019 (0.036)	0.001 (0.006)
Mother Educ. Below Sec (d)	0.069* (0.042)	-0.019 (0.041)	-0.049** (0.019)	-0.002 (0.003)
Mother Educ. Secondary (d)	0.022 (0.058)	-0.035 (0.052)	0.011 (0.040)	0.002 (0.007)
Mother working when 15 (d)	-0.064 (0.051)	-0.032 (0.046)	0.090* (0.047)	0.007 (0.007)
Father working when 15 (d)	0.014 (0.036)	-0.005 (0.035)	-0.01 (0.023)	0.001 (0.004)
HH Cultivates Land (d)	0.016 (0.040)	0.016 (0.039)	-0.046* (0.024)	0.013* (0.007)
HH Owns but does not Cultivate Land (d)	-0.012 (0.035)	0.031 (0.034)	-0.017 (0.022)	-0.002 (0.003)
Husband Below Sec.	0.043 (0.030)	-0.039 (0.026)	-0.004 (0.026)	0 (0.002)
Husband Sec	0.028 (0.038)	-0.038 (0.030)	0.012 (0.035)	-0.002 (0.003)
Husband Working in Government	-0.160*** (0.032)	0.185*** (0.036)	-0.028 (0.021)	0.003 (0.004)
Husband Employer/ Self-Empl.	0.115*** (0.037)	-0.062* (0.034)	-0.064*** (0.024)	0.011 (0.007)
<b>Number of Observations</b>	<b>7591</b>	<b>7591</b>	<b>7591</b>	<b>7591</b>

Notes: i.\*\*\* p<0.01, \*\* p<0.05, \* p<0.1. ii. Calculations are for a reference individual with means for the continuous variables and zeros for dummy variables. iii. Age and Age squared are continuous variables. iv. The reference for the educational level is the above secondary education. v. Rural Locations are the reference for Regions. vi. The reference for the Land holding variable is "Not having land".

**Table 8: Results of the Multinomial Logit Model for Males**

	<b>Not Working dy/dx</b>	<b>Government/ Public Wage Work dy/dx</b>	<b>Private Wage Work dy/dx</b>	<b>Employers/ Self Emp/ Unpaid Work dy/dx</b>
<b>Reference individual</b>	<b>0.324</b>	<b>0.466</b>	<b>0.167</b>	<b>0.043</b>
Age	-0.127*** (0.006)	0.102*** (0.006)	0.018*** (0.004)	0.008*** (0.002)
Age Squared	0.175*** (0.008)	-0.145*** (0.008)	-0.024*** (0.005)	-0.007*** (0.002)
Currently Married (d)	-0.124*** (0.026)	0.115*** (0.032)	-0.029* (0.016)	0.038*** (0.014)
Divorced/Widowed (d)	0.099 (0.100)	-0.001 (0.102)	-0.098*** (0.030)	0.001 (0.022)
Educ. Below Secondary (d)	0.144*** (0.022)	-0.196*** (0.019)	0.030** (0.012)	0.022*** (0.005)
Educ. Secondary (d)	0.247*** (0.024)	-0.206*** (0.021)	-0.051*** (0.012)	0.010* (0.006)
Urban Location (d)	-0.007 (0.016)	-0.181*** (0.016)	0.165*** (0.013)	0.022*** (0.005)
Father Educ. Below Secondary (d)	-0.016 (0.030)	0.022 (0.032)	0.001 (0.017)	-0.007 (0.006)
Father Educ. Secondary (d)	0.041 (0.047)	-0.05 (0.045)	0.003 (0.024)	0.006 (0.011)
Mother Educ. Below Sec (d)	-0.066** (0.026)	0.049 (0.030)	0.027 (0.018)	-0.010* (0.005)
Mother Educ. Secondary (d)	-0.078 (0.057)	0.06 (0.061)	0.003 (0.033)	0.015 (0.016)
Mother Working when 15 (d)	-0.027 (0.060)	-0.039 (0.058)	0.046 (0.035)	0.02 (0.014)
Father Working when 15 (d)	0.017 (0.029)	-0.045 (0.029)	0.028 (0.018)	0 (0.006)
HH Cultivates Land (d)	-0.062*** (0.024)	0.134*** (0.027)	-0.092*** (0.014)	0.020** (0.008)
HH Owns but does not Cultivate Land (d)	-0.033 (0.023)	0.122*** (0.025)	-0.087*** (0.012)	-0.002 (0.006)
<b>Number of Observations</b>	<b>7419</b>	<b>7419</b>	<b>7419</b>	<b>7419</b>

Notes: i.\*\*\* p<0.01, \*\* p<0.05, \* p<0.1. ii. Calculations are for a reference individual with means for the continuous variables and zeros for dummy variables. iii. Age and Age squared are continuous variables. iv. The reference for the educational level is the above secondary education. v. Rural Locations are the reference for Regions. vi. The reference for the Land holding variable is "Not having land".