Youth Transitions to Employment and Marriage in Iran:

Evidence from the School to Work Transition Survey

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MIDDLE EAST YOUTH INITIATIVE WORKING PAPER

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CONTENTS

LIST OF TABLES

LIST OF FIGURES

YOUTH TRANSITIONS TO EMPLOYMENT AND MARRIAGE IN IRAN

ABSTRACT

Iran's young men and women face serious challenges in their transitions to employment and marriage. We study the factors that affect these transitions using the 2005 School to Work Transition Survey (SWTS). As this survey contains detailed retrospective data of education, employment, and marital outcomes for youth ages 15-29, it provides a new and valuable tool for exploring the challenges facing these youth. In our analysis of the transition to employment, which employs discrete-time hazard models and probit models of women's desired and actual labor force participation, we find that (1) the duration of unemployment increases secularly with men's but not women's education, (2) parental background significantly affects men but not women, and (3) labor force participation of a mother is the strongest predictor of a daughter's labor force participation. For the transition to marriage, we find that job stability is the most important determinant of the age of marriage, as both years of employment and high quality employment contracts accelerate the marriage transition. Among women we find that the transition to marriage is delayed significantly by both work experience and increased education. We discuss the relevance of these findings in designing policies to help these youth in their transitions.

1. INTRODUCTION[1]

Iranian youth, like many youth of the Middle East, face myriad challenges in their transitions from education to employment and to marriage. Unfulfilled educational expectations, high rates of youth unemployment, and a rapidly rising age of first marriage are indicative of the difficulties encountered by these young men and women along their journey to adulthood. While many policies are currently being proposed and implemented in Iran to help mediate these challenges, there is little research to help guide policy. This paper is an empirical study of the factors that affect these transitions and aims to provide insights that can help design effective policies for youth.

Though challenges during the transition to adulthood are not unique to Iran, three factors make the transitions in Iran particularly difficult. First, as a result of a rise in fertility in the late 1970s, today's cohort of youth is the largest in Iranian history, with men and women ages 15-29 accounting for 35 percent of the total population, putting great stress on Iran's educational system and labor market. Second, a history of public sector domination and a strong bias in favor of older workers has restricted the ability of the labor market to absorb new entrants. Finally, social norms regarding marriage are also a source of involuntary delay in marriage, because they define a good prospect for a husband

as a man with a secure job who is several years older than his wife. They thus raise the expectations for a suitable groom to above what the labor market can offer the majority of young men, and cause an imbalance in the marriage market in terms of the number of marriage-age men and women (Torabi and Baschieri 2010).

Exploring these transitions requires data that describe the activities and choices of youth through their formative years. This paper draws on the 2005 Iranian School to Work Transition Survey (SWTS) which was designed specifically to study youth transitions to and through employment. In particular, we are able to create life histories of all the youth sampled in the SWTS using the detailed retrospective information that was collected on educational achievement, work histories, and the timing of marriage.[2] This allows us to analyze the interactions of transitions to employment and marriage in a way that was previously not possible.[3] We use these life histories to study the impact of educational outcomes and other factors on duration of employment and job search and how these in turn affect the transition to marriage. We are also able to match these life histories to youth attitudes toward employment which help us explore a variety of important issues affecting the transition to work (e.g., reservation wage, attitudes toward public/private/self employment). To the best of our knowledge, we are the first to study youth transitions in Iran in this fashion.

The analysis is divided into two parts with the first focusing on the transition from education to employment and the second on the transition to marriage. We begin by examining the general external validity of these data by comparing them to results we obtained previously with other, more expansive surveys conducted in Iran (Salehi-Isfahani and Egel 2007). We then exploit the data to look at the dynamics of employment as well as the factors that affect these dynamics. Our findings with respect to the school-to-work transition can be summarized as follows:

- First, we find that education is not the sure path to secure employment that it once was. This result is similar to what has been observed elsewhere in the Middle East.[4]

- Second, we find that there is a significant degree of job mobility for young workers, which is at odds with the prevailing notion of inflexible youth labor markets. Individuals seem to switch frequently between the formal and the informal sectors, suggesting that formal jobs do not provide the type of job security that we usually associate with a rigid labor market such as Iran's. This mobility between the formal sector – which is dominated by public sector jobs – and informal jobs is driven by the growing importance of short-term contracts noted above.

- Third, we find some evidence that among the men in our sample a high reservation wage may be responsible for delayed transition from school to work; there is no evidence of this in the case of women. For men we find weak evidence of a secular negative relationship between father's education and the duration of unemployment (i.e., men with more educated fathers remain unemployed for longer durations). This result is consistent with the result found by Assaad et al. (2010) for Egypt. Though we do not observe a significant relationship between family background and women's likelihood of participating in the labor market, duration of unemployment, or stated desire to participate in the labor market, we do find that mother's labor force activity has a strong impact on the likelihood that a young woman will work. This suggests that role models and not familial income are the driving force behind women's desire to work, which is significantly different from the standard reservation wage story of low female labor force participation in the Middle East expressed by Ross (2008) and others.

The second part of our analysis examines the factors affecting youth transitions to marriage, taking into account the school-to-work transition. The age at first

marriage has been rising rapidly in Iran, as it has in most Middle Eastern countries (Salehi-Isfahani and Egel 2007, Salehi-Isfahani 2008, Dhillon and Yousef 2009, Salehi-Isfahani and Egel 2009), with Egypt as a notable exception for having reversed this trend in recent years (Assaad et al. 2010). In many cases, this rising age at first marriage may be voluntary as youth delay marriage in order to continue their education, to have an opportunity to work outside the home, or because they decide to have smaller families (all characteristics associated with social modernization). However, in Iran, where sexual relations outside of marriage are socially and legally forbidden, there is a greater likelihood that, beyond a certain point, delayed marriage is not voluntary and therefore becomes socially exclusionary.

In order to explore this issue, and to identify whether youth are voluntarily or involuntarily delaying marriage, we examine the role of education, employment, and family background on the timing of marriage using a hazard model that allows the analysis of the role of a variety of time varying characteristics on the timing of marriage. We find that, as expected, employment plays an important role in the timing of marriage. For men we find that both the time spent in employment as well as the duration of their job contract has a positive influence on the probability of getting married, demonstrating the value of job stability in making this transition. In contrast, our evidence suggests that women defer marriage in order to pursue careers. Unsurprisingly, education seems to have the same effect on men and women: to delay marriage . Interestingly, we find little evidence that family background (father's education) affects the timing of marriage, which suggests that the cost of marriage may not be exogenous or uniform across different social classes of youth. Instead, the cost of marriage may be an increasing function of the socioeconomic background of the parents of the youth.

In the following section, we summarize existing work on youth transitions in Iran. In Section 3 we describe the SWTS survey that we use in this study. Sections 4 and 5 describe our analysis of the transitions from school to work and marriage, respectively. Section 6 concludes and discusses some possible avenues for further research.

2. BACKGROUND

The challenges facing Iranian youth today are often discussed in the media of both Iran and the West.[5] And the angst of these youth was highlighted by the important role that they played in the political events of the summer of 2009 when the streets filled with youthful protesters. However, despite the clear importance of understanding the challenges that Iranian youth face in starting a career and family formation, there are relatively few studies that try to systematically document their transitions from school to work and to marriage.

Our past work was, to our knowledge, the first to empirically study the conditions that Iranian youth face in education, employment, and marriage (Salehi-Isfahani and Egel 2007 and Salehi-Isfahani and Egel 2009).[6] This research focused largely on understanding the implications of the dramatic baby boom of the revolution years (1978-1983) on the education system and the labor and marriage markets.[7] In particular, this research tried to understand how Iran's youth bulge (at 35 percent, the proportion of youth aged 15-29 in the population is the highest in the Middle East and perhaps in the world) affected these critical transitions to adulthood.

Our earlier research drew on cross-sectional data to provide several key insights into the challenges that these youth face. First, it highlighted the stress that the youth bulge caused in terms of overcrowding of schools and increased competition for the limited number of available positions in universities. Even those who did secure a position in a good university (about 20 percent of applicants) often graduated to begin a long wait for a job that suited their education. Unemployment of the educated youth was the second focus of our earlier research. Iran, which invested heavily to educate its youth in the last two decades, is

now finding it difficult to absorb them into the labor market. This difficulty has led to steadily increasing youth unemployment rates which now exceed 25 percent. About 70 percent of all unemployed persons in Iran are under age 30. Figure 1, based on the most recent 2006 census data, shows the extreme age dependence of unemployment in Iran. The unemployment rate of older workers was then about 5 percent, which is low by developing country standards, while it exceeded 20 percent for youth.

The third focus of this work was to explore the factors behind the rising age at marriage. In addition to rising cost of marriage and shortage of housing, the analysis identified "marriage squeeze," created by the youth bulge, as a main reason for marriage delay in Iran. As the customary age difference between men and women at the time of marriage is around 5-10 years, one important implication of the youth bulge was that the women of the baby boom would reach marriageable age several years before the corresponding large cohorts of men. As a result, the number of marriage-age women exceeds the number of marriage-age men. Figure 2 depicts this situation for Iran using the number of women aged 20-24 and men aged 25-29 as well as the ratio of men to women over time. As this figure shows, in recent years Iran

has experienced an excess of men over women in these age groups of about 25 percent. Significantly, this situation will disappear in the next few years and will actually reverse itself in the next ten years.

While our earlier study provided a good snapshot of youth conditions in Iran in terms of schooling, employment, and marital status, the cross-sectional data did not allow us to follow individuals over time. We could observe that youth were experiencing high rates and long periods of unemployment and increasingly delaying marriage, but without longitudinal data we could not accurately link individuals to the transitions that led to these outcomes.

3. DATA

In 2005, the International Labor Organization (ILO) and the Iranian Statistical Research and Training Center collaborated to produce the School-to-Work Transition Survey (SWTS). The SWTS in Iran is part of a global effort by the ILO to study the transition from school to work in developing countries.[8] In particular, the goal of this global project was to assist countries in designing youth employment programs and policies.

Figure 1: Unemployment by Age, 2006
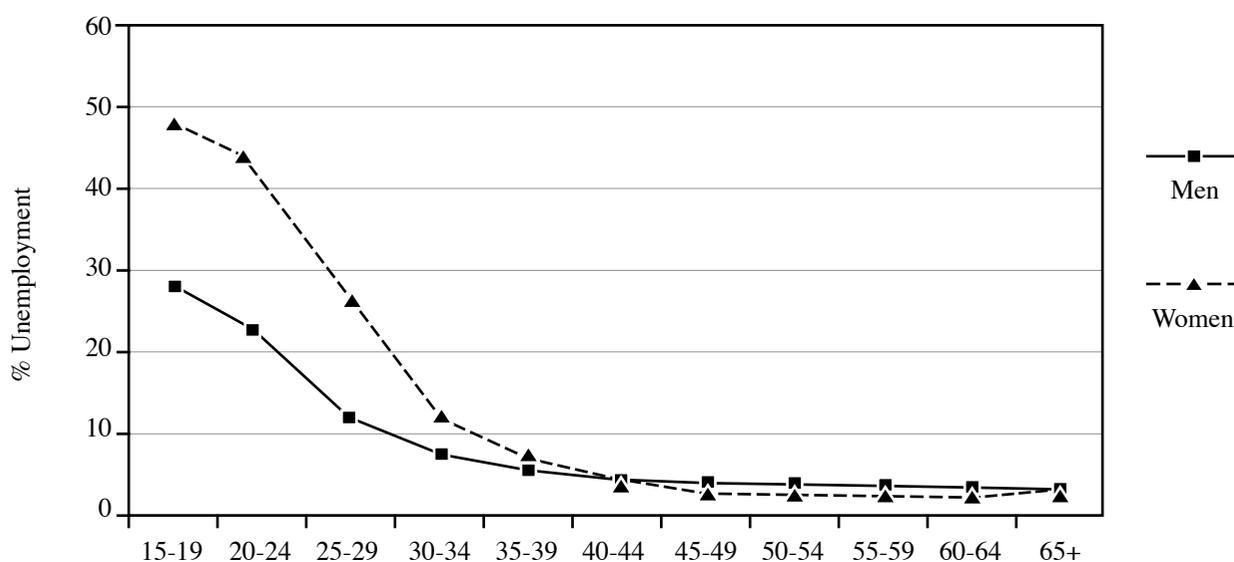
Source: Statistical Center of Iran, National Census of Population 2006

Figure 2: Marriage Squeeze: Marriage-age Women Outnumber Marriage-age Men
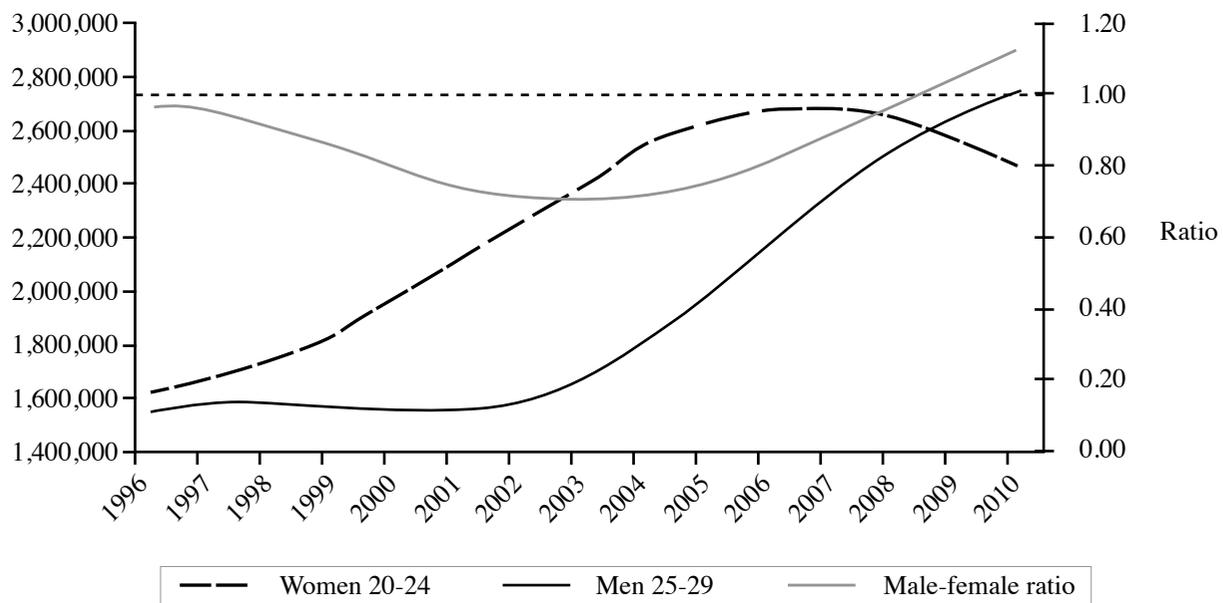
Source: Author's calculations, HEIS data files.

Iranian youth (ages 15-29) from three provinces were surveyed as a part of this study. While the three provinces that were selected, East Azerbaijan, Lorestan and Tehran, are all located in the northwest of the country, they are economically very different. They represent substantially different levels of urbanization as Lorestan is only 58% urban, East Azerbaijan is 67% urban, and Tehran is nearly 86% urban, while the national average is 67%. The average years of education in East Azerbaijan, at 4.5 years, is the lowest of the three provinces and significantly below the national average of 5.6 years. The average years of education in Lorestan and Tehran are 6 and 7 years respectively. Also, average per capita expenditure in Tehran is nearly double that of East Azerbaijan and Lorestan, where it is nearly the same.

Figure 3: Unemployment in the Provinces of the SWTS
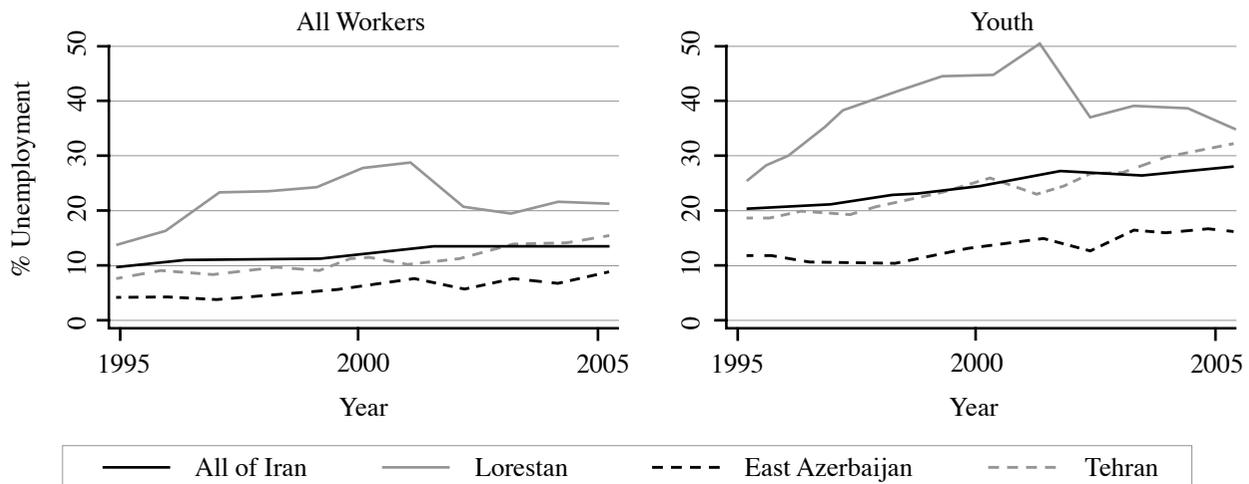
Source: Authors' calculations

Table 1: Summary Statistics for SWTS Data [percent]

	All	Men	Women
Age[1]	21.2 (4.1)	21.1 (4.2)	21.4 (4.1)
Still In School	37.1	37.0	37.0
Last Level of Education:[2]			
Primary	14.3	11.9	16.7
Lower Secondary	23.9	28.4	19.4
High School	51.6	49.8	53.5
University	9.1	9.5	8.6
Father's Education:[3]			
Illiterate	29.3	28.1	30.5
Primary	34.7	34.5	34.9
Lower Secondary	14.1	15.0	13.2
High School	12.7	13.3	12.1
University	8.4	8.5	8.2
Engaged[4]	2.7	2.7	2.8
Married	24.8	15.8	33.4
N	3245	1588	1657

1: Standard errors in parentheses.

2: These do not sum to 100 as there is an `other' category for education which likely indicates religious or similar training.

3: We will use this as a proxy for family background. Also see note 2.

4: For the analysis in this paper we will consider `engaged' individuals as not married since we have no idea how long they have been engaged and whether they will get married.

These provinces were actually selected to provide a diverse sample of youth unemployment. In 2003 Lorestan had the highest youth unemployment rate, East Azerbaijan the lowest, and Tehran was about average. In Figure 3 we can see that unemployment rates over the past decade among youth, and among the whole population, have been high in Lorestan, about average in Tehran, and quite low in East Azerbaijan.

Sampling for the SWTS was done in two stages, and stratified according to rural and urban divisions in each province to yield a total of six strata. After the total number of households to be surveyed in each stratum was determined, in stage one the requisite number of clusters was randomly picked. In stage two, 25 households were randomly picked for each of the selected clusters. Household-level information is collected from the household head, and youth questionnaires are completed by all youth aged 15-29 (Statistical Center of Iran 2006). In Table 1 we provide

summary statistics for some key demographic and socioeconomic variables of the 3,245 Iranian youth included in these data.

For 2,056 of these youth (63 percent) who are not in school we also have retrospective data on their activities since they left school. These retrospective data, which we employ extensively, allow us to analyze how these youth transition from unemployment to employment and between different types of jobs. Additionally we are able to measure the duration of each of these unemployment or employment spells and analyze the impact that the transition to work has on the transition to marriage.

4. WORK TRANSITIONS

Despite the economic expansion of the last decade and the low rate of unemployment of adult workers, young Iranians continue to face great difficulty in

finding employment once they leave school. This phenomenon is demonstrated in Figure 1 by the very high unemployment rates among those under age thirty: more than one in five young men and one in three young women are unemployed. Restrictive labor laws in Iran reduce the rate of turnover in the labor market, forcing many new entrants to wait several years before finding regular work.

The high unemployment rates found in nationally representative cross-sectional data are also found in the retrospective panel data that we use for this analysis. This is demonstrated in Figure 4 where we compare the self-reported retrospective unemployment rates for young men in the SWTS, the focus of our analysis, and the comparable youth from the same three provinces in the much larger Iranian Household Expenditure and Income Surveys (HEIS) from 2001 to 2005.[9] This figure also demonstrates that unemployment is particularly high among the most educated, one of the central characteristics of the situation facing young Iranian men.[10] This negative relationship between schooling and unemployment is demonstrated in both sets of data with the strongest contrast demonstrated by the difference between those with only primary education and secondary

school graduates as the unemployment rate is roughly twice as high among the latter group.

An important difference between the unemployment rates reported by census and survey data and the SWTS is that even though we adopt a broader definition of unemployment in the latter (we define all youth who are not actively studying or engaged in home duties as 'jobless' and treat them as unemployed in constructing this figure), the unemployment rate is significantly lower in SWTS data. This apparent downward bias in the SWTS unemployment rate is likely caused by a different definition of unemployment: While the census and HEIS use a standard question concerning activity during the previous week before the survey, the SWTS is retrospective and looks at activity over longer periods of time.[11] Though the ordering of employment by education level is roughly comparable between the two data sets suggesting that the SWTS is representative of Iranian youth, all of the results presented here should be treated as lower bounds of the difficult labor market that these youth face.

In this section we exploit the retrospective data available in the SWTS to look at four questions about the transition to work. First, we look at the

Figure 4: Male Youth Unemployment Rates in Two Surveys[1]
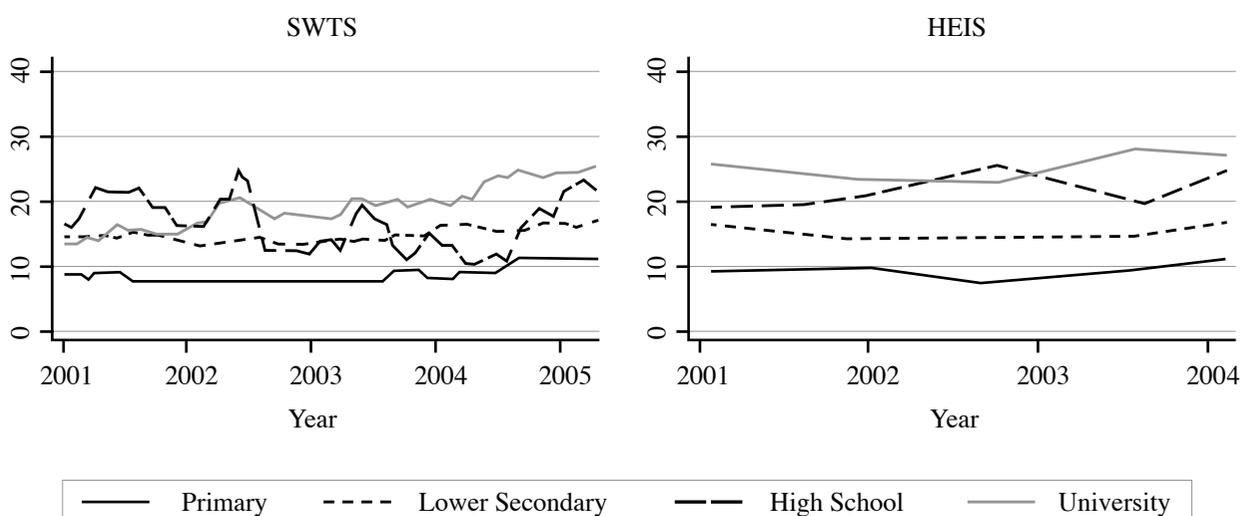
1: Both figures include only men ages 15-29. See text for a discussion of the choice to focus only on men.

activities of youth after they leave school and explore the variety of factors that affect their employment prospects immediately after school.

Second, as a large number of youth are unemployed, or jobless, at the time they leave school, we look at the factors that affect the duration of their unemployment. Third, we address the question of the reservation wage and the possible influence that it has on the labor market outcomes of youth. Finally, we explore the oft-mentioned labor market inflexibility by looking at the degree of job mobility and stability that youth experience during their early years in the labor market.

4.1 TRANSITION FROM EDUCATION

We explore the activities of youth after school in two ways. We begin with a descriptive analysis

of the transition from education and examine the activities of men and women during the first four years after they leave school. We then use a probit model to examine the family and personal characteristics that affect the ability of a youth to transition directly from education to employment, the most important transition for many of these youth.

For our descriptive analysis we aggregate the activities of youth into four categories: The first category is employed and includes all those who select "work" as a primary activity. The second, which we will refer to as both unemployed or jobless (though jobless is probably more accurate) are people who are either "available and actively looking for work" or engaged in "rest and recreation."[12] The third, test preparation, are students preparing for an exam, such as the national entrance examinations for

Figure 5: Activities of Men after Leaving School
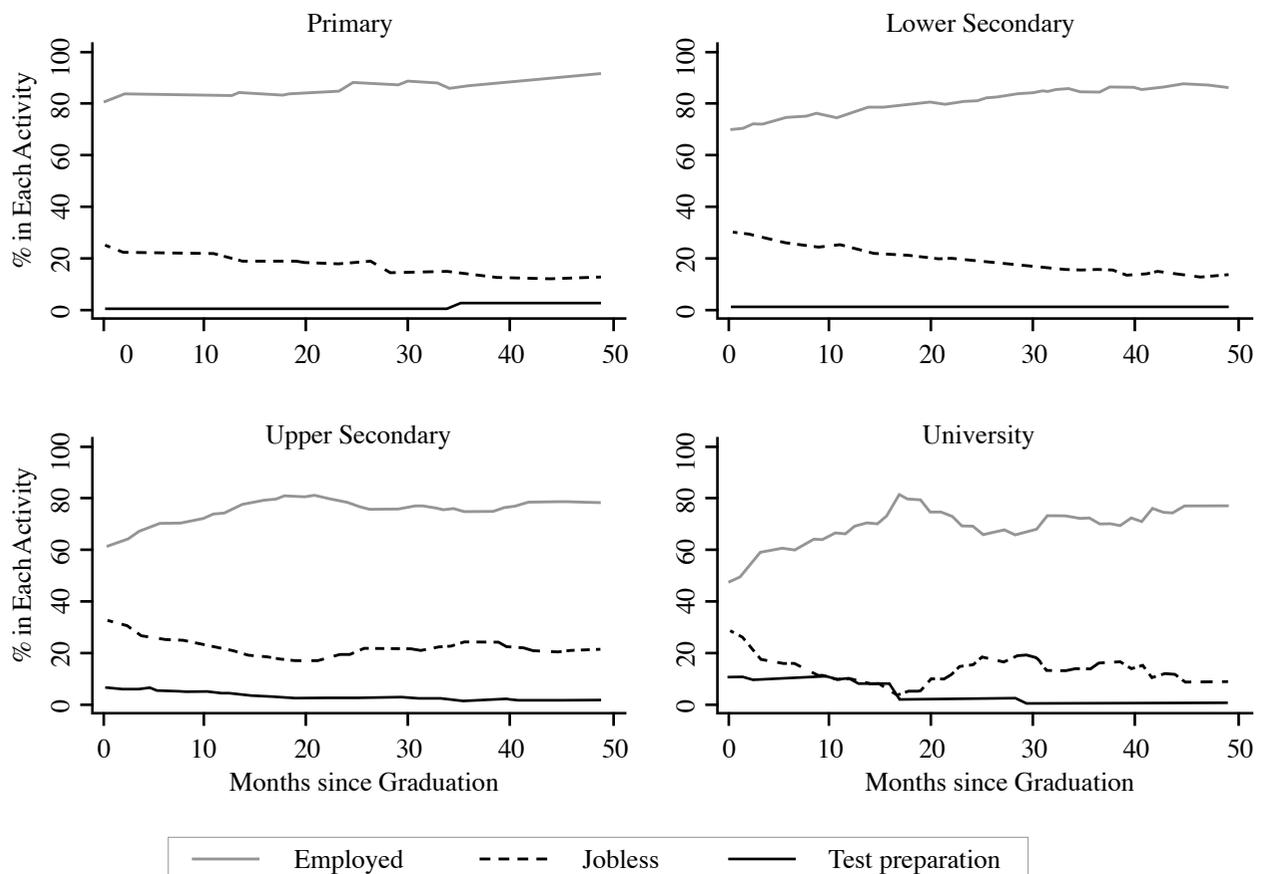
Figure 6: Activities of Women after Leaving School
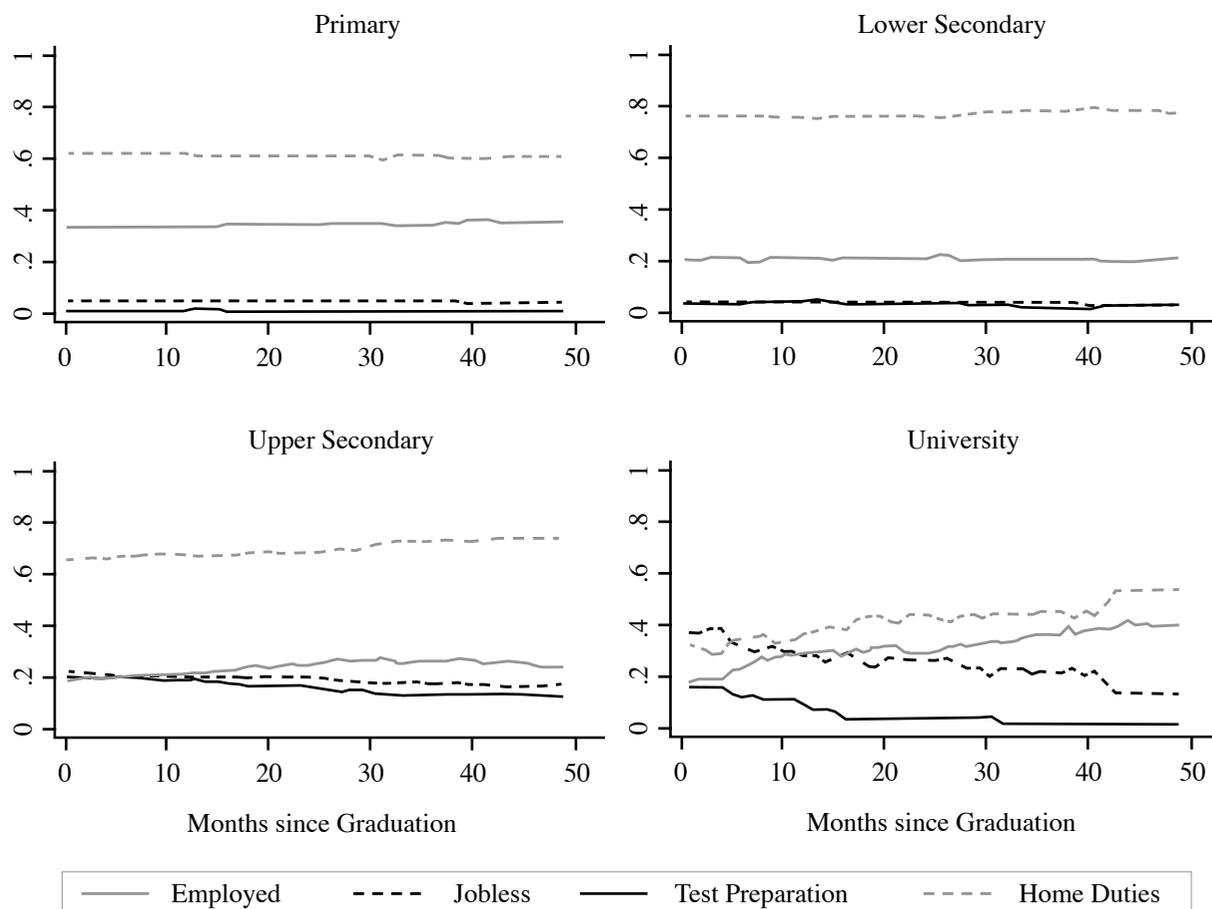
Iranian universities (concour) or various tests needed to enter graduate schools abroad. The final category is home duties, which is almost entirely women as only 0.4% of men report this activity, and includes many women who are likely active participants in the labor force as discussed above.

Figures 5 and 6 provide a longitudinal perspective on the experience of men and women after they leave school by looking at the activities of these youth during the first four years after they leave school. An important result demonstrated here is that the unemployment rate for men immediately after school is highest among the most educated. While more than 80 percent of men with only primary schooling begin work immediately, the unemployment rate among lower secondary school graduates is 30 percent and

around 40 percent among high school and university graduates. Employment rates among these more educated groups do not reach 80 percent until over a year after graduation.

While there is a secular relationship between education and unemployment among young men, the relationship between education and both the labor market participation rate and the unemployment rate is nonlinear among women. In particular, as demonstrated in Figure 6, the employment rates and the labor force participation rate (the aggregate of the employed and jobless) are highest among the least and the most educated women. The high labor force participation rate among these two groups of women indicates very different things. The high and steady 40 percent employment of women with

Table 2: Probit Estimates for Post-School Joblessness

	Men			Women		
	(1)	(2)	(3)	(4)	(5)	(6)
Cohort Effects						
Born 1979 or earlier	-0.16*	-0.16	-0.19*	0.18	0.20	0.11
	(0.09)	(0.10)	(0.10)	(0.16)	(0.17)	(0.17)
Own Educational Attainment (reference: primary)						
Lower Secondary	0.43***	0.34**	0.22	0.23	0.23	0.12
	(0.15)	(0.16)	(0.16)	(0.24)	(0.25)	(0.26)
Secondary	0.66***	0.49***	0.36**	1.17***	1.08***	0.55**
	(0.14)	(0.15)	(0.16)	(0.20)	(0.21)	(0.24)
Tertiary	0.88***	0.60***	0.49**	1.35***	1.06***	0.52
	(0.19)	(0.21)	(0.21)	(0.25)	(0.28)	(0.32)
Parents Educational Attainment (reference: illiterate)						
Father: Primary		0.33***	0.28***		0.29	0.15
		(0.10)	(0.11)		(0.18)	(0.19)
Father: Lower Secondary		0.37***	0.28**		0.53**	0.19
		(0.14)	(0.14)		(0.25)	(0.28)
Father: Secondary		0.54***	0.44***		0.47	0.25
		(0.16)	(0.16)		(0.31)	(0.33)
Father: Tertiary		0.56***	0.45**		0.52	0.04
		(0.21)	(0.22)		(0.42)	(0.44)
Location						
Urban			0.15			0.52***
			(0.10)			(0.20)
Lorestan			0.54***			0.55**
			(0.13)			(0.22)
Tehran			0.63***			0.78***
			(0.11)			(0.22)
N=	979	966	966	324	312	312

*Notes: Probit estimates for women include only women who enter the labor force at some point in the sample. * significant at 10%; ** significant at 5%; *** significant at 1%.*

primary education likely indicates women from poor backgrounds whose income is needed by the family. Conversely, the relatively high rate among the university educated women reflects the ambition and drive of these women. That we only see rising rates of employment over time among the most educated, especially for the university educated, indicates that these women are queuing for more preferred jobs while the lower educated women are working out of necessity.[13]

In Table 2 we use a probit model to look at the factors affecting the probability of being jobless immediately after school. The dependent variable in this analysis is a binary variable equal to zero if the individual is working after school and one if the individual is considered jobless according to our definition above. While we do include women in this analysis, the point estimates from this probit are only applicable to those women who report being in the labor market, either employed or looking for work, at some point after

the completion of their education. This is a biased subset of the working female population as there is undercounting of female labor in Iran and many of the women who report home duties are probably active in the labor market (Moghadam 2009).

The first section of this table examines whether post-education employment has changed in more recent years by comparing those individuals born in 1979 and earlier to those born in later years. Interestingly, we find that individuals born in the early cohort seemed to be somewhat less likely to have been unemployed at the time of their graduation. This result is consistent with the tightening of the labor market that accompanied the entrance of the youth bulge into the labor market.

The second set of rows examines the impact of an individual's level of education on the probability of joblessness after school. For the men, we find evidence that those with both secondary and university educations are significantly more likely to be jobless at the time of graduation than the less educated, which is broadly consistent with the result we observed above. That the point estimate for men with university education is larger than those with secondary education suggests that this phenomenon is perhaps more severe among the most highly educated, though the point estimates are not significantly different. While we find a similar relationship between education and joblessness for women, this result is not robust to controlling for location effects. This is demonstrated by the difference between columns 5 and 6 for women (the implications of this are discussed below).

The third factor that we study is the relationship between parental education and post-school joblessness. This analysis demonstrates three key results. First, young men with illiterate fathers are much more likely to be employed at the time they leave school. Second, there seems to be a secular relationship between parent educational background and the probability of joblessness immediately after school among these young men, though again the

difference between parental education levels is not significant. Third, there is no relationship between parental background and female joblessness post-education.

Finally we study the impact of locational factors on joblessness. Most importantly, in all specifications we see that even after controlling for the province, living in an urban environment increases the probability that an individual is jobless at the time of graduation. For women, location is the strongest predictor of joblessness. This effect may describe a familiar phenomenon in rural Iran, where women are more likely to work in the home and will not enter the formal labor market unless they already have a position arranged.

4.2 DURATION ANALYSIS OF TRANSITION TO FIRST JOB

In Salehi-Isfahani and Egel (2007) and Salehi-Isfahani and Egel (2009) we identified long spells of post-education unemployment as a major issue facing Iranian youth. We estimated these unemployment spells using a pseudo-panel approach with repeated cross-sectional data and found evidence of long unemployment spells lasting one to three years. However, as we were working with repeated cross-sectional data, we could not link individual characteristics to unemployment spells with any accuracy. A major advantage of the SWTS is that it allows us to directly analyze the impact of personal characteristics on the duration of unemployment.

While the median duration of joblessness in the SWTS data is zero months for men (nearly 60 percent of men find a job immediately) and 1 month for women, the average duration is much higher as demonstrated in Table 3. Indeed, we find that the average young man waits over a year to find his first job and the average woman waits nearly three years. These results are very similar to those we found from the pseudo-panel data and to those found for Egypt by Assaad et al. (2010).

**Table 3: Mean Duration of Joblessness by Gender and Education (Months)**

	EDUCATION LEVEL				
	All	Primary	Lower Secondary	Upper Secondary	College
Men	15.0	14.6	17.3	12.8	13.2
Women	37.5	25.1	29.3	43.4	31.5

Note: The reported means are calculated as extended means using STATA commands stci, emean (Cleves et al. 2008, p. 120)

The results from a proportional hazard model analysis of the duration of unemployment for men and women who are jobless (using our definition above) upon graduation are reported in Tables 4 and 5, but before discussing these results let us briefly consider the baseline hazards for men in Figure 7, which are comparable to Figure 2a in Assaad et al. (2010). The right hand graph in our Figure 7 provides a closer comparison because it depicts the hazard for men with secondary education and above, as in the case of Egypt. These baseline hazards confirm the long delay that youth in both countries experience from the time they leave school and find their first job. In Iran, about 60 percent of men find a job in the first year and the rest spend several years searching (the point estimates beyond 4 years are based on too few observations and are not significant). In Egypt, about 40 percent find a job in the first year out of school and the majority has to wait longer.

Turning to the estimates of the proportional hazard function of employment conditional on covariates, in Tables 4 and 5, the negative coefficients indicate factors that increase the duration of unemployment (reduce the hazard of employment) and positive coefficients indicate factors that decrease the duration of unemployment (increase the hazard of employment). These coefficients are shifts in the baseline proportional hazards of employment. Since the interpretation of their magnitude is complicated, we will focus on the relative magnitude of different coefficients. The first result from these tables is that younger cohorts do not seem to be waiting longer for their first job. We base this conclusion on the difference between those born before and after 1979 (15-25 versus 26-29 years old in this survey; this result is robust to the age range) in the first rows of Tables 4 and 5. This finding differs from Egypt's case, where the school to work transitions are becoming

Figure 7: Baselines Hazard of Getting a First Job for Men
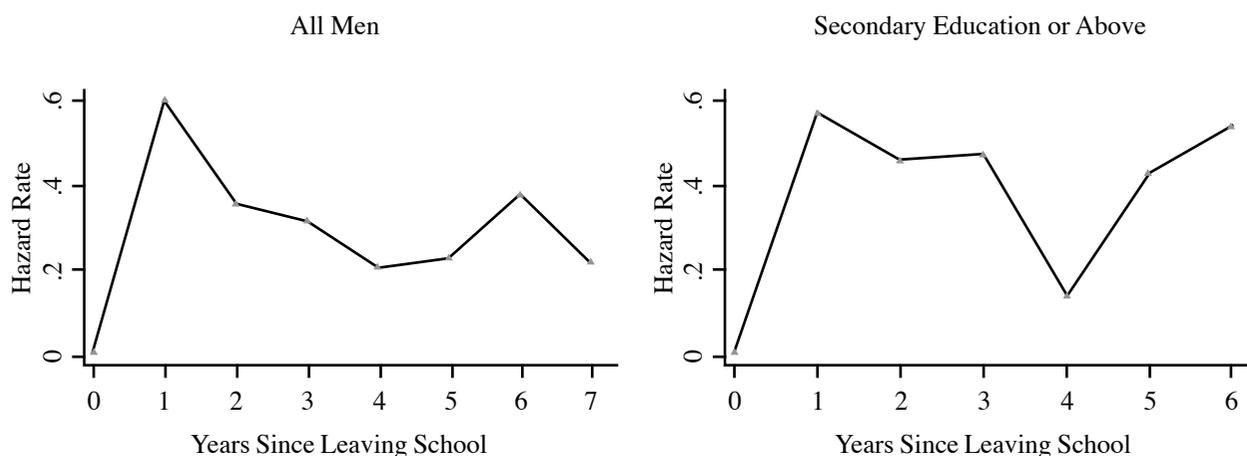
Source: Author's calculations from STWS data files

Table 4: Hazard Model for Duration of Joblessness for Men after Leaving School

	(1)	(2)	(3)	(4)
Cohort Effects				
Born 1979 or earlier	0.86**	0.69*	0.74*	0.77**
	(0.38)	(0.39)	(0.38)	(0.39)
Own Educational Attainment (reference: primary)				
Lower Secondary	-2.00**	-1.54*	-0.97	-0.97
	(0.81)	(0.81)	(0.79)	(0.80)
Secondary	-2.82***	-2.04**	-1.43*	-1.46*
	(0.78)	(0.79)	(0.77)	(0.78)
Tertiary	-3.65***	-2.52***	-1.96**	-2.00**
	(0.88)	(0.91)	(0.88)	(0.90)
Parents' Educational Attainment (reference: illiterate)				
Father: Primary		-1.39***	-1.22***	-1.23***
		(0.43)	(0.43)	(0.44)
Father: Lower Secondary		-1.28**	-1.02*	-1.03*
		(0.54)	(0.55)	(0.55)
Father: Secondary		-1.90***	-1.61***	-1.63***
		(0.57)	(0.58)	(0.58)
Father: Tertiary		-2.02***	-1.82**	-1.83**
		(0.71)	(0.72)	(0.72)
Location				
Urban			-0.41	-0.50
			(0.40)	(0.44)
Lorestan			-2.50***	-2.70***
			(0.58)	(0.71)
Tehran			-2.39***	-2.47***
			(0.52)	(0.55)
Local Labor Market Conditions (varies by year)				
Unemployment				0.90
				(1.80)
Spell Dummies				
Constant	1.31***	1.30***	1.29***	1.30***
	(0.07)	(0.07)	(0.07)	(0.07)
Gamma variance	3.70***	3.68***	3.63***	3.66***
	(0.25)	(0.25)	(0.25)	(0.26)
N =	994	994	994	994

Notes: Conditional on being jobless at end of schooling.

* significant at 10%; ** significant at 5%; *** significant at 1%.

Table 5: Hazard Model for Duration of Joblessness for Women after Leaving School

	(1)	(2)	(3)	(4)
Cohort Effects				
Born 1979 or earlier	0.06	-0.06*	0.43	0.62
	(0.70)	(0.70)	(0.66)	(0.68)
Own Educational Attainment (reference: primary)				
Lower Secondary	-1.97	-1.62	-0.35	-0.72
	(1.83)	(1.80)	(1.68)	(1.74)
Secondary	-6.55***	-5.88***	-1.70	-1.99
	(1.58)	(1.55)	(1.57)	(1.59)
Tertiary	-7.13***	-5.49***	-0.82	-1.21
	(1.67)	(1.72)	(1.73)	(1.76)
Parents' Educational Attainment (reference: illiterate)				
Father: Primary		-1.48	-0.65	-0.77
		(0.90)	(0.86)	(0.88)
Father: Lower Secondary		-2.84***	-1.51	-1.60
		(1.06)	(1.03)	(1.04)
Father: Secondary		-2.10*	-1.79	-1.85
		(1.23)	(1.13)	(1.14)
Father: Tertiary		-2.62*	-1.59	-1.71
		(1.50)	(1.57)	(1.59)
Location				
Urban			-3.40***	-3.75***
			(1.04)	(1.05)
Lorestan			-3.64***	-1.48
			(1.25)	(1.50)
Tehran			-3.33***	-1.67
			(1.21)	(1.34)
Local Labor Market Conditions (varies by year)				
Unemployment				-12.24**
				(5.08)
Spell Dummies				
Constant	1.81***	1.80***	1.73***	1.77***
	(0.12)	(0.13)	(0.13)	(0.13)
Gamma variance	6.09***	5.65***	5.64***	5.86***
	(0.76)	(0.75)	(0.74)	(0.76)
N =	324	324	324	324

Notes: Conditional on being jobless at end of schooling.

* significant at 10%; ** significant at 5%; *** significant at 1%.

shorter (Assaad et al. 2010). Two possible reasons may explain the difference between the two countries. Egypt is more advanced in economic reforms. Although the 2003 labor market reforms occur too late to be reflected in the experience of the cohorts under consideration in their paper, general economic reforms since the 1990s have outpaced reforms in Iran. Secondly, Iran's youth bulge has been more severe. The share of youth (aged 15-29) in total population is 35 percent compared to 30 percent in Egypt. So Iran's labor markets have been under greater pressure than Egypt's from both the supply and demand sides, and therefore less able to reverse the rising trend in the length of transition to employment.

The second key result is that education affects the length of unemployment after graduation for men but not women.[14] Table 4 demonstrates the first result, that increased education delays the transition to a first job for men, where we find a robust negative and monotonic relationship between education and the duration of unemployment. And while the first two columns of Table 5 suggest a similar result for women, this result is not robust to the inclusion of locational controls as seen in columns (3) and (4). Another contrast between the estimated hazards for men and women is in the effect of the provincial rate of unemployment on the probability of finding a first job: there is evidence that weak labor market conditions hurt women's chances but not men's.[15] The results for men differ from what Assaad et al. (2010) find in the case of Egypt, according to which (see their Table 5) education beyond secondary level does not have an impact on the length of the transition from school to work. This difference could be the result of faster expansion of higher education in Iran relative to Egypt, and on the demand side, Egypt's market reforms and increased integration into the global economy may have given their tertiary educated an edge vis-a-vis the Iranian graduates.

4.3 RESERVATION WAGE

A key question in understanding youth unemployment in Middle Eastern countries is whether the slow transition to work and low rates of participation in the labor market, especially for women, are the result of a high reservation wage (the level of welfare achievable by not working). This question is particularly pertinent for richer oil exporting countries, such as Iran, where non-labor income is significant and can delay youth transitions. Indeed, Ross (2008) suggests that much of the low female labor force participation in many MENA countries can be explained by the oil income in these countries which raises women's unearned income and thus increases their reservation wage.

This hypothesis can be couched in the language of reservation wage with two central predictions ceterus peribus: (1) youth from wealthier families should be more able to delay taking a job and search for a position with a higher salary, and (2) women from wealthier families will be less willing to work overall. Though we do not observe familial income directly in the SWTS data, we can use father's education as a proxy, which is the strongest predictor of familial income.[16] In particular, family income rises monotonically with father's education on average, so that the familial income of youth with university educated fathers is higher than with fathers who have only secondary education, etc.

Tables 4 and 5 examined the first of these two predictions by studying how father's education affected the duration of unemployment post-education. Interestingly, while we find some weak evidence of a reservation wage phenomenon among men, as those with more educated fathers seem to stay unemployed slightly longer, we find no evidence of this phenomenon among women. A central concern with our result, highlighted by Assaad et al. (2010), is that we cannot separately identify the impact of familial wealth and familial employment contacts, both of which are expected to be correlated with father's education. While this is perhaps an important consideration, there is no evidence to suggest that wealthier families necessarily have better connections in terms of finding jobs as the share of youth finding jobs through familial contacts is actually higher among those with the least educated parents.[17]

Despite not being able to include a separate measure of familial wealth, our results are broadly consistent with those presented by Assaad et al. (2010) who similarly find that individuals with more educated fathers tend to remain unemployed longer. However, as we are unable to identify the separate impact of mother's education on youth employment due to the strong correlation of father and mother education, we cannot explore the apparent U-shaped relationship between mother's education and unemployment duration observed in Egypt.

The second prediction of the reservation wage hypothesis, that women from wealthier families will be less willing to work overall, is explored in Table 6 where we examine the factors that affect women's willingness to work. We do this in two ways. First, we look at their stated willingness to work by studying responses to the question: "Ideally, which of the following types of employment status would you prefer?" Second, we examine the factors that affect the willingness of female graduates to enter the labor force after they have completed school. This allows us to look at the 'revealed preference' of women's willingness to work.

Columns (1)-(3) of Table 6 report the results from the first component of the analysis of women's willingness to work. Here we code each woman's stated willingness to work as a binary variable, with a one indicating that she is willing to work and a zero otherwise, and then use a standard probit regression approach. Column (1) includes personal characteristics of the women only, while column (2) augments the analysis to include parental characteristics and column (3) adds locational effects. Several key results emerge from this analysis. First, individual characteristics seem to have the most significant effect as married women are much less likely to want to work, women in school are more likely to want to work and increasing education seems to have a strong positive impact on the desire to work. Second, we find two surprising results for the effect of parental characteristics:

(a) mother's labor force activity does not affect her daughter's willingness to work, and

(b) father's education (in particular a university educated father) has a significant positive impact on the desire of these women to work.

The latter finding is significant given the insignificant relationship between parental education and actual labor market outcomes among these women observed above. Third, we find that urban and rural women are equally likely to want to work, demonstrating that women throughout the country have similar desires for success, suggesting that what they can achieve is not necessarily in line with their goals.

The following three columns of Table 6 repeat the same analysis using the activity status of women following graduation. Similar to the analysis of desire to work, this variable is coded as a binary variable with a one indicating that a woman is in the labor force (either employed or jobless), zero otherwise. While we find that individual characteristics have a similar impact on the probability of actual labor market participation, as compared to stated desire, the impact of parental and locational characteristics are now different. First, similar to the result observed in Tables 2 and 5, father's education does not have a meaningful impact. Second, women in urban areas are estimated to be less likely to enter into the labor force which is perhaps unsurprising given that rural work places are closer to home and the fact that the unemployment rate among urban women is much higher than for rural women. Third, a working mother has a very strong positive impact on the probability that a young woman works, which indicates the important role that mothers play in creating employment opportunities for their daughters, serving not just as role models.

4.4 JOB STABILITY AND MOBILITY

One of the principal advantages of the type of retrospective data available in the SWTS is that we can look at the dynamics of employment for youth after they succeed in finding a job. Here we will focus

Table 6: Examining Women's Willingness to Work

	Desire to Work			In Labor Force[1]		
	(1)	(2)	(3)	(4)	(5)	(6)
Individual Characteristics						
Married	-0.77***	-0.78***	-0.79***	-0.89***	-0.89***	-0.86***
	(0.09)	(0.10)	(0.10)	(0.10)	(0.12)	(0.12)
Engaged	-0.07	-0.05	0.07	-0.16	0.08	0.06
	(0.26)	(0.29)	(0.29)	(0.26)	(0.29)	(0.30)
In School	0.75***	0.70***	0.66***			
	(0.12)	(0.13)	(0.13)			
Own Education: Lower Secondary	-0.04	0.12	0.21	-0.43***	-0.24	-0.21
	(0.14)	(0.16)	(0.16)	(0.15)	(0.18)	(0.19)
Own Education: Secondary	0.37***	0.46***	0.49***	-0.40***	-0.17	0.02
	(0.12)	(0.14)	(0.15)	(0.13)	(0.16)	(0.17)
Own Education: Tertiary	1.33***	1.29***	1.38***	0.54***	0.74***	0.95***
	(0.19)	(0.21)	(0.22)	(0.19)	(0.24)	(0.25)
Parental Characteristics						
Mother Works		0.28*	0.11		0.88***	0.75***
		(0.14)	(0.16)		(0.16)	(0.17)
Father's Education: Primary		-0.09	-0.00		-0.10	-0.12
		(0.11)	(0.11)		(0.13)	(0.13)
Father's Education: Lower Secondary[3]		0.02	0.17		0.34*	0.32*
		(0.15)	(0.15)		(0.19)	(0.19)
Father's Education: Secondary		-0.11	0.04		-0.17	-0.19
		(0.16)	(0.17)		(0.24)	(0.25)
Father's Education: Tertiary		0.55**	0.73***		0.33	0.34
		(0.27)	(0.27)		(0.35)	(0.35)
Location						
Urban			-0.01			-0.37***
			(0.11)			(0.13)
Lorestan			0.71***			-0.55***
			(0.13)			(0.16)
Tehran			-0.10			-0.26*
			(0.11)			(0.13)
N=	1397	1195	1195	844	703	703

Notes: 1: Among women who state that they have completed school.

2: Reference: Primary education.

3: Reference: No education.

* significant at 10%; ** significant at 5%; *** significant at 1%.

on two aspects of these dynamics: First, we look at the stability of the first jobs to examine whether youth still face uncertainty about the future even after finding employment. As many of these youth are taking jobs in the informal sector, we might expect that their futures in these positions are quite uncertain. Second, as inflexible labor markets are often cited as a major challenge facing youth we look at the transitions between positions. Excessive job stability and lack of mobility across jobs are oft-mentioned as central reasons for the high unemployment among youth; unfortunately, this analysis does not allow us to explore this possible relationship.

While the SWTS has detailed information on how long individuals stayed in each position, there are two weaknesses in these data. First, because the sample is limited to ages 15-29, the length of stay on a job, especially for college educated workers, is heavily censored. We learn more about the job duration of those with less education who leave school at an earlier age. Second, there is limited information about the type of position that they held, except for its informality and whether it was public or private. Thus in the analysis below we will compare the stability of

jobs in the private and the public sector and formal and informal jobs to ascertain whether public and formal jobs do offer the stability they promise. This is the first study to our knowledge to empirically compare the degree of stability of different types of jobs in Iran.

In Table 7 we look at job stability by type of job, public versus private versus self-employment and formal versus informal. We define a job as formal if the position is either in the public sector or has a contract of unlimited or fixed duration, with all other jobs being defined as being informal.[18] This definition of informality gives us roughly the same proportion that the Statistical Center of Iran's own report of the SWTS results lists as informal (Statistical Center of Iran 2006).

In looking at the results of the public-private comparison we should bear in mind that the public sector jobs that have appeal to youth are those that require a college education. We are unable to observe college educated individuals in these positions for long enough because age is truncated at 29. Despite this limitation, there is an interesting observation about their longevity which we observe from those

Table 7: Median Duration of First Job by Job Type (Medians in Months)

Education Level	All	Primary	Lower Secondary	Secondary	College
Male					
Informal	76	98	69	58	*
Formal	24	24	24	24	27
Private	48	84	59	24	*
Public	24	27	23	22	*
Self-Employed	*	*	*	*	*
Female					
Informal	*	*	*	107	*
Formal	*	30	67	*	63
Private	52	3	67	19	52
Public	*		11	*	*
Self-Employed	96	96	*	107	*

*Notes: Controls for right-censoring in duration of employment. * cannot calculate due to severe censoring.*

with less than secondary education. Contrary to the prevailing notion about the stability offered by public positions, for these individuals the median length of employment is actually longer in the private sector. In fact, the median length of a position is about twice as long in the private sector. The results for women are less clear largely as a result of the small sample size. Nothing is learned about the job stability of men in self-employment, because there are few uncensored observations in these cells, but self employed women appear to stay longest in these jobs.

The results regarding the impact of informality on job duration are even more interesting. We find that for men the median duration of informal jobs - about 6 years - is three times that of formal jobs. The difference declines at higher levels of education. The longer tenure in the informal sector for the less educated may be because these individuals are getting stuck in undesirable positions without the resources to find a new position. Another factor that may explain the higher turnover in the public and formal sectors is that both public and formal private sector employers use short term contracts in order to avoid the high cost of laying off workers who stay on a job longer than one year.[19] The issue of short term contracts, which some interpret as a way to get around the Labor Law, has been a hot topic of debate in Iran. Soon after his election, President Mahmoud Ahmadinejad prohibited public companies from hiring workers on short term contracts, but the prohibition is yet to be extended to private employment.[20] In Egypt, where such contracts were not allowed until the 2003 reforms, we see the opposite (longer durations of public and formal jobs) (Assaad et al. 2010).

The final aspect of job formality we will examine is the mobility between the formal and the informal sector. If the formality of jobs is indeed important, then segmentation of the two markets - that is, little mobility between the two - will discourage youth from taking jobs in the informal sector, even temporarily. However, as short term informal sector jobs may help youth develop useful skills that are not taught in schools, such as good work habits and ability to work in teams, they are likely to play an important role in the development of youth careers.

In Table 8 we provide transition matrices for men that describe the degree of mobility between the formal and informal sectors. Here we focus on men as the number of observations for women in the formal sector is too small to allow a reasonably precise estimate of job mobility. Each transition matrix has a total of four cells where the rows correspond to the first job after school and the columns correspond to the second job after school. As the first job could be either informal or formal we abbreviate these as I_1 and F_1 respectively. Similarly, I_2 and F_2 indicate that the second job was either informal or formal. We also provide two rows of transition matrices where the top row includes only men who report more than one job while the bottom row includes all men.

As an example, consider the transition matrix at the

Table 8: Transitions between Formal and Informal Jobs

		All		Primary		Lower Secondary		Secondary		College	
		I_2	F_2	I_2	F_2	I_2	F_2	I_2	F_2	I_2	F_2
Changes	I_1	75	191	17	40	30	88	20	56	1	4
	F_1	172	78	6	0	28	18	124	40	9	17
All	I_1	323	191	65	40	109	88	117	56	16	4
	F_1	172	213	6	1	28	33	124	118	9	52

Figure 8: Delayed Marriage
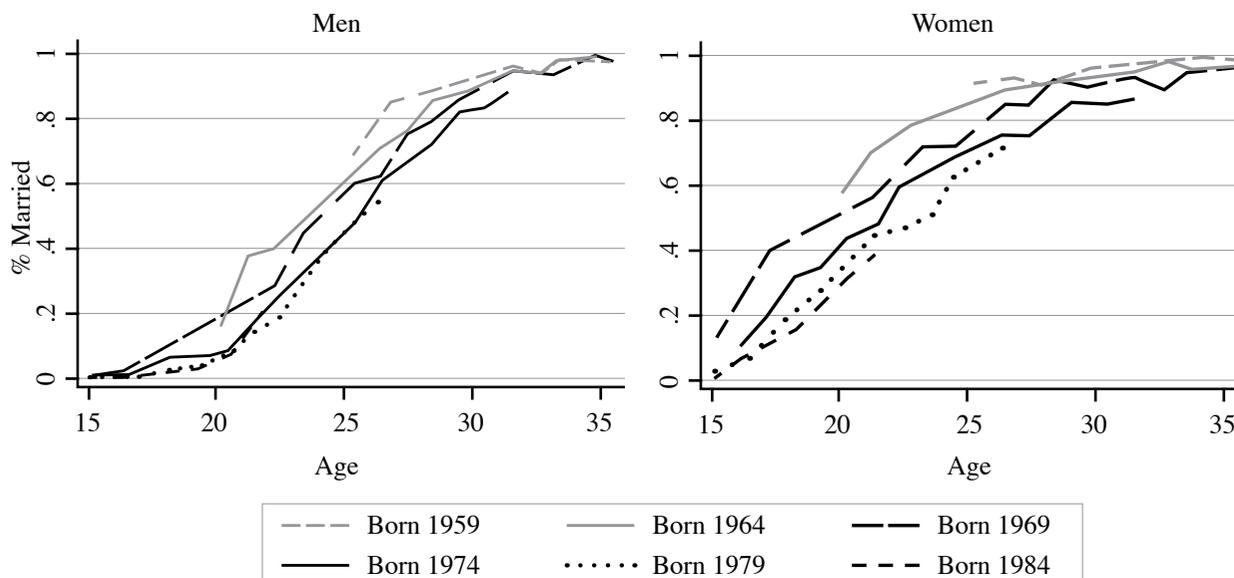
Source: Author's calculations from HEIS data files.

upper left of this table which corresponds to men of all education levels who have had more than one job. From here we can see that of the original 266 men who were informally employed in the first period (75 + 191), 75 moved to another informal job as their second job and 191 moved to a formal job. Similarly, of the 250 men originally in the formal sector (172 + 78), 172 moved to the informal sector and 78 to another formal job. Now if we consider the matrix that includes people who only have one job ("stayers") we see that of the 514 who start off in the informal sector, 323 stay in the informal sector and 191 move to a formal position, etc.

When we focus on only those who have more than one job, the "changers", we see that there is a lot of mobility between the informal and formal sectors which is contrary to the accepted wisdom. Indeed, in almost all cases, "changers" who were in the formal sector moved to the informal sector and vice versa. The only exceptions are the university educated men who show a clear preference for formal sector jobs. Though this is not evidence of the "high status" of formal jobs suggested above, it does suggest that there is flexibility in the labor market and that informal jobs are providing skills that are transferrable to the formal sector. Further evidence of the benefits of the

informal sector is suggested by the fact that formal sector employees are indeed willing to switch to the informal sector. Future work examining the benefits of working in the informal sector in Iran, as suggested by this preliminary analysis, is clearly in order.

5. MARRIAGE TRANSITIONS

The rapidly rising age of first marriage in Iran is in part the consequence of fundamental changes in the family brought about mainly by the transition in fertility that has taken place in the last two decades, but it is also in part a sign of crisis in the youth transition to adulthood. In Iran nothing symbolizes this transition better than getting married and setting up a family of one's own. The marriage issue is widely discussed inside and outside Iran, and the Iranian government has put forward numerous initiatives from marriage loans to mass marriage ceremonies to promote early marriage.[21] Despite its importance, there have been few attempts at systematically studying the factors affecting the transition of youth to marriage.[22] In this section we exploit the SWTS to explore how education, employment, and familial and environmental factors affect the transition of youth to marriage.

The proportion of never married men and women

aged 25-29 increased from 21 and 14 percent in 1986 to 36 and 24 percent in 2006 (Salehi-Isfahani 2008). In Figure 8 we depict delay in marriage by comparing six different birth cohorts. Beginning with those born in 1959, and then for every fifth year after that, we plot the percentage of individuals from that cohort who are still unmarried as a function of age. This figure demonstrates the delay in the transition to marriage compared to previous generations. For example, nearly four times as many men born in 1964 were married at age twenty as compared to those born in 1984. Similarly the percent of women married by age twenty has fallen from 60 percent for the 1964 birth cohort to under 30 percent for the 1984 cohort. This situation distinguishes the experience of Iranian youth from their counterparts in Egypt, where, since the cohort born in 1960s, successive generations have married earlier (Assaad et al. 2010).

Delayed marriage clearly has some positive effects such as an increased opportunity for accumulation of human capital, particularly among women. However in a culture where it is difficult to socialize and interact with the opposite sex before marriage and where marriage is typically a prerequisite for being accepted as an adult, delayed marriage can have deleterious effects (Gregg 2005). The importance of marriage in the lives of these youth is illustrated by the responses to

a question in the SWTS regarding the most important goal in their lives where "having a good family life" was the most popular response among both men and women. This response was favored over the next most popular response, "being successful in work", by 50% over 14% for women and 31% over 28% for men (Statistical Center of Iran 2006).

In the following section we examine the transition to marriage in two ways. First, we provide a descriptive analysis of several factors that have an important role in mediating the transition to marriage. Second, we analyze this transition using a hazard model that allows for a multivariate analysis of the timing of marriage.

5.1 DESCRIPTIVE ANALYSIS

In Iran, social norms establish close links between education, employment, and marriage. Men are typically expected to marry as soon as they finish school and find a job, and not before both of these transitions are completed. And women are expected to get married shortly after they leave school and then either enter the labor force or engage in home production of some kind after they marry. Here we provide a descriptive analysis of the relationship between education, employment and marriage in order to compare the experiences of these youth

Figure 9: Activity and Marriage Age[1]
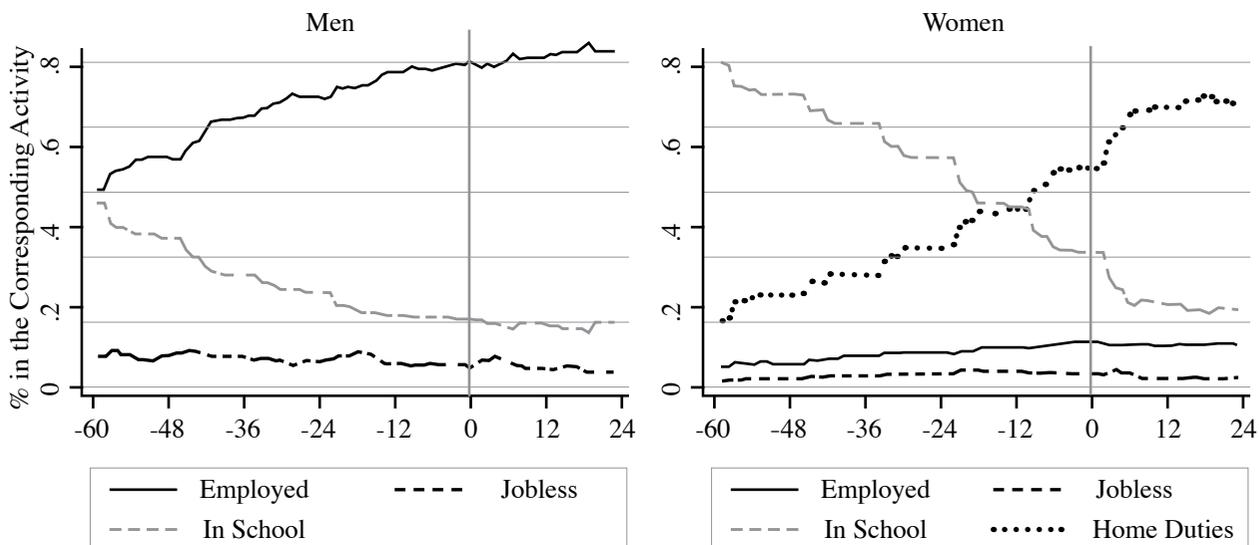
1: Only includes individuals who are married at the time of the survey.

with these standard "life courses" that were the norm among older generations of Iranians.

In order to examine the types of life courses that Iranian youth are experiencing today, Figure 9 reports the activities of individuals five years before and then two years after their marriage. The left side of this figure, which aggregates the activities of all men in the SWTS before and after marriage, demonstrates two key results. First, there is no noticeable shift in their average activity either before or after marriage. Indeed, there seems to be no evidence that men need to leave school shortly before or after marriage, which suggests that the purported high costs of marriage do not seem to be an issue for these individuals. Second, while the majority of married men are employed at the time of marriage (~80%), there is a significant number of men that are still in school when they get married (~15%) and there are some men who are graduated and jobless (~5%).

The activities of women before and after marriage, depicted in the right side of Figure 9, demonstrate the sharp discrepancy of the life courses between young men and women. Here we see a sharp fall in the number of students right after marriage, and a subsequent increase in the number of women engaged in home production. While this may simply reflect women's desire to stay in school while unmarried in order to avoid being confined to home (given the social restrictions placed on unmarried women in the public space), this may also reflect the fact that women end their schooling after they get married either voluntarily or at the encouragement of their husbands and/or family. Interestingly, the share of employed women does not change before or after marriage suggesting that the decision to get married does not affect the ability of these women to participate in the labor force. This result is similar to what Assaad and Zouari (2003) find in the case of Morocco, but is contrary to the general perception that in the Middle East married women are less likely to be employed (Moghadam 1996).

5.2 MODELING THE AGE OF MARRIAGE

While the descriptive analysis provides a useful characterization of the relationship between education, employment and marriage transitions, the bivariate structure of this analysis does not allow us to study the simultaneous impact of personal, familial and environmental factors that may affect the transition to marriage. Thus, in this sub-section we employ a hazard model that both allows for multivariate analysis and corrects for the fact that not all youth in the sample were married at the time the data were collected.[23] This is similar to the approach used above in studying the duration of unemployment (see Section 4.2).

Table 9 reports our estimates from the hazard model for men and women separately (see Section 4.2 for a discussion of the interpretation of these coefficients). We first consider the role of cohort, education, and age variables on the timing of marriage. The positive estimated cohort effect demonstrates the marriage delay found in cross-sectional data. The cohort effect is much larger for women, as we would expect from the nature of the "marriage squeeze" in Iran (Salehi-Isfahani and Taghvatalab 2009; Torabi and Baschieri 2010). However, as the significance of this estimate is not affected by controlling for the variety of other covariates, this is evidence that the rise in the age of marriage is not simply driven by changes in educational attainment or changing labor market conditions. We also find evidence of a secular relationship between an individual's education and the age of marriage, though interestingly this observed relationship is only robust for the women in the sample. The two age variables, $\log(45\text{-age})$ and $\log(\text{age-9})$, are included primarily to correct for the well-known non-monotonic age dependence of the marriage rate following Blossfeld and Huinink (1991).[24]

The second set of covariates that are included in the analysis are two key measures of employment experience: years of work experience and whether the individual ever had a position with an unlimited duration contract. For men, both variables have a significant positive impact on the probability of being married, which demonstrates the importance of job

Table 9: Marriage Hazard Model

	Men				Women			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Cohort Effects								
Born 1979 or Earlier	0.54**	0.49**	0.64**	0.59**	0.77***	0.73***	0.87***	0.82***
	(0.22)	(0.21)	(0.26)	(0.25)	(0.22)	(0.21)	(0.24)	(0.24)
Own Educational Attainment (reference: primary)								
Lower Secondary	-0.67*	-0.25	-0.05	-0.19	-0.32	-0.54	-0.39	-0.38
	(0.37)	(0.34)	(0.42)	(0.41)	(0.36)	(0.33)	(0.34)	(0.33)
Upper Secondary	-1.85***	-0.93**	-0.76	-0.84*	-1.48***	-1.92***	-1.70***	-1.66***
	(0.42)	(0.40)	(0.51)	(0.50)	(0.45)	(0.42)	(0.41)	(0.44)
Tertiary	-2.77***	-1.38**	-1.43*	-1.44*	-3.53***	-4.09***	-3.53***	-3.33***
	(0.61)	(0.58)	(0.77)	(0.75)	(0.89)	(0.81)	(0.78)	(0.84)
Age Effects								
$\log(45-age)$	-0.98	2.83	1.05	1.46	-3.71	-5.41	-3.63	-1.89
	(4.66)	(3.67)	(4.41)	(4.17)	(5.23)	(4.53)	(4.94)	(5.35)
$\log(age-9)$	5.97***	6.00***	5.66***	5.82***	3.93***	3.78***	4.07***	4.26***
	(1.82)	(1.65)	(1.96)	(1.91)	(0.78)	(0.71)	(0.80)	(0.79)
Employment								
Years of Employment		0.14***	0.16***	0.16***		-0.32***	-0.32***	-0.28***
		(0.05)	(0.05)	(0.05)		(0.07)	(0.08)	(0.08)
Unlimited duration contract?		1.21***	1.20***	1.03***	†	†	†	†
		(0.33)	(0.38)	(0.38)				
Parents' Educational Attainment (reference: illiterate)								
Father: Primary			-0.64**	-0.61**			-0.04	-0.06
			(0.29)	(0.29)			(0.23)	(0.22)
Father: Lower Secondary			-0.52	-0.54			-0.05	-0.10
			(0.42)	(0.43)			(0.32)	(0.31)
Father: Secondary			-0.25	-0.24			-0.44	-0.40
			(0.49)	(0.49)			(0.41)	(0.39)
Father: Tertiary			-0.61	-0.53			-0.99	-0.97
			(0.67)	(0.68)			(0.61)	(0.59)
Location								
Urban				-0.43*				0.11
				(0.26)				(0.21)
Lorestan				0.84**				0.27
				(0.36)				(0.31)
Tehran				0.86***				0.36
				(0.32)				(0.22)
Spell Dummies								
Constant	0.90**	0.64	0.91**	0.85**	1.29***	1.21***	1.10***	0.97**
	(0.45)	(0.43)	(0.38)	(0.36)	(0.39)	(0.33)	(0.38)	(0.49)
Gamma variance	2.46**	1.90**	2.50***	2.33***	3.62**	3.37***	3.02***	2.63**
	(1.10)	(0.82)	(0.96)	(0.83)	(1.42)	(1.11)	(1.14)	(1.29)
N =	982	982	982	982	995	995	995	995

*Note: * significant at 10%; ** significant at 5%; *** significant at 1%.*

†: Too few observations to estimate.

stability in facilitating the marriage transition. For women, we find that years of work experience delays the onset of marriage, which suggests that women in the labor market may be delaying marriage to pursue professional careers.

Interestingly, we find that both parental education and locational variables seem to have a weak impact on the transition to marriage at most. While there is some evidence that men in urban areas delay marriage more than their rural counterparts, there is only weak evidence that parental education has any role as only one of the parental education categories is estimated to be significantly different from zero. Neither of these variables has a significant impact on the timing of women's marriage.

In order to provide some intuition for the magnitude of the coefficient estimates reported in Table 9, Figures 10 and 11 demonstrate how education and employment outcomes affect the timing of marriage. These figures follow the approach used by Jenkins (2005) to examine how individual characteristics and

experiences affect the cumulative probability that an individual is married by a given age. This approach uses the point estimates from the hazard model to create synthetic individuals with selected individual characteristics and thus allows a clear exposition of the marginal impact of individual variables on the marriage transition. Columns (2) and (6) of Table 9, which focused on the individual characteristics of the sampled youth, were used in creating these figures.

Figure 10 examines the impact of employment experience on the marriage transitions of men. In this figure, we focus on understanding how both the length of unemployment as well as the type of employment contract affects a man with a secondary school education born after 1979. This figure demonstrates two key results. First, the duration of unemployment has a meaningful negative impact on the timing of marriage. And while an individual who is unemployed for two years following graduation has only a five percentage point higher probability of being married by age 30, a man who never finds a position has less than a ten percent chance of being married by age

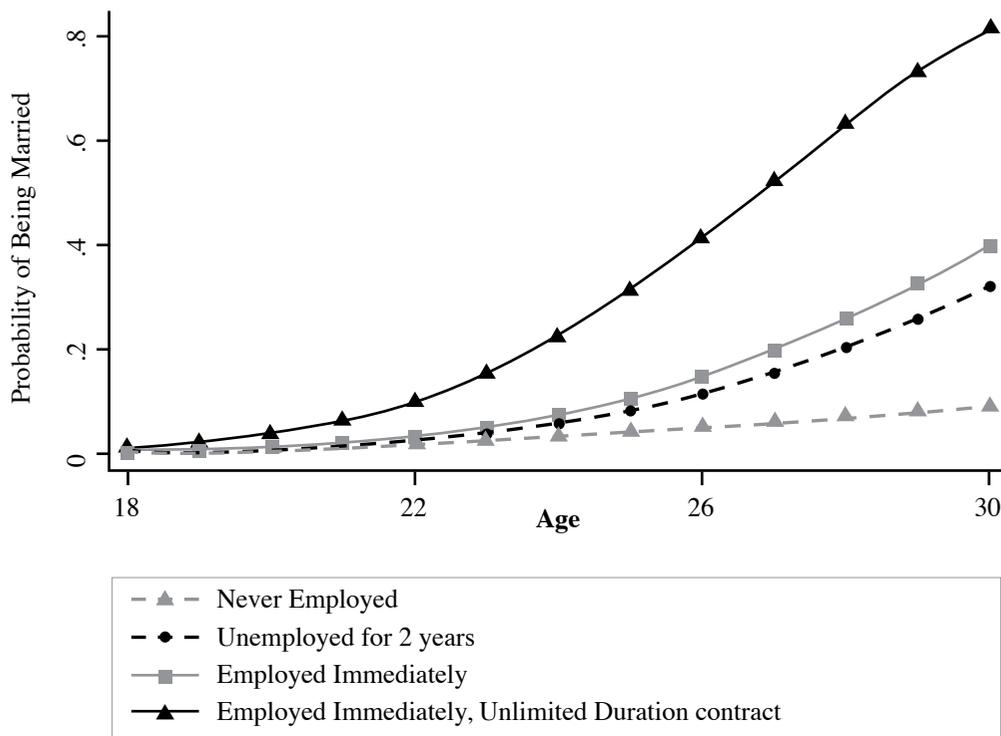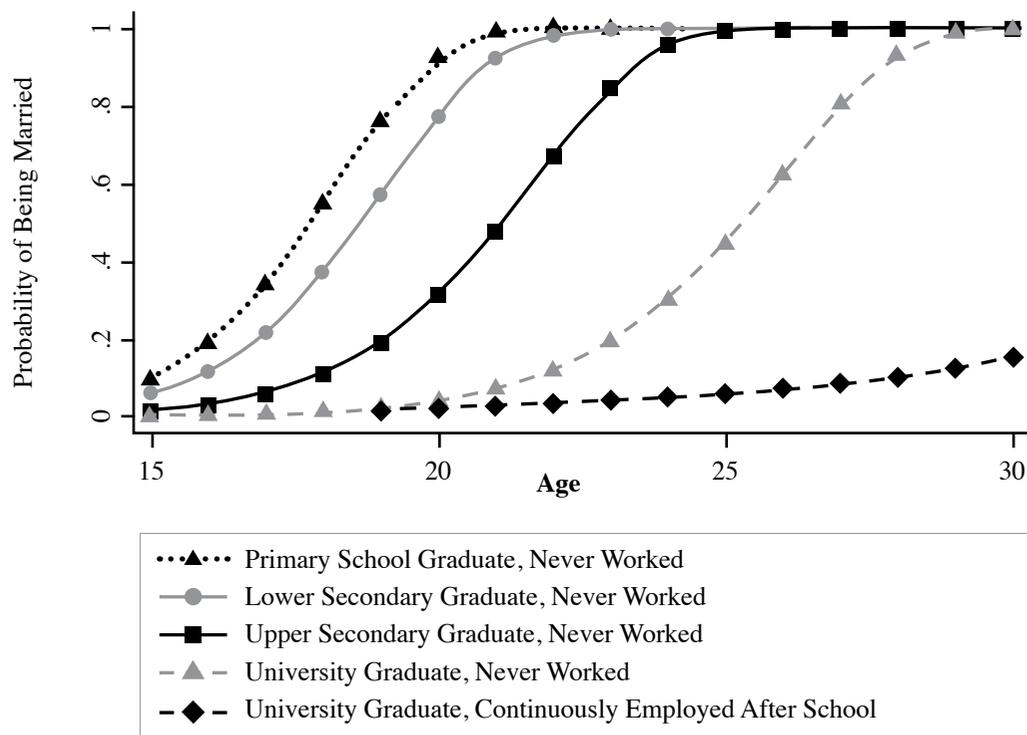**Figure 10: Employment Experience and the Timing of Marriage among Men**

Figure 11: Education, Employment and the Timing of Marriage among Women

····▲···· Primary School Graduate, Never Worked
──●── Lower Secondary Graduate, Never Worked
──■── Upper Secondary Graduate, Never Worked
─ ▲ ─ University Graduate, Never Worked
─ ◆ ─ University Graduate, Continuously Employed After School

30. Second, the type of labor contract has a dramatic impact on the probability that a man gets married. Indeed, a man who is able to secure a position with an unlimited duration contract has more than double the probability of being married than the comparable individual with a less secure contract for all ages.

Figure 11 examines the impact of educational outcomes and employment experience on the marriage transitions of women. In this figure, we focus on understanding how a woman's educational level and choice to participate in the labor market affects her transition to marriage. The reference individual is a woman who was born after 1979. This figure demonstrates the importance of a woman's education and labor market experience. The impact of education on the timing of marriage is illustrated by the large gap in the probabilities of being married by age 20 for each of these synthetic women. While a woman with a primary or lower secondary education has over a 90 percent probability of being married by age 20, a woman with an upper secondary degree has just over a 30 percent chance of being married, and a woman

with a university degree has less than a 5 percent chance of being married. The impact of employment is equally dramatic as demonstrated by the university graduate who enters the labor force. While all the other women, who are assumed to leave the labor force and become homemakers after leaving school, are nearly guaranteed marriage by age 30, this woman has only a 15 percent chance of being married by age 30.

6. CONCLUSION

In this study we exploited retrospective information available in the 2005 SWTS to study the education-work and work-marriage transitions of Iranian youth, two of the most critical aspects of youth transition to adulthood in Iran. The use of longitudinal data that follow youth through their transitions adds to previous analysis that relied on static accounts of youths' education, labor market outcomes and marital status. Our approach allows us to explore and test a variety of propositions that have been made about the difficulties facing youth in transition to adulthood in Iran.

In addition to confirming some of our previous

findings in Salehi-Isfahani and Egel (2007) and Salehi-Isfahani and Egel (2009), this study has a variety of new, and sometimes surprising, findings about youth transitions in Iran. We find several new results for the school to work transition. Contrary to the prevailing wisdom about the inflexibility of the Iranian labor market, we find that there is a significant degree of job mobility between informal and formal sector positions for all education levels. However, this reflects the changing nature of public sector employment rather than greater general labor market liberalization. Short-term positions are becoming increasingly prevalent in the public sector for new labor market entrants while older workers continue to enjoy lifetime employment with little turnover. We also find little evidence to support the hypothesis that a high reservation wage is responsible for delayed transitions to work. Family background does not seem to matter in the probability of employment, the duration of transition to work, or the willingness of women to work. Turning to the work-marriage transition, we report indirect evidence that the cost of marriage is not as prohibitory as previously asserted. In particular, we find that wealthier individuals, i.e. those with higher education and those with parents with higher education, are more likely to delay marriage. Though this is certainly not conclusive, it is evidence that the cost of marriage is endogenous and adjusts to the ability of both the couple, in particular the groom, and the parents to pay.

There are still several questions that are key to understanding the transitions of Iranian youth that we are unable to answer with this survey. For some important questions the limitations imposed by the data prevent us from going beyond description and saying something about causation. For example, on the importance of having a job in order to marry, the longitudinal data show that those who find a job, especially one with a long-duration contract, are subsequently more likely to be married. This finding falls short of identifying employment as a barrier for early marriage because the causation could go the other way round; that is, those who decide to get married take a job first. The causation is more likely to be satisfied in the case of job quality because getting

it is not quite under the control of the individual. We are also unable to learn about skill formation in the process of search and changing of jobs. Are youth able to learn skills or reveal latent talents while working on jobs that last one year or two? Do those who move up to formal jobs do so because of some skill they learned or revealed while working in the informal sector? SWTS is not the right tool for this purpose, mainly because it does not report earnings. We do not know if youth make more or less money as they change jobs. For a deeper look into the learning possibilities offered by short-term employment, a new more detailed survey is needed.

As indicated by the comparisons we drew with the Egyptian case analyzed by Assaad et al. (2010), generalizing the results of this study to other countries must be made with caution. Youth transitions are sensitive to several factors that may be specific to Iran: the extent of the youth bulge (few countries have such a severe youth bulge as Iran), the functioning of education and the labor markets (Salehi-Isfahani et al. 2009), and the social norms that govern marriage.

As regards youth policy in Iran, our analysis has at least two important implications. First, we find evidence that family background matters in both the education-work transition and the work-marriage transition. Policy in all three areas, education, work and marriage, should attempt to increase the equality of opportunity, to even the playing field for individuals from weaker family backgrounds. Second, our study provides evidence of interdependence of youth transitions. In Iran, different agencies design policy for different transitions. Three ministries deal with education policy and how education prepares individuals for the labor market, the Ministry of Labor is responsible for regulating the labor market, and several agencies provide loans to youth for employment, housing, and marriage. To the extent that the policy actions of one agency affect outcomes in the purview of another, compartmentalizing youth policy in the old bureaucratic fashion may reduce their effectiveness.

ENDNOTES

1. We are grateful to Ragui Assaad, Navtej Dhillon, Paul Schultz, and Lyn Squire for valuable comments and to the Statistical Center of Iran and Farideh Bagheri for making the survey data available.

2. Though a panel data set that interviews youth at several points throughout their life, such as the National Longitudinal Survey of Youth (NLSY), is the ideal type of data, such data are not available for Iran.

3. While we studied these transitions previously using cross-sectional data, we could not match educational outcomes to employment transitions and we could not match employment transitions to marriage transitions (Salehi-Isfahani and Egel 2009, Salehi-Isfahani and Egel 2007).

4. See the country studies in the collection in Dhillon and Yousef (2009).

5. See, for example, the discussion in the New York Times right after the disputed presidential election of June 2009, when young protesters filled Tehran's streets: "Behind the protests, Social Upheaval in Iran," *New York Times* Room for Debate, June 23, 2009, http://roomfordebate.blogs.nytimes.com/2009/06/23/behind-the-protests-social-upheaval-in-iran/?pagemode=print.

6. In the context of a global study, Lloyd (2005) discusses the conditions of Iranian youth in general terms.

7. For the history of fluctuations in fertility in Iran, see Abbasi-Shavazi et al. (2009).

8. A total of 11 countries participated in the survey, including Egypt, Iran, and Jordan in the Middle East.

9. HEIS are the standard income and expenditure surveys that are annually conducted by the Statistical Center of Iran.

Their sample sizes range between 20,000 to 36,000 in more recent years.

10. In calculating the youth unemployment rates for Figure 4 we limited the sample to young men for an important reason. Though female unemployment, and in particular female joblessness, is an important issue and will be addressed throughout this section, measuring unemployment among women is difficult and not standardized across surveys. Measurement of unemployment among women in standard labor force surveys is problematic because both employed and unemployed women will often be reported as engaging in 'home duties' as their primary occupation (See Singerman 1996 in the case of Egypt). As the SWTS is not a standard labor force survey and the interviewee is the youth themselves, it is plausible that these young women could respond systematically differently than the household head who typically responds to labor force surveys.

11. According to this definition to be counted as unemployed a person must be actively searching for a job and work less than two days in the week prior to the interview. Since 2006, the Statistical Center of Iran which collects census and labor force data, including HEIS, has adopted the standard ILO definition of working for one hour counts as the cutoff for employment.

12. There are three times as many men as women who are engaged in "rest and recreation."

13. As mentioned above, the category of "home duties" is problematic as many of these women are likely engaged in either home production or some sort of informal work.

14. Since the hazard regressions take into account censoring, this is unlikely to be caused by the fact that more educated youth have had fewer years in the labor market.

15. These unemployment rates are calculated

from HEIS data and are age, gender, and period specific.

16. Authors' calculations using HEIS income and expenditure data.

17. Authors' calculations using SWTS data.

18. SWTS questionnaire lists fixed contracts as 12-36 months in duration. So, according to the survey, contracts shorter than a year are considered seasonal or informal. Some formal jobs have shifted to shorter duration than a year to avoid the restrictions of the labor law, which increases the cost of layoffs steeply after a year of employment.

19. Iran's Labor Law imposes high costs on employers when they lay off workers who have been with them longer than one year (Salehi-Isfahani 2005). As a result, both public and private employers hire workers for formal sector jobs on short term contracts, which they often renew many times. Because we define as formal all public sector jobs but only private sector jobs with contract durations longer that one year, the shorter duration in the formal sector may be due to the short term contracts in the public sector.

20. In 2006 Iran's Labor Minister was quoted as saying that 65% of Iran' workers (85% including construction and transport workers) were on short term contracts (Mather, Mather, and Tamjidi 2007). In a major labor rally on May 1, 2007, demonstrators opposed new short-term contracts, complaining that Iranian labor laws are gradually being watered down to benefit employers. See Frances Harrison, "Iran workers demand labour reform," BBC news, May 1, 2007, http://news.bbc.co.uk/2/hi/middle_east/6612489.stm (accessed July 25, 2008).

21. See Azadeh Moaveni, "Will Iran's 'Marriage Crisis' Bring Down Ahmadinejad?"*TIME*, June 09, 2009, http://www.time.com/time/world/article/0,8599,1903420,00.html, and

Navtej Dhillon and Daniel Egel, "The Many Crises of Iranian Youth," The Brookings Institution, http://www.brookings.edu/opinions/2009/0625_iran_youth_dhillon.aspx.

22. Torabi and Baschieri (2010) is a recent exception. They use Iran's 2000 Demographic Health Survey to study the role of ethnicity in transition to marriage. See also their references to the extensive literature in Persian.

23. A variety of other models have been used to study the age at first marriage, such as the three-parameter Coale-McNeil model used by Bloom and Bennett (1990) and Goldstein and Kenney (2001). The hazard model is the most parsimonious and most common of these approaches.

24. These terms assume that an individual is at risk of getting married between the ages of 10 and 44.

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ABOUT THE MIDDLE EAST YOUTH INITIATIVE

Our Mission

To develop and implement a regional action plan for promoting the economic and social inclusion of young people in the Middle East.

Creating Alliances for Maximum Progress

The Middle East Youth Initiative's objective is to accelerate the international community's ability to better understand and respond to the changing needs of young people in the Middle East. By creating an international alliance of academics, policymakers, youth leaders and leading thinkers from the private sector and civil society, we aim to develop and promote a progressive agenda of youth inclusion.

The Middle East Youth Initiative was launched in July 2006 by the Wolfensohn Center for Development at the Brookings Institution in partnership with the Dubai School of Government.

Connecting Ideas with Action

The initiative blends activities in an attempt to bridge the divide between thinkers and practitioners and utilizes robust research as a foundation for effective policy and programs. The initiative has three complementary pillars:

Research and Policy: Pathways to Inclusion

With this initiative, cutting-edge research advances the understanding of economic and social issues affecting young people. The main target group is youth 15 to 29 years old, with a special focus on young men and women who live in urban areas and have secondary or post-secondary education. In addition to addressing needs of older youth, the initiative will also focus on strategies for promoting development of youth 15 years and under in areas such as primary education, skills development and community participation.

The research framework focuses on youth making two major transitions to adulthood: i) the transition from education to employment; and ii) the transition to household formation (marriage and family). Research will concentrate on strategies to achieve inclusion in:

- Quality education

- Quality employment

- Marriage

- Housing

- Civic participation

Our goal is to examine the relationship between economic and social policies and generate new recommendations that promote inclusion.

Advocacy and Networking: Creating Vital Connections

The initiative aspires to be a hub for knowledge and ideas, open to all stakeholders who can make change happen. Strong partnerships with policymakers, government officials, representatives from the private sector and civil society organizations, donors and the media will pioneer forms of dialogue that bridge the divide between ideas and action. By bringing in the voice and new perspectives of young people, the initiative will revitalize debate on development in the Middle East.

Practical Action: Life-Changing Impact

Outcomes matter. With a focus on areas with the greatest potential for innovation and impact, the initiative will mobilize partners for practical action that can improve young people's lives. The initiative will help develop policies and program interventions which provide youth with skills, expand opportunities for employment and facilitate access to credit, housing and civic participation.

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- Bridging the gap between **development theory and practice** to bring about action

- Giving **voice** to developing countries, with high-level policy engagement and broad networking

- A **rigorous, independent research** approach that draws from multiple disciplines

- Working in **partnership** with others

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The school is committed to the creation of knowledge, the dissemination of best practice and the training of policy makers in the Arab world. To achieve this mission, the school is developing strong capabilities to support research and teaching programs including:

- Applied research in public policy and management

- Masters degrees in public policy and public administration

- Executive education for senior officials and executives

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