Youth Education, Employment and Marriage Transitions in Iran: Evidence from the School to Work Transition Survey*

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Abstract

This paper studies the factors that affect the transitions of Iranian youth through education, employment and marriage using the School-to-Work Transition Survey (SWTS). While previous studies have described various aspects of the Iranian economy, this is the first study that is able to analyze directly the impact of these economic factors on the lives of youth and their success in each of these three central components of their young lives. Our analysis, which relies on a detailed retrospective question available for the youth in the SWTS, also allows us to to study the dynamics of the labor market in more detail than was previously possible as we observe the various types of employment and unemployment for many youth over a relatively long window of time. Thus, in addition to showing how personal or familial characteristics effect youth education, employment and marriage transitions, and how these transitions effect each other, we provide new insights into the dynamics of the Iranian labor market.

1 Introduction

Iranian youth, like many youth of the Middle East, face myriad challenges in their education, employment and marriage transitions. Unfulfilled educational goals, high rates of youth unemployment and a rapidly rising age of marriage are indicative of the difficulties that the young men and women of Iran encounter along their journey to adulthood. Understanding these transitions and the institutional factors that affect them, which is the focus of this paper, is essential in designing policies to help youth mediate them.

Though challenges during the transition to adulthood are not unique to Iran, three factors make the transition in Iran particularly difficult. First, today's youth cohort in Iran is the largest in Iranian history. This youth

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bulge, which is the product of a rise in fertility in the late 1970s, has put stress on both the educational system and the labor market. Second, a rigid labor market, with a history of public sector domination and a strong bias in favor of older workers, has restricted the ability of the labor market to create new positions for these youth. Finally, a culture of marriage where only older and wealthier men are considered eligible mates has led to imbalances in the marriage market and increasing number of male and female bachelors.

Exploring these transitions requires data that describes the activities and choices of youth through their formative years. 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, this type of data is not available for Iran. Instead, in this paper we rely on retrospective life histories that were collected as part of the 2005 Iranian School to Work Transition Survey (SWTS).

The SWTS was designed specifically to study youth transitions to and through employment by collecting detailed retrospective information on their work histories. However, as the SWTS contains detailed individual level information on educational achievement and the timing of marriage it allows us to analyze the interactions of these transitions in a way that was previously not possible. Thus, 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 2007).

We construct life histories for each of the youth in the SWTS by combining their work histories with their educational outcomes, their marriage age and a variety of important personal and parental characteristics. These life histories can then be used to study the role that employment may play in making educational choices, the impact of educational outcomes on duration of employment and job search and the impact that the work transition has on 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 both the education and work transitions (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 below follows the lives of youth chronologically and thus begins by examining education transitions. Here we rely on hazard and probit models to explore the impact of a variety of personal and familial characteristics on educational outcomes. We find that parental education is the most important characteristic in determining educational achievement as well as acceptance into university. As these parents both earn higher incomes and are better able to teach their children and thus help them succeed in school, this result

is unsurprising. It does, however, undermine the claims of equal opportunity which is the stated objective of Iran's educational system. We also find that the mother's education is a much stronger predictor of female educational outcomes and the father's education is similarly a much stronger predictor of male outcomes. This strong gender component of the inheritance of education likely reflects the importance of role models of the same gender as well as intra-household bargaining, as an educated woman is more likely to be successful in guaranteeing resources for her daughter's education.

In the work transition section we first demonstrate 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 both the dynamics of employment as well as the factors that affect these dynamics. Here we find some new and surprising results about the type and degree of job mobility among youth as well as the impact that their families can have on their work transitions.

First, we find that there is a significant amount 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 traditional formal sector, which is dominated by public sector jobs, is driven by the growing importance of short term contracts, contracts of fixed duration between 12 and 36 months, in the public sector. As these limited duration contracts induce flexibility in the labor market, with youth switching between private and public, it seems that they may have been somewhat successful in combatting the traditional inflexibility. However, it is unclear whether this mobility represents career advancement with youth learning useful skills as they move from one job to the next or it reflects the inability of the labor market to provide youth with good and stable jobs.

We also find two pieces of evidence suggesting that the reservation wage is not a central issue for either men or women. First, family background does not seem to have an impact on the probability or duration of unemployment following school which contradicts a central prediction of a reservation wage model that youth with more access to unearned income will have a higher reservation wage and thus queue longer for preferred jobs. However, as it is possible that individuals with wealthier or more connected families are also able to find these preferred jobs faster, this is not entirely conclusive evidence. Second we find that mother's, and not father's, education has a significant effect on the desire of women to work, which 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 Ross (2008) and others.

We also provide new insights on the transitions to marriage. As we showed previously, the age at first marriage has been rising rapidly in Iran, as it has in most Middle Eastern countries (Salehi-Isfahani and Egel 2007). 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 that it is exclusionary.

In order to explore this issue, and to identify whether youth are voluntarily or involuntarily delaying marriage, we examine the role of employment, education, and individual characteristics on the timing of marriage using a hazard model that allows 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. Having a job and time spent employed are the two strongest predictors of marriage for men. We also find that, unsurprisingly, more educated men and women in our sample marry later. Interestingly, while education level seems to delay marriage, the number of years spent in school increases the chance of marriage suggesting that the relationship between schooling and marriage may be more complex than previous, more limited descriptive analyses have assumed. We also find evidence here that people from poorer family backgrounds are likely to marry sooner. This result suggests that the cost of marriage may not be exogenous or uniform across different social classes of youth. Instead this suggests that 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, youth transitions using survey data and youth transitions more generally. Then in Section 3 we describe the SWTS survey that we use in this study. Sections 4, 5 and 6 describe our analysis of the transitions through school, to work, and marriage respectively. Section 7 concludes and discusses some possible avenues for further research.

2 Background

While the situation facing youth in Iran is often discussed in the media, there are relatively few studies that try to systematically document youth transitions. Indeed, while some aspects of these transitions for Iranian youth are described in Lloyd (2005), our previous analysis of these transitions was the first to exploit the cross sectional data available for Iran to provide a detailed account of the status of youth in education, employment, and marriage (Salehi-Isfahani and Egel 2007).

Our previous analysis emphasized the stress on the education system and the labor and marriage markets created by the unusual youth bulge that Iran is currently experiencing and which will continue into the second decade of the 21st century. At 35 percent, the proportion of youth aged 15-29 in the population is the highest in the Middle East and one of the highest in the world. These cohorts are growing at nearly four times the rate of growth of population and Iran, that only a few years ago was struggling to educate these youth, is finding it difficult to employ the one million workers to Iran's labor market each year. This difficulty has led to steadily increasing youth unemployment rates which are now nearly 30%. And as women typically marry men 5-10 years older, the marriage market is under stress as the number of women who are ready and eligible for marriage is nearly 25 percent larger than the number of eligible men (Salehi-Isfahani and Egel 2007).

While our earlier study provided a good snapshot of youth conditions in Iran as we observed the schooling and employment status of Iranian youth, the cross-sectional data did not allow us to follow individuals over time. We could observe the recent rises in educational attainment, with nearly 80 percent of Iranian youth completing some type of high school. We also knew that these youth were experiencing high rates and long periods of unemployment and increasingly delaying marriage. However, because we did not have longitudinal data we could not accurately link individuals to the transitions that led to these outcomes.

3 Data

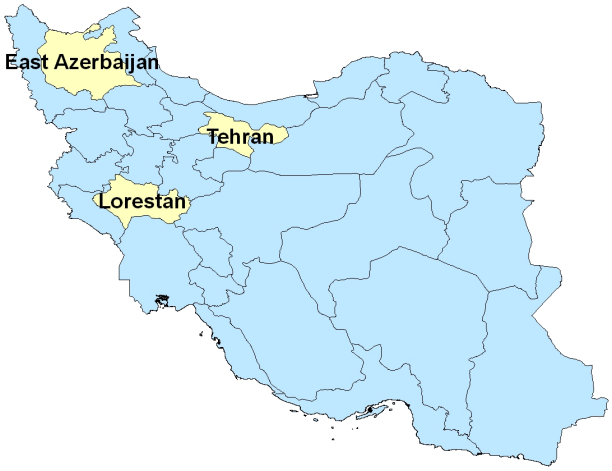
In 2005, the International Labour Organization (ILO) and the Iranian Statistical Research and Training Center collaborated to produce the School to Work Transition Survey (SWTS). The SWTS in Iran is part of a global effort by the ILO to study the transition from school to work in developing countries through the world.[1] In particular, the goal of this global project was to assist countries with high youth unemployment rates in designing youth employment programs and policies.

Iranian youth ages 15 to 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 as shown in Figure 1, 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

[1] In the Middle East, Egypt, Syrian and Jordan have also participated in these surveys.

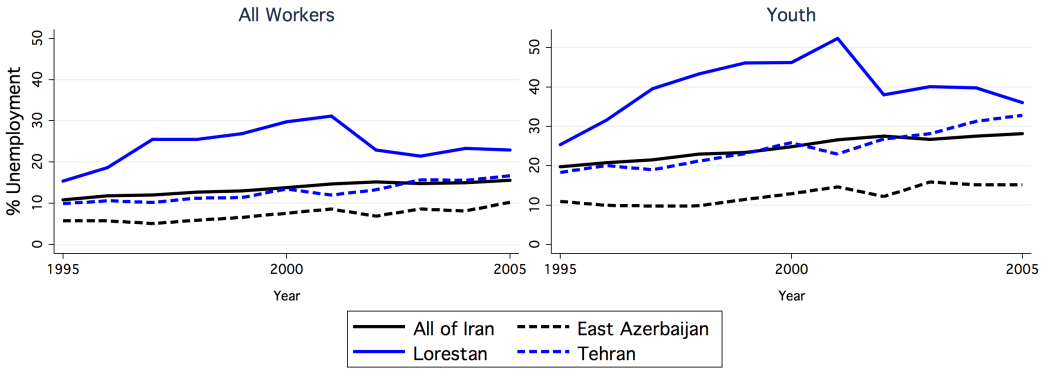
years of education Lorestan and Tehran are 6 and 7 years respectively. Also, the per capita expenditures in Tehran is nearly double that of East Azerbaijan and Lorestan, which are nearly the same.

Figure 1: Provinces included in SWTS



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 2 we can see that unemployment rates over the past decade among youth, and among the whole population, have been very high in Lorestan, about average in Tehran and quite low in East Azerbaijan.

Figure 2: Unemployment in the Provinces of the SWTS



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 were 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 ages 15-29 (Statistical Center of Iran 2006). In Table 1 we provides summary statistics for some key demographic and socioeconomic

variables of the 3,245 Iranian youth included in these data.

Table 1: Summary Statistics for SWTS Data[1]

	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 one as their 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.

For 2,056 of these youth (63%) who are not in school we also have retrospective data on their activities since they left school. These retrospective data, which we employ extensively here, allows us to analyze how these youth transition from unemployment to employment and between different types of job. 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 other transitions, such as the transition to marriage.

4 Education Transitions

The educational system in Iran has transformed dramatically within the past generation. The expanded opportunities that this transformation has brought Iranian youth can be seen by comparing Figures 3 and 4 where we graph the education levels of the youth in the sample and their parents. Educational attainment among the youth is much higher than their parents, with increased access to higher levels of education

for both men and women in both urban and rural areas. Indeed, the dramatic urban/rural and gender difference evident in the educational attainment of their parents seems to have largely been attenuated in just one generation.

Figure 3: Parental Educational Levels

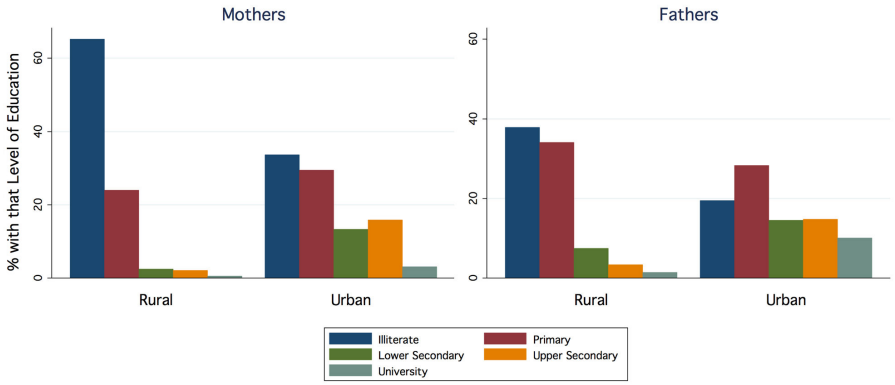
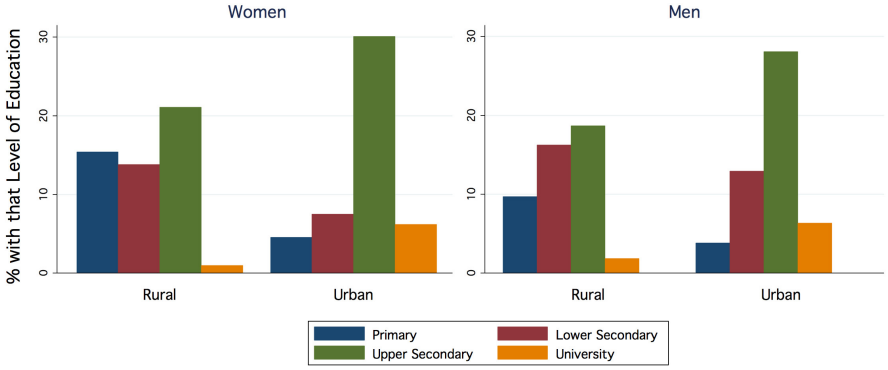


Figure 4: Youth Educational Attainment[1]



[1]: Only includes youth who have completed schooling. Estimates for university attainment are therefore biased downward.

While this rapid evolution of the education system has brought new opportunities to today's youth, it has also brought new challenges and risks of failure. In this section we explore two central components of the education transition in order to understand the dynamics, as well as the challenges, of youth education.

First, different youth face different pressures in their transitions through school. While some are pressured to stay in school, in hopes of obtaining a good job and thus a successful life, others are encouraged to leave early, to get experience and to support the family. In the first part of this sub-section we turn to a hazard model to understand what factors affect this transition by examining the determinants of total educational attainment. Second, the transition from secondary school to the university is perhaps the most difficult and coveted educational transition to make. Indeed, while a university degree offers the promise of guaranteed government employment, success on a single entrance exam determines - the *concours* - determines whether

a student is accepted or rejected. In order to study the factors affect the success of youth in this transition we use a probit to analyze the factors affecting entrance into university.

4.1 Total Educational Attainment

In order to explore the factors affecting youths' total educational attainment, we measure the effect of parental and regional characteristics on the age at which youth choose to finish their education. Because the probability of a youth graduating increases with age, and thus exhibits a strict time dependency, we will use the hazard model proposed by Meyer (1990) which is ideal for this type of problem. This hazard model will also allow us to control for truncation, which is of practical use for us as many of the youth in our data are still in school.

Table 2 reports the results from four specifications of this hazard model. Importantly, in this type of hazard analysis, a *negative* coefficient on a variable indicates that that factor *decreases the probability* of an individual graduating, everything else held constant. Thus, a significant negative coefficient should be interpreted as a factor that increases the years of education for an individual, which is our measure of educational success. Thus, column (2) indicates that women weakly spend more time in school after controlling for parental education and location.[2]

The importance of the educational background of parents in mediating youth transitions through education is demonstrated in columns (2)-(4) of Table 2. In each of these columns, where the young men and women are analyzed first together and then separately, educational success increases significantly with higher educational attainment among parents. This result is unsurprising for at least two reasons: First, educated parents are more capable of helping their students with their schoolwork in the home. Second, the educational attainment of the parents, and in particular the father, is highly correlated with family income which provides the youth with more resources.

[2]Point estimate is significant at the 10% level.

Table 2: Hazard Model for the Numbers of Year of Education

	Both		**Males**	**Females**
	(1)	(2)	(3)	(4)
Female	-0.06	-0.09		
	(0.04)	(0.05)		
Mother's Education:				
Elementary		-0.21**	-0.26**	-0.17
		(0.07)	(0.09)	(0.09)
Lower Secondary		-0.38**	-0.24	-0.53**
		(0.11)	(0.14)	(0.16)
Upper Secondary		-0.40**	-0.27	-0.57**
		(0.14)	(0.16)	(0.19)
University		-0.42	-0.24	-0.74
		(0.25)	(0.30)	(0.42)
Father's Education:				
Elementary		-0.13*	-0.19*	-0.08
		(0.06)	(0.09)	(0.08)
Lower Secondary		-0.19*	-0.28*	-0.09
		(0.09)	(0.12)	(0.13)
High School		-0.37**	-0.56**	-0.19
		(0.12)	(0.16)	(0.17)
University		-0.60**	-0.63**	-0.57*
		(0.17)	(0.23)	(0.24)
Regional Controls Included?	Yes	Yes	Yes	Yes
N =	39719	33552	16351	17201
Log-likelihood value	-8078.7	-6622.4	-3322.7	-3294.5

Youth whose parents are unable to assist their children in the transition through school are clearly at a disadvantage in Iran. This fact is particularly evident among daughters of mothers who are illiterate or have only a primary education. The importance of family background in predicting years of education suggests that despite the increased opportunities offered by the expansion of the educational system, equality of opportunity still eludes Iran.

4.2 Transition to University

University degrees are highly coveted in Iran as they offer access to preferred jobs in the formal private and public sector. However, as the universities have capacity for only a fraction of the secondary school students, many students are denied access each year. Though regional private universities have emerged at a rapid pace in response to this excess demand, they have not reduced the competition for spots in public universities as they are typically of low quality relative to the public universities. Instead, these private universities seem to serve more as a backup option for the wealthy who are not accepted to a public university as they are

quite expensive and not available to the bulk of the population.

In this section we use a probit analysis to study the factors that affect the transition from high school to university. As only secondary school graduates are qualified for entrance to universities, our analysis here is limited to the students in our sample who are currently in university or who have completed their education and have either a high school or university degree. In Table 3 we reports the results from a probit where the dependent variable is a binary variable with a zero indicating the individual only completed secondary school and a one indicating that the individual entered university.

The results in Table 3 demonstrate again the importance of family background in successful educational transitions. However, as compared to the results for years of education above, we see a much stronger gender correspondence in terms of the relationship of parent and child education. Indeed father's education has a strong effect on young males' access to university, but seemingly no effect on young females. Conversely, the education of a young female's mother has a strong effect on her transition to university, while there seems to be only a week effect of mother's education on young males.

Interestingly, women have a higher overall probability of making a successful transition to university, as indicated by the significantly positive coefficient for 'Female' in column (2) of Table 3, which is consistent with the growing dominance of women in Iranian higher education.

Table 3: Probit for Transition from High School to University

	Both		Males	Females
	(1)	(2)	(3)	(4)
Female	0.11	0.16*		
	(0.07)	(0.08)		
Mother's Education				
Primary		0.31**	0.24	0.40*
		(0.12)	(0.17)	(0.17)
Lower Secondary		0.68**	0.29	1.03**
		(0.15)	(0.22)	(0.21)
Upper Secondary		0.77**	0.44	1.06**
		(0.17)	(0.24)	(0.24)
University		1.11**	0.52	1.84**
		(0.28)	(0.37)	(0.46)
Father's Education				
Primary		0.24	0.41*	0.09
		(0.13)	(0.19)	(0.18)
Lower Secondary		0.30*	0.65**	-0.03
		(0.15)	(0.22)	(0.21)
Upper Secondary		0.48**	0.96**	0.12
		(0.17)	(0.26)	(0.24)
University		0.81**	1.33**	0.38
		(0.20)	(0.30)	(0.28)
Regional Controls Included?	Yes	Yes	Yes	Yes
N =	1547	1318	621	694
Log-likelihood value	-952.9	-735.5	-336.6	-388.3

5 Work Transitions

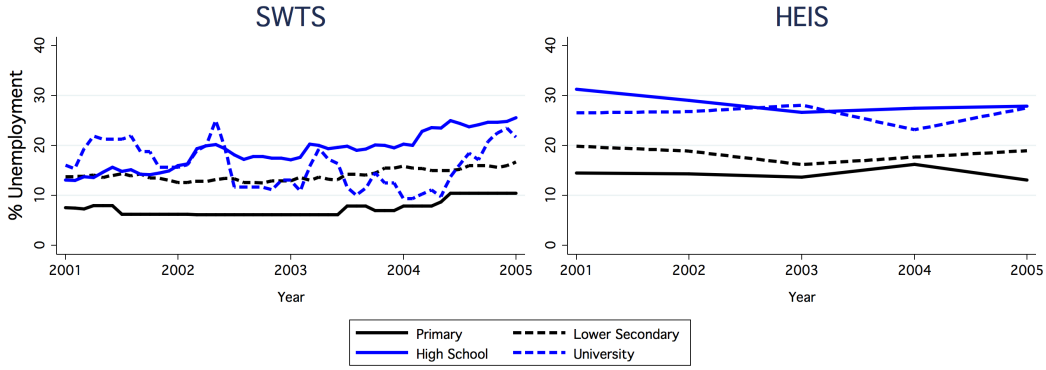
Despite the economic expansion of the last decade and substantial decline in unemployment for older workers, Iranians still face great difficulty in finding employment once they leave school. Indeed, while the unemployment rate among those age thirty and over is less than five percent, the unemployment rates facing youth is much higher. For men in their late teens the unemployment rate is nearly thirty percent, and the comparable rate for those women who participate in the labor market is almost fifty percent. And though unemployment does fall towards the late 20s, the rate is still quite high with unemployment rates of 22% for men and 44% for women through the mid-20s.

In Figure 5 we compare the self-reported retrospective unemployment rates for young men in the SWTS, which will be the focus of our analysis here, and the comparable youth in the much larger Iranian Household Expenditure and Income Surveys (HEIS) from 2001 to 2005.[3] This figure demonstrates the particularly high

[3]In calculating the youth unemployment rates for Figure 5 we limited the sample to young men for an important reason.

unemployment among the most educated, one of the central characteristics of the situation facing Iranian youth. This negative relationship between employment prospects and education can be seen in both the SWTS and HEIS data. More educated youth face higher rates of unemployment than less educated youth, with the strongest contrast demonstrated by the secondary school graduates and those with only primary educations. In the SWTS the unemployment rate is almost twice as high among secondary school graduates while the HEIS exhibits just over a fifty percent difference.

Figure 5: 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.

However this figure also demonstrates two important facts about the SWTS data. First, while they have the advantage of providing retrospective data about activities since graduation, the small sample size limits the reliability of analysis focusing on specific groups. This can be seen by comparing the calculated unemployment rates for university students between the SWTS and the HEIS, where the data from the SWTS exhibit much more volatility. This is to be expected as the line represents a total of only 70 individuals, and nearly 50 of those individuals entered the labor force at some point after 2001 so that the leftmost part of the line represents only 20 observations.

Second, even though we adopt a broader definition of unemployment in the SWTS than that used in the HEIS (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 our data. This apparent downward bias in the SWTS unemployment rate is likely caused by a different definition of unemployment: While the HEIS uses 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. Though the

Though female unemployment, and in particular female joblessness, is a very 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.

ordering of employment by education level is roughly comparable between the two data sets suggesting that the SWTS is a relatively random sample, all of the results presented here should be treated as lower bounds of the difficult labor market facing Iranian youth.

In this section we exploit the retrospective data available in the SWTS to look at several questions about the transition to work. We begin by looking at the activities of youth after they leave school and explore the variety of factors that affect the employment prospects of youth immediately after school. As a large number of youth are unemployed, or jobless, at the time they leave school, we look at the factors that affect this duration of unemployment. Third, we address the question of the reservation wage and the possible influence that it is having on the labor market outcomes of these youth. Finally, we explore the oft-mentioned labor market inflexibility by looking at the degree of job mobility and stability that these youth face during their early years in the labor market.

5.1 Transition from Education

We explore the activities of youth after school in two majors 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, which is 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".[4] The third, *test preparation*, are students preparing for an exam as discussed in the education section above. 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 6 and 7 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,

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

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. Clearly, while extended schooling increases the general level of skills of those who go beyond lower secondary, it does not prepare them better for employment. Most likely there are at least two types of youth who go beyond lower secondary, those who are well suited for higher education and therefore benefit from it, and those who treat it as a lottery, hoping to escape unskilled work.

Figure 6: Activities of Men After Leaving School

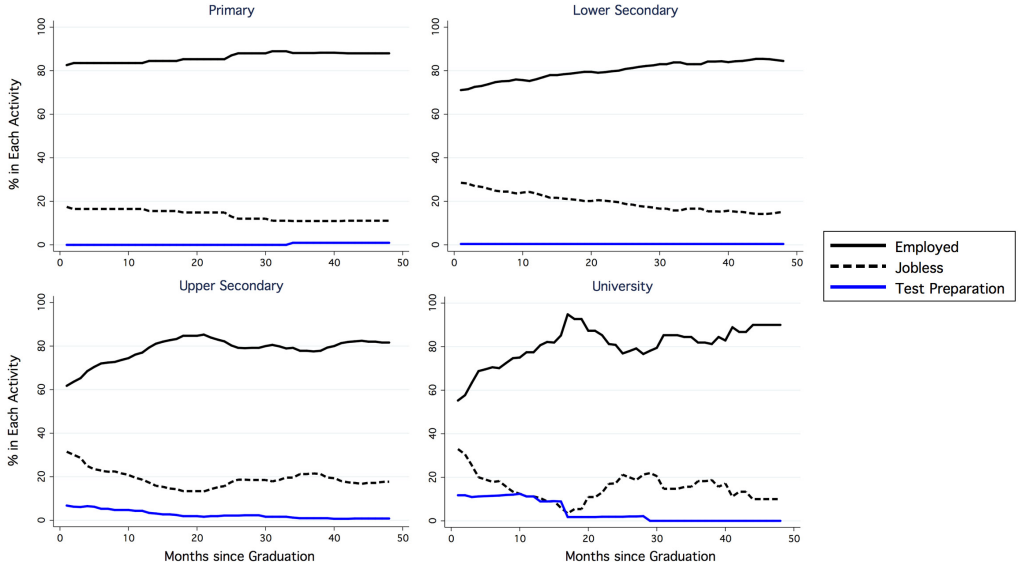
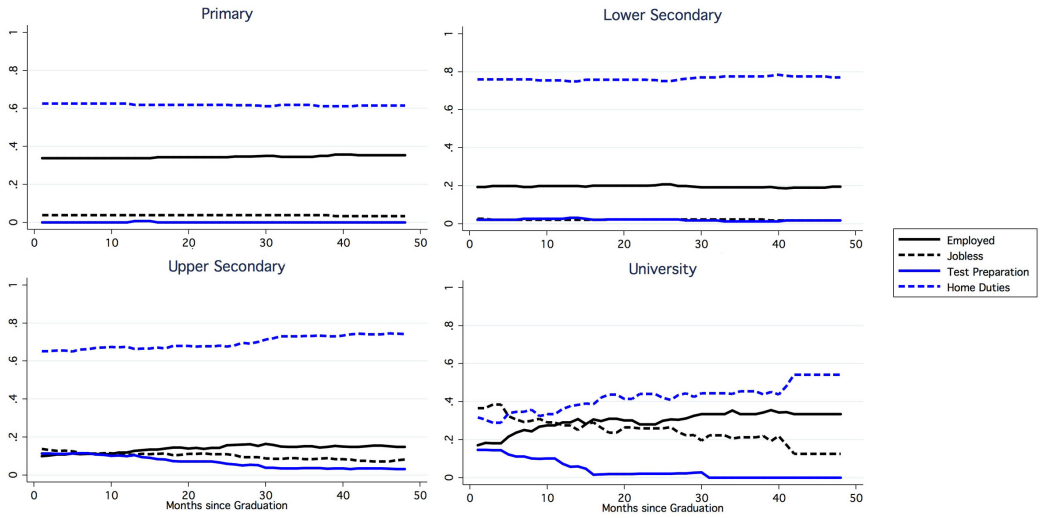


Figure 7: Activities of Women After Leaving School



Employment rates for women seem to be the highest for the least and the most educated women. The high and steady 40 percent employment of women with 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 reflect the ambition and drive of these women. That we only see rising rates of employment over time among the most educated, and strongest for the university educated, indicates that these women are queuing for more preferred jobs while the lower educated women are working out of necessity. 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.

In Table 4 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 say that they are in the formal labor market, either employed or jobless, which is very likely a biased subset of the total female population. Indeed, many of the women who report home duties are actively working and in many cases more than their male counterparts in the formal labor force.

In all specifications we can 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. However, this effect is particularly pronounced among women and is indeed the strongest predictor of joblessness among women. This effect is likely to be mostly mechanical as women in rural areas are more likely to work in the home and will not enter the formal labor market unless they already have a position arranged.

Table 4: Probit for Post-School Joblessness[1]

	Both		**Men**		**Women**		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Female	0.64***						
	(0.09)						
Urban	0.45***	0.24**	0.16	0.21**	1.11***	1.21***	1.01***
	(0.09)	(0.10)	(0.11)	(0.11)	(0.21)	(0.24)	(0.22)
Own education							
Lower Secondary	0.36**	0.29*	0.26	0.25	0.16	0.13	0.11
	(0.15)	(0.17)	(0.19)	(0.17)	(0.33)	(0.36)	(0.34)
High School	0.66***	0.48***	0.43**	0.39**	0.94***	0.88***	0.80***
	(0.14)	(0.16)	(0.19)	(0.17)	(0.28)	(0.32)	(0.29)
University	0.73***	0.59***	0.53**	0.40*	0.80**	0.34	0.43
	(0.17)	(0.21)	(0.24)	(0.22)	(0.33)	(0.39)	(0.37)
Father's education							
Elementary			0.25**			0.21	
			(0.12)			(0.23)	
Lower Secondary			0.34**			0.58*	
			(0.16)			(0.30)	
High School			0.50***			0.58	
			(0.18)			(0.36)	
University			0.49**			0.69	
			(0.23)			(0.43)	
Mother's Education							
Elementary				0.26**			0.21
				(0.11)			(0.23)
Lower Secondary				0.19			0.91**
				(0.17)			(0.39)
High School				0.51***			0.74**
				(0.17)			(0.34)
University				0.62			-0.01
				(0.38)			(0.63)
N =	1239	910	774	880	329	272	313
Log-likelihoodvalue	-710.1	-542.9	-456.6	-520.3	-152.6	-121.5	-142.5

[1]: Probit estimates for women only include women who enter the labor force immediately after school.

In column (1) we again see the strong impact that an individual's level of education has on the probability of being jobless at the time that they leave school. While the point estimates on own education increase monotonically with the level of education for the pooled sample and the sample only including men, this does not seem to be the case for women. Indeed, though not significantly different, university educated women seem to be more likely to be employed than those with upper secondary educations, which indicates the benefit that a university education can offer women.

5.2 Duration of Unemployment

A major issue facing Iranian youth is very long spells of post-education unemployment. In Salehi-Isfahani and Egel (2007) we estimated these unemployment spells using a pseudopanel approach with repeated cross-sectional data and found evidence of long unemployment spells lasting two 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. Thus, one major advantage of the SWTS is that we can directly analyze the impact of personal characteristics on the duration of unemployment.

In Figures 6 and 7 we examine how unemployment varies by education level and find, similar to our earlier analysis in Salehi-Isfahani and Egel (2007), that unemployment is the highest among the most educated. However, while we found previously that these spells of unemployment were particularly severe among upper secondary and university graduates, these figures suggest that the situations is nearly as grim for graduates of lower secondary programs.

The results from a hazard model analysis of the duration of unemployment are then reported in Table 5 where we limit our analysis to only those whom we consider to be jobless when they leave school (using our definition above). In this table, negative coefficients indicate factors that increase the duration of unemployment and positive coefficients indicate factors that decrease the duration of unemployment. As the specific interpretation of these coefficients is complicated, our discussion here we will focus on the relative magnitude of different coefficients. For more intuition on the economic meaning of these coefficients, we refer the reader to the hazard model presented in the marriage section below where we use a simulation approach to interpret an analogous estimation approach.

The central result in this table is that the duration of unemployment has a negative and monotonic relationship with education. Thus, while individuals of higher education may be more likely to be jobless at the time that they leave school, their post-school unemployment spells are significantly shorter than individuals with lower education. Interestingly, this result contradicts the results we found using a pseudopanel approach in Salehi-Isfahani and Egel (2007) and demonstrates the value of the retrospective data available in the SWTS. While we find here that youth with both high school and university educations face significantly shorter durations of unemployment, the pseudopanel approach used in our previous paper showed no effect of education on the duration of unemployment for those unemployed at graduation.

Table 5: Hazard Model for Duration of Joblessness[1]

	Both	**Men**		**Women**
	(1)	(2)	(3)	(4)
Female	-0.85**			
	(0.14)			
Urban	-0.39*	-0.38*	-0.35	-0.32
	(0.15)	(0.17)	(0.20)	(0.34)
Own Education				
Lower Secondary	0.40	0.41	0.61	0.55
	(0.27)	(0.31)	(0.37)	(0.61)
Upper Secondary	1.11**	1.16**	1.42**	0.89
	(0.26)	(0.29)	(0.36)	(0.50)
University	1.72**	1.81**	2.13**	1.45**
	(0.29)	(0.35)	(0.44)	(0.55)
Father's Education				
Primary			-0.04	
			(0.22)	
Lower Secondary			-0.13	
			(0.28)	
Upper Secondary			-0.05	
			(0.30)	
University			-0.47	
			(0.37)	
Heterogeneity Variance	0.14	0.19	0.20	0.00
	(0.11)	(0.12)	(0.13)	(0.00)
Regional Controls Included?	Yes	Yes	Yes	Yes
N =	11897	7185	5814	4712
Log-likelihood value	-1420.1	-986.1	-839.0	-433.0

[1]: Conditional on being jobless at end of schooling. We do not include a spec--ification for women including father's education as the model becomes unstable.

5.3 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 despite 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.

A central prediction of the reservation wage is that youth from wealthier families will be more likely to delay

employment, as they are only willing to work if they are offered a job with a salary above their reservation, or to choose not to work. Though we do not observe familial wealth directly, we use parental education as a proxy as it is highly correlated with familial wealth. In particular, family wealth rises monotonically with father's education on average, so that the familial wealth of youth with university educated fathers are higher than those with fathers who have only secondary educations, etc.

Thus, our analysis of both the probability of unemployment at graduation in Table 4 and the duration of unemployment in Table 5 from before provide evidence against the importance of a reservation wage in Iran. While we did find that father's education had a non-zero impact, that there was no significant difference having a father with a lower secondary or university education is evidence that familial income does not affect the employment decision for either men or women.

While this is evidence that youth from wealthier families do not delay employment and queue for jobs, which is inconsistent with the importance of a reservation wage, it does not allow us to directly test the hypothesis of Ross (2008) as only a small share of women enter the labor force. Thus, in Table 6 we focus on testing the factors that affect women's willingness to work. We do this in two ways. First, we look at these young women's stated willing to work by studying their responses to the question: "Ideally, which of the following types of employment status would you prefer?" Second, we restrict our sample to only those who have completed school and look at the factors that affect the willingness of female graduates to enter labor force. This allows us to look at the 'revealed preference' of women's willingness to work.

Columns (1) and (2) of Table 6 report a simple analysis of the women's stated desire to work. In particular, we code each woman's willingness to work as a binary variable, with a one indicating that she is willing to work, and then use a standard probit regression. Column (1) includes personal characteristics of the women only and column (2) includes parental characteristics. The results show that greater education, especially at the university level, increases the marginal probability of working, and that women still in school are more likely to be interested in working. Interestingly, while being married reduces desire to work, being engaged does not seem to have a significant effect. And similar to our analysis above for women's education transitions, the characteristics of a woman's mother, and not her father, affects her desire to work. In particular, a young woman's desire to work is increasing in her mother's education though it does not seem to be affected by the working status of her mother. This suggests that reservation wage is not a significant factor in explaining women's desire to work as father's education, a proxy for family background, does not play an important role and mother's education does.

The following two 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. While a woman's education still seems to impact her likelihood, this is now only true of the most educated - which likely reflects the realities of the job market in that woman with high school education face many difficulties in finding opportunities to work. Interestingly, while parental education does not seem to impact the probability of working, a working mother has a very strong positive impact on the probability that a woman works which is suggestive of the importance of the mother as a role model. Urban woman are less likely to enter 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.

Table 6: Examining Female Willingness to Work

Dependent Variable:	Desire to Work		In Labor Force[1]	
	(1)	(2)	(3)	(4)
Married	-0.75***	-0.78***	-0.82***	-0.86***
	(0.09)	(0.11)	(0.10)	(0.12)
Engaged	0.01	-0.10	-0.16	-0.16
	(0.27)	(0.31)	(0.27)	(0.32)
Urban	0.00	-0.02	-0.37***	-0.39***
	(0.09)	(0.11)	(0.11)	(0.14)
Mother Works		0.13		0.79***
		(0.16)		(0.18)
Still in School	0.74***	0.68***		
	(0.12)	(0.13)		
Own education[2]				
Lower Secondary	0.09	0.19	-0.34**	-0.17
	(0.15)	(0.17)	(0.16)	(0.19)
Upper Secondary	0.52***	0.51***	-0.12	0.09
	(0.13)	(0.16)	(0.14)	(0.18)
University	1.56***	1.37***	0.87***	1.07***
	(0.20)	(0.23)	(0.20)	(0.27)
Father's education[3]				
Elementary		-0.06		-0.15
		(0.12)		(0.15)
Lower Secondary		0.04		0.29
		(0.17)		(0.21)
Upper Secondary		-0.37*		-0.43
		(0.21)		(0.30)
University		0.26		0.16
		(0.34)		(0.44)
Mothers education[3]				
Elementary		0.03		-0.01
		(0.13)		(0.16)
Lower Secondary		0.40*		-0.04
		(0.21)		(0.28)
Upper Secondary		0.84***		0.57
		(0.26)		(0.35)
University		0.25		-0.26
		(0.65)		(0.66)
Log-likelihood				
N	1397	1157	844	672

[1]: Among women who state that they have completed school.
[2]: Primary is excluded category
[3]: Illiterate is excluded category. Results for primary omitted to save space.

5.4 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 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 is limited information about the type of positions that they held. However, we are able to observe whether a position was in the private or public sector. Thus in the analysis below we will compare the stability of jobs in the private and public sector to ascertain whether public jobs do offer the stability they promise. This is the first study to our knowledge to empirically compare the degree of stability between public and private sector jobs in Iran.

In Table 7 we look at job stability for public and private positions. Interestingly, contrary to the prevailing notion about the stability offered by public positions, the length of employment is actually longer in the private sector. In fact, the length of a position on average is twice as long in the private sector. This result holds for all levels of education for men and suggests that men may be willing to stay with the same firm in the private sector if they have a preferred long-term contract as it allows for upward mobility as compared to the public sector. The results for the women are a bit less clear largely as a result of the small sample size.

Table 7: Duration of First Job for Private vs. Public Sector (in months)

	Men				**Women**		
	All	Low Sec.	Sec.	College	All	Sec.	College
Private	49	67	35	36	32	11	7
	(N = 53)	(N = 20)	(N = 22)	(N = 10)	(N = 20)	(N = 11)	(N = 27)
Public	24	27	23	24	38	7	6
	(N = 317)	(N = 41)	(N = 219)	(N = 51)	(N = 33)	(N = 20)	(N = 12)
Sig. Diff?	***	***	***	***	-	-	-

To examine the difference between formal and informal positions we define a job as formal if the position is either

- in the public sector, or
- has a contract of unlimited or fixed duration,[5]

and all other jobs are defined as being informal. This definition of informality gives us roughly the same proportion that SCI's own report of the SWTS results lists as informal (Statistical Center of Iran 2006). Using this definition of formality we explore the impact that taking a position in the informal sector has on the future of youth by focusing on two issues. First, as informal sector positions are typically viewed as being less desirable than formal sector jobs we might anticipate that informal jobs are of shorter duration, with the implication that these jobs are a stepping stone to formal jobs. Second accepting a position in the informal sector may lock an individual into the informal sector. This is the 'credentialism' story that is often told for the Middle East where only individuals with formal positions can access other similar positions by using the credentials obtained from a previous position (Assaad 1997, Salehi-Isfahani 2005).

In Table 8 we similarly compare the duration of formal versus informal jobs. Again the results are rather surprising as we find that for both men and women the average duration of informal jobs - more than 4 years for men and 5.5 years for women - is nearly twice that of formal jobs. The largest difference is for men and women with primary and lower secondary education who are not eligible to be hired in the public sector under the Civil Service Employment Code which offers the generous tenure and benefits package. These individuals with low education are instead most likely hired on short term contracts for low end jobs, such as street cleaning for the municipalities. The longer tenure in the informal sector for the less educated may be also because these individuals are getting stuck in undesirable positions without the resources to find a new position, which is related to the issue of credentialism discussed above.

[5]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 layoff steeply after a year of employment.

Table 8: Duration of First Job, Formal vs. Informal (in months)[1]

	Men					Women				
	All	Primary	Lower Sec.	Sec.	College	All	Primary	Lower Sec.	Sec.	College
# Informal	51 (2)	89 (4)	55 (3)	30 (2)	23 (6)	67 (4)	107 (7)	47 (7)	33 (4)	14 (4)
# Formal	27 (1)	39 (14)	40 (5)	24 (1)	26 (2)	34 (4)	30 (-)	35 (17)	39 (6)	29 (5)
N	886	108	253	411	81	260	69	50	100	29
Sig. Diff?	***	***	***	***	-	***	-	-	-	**

[1]: Standard errors in parentheses.

: 5% significance *: 1% significance.

While university educated women have longer-lasting positions in the formal sector, which is consistent with our predictions, the evidence for university educated men and high school educated women only weakly supports our predictions. Also, informal sector jobs actually last longer for men with high school degrees. One possible reason for this may be that private sector employers use short-term contracts in order to avoid the restrictions of Iran's Labor Law that makes it difficult to fire employees who stay on the same job for longer than three month (Salehi-Isfahani 2005).[6] 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 Ahmadinejad prohibited public companies from hiring workers on short term contracts, but the prohibition is yet to be extended to private employment.[7]

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 the basic work habits and ability to work in teams, they are likely to play an important role in the development of youth careers.

In Table 9 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

[6]Iran's Labor Law imposes high costs on employers when they layoff workers who have been with them longer than one year. As a result, both public and private employers hire workers for formal sector jobs on 3 or 12 month 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.

[7]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 contract (Mather, Mather, and Tamjidi 2007). In a major labor rally on May 1, 2007, "demonstrators opposed new short-term contracts, complaining that Iranian labour laws are gradually being watered down to benefit employers." BBC news http://news.bbc.co.uk/2/hi/middle_east/6612489.stm, accessed July 25, 2008.

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 the columns correspond to the second job after school. As the first job could be either formal or informal 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 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.

Table 9: Transitions between Formal and Informal Jobs

		All		Primary		Lower Secondary		Secondary		College	
		$\mathbf{I}_2$	$\mathbf{F}_2$	$\mathbf{I}_2$	$\mathbf{F}_2$	$\mathbf{I}_2$	$\mathbf{F}_2$	$\mathbf{I}_2$	$\mathbf{F}_2$	$\mathbf{I}_2$	$\mathbf{F}_2$
Changers	$\mathbf{I}_1$	75	191	17	40	30	88	20	56	1	4
	$\mathbf{F}_1$	172	78	6	0	28	18	124	40	9	17
All	$\mathbf{I}_1$	323	191	65	40	109	88	117	56	16	4
	$\mathbf{F}_1$	172	213	6	1	28	33	124	118	9	52

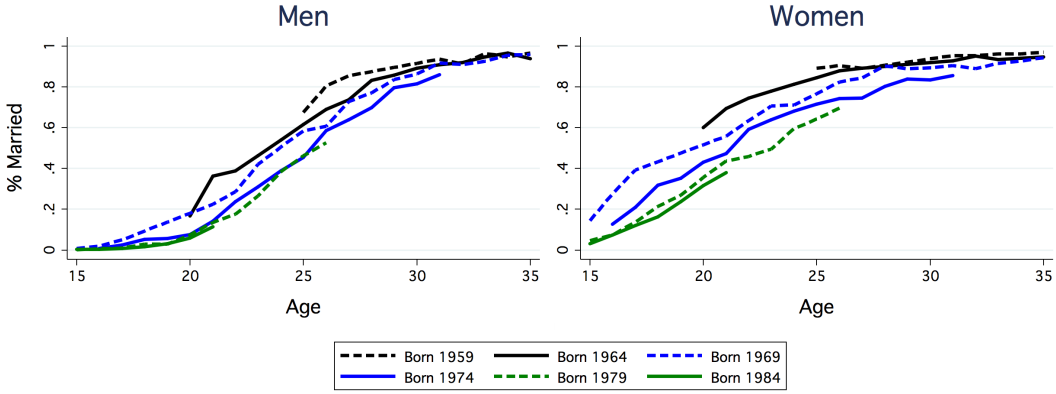
When we focus on only those who have more than one job, the "changers", we see that there is a lot of mobility between the informal and formal sectors which is contrary to the accepted wisdom. Indeed, in almost all cases, "changers" who were in the formal sector moved to the informal sector and vice versa. The only exception 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, are clearly in order.

6 Marriage Transitions

In this section we explore the variety of personal, familial and environmental factors that affect the transition of these youth to marriage. While the observation that young people in Iran are finding it increasingly difficult to get married and start families is not new, there have been few efforts to systematically study the myriad factors that might be affecting the successful transition of youth to marriage.

Figure 8 demonstrates how the transition to marriage has changed over time in Iran 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 as compared to previous generations. For example nearly four times as many men born in 1964 were married at age twenty 20 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.

Figure 8: Delayed Marriage



Source: Authors' calculations from HEIS data files.

Delayed marriage clearly has some positive impacts 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 the response "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).

Here 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 multivariate analysis of the timing of marriage and accounts for the fact that many of the individuals in our data are not married by the time of the survey.

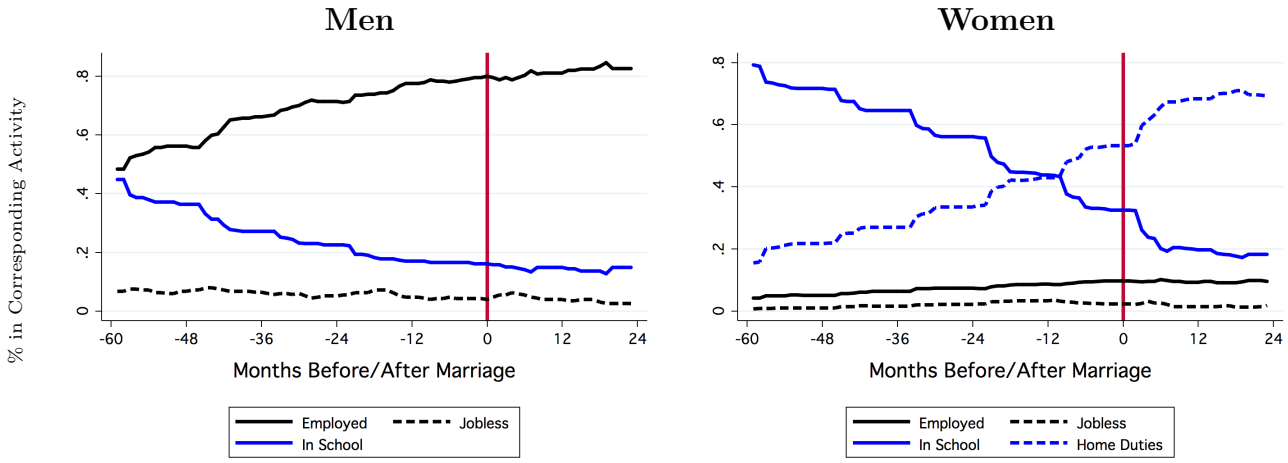
6.1 Descriptive Analysis

We might expect that work and life experiences, such as schooling, might be tied to the transition to marriage. In particular, we might expect that men get married shortly after they leave school and find employment, and we might similarly expect that women will get married after they leave school and either enter the labor force or engage in home production of some kind. In order to examine this issue in Figure 9 we look at the activities of individuals five years before and then two years after their marriage.

While these figure represent the aggregate across all married men or women, it is interesting that there is not a noticeable shift in the average activity of men either before or after marriage. The majority of married men are employed at the time of marriage (80%), and most of the rest are still in school at the time of marriage. Further, there is 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.

Among women 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. This could be because women prefer 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), or their husband prefer they stop going to school. Interestingly, the share of employed women does not change before or after the marriage suggesting that the decision to get married does not affect the ability of these women to participate in the labor force. This results 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).

Figure 9: Activity and Marriage Age[1]



[1]: Only includes individuals who are married at the time of the survey.

6.2 Modeling the Age of Marriage

Here we model the age at marriage using a hazard model following Meyer (1990). While 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), hazard model approaches are designed to deal with truncation. This is an important issue for us as many of the observations are censored as the youth were not married by the time of the survey.

Our parameterization of the hazard model is simple and we consider the impact that age, employment experience, parental background, and education have on the age of marriage controlling for the location of the individual. Following Blossfeld and Huinink (1991) we include two age variables, $log(45 - age)$ and $log(age - 9)$, to correct for the well-known nonmonotonic age dependence of the marriage rate. These terms assume that an individual is at risk of getting married between the ages of 10 and 44. As this model is unstable with terms that are collinear, estimation including both father's and mother's education perform poorly and we omit these results. The specification with father's education and the education of the youth is similarly unstable.

In Table 10 we provide estimates of the hazard model for men and women separately. The interpretation of these point estimates is a bit different than a standard regression framework. In this case a negative coefficient should be interpreted as a factor that delays the age of marriage and a positive coefficient does the opposite. Thus in the simplest specification for the men, column (1), the age of marriage falls with the

number of years that a man is employed.

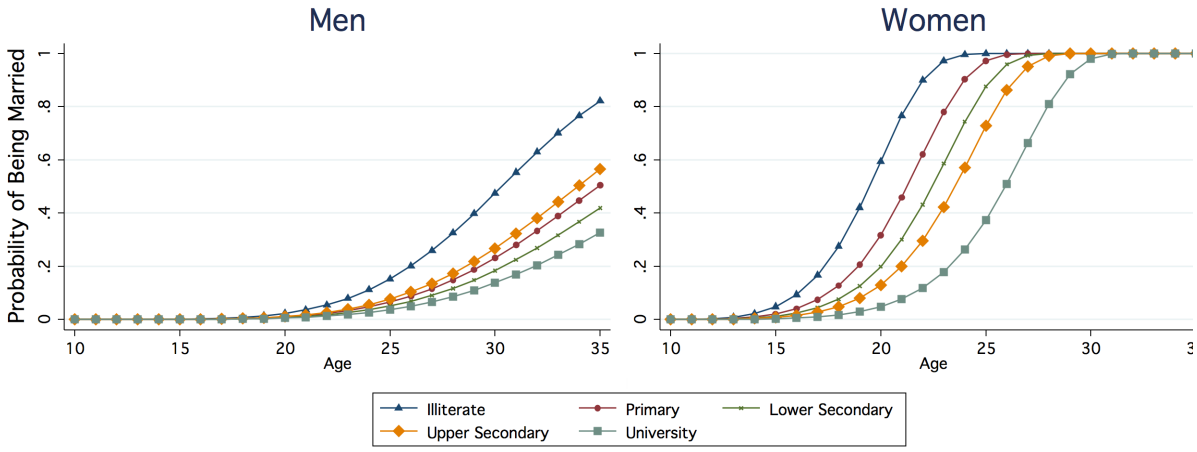
Table 10: Marriage Hazard Model

	Men				Women		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
log(45 - Age)	0.96	0.48	2.39	-1.16	3.02	-4.01	-2.88
	(3.84)	(4.34)	(3.38)	(4.61)	(3.58)	(4.92)	(3.65)
log(Age - 9)	4.86**	5.51**	5.48**	5.22*	4.22**	3.60**	3.58**
	(1.63)	(1.96)	(1.54)	(2.03)	(0.63)	(0.82)	(0.67)
Years Employed	0.21**	0.21**	0.18**	0.17**	-0.08*	-0.16**	-0.14**
	(0.04)	(0.04)	(0.03)	(0.06)	(0.04)	(0.06)	(0.05)
Father's Education:[1]							
Elementary		-0.90**		-0.59		-0.86**	
		(0.29)		(0.30)		(0.23)	
Lower Secondary		-1.15**		-0.63		-1.40**	
		(0.43)		(0.45)		(0.34)	
Upper Secondary		-0.73		-0.23		-1.88**	
		(0.45)		(0.51)		(0.45)	
University		-1.47*		-0.68		-2.90**	
		(0.64)		(0.70)		(0.61)	
Mother's Education:[1]							
Elementary			-0.71**				-1.03**
			(0.25)				(0.22)
Lower Secondary			-1.10**				-1.70**
			(0.43)				(0.35)
Upper Secondary			-0.81*				-2.37**
			(0.38)				(0.44)
University			-2.16				-3.60**
			(1.17)				(0.91)
Own Education:[2]							
Lower Secondary				-0.30			
				(0.43)			
Upper Secondary				-0.91			
				(0.53)			
University				-1.39			
				(0.78)			
Heterogeneity Variance	2.19**	2.56**	1.71*	2.85**	1.52	3.92**	3.28**
	(0.94)	(0.94)	(0.75)	(0.99)	(1.08)	(1.48)	(1.05)
Regional Controls Included?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	18321	15818	17758	11011	17429	14861	16593
Log-likelihood Value	-964.5	-743.6	-892.1	-682.0	-2159.2	-1749.7	-1976.8

[1]: Illiterate is excluded category. [2]: Primary is excluded category.
[3]: Rural East Azerbaijan is excluded category.

In order to provide some intuition for the magnitude of these coefficients, in Figure 10 we demonstrate the effect of father's education at age of first marriage following Jenkins (2005) and Binzel (2008). In this simulation approach we use the results from specifications (2) and (6) of Table 10 to compare the impact that father's education has on the probability of marriage for men and women from ages 10 to 35. Importantly we are comparing the impact of men and women who are *never* employed. Though this is unrealistic as both men and women are working after graduation, this allows us to focus on the marginal impact of father's education on the age of marriage.

Figure 10: Effect of Father's Education on Probability of Being Married[1]

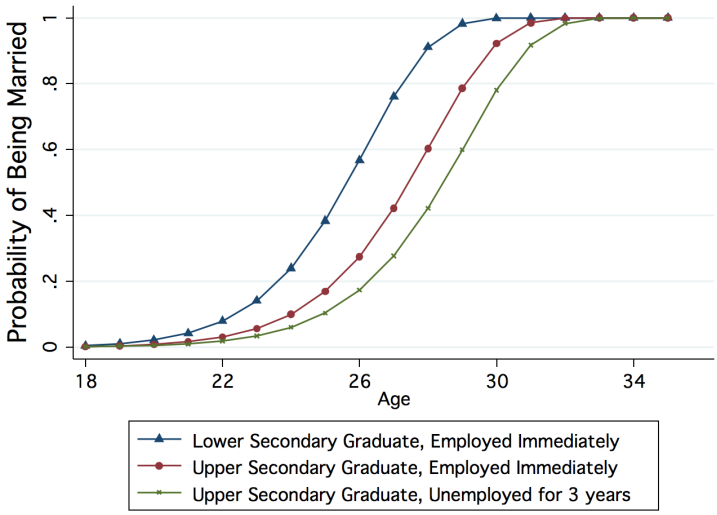


[1]: Comparison assumes that these men and women were never employed to simplify comparison of the effect of father education.

Figure 10 clearly shows that the education of an individual's father, which is a proxy for familial wealth and social status, has a strong impact on the age of marriage. This impact can be seen from the pronounced rightward shift of the probability of marriage age profile for individuals with more educated fathers. From Table 10 we can see that these effects are significant and monotonic, except for the case of men with fathers who are graduates of upper secondary schools suggesting that youth of higher social status do delay marriage. Men whose fathers have upper secondary educations seem to marry earlier than those with primary educations, which is peculiar. However this result is not significant and may be a result of noisy data.

Youth do not choose their father's education level, but they can choose at what point they will enter the labor market. Though the effect of their own education is not significant, likely because of the collinearity with both parental education and a combination of age and years employed, we can look at the impact of years of employment on the age of marriage. In order to demonstrate this, in Figure 11 we compare three "synthetic" types of men using specification (4) of Table 10. The first left school after lower secondary school and entered the labor market immediately. The second left high school and entered the labor market immediately. The third, like the second, graduated from high school but spent 3 years unemployed before entering the labor market. For all three we assume that their father had a lower secondary education and the figure begins from age 18 when the second and third left high school.

Figure 11: Effect of Education and Employment on the Probability of Men being Married (by age)



While the three sample 'synthetic' men considered in Figure 11 do show different age profiles for the probability of marriage, the difference is surprisingly small. Indeed, it seems that spending three years in unemployment has only a very small effect on the total probability of getting married. This is further evidence to corroborate our conclusion that the cost of marriage is likely *not* exogenous and adjusts based on the social and economic status of men and women.

For women, employment seems to have a weak effect in the opposite direction as men, which is indicated by the negative coefficient in columns (5)-(7) for years of employment. As the coefficient for men and women are of roughly equal magnitude, three years of employment for a woman and three years of unemployment for a man would similarly shift the age profile for marriage to the right. This is a sensible result as women who are working are more economically self-sufficient and perhaps more willing or able to delay marriage.

7 Conclusion

In this study we exploited retrospective information available in the 2005 SWTS to study the education, work, and marriage transitions of Iranian youth, the three 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 relies on static accounts of youths education, labor market outcomes, and marital status. Our approach allowed 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 a variety of our previous findings in Salehi-Isfahani and Egel (2007), this study has a variety of new, and sometimes surprising, findings about youth transitions in Iran. First, while we find that parental background does affect the ability of youth to transition through school and into high school, our evidence here suggests that the effect is likely driven by role models and not family wealth. We demonstrate this by exploiting the fact that the education of both parents is available in these data.

Second, 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 in examining the impact of family background on the probability and duration of employment as well as the willingness of these youth to work.

Finally, 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 say 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 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. 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.

Despite limitation in identifying causation, our analysis has important implications for policy, two of which are worth noting here. First, we find evidence that family background matters in all three transitions, through school, to work, and to marriage. Policy in all three areas 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 these transitions. In Iran, different agencies design policy for different aspects of youth 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 young couples 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 reduces its effectiveness.

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