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UPWARD OR DOWNWARD: OCCUPATIONAL MOBILITY AND RETURN MIGRATION

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Abstract

We study the extent to which temporary overseas migration enables returnees to climb the occupational ladder. Using data from Egypt, we examine the occupational mobility of returnees relative to non-migrants for the same labor market entrants' cohort. We rely on instrumental variable approach but also employ a Difference-in-Differences, as well as Difference-in-Differences matching techniques to control for the endogeneity and selection into migration. We find evidence that return migration increases the probability of upward occupational mobility. However, the results suggest that only highly educated returnees climb the occupational ladder after return. Our findings underscore the role played by temporary overseas work experience in dampening potential brain drain concerns through the human capital enhancement of high educated return migrants.

JEL Classifications: F22, J62.

Keywords: return migration, occupational mobility, Egypt.

ملخص

ندرس مدى تمكين الهجرة المؤقتة إلى الخارج للعائدين إلى تسلق السلم المهني. وباستخدام بيانات من مصر، ندرس الحراك النسبي المهني للعائدين لغير المهاجرين لنفس فوج الداخلين إلى سوق العمل. نعتمد على نهج متغير أساسي ولكن ايضا باستخدام الفرق في والاختلافات، مطابقة التقنيات للسيطرة على تأثير الجوانب الداخلية وبالتحديد للهجرة. نجد دليلا على أن عودة الهجرة يزيد من احتمال الحراك المهني التصاعدي. ومع ذلك، تشير النتائج إلى أن العائدين المتعلمين فقط هم اللذين يستطيعوا تسلق السلم المهني بعد العودة. النتائج التي توصلنا إليها تؤكد على الدور الذي تلعبه الخبرة في العمل في الخارج وتخفيف مخاوف هجرة الأدمغة المحتملة من خلال تعزيز رأس المال البشري من ارتفاع المهاجرين العائدين المتعلمين.

1. Introduction

For many poor developing countries, the emigration of the high skilled workers is a source of concern. As such, the brain drain is seen as a negative consequence of international emigration. However, international migration can lead to brain gain when the possibility of emigration increases the incentives to get education of both migrants and remaining citizens (see, e.g. Batista et al. (2012), Docquier and Rapoport (2012) and Beine et al. (2011)). Another channel through which the emigration of high skilled workers results in a brain gain is return migration, when returnees enhance the average human capital of the origin country. Indeed the return migration motive increases the education incentive if there is a wage premium for returnees as shown by Mayr and Peri (2011) and Dustmann et al. (2011).

Temporary migration provides an opportunity for workers to acquire physical capital, to accumulate savings and assets and most importantly to acquire new skills and knowledge. Upon return to their home country, migrants represent an inflow of both human capital and financial capital. The return of migrants can be a potential source of economic growth for the origin country through increased productivity and knowledge diffusion (see, for example Dustmann and Gorlach (2015), Djajic (2014) and Dos Santos and Postel-Vinay (2003)).

The literature on the impact of international migration on the human capital accumulation of returnees has focused on the wage premium earned by return migrants compared to non-migrants.[1] Overall the evidence suggests that there is a positive wage premium associated with overseas work migration for returnees in developing countries, see for example Lacuesta (2010), De Vreyer et al. (2010), Reinhold and Thom (2013), and Wahba (2015). Another measure of the acquisition of human capital of temporary migrants is their skill upgrading or occupational mobility. Whether migrants acquire human capital whilst overseas is an important question for the economic development of the home developing countries since the public debate tends to underscore the negative impact of high skilled emigration, resulting in a brain drain for origin developing countries.

This paper contributes to this literature by providing evidence on the impact of temporary migration experience on human capital accumulation of returnees by examining occupational mobility, a hardly studied issue, of return migrants vis-à-vis working-age individuals who have never migrated, controlling for the potential endogeneity and selection of migration. Unlike the studies on wage premiums where wages of returnees are only observed at the time of survey, we are able to construct individual occupational mobility based on the first job and the current occupation. Furthermore, we adopt a novel approach in order to identify the impact of overseas migration by constructing cohort groups who entered the labor market in the same decade to control for the initial labor market conditions and examine current occupational mobility relative to the first job.

The relevance of this research question is twofold. On the one hand, the answer to this question is not straightforward. Temporary migrants might acquire additional human capital due to their work experience abroad and hence, the human capital accumulated abroad might help those temporary migrants to find occupations higher in the skill and remuneration ladder upon return. Conversely, it might be the case that temporary migration experience is motivated by the shortage of unskilled labor in destination countries and subsequently, the positive effects of temporary migration on human capital and occupational mobility might be contested. Whether temporary emigration and overseas work experience enhance human capital accumulation is an important question. In

[1] See Wahba (2014) for a survey on return migration.

particular, whether return migration can provide a leeway to promote the economic development of sending countries and compensate for the loss of human capital due to outward migration, through the returnees' higher human capital remain to be an understudied issue.

In this context, understanding the development effects of return migration is crucial. We use data from Egypt, a country with substantial temporary migration. The literature on return migration in Egypt focuses primarily on the impact of temporary migration experience on self-employment, entrepreneurial activities, wage premiums of temporary migrants or fertility choices. For example, Wahba and Zenou (2012) have studied the impact of temporary migration on entrepreneurial activities of returnees in Egypt. Bertoli and Marchetta (2015) have examined how the prevailing social norms in the countries of destination of Egyptian migrants affect their fertility choices upon return. More recently, Wahba (2015) has examined the returns to returning by estimating the wage premium incurred by Egyptian returnees. We extend this literature by investigating the extent to which return migrants move up the occupational ladder relative to non-migrants.

The existing literature on the impact of return on upward mobility is very sparse. Carletto and Kilic (2011) estimate the impact of international migration experience on the occupational mobility of returnees compared to stayers in Albania. Relying on an instrumental variable approach to control for the non-random nature of international migration and return, they use foreign language knowledge of household members before migration and the number of young children at the time of return, as predictors of past migration and return decisions. They find that past migration experience increases the probability of upward occupational mobility. On the other hand, using the online job search portal of Estonia, Masso, Eamets and Motsmees (2014) also investigate the effect of temporary migration experience on the upward occupational mobility, but using online job search data, which also rely on online self-reported occupations. They find that temporary migration experience does not exhibit any significant effect on upward occupational movement, but this could be due to the very selective nature of their data and the bias arising from using self-reported online information. Unlike those previous studies, we adopt a novel approach by constructing cohort groups who entered the labor market in the same decade to control for the initial labor market conditions as well as using Difference-in Differences and Difference-in-Differences matching techniques to control for the endogeneity and selection into migration.

In this paper, we estimate occupational mobility of returnees relative to non-migrants taking into account the selection into temporary emigration, using the Egypt Labor Market Panel Survey (ELMPS), a nationally representative household survey with very rich information on labor market characteristics and dynamics, including retrospective data on international migration and individual experiences before, during and after migration. We rely on cohort analysis by focusing on individuals who had their first job in the same decade and examine occupational mobility between the first job and their job in 2010, before the Egyptian Revolution of the 25th of January 2011, to ensure that our results can be generalized and are not affected by momentous events in the aftermath of the Egyptian Uprising. Estimating the impact of temporary migration on occupational mobility poses the challenge of addressing the non-random selection of who migrates and who returns. To control for the non-randomness nature of migration, we rely on an instrumental variable approach, following Wahba and Zenou (2012) and Bertoli and Marchetta (2015). Hence, to obtain an exogenous source of variation in the probability of migration, we use the historical inflation-adjusted oil prices. We also employ a Difference-in-Differences technique that differences out all unobserved time-invariant differences between the treatment and control groups, as well as Difference-in-Differences matching technique that controls for the observable

characteristics as well as the unobserved time-invariant heterogeneity of returnees relative to stayers.

Controlling for the potential non-randomness of migration, we find that return migration increases the probability of upward occupational mobility. Our results are robust to different specifications using Difference-in-Differences and Difference-in-Differences matching techniques and also using different cohorts of entry in the labor market. Our results seem to be driven by the most educated returnees, those who have secondary education or above. However, our results are not significant for the less educated individuals, those who have below secondary education. Hence, returnees who are positively selected in terms of education, experience upward occupational mobility upon return in Egypt. In other words, only individuals drawn from the upper end of the educational distribution seem to climb the occupational ladder upon return. This suggests that return migration can lead to a brain gain.

The rest of this paper is organized as follows. Section 2 provides a brief description of Egyptian migration and the data used in our analysis. Section 3 describes the empirical strategy. Section 4 presents the results, mechanisms and robustness checks. Section 5 briefly concludes.

2. Information Background on Egyptian Migration and the Data

2.1 Egyptian migration

Egyptian migration went through different phases in the last four decades. Until 1971, Egyptian migration was limited being subject to legal restrictions. The largest boost to outward migration flows occurred when the government lifted all restrictions on labor migration after the adoption of the 1971 constitution that legalized permanent and temporary emigration. One key factor contributing to the boost in outward migration flows was the 1973 War, when oil revenues quadrupled and hence, Gulf countries started implementing major development programs. Massive emigration from Egypt was triggered by the labor shortages in the Gulf oil-producing countries and the increased demand for foreign labor. The majority of Egyptian migrants went to Iraq, Saudi Arabia and the other Gulf States, as well as Libya, while Egyptian migration to the West slowed down (Zohry, 2007; MPC Migration Profile, 2013 and Wahba, 2015).

Neighboring Arab countries have been the major labor exporters to the Gulf Countries until the 1980s. In the 1980s and in the 1990s, Asians started to gradually replace Arab workers; however, Egyptian migration to the Gulf countries didn't cease but carried on a lower scale (Wahba, 2015). More recently, migration to Europe, namely Greece and Italy, has increased, in particular, undocumented migration. The main reasons being high unemployment rates among Egyptian youth, the increased competition for employment opportunities that young Egyptians face in Gulf countries, due to the massive number of cheap South East Asian labor and the geographical proximity between Egypt and Europe (see Zohry, 2007 and MPC Migration Profile, 2013).

Egyptian migration is characterized by its temporary nature, with mean migration duration of around four to five years (Lucas, 2008). It is also known to be male dominated, where young men migrate in order to achieve some financial goals and return to Egypt. Hence, Egypt is a country with a substantial number of returnees with overseas migration experience (Zohry, 2007 and Wahba, 2015). This provides us with a good case to study the impact of temporary overseas migration.

2.2 Data

The empirical analysis relies on data from the Egypt Labor Market Panel Survey 2012 (ELMPS 12). The ELMPS is a nationally representative panel survey carried out by the Economic Research Forum (ERF) in cooperation with Egypt's Central Agency for Public Mobilization and Statistics

(CAPMAS) since 1998. The ELMPS is a wide-ranging panel survey that covers topics such as employment, unemployment, job dynamics and earnings, as in a typical labor force survey but also provides very rich information on education, residential mobility, migration and entrepreneurial activities (Assaad and Krafft, 2013).

The ELMPS has been administered to nationally representative samples in 1998, 2006 and 2012. We focus particularly on the third round, the ELMPS 2012. The total sample size is 12,060 households and 49,186 individuals. It tracks households and individuals that were previously interviewed in 2006, both those also interviewed in 1998 as well as individuals added in 2006. In 2012, the refresher sample of 2,000 households was selected from an additional 200 PSUs randomly selected from a new master sample prepared by CAPMAS. By design, the 2012 refresher sample over-sampled areas with high migration rates. (Assaad and Krafft, 2013). We exploit rich information derived from a supplementary module on return migration, surveying individuals aged between 15 and 59 years old who have worked abroad for more than six months. This module features return migrants' characteristics, incidences of migration, reason for migration, and financial situation before migration, year and country of first migration episode, year of final return, savings abroad, remittances, as well as other relevant information. We also rely on retrospective data from the job mobility module. This section traces job trajectories for all individuals aged 15 years old and above. Explicitly, it tracks the occupation, economic activity, sector of employment, job stability, incidence of work contract and social security for the first, second, third, fourth jobs and the job in 2011, if any changes in job status occurred after the 25th of January 2011 uprising.

In our analysis, we focus mainly on the 1980s cohort, individuals who had their first job in the 1980s aged at least 15 years old at first job and were less than 65 years old in 2010, but also use different cohorts to check for the robustness of the results.[2] The average age of individuals was 20 years at first job. Throughout the analysis, we consider the year 2010 for the current occupation instead of 2012, before the Egyptian Revolution of the 25th of January 2011, to ensure that our results can be generalized and are not affected by momentous events in the aftermath of the Egyptian Uprising. We only focus on males as we only have 3.6% of female returnees among those in the 1980s cohort, as Egyptian migration is mostly male-dominated. Our 1980s cohort is comprised of 956 stayers and 304 returnees. A returnee is defined as a male who had worked abroad but had returned back to Egypt before 2010, whereas, a stayer is defined as a male who never had any overseas migration experience.

Descriptive statistics on the sample of stayers versus returnees in the 1980s cohort are reported in Table 1. Returnees were on average about seven months older than stayers at first job. Regarding their educational attainment, returnees were on average more educated compared to stayers. Around 83% of return migrants had at least secondary education compared to 68% of stayers, and hence, the least educated (less than secondary education) category among the stayers was two times greater compared to the returnees and the difference is statistically significant. Returnees in the 1980s cohort were also found to be less likely to live in Greater Cairo, Alexandria and the Canal cities, whereas, they are found to be more likely to live in Urban and Rural Lower Egypt in 1980. With respect to their parental background, there is not any significant difference between the two groups in terms of their mother and father's highest level of educational attainment.

[2] The years considered for the 1980s cohort are from the 1980 to 1989, inclusive. The choice of the 1980s cohort is guided by the desire to capture workers' occupational mobility between their first and possibly last job. We also conducted several robustness checks using 1990s cohort, as well examining occupation when the worker was 50 to 55 years of age (see Table A8 in the Appendix). All our results were robust.

Given our focus here in occupational mobility, we compare stayers and returnees who had their first job in the 1980s and were working in 2010. In Table 2, we explore their first and current (in 2010) job characteristics. For their first job, returnees were more likely to be employed in the private sector compared to stayers and also less likely to be employed in the governmental sector. Returnees were also more likely to work in economic activities, such as wholesale and retail trade, transportation and storage, accommodation and food services, as well as, professional, scientific, technical and administrative activities, for their first job compared to stayers. The incidence of social security for the first job was 18% lower among returnees compared to stayers. Interestingly, we find contrasted figures when we consider the current job characteristics for the two groups. In 2010, returnees were on average more likely to be employed in the governmental sector compared to stayers and less likely to be employed in the private sector. In addition, the incidence of social security for the current job in 2010 was 6% higher among returnees compared to stayers.

2.3 Occupational ranking and mobility

For each individual, we compare his first occupation in the 1980s to his current occupation in 2010.[3] Occupational categories are split into five distinct categories according to the ISCO-88 one digit classification, and are the following: agriculture, low-skilled blue collar, high-skilled blue collar, low-skilled white collar and high-skilled white collar occupations.[4] Agriculture refers to skilled agricultural, forestry and fishery workers, low-skilled blue collar refers to plant and machine operators, assemblers and elementary occupations, high-skilled blue collar refers to craft and related trades workers, low-skilled white collar refers to clerical support workers and service and sales workers and high-skilled white collar refers to managers, professionals, technicians and associate professionals. These five occupational categories are ranked one to five, respectively. We ranked the occupational groups according to the amount of human capital required to be employed in each occupation (see e.g. Sicherman and Galor (1990) and Carletto and Kilic (2011)). Thus, to compute occupational indices, we regress the hourly wage and its log, the monthly wage and its log, on the number of years of schooling and its squared term, the work experience and its squared term, controlling for marital status, geographical regions and the number of years in the current job and its squared term. Occupational indices are computed as following: first we multiply the estimated coefficients on the number of years of schooling and its squared term and the number of years of work experience and its squared term, obtained from the wage regression, by the levels for each individual. Second, we sum the resulting products and they are averaged at the ISCO88 1-digit occupation to obtain our occupational ranking. Occupational indices are reported in Table 5.

Table 3 sheds some light on individuals' first and current occupations and their occupational mobility indicators, for the sample of stayers and returnees respectively. For their first occupation, returnees were significantly more likely to have either high-skilled blue collar or low-skilled white collar occupations compared to stayers. In 2010, return migrants are significantly less likely to be employed in high-skilled blue collar occupations and more likely to be employed in high-skilled white collar occupations compared to stayers. We consider several occupational mobility indicators. Degree of mobility is an ordered categorical variable that ranges between -3 and 4 and is computed as the difference between individual's current occupation in 2010 and individual's

[3] Since we rely on the ELMPS 2012, we use current job occupation in 2012 as individual's occupation in 2010 if the individual didn't witness any job status changes with the 25th of January 2011 Egyptian Revolution. Whereas, for those individuals who witnessed job status changes in 2011, we consider their employment status in 2010 and subsequently, we determine their job occupation in 2010.

[4] Armed forces occupations are eliminated. These five occupational categories are ranked one to five, respectively. See Table 5 for a computation of the occupational rankings.

first occupation in 1980s. Upward mobility is a dummy variable equal to one if the individual's occupation in 2010 is ranked higher compared to his first job occupation in the 1980s, while the opposite is true for downward mobility. Immobility is a dummy variable equal to one if the individual stayed within the same occupational category in the two years considered. Returnees are found to be significantly more mobile compared to stayers and more likely to witness upward mobility, when we compare their first job in the 1980s and their current occupation in 2010. We also find that the difference in means between the two groups is statistically significant.

In order to examine the occupational mobility of the 1980s cohort, in Table 4, we construct employment transition matrices for stayers (Panel A) versus returnees (Panel B). Transition rates are row %. Hence, all transition rates are computed for individuals starting within a specific occupational category. As for example, 46.392% of the stayers who had agriculture as their first occupation in the 1980s had also an agricultural occupation in 2010. The diagonal cells represent the percentage of individuals who stayed in the same occupational category between the first job in the 1980s and the current job in 2010. The cells above the diagonal represent the percentage of individuals who witnessed upward mobility, whereas, the cells below the diagonal represent the percentage of individuals who witnessed downward mobility. To compute the share of individuals witnessing upward mobility (out of the total individuals), we consider for each occupational category, the sum of the cells above the diagonal multiplied by the % of total. For example, if the occupational category for the first job is agriculture, the share of individuals witnessing upward occupational mobility would be the sum of the shares of individuals employed in low-skilled blue collar, high-skilled blue collar, low-skilled white collar or high-skilled white collar occupations in 2010, multiplied by 20.293%. Among the sample of returnees in the 1980s cohort, we find that 46%[5] of return migrants witnessed upward occupational mobility when we compare their first job in the 1980s and their current job in 2010. This figure drops to 25% when we consider the sample of stayers. Interestingly, we also find that 61% of the returnees who witnessed upward mobility had either high-skilled blue collar or low-skilled white collar occupations in 1980s and they moved up the occupational ladder to hold either white collar occupations in general for the former category or high-skilled white collar occupations for the latter. Whereas, 57% of the stayers who witnessed upward occupational mobility, had in the 1980s less qualified occupations to start, namely agricultural or low-skilled blue collar occupations. Although by examining occupational change for the same individual we are able to control for time invariant unobservable, in the next section, we also control for observables and more importantly for the potential endogeneity between migration and occupational choice as well as for the non-randomness of returnees.

3. Empirical Methodology

3.1 Regression specification

We estimate the effect of return migration on occupational mobility for the 1980s cohort, focusing on males aged at least 15 years old at first job and 64 years old in 2010. For each individual, we compare his first occupation in the 1980s to his current occupation in 2010.[6] We estimate the following specification, using Probit, Linear Probability and Ordered Probit Models:

[5] To compute the share of individuals witnessing upward mobility, we consider for each occupation category, the sum of the cells above the diagonal. For example, if the occupational category for the first job is agriculture, the share of individuals witnessing upward occupational mobility would be the sum of the shares of individuals employed in low-skilled blue collar, high-skilled blue collar, low-skilled white collar or high skilled white collar occupations in 2010.

[6] To compute occupational indices, we regress the hourly wage and its log, the monthly wage and its log, on the number of years of schooling and its squared term, the work experience and its squared term, controlling for marital status, geographical regions and the number of years in the current job and its squared term. Occupational indices are computed as following: first we multiply the estimated coefficients on the number of years of schooling and its squared term and the number of years of work experience

$$Y_i = \alpha_0 + \alpha_1 Returnee_i + \alpha_2 X_i + \alpha_3 Z_i + \varepsilon_i \quad (1)$$

Y_i is a dummy variable for upward mobility that takes the value one if the individual's occupation in 2010 is ranked higher compared to his first job occupation in the 1980s and zero otherwise, either for individuals who witnessed downward mobility or stayed within the same occupational category. For the Ordered Probit Model, Y_i is a categorical variable equal 0 if the individual stayed within the same occupational category between the first job in the 1980s and the current occupation in 2010 or downgraded, equal 1 if the individual moved up the occupational ladder one step, equal 2 if the individual moved up the occupational ladder two steps and equal 3, if the individual climbed up the occupational ladder three or four steps. Returnee is a dummy variable equal one for males who had worked abroad and returned to Egypt before 2010 and equal to zero for stayers who never had any migration experience abroad. X_i is a vector of individual and household characteristics. Individual-level characteristics are the following: age in 1980 and its squared term, educational levels and five dummies for individual's geographical regions in 1980. Household level characteristics include mother's and father's level of education. $Z_{i\,t_0}$ is a vector of first job characteristics in the 1980s[7] and includes: sectors of employment, economic activities and the incidence of work contract and social security in the 1980s.

3.2 IV approach and selection-corrected estimations

We face two methodological challenges when estimating the impact of occupational mobility of returnees versus stayers. Unobserved individual characteristics might simultaneously affect the probability of temporary migration, on the one hand and occupational choices, on the other hand. Aware of the potential endogeneity problem inherent in this type of analysis, we rely on an instrumental variable approach, following the same identification strategy proposed by Wahba and Zenou (2012). Hence, to obtain an exogenous source of variation in the probability of temporary migration, we use the historical inflation-adjusted oil prices when the individual was 26 years old and 25 years old, being the mean age at migration for our sample of Egyptian men for the 1980s cohort and the 1990s cohort, respectively.[8] First stage regressions are reported in Table 7 for the 1980s and the 1990s cohorts. As a robustness check, for each cohort, we also matched the inflation-adjusted oil prices to one year below and one year above the mean age at migration. Our results are robust to the different specifications in both the first and the second stages and our instrument is well correlated with the endogenous variable (see the reported Kleibergen-Papp rk Wald F statistics in Table 7). The rationale behind using historic oil prices as a predictor of the migration probability, as argued by Wahba and Zenou (2012), is that other Arab countries constitute the most important destination for Egyptian migrants, where oil prices played a crucial role in driving the demand for foreign labor both directly in the Gulf countries or indirectly, in other non-oil Arab countries.[9] On average, we find that one dollar increase in the price of oil increases the probability of return migration by 2 percentage points (see the reported first stage regressions in Table 7).We

and its squared term, obtained from the wage regression, by the levels for each individuals. Second, we sum the resulting products and they are averaged at the ISCO88 1-digit occupation to obtain our occupational ranking. Occupational indices are reported in Table 5.

[7] In unreported regressions, we have only conditioned on individual and household characteristics, eliminating the vector of first job characteristics Z_i. We are likely to overestimate the effect of return migration on upward occupational mobility if we don't condition on the vector of first job characteristics.

[8] See Wahba and Zenou (2012) and Bertoli and Marchetta (2015) for similar approach.

[9] 98% of Egyptian migrants, in our estimation sample (1980s cohort), migrated to other Arab countries during the last migration episode.

instrument $\widehat{Returnee}$ and estimate upward mobility as follows and similar to above, using IV-Probit, IV-regression and IV-Ordered Probit Models.

$$Y_i = \alpha_0 + \alpha_1 \widehat{Returnee}_i + \alpha_2 X_i + \alpha_3 Z_i + \varepsilon_i \quad (2)$$

The second methodological issue is the non-random selection into temporary migration. We hence provide additional selection-corrected estimations. Since, unobserved differences between treatment and control groups - returnees and stayers, respectively - might be plaguing our standard Probit, Linear Probability and Ordered-Probit models' results, we also estimate the following Difference-in-Differences specification:

$$Y_{it} = \beta_0 + \beta_1 Returnee_i + \beta_2 2010_t + \beta_3 Returnee_i \times 2010_t + \varepsilon_{it} \quad (3)$$

Y_{it} is the individual's occupation at time t, split into five distinct occupational categories according to the one digit ISCO-88 classification, agriculture, low-skilled blue collar, high-skilled blue collar, low-skilled white collar and high-skilled white collar. $Returnee_i$ is a dummy variable equal one for the sample of returnees and zero, for the sample of stayers, it captures differences between the treatment and control groups, before the treatment. As we mentioned earlier, the treatment group is the sample of return migrants, all males who had both worked abroad for more than 6 months and had their final return in Egypt before 2010, or males who had a job abroad before 2010 considering retrospective data on job mobility. The control group is the sample of stayers, all males who never had any migration experience abroad. 2010_t is a dummy variable equal one for the second time period and equal zero for the 1980s. The time dummy captures aggregate factors that would cause changes in the individual's occupational choice even in the absence of the treatment. The coefficient of interest is β_3, it multiplies the interaction term between the treatment variable and the time period dummy. The Difference-in-Differences estimator is the difference in the average occupational ranking among the returnees between the follow-up and baseline periods, minus the difference in the average occupational ranking among the stayers for the same periods. It differences out all unobserved time-invariant differences between the treatment and control groups.

$$\hat{\beta}_3 = (\bar{Y}^{returnees,t=1} - \bar{Y}^{returnees,t=0}) - (\bar{Y}^{stayers,t=1} - \bar{Y}^{stayers,t=0}) \quad (4)$$

We also employ a Difference-in-Differences matching technique that controls for the observable characteristics as well as the unobserved time-invariant heterogeneity.

$$E(\bar{Y}^{returnees,t=1} - \bar{Y}^{returnees,t=0} | P(X), R = 1) = E(\bar{Y}^{stayers,t=1} - \bar{Y}^{stayers,t=0} | P(X), R = 0) \quad (4a)$$

$$0 < P(R = 1|X) < 1 \quad (4b)$$

First, we estimate the propensity score or the individual's probability of receiving the treatment, given the same set of covariates presented earlier, using a Logit model. It enables us to pair return migrants with stayers who have similar values of the propensity score. Hence, the two groups are similar, after the fact, in terms of observable characteristics, apart from the treatment. Second, we combine the Propensity score matching technique with a standard Difference-in-Differences specification, based on the matched sample of returnees and stayers.

4. Empirical Findings

4.1 Estimating the effect of return migration on upward occupational mobility

In Table 8, we estimate Equation 1 using Probit and Linear Probability models, IV-Probit and IV-regression models, while conditioning on individual, household controls, as well as, the first job

characteristics.[10] We find a positive and statistically significant effect of return migration on upward occupational mobility for males who first entered the labor market in the 1980s, robust across all specifications. Being a return migrant increases the probability of upward occupational mobility by about 9 percentage points, using probit and linear probability models. Controlling for the potential non-randomness of migration and selection bias using historic oil prices as an instrument for return migration, results in coefficient estimates for the IV-Probit model about four times greater than the standard Probit Model. Standard Probit Model results present a lower bound of the selection-corrected estimates. Relying on the IV-Ordered Probit Model, in Table 9, we find that return migration decreases the probability of downgrading or immobility by 6 percentage points. We also find that return migrants have a consistently higher probability of leaping across occupational categories, by moving up the occupational ladder either one step, two steps, three or four steps. And interestingly, returnees have a higher probability of making bigger leaps across the occupational ladder compared to stayers; 3 percentage points for moving up the occupational ladder 3 or 4 steps compared to 2 percentage points for moving up two steps and one percentage point for moving up 1 step.

In Table 10, we also estimate the effect of return migration on occupational mobility, by disentangling the effect conditional on the country of destination of Egyptian returnees during the last migration episode, namely oil and non-oil countries.[11] As we mentioned earlier, Egyptian migration is mostly towards Arab oil producing countries, hence, the sample size of Egyptians heading to non-oil countries is much smaller. Using a Probit model, return migration from oil countries increases the probability of upward occupational mobility by 9 percentage points, the effect for non-oil countries is 10 percentage points, however imprecisely estimated. Results are also robust to using a standard linear probability model.

In Table 11, we provide additional selection-corrected estimates. We estimate a Difference-in-Differences specification, by considering return migration unconditional on the country of destination of Egyptian migrants (Panel A), return migration from oil countries during the last migration episode (Panel B) and return migration from non-oil countries during the last migration episode (Panel C). Difference-in-Differences estimators are positive and statistically significant. Unconditional on the country of destination of Egyptian migrants, return migration increases the probability of upward occupational mobility. Interestingly, conditioning on the destination country during the last migration episode, the magnitude of the estimated coefficient for non-oil countries is about two times greater than the estimated Difference-in-Differences estimator for oil countries. On average, returnees from the 1980s cohort are found to be more likely to climb the occupational ladder in Egypt. Results are qualitatively very similar in Table 12, when we use Difference-in-Differences matching estimator.

It is important, though, to note that since we are controlling for selection into temporary migration but not for the double selection of emigration and return, and based on Wahba (2015), if migrants are positively selected relative to non-migrants and return migrants are negatively selected amongst migrants, our estimates would be an upper bound of the impact of migration on occupational upgrade. Indeed, the OLS estimates provide a lower bound whilst the IV-Probit and Difference-in-Differences estimators would provide an upper bound.

[10] We have also used Linear Probability model as opposed to a Probit and the results are robust.

[11] For the 1980s cohort, the countries of destination of returnees during the last migration episode are the following oil-producing countries: Libya, Saudi Arabia, Iraq, United Arab Emirates, Qatar and Kuwait. The non-oil producing countries are the following: Morocco, Jordan, Syria, Lebanon, Yemen, Greece, Romania, Germany, France and the Netherlands.

5. Mechanisms: Who Climbs the Occupational Ladder?

5.1 High versus low educated

Our results show that returnees move up the occupational ladder more than non-migrants controlling for the endogeneity and selection of temporary migration. Thus in this section we explore the mechanism behind the observed occupational mobility. First we investigate whether both the high educated and low educated returnees benefit from their overseas work experience and enhance their human capital. Examining the characteristics of the returnees by educational attainment, Table A1 shows that returnees who are less educated (have less than secondary education) are about 3 years older when they had their first job in the 1980s. They are also found to be significantly more likely to come from Rural Upper Egypt compared to returnees with higher levels of educational attainment, namely secondary and above education. In terms of parental background, returnees who are listed as less educated are significantly more likely to have an illiterate father, whereas, in terms of the mother's level of education, there are no significant differences between the two groups of returnees. Regarding their first job characteristics, in Table A2, the less educated returnees in the 1980s cohort are found to be significantly more likely to work in the private sector compared to the public sector and by contrast, the more educated returnees are found to be significantly more likely to work in the government sector for their first job in the 1980s. The less educated returnees are also more likely to work in agricultural activities compared to the more educated returnees, who are about 23 percentage points less likely to have an agricultural activity for their first job. Returnees who have either secondary or above secondary education, were also better off in terms of having a work contract and social insurance compared to returnees with lower levels of educational attainment.

Upon return, we find that the more educated returnees are significantly more likely to work in the government/public sector compared to the subsample of returnees who have lower educational levels. By contrast, the latter group is significantly more likely to be employed in the private sector. These patterns were also true for the first job; however, differences are significantly more important in terms of magnitude for the current job upon return. The less educated returnees are also found to be significantly different in terms of current job activity compared to the sample of returnees with higher educational levels. The former group is significantly more likely to work in agricultural and manufacturing activities. Upon return, the incidence of work contract and social security is still significantly greater among the returnees who have either secondary or above secondary education compared to returnees with lower levels of educational attainment and the differences are more pronounced upon return compared to the first job.

According to Table A3, the more educated returnees are better off both in terms of their first occupation and their current occupation upon return. Regarding their first job, they are significantly less likely to work in the agricultural sector but more likely to have a high-skilled white collar occupation. Upon return, returnees with lower levels of educational attainment are found to be significantly more likely to held agricultural occupations and blue collar occupations, either low-skilled or high-skilled. Whereas, returnees with higher levels of educational attainment are found to be significantly more likely to held high-skilled white collar occupations. In terms of mobility indicators, the degree of mobility is much greater, the incidence of upward mobility is 23 percentage points greater and the degree of immobility is also significantly less pronounced for the more educated returnees compared to returnees with lower levels of educational attainment.

Table 13 presents the transitional matrices for returnees in the 1980s cohort, by educational attainment. In Panel A, we consider the less educated, whereas, in Panel B, we consider the more educated. In Panel A, we find that only 27% of the returnees listed as less educated, witness an

upward mobility between the first occupation and the current occupation, whereas about 13% downgrade.[12] By contrast, in Panel B, we find that 50% of the returnees listed as more educated, witness a sort of occupational upgrading between the first and the current job and the incidence of downshifting is also less pronounced, 10%. Interestingly, we also find that most of the returnees with either no educational degree or primary and preparatory education, who witness occupational upgrading have lower occupations to start, namely, 15% of those climbing up the occupational ladder had agricultural occupations. Whereas, 32% of the returnees who either have secondary and above secondary education and witnessing upward mobility had better occupations to start, high-skilled blue collar and low-skilled white collar occupations.

In Table 14 and Table 15, in order to explore the role played by the overseas work experience, we construct transitional matrices for returnees by looking at the occupation abroad. In Table 14, we investigate the employment transition for returnees who had their first job in Egypt by looking at the employment transition between the first occupation in the 1980s in Egypt and the occupation in the last migration episode and subsequently, the employment transition between the occupation in the last migration episode and the occupation in Egypt upon return in 2010. We find that 28% of the returnees witness an upward mobility between the first occupation in Egypt and the occupation during the last migration episode, whereas about 16% downgrade while being abroad compared to their first occupation in Egypt. Following the occupational mobility of the same subsample of returnees between the occupation during the last migration episode and the current occupation in Egypt, we find that 36% of the returnees witness an upward mobility upon return, whereas, about 12% witness some sort of downgrading.

By contrast, considering the subsample of returnees who had their first job abroad, we investigate in Table 15, the occupational mobility between the first occupation abroad and the current occupation upon return. Interestingly, on the one hand, we find that 65% of those returnees witness an upward mobility compared to their first occupation abroad. On the other hand, only 9% witness some sort of downgrading when we compare the first occupation abroad to the current occupation in Egypt in 2010. Thus, overall the evidence suggests a human capital enhancement story for the highly educated migrants.

To control for all the empirical challenges discussed above, we run several models. We divide our sample into two educational groups to study the effects of return migration on upward occupational mobility by educational attainment (Table 16, Panel A), unconditional on the country of destination of Egyptian migrants using a standard linear probability model for upward occupational mobility and IV regression to instrument for return migration. Our results suggest that only males who belong to the upper end of the educational distribution are likely to witness upward occupational mobility. Those individuals have either secondary or above secondary education whereas our results are not significant for the subsample of individuals who have either no educational degree or primary and preparatory education. To sum up our previous findings in Section 4 are driven by the high-educated return migrants climbing up the occupational ladder.

5.2 Migration duration

Furthermore, we investigate other potential mechanisms, the effect of migration duration, Table 16 (Panel B) as well as the effect of the number of years since final return in Egypt Table 16 (Panel

[12] As presented in Section 2.3, the percentage of individuals witnessing upward occupational mobility (out of the total) is computed as the sum of the cells above the diagonal for each starting occupational category multiplied by the % of total. Reciprocally, to compute the percentage of individuals witnessing downward occupational mobility, for each starting occupational category, we sum the cells below the diagonal multiplied each time by the corresponding % of total.

C) on upward occupational mobility for return migrants. To do so, we split our sample of returnees in two subsamples, namely, returnees with below median migration duration and returnees with above median migration duration, and we estimate the effects of return migration on upward occupation mobility of returnees versus stayers, separately for each subsample. We also investigate the effect of the number of years since final return, by splitting our sample of returnees into two subsamples, returnees with below median number of years since final return and returnees with above median number of years since final return. In Panel B, we investigate the effect of below and above median migration duration for the 1980s cohort, using linear probability model and IV regression. The median migration duration being 3 years, we find that coefficient estimates are very similar in terms of magnitude for returnees with below or above median migration duration.

Interestingly, we find that the number of years since final return in Egypt matters more than the migration duration of return migrants. In Panel C, we investigate the effect of return migration on upward occupational mobility by investigating the effect of the number of years since final return in Egypt. We also find that the effect of return migration on upward occupational mobility is greater for returnees with above median number of years since final return in Egypt, the median number of years since return being 18.5 years for the 1980s cohort. Returnees with below median number of years since final return do not witness upward mobility due to their return migration. However, returnees, who have been back in Egypt for a longer period, are found to be significantly more likely to climb the occupational ladder in Egypt.

6. Robustness Checks

To check the robustness of our results[13], we use the 1990s cohort - those who entered the labor market and had their first job in the 1990s.[14] In this section, we focus on males who had their first job in the 1990s[15], were aged at least 15 years old at first job and were less than 65 years of age in 2010m and had a current job in Egypt in 2010. In Table 17, we also estimate the effect of return migration on occupational mobility for the 1990s cohort. We employ a standard Probit, linear probability model, IV-Probit and IV-regression models using historical oil prices. In line with our previous findings, we find the return migration increases the probability of upward occupational mobility by 13 percentage points using a standard Probit Model. Relying on IV-Probit model, the magnitude of the estimated coefficient is more than two times greater. Table 18 and Table 19 also provide additional robustness checks relying on Difference-in-Differences and Difference-in-Differences matching techniques. Our results are robust to the different specifications and again we find evidence of upward occupational mobility as previously found for the 1980s cohort.

As additional robustness checks, we also checked the robustness of our findings by eliminating those men who had high skilled white collar occupations at first job for both the 1980s and the 1990s cohorts, since by definition they cannot move up the occupational ladder between the first occupation in the 1980s and in the 1990s respectively and their current occupation in 2010. We use a linear probability, IV-regression and IV-Probit models. Results are reported in Table A7 in the Appendix. Our results hold and are robust for both cohorts after eliminating men who started their career with high-skilled white collar occupations. Relying on IV-regression, we find that return migration increases the probability of upward occupational mobility by 10 percentage points

[13] We have also constructed synthetic cohorts of individuals examining their first occupation and their occupations when 50, 55 and between 50-55 years of age. All our results are robust.

[14] In Tables A4, A5 and A6 in the Appendix, we provide descriptive statistics for the 1990s cohort regarding individuals' characteristics, first and current job characteristics, occupations and occupational mobility indicators.

[15] The years considered for the 1990s cohort are from the 1990 to 1999, inclusive.

for both the 1980s and the 1990s cohorts and by about, 30 percentage points relying on an IV-Probit model.

We also focused on workers aged 50 to 55 years old in 2010 in Table A8 in the Appendix as a robustness check and considered their mobility between the first occupation and their current occupation in 2010. We considered those aged at least 15 years old at first job, using linear probability and IV-regression models. Our results hold and are in line with our previous findings. We find that return migration increases the probability of upward occupational mobility by 10 percentage points.

7. Conclusion

Whether migrants acquire human capital while overseas is an important question for the economic development of the home country since it is not uncommon for high skilled migration to be perceived as resulting in brain drain for origin developing countries. This paper studies the extent to which temporary overseas migration enables returnees to climb the occupational ladder. We use Egyptian data to estimate the occupational mobility of returnees relative to non-migrants focusing on cohort groups who entered the labor market in the same decade, to control for initial labor market conditions, and compare individual occupational mobility based on the first job relative to the one in 2010. We rely on instrumental variable approach, Difference-in-Differences, as well as Difference-in-Differences matching techniques to control for the endogeneity and selection into migration.

The findings suggest that return migration increases the probability of upward occupational mobility, only for returnees who belong to the upper end of the educational distribution. Furthermore, the results suggest that the number of years since return in Egypt and migration duration do matter for returnees to witness occupational upgrading upon return in Egypt.

Overall, the results highlight the role played by international migration in human capital accumulation of migrants. In particular, the findings underscore that emigration does not drain human capital accumulation in origin developing countries, as is sometimes perceived, but that temporary migration of highly educated workers enhances their skills and leads to a brain gain. An important policy implication is that high skilled temporary migration should be encouraged, as this would enhance human capital in origin developing countries.

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Table 1: Descriptive Statistics on the Sample of Stayers versus Returnees in the 1980s Cohort

	Stayers			Returnees			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Difference
Individual characteristics							
Age in 1980	956	15.040	4.937	304	16.420	4.354	-1.388***
Age at first job	956	19.981	3.929	304	20.655	3.474	-0.673***
Ever-married in 2010	956	0.976	0.153	304	0.987	0.114	-0.011
No educational degree	956	0.155	0.362	304	0.079	0.270	0.076***
Primary or preparatory education	956	0.169	0.375	304	0.092	0.290	0.077***
Secondary education	956	0.392	0.489	304	0.569	0.496	-0.177***
Above secondary education	956	0.283	0.451	304	0.260	0.439	0.023
Geographical region in 1980							
Cairo	956	0.111	0.314	304	0.063	0.242	0.048**
Alexandria and Canal cities	956	0.107	0.309	304	0.030	0.170	0.077***
Urban Lower Egypt	956	0.130	0.336	304	0.178	0.383	-0.048**
Urban Upper Egypt	956	0.199	0.399	304	0.148	0.356	0.051**
Rural Lower Egypt	956	0.244	0.430	304	0.375	0.485	-0.131***
Rural Upper Egypt	956	0.210	0.408	304	0.207	0.406	0.003
Parental background - Mother's level of education							
Illiterate	956	0.817	0.387	304	0.829	0.377	-0.012
Literate	956	0.101	0.302	304	0.122	0.327	-0.020
Less than intermediate	956	0.051	0.221	304	0.033	0.179	0.018
Intermediate and above	956	0.025	0.157	304	0.016	0.127	0.009
University and above	956	0.005	0.072	304	0.000	0.000	0.005
Parental background - Father's level of education							
Illiterate	956	0.558	0.497	304	0.539	0.499	0.018
Literate	956	0.199	0.399	304	0.257	0.437	-0.058
Less than intermediate	956	0.119	0.324	304	0.109	0.312	0.011
Intermediate and above	956	0.081	0.272	304	0.072	0.260	0.008
University and above	956	0.044	0.205	304	0.023	0.150	0.021

Notes: *** p<0.01, ** p<0.05, * p<0.1. Column 7: is t-test for whether the difference in means between the two groups is statistically significant.

Table 2: First and Current Job Characteristics for Stayers and Returnees in the 1980s Cohort

	Stayers			Returnees			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	**N**	**Mean**	**Std. Dev.**	**N**	**Mean**	**Std. Dev.**	**Difference**
First job characteristics in the 1980s							
Sector of employment							
Government	956	0.279	0.449	304	0.151	0.359	0.128***
Public	956	0.04	0.195	304	0.0263	0.160	0.013
Private	956	0.681	0.466	304	0.822	0.383	-0.141***
Economic activity							
Agriculture, Forestry, Fishing	956	0.204	0.403	304	0.197	0.399	0.007
Manufacturing, Mining, Quarrying	956	0.166	0.373	304	0.145	0.352	0.022
Construction	956	0.134	0.341	304	0.247	0.432	-0.113***
Wholesale, retail trade, transportation and other activities	956	0.215	0.411	304	0.230	0.422	-0.015
Professional, scientific, technical and administrative activities	956	0.017	0.128	304	0.033	0.179	-0.016*
Other activities	956	0.264	0.441	304	0.148	0.356	0.116***
Incidence of work contract and social security							
Work contract	956	0.364	0.481	304	0.355	0.479	0.009
Indicator for missing work contract	956	0.315	0.465	304	0.234	0.424	0.081***
Social security	956	0.361	0.481	304	0.184	0.388	0.177***
Current job characteristics in 2010							
Sector of employment							
Government	956	0.408	0.492	304	0.500	0.501	-0.092***
Public	956	0.062	0.241	304	0.043	0.203	0.019
Private	956	0.531	0.499	304	0.457	0.499	0.074**
Economic activity							
Agriculture, Forestry, Fishing	956	0.111	0.314	304	0.095	0.294	0.015
Manufacturing, Mining, Quarrying	956	0.157	0.364	304	0.122	0.327	0.035
Construction	956	0.097	0.296	304	0.072	0.260	0.025
Wholesale, retail trade, transportation and other activities	956	0.229	0.420	304	0.214	0.411	0.015
Professional, scientific, technical and administrative activities	956	0.017	0.128	304	0.026	0.160	-0.010
Other activities	956	0.389	0.488	304	0.470	0.500	-0.081**
Incidence of work contract and social security							
Work contract	956	0.533	0.499	304	0.576	0.495	-0.042
Indicator for missing work contract	956	0.213	0.013	304	0.253	0.025	-0.040
Social security	956	0.601	0.490	304	0.658	0.475	-0.056*

Notes: *** p<0.01, ** p<0.05, * p<0.1. Column 7: is t-test for whether the difference in means between the two groups is statistically significant.

Table 3: First, Current Occupations and Occupational Mobility Indicators for Stayers and Returnees in the 1980s Cohort

	Stayers			Returnees			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Difference
First occupation in the 1980s							
Agriculture	956	0.203	0.402	304	0.197	0.399	0.006
Low-skilled blue collar	956	0.122	0.328	304	0.095	0.294	0.027
High-skilled blue collar	956	0.204	0.403	304	0.313	0.464	-0.109***
Low-skilled white collar	956	0.129	0.335	304	0.194	0.396	-0.065***
High-skilled white collar	956	0.342	0.475	304	0.201	0.401	0.141
Current occupation in 2010							
Agriculture	956	0.107	0.309	304	0.0954	0.294	0.011
Low-skilled blue collar	956	0.165	0.372	304	0.132	0.339	0.034
High-skilled blue collar	956	0.143	0.351	304	0.105	0.307	0.038*
Low-skilled white collar	956	0.118	0.323	304	0.118	0.324	0.000
High-skilled white collar	956	0.467	0.499	304	0.549	0.498	-0.083**
Occupational mobility indicators							
Degree of mobility	956	0.388	1.173	304	0.789	1.467	-0.401***
Upward mobility	956	0.251	0.434	304	0.464	0.500	-0.213***
Downward mobility	956	0.080	0.271	304	0.109	0.312	-0.029
Immobility	956	0.669	0.471	304	0.428	0.496	0.242***

Notes: Column 7: is t-test for whether the difference in means between the two groups is statistically significant. *** p<0.01, ** p<0.05, * p<0.1

Table 4: Employment Transition Matrices for Stayers versus Returnees in the 1980s cohort

	Current occupation					
First occupation	**Agriculture**	**Low skilled blue collar**	**High skilled blue collar**	**Low skilled white collar**	**High skilled white collar**	**Total (% of total)**
Panel A: Stayers (N=956)						
Agriculture	46.392	15.464	9.278	10.825	15.464	100.000 (20.293)
Low skilled blue collar	2.564	64.957	7.692	5.128	19.658	100.000 (12.238)
High skilled blue collar	1.538	16.410	49.744	9.231	23.077	100.000 (20.397)
Low skilled white collar	0.813	12.195	2.439	52.033	32.520	100.000 (12.866)
High skilled white collar	0.000	1.529	3.058	1.223	94.190	100.000 (34.205)
Total	10.669	16.527	14.331	11.820	46.653	100.000
Panel B: Returnees (N=304)						
Agriculture	41.667	11.667	1.667	10.000	35.000	100.000 (19.736)
Low skilled blue collar	0.000	31.034	3.448	17.241	48.276	100.000 (9.539)
High skilled blue collar	2.105	17.895	28.421	10.526	41.053	100.000 (31.250)
Low skilled white collar	3.390	6.780	5.085	22.034	62.712	100.000 (19.408)
High skilled white collar	0.000	4.918	0.000	3.279	91.803	100.000 (20.066)
Total	9.539	13.158	10.526	11.842	54.934	100.000

Notes. The employment transition matrices are computed as % of the rows. The diagonal cells represent the percentage of individuals who stayed in the same occupational category between the first job in the 1980s and the current job in 2010. The cells above the diagonal represent the percentage of individuals who witnessed upward mobility, whereas, the cells below the diagonal represent the percentage of individuals who witnessed downward mobility.

Table 5: Computation of the Occupational Rankings

Rank	Category name	Index value			
		(1)	(2)	(3)	(4)
1	Agriculture	0.054	-0.030	-119.720	-0.891
2	Low skilled blue collar	0.095	0.007	-89.969	-0.692
3	High skilled blue collar	0.096	0.009	-82.681	-0.656
4	Low skilled white collar	0.252	0.174	121.480	0.573
5	High skilled white collar	0.442	0.389	419.797	2.329

Notes. To compute occupational indices, we regress the log of monthly wage on column (1), the log of hourly wage in column (2), the monthly wage in column (3) and the hourly wage in column (4), on the number of years of schooling and its squared term, the work experience and its squared term, controlling for marital status, geographical regions and the number of years in the current job and its squared term for the 1980s estimation sample. Occupational indices are computed as following: first we multiply the estimated coefficients on the number of years of schooling and its squared term and the number of years of work experience and its squared term, obtained from the wage regression, by the levels for each individuals. Second, we sum the resulting products and they are averaged at the ISCO88 1-digit occupation to obtain our occupational ranking.

Table 6: Mean Hourly and Monthly Wages by Occupation

Occupation	Mean hourly wage	Mean monthly wage
Agriculture	4.463	691.951
Low-skilled blue collar	5.650	1104.198
High-skilled blue collar	6.188	1186.362
Low-skilled white collar	6.783	1267.643
High-skilled white collar	9.844	1695.364

Notes. Hourly and monthly wages in 2012 are reported in Egyptian Pounds, by occupation for the 1980s estimation sample.

Table 7: First Stage Regressions

Panel A: For the 1980s cohort			
	(1)	(2)	(3)
VARIABLES	Return migrant	Return migrant	Return migrant
Oil price at age 25	0.020***		
	[0.001]		
Oil price at age 26		0.022***	
		[0.001]	
Oil price at age 27			0.024***
			[0.001]
Observations	1,239	1,239	1,239
R-squared	0.832	0.831	0.868
Kleibergen-Paap rk Wald F statistic	823.254	572.011	814.185
Panel B: For the 1990s cohort			
	(1)	(2)	(3)
VARIABLES	Return migrant	Return migrant	Return migrant
Oil price at age 24	0.022***		
	[0.001]		
Oil price at age 25		0.019***	
		[0.001]	
Oil price at age 26			0.017***
			[0.001]
Observations	2,263	2,263	2,263
R-squared	0.837	0.794	0.787
Kleibergen-Paap rk Wald F statistic	908.101	715.617	727.245
Individual Controls	YES	YES	YES
Household Controls	YES	YES	YES
First job characteristics	YES	YES	YES

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Coefficient estimates for first stage IV-regressions for the 1980s cohort (Panel A) and for the 1990s cohort (Panel B). For the 1980s cohort, we use the historical inflation-adjusted oil prices when the individual was 26 years old, being the mean age at migration for our sample of Egyptian men. For robustness, we also tried to match the oil prices at age 25 and age 27. For the 1990s cohort, we use the historical inflation-adjusted oil prices when the individual was 25 years old, being the mean age at migration for our sample of Egyptian men. For robustness, we also tried to match the oil prices at age 24 and age 26.

Table 8: Estimating the Effect of Return Migration on Occupational Mobility for the 1980s Cohort Linear Probability Model

VARIABLES	Probit Model Upward mobility	Upward mobility	IV Probit Upward mobility	IV regression Upward mobility
Return migrant	0.087**	0.087***	0.347***	0.091***
	(0.034)	(0.032)	(0.119)	(0.032)
Observations	1,260	1,260	1,239	1,239
R-squared		0.248		0.248
Individual Controls	YES	YES	YES	YES
Household Controls	YES	YES	YES	YES
First job characteristics	YES	YES	YES	YES

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Marginal effects are reported for Probit and IV Probit models and coefficient estimates are reported for Linear Probability and IV regression models.

Table 9: Estimating the Effect of Return Migration on Occupational Mobility for the 1980s Cohort, Ordered Probit and IV-Ordered Probit Model

Panel A: Ordered Probit Model				
VARIABLES	**(0)**	**(1)**	**(2)**	**(3)**
Return migrant	-0.072**	0.026**	0.025**	0.021**
	(0.030)	(0.011)	(0.011)	(0.009)
Observations	1,260	1,260	1,260	1,260
Individual Controls	YES	YES	YES	YES
Household Controls	YES	YES	YES	YES
First job characteristics	YES	YES	YES	YES
Panel B: IV-Ordered Probit Model				
Return migrant	-0.059*	0.013*	0.017*	0.030*
	(0.030)	(0.007)	(0.009)	(0.015)
Observations	1,260	1,260	1,260	1,260
Individual Controls	YES	YES	YES	YES
Household Controls	YES	YES	YES	YES
First job characteristics	YES	YES	YES	YES

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. *Notes.* Marginal effects are reported for Ordered Probit and IV-Ordered Probit models. The (0) category refers to staying in the same occupation between the first job in the 1980s and the current occupation, or downgrading, the (1) category refers to moving up the occupational ladder one step, the (2) category refers to moving up the occupational ladder two steps and the (3) category refers to moving up the occupational ladder 3 or 4 steps.

Table 10: Estimating the Effect of Return Migration on Occupational Mobility, Conditional on the Country of Destination of Returnees for the 1980s Cohort

VARIABLES	Probit Model Upward mobility	Linear Probability Model Upward mobility
Return migrant (oil country)	0.085**	0.085**
	(0.037)	(0.034)
Return migrant (non-oil country)	0.101	0.101
	(0.076)	(0.073)
Observations	1,246	1,246
R-squared		0.248
Individual Controls	YES	YES
Household Controls	YES	YES
First job characteristics	YES	YES

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Marginal effects are reported for Probit Model and coefficient estimates using Linear Probability Model.

Table 11: Difference-in-Differences Approach for the 1980s cohort

Panel A: Treatment is return migration **Sample of Returnees=304, Sample of Stayers=956**			
	Before the treatment (t=0)	***After the treatment (t=1)***	***Difference***
Returnees	3.105	3.895	0.789***
(Treatment group)	(0.079)	(0.082)	(0.113)
Stayers	3.285	3.673	0.388***
(Control group)	(0.050)	(0.047)	(0.068)
Difference	-0.179	0.222**	0.401***
	-0.099	-0.096	(0.137)
Panel B: Treatment is return migration (Oil Countries) **Sample of Returnees=248, Sample of Stayers=956**			
	Before the treatment (t=0)	***After the treatment (t=1)***	***Difference***
Returnees	3.145	3.895	0.750***
(Treatment group)	(0.086)	(0.090)	(0.124)
Stayers	3.285	3.673	0.388***
(Control group)	(0.050)	(0.047)	(0.068)
Difference	-0.139	0.223**	0.362**
	(0.107)	(0.103)	(0.149)
Panel C: Treatment is return migration (Non-Oil Countries) **Sample of Returnees=42, Sample of Stayers=956**			
	Before the treatment (t=0)	***After the treatment (t=1)***	***Difference***
Returnees	2.833	3.976	1.143***
(Treatment group)	(0.228)	(0.227)	(0.322)
Stayers	3.285	3.673	0.388***
(Control group)	(0.050)	(0.047)	(0.068)
Difference	-0.451*	0.304	0.755**
	(0.241)	(0.230)	(0.333)

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Notes. In Panel A, treatment is considered as return migration unconditional on the destination country. In Panel B and C, treatment is considered as return migration from Oil countries versus Non-Oil countries, respectively, considering returnees' destination during the last migration episode. Before the treatment refers to the first occupation in the 1980s and after the treatment refers to the current occupation in 2010. The dependent variable is the individual's occupation. It takes values from 1 to 5 for the following categories respectively: agriculture, low-skilled blue collar, high-skilled blue collar, low-skilled white collar and high-skilled white collar.

Table 12: Propensity Score Matching combined with Difference-in-Differences Approach for the 1980s cohort

Panel A: Treatment is return migration **Sample of Returnees=292, Sample of Stayers=951**			
	Before the treatment (t=0)	***After the treatment (t=1)***	***Difference***
Returnees	3.116	3.880	0.764***
(Treatment group)	(0.081)	(0.084)	(0.117)
Stayers	3.284	3.668	0.384***
(Control group)	(0.050)	(0.047)	(0.069)
Difference	-0.167*	0.212**	0.380***
	(0.100)	(0.097)	(0.140)
Panel B: Treatment is return migration (Oil Countries) **Sample of Returnees=237, Sample of Stayers=951**			
	Before the treatment (t=0)	***After the treatment (t=1)***	***Difference***
Returnees	3.156	3.865	0.709***
(Treatment group)	(0.089)	(0.092)	(0.128)
Stayers	3.284	3.668	0.384***
(Control group)	(0.048)	(0.048)	(0.069)
Difference	-0.128	0.197**	0.325**
	(0.109)	(0.105)	(0.152)
Panel C: Treatment is return migration (Non-Oil Countries) **Sample of Returnees=40, Sample of Stayers=913**			
	Before the treatment (t=0)	***After the treatment (t=1)***	***Difference***
Returnees	2.775	4.000	1.225***
(Treatment group)	(0.233)	(0.232)	(0.329)
Stayers	3.234	3.628	0.393***
(Control group)	(0.051)	(0.048)	(0.070)
Difference	-0.459*	0.372	0.832**
	(0.248)	(0.237)	(0.342)

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Propensity score matching, using the nearest neighbor estimator combined with a Difference-in-Differences Specification is estimated. In Panel A, treatment is considered as return migration unconditional on the destination country. In Panel B and C, treatment is considered as return migration from Oil countries versus Non-Oil countries, respectively, considering returnees' destination during the last migration episode. Before the treatment refers to the first occupation in the 1980s and after the treatment refers to the current occupation in 2010. The dependent variable is the individual's occupation. It takes values from 1 to 5 for the following categories respectively: agriculture, low-skilled blue collar, high-skilled blue collar, low-skilled white collar and high-skilled white collar.

Table 13: Employment Transition Matrices for Returnees in the 1980s cohort, by Educational Attainment

	Current occupation					
Initial occupation	**Agriculture**	**Low skilled blue collar**	**High skilled blue collar**	**Low skilled white collar**	**High skilled white collar**	**Total (% of total)**
Panel A: The less educated returnees (N=52)						
Agriculture	60.000	20.000	5.000	0.000	15.000	100.000 (38.462)
Low skilled blue collar	0.000	100.000	0.000	0.000	0.000	100.000 (11.538)
High skilled blue collar	5.263	15.789	52.632	10.526	15.789	100.000 (36.538)
Low skilled white collar	0.000	14.286	28.571	42.857	14.286	100.000 (13.462)
High skilled white collar	0.000	0.000	0.000	0.000	0.000	100.000 (0.000)
Total	25.000	26.923	25.000	9.615	13.462	100.000
Panel B: The high educated returnees (N=252)						
Agriculture	32.500	7.500	0.000	10.000	12.500	100.000 (15.873)
Low skilled blue collar	0.000	13.043	4.348	21.739	60.870	100.000 (9.127)
High skilled blue collar	1.316	18.421	22.368	10.526	47.368	100.000 (30.159)
Low skilled white collar	3.846	5.769	1.923	19.231	69.231	100.000 (20.635)
High skilled white collar	0.000	4.918	0.000	3.279	91.803	100.000 (24.206)
Total	6.349	10.317	7.540	12.302	63.492	100.000

Notes. In Panel A, the less educated individuals are those who have less than secondary education. In Panel B, the high educated individuals are those who have secondary or more education. The employment transition matrices are computed as % of the rows. The diagonal cells represent the percentage of individuals who stayed in the same occupational category between the first job in the 1980s and the current job in 2010. The cells above the diagonal represent the percentage of individuals who witnessed upward mobility, whereas, the cells below the diagonal represent the percentage of individuals who witnessed downward mobility.

Table 14: Employment Transition Matrices for Returnees Who Had Their First Job in Egypt in the 1980s Cohort

Panel A: Transition between the first occupation in Egypt and the occupation in the last migration episode (N=180)						
	Occupation in the last migration episode					
Initial occupation	**Agriculture**	**Low skilled blue collar**	**High skilled blue collar**	**Low skilled white collar**	**High skilled white collar**	**Total (% of total)**
Agriculture	33.333	3.922	49.020	13.725	0.000	100.000 (28.333)
Low skilled blue collar	0.000	50.000	14.286	28.571	7.143	100.000 (7.778)
High skilled blue collar	1.923	9.615	76.923	7.692	3.846	100.000 (28.889)
Low skilled white collar	4.762	9.524	33.333	38.095	14.286	100.000 (11.667)
High skilled white collar	2.381	7.143	7.143	11.905	71.429	100.000 (23.333)
Total	11.111	10.556	42.778	15.556	20.000	100.000
Panel B: Transition between the occupation in the last migration episode and current occupation in Egypt in 2010 (N=180)						
	Current occupation					
Occupation abroad	**Agriculture**	**Low skilled blue collar**	**High skilled blue collar**	**Low skilled white collar**	**High skilled white collar**	**Total (% of total)**
Agriculture	45.000	5.000	0.000	15.000	35.000	100.000 (11.111)
Low skilled blue collar	5.263	47.368	10.526	21.053	15.789	100.000 (10.556)
High skilled blue collar	14.286	15.584	28.571	10.390	31.169	100.000 (42.778)
Low skilled white collar	14.286	10.714	7.143	10.714	57.143	100.000 (15.556)
High skilled white collar	0.000	5.556	2.778	5.556	86.111	100.000 (20.000)
Total	13.889	15.000	15.000	11.111	45.000	100.000

Notes. In Panel A, the table represents employment transition matrices between the first occupation in Egypt and the occupation during the last migration episode and in Panel B, employment transition matrices between the occupation during the last migration episode and the current occupation in Egypt in 2010. The employment transition matrices are computed as % of the rows. The diagonal cells represent the percentage of individuals who stayed in the same occupational category between the first job in the 1980s and the current job in 2010. The cells above the diagonal represent the percentage of individuals who witnessed upward mobility, whereas, the cells below the diagonal represent the percentage of individuals who witnessed downward mobility.

Table 15: Employment Transition Matrices for Returnees Who Had Their First Job Abroad in the 1980s Cohort

Transition between the first occupation abroad and the current occupation in Egypt episode (N=110)						
	Current occupation					
Initial occupation abroad	**Agriculture**	**Low skilled blue collar**	**High skilled blue collar**	**Low skilled white collar**	**High skilled white collar**	**Total (% of total)**
Agriculture	14.286	0.000	0.000	14.286	71.429	100.000 (6.364)
Low skilled blue collar	0.000	14.286	0.000	21.429	64.286	100.000 (12.727)
High skilled blue collar	0.000	10.811	13.514	8.108	67.568	100.000 (33.636)
Low skilled white collar	2.778	11.111	0.000	16.667	69.444	100.000 (32.727)
High skilled white collar	0.000	0.000	0.000	6.250	93.750	100.000 (14.545)
Total	1.818	9.091	4.545	12.727	71.818	100.000

Notes. The table represents employment transition matrices between the first occupation abroad and the current occupation in Egypt in 2010. The employment transition matrices are computed as % of the rows. The diagonal cells represent the percentage of individuals who stayed in the same occupational category between the first job in the 1980s and the current job in 2010. The cells above the diagonal represent the percentage of individuals who witnessed upward mobility, whereas, the cells below the diagonal represent the percentage of individuals who witnessed downward mobility.

Table 16: Investigating the Heterogeneity of the Effect of Return Migration on Upward Occupational Mobility for the 1980s

Panel A: By educational attainment				
	Less educated		**More educated**	
VARIABLES	**Linear Probability Model**	**IV Regression**	**Linear Probability Model**	**IV Regression**
Return migrant	0.010	0.006	0.095***	0.098***
	(0.069)	(0.069)	(0.036)	(0.036)
Observations	362	358	898	881
R-squared	0.101	0.107	0.317	0.317
Panel B: By migration duration				
	Below median migration duration		**Above median migration duration**	
VARIABLES	**Linear Probability Model**	**IV Regression**	**Linear Probability Model**	**IV Regression**
Return migrant	0.109***	0.104**	0.089**	0.108**
	(0.040)	(0.040)	(0.044)	(0.044)
Observations	1,124	1,114	1,092	1,081
R-squared	0.242	0.241	0.240	0.238
Panel C: By years since final return				
	Below median years since final return		**Above median years since final return**	
VARIABLES	**Linear Probability Model**	**IV Regression**	**Linear Probability Model**	**IV Regression**
Return migrant	0.020	0.034	0.185***	0.161***
	(0.040)	(0.039)	(0.044)	(0.045)
Observations	1,104	1,088	1,112	1,107
R-squared	0.216	0.217	0.269	0.268
Individual Controls	YES	YES	YES	YES
Household Controls	YES	YES	YES	YES
First job characteristics	YES	YES	YES	YES

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Coefficient estimates using a linear probability model and IV-regression. In Panel A, the less educated individuals are those who have less than secondary education and the high educated individuals are those who have secondary or more education. In Panel B, median migration duration is 3 years and is computed as the difference between the year of final return and the year of first migration. In Panel C, median number of years since final return is 18.5 years for the 1980s cohort and is computed as the difference between the year 2010 and the year of final return.

Table 17: Estimating the Effect of Return Migration on Occupational Mobility, for the 1990s Cohort

VARIABLES	**Probit Model Upward mobility**	**Linear Probability Model Upward mobility**	**IV Probit Upward mobility**	**IV Regression Upward mobility**
Return migrant	0.131***	0.139***	0.304***	0.104***
	(0.035)	(0.034)	(0.111)	(0.037)
Observations	2,276	2,276	2,263	2,263
R-squared		0.160		0.156
Individual Controls	YES	YES	YES	YES
Household Controls	YES	YES	YES	YES
First job characteristics	YES	YES	YES	YES

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Marginal effects are reported for Probit and and IV-Probit models.

Table 18: Difference-in-Differences Approach for the 1990s cohort

Panel A: Treatment is return migration **Sample of Returnees=220, Sample of Stayers=2056**			
	Before the treatment *(t=0)*	*After the treatment* *(t=1)*	*Difference*
Returnees	3.100	4.300	1.200***
(Treatment group)	(0.115)	(0.098)	(0.151)
Stayers	4.139	4.461	0.321***
(Control group)	(0.031)	(0.031)	(0.044)
Difference	-1.039***	-0.161	0.879***
	(0.103)	(0.099)	(0.143)
Panel B: Treatment is return migration (Oil Countries) **Sample of Returnees=157, Sample of Stayers=2056**			
	Before the treatment *(t=0)*	*After the treatment* *(t=1)*	*Difference*
Returnees	3.318	4.312	0.994***
(Treatment group)	(0.135)	(0.113)	(0.176)
Stayers	4.139	4.461	0.321***
(Control group)	(0.031)	(0.031)	(0.044)
Difference	-0.821***	-0.149	0.672***
	(0.120)	(0.115)	(0.166)
Panel C: Treatment is return migration (Non-Oil Countries) **Sample of Returnees=58, Sample of Stayers=2056**			
	Before the treatment *(t=0)*	*After the treatment* *(t=1)*	*Difference*
Returnees	2.431	4.241	1.810***
(Treatment group)	(0.206)	(0.205)	(0.290)
Stayers	4.139	4.461	0.321***
(Control group)	(0.031)	(0.031)	(0.044)
Difference	-1.708***	-0.219	1.489***
	(0.190)	(0.186)	(0.031)

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. *Notes.* In Panel A, treatment is considered as return migration unconditional on the destination country. In Panel B and C, treatment is considered as return migration from Oil countries versus Non-Oil countries, respectively, considering returnees' destination during the last migration episode. Before the treatment refers to the first occupation in the 1990s and after the treatment refers to the current occupation in 2010.

Table 19: Propensity Score Matching Combined with Difference-in-Differences Approach for the 1990s Cohort

Panel A: Treatment is return migration **Sample of Returnees=215, Sample of Stayers=2056**			
	Before the treatment (t=0)	***After the treatment (t=1)***	***Difference***
Returnees	3.149	4.316	1.167***
(Treatment group)	(0.115)	(0.099)	(0.152)
Stayers	4.139	4.461	0.321***
(Control group)	(0.031)	(0.031)	(0.044)
Difference	-0.990***	-0.144	0.846***
	(0.104)	(0.100)	(0.144)
Panel B: Treatment is return migration (Oil Countries) **Sample of Returnees=154, Sample of Stayers=2021**			
	Before the treatment (t=0)	***After the treatment (t=1)***	***Difference***
Returnees	3.364	4.312	0.948***
(Treatment group)	(0.135)	(0.114)	(0.177)
Stayers	4.120	4.444	0.324***
(Control group)	(0.032)	(0.031)	(0.044)
Difference	-0.757***	-0.133	0.624***
	(0.120)	(0.116)	0.167
Panel C: Treatment is return migration (Non-Oil Countries) **Sample of Returnees=54, Sample of Stayers=1921**			
	Before the treatment (t=0)	***After the treatment (t=1)***	***Difference***
Returnees	2.537	4.222	1.685***
(Treatment group)	(0.214)	(0.216)	(0.304)
Stayers	4.082	4.413	0.331***
(Control group)	(0.032)	(0.032)	(0.045)
Difference	-1.545***	-0.191	1.355***
	(0.196)	(0.192)	(0.275)

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. *Notes*. Propensity score matching, using the nearest neighbor estimator combined with a Difference-in-Differences Specification is estimated. In Panel A, treatment is considered as return migration unconditional on the destination country. In Panel B and C, treatment is considered as return migration from Oil countries versus Non-Oil countries, respectively, considering returnees' destination during the last migration episode. Before the treatment refers to the first occupation in the 1990s and after the treatment refers to the current occupation in 2010.

Appendix

Table A1: Descriptive Statistics on the Sample of Returnees in the 1980s Cohort, by Educational Attainment

	Returnees (less educated)			Returnees (more educated)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	**N**	**mean**	**sd**	**N**	**mean**	**sd**	**Difference**
Individual characteristics							
Age in 1980	52	14.210	4.216	252	16.88	4.248	2.669***
Age at first job	52	18.000	3.475	252	21.200	3.218	3.202***
Ever-married in 2010	52	0.981	0.139	252	0.988	0.109	0.007
Geographical region in 1980							
Cairo	52	0.019	0.139	252	0.071	0.258	0.052
Alexandria- Suez Canal	52	0.058	0.235	252	0.024	0.153	-0.034
Urban Lower Egypt	52	0.192	0.398	252	0.175	0.380	-0.018
Urban Upper Egypt	52	0.077	0.269	252	0.163	0.370	0.086
Rural Lower Egypt	52	0.288	0.457	252	0.393	0.489	0.104
Rural Upper Egypt	52	0.365	0.486	252	0.175	0.380	-0.191***
Parental background - Mother's level of education							
Illiterate	52	0.904	0.298	252	0.813	0.390	-0.090
Literate	52	0.077	0.269	252	0.131	0.338	0.054
Less than intermediate	52	0.000	0.000	252	0.040	0.196	0.040
Intermediate and above	52	0.019	0.139	252	0.016	0.125	-0.003
University and above	52	0.000	0.000	252	0.000	0.000	0.000
Parental background - Father's level of education							
Illiterate	52	0.692	0.466	252	0.508	0.501	-0.184**
Literate	52	0.231	0.425	252	0.262	0.441	0.031
Less than intermediate	52	0.058	0.235	252	0.119	0.324	0.061
Intermediate and above	52	0.019	0.139	252	0.083	0.277	0.064
University and above	52	0.000	0.000	252	0.028	0.165	0.028

Notes: *** p<0.01, ** p<0.05, * p<0.1. *Notes.* Column 7: is t-test for whether the difference in means between the two groups is statistically significant.

Table A2: First and Current Job Characteristics for Returnees in the 1980s Cohort, by Educational Attainment

	Returnees (less educated)			Returnees (more educated)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	**N**	**mean**	**sd**	**N**	**mean**	**sd**	**Difference**
First job characteristics in the 1980s							
Sector of employment							
Government	52	0.039	0.194	252	0.139	0.347	0.100**
Public	52	0.000	0.000	252	0.032	0.176	0.032
Private	52	0.962	0.194	252	0.794	0.405	-0.168***
Economic activity							
Agriculture, Forestry, Fishing	*52*	0.385	0.491	252	0.159	0.366	-0.226***
Manufacturing, Mining, Quarrying	52	0.096	0.298	252	0.155	0.362	0.059
Construction	52	0.269	0.448	252	0.242	0.429	-0.027
Wholesale, retail trade, transportation and other activities	52	0.231	0.425	252	0.230	0.422	-0.001
Professional, scientific, technical and administrative activities	52	0.000	0.000	252	0.040	0.196	0.040
Other activities	52	0.019	0.139	252	0.175	0.380	0.155***
Incidence of work contract and social security							
Work contract	52	0.115	0.323	252	0.405	0.492	0.289***
Indicator for missing work contract	52	0.404	0.495	252	0.198	0.400	-0.205***
Social security	52	0.058	0.235	252	0.210	0.408	0.153***
Current job characteristics in 2010							
Sector of employment							
Government	52	0.212	0.412	252	0.560	0.497	0.348***
Public	52	0.000	0.000	252	0.052	0.222	0.052*
Private	52	0.788	0.412	252	0.389	0.488	-0.400***
Economic activity							
Agriculture, Forestry, Fishing	52	0.250	0.437	252	0.064	0.244	-0.187***
Manufacturing, Mining, Quarrying	52	0.173	0.382	252	0.111	0.315	-0.062***
Construction	52	0.135	0.345	252	0.060	0.237	-0.075*
Wholesale, retail trade, transportation and other activities	52	0.308	0.466	252	0.194	0.397	-0.113*
Professional, scientific, technical and administrative activities	52	0.000	0.000	252	0.032	0.176	0.032
Other activities	52	0.135	0.345	252	0.540	0.499	0.405***
Incidence of work contract and social security							
Work contract	52	0.250	0.437	252	0.643	0.480	0.393***
Indicator for missing work contract	52	0.423	0.499	252	0.218	0.414	-0.205***
Social security	52	0.346	0.480	252	0.722	0.449	0.376***

Notes: *** p<0.01, ** p<0.05, * p<0.1. Column 7: is t-test for whether the difference in means between the two groups is statistically significant.

Table A3: First and Current Occupations and Occupational Mobility Indicators for Returnees in the 1980s Cohort, by Educational Attainment

	Returnees (less educated)			Returnees (more educated)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	**N**	**mean**	**sd**	**N**	**mean**	**sd**	**Difference**
First job occupation in the 1980s							
Agriculture	52	0.385	0.491	252	0.159	0.366	-0.226***
Low-skilled blue collar	52	0.115	0.323	252	0.091	0.289	-0.024
High-skilled blue collar	52	0.365	0.486	252	0.302	0.460	-0.064
Low-skilled white collar	52	0.135	0.345	252	0.206	0.405	0.072
High-skilled white collar	52	0.000	0.000	252	0.242	0.429	0.242***
Current job occupation in 2010							
Agriculture	52	0.250	0.437	252	0.064	0.244	-0.187***
Low-skilled blue collar	52	0.269	0.448	252	0.103	0.305	-0.166***
High-skilled blue collar	52	0.250	0.437	252	0.075	0.265	-0.175***
Low-skilled white collar	52	0.096	0.298	252	0.123	0.329	0.027
High-skilled white collar	52	0.135	0.345	252	0.635	0.482	0.500***
Occupational mobility indicators							
Degree of mobility	52	0.346	1.235	252	0.881	1.497	0.535**
Upward mobility	52	0.269	0.448	252	0.504	0.501	0.235***
Downward mobility	52	0.135	0.345	252	0.103	0.305	-0.031
Immobility	52	0.596	0.495	252	0.393	0.489	-0.203***

Notes: *** p<0.01, ** p<0.05, * p<0.1. Column 7: is t-test for whether the difference in means between the two groups is statistically significant.

Table A4: Descriptive Statistics on the Sample of Stayers versus Returnees in the 1990s Cohort

	Stayers			Returnees			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Difference
Individual characteristics							
Age in 1990	2,056	14.500	4.802	220	14.950	4.694	-0.446
Age at first job	2,056	19.650	3.748	220	19.590	3.325	0.060
Ever-married in 2010	2,056	0.890	0.313	220	0.955	0.209	-0.064***
No educational degree	2,056	0.089	0.285	220	0.055	0.228	0.034*
Primary or preparatory education	2,056	0.127	0.334	220	0.082	0.275	0.046**
Secondary education	2,056	0.506	0.500	220	0.655	0.477	-0.148***
Above secondary education	2,056	0.277	0.448	220	0.209	0.408	0.068**
Geographical region in 1990							
Cairo	2,056	0.093	0.290	220	0.055	0.228	0.038*
Alexandria and Canal cities	2,056	0.085	0.279	220	0.023	0.149	0.062**
Urban Lower Egypt	2,056	0.140	0.347	220	0.159	0.367	-0.019
Urban Upper Egypt	2,056	0.179	0.383	220	0.100	0.301	0.079***
Rural Lower Egypt	2,056	0.261	0.439	220	0.423	0.495	-0.162***
Rural Upper Egypt	2,056	0.243	0.429	220	0.241	0.429	0.002
Parental background - Mother's level of education							
Illiterate	2,056	0.786	0.410	220	0.873	0.334	-0.087***
Literate	2,056	0.094	0.292	220	0.064	0.245	0.030
Less than intermediate	2,056	0.067	0.249	220	0.023	0.149	0.044**
Intermediate and above	2,056	0.037	0.188	220	0.036	0.188	0.001
University and above	2,056	0.017	0.129	220	0.005	0.067	0.012
Parental background - Father's level of education							
Illiterate	2,056	0.511	0.500	220	0.536	0.500	-0.026
Literate	2,056	0.204	0.403	220	0.259	0.439	-0.055**
Less than intermediate	2,056	0.141	0.348	220	0.082	0.275	0.059**
Intermediate and above	2,056	0.092	0.290	220	0.073	0.260	0.020
University and above	2,056	0.052	0.222	220	0.050	0.218	0.016

Notes: *** p<0.01, ** p<0.05, * p<0.1. Column 7: is t-test for whether the difference in means between the two groups is statistically significant.

Table A5: First and Current Job Characteristics for Stayers and Returnees in the 1990s Cohort

	Stayers			Returnees			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	**N**	**Mean**	**Std. Dev.**	**N**	**Mean**	**Std. Dev.**	**Difference**
First job characteristics in the 1990s							
Sector of employment							
Government	2,056	0.167	0.373	220	0.068	0.253	0.099***
Public	2,056	0.031	0.172	220	0.018	0.134	0.012
Private	2,056	0.802	0.399	220	0.914	0.282	-0.112***
Economic activity							
Agriculture, Forestry, Fishing	2,056	0.193	0.394	220	0.218	0.414	-0.026
Manufacturing, Mining, Quarrying	2,056	0.159	0.366	220	0.100	0.301	0.059**
Construction	2,056	0.159	0.365	220	0.318	0.467	-0.160***
Wholesale, retail trade, transportation and other activities	2,056	0.280	0.449	220	0.250	0.434	0.030
Professional, scientific, technical and administrative activities	2,056	0.036	0.185	220	0.023	0.149	0.013
Other activities	2,056	0.175	0.380	220	0.091	0.288	0.084***
Incidence of work contract and social security							
Work contract	2,056	0.247	0.431	220	0.236	0.426	0.011
Indicator for missing work contract	2,056	0.330	0.470	220	0.277	0.449	0.052
Social security	2,056	0.259	0.438	220	0.105	0.307	0.154***
Current job characteristics in 2010							
Sector of employment							
Government	2,056	0.281	0.449	220	0.168	0.375	0.112***
Public	2,056	0.058	0.234	220	0.023	0.149	0.035**
Private	2,056	0.661	0.473	220	0.809	0.394	-0.148***
Economic activity							
Agriculture, Forestry, Fishing	2,056	0.193	0.394	220	0.141	0.349	-0.036*
Manufacturing, Mining, Quarrying	2,056	0.159	0.366	220	0.091	0.288	0.084***
Construction	2,056	0.159	0.365	220	0.223	0.417	-0.096***
Wholesale, retail trade, transportation and other activities	2,056	0.280	0.449	220	0.300	0.459	-0.025
Professional, scientific, technical and administrative activities	2,056	0.036	0.185	220	0.041	0.199	-0.009
Other activities	2,056	0.175	0.380	220	0.205	0.404	0.082***
Incidence of work contract and social security							
Work contract	2,056	0.423	0.494	220	0.264	0.442	0.160***
Indicator for missing work contract	2,056	0.203	0.403	220	0.268	0.444	-0.065**
Social security	2,056	0.482	0.500	220	0.323	0.469	0.159***

Notes: *** p<0.01, ** p<0.05, * p<0.1. *Notes.* Column 7: is t-test for whether the difference in means between the two groups is statistically significant.

Table A6: First, Current Occupations and Occupational Mobility Indicators for Stayers and Returnees in the 1990s Cohort

	Stayers			Returnees			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Difference
First occupation in the 1990s							
Agriculture	2,056	0.183	0.387	220	0.209	0.408	-0.026
Low-skilled blue collar	2,056	0.160	0.366	220	0.109	0.312	0.050**
High-skilled blue collar	2,056	0.240	0.427	220	0.373	0.485	-0.132***
Low-skilled white collar	2,056	0.170	0.376	220	0.150	0.358	0.020
High-skilled white collar	2,056	0.247	0.431	220	0.159	0.367	0.088***
Current occupation in 2010							
Agriculture	2,056	0.099	0.298	220	0.136	0.344	-0.038*
Low-skilled blue collar	2,056	0.199	0.400	220	0.195	0.397	0.004
High-skilled blue collar	2,056	0.190	0.393	220	0.236	0.426	-0.046*
Low-skilled white collar	2,056	0.166	0.372	220	0.096	0.295	0.070***
High-skilled white collar	2,056	0.346	0.476	220	0.336	0.474	0.009
Occupational mobility indicators							
Degree of mobility	2,056	0.321	1.114	220	0.359	1.366	-0.038
Upward mobility	2,056	0.240	0.427	220	0.318	0.467	-0.078***
Downward mobility	2,056	0.090	0.286	220	0.091	0.288	-0.001
Immobility	2,056	0.670	0.470	220	0.455	0.499	0.217***

Notes: *** p<0.01, ** p<0.05, * p<0.1. Column 7: is t-test for whether the difference in means between the two groups is statistically significant.

Table A7: Robustness Checks Eliminating Those Who Had High Skilled White Collar Occupations at First Job

	1980s cohort			1990s cohort		
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Linear Probability Model Upward mobility	IV Regression Upward mobility	IV Probit Upward mobility	Linear Probability Model Upward mobility	IV Regression Upward mobility	IV Probit Upward mobility
Return migrant	0.064*	0.092**	0.280**			
	(0.038)	(0.040)	(0.126)			
Return migrant				0.143***	0.106***	0.299**
				(0.037)	(0.040)	(0.119)
Observations	872	856	856	1,740	1,729	1,729
R-squared	0.214	0.213		0.143	0.138	
Individual Controls	YES	YES	YES	YES	YES	YES
Household Controls	YES	YES	YES	YES	YES	YES
First job characteristics	YES	YES	YES	YES	YES	YES

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1 . Coefficient estimates are reported using a linear probability model and IV-regression and marginal effects are reported using IV-Probit. As a robustness check, we eliminate men who had high skilled white collar occupations at first job for the 1980s cohort in columns (1) to (3) and for the 1990s cohort in columns (4) to (6), as they can't by definition move up the occupational ladder between their first job in the 1980s or the 1990s and their current job in 2010.

Table A8: Robustness Checks, Considering Males Aged 50 to 55 in 2010

	Linear Probability Model	IV-Regression
	(1)	(2)
VARIABLES	Upward mobility	Upward mobility
Return migrant	0.101**	0.099**
	(0.043)	(0.045)
Observations	500	478
R-squared	0.383	0.381
Individual Controls	YES	YES
Household Controls	YES	YES
First job characteristics	YES	YES

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Coefficient estimates using a linear probability model and IV-regression. As a robustness check, we focused on workers aged 50 to 55 years old in 2010 and considered their mobility between the first occupation and their current occupation in 2010. We consider those aged at least 15 years old at first job. We control for all the variables at the year of first job.