

Transition to a first job with reference to the role of macroeconomic crises: the case of Jordanian youth.

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Abstract

Relying on a discrete-time hazard model, the current study utilizes data coming from JLMPS 2016 to examine determinants of youth transition to a first job in Jordan. It primarily devotes special attention to the potential effects of economic crises on such process. The study shows that school cohorts leaving or finishing education during turmoil periods, particularly after the Arab Spring, are greatly less likely to transit quickly to work compared with the earlier cohorts. Transition to a decent job (a job with social security and /or signed contract) tends to be influenced more severely compared with the transition to any job. Overall, women, uneducated, and those coming from poor families have greater probability to spend more time in transition to work.

Keywords: Jordan, Youth transition to labor market, Arab Spring.

الانتقال الى الوظيفة الأولى ودور الازمات الاقتصادية الكلية: حالة الشباب في الاردن

ملخص

استخدمت هذه الدراسة نموذج (discrete-time hazard) و بيانات مأخوذة من (JLMPS 2016) لتقدير محددات انتقال الشباب إلى الوظيفة الأولى في الأردن، مع التركيز على الآثار المحتملة للآزمات الاقتصادية على هذه العملية. توصلت الدراسة أن الاجيال التي تركت التعليم أو أنهته خلال فترات الاضطراب، خاصة بعد الربيع العربي، أقل عرضة للانتقال بسرعة إلى العمل مقارنة بالاجيال التي سبقتها. وبينت الدراسة ان الانتقال إلى وظيفة لائقة (وظيفة بضمان اجتماعي و / أو عقد عمل موقّع) اكثر احتمالية للتأثر بالآزمات الاقتصادية. بشكل عام، أظهرت نتائج الدراسة ان النساء وغير المتعلمين، وأولئك القادمين من أسر فقيرة لديهم احتمالية أكبر لقضاء المزيد من الوقت حتى يحصلوا على عمل.

الكلمات الدالة: الأردن، انتقال الشباب الى سوق العمل، الربيع العربي.

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1. Introduction

Youth transition to labor market is critical to other subsequent social and economic outcomes. During and after crises that shock economies, integrating youth into labor market becomes more challenging. Throughout the last two decades, Jordan and the wider Arab region witnessed stark financial and socio-economic crises. The global financial crisis in 2007-2010 shocked the regional economies and lead them to experience deep economic downturn. Expanding social inequality fueled the eruption of the so-called ‘Arab Spring’ during 2011-2015. Wide-spread uprisings spanned several Arab countries, enforcing millions of people to migrate regionally and internationally. Although Jordan weathered this regional turmoil, it has been hit hard by its socioeconomic and demographic effects. In this vein, Jordan welcomed more than 600 thousand Syrian refugees since 2011 (UNHCR 2019). Currently, like other countries, the governments in the region are experiencing an uncommon pandemic (Covid-19), a crisis pushing them to implement strong interventions and lockdowns. Economists expect the pandemic to severely inflict economic pain on economies and labor markets (Juraneck et al, 2020).

In part due to the lack of adequate data, the dynamics of school to work transition and the potential effects of economic crises on such a process have not received enough attention in Jordan. Using novel data coming from the second round of Jordan Labor market Panel Survey (JLMPS 2016), this paper applies discrete-time hazard techniques to investigate the determinants of youth transition into labor market in Jordan. It estimates what determines time to transit to a first job, and whether such transition duration is significantly influenced by the existence of economic crises. The study contributes to the existing literature of school-to-work transition in Arab countries by extending previous Jordan related research. This endeavor is central to the current debate about the potential effects of Covid-19 pandemic on labor markets.

The remaining part of the paper is divided into four section. The next section reviews the previous studies. Section 3, in turn, provides discussion of data and methods of estimation.

In the fourth section, we present the results of the study. Finally, section five summarizes and concludes the study.

2. Previous related literature

Pertaining empirical evidence in the Arab region that employs survival analysis is limited and shows that current youth cohorts encounter difficulties in transition to a first job (Selwaness and Roushdy, 2019; Amer, 2015; Amer, 2014; Assaad and Krafft, 2016). The previous studies find that men and educated youth are more likely to spend shorter times to transit to a first job. Amer (2019) indicates sharp recent increases in inactivity, unemployment rates and duration to work regardless of gender and education in Jordan. Upon leaving education, youth women appeared to become increasingly less likely to move on to workplace. Their employment opportunities, unemployment rates, and inactivity periods are positively linked to their educational attainment. Relevantly, the later study, utilizing non-parametric descriptive survival analysis, shows that recent cohorts appeared to require longer time periods in their pursuit for a job. Utilizing survival analysis, Assaad and Krafft (2016) examine unemployment and employment dynamics in Jordan, Egypt, and Tunisia. Their data for Jordan comes from JLMPS (2010). Through applying unemployment duration data that exceed six months, they found that gender is a key factor in transition to employment, as women appear to be more likely to stay unemployed compared with men.

Using the same data that we apply, and to a great extent the same variables, Alawad and Alhawarin (2021) apply multinomial logistic regression models to analyze determinants of the probability of obtaining a job among youth after school. They find that periods of instability significantly influence the probability of a Jordanian to get a job after school, regardless of gender. Their models show that the proportion of youth staying inactive or unemployed has risen noticeably in the recent years. The results provided by the later study match very well with the evidence presented in our current study, although the two studies apply different econometric modeling.

3. *Data and the methods of estimation*

JLMPS (2016)³ was gathered by the Economic Research Forum (ERF) and the (DoS) in 2016 and 2017. It gives detailed information on various household and personal characteristics including education, household socio-economic background, residence and employment and inactivity histories. The retrospective data made available by JLMPS permits the construction of duration data at the individual level. This enabled us to track youth's labor market trajectories after education. Our main outcome variable is the time elapsed before an individual obtains his/her first job after leaving higher education. Here, we differentiate between transition to any job and to a good job. Jobs with social security and /or signed contract are supposed to be decent ones (similar methodology is applied by Selwaness and Roushdy, 2019 for Egypt).

Survival analysis is the proper method for the analysis of data in which the dependent variable denotes the time to the occurrence of a certain event (Austin, 2017). We rely on a discrete-time hazard model estimated using what is known as the complementary log-log link function (Meyer, 1990; Jenkins 1995; Prentice & Gloeckler, 1978). This type of survival modeling is more appropriate than continuous time hazard models when the data of the duration variable of interest is not continuous (Blossfeld *et al*, 2007). Our model incorporates gamma frailty to account for unobserved heterogeneity⁴.

Survival analysis produces two functions for a non-negative random duration variable denoted as T : survival and hazard functions (i.e. $S(t)$ and $h(t)$; respectively). In the current study, T represents how long it takes an individual to obtain her/his first job after leaving education. In this context, $S(t)$ is the probability of an individual spending a period of time (T) that is longer than (t) to find the first job (i.e. $P(T>t)$). On the other hand, the hazard function gives the opposite information (Kleinbaum and Klein, 2012). Basically, $h(t)$ in this study gives the probability of an individual to obtain the first job, given that he or she has survived (not obtaining a job) until time t . This is typically termed as the hazard rate or the rate of failure at time t . The resultant coefficients through the complementary log-

³ The first round of the JLMPS was collected in 2010.

⁴ Not incorporating individual heterogeneity in survival analysis is more serious than in linear regression (Austin, 2017). We use the STATA program `pgmhaz8`. This is a proper command for single spells that are not left-truncated.

log method are comparable to those produced by the Cox proportional hazard model (Steele & Washbrook, 2013). Specifically, the estimation using this procedure specifies how time and certain predictors affect the hazard rate.

Suppose there are individuals $i = 1, \dots, N$ that finish the state of education at time $t = 0$ and may experience the event of interest only once, or may not, in the subsequent periods. The complementary log-log function of the hazard rate and its dependence on a vector of covariates, X_{it} , for individual i in time interval t is as follows (Jenkins, 1995):

$$h_{it} = 1 - \exp \{ - \exp (X_{it}\beta + \theta(t)) \}$$

or

$$\log \{ - \log (1 - h_{it}) \} = X_{it}\beta + \theta(t)$$

4. Empirical Results

Tables (1 and 2)⁵ display exponentiated coefficients obtained from the specifications of discrete-time survival models we estimate using the complementary log-log link function. A covariate with an estimated coefficient (hazard rate) greater than/ less than one means it exerts a positive/negative influence on the probability of transition to a first job after education. In addition to region, gender education level, urban areas, and marital status, our estimated models integrate local labor market statuses. Differences in unemployment rates (log one-year lagged URs) at the government level, and by gender, for each year of school exit (2000-2015) are included. Furthermore, to control for socio-economic background, we utilize household wealth quintiles that are available in the raw data, which were constructed based on household's different types of assets.

4.1. Duration Dependence

Although not all of them are significant, the estimated hazard rates show evidence of *positive duration dependence*: the longer an educated remains without a job the more likely he or she will exit that state in the next period. The results emphasize the latter conclusion for both men and women. In Jordan, most of those holding secondary education or higher register with the Civil Service Bureau (CSB), to compete for a job in the public sector. The

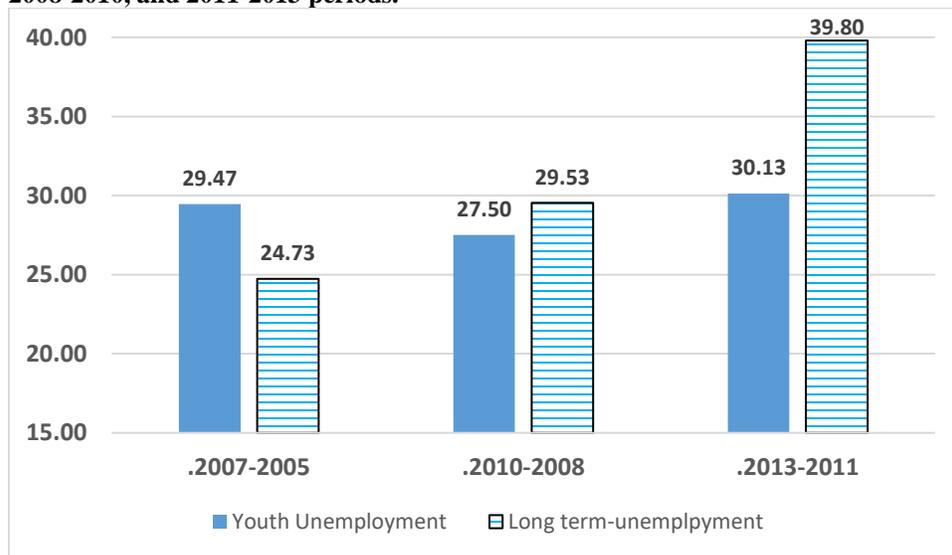
⁵ Alawad and Alhawarin (2021) provides descriptive statistics of the explanatory variables utilized in the current study.

eligibility to gain a job in the public sector is subject to certain conditions, mainly education and number of years since graduation. Government agencies and public sector enterprises absorb around 40% of the employed in the economy (Lassaissi and Alhawarin 2018). This probably offers a good explanation of why we would experience positive duration dependence in transition to employment in this developing country.

4.2. The role of macroeconomic crises

Overall, our results show that transition to a first job is significantly and negatively influenced by macroeconomic downturn caused by the global financial crisis (2007-2010) and the regional instability that hit Middle East and North Africa since 2011. Jordanian school cohorts leaving or finishing education during such turmoil periods, particularly since 2011, are greatly less likely to transit quickly to work compared with the earlier cohort (2000-2006). Interestingly, the results demonstrate that the process to transit to a decent job (a job with social security and /or signed contract, Table 2) tends to be influenced more severely compared with the transition to any job (Table 1).

Figure 1: Youth unemployment and long-term unemployment rates in Jordan averaged for 2007-2005, 2008-2010, and 2011-2013 periods.



Source: Department of Statistics (DoS), Labor Market Statistics, http://dosweb.dos.gov.jo/ar/analytical-reports/job_reports/

Figure (1) shows additional official data on average youth unemployment and long-term unemployment rates for three periods (2005-2007, 2008-2010, 2011-2013). Long-term unemployment measures the percentage of those registered as unemployed for more than one year. The figure, to some extent, supports the results obtained in our empirical models, particularly the incidence of staying longer time periods looking for jobs among Jordanians (i.e., long-term unemployment). For example, in the first three years after the eruption of the Arab Spring, long-term unemployment had risen considerably by more than 10 percent, according to the data obtained from DoS.

4.3. The role of other variables

Unsurprisingly, *women* have greater probability to spend more time in transition to work, regardless of macroeconomic overall performance, compared with their men counterparts. This result matches very well with overall labor market indicators, as Jordan has one of lowest women's labor market participation worldwide (15 % in 2018, DoS, 2019).

Our findings show that *more education* is broadly associated with better chances to quickly transit to any first or good job. Furthermore, the role of education is verified at the same time for educated women and men, with a stronger influence for the former. This is obvious when one examines the magnitude of the estimated hazard rates of education for both gender sub-samples, as shown in Table 3. Given our above finding on gender, this result grants us more understanding on why youth women outperform youth men in terms of education in Jordan (see Hailat, 2019). Female workers are typically crowded into limited number of formal, particularly public, economic activities that require higher education degrees. Encountering cultural and socioeconomic barriers that constrain their labor market choices and mobility, youth women invest heavily in higher education to improve their economic opportunities.

Finally, those coming from rich socio-economic background, regardless of gender, face less difficulties in transiting to labor market. Poor youth, with less household wealth, appear to be more likely to spend longer periods before transiting to labor market. This finding is supported by the results reported in Alawad and Alhawarin (2021) and may

partly explain social unrests that take place from time to time in Jordan and countries in the region demanding more equitable labor market opportunities. In the vein, Assaad (2014) refers to this phenomenon pointing out that the social and political motives are important determinants of the distribution of employment opportunities in the Arab World.

5. Conclusion

Moving from school into the world of employment is a crucial phase in youth lives and in their process of attaining pleasing life. Initial difficulties in transition from education to work may have harmful social and economic consequences at the individual and societal levels. Arab countries have been characterized with considerable unemployment rates, particularly among youth and women, stylized facts believed to have contributed to Arab Spring uprisings that erupted in 2011.

The current paper contributes to the literature on youth labor market in the Arab World by examining the dynamics of school to work transition in the context of Jordan. It primarily focuses on the potential effects of economic crises on such a process, which has not received enough attention in Jordan. Using detailed data coming from the second round of Jordan Labor market Panel Survey (JLMPS 2016), the study employs discrete-time hazard techniques to estimate what determines time to transit to a first job, and whether such transition duration is significantly influenced by the existence of economic crises. To carry out this, the study relies on a discrete-time hazard model estimated using what is known as the complementary log-log link function.

Mainly, the study shows that transition to a first job is significantly and negatively influenced by macroeconomic downturn as represented by the global financial crisis (2007-2010) and Arab Spring since 2011. Jordanian school cohorts leaving or finishing education during such turmoil periods, particularly since 2011, are greatly less likely to transit quickly to employment compared with the earlier cohort (2000-2006). The study demonstrates that the process to transit to a decent job (a job with social security and /or signed contract) tends to be influenced much more compared with the transition to any job.

Finally, this paper is central to the current debate about the potential effects of Covid-19 pandemic on labor markets. This pandemic tends to generate stark adverse effects in labor markets, particularly for youth, regardless of gender and education. Integration of youth into labor market is expected to become even tougher in the few years to come.

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Table 1: Discrete-time hazard models, with complementary log-log link function, of transition to a any first job by gender (JLMPS 16).

	Transition to any first Job (Specification 1)			Transition to any first Job (Specification 2)		
	(All)	Males	Females	All	Males	Females
<i>Female (Male omit.)</i>	0.130***			0.223***		
Period (Baseline in years)						
<i>One</i>	0.187***	0.270***	0.025***	0.259***	0.325***	0.021***
<i>Two</i>	0.192***	0.275***	0.026***	0.272***	0.336***	0.023***
<i>Three and more</i>	0.859	1.251	0.106***	1.276	1.586	0.108**
Education (Basic. ed. omit.)						
<i>Secondary</i>	1.378***	1.358***	2.034***	1.312***	1.292***	2.180***
<i>Post-Secondary education</i>	2.223***	1.783***	5.867***	2.179***	1.761***	5.321***
<i>University and above</i>	2.434***	1.706***	8.800***	2.354***	1.635***	7.677***
School Exit year (2000-2006 omit.)						
<i>2007-2010</i>	0.798***	0.804***	0.809*	0.756***	0.772***	0.742***
<i>2011-2015</i>	0.554***	0.520***	0.623***	0.472***	0.483***	0.481***
<i>Log Local UR (Lagged)</i>	1.042			0.883		
<i>Log Local Men's UR (Lagged)</i>		0.940			0.883	
<i>Log Local Women's UR (Lagged)</i>			0.804			0.902
<i>Married (others omit.)</i>				1.212***	1.332**	0.654***
H.Wealth Quintiles (Q1 omit.)						
<i>Q2</i>				0.988	1.028	0.916
<i>Q3</i>				1.211**	1.234**	1.578**
<i>Q4</i>				1.386***	1.464***	1.591**
<i>Q5</i>				1.220**	1.190*	1.582**
<i>Urban (Rural omit.)</i>				1.078	1.112*	1.056
Region (Middle omit)						
<i>North</i>				1.254	1.312	0.994
<i>South</i>				0.872***	0.954*	0.687***
N	15841	7463	8378	15643	7327	8316
Log likelihood	-5679.19	-3913.14	-1664.91	-5401.66	-3786.63	-1455.29

Exponentiated coefficients are presented. *, **, *** significant at 0.1, 0.05, 0.01 levels; respectively.

Table 2: Discrete-time hazard models, with complementary log-log link function, of transition to a good-quality first job by gender (JLMPS 16).

	Transition to a decent Job (Specification 1)			Transition to a decent Job (Specification 2)		
	(All)	Males	Females	All	Males	Females
<i>Female (Male omit.)</i>	0.155***			0.270***		
Period (Baseline in years)						
<i>One</i>	0.025***	0.028***	0.010***	0.041***	0.043***	0.003***
<i>Two</i>	0.030***	0.035***	0.011***	0.051***	0.055***	0.003***
<i>Three and more</i>	0.113***	0.128***	0.040***	0.199***	0.212***	0.012***
Education (Basic. ed. omit.)						
<i>Secondary</i>	1.538***	1.499***	2.682***	1.445***	1.407***	2.673***
<i>Post-Secondary education</i>	2.647***	2.363***	7.045***	2.544***	2.383***	5.667***
<i>University and above</i>	3.195***	2.250***	12.987***	2.950***	2.096***	10.007***
School Exit year (2000-2006 omit.)						
<i>2007-2010</i>	0.839***	0.931	0.767**	0.787***	0.851**	0.726**
<i>2011-2015</i>	0.644***	0.662***	0.599***	0.528***	0.573***	0.502***
<i>Log Local UR (Lagged)</i>	0.831			1.209		
<i>Log Local Men's UR (Lagged)</i>		0.744			1.191	
<i>Log Local Women's UR (Lagged)</i>			0.918			1.295
<i>Married (others omit.)</i>				1.308*	1.592**	1.193**
H. Wealth Quintiles (Q1 omit.)						
<i>Q2</i>				1.210*	1.183	2.216**
<i>Q3</i>				1.694***	1.645***	3.912***
<i>Q4</i>				1.858***	1.816***	4.177***
<i>Q5</i>				1.730***	1.558***	4.384***
<i>Urban (Urban omit)</i>				1.296***	1.344***	1.275**
Region (Middle omit)						
<i>North</i>				1.117	1.239	0.698
<i>South</i>				0.902	0.950	0.872*
N	15841	7463	8378	15643	7327	8316
Log likelihood	-4818.86	-3366.11	-1377.68	-4554.12	-3226.55	-1210.69

Exponentiated coefficients are presented. *, **, *** significant at 0.1, 0.05, 0.01 levels; respectively.