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Getting stuck in the status quo ante:
Evidence from the Egyptian Economy[#]

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Abstract

In this study, for the first time, to our knowledge, we use the propensity score matching algorithm to estimate the probability to remain 'stuck in the status-quo ante' across generations in Egypt. We use repeated cross-sectional data relative to a 20-year period from 1998 to 2018 to build transition matrices of intergenerational occupational mobility. The findings of the econometric analysis hint at a low degree of occupational mobility, with children of fathers in the agricultural sector or holding a blue- or white-collar job remaining linked to the profession of their fathers in most cases and experiencing only rarely upward mobility from agricultural to blue- and white-collar jobs.

Introduction

Following the seminal contributions of Blau and Duncan (1967), Featherman and Hauser (1975), Erikson and Goldthorpe (1992), both economists and sociologists have been researching the determinants of intergenerational occupation mobility meant as a form of social mobility.

The Egyptian economy has a long-lasting employment guarantee program which was initiated in the early 1960s. The employment guarantee program is well documented in the current literature (see Assaad, 1997; Bayat, 2002; Richards& Waterbury, 2008). However, the Egyptian labor market may exhibit social barriers able to prevent the possibility for an individual whose father is an agricultural worker of moving to a higher more prestigious and complex occupation. The transfer of occupations from fathers to their children is called intergenerational occupational transfer, whereas the move to a more prestigious occupation than that of own father is called upward intergenerational occupational mobility. The case of a move from a white-collar job to a blue-collar or agricultural job is called downward intergenerational occupational mobility.

In this paper, we propose a novel methodology to assess the probability of a child of remaining stuck in the status quo ante, namely the occupation of her/his father: the propensity score matching (PSM) approach. This is used for the first time in the literature in this paper to select samples of children with exactly the same observed characteristics of their peers except for the occupational status of their parents. Then, we compare the probability to experience an upward mobility for individuals that are otherwise similar, except for the occupational status of their parents. In particular, we compare similar children of fathers who work in agriculture and of young people whose fathers is working in a blue- or white-collar job.

As explained in more detail in the methodological section, the matching approach is based on a two-step procedure. At step one, we estimate the probability to have a father in agriculture in terms of a number of individual characteristics and, based on this estimate, we extract a random sample of individuals with exactly the same characteristic, but with a father owning a blue collar (or a white collar) job. The two samples are chosen in such a way to have a very similar value of the propensity score, which is computed based on the probability model of having a father in agriculture. At step two we run another probit model to see which of the two groups has a higher probability to find a blue (or a white collar) job, namely the children of fathers working in agriculture or the children of fathers working in a blue- or white-collar job. Thereafter, we compare also the probability to find a white-collar job for children of fathers working in blue and in white collar jobs.

We focus on the Egyptian economy and use the Labor Market Panel Surveys (LMPS) for Egypt, for which we own the 1998, 2006, 2012, and 2018 survey cross-section rounds[1]. The case of Egypt is interesting under many respects: first, it is a dynamic economy, experiencing important periods of structural change around the Arab spring (2011) period which is covered in our data (see Assaad et al., 2019 for an overview of recent economic changes in the country's economy). The ongoing structural change is a possible driving factor of occupational mobility and certainly a low degree of intergenerational occupational mobility may be a factor able to slow down the process of structural change and economic growth, by reducing the supply of labor and human resources available in the expanding manufacturing and services sector. This may happen to a greater extent if the labor force is constrained by their skill level, developed across generations in the agricultural sector and there are not sufficient training programs to allow young people from the agricultural sector to take on jobs in the expanding manufacturing and service sectors.

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[1] See Assaad (2014) and Krafft (2021) for a discussion of the advantages of the dataset at hand, closely linked to the time-varying nature of the data.

The main benefit of using the ELMPS is that we can observe the time-varying probability of being stuck in the status-quo ante over a very long period of time, which is rarely available for other countries. We can compare the situation up to 20 years apart and follow the process of structural change through changes in the occupational structure of the society.

The matching estimator allows us to produce the best "like for like" estimates of intergenerational mobility, also compared to other countries. In other words, we control for any possible source of bias due to omitted heterogeneity at least on observable differences among target (young people with parents in agriculture) and control group (young people with parents in blue-collar and white-collar jobs). A well-known limitation of our PSM approach is that it cannot control for unobserved heterogeneity, which would be there if, say the children of fathers working in agriculture had a greater/lower motivation or talent for social mobility than the children of fathers in other types of occupations. However, our methodology should provide more accurate measures of the occupational stability/mobility than previous estimates based on Logit or other more traditional models, in as much as they control better for observed heterogeneity and sample selection bias.

Our findings show that the probability of a young person to remain stuck in the status-quo ante is very high and persistent, even over a 20 year's time period.

We submit that our empirical approach and the data available allow us shedding a new light on the intergenerational occupational mobility in the country considered. We expect that our PSM approach be followed also by future studies relative to other countries so as to provide terms of comparison for the findings of this study.

The remaining part of the paper is organized as follows. Section 2 presents a literature review and defines the main hypotheses to be tested. Section 3 provides discussion of methodology

and data. Section 4 presents the main findings of the econometric analysis. The concluding section discusses the findings, data limitations and policy suggestions.

Literature Review

In the MENA context, social mobility is a much-debated social issue, but still in need of being fully addressed from an empirical point of view. Much of the discussion remains, therefore, ideological. Empirical evidence is still missing, while anecdotal evidence points to very low social mobility across generations. There is a scarce and apparently inconsistent literature on intergenerational social mobility in the MENA Region. Most of the studies that examine the intergenerational social transfer are based on the education transmission across fathers and their sons' pairs. Nugent and Saleh (2009) found that intergenerational educational mobility was on the rise, and that parental education had positive influences on the returns to children's education that go well beyond its direct influence on children's education. Assaad and Krafft (2021) find the reverse by using the 2012 survey dataset of the ERF. They state that only 10% of the offspring had the same level of education as their fathers.

Binzel & Carvalho (2017) find that there is low degree of social mobility in Egypt. Binzel (2011) finds both low occupational and educational mobility in Egypt in 2006, namely in the pre-Arab Spring period. Probably, this was one of the underlying forces of the Arab spring.

Assad (2014) underlines that the labor market in the Arab countries in general, and in Egypt in particular, has a very high youth unemployment rate, while there has been a declining trend in the public sector share of employment, due to increasing budget constraints on public finances. Assaad (2014)'s analyses are based mostly on the pre-Arab Spring period, but his conclusions are still valid in the post-Arab Spring period. This macroeconomic context might have affected the degree and extent of intergenerational transfers in the country, by reducing the opportunities to find public sector jobs, which is especially important for women.

In addition, Ibrahim (1982) found a substantial degree of social mobility in Egypt in 1978, hinting at the possibility that social mobility was higher in the past than it is now. However, there is little systematic and comprehensive evidence.

Researching occupational mobility across generations is important for the MENA countries, as this type of research is still neglected in these countries. Moreover, to our knowledge, there are no previous studies specifically focused on occupational mobility. With our paper we try to fill an important lacuna in the current literature both by focusing on an understudied country and by proposing the matching approach from a methodological point of view.

In the Egyptian economy, the historical transformation of the labor market has an important role and has represented an important constraint because the high degree of rigidity has meant that workers have remained stuck in the status-quo ante for decades, possibly slowing down the process of structural change and the related process of economic growth. One positive outcome of the Nasser regime, back in 1962, was that higher education was made and has remained free for both man and woman (see Antoninis, 2001). As Assad (1997), Assaad (2008), Barsoum (2004) emphasized, right after this free education movement, employment in the public sector was guaranteed for the graduates from vocational secondary, and post-secondary schools starting from 1964. This was a gender-blinded hiring policy and the life expectations of woman in Egypt has changed since this public employment guarantee policy in the early 1960s.

Assaad (2008) emphasizes that the policy for public employment guaranteed program shaped the expectations of employment for well-educated Egyptians (see Sieverding, 2015 for women employment in Egypt). In addition, studies by the WEO (2017), IMF (2019) and ILO (2021) stress that there is a need to create more jobs for the Arab countries by 2025. The discrepancies between increasing educational outcomes and a staggeringly low degree of job creation appear to be one of the main reasons for the existing gap between social and education mobility in Arab countries (Driouchi & Gamar, 2016).

With our study, we cover one of the key countries in the much-neglected MENA region: Egypt. We do so by introducing an important methodological novelty in the existing literature, not only that relative to MENA countries, namely the matching approach to estimating the degree of intergenerational occupational mobility.

Hypotheses

The hypotheses of the present study are as follows.

Hypothesis 1: A child whose father holds an agricultural job has a lower chance to get an occupation in higher ranked jobs (blue- or white-collar jobs) relative to her peer whose father is a blue-collar or a white-collar worker.

Hypothesis 2: Also, a child whose father is a blue-collar worker has a lower chance to access a white-collar job than her peer whose father was already in a white-collar job.

These hypotheses are implicitly based on a social ranking of occupations (from agricultural jobs, to blue- and white-collar jobs). Before testing these hypotheses by means of our matching approach, we provide some descriptive empirical evidence based on transition matrices of intergenerational mobility at an occupational level between fathers and children.

Dataset and Methodology

In our transition matrix estimations, at the beginning, we prefer to use all available occupational categories (according to the ISCO 88 classifications) to examine the social mobility across generations, rather than only the three main categories of agricultural jobs, blue-collar and white-collar jobs. The classification is as follows:

* Managers

* Professionals

* Technicians and associate professionals

* Clerical support workers

* Service and sales workers

* Skilled agricultural, forestry and fish

* Craft and related trades workers

* Plant and machine operators, and assemblers

* Elementary occupations

In our propensity score matching analysis, however, for shortness' sake, we use the ISCO classification, based on which we determine the white-collar and blue-collar jobs according to the criterions defined below. We define an occupation as a white-collar job if it falls in one of the following ISCO codes:

- Managers

- Professionals

- Technicians & associate professionals

- Clerks

Second, we define blue-collar jobs those including the following occupations:

- Service workers, and shop, and market sales workers

- Crafts and related trade workers

- Plant and machine operators

- Elementary occupations

The third category includes workers in agriculture. As noted above, we assume that these workers have a lower-than-average chance of entering one of the above-mentioned occupations: blue collar and white-collar jobs.

Transition Matrices Estimations

In the present study, we also estimate the transition matrices, which are a well-known empirical tool in the social mobility literature. We compute different types of PkxK transition matrix. They are studied, first by means of two synthetic indices and then analyzed in detail to understand the actual extent of intergenerational occupational mobility/stability. The first index, the Prais-Shorrock (1978), is based on Equation 1:

Prais (trace) $(K - 1)-1\{K - \text{trace}(P)\}$ (1)

It is a tool to measure the overall degree of social mobility in a country. When the index is close to 1, it shows a very low degree of social mobility.

Another indicator is the Bartholomew (1973) index, which is defined as follows:

$$\left\{K(K-1)\right\}^{-1} \sum_i \ \sum_j p_{i,j}\left|i - j\right|$$ (2)

This index is used to estimate the average jump across occupational classes to examine the occupational mobility across generations and understand the overall degree of social mobility across generations. When the index takes a value close to 0 it suggests perfect occupational mobility across generations. The higher the Bartholomew index, the lower is the average jump of social classes across generations.

Table 3 shows that, according to Bartholomew and Prais-Shorrocks indexes, Egyptian children are stuck at the occupation of their fathers, denoting a low degree of social mobility

transmission. In fact, the Prais-Shorrock index is around 0.84 and 0.86, which is very close to 1, while the Bartholomew index is around 0.26 and 0.29, namely close to 0.

Propensity Score Matching Method

The Propensity Score Matching approach, established in Rosembaum & Rubin (1983) and extended by Heckman (1997), is generally used for two purposes in applied works: first, to reduce non-random sample selection bias in a given sample, and, second, to compare differences across a target group and a control group. It is considered a quasi-experimental approach, since it compares the outcome of a target group and a control group, the latter being chosen for having exactly the same observed characteristics of the target group, except for one characteristic, which is the treatment. In the last two decades, it has become an increasingly popular method in economics, for its properties of statistical accuracy and effectiveness, especially in the context of cross-section data. The main aim of the PSM approach is obtaining propensity scores, which are denoted as e(X) and are used to select individuals from the control group exactly with the same characteristics of individuals from the target group.

The PSM approach is developed in two steps. In the first step, we estimate a probit model of the probability that the father of all the individuals aged 23 or more is involved in an agricultural job (our treatment), in terms of a number of observed variables:

$$Pr\left(Y_j \neq 0 | X_j\right) = \Phi\left(\beta_0 + \beta_1 G + \beta_2 edf + \beta_3 edc + \beta_4 I + \beta_5 W + \beta_6 R \right.$$

$$\left. + \sum_{i=1}^{20} \beta_i Gov_i\right) \qquad (3)$$

Where Yj denotes the probability of an individual to have a father involved in an agricultural job (the target group) as a function of gender (G), the education level of fathers (edf), the education level of offspring (edc), household income (I), household wealth (W), living in a rural area (R), one of the 20 governorate where the offspring is living in ($\sum_{i=1}^{20} Gov_i$),[2]. Equation (3) is estimated by a standard probit model. The education levels of fathers and children are defined as follows: illiterate, reads&writes, less than intermediate, intermediate, above intermediate, university, and postgraduate. Living in a rural area is a dummy variable that takes 1 if the offspring is living in a rural area, 0 otherwise. Household income is measured as total of basic wage income (for 3 months) for each member within a household. For governorate dummies, we use dummy variables for each governorate that the offsprings are living in as follows: Alexandria, Port Said, Saez, Damietta, Dakahlia, Sharkia, Kalyoubia, Kafr-Elsheikh, Gharbia, Menoufia, Behera, Ismailia, Giza, Beni-Suef, Fayoum, Menia, Asyout, Suhag, Qena, Aswan, and Luxur.

Based on (3), we predict the propensity score of the individuals in the control group (with parents owning, first, a blue and, later, a white-collar job) with exactly the same characteristics as the target group. We use the nearest neighborhood matching approach without replacement and with common support option.

In the second step, after having identified the control group with a father in a blue- or a white-collar job by selecting the individuals with the closest propensity scores to those having a father in agriculture, we compute, by probit again, the average treatment effect on the treated (ATeT) or the probability of an individual whose father was employed in agriculture to find a blue-, first, and a white-collar job, later (outcome variable) as compared to an individual whose father had already a blue or a white collar job. As noted above, with our methodology, we are able to

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[2] We use the household wealth score estimated by ERF. We cannot use the number of siblings as a covariate since there is not a sufficiently large number of observations to do first-stage probit, and the psm estimations.

compare individuals with exactly the same characteristics, except for the fact that their fathers have a different occupational background. The outcome variable is the probability to move up the social ladder from the occupation of their father to a superior occupation, namely a blue- or white-collar job.

We compute standard errors of these estimates by bootstrapping since the first step standard errors are downward biased if they are used in the second step[3].

. In our case, there is common support for almost all the individuals in the sample. Moreover, to check the efficiency of our matching procedure, we test for statistically significant differences between target and control group in terms of the observed characteristics mentioned above before and after matching. We will show that our matching procedure reduces to non-statistical significance all pre-matching differences in observed characteristics.

We define our measure of 'relative social mobility" by using our estimated Average Treatment Effect on Treated (henceforth, ATeT) which can be defined as follows:

$$E(AgF_1 - OF_0 | D = 1) = E(AgF_1 | D = 1) - E(OF_0 | D = 1) \qquad [4]$$

In our case, AgF_1 is the treatment group, which is the offspring having a father with an agricultural occupation, OF_0 is the control group (offspring have fathers with occupation other than agricultural: blue- or white-collar workers).

Estimation Results

Transition Matrix Estimations

Before analysing the transition matrices, we propose the aforementioned indices of mobility for all the years considered (Table 1). The table shows that both indices point consistently and

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[3] As Rosenbaum and Rubin (1983) note, it is difficult to establish an asymptotic approximation to the distribution of matching estimators when a matching variable is estimated in a first step. Therefore, the bootstrapped errors are used in the present study as it is usually the case in the PSM literature.

concurrently to a very low degree of intergenerational occupational mobility all over the 20 years considered. In fact, the Shorrock index tends to 1, while the Bartholomew index tends to 0. There seems to be little difference over time and, probably, such differences are not statistically significant.

Table 2 provides the transition matrix estimations across generations in 1998 for all occupational categories. The column of the matrix reports the occupation of fathers and the row represents the occupation of their offspring. The Tables 3 through 5 present the same transition matrices for each of the following waves of the survey. The ERF occupational classifications used in the survey are based on the ISCO 1988 classification. Only 9 occupational categories can be used. We drop the armed forces occupations since they fall outside of the aims of the present study (we cannot classify it as a white-collar, blue-collar, or agricultural occupation). Table 2 shows a high degree of persistence across generations of especially the agricultural and the white-collar occupations in 1998.

The highest degree of persistence belongs with the child whose father is an agricultural worker. If we consider the entire period covered in our data, there is a high degree of immobility for the occupational categories of service and sales workers, clerks, technicians and associate professionals, and elementary occupations. For white-collar workers, there is also a high degree of persistence across generations. The findings based on Table 2 suggest that most children were stuck at the status-quo ante in the Egyptian economy at the end of the 1990s.

[Insert Table 2]

[Insert Table 3]

[Insert Table 4]

Overall, the transition matrices contained in the tables from 2 to 5 allow us assessing the long-run evolution of the probability to remain stuck in the status-quo ante. Table 4 suggests that occupational immobility across generations still continues, although the percentages slightly shrink in 2006. Similarly, Table 5 confirms the high degree of persistence of the occupational structure across generations for white-collar and agricultural occupations, but the persistence of white-collar occupations is lower than that in 1998, while that relative to agricultural occupations is lower than that in 2006. The degree of persistence of the social structure increases for white-collar occupations from 1998 to 2012. In 2018, the degree of persistence decreased, though it remained still high, especially for professionals.

The transition matrix relative to 2018 proposed in Table 5 shows that the degree of social immobility for the white-collar occupations decreases compared to 1998. For children of parents employed in the service sector and sales workers, the degree of social immobility becomes persistent across generations.

[Insert Table 5]

For White, Blue, and Agricultural Occupation Classifications

Table 6 gives the transition matrices with the classical three categories occupational classification for each round of the survey from 1998 (panel a) to 2018 (panel d). In other words, we group the previous 9 ISCO categories in the three main ones. The table suggests that the children of parents working in the agricultural sector experience the highest degree of persistence within that occupation (from about 61% in 1998 to about 64% in 2018), followed by children of parents working as white collar workers (from 46% in 1998 to 56% in 2018) and,

eventually, by children of parents working as blue collar workers (from about 44% in 1998 to about 39% in 2018). In other words, the agricultural occupations are the most persistent ones, but they are followed, quite surprisingly, by the children of parents involved in white collar jobs, rather than manual jobs. The latter is the least immobile category, probably due to the weakness of the manufacturing sector in the country and the relatively low level of expansion it has experienced over the last decades.

When we compare the matrices over time, we can see a high degree of persistence of this pattern: first are children of parents in the agricultural sector, then of white-collar parents and eventually of manual workers. The differences over time are not particularly sizeable. This confirms the high degree of social immobility existing in the country over a long period of time. In turn, the latter is a sign of a relatively stagnant production structure with little evolution of the size of sectors in terms of employment shares.

This notwithstanding, there are also signs of upward social mobility from agriculture to blue- and white-collar jobs and from blue to white collar job: from 20 to 30% of children experience upward mobility, according to the year and type of job. There are also cases of downward social mobility from white collar jobs to manual jobs and agriculture. Again, the shares involved are of an order of about 20%.

[Insert Table 6]

Propensity Score Matching Analysis Results

Our propensity score matching estimation results are reported in the following tables. We compare the probability to occupy a given job for children of fathers with different occupations with any other child with a father in other occupations. The Tables 7 and 8 present the psm

estimate of the probability of the offspring of an agricultural worker to move to a blue-collar job, compared to that of the offspring of a blue-collar worker and of a white-collar worker for all years considered. The Tables 9 and 10 present the PSM estimate of the probability of the offspring of an agricultural worker to move to a white-collar job, compared to that of the offspring of a blue-collar worker and of a white-collar worker for all years considered. For the sake of clarity, the first stage probit estimation coefficients obtained from the unmatched samples are given in the right columns of each table as a term of comparison to see the effect on the raw and unconditional coefficient to change once controlling for omitted heterogeneity on observables.

Having a father whose occupation is in agriculture implies a lower probability to move up the social ladder in all years. The coefficient is always negative for moves to blue-collar jobs for the offspring of an agricultural worker compared to the both the other control groups confirming the presence of a gap against individuals whose father is working in an agricultural job, but also the low appeal and diffusion of blue-collar jobs (Tables 7 and 8). The ATeT results of our PSM estimations show that the offspring of fathers working in agriculture has a lower probability to become a blue-collar worker than the offspring whose father is blue-collar worker. Such a relative probability reduces from -6% in 1998 to -9% in 2018 and is always statistically significant (see Table 7).

The offspring of fathers working in agriculture has a lower probability to reach blue-collar occupations than their peers whose father works in white-collar occupations. The probability is -7% in 1998; it decreases to -5% in 2012; and -4% in 2018 (see Table 8).

[Insert Table 7]

[Insert Table 8]

Table 9 shows the relative probability of becoming a white-collar worker for the offspring of a father working in agricultural occupations compared with the offspring of a father working as a blue-collar worker. When we compare these two groups, the former has a higher probability than the latter, with values of around 1 ppt in all years, except for 2012, when the value equals 8 ppt.

[Insert Table 9]

Table 10 shows that the probability for the offspring of a father working in agriculture to become a white-collar worker relative to their peers whose father works in white-collar occupations. It is sometimes positive and sometimes negative, but always very small in absolute value. The relative probability is around 1 ppt., and the relative probability is positive of 1, 1 and 0.2% in the following years, respectively.

[Insert Table 10]

Interestingly, the impact is larger and show a higher statistical significance in the case of the probability to reach a blue, rather than a white-collar job. The former coefficient is in most years, sizeable and highly statistically significant. The latter coefficient is, instead, in most years close to zero, though remaining statistically significant.

The Tables 11 and 12 compare the offspring with a father owning an agricultural job with the offspring of fathers in blue- and white-collar occupations, respectively, in the probability to remain in an agricultural occupation. Table 11 shows the relative probability to become an agricultural worker for the offspring whose father works in agriculture relative to their peers whose father works in a blue-collar occupation: their coefficients fluctuate between 2 and 8 ppt.

For the offspring whose father is an agriculture relative to their peers whose father is a white-collar worker the probability to become an agricultural worker is also positive and fluctuates between 4 and 7 ppt (Table 12).

[Insert Table 11]

[Insert Table 12]

In a nutshell, our findings based on matching confirm the main conclusion drawn from inspection of the intergenerational transition matrices, namely that there is a very low degree of social mobility across generations, especially for the offspring whose father is an agricultural worker. Surprisingly, becoming a white-collar worker is more likely for the offspring who has a father in agriculture relative to the offspring of a blue-collar worker. Such type of mobility is persistent over the 20 years considered.

Efficiency of the PSM estimates

The diagnostic test results show that there is no statistically significant difference between the observed characteristics of the matched samples, although differences between the unmatched samples were statistically significant and sizeable. This confirms the effectiveness of the matching approach in reducing only to the treatment variable the difference between target and control at least in terms of observed characteristics. The relevant tests and figures are given in Appendix A.

Appendix A also reports Figures that show that there is common support in the estimates of psm. These figures show that there is a wide variation in the common support to control for the different characteristics that were used in the PSM procedure and documented in Equation [1]. These wide variation in the common support is adequate for the PSM method (see Pastore & Pompili, 2020). Moreover, the common support is also found to be generally more complete

and satisfactory when there is a large number of observations from which the control group is selected (see Pastore & Pompili, 2020).

Robustness Checks

As a robustness check, we use the Mahalanobis matching methodology (MM, henceforth). The MM is a more flexible methodology than the propensity score matching method. MM matching is very useful and effective to overcome the anomaly problems in the dataset. As Pastore and Pompili (2020) show the MM method completely eliminates the statistical differences in the observed characteristics of the target and control group, as it selects as control group only observations which are almost identical in terms of observed characteristics to one observation in the target group. We run all the estimates above (see the Tables 13 through 18) and find very similar coefficients to the ones found with PSM.

[Insert Table 13]

[Insert Table 14]

[Insert Table 15]

[Insert Table 16]

[Insert Table 17]

[Insert Table 18]

Concluding remarks

In the present study, we examine the process of intergenerational social mobility, especially across occupations, in an important MENA country, Egypt, over the 20 years covered by the

PLFS (1998, 2006, 2012, 2018). We use the repeated cross-sections of the data. We do so by means of transition matrix estimations first with 9 and then with 3 grouped occupational categories. At an ensuing step of the analysis, we estimate by propensity score matching (and by Mahalanobis distance for robustness check) the probability for the offspring of agricultural workers to find a blue- or a white-collar job. With the same approach, we compare the offspring of blue-collar workers and white-collar workers to access other types of occupations. The estimates provide a vivid picture of the extent of downward and upward occupational mobility in Egypt over the long period of observation considered. PSM estimates are used to compare the like with the like and, indeed, at the first step of the analysis, we select samples of offspring from other social groups based on a propensity score obtained from a probit analysis of the observed determinants of the target group. Each social group is used as a target and a control group in successive estimates to compare the occupational groups with each other. The matching approach allows us comparing groups that differ only for the treatment, which is belonging to a given occupational category rather than the other, after obtained matched samples with exactly the same observed characteristics.

We submit that the very low degree of social mobility existing in the country is the consequence of the low level of economic development and structural change, while also being able to prevent further economic development, by constraining the necessary condition of structural change from agriculture to manufacturing and services. Social mobility is key to economic development and growth not only for the MENA countries, but for all developing countries and may represent a constraint to the process of structural change which may be a pre-condition for economic development. We contribute to the understanding of the process of structural change by studying the trends in terms of social and occupational mobility by controlling for the observed heterogeneity of the different social groups and the possible sample selection bias that may accrue as a consequence of observed heterogeneity.

We find that the offspring of fathers who work in the agricultural sector has a lower chance than the offspring of a father working in a blue-collar occupation but not compared to the offspring of a white-collar worker. Therefore, our results indicate that many young people remain stuck in the status quo ante across generations. This applies especially for the offspring of agricultural workers. We find also a high degree of social immobility among the offspring of white-collar workers. These social phenomena depend on the archaic nature of the agricultural sector and its stability over time in the country considered, but also on the stagnancy of the manufacturing sector, which is probably located in the low to middle skill levels of production and is therefore crashed between low- and high-skill intensive countries' competition in international markets. The public sector still maintains a certain stability of employment over the decades, granting to a middle to upper class in urban areas to maintain their living standard.

Our analysis helps identifying special social groups to whom to address special policy interventions. Policy intervention may be addressed to reduce the borrowing constraints in Egypt, so as to favor the creation of more enterprises and jobs and, at the same time, social mobility. Moreover, the policy makers should consider the talented children of fathers working in agriculture for their education and occupation policies. Skill upgrading of productions can be fostered with adequate incentives to R&D and innovation by firms, in addition to public investment in material and immaterial infrastructures. Albeit Egypt is a well characterized country for free higher education and public job guarantee programs which has been implemented since the late 1960s, there has been a growing trend of decreasing public jobs in Egypt. In Egypt, lower-level educational institutions should develop cognitive as well as soft skills for children with a poor occupational background. Higher secondary schools and university should provide also work-related skills and work experience. Last, but not least, for

the current population, training policy for those wishing to move out of the agricultural sector should be provided for free.

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Appendix

PSM Graphs

I. Becoming a Blue Collar Worker for the offsprings whose father is an agricultural father relative to a blue-collar father
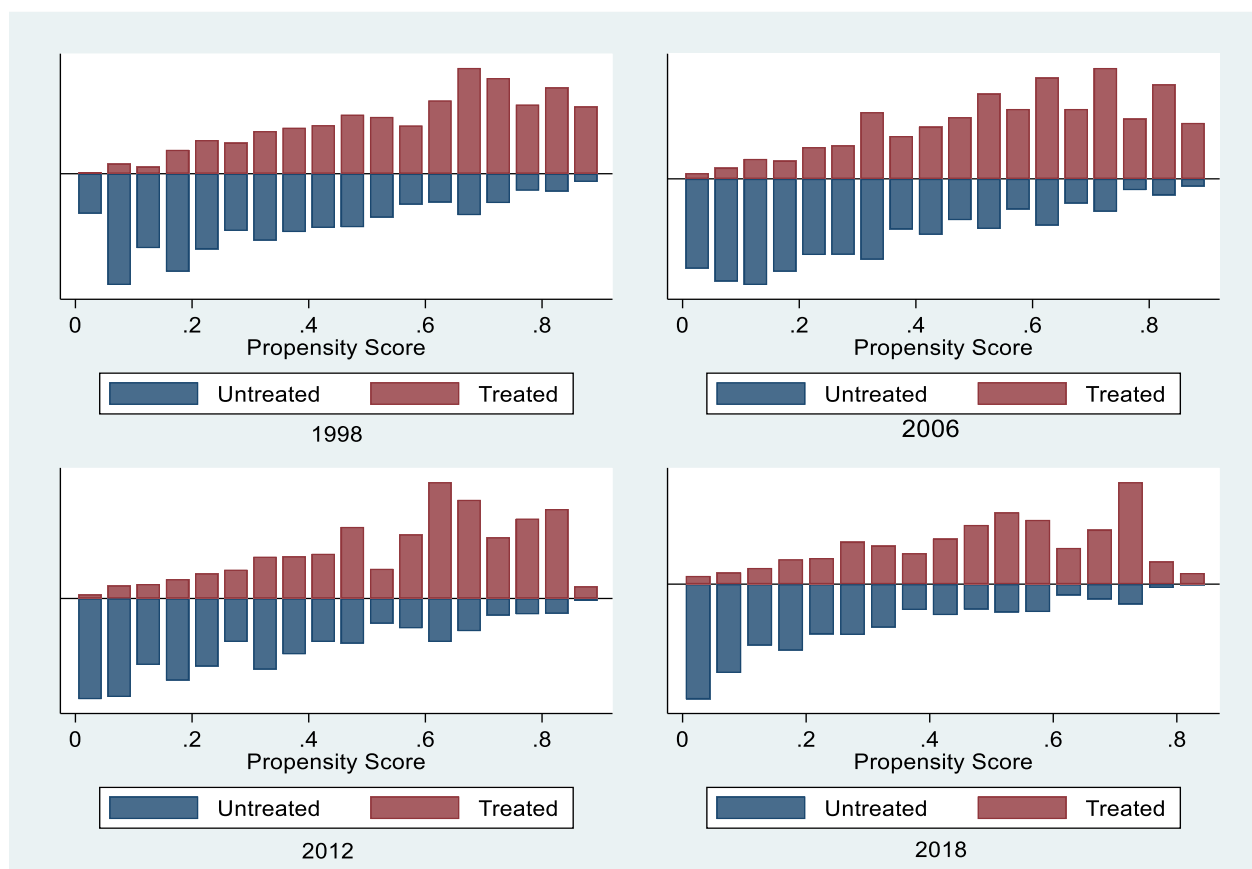
II.   Becoming a Blue Collar Worker for the offsprings whose father is an agricultural father relative to a white-collar father
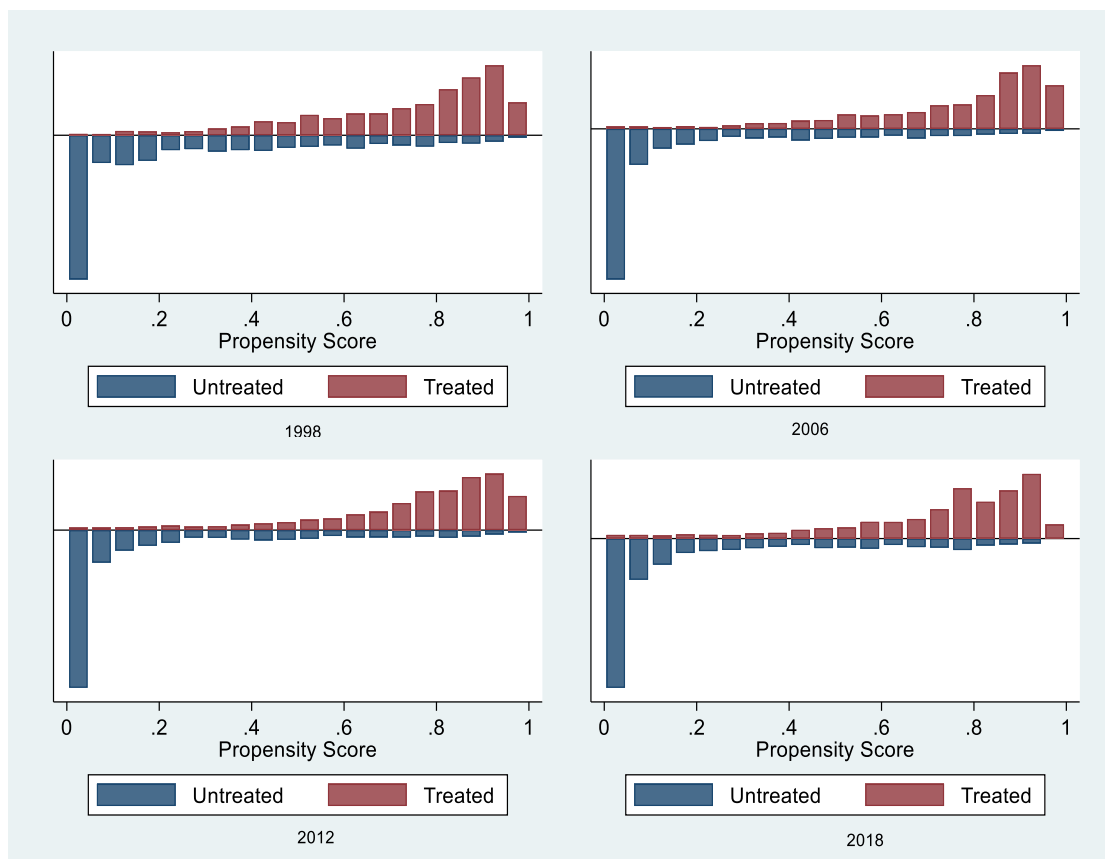
III. Becoming a White Collar Worker for the offsprings whose father is an agricultural father relative to a blue-collar father

IV. Becoming a White Collar Worker for the offsprings whose father is an agricultural father relative to a white-collar father

1998

2006

2012

2018

V.   Becoming an Agricultural Worker for the offsprings whose father is an agricultural father relative to a blue-collar father

1998

2006

2012

2018

VI. Becoming an Agricultural Worker for the offsprings whose father is an agricultural father relative to a white-collar father

1998

2006

2012

2018
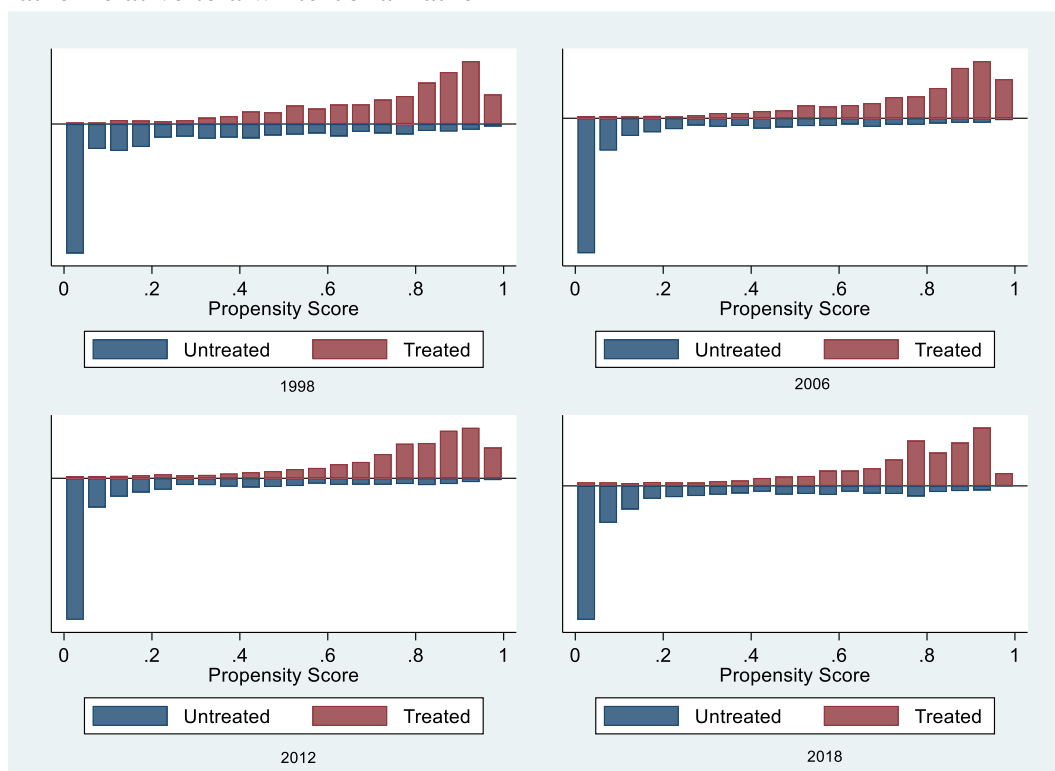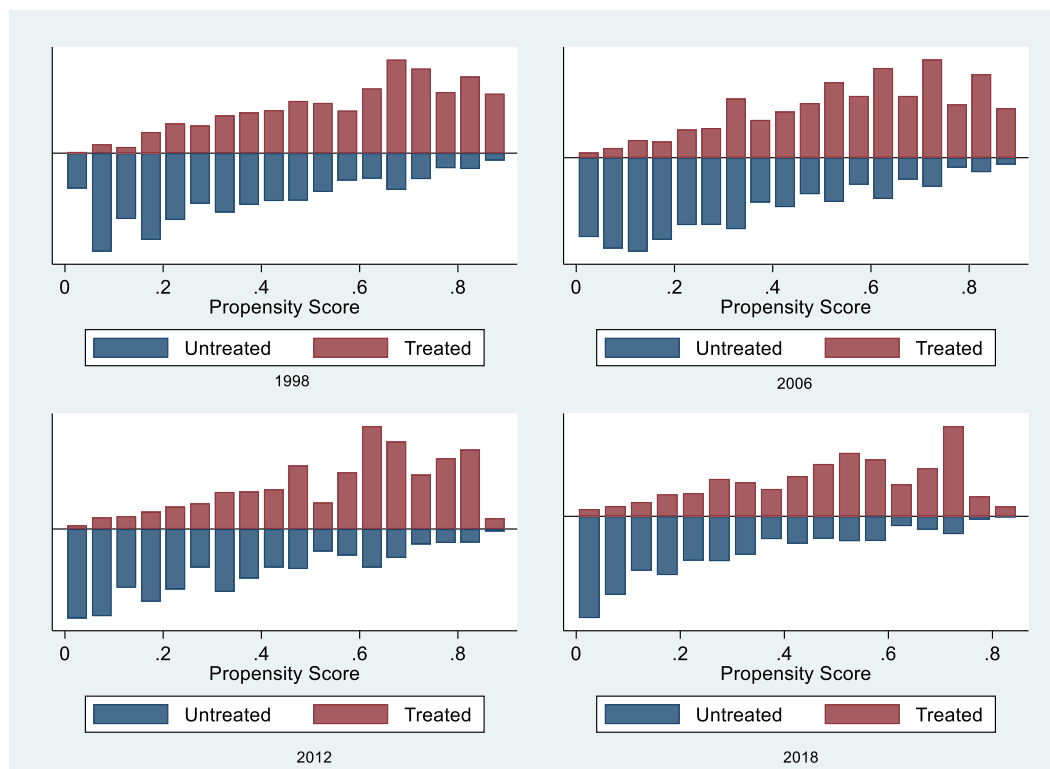
PSM T Test Results

    I.   Becoming a Blue Collar Worker for the offsprings whose father is an agricultural father relative to a blue-collar father

1998

Variable	Mean Treated Control	%bias	t-test t p>t
Living in a rural area	.7038 .71246	-1.8	-0.66 0.507
Reads&writes (for a father)	.17987 .18729	-1.7	-0.67 0.504
Less than intermediate (for a father)	.04208 .03342	3.0	1.58 0.114
Intermediate education level (for a father)	.00866 .00619	1.7	1.00 0.316
Above intermediate education level (for a father)	.00041 .00124	-1.7	-1.00 0.317
University education level (for a father)	.00165 .00083	1.6	0.82 0.414
Reads&writes	.14645 .12252	6.6	2.44 0.015
Less than intermediate education level	.19719 .20957	-2.9	-1.07 0.285
Intermediate education level	.13861 .14563	-1.8	-0.70 0.485
Above intermediate education level	.02145 .02682	-3.3	-1.22 0.224
University education level	.02847 .02475	2.0	0.80 0.422
Post graduate education level	.00041 0	1.1	1.00 0.317
Alexandria	.01898 .02104	-0.9	-0.51 0.608
Port Said	.00413 .00454	-0.5	-0.22 0.827
Saez	.0033 .00371	-0.4	-0.24 0.808
Damietta	.06064 .06642	-2.8	-0.82 0.410

Variable	Mean Treated Control	%bias	t-test t p>t
Dakahlia	.04002 .03135	4.5	1.63 0.104
Sharkia	.05116 .04662	2.1	0.73 0.464
Kalyoubia	.04002 .04868	-4.0	-1.47 0.143
Kafr-Elsheikh	.09158 .08622	2.1	0.66 0.512
Gharbia	.05363 .05322	0.2	0.06 0.949
Menoufia	.00784 .01031	-2.1	-0.91 0.364
Behera	.07178 .06106	4.3	1.50 0.134
Ismailia	.04455 .04043	1.8	0.71 0.477
Giza	.04827 .04909	-0.4	-0.13 0.894
Beni-Suef	.08045 .08952	-3.8	-1.13 0.257
Fayoum	.07219 .06229	4.5	1.38 0.169
Menia	.06147 .04909	5.7	1.89 0.059
Asyout	.06642 .06642	0.0	0.00 1.000
Suhag	.04703 .06271	-7.4	-2.40 0.017
Qena	.05817 .05982	-0.7	-0.24 0.807
Aswan	.05281 .06188	-4.2	-1.36 0.174
Luxur	.00041 .00041	0.0	-0.00 1.000
Female	.53878 .53754	0.2	0.09 0.931
Household Income	199.67 221.38	-5.2	-1.79 0.073
Household Wealth	-.47616 -.48457	1.0	0.36 0.722

2006

Variable	Mean Treated Control	%bias	t-test t p>t	V(T)/ V(C)	

Living in a rural area	.73345 .7464	-2.8	-1.10 0.271	.	
Reads&writes (for a father)	.15288 .15863	-1.4	-0.59 0.554	.	
Less than intermediate (for a father)	.05647 .05108	1.7	0.89 0.373	.	
Intermediate education level (for a father)	.00755 .01043	-1.7	-1.14 0.256	.	
Above intermediate education level (for a father)	.00072 .00108	-0.6	-0.45 0.655	.	
University education level (for a father)	.00288 .00288	0.0	0.00 1.000	.	
Reads&writes	.11655 .12086	-1.3	-0.50 0.619	.	
Less than intermediate education level	.19209 .21403	-5.2	-2.03 0.042	.	
Intermediate education level	.18813 .18921	-0.3	-0.10 0.918	.	
Above intermediate education level	.01439 .01295	1.0	0.46 0.644	.	
University education level	.04317 .04281	0.2	0.07 0.947	.	
Post graduate education level	.0018 .00216	-0.8	-0.30 0.763	.	
Alexandria	.01367 .01259	0.5	0.35 0.724	.	
Port Said	.0036 .00216	1.7	1.00 0.317	.	
Saez	.00468 .00324	1.5	0.85 0.393	.	
Damietta	.06583 .06511	0.3	0.11 0.914	.	
Dakahlia	.04532 .03849	3.3	1.27 0.204	.	
Sharkia	.05144 .05683	-2.5	-0.89 0.374	.	
Kalyoubia	.04209 .04029	0.8	0.34 0.736	.	
Kafr-Elsheikh	.09065 .08849	0.9	0.28 0.778	.	
Gharbia	.0536 .05504	-0.7	-0.24 0.813	.	

Variable	Mean Treated Control	%bias	t p>t	
Menoufia	.00612 .00396	1.9	1.14 0.256	.
Behera	.06942 .07734	-3.3	-1.13 0.258	.
Ismailia	.04209 .03777	1.9	0.82 0.411	.
Giza	.04353 .04137	1.1	0.40 0.690	.
Beni-Suef	.08453 .08705	-1.0	-0.34 0.738	.
Fayoum	.07338 .08345	-4.3	-1.40 0.163	.
Menia	.05899 .05468	2.0	0.69 0.487	.
Asyout	.07158 .06367	3.1	1.17 0.240	.
Suhag	.04676 .04784	-0.5	-0.19 0.850	.
Qena	.06511 .05863	2.6	1.00 0.316	.
Aswan	.0464 .05863	-5.8	-2.04 0.041	.
Luxur	.000360	1.0	1.00 0.317	.
Female	.52482 .51835	1.3	0.48 0.629	.
Household Income	412.18 427.72	-1.4	-0.74 0.459	0.97
Household Wealth	-.44189 -.43651	-0.7	-0.25 0.804	0.95

2012

	Mean		t-test	
Variable	Treated Control	%bias	t p>t	
Living in a rural area	.71597 .74023	-5.2	-2.10 0.036	
Reads&writes (for a father)	.1004 .10916	-2.4	-1.10 0.271	
Less than intermediate (for a father)	.03706 .03841	-0.4	-0.27 0.785	
Intermediate education level (for a father)	.0155 .01381	0.9	0.54 0.589	
Above intermediate	.00067 .00067	0.0	-0.00 1.000	

education level (for a father)			
University education level (for a father)	.00101 .00034	0.7	1.00 0.317
Reads&writes	.04919 .04852	0.3	0.12 0.904
Less than intermediate education level	.19744 .20822	-2.5	-1.03 0.302
Intermediate education level	.24057 .25101	-2.3	-0.93 0.350
Above intermediate education level	.01247 .01516	-1.8	-0.89 0.374
University education level	.05391 .0529	0.4	0.17 0.863
Post graduate education level	.00202 .00034	3.2	1.89 0.059
Alexandria	.01415 .01348	0.3	0.22 0.824
Port Said	.00404 .00202	2.4	1.42 0.157
Saez	.00404 .00472	-0.7	-0.39 0.694
Damietta	.05829 .05728	0.5	0.17 0.867
Dakahlia	.04582 .04346	1.2	0.44 0.660
Sharkia	.0465 .05627	-4.6	-1.71 0.088
Kalyoubia	.03841 .04043	-0.9	-0.40 0.689
Kafr-Elsheikh	.09063 .08996	0.3	0.09 0.928
Gharbia	.04919 .04852	0.3	0.12 0.904
Menoufia	.00708 .00708	0.0	-0.00 1.000
Behera	.06907 .06233	2.8	1.05 0.295
Ismailia	.03605 .03437	0.8	0.35 0.725
Giza	.03706 .04111	-2.1	-0.80 0.422
Beni-Suef	.08625 .08861	-0.9	-0.32 0.748
Fayoum	.07244 .07143	0.4	0.15 0.880

	Mean	%bias	t-test
			t p>t
Menia	.06233 .06334	-0.5	-0.16 0.873
Asyout	.07884 .07513	1.5	0.54 0.592
Suhag	.05559 .06233	-3.1	-1.10 0.271
Qena	.06435 .06031	1.6	0.64 0.519
Aswan	.05627 .05189	2.0	0.75 0.456
Luxur	.00067 .00067	0.0	0.00 1.000
Female	.51988 .51819	0.3	0.13 0.897
Household Income	887.02 921.27	-1.3	-0.50 0.617
Household Wealth	-.43018 - .37851	-6.6	-2.65 0.008

2018

	Mean		t-test
Variable	Treated Control	%bias	t p>t
Living in a rural area	.72051 .72704	-1.4	-0.54 0.588
Reads&writes (for a father)	.08457 .09111	-1.9	-0.86 0.392
Less than intermediate (for a father)	.03303 .0323	0.3	0.15 0.880
Intermediate education level (for a father)	.01996 .01597	1.7	1.12 0.265
Above intermediate education level (for a father)	.00218 .00254	-0.5	-0.28 0.781
University education level (for a father)	.00218 .0029	-0.5	-0.54 0.593
Reads&writes	.07187 .06316	3.5	1.29 0.198

Less than intermediate education level	.12341 .13466	-3.3	-1.25 0.213
Intermediate education level	.27804 .27332	1.0	0.39 0.695
Above intermediate education level	.01633 .01924	-1.8	-0.82 0.415
University education level	.05517 .05517	0.0	-0.00 1.000
Post graduate education level	.00327 .00327	0.0	0.00 1.000
Alexandria	.01162 .0098	0.9	0.65 0.513
Port Said	.00363 .00436	-0.9	-0.43 0.669
Saez	.00472 .00363	1.1	0.63 0.531
Damietta	.06062 .05771	1.4	0.46 0.648
Dakahlia	.03702 .03848	-0.7	-0.28 0.777
Sharkia	.05082 .05626	-2.6	-0.90 0.369
Kalyoubia	.03884 .04211	-1.6	-0.62 0.538
Kafr-Elsheikh	.08893 .08857	0.1	0.05 0.962
Gharbia	.04537 .04283	1.2	0.46 0.646
Menoufia	.00508 .00399	1.0	0.60 0.548
Behera	.08494 .0882	-1.3	-0.43 0.666
Ismailia	.0363 .03993	-1.6	-0.70 0.482
Giza	.04283 .05263	-5.1	-1.71 0.088
Beni-Suef	.08312 .08603	-1.2	-0.39 0.699
Fayoum	.07877 .0726	2.7	0.87 0.387
Menia	.06534 .0686	-1.4	-0.48 0.628
Asyout	.08203 .07731	1.9	0.65 0.518
Suhag	.05045 .05299	-1.2	-0.43 0.670

|	Mean	%bias	t-test
Qena	.05372 .05154	0.9	0.36 0.717
Aswan	.05263 .04392	4.0	1.51 0.132
Luxur	.00109 .00073	0.7	0.45 0.655
Female	.53285 .52922	0.7	0.27 0.787
Household Income	1888.1 1959.3	-1.0	-0.40 0.691
Household Wealth	-.36785 - .35466	-1.6	-0.72 0.470

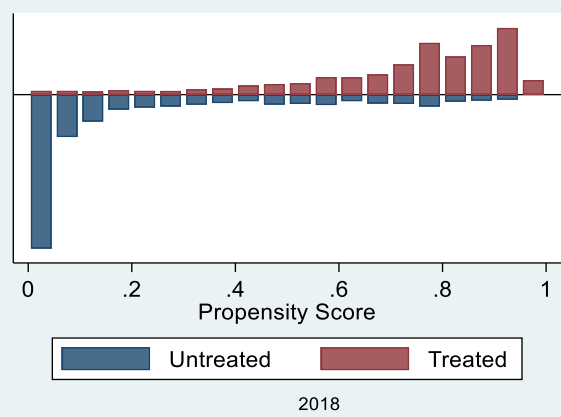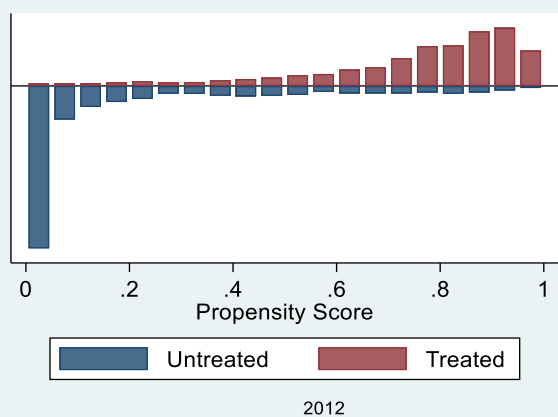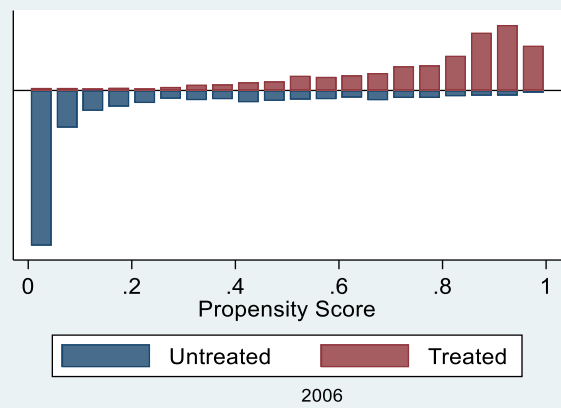II.   Becoming a Blue Collar Worker for the offsprings whose father is an agricultural father relative to a white-collar father
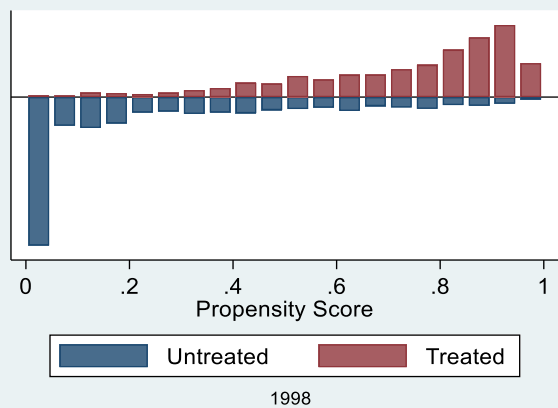
1998

	Mean		t-test
Variable	Treated Control	%bias	t p>t
Living in a rural area	.7038 .70503	-0.3	-0.09 0.925
Reads&writes (for a father)	.17987 .19389	-3.4	-1.25 0.210
Less than intermediate (for a father)	.04208 .04084	0.5	0.22 0.829
Intermediate education level (for a father)	.00866 .00701	0.5	0.65 0.515
Above intermediate education level (for a father)	.000410	0.3	1.00 0.317
University education level (for a father)	.00165 .00165	0.0	-0.00 1.000
Reads&writes	.14645 .2203	-20.5	-6.67 0.000
Less than intermediate education level	.19719 .20338	-1.4	-0.54 0.590
Intermediate education level	.13861 .11427	6.2	2.55 0.011
Above intermediate education level	.02145 .01733	2.3	1.04 0.298
University education level	.02847 .03053	-0.8	-0.42 0.671

Variable	Coef		
Post graduate education level	.000410	0.8	1.00 0.317
Alexandria	.01898 .01238	3.3	1.85 0.064
Port Said	.00413 .00578	-1.8	-0.82 0.413
Saez	.0033 .00206	1.2	0.83 0.405
Damietta	.06064 .0755	-7.0	-2.05 0.040
Dakahlia	.04002 .03507	2.3	0.91 0.365
Sharkia	.05116 .03507	7.5	2.76 0.006
Kalyoubia	.04002 .05033	-5.3	-1.73 0.084
Kafr-Elsheikh	.09158 .08663	2.0	0.60 0.545
Gharbia	.05363 .06147	-3.5	-1.17 0.241
Menoufia	.00784 .0099	-1.8	-0.77 0.444
Behera	.07178 .04002	12.6	4.82 0.000
Ismailia	.04455 .05817	-6.3	-2.15 0.032
Giza	.04827 .10025	-27.1	-6.93 0.000
Beni-Suef	.08045 .0854	-2.0	-0.62 0.532
Fayoum	.07219 .05239	8.7	2.85 0.004
Menia	.06147 .07137	-4.2	-1.38 0.166
Asyout	.06642 .04414	9.3	3.40 0.001
Suhag	.04703 .04868	-0.8	-0.27 0.788
Qena	.05817 .06436	-2.9	-0.90 0.369
Aswan	.05281 .04167	4.9	1.83 0.068
Luxur	.000410	0.6	1.00 0.317
Female	.53878 .52682	2.4	0.83 0.404
Household Income	199.67 235.29	-6.5	-2.90 0.004

	Household Wealth	-.47616 - .45761	-2.3	-0.80 0.426

2006

	Mean		t-test
Variable	Treated Control	%bias	t p>t
Living in a rural area	.73345 .73417	-0.2	-0.06 0.952
Reads&writes (for a father)	.15288 .14892	1.1	0.41 0.680
Less than intermediate (for a father)	.05647 .0464	3.4	1.70 0.089
Intermediate education level (for a father)	.00755 .00612	0.4	0.65 0.515
Above intermediate education level (for a father)	.00072 .00144	-0.4	-0.82 0.414
University education level (for a father)	.00288 .0054	-1.0	-1.46 0.144
Reads&writes	.11655 .13669	-5.9	-2.26 0.024
Less than intermediate education level	.19209 .19964	-1.8	-0.71 0.478
Intermediate education level	.18813 .17374	3.4	1.39 0.164
Above intermediate education level	.01439 .01835	-2.4	-1.16 0.245
University education level	.04317 .03993	1.1	0.60 0.545
Post graduate education level	.0018 .00108	1.2	0.71 0.479
Alexandria	.01367 .01655	-1.5	-0.88 0.379
Port Said	.0036 .0018	2.1	1.29 0.196
Saez	.00468 .00468	0.0	-0.00 1.000
Damietta	.06583 .08237	-7.9	-2.36 0.019
Dakahlia	.04532 .04712	-0.9	-0.32 0.750

Variable		%bias	t-test
Sharkia	.05144 .04424	3.3	1.26 0.209
Kalyoubia	.04209 .0518	-5.0	-1.71 0.087
Kafr-Elsheikh	.09065 .11475	-9.5	-2.96 0.003
Gharbia	.0536 .07374	-9.2	-3.08 0.002
Menoufia	.00612 .00863	-2.3	-1.10 0.273
Behera	.06942 .05036	7.6	3.00 0.003
Ismailia	.04209 .02374	8.3	3.84 0.000
Giza	.04353 .03633	3.8	1.37 0.171
Beni-Suef	.08453 .04496	16.3	6.01 0.000
Fayoum	.07338 .08058	-3.2	-1.01 0.314
Menia	.05899 .05216	2.9	1.11 0.266
Asyout	.07158 .05899	5.3	1.90 0.057
Suhag	.04676 .07194	-11.3	-3.98 0.000
Qena	.06511 .05396	5.0	1.76 0.079
Aswan	.0464 .05971	-5.6	-2.21 0.027
Luxur	.00036 .00108	-1.1	-1.00 0.317
Female	.52482 .56367	-7.8	-2.91 0.004
Household Income	412.18 449.28	-3.9	-1.44 0.150
Household Wealth	-.44189 - .41315	-3.5	-1.31 0.192

2012

	Mean		t-test
Variable	Treated Control	%bias	t p>t
Living in a rural area	.71597 .69677	4.2	1.62 0.104
Reads&writes (for a father)	.1004 .11354	-4.1	-1.64 0.102

Less than intermediate (for a father)	.03706 .02864	3.0	1.82 0.069
Intermediate education level (for a father)	.0155 .01516	0.1	0.11 0.916
Above intermediate education level (for a father)	.00067 .00168	-0.6	-1.13 0.257
University education level (for a father)	.00101 .00135	-0.1	-0.38 0.705
Reads&writes	.04919 .06031	-5.8	-1.88 0.060
Less than intermediate education level	.19744 .21395	-3.9	-1.57 0.116
Intermediate education level	.24057 .21597	5.5	2.26 0.024
Above intermediate education level	.01247 .01247	0.0	0.00 1.000
University education level	.05391 .04279	3.3	2.00 0.046
Post graduate education level	.00202 .00202	0.0	-0.00 1.000
Alexandria	.01415 .01617	-1.0	-0.64 0.524
Port Said	.00404 .00674	-3.3	-1.42 0.156
Saez	.00404 .00303	0.9	0.66 0.512
Damietta	.05829 .06772	-4.7	-1.50 0.135
Dakahlia	.04582 .03066	7.1	3.05 0.002
Sharkia	.0465 .04683	-0.2	-0.06 0.951
Kalyoubia	.03841 .03369	2.5	0.97 0.330
Kafr-Elsheikh	.09063 .06199	11.2	4.16 0.000
Gharbia	.04919 .05593	-3.2	-1.16 0.245
Menoufia	.00708 .01247	-4.7	-2.11 0.035
Behera	.06907 .03942	12.1	5.05 0.000

	Mean	%bias	t-test
Ismailia	.03605 .05559	-8.8	-3.60 0.000
Giza	.03706 .04178	-2.6	-0.93 0.350
Beni-Suef	.08625 .07008	6.7	2.32 0.020
Fayoum	.07244 .08693	-6.4	-2.06 0.039
Menia	.06233 .05728	2.1	0.82 0.412
Asyout	.07884 .09872	-8.1	-2.69 0.007
Suhag	.05559 .03807	7.7	3.20 0.001
Qena	.06435 .07446	-4.4	-1.53 0.126
Aswan	.05627 .07581	-8.2	-3.03 0.002
Luxur	.00067 .00067	0.0	0.00 1.000
Female	.51988 .51449	1.1	0.42 0.678
Household Income	887.02 896.83	-0.3	-0.14 0.890
Household Wealth	-.43018 -.49788	8.0	3.33 0.001

2018

	Mean	%bias	t-test
Variable	Treated Control		t p>t
Living in a rural area	.72051 .74483	-5.3	-2.04 0.041
Reads&writes (for a father)	.08457 .0824	0.7	0.29 0.770
Less than intermediate (for a father)	.03303 .03412	-0.4	-0.22 0.823

Intermediate education level (for a father)	.01996 .01815	0.6	0.49 0.622
Above intermediate education level (for a father)	.00218 .00145	0.5	0.63 0.527
University education level (for a father)	.00218 .0029	-0.3	-0.54 0.593
Reads&writes	.07187 .06897	1.3	0.42 0.674
Less than intermediate education level	.12341 .13575	-4.0	-1.36 0.173
Intermediate education level	.27804 .29038	-2.6	-1.02 0.310
Above intermediate education level	.01633 .01851	-1.3	-0.62 0.537
University education level	.05517 .04574	2.6	1.60 0.110
Post graduate education level	.00327 .00218	1.0	0.78 0.438
Alexandria	.01162 .00907	1.3	0.93 0.351
Port Said	.00363 .00327	0.4	0.23 0.818
Saez	.00472 .00544	-0.7	-0.38 0.705
Damietta	.06062 .06098	-0.2	-0.06 0.955
Dakahlia	.03702 .05299	-7.9	-2.86 0.004
Sharkia	.05082 .04356	3.3	1.27 0.204
Kalyoubia	.03884 .03303	2.9	1.16 0.247
Kafr-Elsheikh	.08893 .08784	0.4	0.14 0.887
Gharbia	.04537 .0392	3.0	1.14 0.255
Menoufia	.00508 .00363	1.3	0.82 0.413
Behera	.08494 .08857	-1.5	-0.48 0.632
Ismailia	.0363 .0461	-4.5	-1.83 0.067

Giza	.04283 .05372	-5.4	-1.89 0.059
Beni-Suef	.08312 .05989	9.5	3.35 0.001
Fayoum	.07877 .07151	3.2	1.02 0.307
Menia	.06534 .07768	-5.2	-1.78 0.075
Asyout	.08203 .08421	-0.9	-0.29 0.770
Suhag	.05045 .06388	-5.9	-2.15 0.032
Qena	.05372 .04138	5.9	2.15 0.031
Aswan	.05263 .05118	0.6	0.24 0.808
Luxur	.00109 .00073	0.8	0.45 0.655
Female	.53285 .49583	7.4	2.75 0.006
Household Income	1888.1 1906.6	-0.3	-0.10 0.924
Household Wealth	-.36785 - .36944	0.2	0.09 0.929

III. Becoming a White Collar Worker for the offsprings whose father is an agricultural father relative to a blue-collar father

1998

Variable	Mean Treated Control	%bias	t-test t p>t
Living in a rural area	.7038 .71246	-1.8	-0.66 0.507
Reads&writes (for a father)	.17987 .18729	-1.7	-0.67 0.504
Less than intermediate (for a father)	.04208 .03342	3.0	1.58 0.114
Intermediate education level (for a father)	.00866 .00619	1.7	1.00 0.316
Above intermediate education level (for a father)	.00041 .00124	-1.7	-1.00 0.317
University education level (for a father)	.00165 .00083	1.6	0.82 0.414
Reads&writes	.14645 .12252	6.6	2.44 0.015
Less than intermediate education level	.19719 .20957	-2.9	-1.07 0.285
Intermediate education level	.13861 .14563	-1.8	-0.70 0.485
Above intermediate education level	.02145 .02682	-3.3	-1.22 0.224
University education level	.02847 .02475	2.0	0.80 0.422
Post graduate education level	.00041 0	1.1	1.00 0.317
Alexandria	.01898 .02104	-0.9	-0.51 0.608
Port Said	.00413 .00454	-0.5	-0.22 0.827
Saez	.0033 .00371	-0.4	-0.24 0.808
Damietta	.06064 .06642	-2.8	-0.82 0.410

Dakahlia	.04002 .03135	4.5	1.63 0.104
Sharkia	.05116 .04662	2.1	0.73 0.464
Kalyoubia	.04002 .04868	-4.0	-1.47 0.143
Kafr-Elsheikh	.09158 .08622	2.1	0.66 0.512
Gharbia	.05363 .05322	0.2	0.06 0.949
Menoufia	.00784 .01031	-2.1	-0.91 0.364
Behera	.07178 .06106	4.3	1.50 0.134
Ismailia	.04455 .04043	1.8	0.71 0.477
Giza	.04827 .04909	-0.4	-0.13 0.894
Beni-Suef	.08045 .08952	-3.8	-1.13 0.257
Fayoum	.07219 .06229	4.5	1.38 0.169
Menia	.06147 .04909	5.7	1.89 0.059
Asyout	.06642 .06642	0.0	0.00 1.000
Suhag	.04703 .06271	-7.4	-2.40 0.017
Qena	.05817 .05982	-0.7	-0.24 0.807
Aswan	.05281 .06188	-4.2	-1.36 0.174
Luxur	.00041 .00041	0.0	-0.00 1.000
Female	.53878 .53754	0.2	0.09 0.931
Household Income	199.67 221.38	-5.2	-1.79 0.073
Household Wealth	-.47616 - .48457	1.0	0.36 0.722

2006

	Mean	%bias	t-test
Variable	Treated Control		t p>t
Living in a rural area	.73345 .7464	-2.8	-1.10 0.271
Reads&writes (for a father)	.15288 .15863	-1.4	-0.59 0.554
Less than intermediate (for a father)	.05647 .05108	1.7	0.89 0.373
Intermediate education level (for a father)	.00755 .01043	-1.7	-1.14 0.256
Above intermediate education level (for a father)	.00072 .00108	-0.6	-0.45 0.655
University education level (for a father)	.00288 .00288	0.0	0.00 1.000
Reads&writes	.11655 .12086	-1.3	-0.50 0.619
Less than intermediate education level	.19209 .21403	-5.2	-2.03 0.042
Intermediate education level	.18813 .18921	-0.3	-0.10 0.918
Above intermediate education level	.01439 .01295	1.0	0.46 0.644
University education level	.04317 .04281	0.2	0.07 0.947
Post graduate education level	.0018 .00216	-0.8	-0.30 0.763
Alexandria	.01367 .01259	0.5	0.35 0.724
Port Said	.0036 .00216	1.7	1.00 0.317
Saez	.00468 .00324	1.5	0.85 0.393
Damietta	.06583 .06511	0.3	0.11 0.914
Dakahlia	.04532 .03849	3.3	1.27 0.204
Sharkia	.05144 .05683	-2.5	-0.89 0.374

Kalyoubia	.04209 .04029	0.8	0.34 0.736
Kafr-Elsheikh	.09065 .08849	0.9	0.28 0.778
Gharbia	.0536 .05504	-0.7	-0.24 0.813
Menoufia	.00612 .00396	1.9	1.14 0.256
Behera	.06942 .07734	-3.3	-1.13 0.258
Ismailia	.04209 .03777	1.9	0.82 0.411
Giza	.04353 .04137	1.1	0.40 0.690
Beni-Suef	.08453 .08705	-1.0	-0.34 0.738
Fayoum	.07338 .08345	-4.3	-1.40 0.163
Menia	.05899 .05468	2.0	0.69 0.487
Asyout	.07158 .06367	3.1	1.17 0.240
Suhag	.04676 .04784	-0.5	-0.19 0.850
Qena	.06511 .05863	2.6	1.00 0.316
Aswan	.0464 .05863	-5.8	-2.04 0.041
Luxur	.000360	1.0	1.00 0.317
Female	.52482 .51835	1.3	0.48 0.629
Household Income	412.18 427.72	-1.4	-0.74 0.459
Household Wealth	-.44189 -.43651	-0.7	-0.25 0.804

2012

	Mean		t-test
Variable	Treated Control	%bias	t p>t
Living in a rural area	.71597 .74023	-5.2	-2.10 0.036
Reads&writes (for a father)	.1004 .10916	-2.4	-1.10 0.271
Less than intermediate (for a father)	.03706 .03841	-0.4	-0.27 0.785
Intermediate education level (for a father)	.0155 .01381	0.9	0.54 0.589
Above intermediate education level (for a father)	.00067 .00067	0.0	-0.00 1.000
University education level (for a father)	.00101 .00034	0.7	1.00 0.317
Reads&writes	.04919 .04852	0.3	0.12 0.904
Less than intermediate education level	.19744 .20822	-2.5	-1.03 0.302
Intermediate education level	.24057 .25101	-2.3	-0.93 0.350
Above intermediate education level	.01247 .01516	-1.8	-0.89 0.374
University education level	.05391 .0529	0.4	0.17 0.863
Post graduate education level	.00202 .00034	3.2	1.89 0.059
Alexandria	.01415 .01348	0.3	0.22 0.824
Port Said	.00404 .00202	2.4	1.42 0.157
Saez	.00404 .00472	-0.7	-0.39 0.694
Damietta	.05829 .05728	0.5	0.17 0.867

Dakahlia	.04582 .04346	1.2	0.44 0.660
Sharkia	.0465 .05627	-4.6	-1.71 0.088
Kalyoubia	.03841 .04043	-0.9	-0.40 0.689
Kafr-Elsheikh	.09063 .08996	0.3	0.09 0.928
Gharbia	.04919 .04852	0.3	0.12 0.904
Menoufia	.00708 .00708	0.0	-0.00 1.000
Behera	.06907 .06233	2.8	1.05 0.295
Ismailia	.03605 .03437	0.8	0.35 0.725
Giza	.03706 .04111	-2.1	-0.80 0.422
Beni-Suef	.08625 .08861	-0.9	-0.32 0.748
Fayoum	.07244 .07143	0.4	0.15 0.880
Menia	.06233 .06334	-0.5	-0.16 0.873
Asyout	.07884 .07513	1.5	0.54 0.592
Suhag	.05559 .06233	-3.1	-1.10 0.271
Qena	.06435 .06031	1.6	0.64 0.519
Aswan	.05627 .05189	2.0	0.75 0.456
Luxur	.00067 .00067	0.0	0.00 1.000
Female	.51988 .51819	0.3	0.13 0.897
Household Income	887.02 921.27	-1.3	-0.50 0.617
Household Wealth	-.43018 - .37851	-6.6	-2.65 0.008

2018

	Mean	%bias	t-test	V(T)/	
Variable	Treated Control		t p>t	V(C)	
Living in a rural area	.72051 .72704	-1.4	-0.54 0.588	.	
Reads&writes (for a father)	.08457 .09111	-1.9	-0.86 0.392	.	
Less than intermediate (for a father)	.03303 .0323	0.3	0.15 0.880	.	
Intermediate education level (for a father)	.01996 .01597	1.7	1.12 0.265	.	
Above intermediate education level (for a father)	.00218 .00254	-0.5	-0.28 0.781	.	
University education level (for a father)	.00218 .0029	-0.5	-0.54 0.593	.	
Reads&writes	.07187 .06316	3.5	1.29 0.198	.	
Less than intermediate education level	.12341 .13466	-3.3	-1.25 0.213	.	
Intermediate education level	.27804 .27332	1.0	0.39 0.695	.	
Above intermediate education level	.01633 .01924	-1.8	-0.82 0.415	.	
University education level	.05517 .05517	0.0	-0.00 1.000	.	
Post graduate education level	.00327 .00327	0.0	0.00 1.000	.	
Alexandria	.01162 .0098	0.9	0.65 0.513	.	
Port Said	.00363 .00436	-0.9	-0.43 0.669	.	

Saez	.00472 .00363	1.1	0.63 0.531	.	
Damietta	.06062 .05771	1.4	0.46 0.648	.	
Dakahlia	.03702 .03848	-0.7	-0.28 0.777	.	
Sharkia	.05082 .05626	-2.6	-0.90 0.369	.	
Kalyoubia	.03884 .04211	-1.6	-0.62 0.538	.	
Kafr-Elsheikh	.08893 .08857	0.1	0.05 0.962	.	
Gharbia	.04537 .04283	1.2	0.46 0.646	.	
Menoufia	.00508 .00399	1.0	0.60 0.548	.	
Behera	.08494 .0882	-1.3	-0.43 0.666	.	
Ismailia	.0363 .03993	-1.6	-0.70 0.482	.	
Giza	.04283 .05263	-5.1	-1.71 0.088	.	
Beni-Suef	.08312 .08603	-1.2	-0.39 0.699	.	
Fayoum	.07877 .0726	2.7	0.87 0.387	.	
Menia	.06534 .0686	-1.4	-0.48 0.628	.	
Asyout	.08203 .07731	1.9	0.65 0.518	.	
Suhag	.05045 .05299	-1.2	-0.43 0.670	.	
Qena	.05372 .05154	0.9	0.36 0.717	.	
Aswan	.05263 .04392	4.0	1.51 0.132	.	
Luxur	.00109 .00073	0.7	0.45 0.655	.	
Female	.53285 .52922	0.7	0.27 0.787	.	
Household Income	1888.1 1959.3	-1.0	-0.40 0.691	1.57*	
Household Wealth	-.36785 -.35466	-1.6	-0.72 0.470	0.98	

IV. Becoming a White Collar Worker for the offsprings whose father is an agricultural father relative to a white-collar father

1998

	Mean	%bias	t-test	V(T)/
Variable	Treated Control		t p>t	V(C)
Living in a rural area	.7038 .70503	-0.3	-0.09 0.925	.
Reads&writes (for a father)	.17987 .19389	-3.4	-1.25 0.210	.
Less than intermediate (for a father)	.04208 .04084	0.5	0.22 0.829	.
Intermediate education level (for a father)	.00866 .00701	0.5	0.65 0.515	.
Above intermediate education level (for a father)	.00041 0	0.3	1.00 0.317	.
University education level (for a father)	.00165 .00165	0.0	-0.00 1.000	.
Reads&writes	0 0	.	. .	.
Less than intermediate education level	.14645 .2203	-20.5	-6.67 0.000	.
Intermediate education level	.19719 .20338	-1.4	-0.54 0.590	.
Above intermediate education level	.13861 .11427	6.2	2.55 0.011	.
University education level	.02145 .01733	2.3	1.04 0.298	.
Post graduate education level	.02847 .03053	-0.8	-0.42 0.671	.
Alexandria	.01898 .01238	3.3	1.85 0.064	.
Port Said	.00413 .00578	-1.8	-0.82 0.413	.
Saez	.0033 .00206	1.2	0.83 0.405	.
Damietta	.06064 .0755	-7.0	-2.05 0.040	.
Dakahlia	.04002 .03507	2.3	0.91 0.365	.
Sharkia	.05116 .03507	7.5	2.76 0.006	.
Kalyoubia	.04002 .05033	-5.3	-1.73 0.084	.

Variable		%bias	t-test	
Kafr-Elsheikh	.09158 .08663	2.0	0.60 0.545	.
Gharbia	.05363 .06147	-3.5	-1.17 0.241	.
Menoufia	.00784 .0099	-1.8	-0.77 0.444	.
Behera	.07178 .04002	12.6	4.82 0.000	.
Ismailia	.04455 .05817	-6.3	-2.15 0.032	.
Giza	.04827 .10025	-27.1	-6.93 0.000	.
Beni-Suef	.08045 .0854	-2.0	-0.62 0.532	.
Fayoum	.07219 .05239	8.7	2.85 0.004	.
Menia	.06147 .07137	-4.2	-1.38 0.166	.
Asyout	.06642 .04414	9.3	3.40 0.001	.
Suhag	.04703 .04868	-0.8	-0.27 0.788	.
Qena	.05817 .06436	-2.9	-0.90 0.369	.
Aswan	.05281 .04167	4.9	1.83 0.068	.
Luxur	.000410	0.6	1.00 0.317	.
Female	.53878 .52682	2.4	0.83 0.404	.
Household Income	199.67 235.29	-6.5	-2.90 0.004	0.70*
Household Wealth	-.47616 -.45761	-2.3	-0.80 0.426	1.00

2006

	Mean		t-test
Variable	Treated Control	%bias	t p>t
Living in a rural area	.73345 .73417	-0.2	-0.06 0.952
Reads&writes (for a father)	.15288 .14892	1.1	0.41 0.680
Less than intermediate (for a father)	.05647 .0464	3.4	1.70 0.089

Intermediate education level (for a father)	.00755 .00612	0.4	0.65 0.515
Above intermediate education level (for a father)	.00072 .00144	-0.4	-0.82 0.414
University education level (for a father)	.00288 .0054	-1.0	-1.46 0.144
Reads&writes	.11655 .13669	-5.9	-2.26 0.024
Less than intermediate education level	.19209 .19964	-1.8	-0.71 0.478
Intermediate education level	.18813 .17374	3.4	1.39 0.164
Above intermediate education level	.01439 .01835	-2.4	-1.16 0.245
University education level	.04317 .03993	1.1	0.60 0.545
Post graduate education level	.0018 .00108	1.2	0.71 0.479
Alexandria	.01367 .01655	-1.5	-0.88 0.379
Port Said	.0036 .0018	2.1	1.29 0.196
Saez	.00468 .00468	0.0	-0.00 1.000
Damietta	.06583 .08237	-7.9	-2.36 0.019
Dakahlia	.04532 .04712	-0.9	-0.32 0.750
Sharkia	.05144 .04424	3.3	1.26 0.209
Kalyoubia	.04209 .0518	-5.0	-1.71 0.087
Kafr-Elsheikh	.09065 .11475	-9.5	-2.96 0.003
Gharbia	.0536 .07374	-9.2	-3.08 0.002
Menoufia	.00612 .00863	-2.3	-1.10 0.273
Behera	.06942 .05036	7.6	3.00 0.003
Ismailia	.04209 .02374	8.3	3.84 0.000

	Mean	%bias	t-test
Giza	.04353 .03633	3.8	1.37 0.171
Beni-Suef	.08453 .04496	16.3	6.01 0.000
Fayoum	.07338 .08058	-3.2	-1.01 0.314
Menia	.05899 .05216	2.9	1.11 0.266
Asyout	.07158 .05899	5.3	1.90 0.057
Suhag	.04676 .07194	-11.3	-3.98 0.000
Qena	.06511 .05396	5.0	1.76 0.079
Aswan	.0464 .05971	-5.6	-2.21 0.027
Luxur	.00036 .00108	-1.1	-1.00 0.317
Female	.52482 .56367	-7.8	-2.91 0.004
Household Income	412.18 449.28	-3.9	-1.44 0.150
Household Wealth	-.44189 -.41315	-3.5	-1.31 0.192

2012

	Mean		t-test
Variable	Treated Control	%bias	t p>t
Living in a rural area	.71597 .69677	4.2	1.62 0.104
Reads&writes (for a father)	.1004 .11354	-4.1	-1.64 0.102
Less than intermediate (for a father)	.03706 .02864	3.0	1.82 0.069
Intermediate education level (for a father)	.0155 .01516	0.1	0.11 0.916
Above intermediate education level (for a father)	.00067 .00168	-0.6	-1.13 0.257

University education level (for a father)	.00101 .00135	-0.1	-0.38 0.705
Reads&writes	.04919 .06031	-5.8	-1.88 0.060
Less than intermediate education level	.19744 .21395	-3.9	-1.57 0.116
Intermediate education level	.24057 .21597	5.5	2.26 0.024
Above intermediate education level	.01247 .01247	0.0	0.00 1.000
University education level	.05391 .04279	3.3	2.00 0.046
Post graduate education level	.00202 .00202	0.0	-0.00 1.000
Alexandria	.01415 .01617	-1.0	-0.64 0.524
Port Said	.00404 .00674	-3.3	-1.42 0.156
Saez	.00404 .00303	0.9	0.66 0.512
Damietta	.05829 .06772	-4.7	-1.50 0.135
Dakahlia	.04582 .03066	7.1	3.05 0.002
Sharkia	.0465 .04683	-0.2	-0.06 0.951
Kalyoubia	.03841 .03369	2.5	0.97 0.330
Kafr-Elsheikh	.09063 .06199	11.2	4.16 0.000
Gharbia	.04919 .05593	-3.2	-1.16 0.245
Menoufia	.00708 .01247	-4.7	-2.11 0.035
Behera	.06907 .03942	12.1	5.05 0.000
Ismailia	.03605 .05559	-8.8	-3.60 0.000
Giza	.03706 .04178	-2.6	-0.93 0.350
Beni-Suef	.08625 .07008	6.7	2.32 0.020
Fayoum	.07244 .08693	-6.4	-2.06 0.039
Menia	.06233 .05728	2.1	0.82 0.412

	Mean	%bias	t-test
Asyout	.07884 .09872	-8.1	-2.69 0.007
Suhag	.05559 .03807	7.7	3.20 0.001
Qena	.06435 .07446	-4.4	-1.53 0.126
Aswan	.05627 .07581	-8.2	-3.03 0.002
Luxur	.00067 .00067	0.0	0.00 1.000
Female	.51988 .51449	1.1	0.42 0.678
Household Income	887.02 896.83	-0.3	-0.14 0.890
Household Wealth	-.43018 - .49788	8.0	3.33 0.001

2018

	Mean		t-test
Variable	Treated Control	%bias	t p>t
Living in a rural area	.72051 .74483	-5.3	-2.04 0.041
Reads&writes (for a father)	.08457 .0824	0.7	0.29 0.770
Less than intermediate (for a father)	.03303 .03412	-0.4	-0.22 0.823
Intermediate education level (for a father)	.01996 .01815	0.6	0.49 0.622
Above intermediate education level (for a father)	.00218 .00145	0.5	0.63 0.527
University education level (for a father)	.00218 .0029	-0.3	-0.54 0.593
Reads&writes	.07187 .06897	1.3	0.42 0.674
Less than intermediate education level	.12341 .13575	-4.0	-1.36 0.173
Intermediate education level	.27804 .29038	-2.6	-1.02 0.310

Above intermediate education level	.01633 .01851	-1.3	-0.62 0.537
University education level	.05517 .04574	2.6	1.60 0.110
Post graduate education level	.00327 .00218	1.0	0.78 0.438
Alexandria	.01162 .00907	1.3	0.93 0.351
Port Said	.00363 .00327	0.4	0.23 0.818
Saez	.00472 .00544	-0.7	-0.38 0.705
Damietta	.06062 .06098	-0.2	-0.06 0.955
Dakahlia	.03702 .05299	-7.9	-2.86 0.004
Sharkia	.05082 .04356	3.3	1.27 0.204
Kalyoubia	.03884 .03303	2.9	1.16 0.247
Kafr-Elsheikh	.08893 .08784	0.4	0.14 0.887
Gharbia	.04537 .0392	3.0	1.14 0.255
Menoufia	.00508 .00363	1.3	0.82 0.413
Behera	.08494 .08857	-1.5	-0.48 0.632
Ismailia	.0363 .0461	-4.5	-1.83 0.067
Giza	.04283 .05372	-5.4	-1.89 0.059
Beni-Suef	.08312 .05989	9.5	3.35 0.001
Fayoum	.07877 .07151	3.2	1.02 0.307
Menia	.06534 .07768	-5.2	-1.78 0.075
Asyout	.08203 .08421	-0.9	-0.29 0.770
Suhag	.05045 .06388	-5.9	-2.15 0.032
Qena	.05372 .04138	5.9	2.15 0.031
Aswan	.05263 .05118	0.6	0.24 0.808
Luxur	.00109 .00073	0.8	0.45 0.655

	Mean		
Female	.53285 .49583	7.4	2.75 0.006
Household Income	1888.1 1906.6	-0.3	-0.10 0.924
Household Wealth	-.36785 -.36944	0.2	0.09 0.929

V.   Becoming an Agricultural Worker for the offsprings whose father is an agricultural father relative to a blue-collar father

1998

	Mean		t-test
Variable	Treated Control	%bias	t p>t
Living in a rural area	.7038 .71246	-1.8	-0.66 0.507
Reads&writes (for a father)	.17987 .18729	-1.7	-0.67 0.504
Less than intermediate (for a father)	.04208 .03342	3.0	1.58 0.114
Intermediate education level (for a father)	.00866 .00619	1.7	1.00 0.316
Above intermediate education level (for a father)	.00041 .00124	-1.7	-1.00 0.317

University education level (for a father)	.00165 .00083	1.6	0.82 0.414
Reads&writes	.14645 .12252	6.6	2.44 0.015
Less than intermediate education level	.19719 .20957	-2.9	-1.07 0.285
Intermediate education level	.13861 .14563	-1.8	-0.70 0.485
Above intermediate education level	.02145 .02682	-3.3	-1.22 0.224
University education level	.02847 .02475	2.0	0.80 0.422
Post graduate education level	.000410	1.1	1.00 0.317
Alexandria	.01898 .02104	-0.9	-0.51 0.608
Port Said	.00413 .00454	-0.5	-0.22 0.827
Saez	.0033 .00371	-0.4	-0.24 0.808
Damietta	.06064 .06642	-2.8	-0.82 0.410
Dakahlia	.04002 .03135	4.5	1.63 0.104
Sharkia	.05116 .04662	2.1	0.73 0.464
Kalyoubia	.04002 .04868	-4.0	-1.47 0.143
Kafr-Elsheikh	.09158 .08622	2.1	0.66 0.512
Gharbia	.05363 .05322	0.2	0.06 0.949
Menoufia	.00784 .01031	-2.1	-0.91 0.364
Behera	.07178 .06106	4.3	1.50 0.134
Ismailia	.04455 .04043	1.8	0.71 0.477
Giza	.04827 .04909	-0.4	-0.13 0.894
Beni-Suef	.08045 .08952	-3.8	-1.13 0.257
Fayoum	.07219 .06229	4.5	1.38 0.169
Menia	.06147 .04909	5.7	1.89 0.059

Asyout	.06642 .06642	0.0	0.00 1.000
Suhag	.04703 .06271	-7.4	-2.40 0.017
Qena	.05817 .05982	-0.7	-0.24 0.807
Aswan	.05281 .06188	-4.2	-1.36 0.174
Luxur	.00041 .00041	0.0	-0.00 1.000
Female	.53878 .53754	0.2	0.09 0.931
Household Income	199.67 221.38	-5.2	-1.79 0.073
Household Wealth	-.47616 -.48457	1.0	0.36 0.722

2006

	Mean		t-test	V(T)/
Variable	Treated Control	%bias	t p>t	V(C)
Living in a rural area	.73345 .7464	-2.8	-1.10 0.271	.
Reads&writes (for a father)	.15288 .15863	-1.4	-0.59 0.554	.
Less than intermediate (for a father)	.05647 .05108	1.7	0.89 0.373	.
Intermediate education level (for a father)	.00755 .01043	-1.7	-1.14 0.256	.
Above intermediate education level (for a father)	.00072 .00108	-0.6	-0.45 0.655	.
University education level (for a father)	.00288 .00288	0.0	0.00 1.000	.
Reads&writes	.11655 .12086	-1.3	-0.50 0.619	.

Less than intermediate education level	.19209 .21403	-5.2	-2.03 0.042	.
Intermediate education level	.18813 .18921	-0.3	-0.10 0.918	.
Above intermediate education level	.01439 .01295	1.0	0.46 0.644	.
University education level	.04317 .04281	0.2	0.07 0.947	.
Post graduate education level	.0018 .00216	-0.8	-0.30 0.763	.
Alexandria	.01367 .01259	0.5	0.35 0.724	.
Port Said	.0036 .00216	1.7	1.00 0.317	.
Saez	.00468 .00324	1.5	0.85 0.393	.
Damietta	.06583 .06511	0.3	0.11 0.914	.
Dakahlia	.04532 .03849	3.3	1.27 0.204	.
Sharkia	.05144 .05683	-2.5	-0.89 0.374	.
Kalyoubia	.04209 .04029	0.8	0.34 0.736	.
Kafr-Elsheikh	.09065 .08849	0.9	0.28 0.778	.
Gharbia	.0536 .05504	-0.7	-0.24 0.813	.
Menoufia	.00612 .00396	1.9	1.14 0.256	.
Behera	.06942 .07734	-3.3	-1.13 0.258	.
Ismailia	.04209 .03777	1.9	0.82 0.411	.
Giza	.04353 .04137	1.1	0.40 0.690	.
Beni-Suef	.08453 .08705	-1.0	-0.34 0.738	.
Fayoum	.07338 .08345	-4.3	-1.40 0.163	.
Menia	.05899 .05468	2.0	0.69 0.487	.
Asyout	.07158 .06367	3.1	1.17 0.240	.
Suhag	.04676 .04784	-0.5	-0.19 0.850	.

Variable		%bias	t-test
Qena	.06511 .05863	2.6	1.00 0.316	.
Aswan	.0464 .05863	-5.8	-2.04 0.041	.
Luxur	.000360	1.0	1.00 0.317	.
Female	.52482 .51835	1.3	0.48 0.629	.
Household Income	412.18 427.72	-1.4	-0.74 0.459	0.97
Household Wealth	-.44189 - .43651	-0.7	-0.25 0.804	0.95

2012

	Mean		t-test
Variable	Treated Control	%bias	t p>t
Living in a rural area	.71597 .74023	-5.2	-2.10 0.036
Reads&writes (for a father)	.1004 .10916	-2.4	-1.10 0.271
Less than intermediate (for a father)	.03706 .03841	-0.4	-0.27 0.785
Intermediate education level (for a father)	.0155 .01381	0.9	0.54 0.589
Above intermediate education level (for a father)	.00067 .00067	0.0	-0.00 1.000
University education level (for a father)	.00101 .00034	0.7	1.00 0.317
Reads&writes	.04919 .04852	0.3	0.12 0.904
Less than intermediate education level	.19744 .20822	-2.5	-1.03 0.302
Intermediate education level	.24057 .25101	-2.3	-0.93 0.350
Above intermediate education level	.01247 .01516	-1.8	-0.89 0.374
University education level	.05391 .0529	0.4	0.17 0.863

Post graduate education level	.00202 .00034	3.2	1.89 0.059
Alexandria	.01415 .01348	0.3	0.22 0.824
Port Said	.00404 .00202	2.4	1.42 0.157
Saez	.00404 .00472	-0.7	-0.39 0.694
Damietta	.05829 .05728	0.5	0.17 0.867
Dakahlia	.04582 .04346	1.2	0.44 0.660
Sharkia	.0465 .05627	-4.6	-1.71 0.088
Kalyoubia	.03841 .04043	-0.9	-0.40 0.689
Kafr-Elsheikh	.09063 .08996	0.3	0.09 0.928
Gharbia	.04919 .04852	0.3	0.12 0.904
Menoufia	.00708 .00708	0.0	-0.00 1.000
Behera	.06907 .06233	2.8	1.05 0.295
Ismailia	.03605 .03437	0.8	0.35 0.725
Giza	.03706 .04111	-2.1	-0.80 0.422
Beni-Suef	.08625 .08861	-0.9	-0.32 0.748
Fayoum	.07244 .07143	0.4	0.15 0.880
Menia	.06233 .06334	-0.5	-0.16 0.873
Asyout	.07884 .07513	1.5	0.54 0.592
Suhag	.05559 .06233	-3.1	-1.10 0.271
Qena	.06435 .06031	1.6	0.64 0.519
Aswan	.05627 .05189	2.0	0.75 0.456
Luxur	.00067 .00067	0.0	0.00 1.000
Female	.51988 .51819	0.3	0.13 0.897
Household Income	887.02 921.27	-1.3	-0.50 0.617

Variable		-.43018 - .37851	-6.6	-2.65 0.008
Household Wealth		-.43018 - .37851	-6.6	-2.65 0.008

2018

	Mean		t-test
Variable	Treated Control	%bias	t p>t
Living in a rural area	.72051 .72704	-1.4	-0.54 0.588
Reads&writes (for a father)	.08457 .09111	-1.9	-0.86 0.392
Less than intermediate (for a father)	.03303 .0323	0.3	0.15 0.880
Intermediate education level (for a father)	.01996 .01597	1.7	1.12 0.265
Above intermediate education level (for a father)	.00218 .00254	-0.5	-0.28 0.781
University education level (for a father)	.00218 .0029	-0.5	-0.54 0.593
Reads&writes	.07187 .06316	3.5	1.29 0.198
Less than intermediate education level	.12341 .13466	-3.3	-1.25 0.213
Intermediate education level	.27804 .27332	1.0	0.39 0.695
Above intermediate education level	.01633 .01924	-1.8	-0.82 0.415
University education level	.05517 .05517	0.0	-0.00 1.000
Post graduate education level	.00327 .00327	0.0	0.00 1.000
Alexandria	.01162 .0098	0.9	0.65 0.513
Port Said	.00363 .00436	-0.9	-0.43 0.669
Saez	.00472 .00363	1.1	0.63 0.531
Damietta	.06062 .05771	1.4	0.46 0.648

Dakahlia	.03702 .03848	-0.7	-0.28 0.777
Sharkia	.05082 .05626	-2.6	-0.90 0.369
Kalyoubia	.03884 .04211	-1.6	-0.62 0.538
Kafr-Elsheikh	.08893 .08857	0.1	0.05 0.962
Gharbia	.04537 .04283	1.2	0.46 0.646
Menoufia	.00508 .00399	1.0	0.60 0.548
Behera	.08494 .0882	-1.3	-0.43 0.666
Ismailia	.0363 .03993	-1.6	-0.70 0.482
Giza	.04283 .05263	-5.1	-1.71 0.088
Beni-Suef	.08312 .08603	-1.2	-0.39 0.699
Fayoum	.07877 .0726	2.7	0.87 0.387
Menia	.06534 .0686	-1.4	-0.48 0.628
Asyout	.08203 .07731	1.9	0.65 0.518
Suhag	.05045 .05299	-1.2	-0.43 0.670
Qena	.05372 .05154	0.9	0.36 0.717
Aswan	.05263 .04392	4.0	1.51 0.132
Luxur	.00109 .00073	0.7	0.45 0.655
Female	.53285 .52922	0.7	0.27 0.787
Household Income	1888.1 1959.3	-1.0	-0.40 0.691
Household Wealth	-.36785 - .35466	-1.6	-0.72 0.470

VI.   Becoming an Agricultural Worker for the offsprings whose father is an agricultural
       father relative to a white-collar father

1998

	Mean	%bias	t-test
Variable	Treated Control		t p>t
Living in a rural area	.7038 .70503	-0.3	-0.09 0.925
Reads&writes (for a father)	.17987 .19389	-3.4	-1.25 0.210
Less than intermediate (for a father)	.04208 .04084	0.5	0.22 0.829
Intermediate education level (for a father)	.00866 .00701	0.5	0.65 0.515
Above intermediate education level (for a father)	.00041 0	0.3	1.00 0.317
University education level (for a father)	.00165 .00165	0.0	-0.00 1.000
Reads&writes	.14645 .2203	-20.5	-6.67 0.000
Less than intermediate education level	.19719 .20338	-1.4	-0.54 0.590
Intermediate education level	.13861 .11427	6.2	2.55 0.011
Above intermediate education level	.02145 .01733	2.3	1.04 0.298
University education level	.02847 .03053	-0.8	-0.42 0.671
Post graduate education level	.00041 0	0.8	1.00 0.317
Alexandria	.01898 .01238	3.3	1.85 0.064
Port Said	.00413 .00578	-1.8	-0.82 0.413
Saez	.0033 .00206	1.2	0.83 0.405
Damietta	.06064 .0755	-7.0	-2.05 0.040
Dakahlia	.04002 .03507	2.3	0.91 0.365
Sharkia	.05116 .03507	7.5	2.76 0.006
Kalyoubia	.04002 .05033	-5.3	-1.73 0.084

Variable	Mean Treated Control	%bias	t-test t p>t
Kafr-Elsheikh	.09158 .08663	2.0	0.60 0.545
Gharbia	.05363 .06147	-3.5	-1.17 0.241
Menoufia	.00784 .0099	-1.8	-0.77 0.444
Behera	.07178 .04002	12.6	4.82 0.000
Ismailia	.04455 .05817	-6.3	-2.15 0.032
Giza	.04827 .10025	-27.1	-6.93 0.000
Beni-Suef	.08045 .0854	-2.0	-0.62 0.532
Fayoum	.07219 .05239	8.7	2.85 0.004
Menia	.06147 .07137	-4.2	-1.38 0.166
Asyout	.06642 .04414	9.3	3.40 0.001
Suhag	.04703 .04868	-0.8	-0.27 0.788
Qena	.05817 .06436	-2.9	-0.90 0.369
Aswan	.05281 .04167	4.9	1.83 0.068
Luxur	.000410	0.6	1.00 0.317
Female	.53878 .52682	2.4	0.83 0.404
Household Income	199.67 235.29	-6.5	-2.90 0.004
Household Wealth	-.47616 - .45761	-2.3	-0.80 0.426

2006

Variable	Mean Treated Control	%bias	t-test t p>t
Living in a rural area	.73345 .73417	-0.2	-0.06 0.952
Reads&writes (for a father)	.15288 .14892	1.1	0.41 0.680
Less than intermediate (for a father)	.05647 .0464	3.4	1.70 0.089

Intermediate education level (for a father)	.00755 .00612	0.4	0.65 0.515
Above intermediate education level (for a father)	.00072 .00144	-0.4	-0.82 0.414
University education level (for a father)	.00288 .0054	-1.0	-1.46 0.144
Reads&writes	.11655 .13669	-5.9	-2.26 0.024
Less than intermediate education level	.19209 .19964	-1.8	-0.71 0.478
Intermediate education level	.18813 .17374	3.4	1.39 0.164
Above intermediate education level	.01439 .01835	-2.4	-1.16 0.245
University education level	.04317 .03993	1.1	0.60 0.545
Post graduate education level	.0018 .00108	1.2	0.71 0.479
Alexandria	.01367 .01655	-1.5	-0.88 0.379
Port Said	.0036 .0018	2.1	1.29 0.196
Saez	.00468 .00468	0.0	-0.00 1.000
Damietta	.06583 .08237	-7.9	-2.36 0.019
Dakahlia	.04532 .04712	-0.9	-0.32 0.750
Sharkia	.05144 .04424	3.3	1.26 0.209
Kalyoubia	.04209 .0518	-5.0	-1.71 0.087
Kafr-Elsheikh	.09065 .11475	-9.5	-2.96 0.003
Gharbia	.0536 .07374	-9.2	-3.08 0.002
Menoufia	.00612 .00863	-2.3	-1.10 0.273
Behera	.06942 .05036	7.6	3.00 0.003
Ismailia	.04209 .02374	8.3	3.84 0.000

Giza	.04353 .03633	3.8	1.37 0.171
Beni-Suef	.08453 .04496	16.3	6.01 0.000
Fayoum	.07338 .08058	-3.2	-1.01 0.314
Menia	.05899 .05216	2.9	1.11 0.266
Asyout	.07158 .05899	5.3	1.90 0.057
Suhag	.04676 .07194	-11.3	-3.98 0.000
Qena	.06511 .05396	5.0	1.76 0.079
Aswan	.0464 .05971	-5.6	-2.21 0.027
Luxur	.00036 .00108	-1.1	-1.00 0.317
Female	.52482 .56367	-7.8	-2.91 0.004
Household Income	412.18 449.28	-3.9	-1.44 0.150
Household Wealth	-.44189 - .41315	-3.5	-1.31 0.192

2012

	Mean		t-test
Variable	Treated Control	%bias	t p>t
Living in a rural area	.71597 .69677	4.2	1.62 0.104
Reads&writes (for a father)	.1004 .11354	-4.1	-1.64 0.102
Less than intermediate (for a father)	.03706 .02864	3.0	1.82 0.069
Intermediate education level (for a father)	.0155 .01516	0.1	0.11 0.916
Above intermediate education level (for a father)	.00067 .00168	-0.6	-1.13 0.257
University education level (for a father)	.00101 .00135	-0.1	-0.38 0.705

Reads&writes	.04919 .06031	-5.8	-1.88 0.060
Less than intermediate education level	.19744 .21395	-3.9	-1.57 0.116
Intermediate education level	.24057 .21597	5.5	2.26 0.024
Above intermediate education level	.01247 .01247	0.0	0.00 1.000
University education level	.05391 .04279	3.3	2.00 0.046
Post graduate education level	.00202 .00202	0.0	-0.00 1.000
Alexandria	.01415 .01617	-1.0	-0.64 0.524
Port Said	.00404 .00674	-3.3	-1.42 0.156
Saez	.00404 .00303	0.9	0.66 0.512
Damietta	.05829 .06772	-4.7	-1.50 0.135
Dakahlia	.04582 .03066	7.1	3.05 0.002
Sharkia	.0465 .04683	-0.2	-0.06 0.951
Kalyoubia	.03841 .03369	2.5	0.97 0.330
Kafr-Elsheikh	.09063 .06199	11.2	4.16 0.000
Gharbia	.04919 .05593	-3.2	-1.16 0.245
Menoufia	.00708 .01247	-4.7	-2.11 0.035
Behera	.06907 .03942	12.1	5.05 0.000
Ismailia	.03605 .05559	-8.8	-3.60 0.000
Giza	.03706 .04178	-2.6	-0.93 0.350
Beni-Suef	.08625 .07008	6.7	2.32 0.020
Fayoum	.07244 .08693	-6.4	-2.06 0.039
Menia	.06233 .05728	2.1	0.82 0.412
Asyout	.07884 .09872	-8.1	-2.69 0.007

	Mean	%bias	t-test	V(T)/
Suhag	.05559 .03807	7.7	3.20 0.001	
Qena	.06435 .07446	-4.4	-1.53 0.126	
Aswan	.05627 .07581	-8.2	-3.03 0.002	
Luxur	.00067 .00067	0.0	0.00 1.000	
Female	.51988 .51449	1.1	0.42 0.678	
Household Income	887.02 896.83	-0.3	-0.14 0.890	
Household Wealth	-.43018 - .49788	8.0	3.33 0.001	

2018

Variable	Mean Treated Control	%bias	t-test t p>t	V(T)/ V(C)
Living in a rural area	.72051 .74483	-5.3	-2.04 0.041	.
Reads&writes (for a father)	.08457 .0824	0.7	0.29 0.770	.
Less than intermediate (for a father)	.03303 .03412	-0.4	-0.22 0.823	.
Intermediate education level (for a father)	.01996 .01815	0.6	0.49 0.622	.
Above intermediate education level (for a father)	.00218 .00145	0.5	0.63 0.527	.
University education level (for a father)	.00218 .0029	-0.3	-0.54 0.593	.
Reads&writes	.07187 .06897	1.3	0.42 0.674	.
Less than intermediate education level	.12341 .13575	-4.0	-1.36 0.173	.
Intermediate education level	.27804 .29038	-2.6	-1.02 0.310	.
Above intermediate education level	.01633 .01851	-1.3	-0.62 0.537	.

University education level	.05517 .04574	2.6	1.60 0.110	.
Post graduate education level	.00327 .00218	1.0	0.78 0.438	.
Alexandria	.01162 .00907	1.3	0.93 0.351	.
Port Said	.00363 .00327	0.4	0.23 0.818	.
Saez	.00472 .00544	-0.7	-0.38 0.705	.
Damietta	.06062 .06098	-0.2	-0.06 0.955	.
Dakahlia	.03702 .05299	-7.9	-2.86 0.004	.
Sharkia	.05082 .04356	3.3	1.27 0.204	.
Kalyoubia	.03884 .03303	2.9	1.16 0.247	.
Kafr-Elsheikh	.08893 .08784	0.4	0.14 0.887	.
Gharbia	.04537 .0392	3.0	1.14 0.255	.
Menoufia	.00508 .00363	1.3	0.82 0.413	.
Behera	.08494 .08857	-1.5	-0.48 0.632	.
Ismailia	.0363 .0461	-4.5	-1.83 0.067	.
Giza	.04283 .05372	-5.4	-1.89 0.059	.
Beni-Suef	.08312 .05989	9.5	3.35 0.001	.
Fayoum	.07877 .07151	3.2	1.02 0.307	.
Menia	.06534 .07768	-5.2	-1.78 0.075	.
Asyout	.08203 .08421	-0.9	-0.29 0.770	.
Suhag	.05045 .06388	-5.9	-2.15 0.032	.
Qena	.05372 .04138	5.9	2.15 0.031	.
Aswan	.05263 .05118	0.6	0.24 0.808	.
Luxur	.00109 .00073	0.8	0.45 0.655	.
Female	.53285 .49583	7.4	2.75 0.006	.

Household Income	1888.1 1906.6	-0.3	-0.10 0.924	1.11*
Household Wealth	-.36785 - .36944	0.2	0.09 0.929	1.07

Table 1. Indices of intergenerational occupational mobility

	Shorrock	Bartholomew	Number of observations
1998	0.86	0.27	3544
2006	0.85	0.27	4615
2012	0.84	0.29	4623
2018	0.86	0.26	4074

Source: our elaboration on the ERF Surveys.

Table 2. Transition Matrices Estimations: Occupation Based Estimations (1998)

	Father's Occupation									
Child's Occupation	Managers	Professionals	Technicians and associate professionals	Clerical support workers	Service and sales workers	Skilled agricultural, forestry and fish	Craft and related trades workers	Plant and machine operators, and assemblers	Elementary occupations	N
Managers	**18.13**	10.00	16.07	11.90	6.32	3.97	7.48	5.85	6.80	280
Professionals	17.95	**40.00**	19.64	23.81	13.05	6.42	9.98	12.87	3.88	433
Technicians and associate professionals	4.40	6.67	**8.93**	8.33	4.63	2.44	5.22	6.43	1.94	146
Clerical support workers	8.61	7.33	7.14	**13.10**	8.63	3.42	9.30	14.04	0.97	240
Service and sales workers	13.55	8.00	5.36	8.93	**10.11**	8.09	9.98	5.26	13.59	335
Skilled agricultural, forestry and fish	20.15	23.33	33.93	22.62	36.00	**61.58**	23.58	24.56	27.18	1,430
Craft and related trades workers	12.27	4.00	7.14	9.52	13.89	8.23	**28.34**	17.54	18.45	451
Plant and machine operators, and assemblers	3.48	0.67	1.79	1.19	4.84	3.70	2.95	**12.28**	5.83	139
Elementary occupations	1.47	0.00	0.00	0.60	2.53	2.16	3.17	1.17	**21.36**	90
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	3,544

Note: We use the ISCO Classification. See the text for the description of occupational categories. The figures represent column percentages.

Table 3. Transition Matrices Estimations: Occupation Based Estimations, 2006

Child's Occupation	Father's Occupation									
	Managers	Professionals	Technicians and associate professionals	Clerical support workers	Service and sales workers	Skilled agricultural, forestry and fish	Craft and related trades workers	Plant and machine operators, and assemblers	Elementary occupations	N
Managers	**24.80**	8.92	8.73	5.26	6.82	3.94	8.30	5.31	3.45	382
Professionals	18.10	**40.76**	20.96	25.00	8.53	6.01	7.04	14.16	4.14	505
Technicians and associate professionals	9.67	12.74	**16.16**	14.47	10.39	5.03	7.04	10.03	2.76	366
Clerical support workers	3.43	3.82	5.68	**18.42**	4.19	1.53	6.14	8.26	1.38	174
Service and sales workers	12.01	11.46	10.48	17.11	**18.29**	9.02	12.64	10.03	15.86	542
Skilled agricultural, forestry and fish	14.20	11.46	15.72	10.53	26.36	**58.34**	15.70	18.58	30.34	1,584
Craft and related trades workers	11.23	8.28	14.41	5.26	15.97	10.11	**33.03**	15.63	24.14	681
Plant and machine operators, and assemblers	4.52	2.55	4.80	3.95	7.13	4.10	7.76	**15.63**	8.97	277
Elementary occupations	2.03	0.00	3.06	0.00	2.33	1.91	2.35	2.36	**8.97**	104
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	4,615

Table 4. Transition Matrices Estimations: Occupation Based Estimations, 2012

Child's Occupation	Father's Occupation									N
	Managers	Professionals	Technicians and associate professionals	Clerical support workers	Service and sales workers	Skilled agricultural, forestry and fish	Craft and related trades workers	Plant and machine operators, and assemblers	Elementary occupations	
Managers	**24.13**	10.87	9.93	8.70	6.91	5.66	5.61	6.64	6.63	424
Professionals	21.72	**43.91**	24.82	29.35	9.87	7.61	9.15	13.50	10.50	653
Technicians and associate professionals	10.11	9.13	**21.63**	10.87	7.89	5.47	9.56	9.84	8.10	403
Clerical support workers	3.32	3.91	3.90	**6.52**	1.64	2.01	2.70	2.75	3.31	128
Service and sales workers	13.12	10.00	12.06	8.70	**22.37**	8.11	12.27	8.47	12.34	512
Skilled agricultural, forestry and fish	7.99	10.87	6.03	17.39	16.78	**46.01**	9.77	12.36	16.94	1,087
Craft and related trades workers	9.50	6.52	10.28	5.43	17.76	13.26	**33.47**	17.39	19.89	722
Plant and machine operators, and assemblers	6.79	2.61	6.74	8.70	9.87	5.85	9.98	**21.97**	11.05	405
Elementary occupations	3.32	2.17	4.61	4.35	6.91	6.03	7.48	7.09	**11.23**	289
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	4,623

Table 5. Transition Matrices Estimations: Occupation Based Estimations, 2018

Child's Occupation	Father's Occupation									
	Managers	Professionals	Technicians and associate professionals	Clerical support workers	Service and sales workers	Skilled agricultural, forestry and fish	Craft and related trades workers	Plant and machine operators, and assemblers	Elementary occupations	N
Managers	**10.96**	7.88	4.86	8.12	5.84	2.92	4.89	6.17	1.15	208
Professionals	25.57	**42.86**	25.00	25.46	12.35	6.46	8.41	12.01	8.05	538
Technicians and associate professionals	5.02	8.37	**13.89**	5.54	5.05	2.85	3.72	6.17	3.45	190
Clerical support workers	10.05	8.37	11.81	**12.55**	7.30	3.68	7.44	8.44	4.60	276
Service and sales workers	16.89	15.76	14.58	14.02	**26.15**	14.44	18.00	17.86	25.29	738
Skilled agricultural, forestry and fish	13.24	8.87	10.42	14.39	18.63	**49.03**	15.07	12.34	17.24	1,103
Craft and related trades workers	10.50	5.91	13.89	12.92	12.57	13.19	**30.53**	13.64	16.09	604
Plant and machine operators, and assemblers	5.48	0.99	4.86	6.27	9.54	4.86	9.00	**20.78**	9.20	311
Elementary occupations	2.28	0.99	0.69	0.74	2.58	2.57	2.94	2.60	**14.94**	106
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	4,074

Table 6. Transition Matrix Estimations, Occupational Classifications,

Panel A. In 1998

Child's occupation	Father's occupation			
	White collar	Blue collar	Agriculture	N
White collar	**46.10**	34.30	24.12	1,099
Blue collar	22.56	**44.49**	14.12	1,067
Agriculture	31.33	21.20	**61.74**	1,430
	100	100	100	3,596

Panel B. In 2006

Child's occupation	Father's occupation			
	White collar	Blue collar	Agriculture	N
White collar	**51.31**	34.76	22.98	1,190
Blue collar	20.01	**44.08**	9.66	920
Agriculture	28.68	21.16	**67.36**	1,434
	100	100	100	3,544

Panel C. In 2012

Child's occupation	Father's occupation			
	White collar	Blue collar	Agriculture	N
White collar	**52.54**	31.59	22.45	1,765
Blue collar	20.02	**47.89**	10.21	1,267
Agriculture	27.44	20.52	**67.34**	1,591
	100	100	100	4,623

Panel D. In 2018

Child's occupation	Father's occupation			
	White collar	Blue collar	Agriculture	N
White collar	**56.17**	42.33	26.84	1,797
Blue collar	15.12	**38.78**	9.16	837
Agriculture	28.71	18.89	**64.01**	1,440
	100	100	100	4,074

Table 7. PSM Estimates of probability of becoming a blue-collar worker for children of fathers in agricultural jobs versus children of fathers in blue collar jobs

	Outcome	Unmatched Sample (which is based on the First stage probit)	Observations per group and total
1998	-0.06*** (0.01)	-0.04 (0.009)	T=2424 C=2997 N=5421
2006	-0.05*** (0.01)	-0.06 (0.009)	T=2780 C=3868 N=6648
2012	-0.09*** (0.01)	-0.09 (0.001)	T=2968 C=4217 N=7185
2018	-0.09*** (0.01)	-0.08 (0.009)	T=2755 C=5443 N=8198

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses. Treatment group: a father with an agricultural occupation. Control groups are a father with blue collar occupations in the first model.

Table 8. PSM Estimates of probability of becoming a blue-collar worker for children of fathers in agricultural jobs versus children of fathers in white collar jobs

	Outcome	Unmatched Sample (which is based on the First stage probit)	Observations per group and total
1998	-0.07*** (0.02)	0.01 (0.009)	T=2424 C=2416 N=4840
2006	-0.05*** (0.03)	0.04 (0.009)	T=2780 C=3016 N=5796
2012	-0.05*** (0.02)	0.02 (0.009)	T=2968 C=3389 N=6357
2018	-0.04*** (0.02)	-0.03 (0.01)	T=2755 C=3354 N=6109

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses

Table 9. PSM Estimates of probability of becoming a white-collar worker for children of fathers in agricultural jobs versus children of fathers in blue collar jobs

Year	Outcome	Unmatched Sample (which is based on the First stage probit)	Observations per group and total
1998	0.01*** (0.01)	-0.03 (0.007)	T=2424 C=2997 N=5421
2006	0.03*** (0.01)	-0.02 (0.008)	T=2780 C=3868 N=6648
2012	0.008*** (0.01)	-0.02 (0.007)	T=2968 C=4217 N=7185
2018	0.001*** (0.01)	-0.07 (0.007)	T=2755 C=5443 N=8198

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses.

Table 10. PSM Estimates of probability of becoming a white-collar worker for children of fathers in agricultural jobs versus children of fathers in white collar jobs

	Outcome	Unmatched Sample (which is based on the First stage probit)	Observations per group and total
1998	0.01*** (0.01)	-0.11 (0.01)	T=2424 C=2416 N=4840
2006	0.01*** (0.01)	-0.10 (0.009)	T=2780 C=3016 N=5796
2012	-0.01*** (0.01)	-0.12 (0.009)	T=2968 C=3389 N=6357
2018	0.002*** (0.01)	-0.15 (0.009)	T=2755 C=3354 N=6109

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses.

Table 11. PSM Estimates of probability of becoming an agricultural worker for children of fathers in agricultural jobs versus children of fathers in blue collar jobs

	Outcome	Unmatched Sample (which is based on the First stage probit)	Observations per group and total
1998	0.04*** (0.01)	0.07 (0.01)	T=2424 C=2997 N=5421
2006	0.02*** (0.02)	0.08 (0.01)	T=2780 C=3868 N=6648
2012	0.08*** (0.02)	0.11 (0.01)	T=2968 C=4217 N=7185
2018	0.08*** (0.02)	0.15 (0.01)	T=2755 C=5443 N=8198

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses.

Table 12.PSM Estimates of probability of becoming an agricultural worker for children of fathers in agricultural jobs versus children of fathers in white collar jobs

	Outcome	Unmatched Sample (which is based on the First stage probit)	Observations per group and total
1998	0.05*** (0.02)	0.09 (0.01)	T=2424 C=2416 N=4840
2006	0.04*** (0.03)	0.05 (0.01)	T=2780 C=3016 N=5796
2012	0.07*** (0.02)	0.10 (0.01)	T=2968 C=3389 N=6357
2018	0.04*** (0.03)	0.18 (0.01)	T=2755 C=3354 N=6109

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses.

Table 13. MM estimates of the probability of becoming a blue-collar worker for the offspring of agricultural workers versus the offspring of blue-collar workers

	Outcome	Observations per group and total
1998	-0.01*** (0.01)	T=2424 C=2997 N=5421
2006	-0.03*** (0.01)	T=2780 C=3868 N=6648
2012	-0.10*** (0.01)	T=2968 C=4217 N=7185
2018	-0.08*** (0.01)	T=2755 C=5443 N=8198

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses.

Table 14. MM estimates of the probability of becoming a blue-collar worker for the offspring of agricultural workers versus the offspring of white-collar workers

	Outcome	Observations per group and total
1998	-0.03*** (0.01)	T=2424 C=2416 N=4840
2006	-0.02*** (0.01)	T=2780 C=3016 N=5796
2012	-0.02*** (0.01)	T=2968 C=3389 N=6357
2018	-0.06*** (0.02)	T=2755 C=3354 N=6109

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses

Table 15. MM estimates of the probability of becoming a white-collar worker for the offspring of agricultural workers versus the offspring of blue-collar workers

Year	Outcome	Observations per group and total
1998	0.01*** (0.008)	T=2424 C=2416 N=4840
2006	0.03*** (0.01)	T=2780 C=3016 N=5796
2012	0.02*** (0.008)	T=2968 C=3389 N=6357
2018	0.01*** (0.009)	T=2755 C=3354 N=6109

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses.

Table 16. MM estimates of the probability of becoming a white-collar worker for the offspring of agricultural workers versus the offspring of white-collar workers

	Outcome	Observations per group and total
1998	0.002*** (0.01)	T=2424 C=2416 N=4840
2006	-0.01*** (0.01)	T=2780 C=3016 N=5796
2012	-0.02*** (0.01)	T=2968 C=3389 N=6357
2018	0.001*** (0.01)	T=2755 C=3354 N=6109

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses.

Table 17. MM estimates of the probability of becoming an agricultural worker for the offspring of agricultural workers versus the offspring of blue-collar workers

	Outcome	Observations per group and total
1998	0.008*** (0.01)	T=2424 C=2997 N=5421
2006	0.003*** (0.01)	T=2780 C=3868 N=6648
2012	0.07*** (0.01)	T=2968 C=4217 N=7185
2018	0.07*** (0.01)	T=2755 C=5443 N=8198

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses.

Table 18. MM estimates of the probability of becoming an agricultural worker for the offspring of agricultural workers versus the offspring of a white-collar worker

	Outcome	Observations per group and total
1998	0.03*** (0.01)	T=2424 C=2416 N=4840
2006	0.03*** (0.01)	T=2780 C=3016 N=5796
2012	0.05*** (0.02)	T=2968 C=3389 N=6357
2018	0.06*** (0.03)	T=2755 C=3354 N=6109

Source: our elaboration on the ERF Surveys. Standard errors are given in the parentheses.