

## Socioeconomic Mobility of Return Migrants: Evidence from Jordanian Labor Market Surveys

(Mobiliti Sosioekonomi Migran Pulang: Bukti daripada Tinjauan Pasaran Buruh Jordan)

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### ABSTRACT

*While the consequences of overseas migration for economic inequalities are well-documented, a relatively less researched aspect is well-being and socio-demographic status of those who chose to return to their country of origin. This paper therefore profiles returnee migrants in the Jordanian labor market as well as the causes and consequences of migration for workers' outcomes using the 2010 and 2016 waves of the Jordanian Labor Market Panel Survey. We study changes in socioeconomic status within and across generations, linking male workers' current outcomes to those in prior years (across different points in their careers and to their fathers' outcomes). We assess inter-temporal social mobility as a function of their prior migration experience, socioeconomic status and demographics. In addition, we present regression evidence of how they fare in the labor market in terms of wage returns. Our data show that migration flows evolve over time, and are driven by socioeconomic and location-specific considerations. More specifically, migration flow from Jordan is geographically highly diffused by regional standards, as Jordanians seek high-skill jobs through formal recruiting channels. Jordanian migrants typically come from urban areas and are more educated. Return migrants are concentrated in higher earning occupations. Altogether this suggests that the labor migration process in Jordan is subject to a selection bias. However, even after controlling for background differences, we find some evidence of beneficial effect of migration for social mobility. Migrants outperform non-migrants not only in terms of current outcomes, but also in their previous occupations as well as those they held 8–10 years earlier, implying that workers' predispositions may play a role.*

*Keywords:* Return migration; socioeconomic mobility; Jordan; Middle East.

*JEL:* F22, O15, N35, R23, J6.

*Received 14 July 2022; Revised 14 October 2022; Accepted 27 October 2022; Available online 30 October 2022*

### ABSTRAK

*Walaupun kesan penghijrahan ke luar negara untuk ketidaksamaan ekonomi didokumentasikan dengan baik, aspek yang agak kurang diteliti ialah status kesejahteraan dan sosio-demografi mereka yang memilih untuk kembali ke negara asal mereka. Oleh itu, kertas kerja ini memprofilkan pendatang yang pulang ke pasaran buruh Jordan serta punca dan akibat penghijrahan untuk hasil pekerja menggunakan gelombang 2010 dan 2016 Tinjauan Panel Pasaran Buruh Jordan. Kami mengkaji perubahan dalam status sosioekonomi dalam dan merentas generasi, mengaitkan hasil semasa pekerja lelaki dengan hasil pada tahun-tahun sebelumnya (merentas titik berbeza dalam kerjaya mereka) dan dengan hasil bapa mereka. Kami menilai mobiliti sosial antara waktu sebagai fungsi pengalaman penghijrahan terdahulu, status sosioekonomi dan demografi mereka. Di samping itu, kami membentangkan bukti regresi tentang bagaimana mereka berada dalam pasaran buruh dari segi pulangan gaji. Data kami menunjukkan bahawa aliran migrasi berkembang dari semasa ke semasa, dan didorong oleh pertimbangan sosioekonomi dan lokasi khusus. Lebih khusus lagi, aliran migrasi dari Jordan secara geografi sangat tersebar mengikut piawaian serantau, kerana orang Jordan mencari pekerjaan berkemahiran tinggi melalui saluran pengambilan formal. Migran Jordan biasanya datang dari kawasan bandar dan lebih berpendidikan. Migran yang pulang tertumpu dalam pekerjaan berpendapatan tinggi. Secara keseluruhannya ini menunjukkan bahawa proses penghijrahan buruh di Jordan tertakluk kepada kecenderungan pemilihan. Walau bagaimanapun, walaupun selepas mengawal perbezaan latar belakang, kami mendapati beberapa bukti kesan berfaedah migrasi untuk mobiliti sosial. Migran mengatasi bukan migran bukan sahaja dari segi hasil semasa, tetapi juga dalam pekerjaan mereka sebelum ini serta pekerjaan yang mereka pegang 8-10 tahun sebelumnya, membayangkan bahawa kecenderungan pekerja mungkin memainkan peranan.*

*Kata kunci:* Penghijrahan kembali; mobiliti sosioekonomi; Jordan; Timur Tengah.

## INTRODUCTION

Geographic migration, both internal and overseas, is a well-recognized pathway out of poverty, toward upward mobility, and toward closing regional income gaps. Migration facilitates better matching of workers to available jobs, and may help workers escape unemployment, informality or dependence on the state, thus alleviating deprivation, and helping to equalize outcomes across regions. Migration also brings life-long benefits to workers as it exposes them to new socioeconomic opportunities (Amirapu et al. 2022). In general, the complementarities between various investments and efforts that allow individuals to increase their lifetime welfare also generate inequalities across workers with different starting points. While recent reviews of the extant literature confirm migration is welfare enhancing, it also points out that rural-urban migration is a complex process shaped by multiple drivers and varying costs and returns to migration (see Selod & Shilpi 2021).

Compared to internal migration, the costs of and barriers to international migration are much more diverse. There is a sizable literature on well-being of migrants in host economies (see Hendriks 2015). However, in contrast to causes and consequences of outmigration overseas, relatively less is known about migrants who return to their country of origin (for exceptions, see Baykara-Krumme & Platt 2018; El-Mallakh & Wahba 2021; Galván Reyes et al. 2022). These considerations and evidence gaps are evident in the Middle East, and specifically in Jordan, a country which has experienced multiple forms of migration – the displacement and internal migration of Palestinian and Syrian refugees, and cross-border labor migration of a large share of Jordanian nationals. This paper contributes to the literature by profiling Jordanian migrant workers and sharing illustrative evidence on how they fare in the local labor markets upon return.

In Jordan, internal and external migration is widespread, highly systematic, and responsible for a significant bulk of remittances from abroad supporting the domestic economy. These remittances accounted for over one-fifth of the Jordanian gross domestic product (EC-DG ECFIN 2010a:76; World Bank 2016). A large population of Jordanian urban fresh graduates who cannot find unemployment move to other resource-rich Middle-Eastern countries such as the Gulf Cooperation Council members, to Europe, and beyond. The inflow of remittances and the prospect of return of more experienced and capital-endowed workers is presumably more beneficial than the short-term brain drain, both for the individuals' families as well as for the entire Kingdom (Olesen 2002). Migration is therefore ingrained in Jordan's state of development and existing profile of inequalities.

However, the level of socioeconomic inequalities vis-à-vis migration experience has been unclear. Perceptions and values surveys point to high inequality, while objective budget surveys show that incomes and other socioeconomic indicators are distributed quite equitably (see Figure 1). Other dimensions of inequality may contribute to the gap between perceptions and manifestations, such as inequality of opportunity, lack of intergenerational social mobility, and the role of family connections and corruption in workers' careers (Bibi & Nabli 2010; Arampatzi et al. 2015).

Migration obscures the real scale of inequality. It mitigates the observable inequality in opportunities and outcomes, in part because migrants are poorly tracked (Assaad 2012). Remittances are often missing from enumeration in the region where they are received or spent. Migrants' material investment to facilitate their journeys is ignored. For these and other reasons it is crucial to track workers' circumstances before and after their journeys to assess their achievements and socioeconomic mobility.

Our study contributes to policy debate on migration and well-being in several ways. One, we study the characteristics of "return migrants" vis-a-vis non-migrants to identify predictors of "return migration". Two, we review the effect of return migration on workers' socioeconomic outcomes, and examine the transmission of status as a function of workers' preexisting socioeconomic status and migration experience. More specifically, we ask: How do Jordanian workers select themselves into (return) migration? To what extent does income, occupational and residential-status mobility exist in Jordan, and how does return migration interact with this mobility?

Our study relies on two waves – 2010 and 2016 – of a high-quality, nationally representative labor market panel survey for Jordan. This survey covers socioeconomic outcomes and various information on workers' backgrounds and migration experiences that provide us with a clearer picture about the importance of migration in the country's labor market across the past decade. Documenting the causal drivers of and gains from return migration requires information on migrants who are yet to return. In the absence of such information, we present evidence on correlates and economic effects of "return migration" for the bulk of workers who have already managed to return, acknowledging a potential sample selection bias due to individuals who have not returned even after a customary but generous period of time.

The rest of the paper is organized as follows. We start by reviewing our existing understanding of the flows of migration, the importance of return migration in particular, and the implications of migration for the extent and form of social inequality in Jordan. The following section introduces the methods and data available to evaluate the relationship between migration

and socioeconomic mobility. Finally, we present the results of our empirical analysis, and conclude with a summary of the main findings and their policy significance.

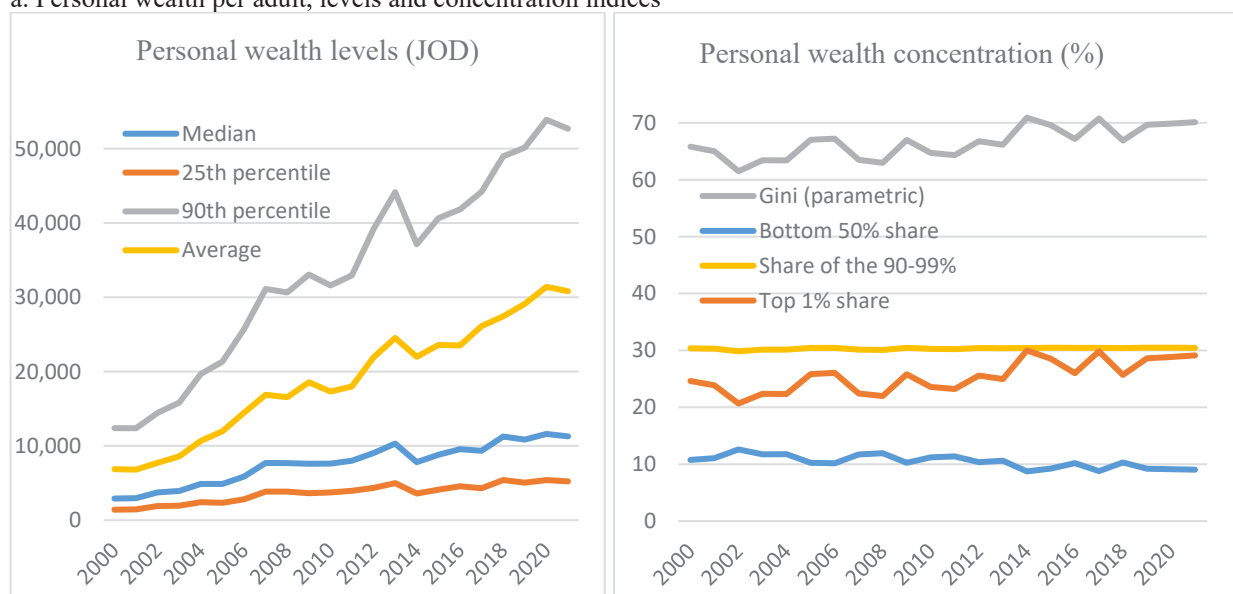
### LITERATURE REVIEW

While there is a large literature on internal and international migration (e.g. Hendriks 2015; Amirapu et al. 2022; Selod & Shilpi 2021), this section specifically focuses on the related literature in the Middle East, with a primary focus on return migration. De Silva and Silva-Jáuregui (2004) presented one of the first

studies examining the relationship between migration and socioeconomic outcomes in the Middle East. They assessed the implications of migration for national and regional employment. They concluded that international outmigration alleviated unemployment in the region, and brought substantial inflows of remittances. In Jordan as of 1996–2000, this amounted to 39 percent of exports. EBRD (2013) found significant migration across the Middle East, evidence of brain drain, and a large impact of migrant-worker remittances on domestic economies, especially during times of economic hardship (Bouhga-Hagbe 2006).

David and Marouani (2013a,b), modelling cross-border migration and remittances endogenously,

#### a. Personal wealth per adult, levels and concentration indices



#### b. Income per capita, concentration indices

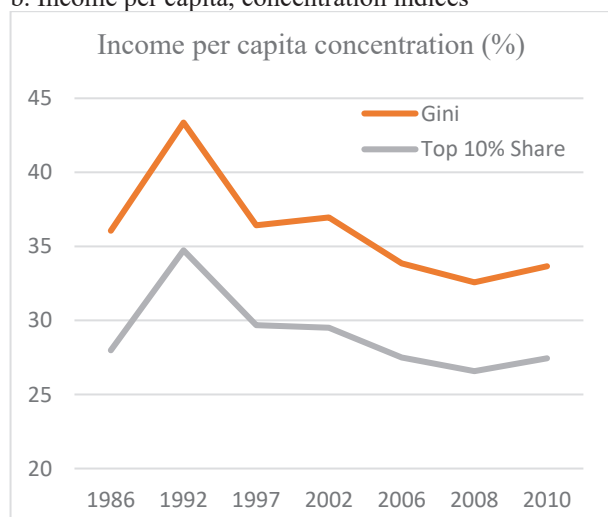


FIGURE 1. Income and wealth distribution in Jordan, selected indicators  
 Source: Authors' calculations based on data from the 2022 Credit Suisse Global Wealth Report, and from the Jordan Household Expenditure and Income Surveys (1986-2010).

estimated that a spike in unemployment in Jordan and Tunisia in recent years could be attributed to labor supply as well as demand factors. Labor demand response to a global downturn was weaker in Jordan. Wages in international markets affected migration more strongly in Tunisia, but had a larger effect on wages in Jordan, whose economy is smaller. An increase in foreign wages for high-skilled workers affected low- and medium-skilled workers negatively in Jordan. The authors surmised that emigration of high-skilled workers could be mitigated by programs promoting the export of services, which would benefit unskilled native workers too.

David and Marouani (2016, 2019) found that out-migration affects families' division of labor, and performance of local labor markets. They found evidence of a rise in skill acquisition in regions with many aspiring migrants, a decline in unemployment among recent graduates on account of migration, but also educational brain drain. In Jordan, migrants tend to be more educated and from better off families that can afford the cost of migration. Return migrants tend to be those less educated among all migrants. However, return migrants bring with them other skills as well as capital that can be applied to productive uses in the home market, such as for self-employment (EC-DG ECFIN 2010a:145).

Wahba (2012) used information in JLMPS 2010 on emigrants, immigrants and Jordanian nationals to compare their characteristics, and model individuals' labor market outcomes as functions of their migration spells. Emigrants were found to be typically more skilled and sending large remittances home. Immigrants typically landed in low-skill occupations, undercutting local Jordanian wages.

We contribute to these studies by comparing relative and absolute mobility in socioeconomic space (Asadullah 2012), between two Jordanian survey waves. Methodologically we contribute by inferring workers' and their fathers' pre-existing socioeconomic status, thus putting value on workers' socioeconomic mobility.

## METHODOLOGY AND DATA

### MEASURING MIGRATION AND SOCIOECONOMIC OUTCOMES

In this study we assess the prospects of Jordanians' income, wealth and employment mobility over their lifetime and inter generationally as a function of their experience with migration. We use panel data from two waves of a Jordanian nationally representative labor market survey tracking individuals' socioeconomic status at different points in their lives, including the outcomes of their parents.

We first identify our outcomes of interest, namely residence status, employment, earnings, and wealth based on both productive and nonproductive assets (Hlasny & AlAzzawi 2018). We estimate individuals' migration experiences including the timing destination, and self-reported drivers of migration. We then model the transitions of individuals' outcomes over time as functions of their initial socioeconomic circumstances, accumulated human capital, and migration experiences.

Workers' wage earnings are expressed in year-2012 international dollars (World Bank 2015a,b). One limitation is that earnings are available only for household members present, and only for the present year. Earnings are unavailable for prior years, for respondents' fathers, or for current migrants. To impute workers' real earnings in past time periods, fathers' earnings at the time when the respondents were 15 years of age, and the earnings of current migrants before they emigrated, we rely on information on the respective workers' economic sector, job (in) formality (permanent/non-permanent, contract/non-contract) and 2-digit occupation group, and we give them the mean earnings in that sector, type of job and occupation group in the survey year.<sup>1</sup> This approach is more tractable than other methodologies such as the recently promulgated classification approaches using machine learning algorithms (Ceriani et al. 2022).

An important assumption behind this approach is that the distinct occupation groups have retained their relative positions compared to one another in terms of worker earnings. The second assumption is that monetary earnings retained their importance relative to other forms of compensation (or that this importance changed consistently across occupation groups). Third, because earnings are summed up across all economic activities (e.g., first and second jobs), we assume that workers in any primary occupation group typically have similar relative earnings from the primary and secondary jobs as workers in the baseline year. Lastly, by imputing workers' earnings from mean occupation-group earnings, and by comparing those imputed values over time, we also assume that workers' earnings remain unchanged relative to the means. If a worker used to earn one standard deviation below the mean in his initial occupation group, (s)he will stay at that level over time, regardless whether (s)he changes occupation groups. These assumptions are necessary in the absence of complete longitudinal information on workers' earnings, and appear to be plausible over short spans of time such as between the 2010 and 2016 survey waves.

### MEASURING SOCIOECONOMIC MOBILITY AND ITS CORRELATES

Several approaches are taken to assess socioeconomic mobility. First, we report workers' current socioeconomic status – including earnings, wealth, education, marital

and household-head status, and urban/rural and privileged/disadvantaged residence status – among return migrants and among non-migrants. Second, we estimate the earnings trajectories for the two groups, over long spans of workers’ lifetimes. Third, we estimate the transition matrices of individuals’ moving across quantiles of the distribution of socioeconomic outcomes – specifically earnings and residence status – between pairs of points in time. Finally, as the fourth method, we estimate two regressions models to study the determinants of probability to migrate and returns to migration.

More specifically, we estimate equation (1) using a probit regression of the probability of “return migration” as a function of their preexisting and parents’ economic status, education, household structure and birthplace:

$$E(\text{migration}) = \text{probit} \left( \begin{array}{l} \alpha_0 + \alpha_1 \log \overline{\text{earn}}_{-8\text{yr}} + \alpha_2 \log \overline{\text{earn}}_{\text{father}} \\ + \sum_i \alpha_i \text{edu}_i + \alpha_3 \text{age} + \alpha_4 \text{hh size} \\ + \alpha_5 \text{urban}_{\text{birth}} + \alpha_6 \text{privileged}_{\text{birth}} \\ + \sum_j \alpha_j \text{governorate}_j \end{array} \right) \quad (1)$$

where  $\overline{\text{earn}}$  indicates average occupation-group earnings in the respective past points in time.

It may be noted that equation (1) does not offer a causal explanation for who among the overseas Jordanian migration population returns home after years of employment overseas. As explained before, we don’t have data on migrants who continue to stay overseas, or information on non-migrants’ future migration plans. So equation (1) serves primarily to better understand the differences in socioeconomic profiles of return migrants vis-à-vis those who never migrated in the first place.

In addition, we estimate an ordinary least squares linear regression examining how return migrants fare in the Jordanian labor market vis-à-vis non-migrants. The dependent variable is workers’ personal earnings and the main independent variable is a “return migrant status” (*migrant*) controlling for migration destination, education, age, mean earnings in the occupation held eight years prior, mean earnings in father’s occupation group, and birthplace in urban or economically privileged regions. Formally the regression function is presented as follows in equation (2):

$$E(\log \text{earn}) = \beta_0 + \beta_1 \text{migrant} + \beta_2 \text{rich countries} + \sum_i \beta_i \text{edu}_i + \beta_3 \text{age} + \beta_4 \log \overline{\text{earn}}_{-8\text{yr}} + \beta_5 \log \overline{\text{earn}}_{\text{father}} + \beta_6 \text{urban}_{\text{birth}} + \beta_7 \text{privileged}_{\text{birth}} \quad (2)$$

where *migrant* is the binary indicator of workers’ prior return-migration experience, *richcountries* is a binary indicator for the latest return migration being to GCC and high-income countries, and *privileged* is a binary indicator for workers’ birthplace in economically privileged regions in Jordan.<sup>2</sup>

## DATA

We rely on both available waves of the Jordanian labor market panel survey: JLMPS 2010 and 2016 (OAMDI 2022; also refer to Table A1 in the appendix). To put the survey waves in perspective of the socio-political events that took place in Jordan amid the “Arab Spring,” a note is warranted about their timing. The 2010 wave was administered in January–April 2010, less than a year before popular protests erupted in Amman in January 2011 inspired by the ongoing larger uprisings in Tunisia and Egypt. Jordanian protestors decried economic conditions in the Kingdom and government failures at addressing them.

The year-2016 LMPS was conducted in a setting of political and economic stability, tested only by an influx of refugees escaping a civil war in Syria. UNHCR figures suggest that Syrian refugees account for about 10% of the Jordanian population, and thus have a significant effect on the Jordanian labor market, even if they themselves are excluded from direct analysis.

The labor market panel survey is well-suited for studying the migration trends, and their implications for lifetime and intergenerational mobility. A crucial task is to identify return migrants, and their characteristics (Cassarino 2004). The survey contains information on individuals’ residence, occupation, education, earnings, household assets, and various demographic characteristics including fathers’ outcomes (Assaad 2012; Krafft 2017). To identify individuals’ migration history we compare their current, prior and birthplace residence. In the year-2016 wave, recall questions on the governorate of one’s prior jobs are also used for this. Specialized modules including the ‘life events calendar’ (marriage, education, work, residence changes), ‘characteristics of current migrants’, and ‘characteristics of return migrants’ also allow a more careful analysis of life events, migration spells, and socioeconomic mobility.

In the 2010 wave, return migrants are those whose previous or before previous residence was abroad (q1002\_ou, q1005\_ou), unless they have not moved out of their birthplace residence (q1001). In the 2016 wave, return migrants are those who have worked abroad for six or more months (v11001), reported a foreign country as their first migration destination (v11005), or moved to a foreign country on one of their most recent eight moves (q2146\_1 ... q2146\_8). Return migrants are also those with a foreign country among their most recent eight jobs (job1\_16o ... job8\_16o).<sup>3</sup>

The estimation sample is limited to male 35–55 year old Jordanian nationals – essentially male Jordanian-nationals of the prime working age – to reduce heterogeneity across individuals. Syrian, Egyptian and other non-Jordanian nationals are excluded, as they are thought to be facing distinct labor market conditions.<sup>4</sup> Nevertheless, the sample restriction agrees with the evidence on the demographics of return migrants, that they are primarily men who have finished their formal education, nearly one-half of whom have returned to Jordan before 40 years of age, and over two-thirds before 50 (EC-DG ECFIN 2010a,b).

Finally worth noting, workers classified as return-migrants are those who have decided to out-migrate, and in six months or later decided to return. Our study of the determination of return migration combines these two decisions into one, for lack of systematic data on outmigration versus return. Analogously, workers classified as non-migrants should be considered as not-yet-migrants subject to risk of future migration. As summary statistics show, however, the group of migrants is typically only marginally older than the non-migrants, suggesting that a large share of non-migrants may have permanently made up their mind against leaving. In any case, controlling for workers' age and other characteristics is warranted in order to compare return-migrants to a similar group of not-yet-migrants.

## MAIN RESULTS

Our results are organized in three sections. First, we present evidence on the migration patterns of Jordanian return migrants, and their own reports of the modalities of their outmigration and return. Second, we present the socio-economic and demographic profiles of non-migrants versus return migrants, and evaluate any systematic correlates of migration. Third, we describe the patterns of socioeconomic mobility among non-migrants versus return migrants and, fourth, their economic outcomes of return migrants.

### MIGRATION TRENDS

The most recent returns of Jordanians from abroad reveal that the migration trends vary importantly between the years 2010 and 2016, presumably due to the changing economic and political conditions in Jordan and in destination countries. Table 1 shows that for Jordanian return-migrants as of 2010, the top six destination places were Saudi Arabia, Palestine, Kuwait (capturing 21% of migrants each), Iraq (7%), UAE (5%) and the US (4%). These six countries together accounted for only 79 percent of return migration. By 2016, return migration became even less concentrated geographically, with the top six destinations capturing only 73% of the most recent migrants. Saudi Arabia, the

US and Bahrain gained in importance as destinations (27%, 8% and 7% of migrants, respectively) relative to the year 2010, while Palestine became less important as a destination. Strong demand for Jordanian high-skilled workers in the high-income countries during the 2010s contributed to these trends.

Indeed, Jordanian workers are revealed to be able to reach an increasing number of countries and find jobs there. In their job search, Jordanian workers are not dependent on their social contacts and on following their country's diaspora abroad, but instead get directly in touch with prospective employers abroad, in places where they have no acquaintances. Only 17 percent of return migrants knew someone in the country of their first migration (Table 2). Similarly, when out-migrating, only 18 percent of Jordanians were helped by relatives, plus 7 percent received help from acquaintances. Only 2 percent of out-migrants paid someone to organize their migration. By contrast, as many as 42 percent of Jordanians got no help when finding a job abroad.

TABLE 1. Top 10 destination countries (% of return migrants)

#### i. Most recent spell of return migration

	Jordan 2010		Jordan 2016	
1	Saudi A.	21.16	Saudi A.	27.11
2	Palestine	20.86	Kuwait	19.37
3	Kuwait	20.70	USA	8.43
4	Iraq	6.56	Bahrain	7.26
5	UAE	5.41	Palestine	7.14
6	USA	4.42	Germany	4.01
7	Syria	2.54	Oman	3.22
8	Bahrain	1.46	Qatar	2.88
9	Romania	1.26	Iraq	2.74
10	UK	1.13	Libya	2.03
	86% of 320 migrants		84% of 87 migrants	

#### ii. Migration before the most recent spell

	Jordan 2010		Jordan 2016	
1	Palestine	40.82	Yemen	15.64
2	Kuwait	24.93	Saudi A.	14.67
3	Saudi A.	6.18	France	10.74
4	Lebanon	4.17	Palestine	8.58
5	USA	3.98	Oman	8.51
6	Syria	3.82	Syria	0.42
7	Germany	2.06	Egypt	0.24
8	Russia	2.05	Other	--
9	Brazil	1.73		
10	Iraq	1.56		
	91% of 108 migrants		59% of 10 migrants	

Note: Statistics account for individuals' sampling weights. Sample is restricted to male nationals 35–55 years old.

TABLE 2. Survey responses to selected migration-related questions, 2016 JLMPS (age; % of return migrants)

When was your first migration? (Imputed age in years)	26.7
Why did you migrate (first reason)? Unemployed/seek work	12.6
Found a better job	51.3
Higher wages	4.3
Help family financially	5.0
Were you planning to stay abroad temporarily? Yes, temp.	68.2
Did you pay anybody to facilitate your departure abroad? Yes.	2.0
Who helped you in getting a job abroad? Relatives	18.1
Friends/acquaintances	6.7
Employer	15.9
Employment agency	5.1
No one	41.6
Know anyone living in country of first migration? Yes.	16.9
Why did you return from abroad? Contract ended	44.7
Poor working conditions	10.2
To get married	13.7

Note: Percent of respondents among 35–55 year-old male return migrants, accounting for individuals' sampling weights. Percentages are out of all responses, including 'unknown' and 'others.' To save space, only some questions and some response options are shown. This survey module is unavailable in the 2010 JLMPS.

Most migrants report traveling abroad seeking work because they were unemployed or found a better job abroad. 68 percent of migrants had planned to return eventually, while the rest may have intended to stay abroad if political and economic conditions and their life situation allowed it. As reasons for their return, the majority cite the conclusion of their contract, but some also mention intentions to get married as their main reason. For one-half of Jordanian migrants, it was the (presumably expected) conclusion of their contract that led them to come back, and only one-tenth came back because they had faced unexpectedly poor working conditions abroad. This suggests that exogenous factors rather than career concerns were typically at play, justifying the use of migration statuses as independent variables.

#### SOCIOECONOMIC CHARACTERISTICS OF RETURN MIGRANTS

Table 3 reports demographic characteristics of return-migrants compared to their non-migrants counterparts. Urban birthplace is shown to be a strong positive predictor of migration. Return migrants are 7–9 percent more likely to come from urban areas compared to non-migrants. As many as 89–93 percent of return migrants are from urban areas, as compared to 80–88 percent of non-migrants. At the same time, return migrants tend to be more often from economically disadvantaged regions. Return migrants thus appear to be from areas offering poor job opportunities to young workers, which may be rural markets or cities with a surplus of skilled

labor. Few return migrants come from economically privileged rural areas.

TABLE 3. Demographics by status as return migrant (%workers; age)

	Return migrant	JO10	JO16
Urban residence at birth	N	80.48%***	87.56%**
	Y	88.92%	92.79% <sup>i</sup>
Privileged region at birth	N	55.46%**	57.78%*
	Y	48.06%	38.19%
Preparatory-school educated	N	15.82%***	0.52%
	Y	10.98%	7.17% <sup>i</sup>
High-school educated	N	30.69%**	28.76%
	Y	37.07%	38.24% <sup>i</sup>
University educated	N	11.23%***	10.31%***
	Y	19.43%	20.89% <sup>i</sup>
Post-graduate educated	N	2.69%***	2.73%***
	Y	9.12%	11.60% <sup>i</sup>
Mean age	N	42.51***	44.26
(age 35≤age≤55)	Y	44.94	45.22 <sup>i</sup>

Notes: Education level attained rather than just attended. <sup>i</sup> Evaluated over small sample sizes of return migrants in JO16 (<100 individuals). Samples are restricted to male nationals 35–55 years old. Difference of means significant at \* 10%, \*\* 5%, \*\*\* 1% using estimate standard errors.

Return migrants are more highly educated compared to non-migrants – more likely to have attained secondary school, tertiary or post-graduate degrees. The

bottom line is that the migration flows from Jordan are positively selected and may represent a brain drain for the Jordanian labor and capital markets if the workers' skills are applied in other economies. Nevertheless, migration could turn into a brain gain if migrants come back with enhanced sets of human, social, cultural and capital endowments.

Return migrants are only marginally older than non-migrants. The mean difference in ages is only 1–2 years. This suggests that it is the length of their stay abroad, and not some systematic cohort effect that would differentiate non-migrants from return migrants and affect their comparability. Most migrants leave at a young post-graduate age, and spend at most several years abroad. (Return migrants' own testimonies in table 2 confirm that, on average, they went abroad for the first time at the age of 27.) Hence, our population of 35–55 year old return migrants appears to be demographically comparable to that of the non-migrants.

In the absence of data on migrants who are yet to return, or on the future migration of current non-migrants, we cannot conclusively answer which workers opt to migrate out or migrate back to Jordan. Nonetheless, we estimated equation (1) based on data on non-migrant workers as well as those who have returned. To isolate the individual contribution of various characteristics to workers' risk to return-migrate, we use probit regression analysis of workers' status as return migrants as a function of their preexisting and parents' economic status, education, household structure and birthplace.

The results (see Appendix Table A2) show that father's earnings, place of upbringing and educational achievement are systematic predictors of workers' migration status. For the most part, the initial economic status, education, and birthplace have coefficients of the expected signs. Return migrants appear to be more highly educated and come from urban areas, but also come from slightly lower earning households and from economically disadvantaged regions, even after controlling for governorate-level effects. In the year-2010 wave, return migrants are shown to be a bit older and come from somewhat smaller households (statistically significant), partly because they may have relatives living abroad.

#### ECONOMIC OUTCOMES OF RETURN MIGRANTS

We have seen that return migrants have different starting socioeconomic status than non-migrants. Knowing the starting position allows us to evaluate the two groups' respective socioeconomic progress, and infer the role of migration in their career advancement, at least up to the survey year. As a caveat, data on individuals' outcomes before their first migration spell is limited, on account of

heterogeneity in workers' migration histories, and lack of explicit survey questions asked consistently across both survey waves. It is also challenging to match outcomes in the histories of migrants to those of non-migrants, since some individuals migrated repeatedly, at different points in their lives, for different spans of time. Thus, we compare workers' earnings at moments specified in relation to the survey date: in their previous job, their before-previous job, and 8–10 years prior to survey date.<sup>5</sup>

Table 4 shows analysis inferring the effect of migration on workers' outcomes (for workers with earnings records in multiple of the evaluated years). Under the conjecture that return migrants are selected from lower-earning positions, but rise to higher-earning occupations by investing in their human, social or physical capital abroad, we would expect that return-migrants underperformed in the past but catch up or overtake non-migrants eventually. Table 4 fails to confirm this using the imputed earnings from workers' current, previous, before-previous, and 8–10 years prior occupation groups. Return migrants outperform non-migrants at most of the considered points in time. Columns 1 and 2 show it for actual mean earnings, while columns 3 and 4 show it for earnings quintiles, to avoid the potential problem of imprecisely imputed earnings. Figure 2 shows this graphically.

The premium that return-migrants earn over non-migrants has not changed systematically across the evaluated times, and earnings do not increase following the presumed recent migration experience. Return-migrants are thus thought to possess some time-constant qualities, unrelated to the observed outcomes of their parents, that affect their engagement in migration and their superior performance over their non-migrating peers throughout their careers.

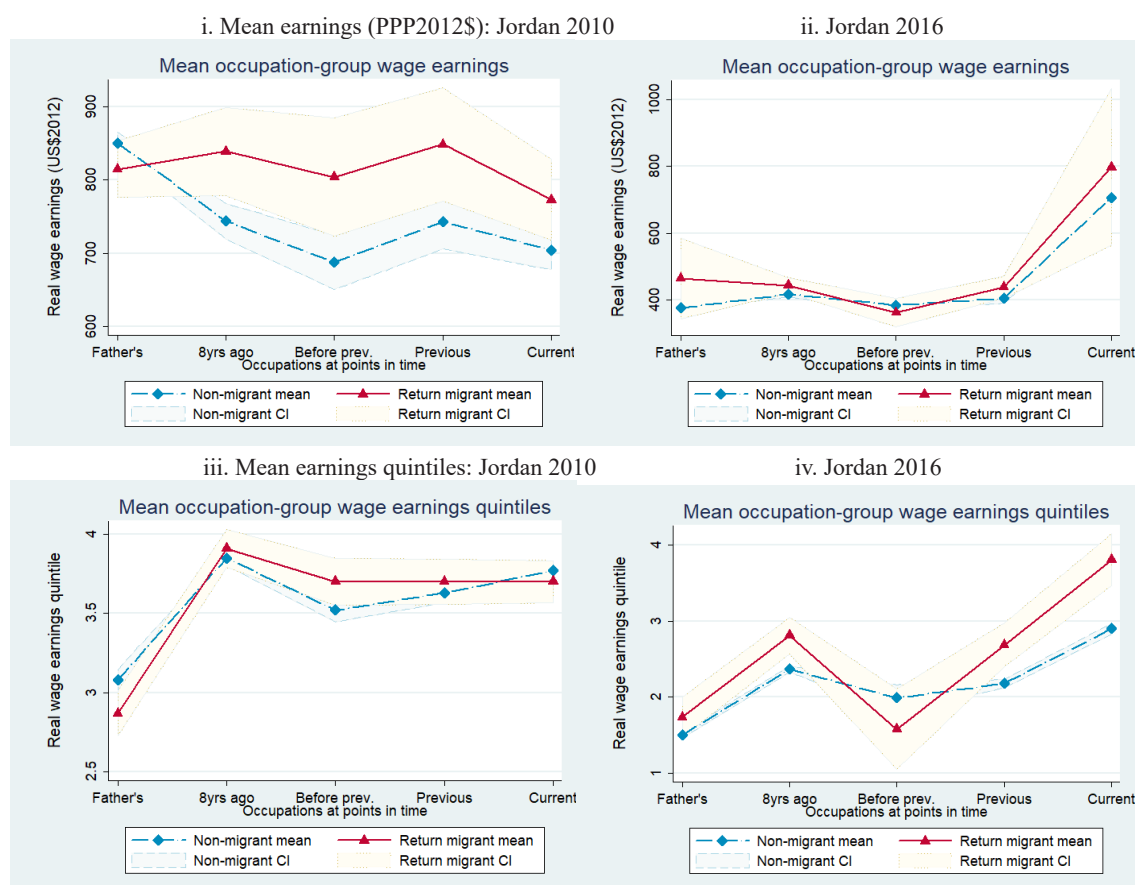
Now, gross earnings do not account for the number of hours worked, the effort at work, or the difficulty of work. We cannot assess the role of return-migrants' inherent qualities or the skills acquired abroad in the estimated earnings gaps. However, we can evaluate additional complementary socio-economic outcomes. Table 5 shows that return migrants perform better not only in terms of observed earnings, but also in a number of alternative indicators of workers' socioeconomic outcomes: Their household and per-capita wealth, possession of a job contract, getting married, and status as a household head. Similarly, figure 3 shows that return-migrants exhibit greater 'upward' geographic mobility from rural to urban residences, even though they are already more likely to have an urban birthplace residence. Across the majority of these indicators, and across both survey waves, return migrants score better or are more likely to have attained them.



TABLE 4. Mean occupation-group gross earnings at different points in time, by status as migrant (PPP2012\$; quintiles)

		Mean wage earnings, PPP2012\$		Mean quintiles	
		Return migrant	JO10	JO16	JO10
Occupation-group mean earnings, current job	N	704.23	707.34	3.77	2.90***
	Y	772.92	797.80 <sup>i</sup>	3.70	3.81
Occupation-group mean earnings, previous job	N	743.16*	405.70	3.63	2.18
	Y	848.56	438.96 <sup>i</sup>	3.70	2.69
Occupation-group mean earnings, before previous job	N	687.43**	385.27 <sup>i</sup>	3.52**	1.99
	Y	803.75	362.97 <sup>i</sup>	3.70	1.58
Occupation-group mean earnings, 8 years prior	N	743.80*	418.61*	3.85	2.37***
	Y	838.80	444.70 <sup>i</sup>	3.91	2.81
Occupation-group mean earnings, father's occupation	N	850.60	376.59*	3.08***	1.50**
	Y	814.80	465.19 <sup>i</sup>	2.87	1.74

Note: Statistics account for individuals' sampling weights. Workers are classified into occupation groups by their 2-digit occupation code, permanent vs. non-permanent job, public vs. private sector, and contract vs. non-contract job. Evaluated only among workers with known occupations 8–10 years prior. <sup>i</sup> Evaluated over small sample sizes in JO16 (<100 individuals). Sample is restricted to male nationals 35–55 years old. Difference of means significant at \* 10%, \*\* 5%, \*\*\* 1% using estimate standard errors on non-weighted samples.



Note: These predicted lines are computed among individuals for whom both current and 8-year prior occupation is observable, to ensure sample consistency. Workers are classified into occupation groups by their 2-digit occupation code, permanent vs. non-permanent job, public vs. private sector, and contract vs. non-contract job. 95% confidence intervals based on standard errors are shown.

FIGURE 2. Wage earnings evolution over lifetime, non-migrants vs. return migrants (PPP2012\$; quintiles)

TABLE 5. Economic outcomes by status as return migrant (PPP2012\$, %workers)

	Return migrant	2010	2016
Hhd. wealth index per capita	N	7.11***	7.44***
	Y	9.58	8.67
Hhd. wealth index	N	37.66***	36.05***
	Y	44.82	39.39
Contract job	N	56.35%**	50.43%**
	Y	52.41%	60.37%
Married	N	94.86%	93.86%
	Y	95.34%	94.94%
Household head	N	95.41%	94.18%
	Y	96.23%	96.17%

Note: Statistics account for individuals' sampling weights. Sample is restricted to male nationals 35–55 years old. Difference of means significant at \* 10%, \*\* 5%, \*\*\* 1% using estimate standard errors on non-weighted samples.

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Table 4 showed the typical transitions of earnings across the years among non-migrants and return migrants. Tables 6 and 7 supplement it by showing the transitions at each quintile of the distribution of earnings using transition matrices. These matrices present the joint distribution of earnings currently versus eight years prior (or father's earnings, respectively), separately for non-migrants and return migrants. (Table A3 in the appendix reports these joint distributions for non-migrants and return migrants combined, assessing social mobility in the total population.) The joint distributions for return-migrants are more dispersed than those for non-migrants, suggesting that return migrants enjoy greater lifetime mobility. Densities are higher near the main diagonal and to its southwest, than to its northeast, showing that significant upward jumps of a few fortunate individuals have not been accompanied by great declines among a

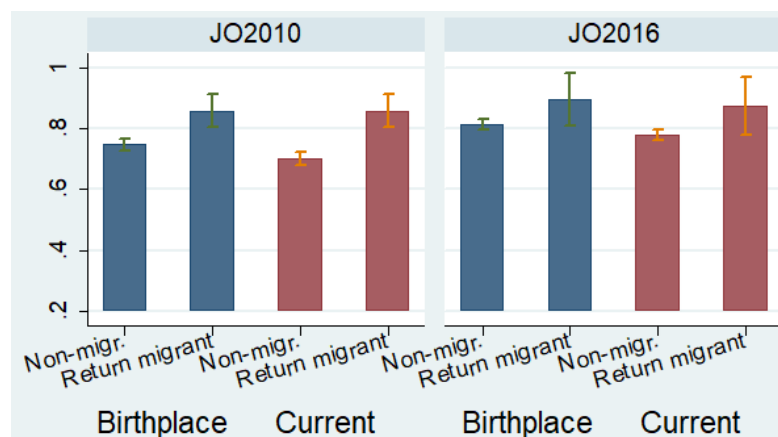
TABLE 6. Joint distribution densities of current and 8–10 year earlier earnings: non-migrants vs. return migrants (%individuals in earnings quintiles)

Jordan 10	Non-migrants					Return migrants				
	10-yr prior: 1	2	3	4	5	1	2	3	4	5
Current:	3.26	9.82	6.75	52.77	27.40	5.98	12.27	18.32	26.47	36.96
1	13.28	8.46	3.70	11.88	8.33	24.27	12.82	8.93	11.76	9.62
2	1.93	25.29	13.45	40.82	18.51	7.16	28.50	26.84	26.49	11.01
	4.75	13.19	4.46	5.56	3.41	11.38	11.67	5.12	4.61	1.12
3	1.74	23.63	36.07	24.46	14.10	0.83	11.53	39.05	22.59	26.01
	13.83	39.71	38.56	10.74	8.36	7.80	27.82	43.96	23.17	15.64
4	3.34	7.10	12.82	49.74	27.01	2.37	7.79	12.27	34.86	42.72
	51.56	23.16	26.60	42.42	31.10	22.80	19.29	14.17	36.70	26.35
5	1.12	4.97	13.46	36.09	44.37	2.54	8.29	17.42	16.33	55.42
	16.58	15.48	26.68	29.40	48.80	33.75	28.40	27.82	23.76	47.26

Jordan 16	Non-migrants					Return migrants				
	8-yr prior: 1	2	3	4	5	1	2	3	4	5
Current:	31.06	58.94	7.90	1.07	1.03	33.38	42.42	0	24.19	0
1	34.39	33.66	9.01	1.43	6.02	58.57	15.04	0	7.36	0
2	22.96	71.29	5.37	0.38	0	0.50	16.77	82.73	0	0
	25.65	41.09	6.19	0.51	0	0.53	3.59	11.23	0	0
3	22.66	8.12	60.07	6.25	2.89	15.65	6.67	77.67	0	0
	19.29	3.56	52.69	6.45	12.99	40.89	3.52	25.99	0	0
4	14.50	12.93	8.90	61.49	2.18	0	19.67	44.27	36.06	0
	12.24	5.63	7.74	62.87	9.70	0	31.89	45.49	50.14	0
5	8.40	30.98	23.55	23.61	13.45	0	36.04	21.41	38.87	3.68
	8.44	16.05	24.37	28.73	71.29	0	45.95	17.30	42.50	100

Note: Densities account for individuals' sampling weights. Workers are classified into occupation groups by their 2-digit occupation code, permanent vs. non-permanent job, public vs. private sector, and contract vs. non-contract job. Joint distributions of earnings quintiles, rather than earnings themselves, are shown. Sample is restricted to male nationals 35–55 years old.



Note: Mean urban status among non-migrants and among return migrants is shown with 95% confidence intervals based on standard errors. Sample restricted to individuals with known birthplace and current residence status, to ensure sample consistency.

FIGURE 3. Geographic mobility since birth, non-migrants vs. return migrants (% urban)

TABLE 7. Joint distribution densities of son's and father's earnings: non-migrants vs. return migrants (%sons in earnings quintiles)

Jordan 10	Non-migrants					Return migrants				
	Father: 1	2	3	4	5	1	2	3	4	5
Son:	65.70	14.73	9.15	2.76	7.65	58.91	14.79	16.67	2.93	6.69
1	72.62	12.51	5.08	5.78	5.18	88.72	10.91	12.07	6.11	8.67
2	1.77	95.79	1.45	0.27	0.72	1.96	98.04	0	0	0
3	1.86	77.42	0.76	0.54	0.47	3.39	82.93	0	0	0
4	7.89	4.58	63.55	2.92	21.06	2.40	6.59	71.44	5.97	13.61
5	21.03	9.39	84.98	14.79	34.41	4.58	6.16	65.60	15.79	22.37
	3.54	1.09	22.9	68.12	4.35	0	0	24.29	67.61	8.10
	2.10	0.49	6.79	76.47	1.58	0	0	8.72	69.91	5.20
	2.30	0.24	4.58	1.22	91.66	2.97	0	25.37	5.29	66.36
	2.39	0.19	2.39	2.42	58.37	3.32	0	13.62	8.18	63.76

Jordan 16	Non-migrants					Return migrants				
	Father: 1	2	3	4	5	1	2	3	4	5
Son:	78.19	14.00	7.19	0.61	0	54.59	45.41	0		0
1	26.08	10.63	12.90	6.27	0	6.12	10.13	0		0
2	59.84	30.50	8.61	0.77	0.28	52.18	42.47	5.35		0
3	17.9	20.76	13.84	7.09	10.08	20.97	33.96	5.01		0
4	63.36	20.13	15.96	0.28	0.27	43.66	24.76	20.04		11.54
5	21.68	15.67	29.36	2.96	10.97	31.68	35.74	33.89		100.00
	52.34	33.94	10.53	2.27	0.91	49.17	10.97	39.86		0
	21.12	31.17	22.86	28.10	44.56	27.37	12.15	51.73		0
	45.92	33.22	13.58	6.29	0.99	63.24	18.4	18.36		0
	13.22	21.77	21.03	55.58	34.39	13.84	8.02	9.37		0

Note: Densities account for individuals' sampling weights. Workers are classified into occupation groups by their 2-digit occupation code, permanent vs. non-permanent job, public vs. private sector, and contract vs. non-contract job. Joint distributions of earnings quintiles, rather than earnings themselves, are shown. Sample is restricted to male nationals 35-55 years old.

few unlucky persons, but instead other individuals only slightly lost their economic standing. Opportunities for substantial upward mobility thus appear to exist even in a Middle Eastern society with substantial path dependency between the outcomes of fathers and their offspring. Migration may offer a pathway toward such socioeconomic mobility.

The transition matrices also reveal that minor transitions (from one quintile to the next) are more typical than major transitions (across 2–4 quintiles), especially during one's lifetime. More individuals experience economic mobility upward than downward, especially among return migrants. Intergenerational mobility is of course greater than mobility over the span of 8–10 years (considering the quintiles scaled), especially for upward mobility. Return migrants experience greater mobility than non-migrants.<sup>6</sup> This re-confirms that return migrants possess some qualities that make them likelier to migrate and likelier to see higher socioeconomic achievements, but these qualities do not come from the observed characteristics of their fathers, or from exposure to migration.

In sum, our evidence shows that return migrants tend to out-earn non-migrants even in the previous, before previous, and eight-years prior occupations. This suggests that individuals' time-invariant characteristics contribute to migrants' lifetime achievements. Multivariate regression analysis can help isolate the individual effects of workers' characteristics on their earnings. In Table 8, workers' earnings are made a function of their return migrant status, their most recent migration destination, education, age, mean earnings in the occupation held eight years prior, mean earnings in father's occupation group, and birthplace in urban or economically privileged regions. The corresponding regression function is equation (2) as described earlier.

The results in Table 8 suggest that the migration status, and destination country, do not have significant earnings effects of either sign once other characteristics are controlled for. Education has a strong and systematic impact on earnings. Earnings are also seen to be subject to strong path dependency across the years. Occupation group from eight years before has a positive effect on current earnings, confirming strong lifetime propagation of one's economic status. Father's occupation group also plays a role (in 2016 significantly), lending support to anecdotal evidence of intergenerational transmission of economic status. Similarly, having been raised in an urban area also helps.<sup>7</sup>

The results in Table 8 present evidence of the factors that workers are able to influence, and those dictated by their starting position. The results confirm various observations made earlier on the basis of pairs of variables, but clarify which of these associations hold directly or are due to the intervening role of some third factors. The regression results should be viewed as directional, but not strictly causal, because various

important factors were omitted from the regressions, and some of the included factors (such as the migration status) may be influenced by workers' unobservable skills, expectations and aspirations. An important goal for future research is thus to identify the one-way causal impact of workers' human-capital investments, including through migration, on their lifetime outcomes.

TABLE 8. OLS regressions estimating return-migrant premium in personal wage earnings

Dep.var.: log(pers. wage earn.)	JO10	JO16
Return migrant	0.045 (0.123)	-0.048 (0.101)
Destination: rich & Gulf countries	0.039 (0.160)	-0.058 (0.212)
Post-primary, preparatory edu.	0.079 (0.066)	0.527*** (0.150)
Secondary edu.	0.289*** (0.058)	0.161** (0.080)
University edu.	0.655*** (0.084)	0.419*** (0.091)
Post-graduate edu.	0.780*** (0.165)	0.721*** (0.136)
Age	0.004 (0.005)	-0.001 (0.007)
Log occupation-group wage earnings, 8–10 yrs prior	0.071 (0.070)	0.075 (0.079)
Log occupation-group wage earnings, father	0.067 (0.066)	0.294*** (0.114)
Urban birthplace	0.066 (0.046)	0.131* (0.075)
Privileged birthplace region	0.072 (0.048)	-0.093 (0.063)
Constant	5.064*** (0.657)	3.555*** (0.947)
Observations	1,088	851
R-squared	0.151	0.106
Wald F	12.48***	9.920***

Notes: Log personal wage earnings are the dependent variable. Both regressions are weighted using survey sampling weights. Significant at \* 10%, \*\* 5%, \*\*\* 1% using two-sided tests on standard errors robust to arbitrary heteroskedasticity (in parentheses). Sample is restricted to male nationals 35–55 years old.

## CONCLUSIONS

It is well known that international migration helps matching workers to employers, and alleviating unemployment among young workers in disadvantaged

regions even as it increases pressure on labor markets in destination economies. By bringing remittance flows to disadvantaged and rural regions, especially in the sending middle-income countries like Jordan, migration alleviates poverty and socioeconomic inequality. This study has aimed to shed more light on the scale and form of migration from Jordan, and its implications for workers' socio-economic mobility with a focus on return migration. We find that migration is a highly systematic behavior subject to a clear selection bias among Jordanian workers, and varies across subsequent survey waves.

Workers' migration decisions are driven by economic as well as personal considerations, and are contingent on skilled-labor demand across the Middle East and Europe, resulting in diffused migration flows from Jordan. Jordanian migrants are highly educated and predominantly come from urban areas, but also come from economically disadvantaged regions lacking adequate jobs. Upon their return, migrants typically find employment in higher earning jobs, transition to more economically privileged and urban areas, and reach other desirable outcomes compared to non-migrants. Relating their current outcomes to those of their fathers suggests that return migrants are inter-generationally more mobile than their non-migrant peers. This would suggest that one way to mitigate opportunity traps and constraints on intergenerational mobility in middle-income Middle Eastern countries could be to promote regulated (re-) return migration. Such regulated migration would help to tackle undesirable flows of migration such as illicit and forced migration, and would present short-term benefits to recipient economies without subjecting them to long-term economic or political risks (Tsourapas 2021). This calls for interagency and inter-state cooperation aiming at enabling and managing an informed flow of migration across the Middle East, Europe and beyond (Turner 2021; Seeberg & Zardo 2022).

With regard to socioeconomic mobility during workers' lifetimes, return migrants are found to outperform non-migrants not only presently, but also in the previous, before previous, and 8–10 years prior occupations. This raises a question whether migration experience has a causal impact itself, rather pointing to individuals' time-invariant predispositions as the determinants of migration and of socioeconomic outcomes. One interpretation is that prospective migrants invest more strongly in their human capital – beyond that revealed by their educational achievements – and this lets them outperform non-migrants in all phases of their careers regardless of the timing of their migration. More research is necessary to identify the causal impacts. Instrumental variables facilitating identification of endogenous migration choices have been proposed in prior research (e.g., Wahba 2015; El-Mallakh & Wahba 2021; Hlasny & AlAzzawi 2022), so these serve as a good starting ground for follow-up inquiry.

As a final observation, we surmise that migration does have a beneficial effect on socioeconomic mobility within workers' lifetime as well as across generations. In order for this effect to be shared with workers' other than those predisposed for migration and for economic success, non-governmental and governmental actors should partner and work on enabling even the disadvantaged to partake in the socioeconomic opportunities, in order to enhance individuals' careers, family wellbeing and resilience of the social fabric in the Kingdom at large.

#### NOTES

- <sup>1</sup> Figure A1 in the appendix illustrates the heterogeneity in observed earnings within and between occupation groups.
- <sup>2</sup> Privileged regions are delineated using standard classification: Middle region – the capital city area – versus North and South.
- <sup>3</sup> The JLMPS also contains data on the form and amount of remittances, and the whereabouts of the migrant members of the household, separately for current and past migrants. The year-2016 wave also asks about the motive for migration. These questions are not used because they are not answered consistently across households, and similar questions are not given to non-migrants, or in the year-2010 wave.
- <sup>4</sup> I.e., 1,257 observations or 7.7% of the sample (using sampling weights) in JLMPS 2010, and 4,943 observations or 23.3% in JLMPS16. Syrians alone account for 85 observations or 0.49% in JLMPS 2010; but as many as 2,876 observations or 14.5% in JLMPS 2016. Among Jordanian nationals in JLMPS16, 18 individuals residing in camps are also excluded.
- <sup>5</sup> In the 2010 JLMPS, position held in February 1999 is used. In the 2016 JLMPS, position attained before 2008 and left after that year is used.
- <sup>6</sup> Figure A2 in the appendix shows off the kernel joint-distribution plots of workers' current and fathers' earnings. Table A4 shows the analogous transition matrices for workers' residence in urban/rural and privileged/disadvantaged regions at birth versus currently. Since these variables are binary, we only observe whether workers' lifetime residence mobility is upward or downward.
- <sup>7</sup> Regressions in Table 8 link workers' individual earnings to a limited set of exogenous background factors, and omit intermediate outcomes correlated with earnings such as workers' current job type or location. The aim has been to estimate the cumulative effect of background factors and migration on earnings, via various direct or indirect routes. This basic specification could be supplemented with indicators for current occupation group, employment

status and sector (i.e., contract×permanent×sector indicators), and governorate of residence. Hence, for completeness, Table A5 in the appendix reports two robustness checks. First, in columns 1–2, the models are re-estimated for household wage earnings per capita, as an alternative measure of welfare outcome. The results are analogous but less precise than in Table 8. Second, in columns 3–4, alternative models are used to estimate the between-occupation versus within-occupation difference between non-migrants & return migrants. If we view workers' occupation and location choice is exogenous, the impact of migration may be limited to the within-occupation earnings gap. Under this view, return-migration status is shown to have a negligible direct effect on wage earnings, of opposite signs across the survey waves. On the other hand, workers' occupation group, type of employment, and location indicators have significant impacts. This could mean that, rather than affecting wage earnings in any job directly, status as a return migrant has bearing on workers' opportunities regarding occupation, type of employment, sector and location. These choices may in turn affect workers' take-home earnings.

#### ACKNOWLEDGEMENTS

This study builds on Hlasny and AlAzzawi's (2018) UNU-WIDER working paper. We thank the editor of the special issue, M Niaz Asadullah, for helpful and constructive comments, which helped improve the paper. Valuable comments were also received from participants at the October 2017 UNU-WIDER conference in Accra.

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## APPENDIX

## Descriptive statistics and additional results

TABLE A1. Basic description of evaluated surveys

Survey wave	Source & documentation	Hhds	35–55 year-old men, known remigrant status	Return migrants, 35–55yo men (%)	Mean pop. sampling weight
JO10 LMPS v.3.2	--; Jordan (2010), Assaad (2012)	5,102	2,406	393 (21.49)	236.18
JO16 LMPS v.0.5	--; Krafft (2017)	6,803	2,495	85 (4.04)	254.55

Notes: Percent return migrant among 35–55 year-old men accounts for individuals' sampling weights.

TABLE A2. Probit regressions of demographic drivers of return migration

Dep.var.: 1(return migrant)	2010	2016
Log occupation-group wage earnings of father	-0.155 (0.187)	-0.021 (0.375)
Log occupation-group wage earnings, 8–10 yrs prior	-0.065 (0.127)	0.157 (0.233)
Post-primary, preparatory edu.	0.174 (0.192)	2.131*** (0.509)
Secondary edu.	0.407*** (0.144)	0.593** (0.278)
University edu.	0.714*** (0.174)	0.638** (0.327)
Post-graduate edu.	1.048*** (0.253)	1.673*** (0.461)
Age	0.070*** (0.010)	-0.004 (0.014)
Household size	-0.057** (0.029)	0.004 (0.070)
Urban birthplace	0.154 (0.158)	0.365 (0.243)
Privileged birthplace residence	-0.203 (0.226)	-0.201 (0.468)
Governorate indicators	Y***	Y***
Constant	-3.123** (1.511)	-3.641 (2.619)
Observations	1,729	1,529
Pseudo R <sup>2</sup>	0.157	0.212
Wald Chi <sup>2</sup>	112.60***	67.11***

Notes: Binary indicator for return migrants is the dependent variable. All regressions are weighted using survey sampling weights. Probit coefficients are shown. Significant at \* 10%, \*\* 5%, \*\*\* 1% using two-sided tests on standard errors robust to arbitrary heteroskedasticity (in parentheses). Sample is restricted to male nationals 35–55 years old with a known return-migrant status.

<sup>a</sup> Asterisks on governorate indicators indicate joint significance. Governorate indicators that perfectly predict return/non-migration are omitted by the design of the probit model; all observations from those governorates are also omitted.



TABLE A3. Joint distribution densities of current and past earnings (%individuals in earnings quintiles)

i. Current and 8-year prior earnings

Jordan 10	10-yr prior: 1	2	3	4	5	Total
Current:	3.90	10.40	9.48	46.55	29.66	100
1	15.89	9.34	5.05	11.86	8.67	9.45
2	2.80	25.83	15.69	38.43	17.26	100
	6.32	12.88	4.63	5.43	2.80	5.24
3	1.50	20.39	36.87	23.95	17.29	100
	12.40	37.30	39.95	12.43	10.29	19.24
4	3.18	7.21	12.73	47.32	29.55	100
	44.74	22.38	23.40	41.64	29.84	32.63
5	1.43	5.69	14.33	31.76	46.78	100
	20.65	18.10	26.97	28.63	48.39	33.43
Total	100 2.32	100 10.52	100 17.76	100 37.09	100 32.32	(N=2,058)

Jordan 16	8-yr prior: 1	2	3	4	5	Total
Current:	31.10	58.67	7.77	1.46	1.01	100
1	34.55	33.17	8.29	1.85	5.94	21.91
2	22.73	70.74	6.15	0.38	0	100
	25.31	40.09	6.59	0.48	0	21.97
3	22.44	8.07	60.64	6.05	2.80	100
	19.46	3.56	50.56	6.00	12.82	17.11
4	13.42	13.52	12.15	58.95	1.97	100
	12.35	6.33	10.75	61.98	9.58	18.15
5	7.87	31.30	23.42	24.58	12.83	100
	8.32	16.85	23.81	29.69	71.67	20.86
Total	100 19.72	100 38.76	100 20.52	100 17.27	100 3.73	(N=1,539)

ii. Workers' current and their fathers' prior earnings

Jordan 10	Father: 1	2	3	4	5	Total
Son:	63.97	14.75	11.08	2.80	7.41	100
1	75.87	12.06	6.53	5.87	5.71	18.07
2	1.83	96.45	1.02	0.19	0.51	100
	2.17	78.98	0.60	0.40	0.40	18.10
3	7.05	4.89	64.76	3.39	19.92	100
	17.72	8.47	80.94	15.05	32.57	38.29
4	2.69	0.82	23.24	68.00	5.26	100
	1.67	0.35	7.19	74.78	2.13	9.48
5	2.44	0.19	9.02	2.09	86.26	100
	2.57	0.14	4.73	3.90	59.19	16.06
Total	100 15.23	100 22.10	100 30.63	100 8.62	100 23.41	(N=2,163)

cont.

cont.

Jordan 16	Father: 1	2	3	4	5	Total
Son:	77.84	14.48	7.08	0.60	0	100
1	25.21	10.60	11.61	6.27	0	19.25
2	59.40	31.19	8.42	0.73	0.26	100
	18.03	21.41	12.93	7.09	6.90	18.04
3	61.44	20.47	16.57	0.26	1.25	100
	22.11	16.66	30.18	2.96	39.02	21.39
4	52.15	32.58	12.27	2.14	0.86	100
	21.39	30.23	25.46	28.10	30.52	24.38
5	46.49	32.73	13.74	6.08	0.96	100
	13.25	21.09	19.82	55.58	23.55	16.94
Total	100 59.43	100 26.28	100 11.74	100 1.85	100 0.69	(N=1,314)

Note: Densities account for individuals' sampling weights. Workers are classified into occupation groups by their 2-digit occupation code, permanent vs. non-permanent job, public vs. private sector, and contract vs. non-contract job. Joint distributions of earnings quintiles, rather than earnings themselves, are shown. Sample is restricted to male nationals 35–55 years old.

TABLE A4. Joint distribution densities of individuals' current and birthplace residence: non-migrants vs. return migrants (% individuals in each residence category)

i. Workers' urban–rural residence status

Jordan 10	Non-migrants			Return-migrants		
	At birth: Rural	Urban	Total	At birth: Rural	Urban	Total
Current: Rural	11.93	8.51	20.43	3.72	5.55	9.27
Urban	7.60	71.97	79.57	7.36	83.37	90.73
Total	19.52	80.48	100.00	11.08	88.92	100.00
Jordan 16	At birth: Rural	Urban	Total	At birth: Rural	Urban	Total
Current: Rural	11.17	2.91	14.08	7.21	2.70	9.91
Urban	1.27	84.65	85.92	0.00	90.09	90.09
Total	12.44	87.56	100.00	7.21	92.79	100.00

ii. Workers' residence in economically privileged–disadvantaged region

Jordan 10	Non-migrants			Return-migrants		
	At birth: Disadv.	Privileg.	Total	At birth: Disadv.	Privileg.	Total
Current: Disadv.	41.01	2.89	43.90	45.25	2.39	47.64
Privileg.	3.52	52.57	56.10	6.68	45.67	52.36
Total	44.54	55.46	100.00	51.94	48.06	100.00
Jordan 16	At birth: Disadv.	Privileg.	Total	At birth: Disadv.	Privileg.	Total
Current: Disadv.	39.49	1.05	40.54	57.47	1.78	59.25
Privileg.	2.73	56.73	59.46	4.34	36.41	40.75
Total	42.22	57.78	100.00	61.81	38.19	100.00

TABLE A5. OLS regressions of return-migrant premium in household wage earnings per capita

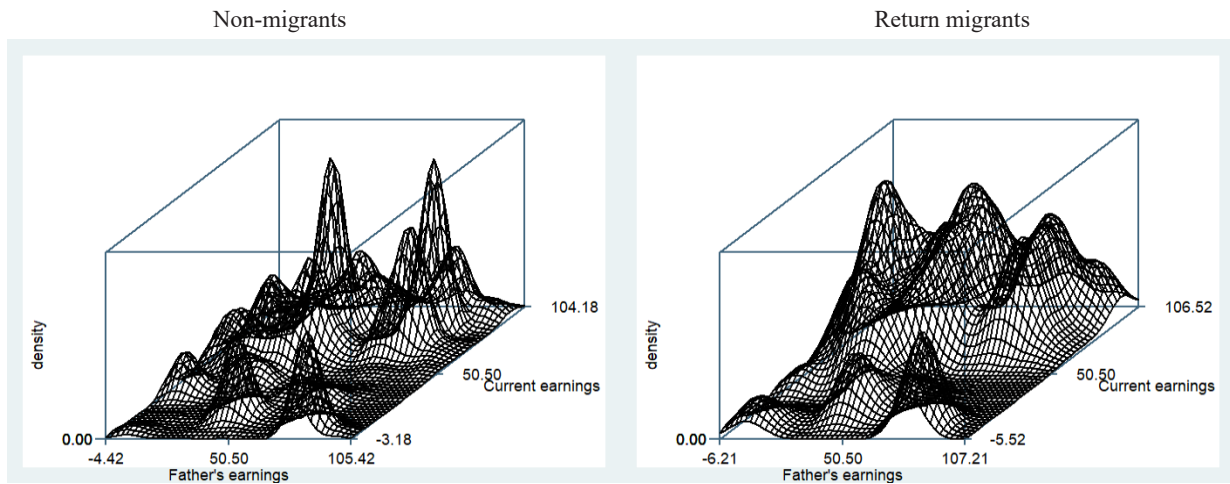
	Log household wage earnings per capita		Log personal wage earnings: within occupation groups	
	JO10	JO16	JO10	JO16
Return migrant	0.154 (0.157)	-0.142 (0.112)	0.105 (0.128)	-0.132 (0.145)
Destination: rich & Gulf countries	0.113 (0.224)	-0.115 (0.219)	0.160 (0.200)	-0.070 (0.262)
Post-primary, preparatory edu.	0.094 (0.068)	0.455*** (0.109)	0.086 (0.066)	0.520** (0.233)
Secondary edu.	0.300*** (0.061)	0.199** (0.086)	0.234*** (0.060)	0.133* (0.078)
University edu.	0.858*** (0.097)	0.423*** (0.104)	0.697*** (0.092)	0.263 (0.186)
Post-graduate edu.	0.890*** (0.123)	0.590*** (0.122)	0.710*** (0.104)	0.315 (0.192)
Age	-0.005 (0.005)	-0.007 (0.007)	0.002 (0.005)	-0.001 (0.007)
Log occupation-group wage earnings, 1990	0.029 (0.057)	0.025 (0.073)	-0.048 (0.053)	-0.067 (0.082)
Log occupation-group wage earnings, father	0.109 (0.085)	0.393*** (0.116)	-0.281* (0.151)	0.386*** (0.113)
Urban birthplace	0.090* (0.053)	0.111 (0.082)	0.074 (0.061)	0.008 (0.129)
Privileged birthplace region	0.052 (0.050)	-0.144** (0.071)	-0.042 (0.083)	0.198* (0.117)
Urban			-0.000 (0.064)	0.092 (0.132)
Privileged region, current			-0.019 (0.140)	-0.507*** (0.195)
Constant	3.781*** (0.715)	2.004** (0.943)	7.098*** (1.230)	1.934** (0.844)
Governorate indicators			Y***	Y***
Occupation group ind.			Y***	Y***
Sector/permanent/contract ind.			Y***	Y***
Observations	1,300	1,066	1,300	916
R-squared	0.157	0.078	0.261	0.153

Notes: Log wage earnings are the dependent variable. All regressions are weighted using survey sampling weights. Significant at \* 10%, \*\* 5%, \*\*\* 1% using two-sided tests on standard errors robust to arbitrary heteroskedasticity (in parentheses). Sample is restricted to male nationals 35–55 years old.

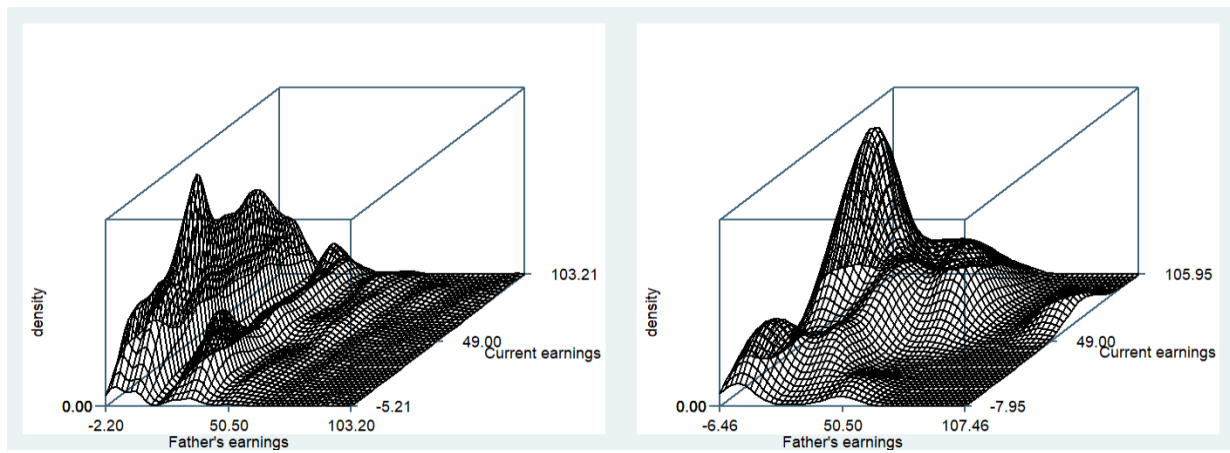


FIGURE A1. Distribution of wage earnings by occupation group

i. Jordan 2010:



ii. Jordan 2016: Non-migrants



Notes: Workers are classified into occupation groups by their 2-digit occupation code, permanent vs. non-permanent job, public vs. private sector, and contract vs. non-contract job.

FIGURE A2. Kernel joint-density plots of current vs. father's occupation-group wage earnings