halshs-00693988, version 1 - 3 May 2012

CENTRE D'ÉTUDES
ET DE RECHERCHES
SUR LE DÉVELOPPEMENT
INTERNATIONAL

Document de travail de la série

Etudes et Documents

E 2012.17

Return Migration and the Survival of Entrepreneurial Activities in Egypt

Francesca MARCHETTA

Mai 2012

CERDI
65 BD. F. MITTERRAND
63000 CLERMONT FERRAND - FRANCE
TÉL. 04 73 17 74 00
FAX 04 73 17 74 28
www.cerdi.org

L' auteur

Francesca Marchetta
Clermont Université, Université d'Auvergne, CNRS, UMR 6587, Centre d'Etudes et de Recherches sur le Développement International (CERDI), F-63009 Clermont-Ferrand, France
Email : francesca.marchetta@u-clermont1.fr

La série des *Etudes et Documents* du CERDI est consultable sur le site :
http://www.cerdi.org/ed

Directeur de la publication : Patrick Plane

Directeur de la rédaction : Catherine Araujo Bonjean

Responsable d'édition : Annie Cohade

ISSN : 2114-7957

Avertissement :

Les commentaires et analyses développés n'engagent que leurs auteurs qui restent seuls responsables des erreurs et insuffisances.

halshs-00693988, version 1 - 3 May 2012

Abstract

The literature shows that temporary international migrants have a high propensity to opt for an entrepreneurial activity upon return, but the prospects of survival of these activities have not been explored. We address this research question using longitudinal Egyptian data. We find that entrepreneurs' migration experience significantly improves the chances of survival of their entrepreneurial activities, adopting econometric techniques that control for return migrants' non-random selection in unobservables. We resort to a bivariate probit model and a two-stage residual inclusion estimator, using the rate of population growth and the real oil price as alternative instruments for migration.

Key Words: return migration, entrepreneurial activities, panel data, endogeneity, North Africa, Egypt.

Acknowledgements

The author is grateful to Hassan Aly, Simone Bertoli, Philippe Fargues, Leonardo Grilli, Patrick Plane, Carla Rampichini, to the editor and to four anonymous referees for their valuable comments and suggestions, and to the participants to the WOCMES 2010, to the 17th ERF Annual Conference, to the Fourth World Bank-Agence Française de Développement Migration and Development Conference, and to seminar presentation at the RSCAS, the American University in Cairo and CERDI; the author also gratefully acknowledges the Jean Monnet Fellowship at the Robert Schuman Center for Advanced Studies at the European University Institute that made this research possible, and the financial support received from the Economic Research Forum (ERF); the usual disclaimers apply.

halshs-00693988, version 1 - 3 May 2012

halshs-00693988, version 1 - 3 May 2012

1. INTRODUCTION

Several recent papers have dealt with the relationship between migration and entrepreneurship, analyzing the occupational choice of returnees and providing evidence of their high propensity to engage in entrepreneurial activities.[1] Dustmann and Kirchkamp (2002) show that more than half of the migrants are economically active after return, and that most of them opt for an entrepreneurial activity. Ilahi (1999) shows that return migrants exhibit a high tendency for self- over wage-employment in Pakistan, with accumulated foreign savings driving this choice. Gubert and Nordman (2011) show that almost 30 per cent of a sample of returnees to Algeria, Tunisia and Morocco become employers or independent workers, with their occupational choice depending on the employment status and level of integration experienced in the countries of destination.

McCormick and Wahba (2001) study the occupational choice of Egyptian return migrants, with a particular focus on the characteristics of the returnees who decide to invest, and provide evidence that the duration of the migration experience and the amount of foreign savings increase the probability of becoming an entrepreneur. A similar conclusion is reached by Mesnard (2004) for Tunisia.

More recently, the hypothesis that return migration can increase the probability of opting for entrepreneurial activities has been tested comparing the occupational choices of returnees and stayers. Kilic et al. (2009) find that returnees to Albania are, *ceteris paribus*, more likely than stayers to become entrepreneurs. Wahba and Zenou (2009) find that Egyptian returnees have a higher propensity to set up an entrepreneurial activity, the loss of social capital due to the period spent abroad notwithstanding, thanks to the experiences and savings they accumulated abroad. The analysis by Démurger and Xu (2011) on the self-employment decision in rural China confirms that return migrants are more likely to be self-employed than non migrants.

A recent contribution by Piracha and Vadean (2010) goes one step further, analyzing the contribution that return migrants give to employment creation and growth in Albania. They differentiate between two types of self-employers: individual working as own account workers and owners of enterprises with paid employees, with the latter group being defined as entrepreneurs. They conclude that, without the migration experience, returnees would have been

[1] Following Nadim and Seymour (2008), we define the "entrepreneurial activity" as "the enterprising human action in pursuit of the generation of value, through the creation or expansion of economic activity", which can be related to different enterprises over time.

more likely to be own account workers and less likely to be entrepreneurs, thus giving a lower contribution to employment creation.

This paper goes in the same direction as Piracha and Vadean (2010), analyzing a necessary precondition for a lasting positive effect of the entrepreneurial activities run by returnees, namely their survival over time. The private sector in developing countries largely consists of entrepreneurs engaged in micro and small activities, which are exposed to specific risks that threaten their development and survival over time. The single most relevant constraint is represented by the lack of access to credit (Beck and Demirguc-Kunt, 2006), which is mainly due to the inability to provide adequate collateral, to the widespread informal status of the enterprises, and to the difficulties connected to a transaction with a formal financial institution. This, in turn, implies that the turnover in the micro and small enterprises, MSEs henceforth, sector is very high: every year, a large number of new enterprises enters the market, a few enterprises evolve rapidly, and many others close down. Thus, in order to assess whether the creation of a new entrepreneurial activity by a returnee can actually produce a substantial contribution to development, it is crucial to understand which factors are conducive to its survival over time.

A plausible hypothesis is that the migration experience of the entrepreneur plays a role in explaining the chances of survival of an entrepreneurial activity. The acquisition of skills in the host countries could improve returnees' entrepreneurial abilities, and their accumulated savings could help not only to cover the start-up costs but also to loosen the constraint determined by a limited access to credit. This entails that the engagement of return migrants in entrepreneurial activities could be more stable than the one of stayers. Still, while abroad, migrants lose part of their social capital, which is generally a key input in the management of a small economic activity; moreover, they can enjoy better opportunities for waged employment (Wahba, 2007), and this improved outside option could reduce the incentives to struggle for the survival of their enterprise.

This paper focuses on a research question that, to the best of our knowledge, has not yet been addressed in the economic literature. Do returnees and stayers differ with respect to their chances of survival as entrepreneurs? Are returnees' entrepreneurial activities more likely to persist over time?

We address this question with respect to Egypt, both because of data availability and because of the relevance of return migration in this specific context. We draw our data from the Egypt Labour Market Panel Survey, ELMPS henceforth, collected by the Economic Research Forum. The ELMPS provides information on Egyptian households, but it also includes a specific

halshs-00693988, version 1 - 3 May 2012

module on the economic activities run by household members. It includes two waves, conducted in 1998 and 2006 respectively, that give this dataset a longitudinal dimension that is crucial for the analysis. While the ELMPS allows us to follow the individuals over time, it does not allow us to track MSEs, as it does not provide information on an enterprise which is sold to a non-household member between the two waves of the survey.[2]

Endogeneity represents a key analytical challenge: return migrants can be positively or negatively selected with respect to unobservables that influence the chances of survival of their entrepreneurial activities. If, for instance, returnees are more talented than stayers, this would bias upward the estimated effect of return migration on survival. Conversely, the estimated effect could be biased downward if return migrants are more risk-prone, as risk-lovers could adopt overly risky entrepreneurial strategies, or if migrants turn to be self-selected among the individuals with a lower endowment of social capital. Moreover, the decision to migrate and the decision to become entrepreneurs can be portrayed as simultaneous choices, with migration being an entrepreneurial strategy itself.

Following Wahba and Zenou (2009), we use a recursive bivariate probit, where the probability of survival as an entrepreneur and the probability of having a migration experience are simultaneously estimated to better identify the causal relationship of interest (Maddala, 1983; Greene, 1998, 2003). We also rely on an alternative estimation strategy, the two-stage residual inclusion estimation, 2SRI, to further tackle the endogeneity problem (Terza et al, 2008). In both models we impose an exclusion restriction in order to improve our identification strategy, using either the rate of growth of the population in the year of birth of the entrepreneur or the real price of crude oil when the entrepreneur was 21 years old as an instrument for return. The use of the first instrument is inspired by Hanson and McIntosh (2010a,b) who find that demographic factors significantly influence the scale of migration flows, while the use of the second instrument follows Wahba and Zenou (2009) who exploit the fact that Egyptian migrants overwhelmingly opt for oil-producing countries.

Our results show that returnees enjoy a significantly higher probability of surviving over time as entrepreneurs with respect to stayers, with this effect being robust to the estimation strategies that we adopt to control for endogeneity, and to the selection of the instrument.

The paper is structured as follows: Section 2 provides the theoretical background of the paper; Section 3 introduces the ELMPS dataset and presents some key descriptive statistics;

[2] This is an intrinsic limitation of a household survey; while a survey on MSEs would overcome this limitation, it would be unlikely to provide the necessary information on the past migration experience of the entrepreneur.

halshs-00693988, version 1 - 3 May 2012

Section 4 presents the identification strategy, the econometric analysis and the robustness checks. Finally, Section 5 draws the main conclusions.

2. THEORETICAL BACKGROUND

Two strands of economic literature are closely related to our research question: the one on the determinants of the survival of enterprises and entrepreneurial activities, and the one analyzing the nexus between return migration and entrepreneurship at origin. We briefly review these two strands, with a specific focus on Egypt.

(a) The survival of entrepreneurial activities

The literature on the survival of entrepreneurial activities is relatively recent. Most of the papers refer to industrialized countries, and data constraints probably have a non-negligible role for this geographical bias, as the necessary longitudinal data are seldom available for developing countries.

The empirical literature that analyzes the determinants of survival can be divided into two strands, defined with respect to their unit of analysis: a first strand that focuses on the survival of the enterprises, and a second strand which deals with the persistence of the occupational choice of the entrepreneur, what we define here as the survival of an entrepreneurial activity. Even in this respect, the analytical choice is often data-driven and each of the two options has its own analytical problems. Specifically, when the focus is on the enterprise, problems can arise because of the gap between the legal and economic definition of an enterprise: a change in the legal status of the enterprise, which can be a natural by-product of its expansion, might be wrongly recorded as the failure of the old enterprise and the creation of a new one. When the focus is on the entrepreneur, the prosecution of the entrepreneurial activity by an individual does not necessarily entail the survival of the same enterprise. The predominant informal status of the entrepreneurial activities in developing countries makes extremely hard to trace the same enterprise over time; moreover, the risks connected to the adoption of the enterprise as the unit of analysis in a vulnerable economic environment are particularly pronounced, since we might wrongly regard as failures all the changes connected to the adoption of coping strategies in the face of an adverse shock, such as the change in the sector of the activity, in the legal status, in its location. Still, the dichotomy in the choice of the unit of analysis is much less sharp when one deals with MSEs, where the survival of the enterprise is strongly related to the occupational choice of the entrepreneur, while this is not true for large enterprises.

halshs-00693988, version 1 - 3 May 2012

The survival of the entrepreneurial activity over time depends on the evaluation, on the side of the entrepreneur, of the value of the expected stream of future earnings from the entrepreneurial activity against the value of the best foregone alternative on the labor market. Needless to say, credit market imperfections could be a binding constraint here, so that an entrepreneur might be forced to abandon her activity because of liquidity problems.

The persistence of the entrepreneurial activity was modeled by Holtz-Eakin et al. (1994) as a discrete choice decision problem which depends on a set of individual characteristics, an approach retained by the literature (Schiller and Crewson, 1997; Carrasco, 1999; Taylor, 2001; Schutjens and Wever, 2000; van Praag, 2003), which uses the characteristics of the entrepreneur as the only determinants of occupational choice.

The strand of literature that focuses on the survival of the enterprises generally includes also individual characteristics of the entrepreneur as explanatory variables, since it is acknowledged that these play a significant role in explaining observed differences in the chances of survival of the enterprises. By the same token, we argue that one can also plausibly expect that the characteristics of an enterprise can have a role in explaining the persistence of the occupational choice of the entrepreneur. Hence, a review of the literature on the survival of the enterprises can offer us with relevant insights for the selection of the variables to be included in our econometric analysis.

Three sets of variables are potentially relevant for the survival of the entrepreneurial activities: the characteristics of the entrepreneur, the characteristics of the enterprise, and the business environment in which the entrepreneurial activity is developed.

The age of the entrepreneur, or the age at the time of the start-up, is found to be an important determinant of survival for German and Vietnamese enterprises (Schutjens and Wever, 2000; Vijverberg and Haughton, 2004). Similar evidence is also found for Great Britain, where young individuals are more likely to survive as entrepreneurs (Taylor, 2001). Arribas and Vila (2007) estimate that the enterprises established by men survive for a longer time, and the role of gender is evidenced also by Liedholm (2002).

The employment status of the father of the entrepreneur is often listed among the determinants of survival; Brüderl et al. (1992) argue that if the father was self-employed, the likelihood to survive as an entrepreneur is higher. The motivation of the entrepreneur, measured by her previous working condition is evidenced by van Praag (2003) and Carrasco (1999) as one of the significant determinants of survival, with an unemployment spell before the start-up being associated with a lower probability of survival.

halshs-00693988, version 1 - 3 May 2012

van Praag (2003) shows that one of the most important determinants of entry into self-employment, namely asset holdings, does not have a significant effect on the duration of self-employment, while Holtz-Eakin et al. (1994) show that "those entrepreneurs who have substantial personal financial resources are more successful than those who do not".

There are a number of studies that show that human capital has a significant positive effect on the survival of an entrepreneurial activity, though they also find that there are differentiated effects across different forms of human capital: vocational schools and training for workers have a significant positive effect on the performance of the enterprises, while the effect of formal schooling is somewhat mixed, at least for developing countries.[3] Vijverberg and Haughton (2004) show, for instance, that the survival rate of Vietnamese small enterprises is not influenced by the educational level of the entrepreneur. The ambiguous impact of formal schooling upon the chances of success of a small economic activity can be explained by two different sets of factors: first, formal education needs not to provide any specific knowledge which is directly applicable to the management of an enterprise; second, better educated individuals are likely to receive a higher wage, and the higher opportunity cost of the entrepreneurial activity can reduce its chances of survival.

The number of years of work experience of the entrepreneur is found to be a key explaining factor by Schiller and Crewson (1997), while Brüderl and Preisendörfer (1998) evidence the role of social networks, measured by the support that the entrepreneurs receives from their family, from their friends and from the commercial partners.

With respect to the characteristics of an enterprise, its size is often considered an important predictor of its chances of survival,[4] and the empirical evidence usually shows that large enterprises are more likely to survive, although this result is not always confirmed for developing countries (Mead and Liedholm, 1998).

Astebro and Bernhardt (2003) study the relationship between obtaining a loan at the start-up and the chances of survival of an entrepreneurial activity, and they conclude that both a bank loan and a loan from informal sources are positively related to survival.

Soderbom et al. (2006) do not find evidence that the age of an enterprises affects its risk of failure, while Vijverberg and Haughton (2004) show that the age of the enterprise is relevant

[3] Specific training is proved to be a more effective predictor of enterprise survival than generic education also for industrialized countries (Almus and Nerlinger, 1999; Colombo and Grilli, 2005).

[4] A number of proxies for enterprise size are used in the literature: the value of the starting capital (Brüderl et al., 1992), the value of the capital at the time of the survey (Vijverberg and Haughton, 2004), the initial number of workers (Brüderl et al., 1992, Audretsch and Mahmood, 1995, Mata et al., 1995).

halshs-00693988, version 1 - 3 May 2012

when combined with its size. The "liability of adolescence hypothesis" implies that the risk of failure is low at the time of start-up, given the stock of initial resources that can be deployed to face possible problems, it reaches its maximum in the "adolescence" or "early" stages of the enterprise, when the initial capital has been depleted, and it then declines. Mahmood (2000) finds that adolescence lasts between one and two years.[5]

Finally, the last set of variables to be considered among the potential determinants of survival are the characteristics of the business environment in which the enterprise is operating. van Praag (2003) finds that the business failure rate in the area in which the enterprise is located is a key determinant of entrepreneurial activity's survival. Vijverberg and Haughton (2004) observe that proximity to markets is positively related to the survival of the enterprises, and the location of the enterprise in rural or urban areas is introduced by Brüderl et al. (1992).

(b) The survival of Egyptian MSEs

The importance of MSEs for Egypt can be hardly overstated: 46.5 per cent of Egyptian workers are employed in private non agricultural activities, and 95 per cent of the enterprises operating in this sector have no more than four employees. Between 1998 and 2006, the number of MSEs increased by 4.5 percent per year, and the number of workers in the private non agricultural sector increased from 3.6 to 5 million (El Mahdi and Rashed, 2009). Such an increase can be traced back to the prolonged recession that hit Egypt in the early 1990s, when a substantial decline in the number of public employees led to the creation of new private economic activities. Together with the recession, the progressive economic liberalization can also account for the growing number of MSEs.

The private sector in Egypt has a dual structure: there is quite a number of big enterprises and a large number of MSEs, while there are only a few medium-sized enterprises. The best available data to draw a picture of the sector were collected by the Economic Research Forum in 2003 and 2004: a sample of 4,962 enterprises were interviewed in eight Egyptian governorates. These data show that 42.6 per cent of the enterprises had just one worker, 52.3 per cent between two and four workers, and just 2.3 per cent of enterprises more than 45 workers. The technology they used was generally not advanced.

The large majority of small-scale manufacturing firms in Egypt are family-run enterprises,

[5] Other potentially relevant factors are the existence of partners (Arribas and Vila, 2007; Astebro and Bernhardt, 2003), the legal status of the enterprise (Astebro and Bernhardt, 2003; Brüderl et al., 1992), and the sector of activity (Brüderl et al., 1992; Taylor, 2001; van Praag, 2003; Vijverberg and Haughton, 2004).

halshs-00693988, version 1 - 3 May 2012

where the labor force acquires its professional skills outside the public education system. The sector is highly labor intensive, the production is for small local markets that are highly competitive, while exports account for just a small share of their total market sales (Meyer, 2000). Informality is widespread and it is generally a permanent status of the enterprise. As far as the source of financing is concerned, loans from credit institutions do not represent more than 3.5 per cent of the start-up capital (El Mahdi, 2006), while private money lenders and loans from relatives represent a common source of finance (El Mahdi, 2002).

Meyer (2000) studied the chances of survival of economic activities between 1985 and 1998 and he found that, despite the negative economic context of the 1990s, more than 50 per cent of economic activities managed to survive, thanks mainly to a reduction in the number of workers, the substitution of external workers with family members, and an increase in the employment of children and women.[6]

El Mahdi (2006) analyzes the performance of enterprises between 2002 and 2004, showing that 6.5 per cent of the enterprises interviewed in 2002 had closed down in 2004. This occurred mostly in rural areas, for enterprises with less than five workers, which had been established only recently, and for entrepreneurs with a high level of education. The average duration of the enterprises which failed was quite short: more than 80 per cent of the enterprises failed in less than two years since their creation, in line with the liability of adolescence hypothesis.

(c) Egyptian migration and entrepreneurship

Migration is an important social and economic phenomenon for Egypt: almost five per cent of households have at least one member living abroad. Most of the estimated 3.5 million Egyptians who are abroad reside in an Arab country.[7] Migrants are mostly young married men who left their family behind (Nassar, 2008), and their contacts with the home country while abroad remain tight. Indeed, Egyptian migration is predominantly temporary: the ELMPS shows that seven per cent of the households included at least one return migrant, and 48 per cent of current migrants had migrated in the three years prior to the survey.

Like most temporary migrants, Egyptians send home sizable cash transfers: officially recorded remittances amounted to USD 7.1 billion, approximately four per cent of GDP, in 2009 (World Bank, 2011). The ELMPS also shows that half of the migrants work in the production

[6] Meyer (2000) also observes that the enterprises which managed to survive used adaptation as a key strategy: most converted their activity from production to repairing, while others were able to adapt to a changing demand, and other entrepreneurs found a second job.

halshs-00693988, version 1 - 3 May 2012

sector, but a substantial number also works in technical and scientific occupations (17 per cent).

The temporary nature of Egyptian migration implies that Egypt is a good case to study the effect of return migration on the labor market of the origin country. The interest around this topic began in the 1980s, given the 1.2 million Egyptians - about seven per cent of the labor force - who returned to the country between 1974 and 1988. Indeed, in 1988, the Labour Force Survey included a supplementary module on return migration.

These data show that the main factors for returning were not related to the intention to establish an entrepreneurial activity, but to family reasons, and poor working conditions at destination. Nassar (1991) analyzes the use of the savings by returnees, showing that 46 per cent was devoted to housing, around 9 per cent are deposited in banks and 10 per cent are invested, especially for the establishment of small size activities. Comparing jobs before and after the migration experience, it is clear that most returnees moved from public to private enterprises upon return: this was probably the result of the downsizing in the public sector that forced young educated public employees into private sector occupation.

McCormick and Wahba (2001) conduct an econometric analysis using the 1988 Labour Force Survey data on the occupational choice upon return to understand the characteristics of returnees who decided to invest. The two variables which drove the returnees' probability to become entrepreneurs upon return were savings and the amount of time spent abroad. According to the authors, the duration of the foreign employment can be seen as a proxy of "learning" overseas.

McCormick and Wahba (2003) use the same data to show that better-educated individuals were less likely to become entrepreneurs and that there is a positive relationship between those who report to have benefited from work abroad and their probability of investing.

Regrettably, no other in-depth survey on return migration has been collected after 1988: the following rounds of the Egyptian Labour Market Survey simply collected information about previous places of work and residence of the individual. We rely on these data in order to compare the characteristics of the return migrants across the decades: between 1988 and 2006, return migrants appear to be older, more educated - reflecting the general improvement in the average level of education of Egyptians, and less often resident in Greater Cairo.

Wahba (2009) uses the ELMPS data to compare of the working status of returnees with the one of stayers: a higher share of returnees holds technical scientific and management

[7] More than 90 per cent of the migrants reside in Saudi Arabia, Jordan, Libya, Kuwait and the UAE (Nassar, 2005).

halshs-00693988, version 1 - 3 May 2012

occupations, and 40 per cent of them are employed in the service sector, with the corresponding figure for stayers standing at 30 per cent, and 36 per cent of them holds a public job, compared to 26 per cent for stayers. The shares of waged workers are similar,[8] while a larger share of returnees are entrepreneurs (Wahba, 2009). The impact of the migration experience on the likelihood of becoming an entrepreneur has already been studied by Wahba and Zenou (2009), who demonstrate that returnees are more likely to become entrepreneurs than stayers. Although migrants may lose their social capital, their accumulated savings and experience overseas overcompensate for this loss.

3. DATA AND DESCRIPTIVE STATISTICS

The ELMPS is a nationally representative panel survey that provides information on individual characteristics, employment history, earnings, past migration experiences, and on the enterprises run or owned by the respondents. The sample of the 1998 round of the ELMPS consisted of 4,816 households, while the second round of the survey in 2006 included 8,349 households. The 2006 sample consisted of 3,685 households from the original survey, 2,168 split households and 2,498 new households. Not all the individuals belonging to the 1998 sample were re-interviewed in 2006; attrition was mainly due to two factors: the inability to locate entire households and the inability to find individuals who had given rise to split households. The first type of attrition is mainly due to the accidental loss of 615 identifying records from the 1998 wave.[9] An additional 516 households could not be re-interviewed, because they had moved and were not located, all the members had died or they refused to participate to the second round of the survey. 18,856 members of the original 1998 sample were successfully tracked in 2006: among them 790 had died, 220 had left the country, 14,661 were still in their original households and 2,694 had created new households, while 491 had left the original households but could not be located.

The lack of data on 6,642 individuals interviewed in 1998 could potentially represent a threat to our analysis, if the panel is characterized by a different probability of attrition between non-migrants and returnees. Specifically, returnee entrepreneurs whose entrepreneurial activity failed might be more likely to engage in further episodes of international migration, and this would lead to an *overestimation* of the rate of survival of their entrepreneurial activities. Luckily,

[8] Wahba (2007) - using ELMPS 2006 data - provides the first evidence that overseas employment result in a sizable wage premium upon return, estimated at around 38 per cent. This premium is higher for the workers with no education (43 per cent) than for university graduates (19 per cent).

[9] Assaad and Roushdy (2009) argue that the loss of these identifying records did not cause any significant problem for the sample, as it was random in nature.

halshs-00693988, version 1 - 3 May 2012

this hypothesis is not borne out by the data, which do not reveal any significant difference in the probability of attrition between non-migrant and returnee entrepreneurs. The difference in the probability of attrition between the two groups is not significant once we control for the observables that are included in the econometric analysis (see Table 1).

As usual with repeated surveys, the matching of the two waves of the ELMPS gave rise to some minor inconsistencies, which induced us to reduce the sample to 16,494 individuals.

We define as *entrepreneurs* all the individuals who are employers or self-employed in non-agricultural activities as a primary or secondary job,[10] including informal activities and activities without a fixed location. Following this definition, 733 (out of 1,071) entrepreneurs in the 1998 sample, corresponding to 4.0 per cent of the population and 6.5 per cent of all working age individuals (15-64 years), were successfully re-interviewed in 2006. 87 per cent of them run an entrepreneurial activity as their primary occupation. The large majority of the enterprises established by the sample entrepreneurs are micro enterprises: 57.3 per cent are individual enterprises, 39.0 per cent employ between 2 and 5 workers, while just 2.5 per cent employ more than 10 workers. The percentage of enterprises where the value of physical capital in 1998 is above LE 10,000 (approximately USD 2,900) is 26 per cent.

About half of the entrepreneurs in our sample do not to have a business license, 24 per cent declare their enterprise has not a fixed location and, among them, about 5 per cent own a van or a taxi. 90 per cent of entrepreneurs sell their goods and services directly to consumers. 92 per cent invested their personal savings to establish a MSE, and less than 3 per cent received a loan to finance the start-up. These data confirm that the Egyptian economic environment is characterized by the presence of a vast majority of MSEs and by a high degree of informality. In order to make the sample more homogeneous, we will not include in the analysis those entrepreneurs employing more than 50 workers in 1998.

The survey also includes a large number of Egyptian returnees:[11] our dataset provides information on 310 individuals who had an international migration experience prior to 1998. They correspond to the 1.8 per cent of the population and to 3.5 of the working age individuals. 8.6 per cent of the entrepreneurs had a migration experience. There is also a considerable percentage of returnees - 8.4 per cent - who are no longer in the labor force.

[10] The number of Egyptians who have a second job is extremely high; waged workers, especially those in the public sector, often open a small business in order to increase household incomes. We are aware that the determinants of the persistence of the main job could differ from those of the second job, and the econometric analysis tests the robustness of our results when we focus only on the primary occupation.

[11] We define an individual as a returnee if she has been living or working abroad before the 1998 round of the

halshs-00693988, version 1 - 3 May 2012

The share of entrepreneurs among the stayers who belonged to the 1998 labor force is 14.6 per cent, and it is lower than the corresponding share among returnees, which stands at 20.4 per cent, with the difference being statistically significant.

Table 2 compares the entrepreneurs with a migration experience with the other entrepreneurs in 1998. The most striking differences between the two groups lie in the individual characteristics of the entrepreneur. The mean age of the entrepreneurs with a migration experience is lower and the percentage of female entrepreneurs among returnees is negligible. The average education level of returnees is well above the one of stayers, and the entrepreneurial activity represents the primary occupation for a lower share of returnees. The MSEs run by returnees have been established more recently, and the reported value of capital is higher.

The differences in the individual characteristics between the stayers and the returnees explored so far can be attributed to the different propensity to migrate of different individuals (for instance, male or more educated are more likely to migrate). We will control for these differences in observables when addressing our research question: do the entrepreneurial activities of Egyptian returnees differ from the entrepreneurial activity of stayers with respect to its chances of survival over time? We consider an entrepreneurial activity as surviving if the individual who was an entrepreneur in 1998 is still an entrepreneur in 2006.[12]

The international migration experience can influence the chances of survival through multiple, and possibly conflicting, channels. The foreign working experience could improve returnees' entrepreneurial ability: they could have benefited from learning by doing while abroad, they could have acquired more advanced managerial abilities, or they might have become more open-minded and innovative. Return migrants could also have higher savings than stayers, even after having used a part of them to finance the creation of the MSE. Larger residual savings entail that they can be better able to overcome temporary demand shocks and to loosen the constraint created by a limited access to credit that affect MSEs, especially at the early stages of activity. While these two channels suggest that migration experience can have a positive causal impact on the probability of survival, there are other channels through which migration can be reasonably expected to reduce the chances of survival, namely the loss of social capital (Wahba and Zenou, 2009) and the better opportunities of returnees as salaried workers (Wahba, 2007). Our approach will allow us to identify the combined effect of migration experience, while data constraints do

survey.

[12] We acknowledge that our analysis would have benefited from the opportunity to study the full duration of the entrepreneurial activities, but the ELMPS does not contain the necessary information for such an analysis.

halshs-00693988, version 1 - 3 May 2012

not allow to disentangle the channels.

We restrict the sample to working age individuals, i.e. 15 to 64 years old. The sample consists of 695 entrepreneurs. According to our definition, 65 per cent of entrepreneurial activities survived in 2006. 77 per cent of return migrants' entrepreneurial activities survived, while the corresponding figure for stayers is 64 per cent, with the difference being statistically significant. These figures strengthen the hypothesis that migration experience can contribute positively to the survival of entrepreneurial activity, but they could also be simply driven by the differences in the characteristics of stayers and returnees entrepreneurs discussed above.

Before proceeding with the econometric analysis, it is useful to explore the working status of the individuals who are no longer entrepreneurs in 2006 (Table 3).

The large majority are still economically active in 2006, mainly as wages workers. Out of these, half become public employees.[13] These figures suggest that the failure of the entrepreneurial activity often coincides with a change of the working status, but the data do not allow to establish if the two events are simultaneous or not. Interestingly, just 2.2 per cent of individuals are unemployed, while the percentage of working age individuals who are out of the labor force stands at 35.5.

4. ECONOMETRIC ANALYSIS

We first estimate a simple probit model on the determinants of the survival of the entrepreneurial activity. Then, we discuss our identification strategy and we introduce the recursive bivariate probit model in order to take into account the endogeneity between migration experience and the chances of survival of the entrepreneurial activity. Finally, we present the results of the 2SRI estimation, which also allow us to deal with endogeneity, and we present some robustness checks.

(a) Probit model

In line with the literature reviewed in Section 2.a, we model the survival of the entrepreneurial activity, $S_i = 0,1$, as depending on the value of a latent variable S_i^* which is a linear function of a vector $\boldsymbol{I}_i$ of individual characteristics of the entrepreneur, a vector $\boldsymbol{F}_i$ of the characteristics of the enterprise, the factors N_i related to the economic environment, and the migration experience M_i of

[13] This relatively high percentage of former entrepreneurs who moved to the public sector is due to the fact that young Egyptians often perform other activities while queuing for public jobs. 61 per cent of returnees who abandoned the entrepreneurial activity had a public job in 2006, while the corresponding figure for stayers is 21 per

halshs-00693988, version 1 - 3 May 2012

the entrepreneur. Specifically, the model can be described as:

$$S_i^* = \boldsymbol{\alpha}_1' \boldsymbol{I}_i + \boldsymbol{\alpha}_2' \boldsymbol{F}_i + \alpha_3 N_i + \alpha_4 M_i + \varepsilon_i \quad (1)$$

where ε_i is i.i.d. $N(0,\sigma^2)$. The observed dichotomous variable S_i equals one if and only if the latent variable $S_i^* > 0$. The empirical literature on the survival of the entrepreneurial activity identifies some of the characteristics of the entrepreneur as key explanatory variables.[14] The individual characteristics that we include in vector $\boldsymbol{I}_i$ are age, education, gender, skills acquired out of school, and wealth - measured through an asset index.[15] We also include in $\boldsymbol{I}_i$ a proxy for the motivation, represented by a dummy variable indicating whether the entrepreneurial activity represents the first job reported by the interviewee. It is reasonable to expect that entrepreneurs who do not run an enterprise as their main economic activity are less likely to put adequate time, energies and motivation into its management. Table 4 reports the definition of the variables used in the econometric analysis.

The vector $\boldsymbol{F}_i$ contains those characteristics of the enterprise that can correlate with the likelihood to survive of the entrepreneurial activity. It is reasonable to assume that an entrepreneur is more likely to remain so if her enterprise has a likelihood of lasting long. We include information on the property of the enterprise - if it is shared with other households or not - , on the age of the enterprise and on the size of the enterprise - measured through the number of workers employed and on the estimated value of the capital invested in 1998.[16] We control for the sector of activity of the enterprise, because both profitability and vulnerability to demand shocks could differ across sectors. We also control for the governorate of residence of the entrepreneurs (N_i) in order to account for the effects of the economic environment where they operate.

Table 5 proposes three specifications of the probit model. The second specification excludes some of the variables which turned out to be statistically insignificant in the first specification. The third specification excludes all the variables indicating enterprise characteristics. The coefficient of migration experience variable is positive and statistically significant, and its marginal effect suggests that being a returnee increases the chances of survival by 19 percentage points.

---

cent; this suggests that the public sector exit is not more likely for stayers than for returnees in our sample.

[14] All the time-varying variables are measured in 1998.

[15] We followed Filmer and Pritchett (2001) in the construction of the asset index; we conducted a principal component analysis separately for urban and rural households, using variables related either to the ownership of durable goods or to the dwelling. Results are available from the author upon request.

[16] Information on the legal status of the enterprise is reported only for the activities with a fixed location, and data constraints do not allow us to include in the model information on the availability of infrastructures, on the characteristics of the enterprises at the start-up, or on the value of the output. The employment status of the father,

halshs-00693988, version 1 - 3 May 2012

halshs-00693988, version 1 - 3 May 2012

(b) Threats to identification

The probit model showed that, controlling for other observable characteristics, return migration is associated with a higher survival rate of entrepreneurial activities. This correlation does not prove the existence of a causal relationship between migration experience and the survival of the entrepreneurial activity, as migrants (and returnees) are likely to be non randomly selected in unobservables which also correlate with the probability of survival of an entrepreneurial activity. Thus, the relationship between return migration and survival might be spurious, and the probit model might simply be picking up confounding factors such as the attitude towards risks or innate talent. The bias could be positive or negative: if returnees are positively selected in innate ability, this could bias the estimated effect of return migration on survival upward; if they happen to be more risk-prone than stayers, then they could adopt overly risky entrepreneurial strategies which jeopardize the chances of survival, and this would bias the estimated effect downward. The same would occur if migrants are drawn from the set of individuals with a low endowment of social capital. This gives rise to an endogeneity problem: the migration experience variable can be correlated with the stochastic term in (1).

The endogeneity of migrant status may also be due to the fact that the decision to migrate and the decision to become an entrepreneur could be simultaneously determined: "individuals migrate temporarily because they plan to become entrepreneurs on their return" (Wahba and Zenou, 2009). If the two decisions are simultaneously determined, then migration can be seen as a part of a broader entrepreneurial strategy, or - in other words - as a strategy to improve the chances of survival of the entrepreneurial activity. Again, this would also induce a correlation between the probability of survival of the entrepreneurial activity and the probability of migrating.

(c) Recursive bivariate probit model

The situation suggests using a recursive bivariate probit model, where the probability of survival of the entrepreneurial activity and the probability of having a migration experience are simultaneously determined (Maddala, 1983; Greene, 1998, 2003).[17] The probability of having a migration experience M_i depends on the value of the latent variable M_i^*, where:

measured when the entrepreneur was 15 years old, was not significant in all the specifications.

[17] We assume, following Wahba and Zenou (2009), that there is no sample selection related to return migration, as Egyptians mostly migrate on a temporary basis.

$$M_i^* = \boldsymbol{\beta}_1' \boldsymbol{A}_i + \beta_2 P_i + \eta_i \quad (2)$$

where η_i is i.i.d. $N(0,\sigma^2)$. In (2), the latent variable M_i^* is a function of a vector $\boldsymbol{A}_i$ of individual characteristics, which include age, sex, education, marital status and governorate of residence. The stochastic terms in (1)-(2) are correlated, and M_i is an endogenous regressor in (1). We impose an exclusion restriction on the model in order to improve identification,[18] using the rate of growth of the population P_i in the year of birth of the individual in the migration equation only.[19] The rate of population growth in the year of birth represents a proxy for the size of the cohort which will enter into the labor market after 15-20 years. The choice to migrate is influenced by the size of the cohorts who enter the labor market, and larger cohorts lead to an increase in the unemployment rate, which, in turn, magnifies the incentives to migrate. Hatton and Williamson (1998) show that the birth rate in the origin country with a 20-year lag has been one of the key determinants of the emigration rate in the age of mass migration. Hanson and McIntosh (2010a,b) demonstrate that migration out of Mexico and other Latin American countries in the last few decades was significantly driven by demographic factors.

The size of the cohort who enters the labor market has an impact on the cohort-specific unemployment rate, so that we can expect it to influence also the occupational choice conditional upon non-migrating. Our exclusion restriction would be violated if the size of the cohort at the time of the entry in the labor market also has an influence on the persistence of the occupational choice of the non-migrants who opted for an entrepreneurial activity. Individuals who become entrepreneurs when the unemployment rate is exceptionally high might revert their occupational choice when the chances to find a wage employment improve.[20] Still, Table 4 evidences that non-migrant entrepreneurs were on average 42.5 years old in 1998, so that one could expect that cohort size, via the unemployment rate, would have already influenced the persistence of the occupational choice of the entrepreneurs mostly *before* the beginning of our period of analysis.

A second factor which could induce a violation of our exclusion restriction is represented by migrants' remittances: demographic factors could influence not only the incentives to migrate, but they could also exert a direct influence on the chances of survival of non-migrants' entrepreneurs who are more likely to receive remittances. We can test for the relevance of this

[18] Wilde (2000) demonstrates that identification in such a model is achieved if both equations contain at least one varying exogeneous regressor, even if no exclusion restriction is introduced; Monfardini and Radice (2010) demonstrate that the availability of an instrument allows to relax the assumption of bivariate normality of the errors.
[19] The data source is World Bank (2011) from 1960 and www.populationstat.info for the previous years.
[20] Taylor (1999) provides evidence that the duration of the spells of self-employment in Great Britain is negatively influenced by the unemployment rate at the beginning of the spell.

halshs-00693988, version 1 - 3 May 2012

specific instance of violation of the exclusion restriction by dropping from the sample the non-migrant entrepreneurs belonging to recipient households, as Wahba and Zenou (2009) do.[21]

While the rate of population growth in Egypt represents a push factor for migration, we can also follow Wahba and Zenou (2009), resorting to a key pull factor, namely the real price of crude oil,[22] as an instrument to predict the probability of having a migration experience, as more than 90 per cent of Egyptian migrants move toward an oil-producing country. We associate to each individual in our sample the real price of oil at the age of 21, and we also test the robustness of our estimates to the selection of a different matching ages.[23] The use of the real price of crude oil considerably softens the concern connected to the correlation of this instrument with labor market conditions in Egypt.

We present the estimates of the recursive bivariate probit model, including either the rate of population growth in the year of birth or the real price of crude oil at the age of 21 as a regressor in the migration equation only.

Table 6 presents the estimates for three specifications, where we included population growth in migration equation. The model fits the data well, the correlation coefficient ρ between the error terms in (1)-(2) is significantly different from zero in all specifications except for the first one, and the rate of population growth is positive and significant at the 5 per cent confidence level. The negative sign of ρ entails that the unobserved factors that increase the probability of having a migration experience decrease the probability of survival of the entrepreneurial activity.

The coefficient of migration experience is still positive and statistically significant across all the specifications and it reveals that having a migration experience increases the probability of survival of an entrepreneurial activity by 34.7-37.2 percentage points.

As discussed in Section 3, this significant effect reflects the joint impact of migration experience through a variety of channels. While the inclusion of the value of physical capital among the regressors partly captures the effect of migration that passes through savings, as returnees have made on average larger investments than stayers in their MSEs, the effect of savings which have not yet been invested is captured by the migration experience variable. This variable also captures the effect of the foreign working experience and, more generally, of all the

[21] The sample includes 24 non-migrant entrepreneurs who belong to a recipient households, which are defined as the households who either reported to be receiving remittances in 1998, or who had a return migrant among their members, so that they had received remittances in the past.
[22] The source of the data, as in Wahba and Zenou (2009), is www.inflationdata.com.
[23] As we are interested in predicting the probability of having a migration experience before 1998, the age at which each individual is matched with the real oil price has to be *below* the lower bound of the ages in our sample.

halshs-00693988, version 1 - 3 May 2012

intangible abilities, such as the entrepreneurial attitude, which might have been strengthened while abroad.[24]

Our estimates show that formal education is not a key determinant of the survival of entrepreneurial activities, in line with El Mahdi (2006); the estimated coefficient is negative but it is significant only for the intermediate level of education. Men enjoy a higher rate of survival of their entrepreneurial activities. Entrepreneurs who received a specific training and whose primary occupation is represented by the management of a MSE are also more likely to persist in their occupational choice. The results also highlight the role of experience and family ties in explaining the chances of survival: individuals who run recently established enterprises or those who share the property of the MSE with non-household members are less likely to survive as entrepreneurs. Size also matters, as the number of employees is positively related to the probability of survival, while the value of capital is not significant, with this latter result reflecting the mixed evidence in the literature for developing countries.

We also run the specifications in Table 6 excluding from the sample the non-migrant entrepreneurs who belong to households who receive remittances from abroad, as remittances might lead to a violation of our exclusion restriction. The coefficients of the rate of population growth in the migration equation and of the migration experience in the survival equation are unaffected.

Table 7 presents all the specifications of the recursive bivariate probit model, including the real oil price at the age of 21, rather than the rate of population growth in the year of birth, in the migration equation for the sample of entrepreneurs aged 25 to 65.[25] The real oil price is positive and significant at the 1 per cent confidence level in the three specifications, and the coefficient of the migration experience variable, which is significant at the 1 per cent confidence level, is of the same magnitude as in Table 6. Having a migration experience increases the probability of survival of an entrepreneurial activity by 35.3-37 percentage points. The results, which are again robust to the exclusion of the 24 non-migrant households belonging to recipient households, also reveal that the estimated coefficients of the other regressors are not influenced by the reliance on a different exclusion restriction.

[24] We have interacted skills and capital with the migration experience variable: the positive coefficient of the interacted variable suggests that migration experience improves their ability to use their skills, the difficulties of interpreting interaction effects in non-linear models notwithstanding (Ai and Norton, 2003). The interaction between capital and migration is not significant; results are available from the author upon request.

[25] The results, which are available upon request from the author, are robust to the selection of any age between 20

halshs-00693988, version 1 - 3 May 2012

(d) Two-stage residual inclusion estimation

We also rely on the 2SRI estimator to tackle the endogeneity of the migration decision. In the first stage, we estimate an auxiliary regression, where the endogenous migration variable enters as the dependent variable. This is the same as (2), which we reproduce here:

$$M_i^* = \boldsymbol{\beta}' \boldsymbol{X}_i + \eta_i$$

where $\boldsymbol{X}_i = (\boldsymbol{A}_i', P_i)'$ and $\boldsymbol{\beta} = (\boldsymbol{\beta}_1', \beta_2)'$. The generalized residuals $\tilde{u}_i(\hat{\boldsymbol{\beta}})$ (Gourieroux et al., 1987) from the first-stage regression (2) are represented by:

$$\tilde{u}_i(\hat{\boldsymbol{\beta}}) = \frac{\phi(\hat{\boldsymbol{\beta}}\boldsymbol{X}_i)}{\Phi(\hat{\boldsymbol{\beta}}\boldsymbol{X}_i)[1-\Phi(\hat{\boldsymbol{\beta}}\boldsymbol{X}_i)]}[M_i - \Phi(\hat{\boldsymbol{\beta}}\boldsymbol{X}_i)]$$

where $\phi(.)$ and $\Phi(.)$ represent respectively the probability density function and the cumulative density function of the standard normal distribution. Then, $\tilde{u}_i(\hat{\boldsymbol{\beta}})$ is included as an additional regressor in the second-stage equation (1). Intuitively, the generalized residuals are correlated with the unobservables that influence both the endogenous regressor and the dependent variable in the second-stage regression. This entails that the coefficient of the migration experience in the second stage equation only captures the causal effect of migration upon the probability of survival. Terza et al. (2008) demonstrate that this method produces consistent estimates in non linear models, and recommend to use this model rather than the widely used two-stage predictor substitution, where the endogenous variable is replaced by its predicted value $\Phi(\hat{\boldsymbol{\beta}}\boldsymbol{X}_i)$ from the first-stage equation (2).

Table 8 presents the estimates obtained with the 2SRI, using either the rate of population growth in the year of birth or the real oil price at the age of 21 as an instrument in the first-stage equation. The estimated coefficients of our instruments are positive and statistically significant. The coefficient of the migration experience variable is positive and highly significant across the six specifications. The generalized residuals from the first-stage equation enters significantly and with a negative sign the second-stage equation, and this further confirms that return migrants are endowed with unobservable characteristics which decreases the likelihood of survival of their entrepreneurial activities. All the other results are confirmed, and they are not sensitive to the exclusion of non-migrant entrepreneurs from recipient households and to alternative matches of entrepreneurs with time series of real oil price data (results not shown).

---

and 24 to match each individual to the corresponding real oil price.

halshs-00693988, version 1 - 3 May 2012

halshs-00693988, version 1 - 3 May 2012

(e) Robustness checks

This section presents several additional robustness checks on our estimates obtained with the 2SRI estimator, using the real price of crude oil as an instrument in the first-stage equation.[26] Specification (1) in Table 9 is estimated on the sample restricted to male entrepreneurs only, and the coefficient of the migration experience variable is not statistically different from the one derived from estimation on the joint sample. This allows us to dismiss the concern that our estimated effect was driven by the under-representation of women, whose entrepreneurial activities are less likely to survive, among returnees.

Specification (2) shows that the results are robust when we run the 2SRI estimation on the sample of first-job entrepreneurs only. As briefly discussed in Section 3, combining primary and secondary job might be problematic since the determinants of the persistence of the two might differ.

As returnee entrepreneurs are, on average, younger than stayers, our results might also be driven by the over-representation in the sample of older stayers who may be less likely to survive as entrepreneurs. The reduction of the sample to entrepreneurs aged 15-49 does not affect the results, with the coefficient of the generalized residuals being just marginally not significant. This suggests that the estimated coefficient of our variable of interest is not capturing differences in the age structure across migrant status.

Finally, the time elapsed since the establishment of the MSEs run by the entrepreneurs included in our sample varies substantially, but the percentage of returnees who established an entrepreneurial activity before 1970 is extremely low. This might bias the estimates in the direction of a positive relationship between migration experience and survival, since stayers who run MSEs established before 1970 might be closer to retirement. Thus, in specification (4), we run the 2SRI estimation excluding from our sample those entrepreneurs who established their MSE before 1970, and results are robust to the introduction of such a restriction in the sample.

5. CONCLUSIONS

This paper has analyzed the relationship between the past international migration experience of the entrepreneurs and the survival chances of their entrepreneurial activities in Egypt. The econometric analysis evidences the fact that returnees have a significantly higher probability of

[26] We opted for the 2SRI estimator because the reduction of the sample size required by the robustness checks does not always allow the recursive bivariate probit model to converge. Results are robust also to the use of the rate of population growth as an instrument in the first-stage equation.

survive over time as entrepreneurs if compared to stayers. While selection in unobservables might have induced this pattern in the data, this effect survives once we control for the endogeneity of the migration decision through a recursive probit model or through a 2SRI estimation, relying either on the rate of population growth or on the real price of crude oil to obtain an exogenous source of variation in the migration variable.

The differential in survival probability can be explained by several complementary factors connected to the migration experience, such as skills or financial savings accumulated while abroad. Specifically, savings can represent an important self-insurance device that helps the entrepreneurs to cope with the vulnerability that characterizes MSEs, enhancing the chances of survival of entrepreneurial activities. Our results show that the occupational choice of the returnee entrepreneurs is more stable over time, and this represents a necessary precondition for temporary migration experiences to produce a lasting employment generation effect in the country of origin.

halshs-00693988, version 1 - 3 May 2012

REFERENCES

Ai, C., & Norton, E. (2003). Interaction terms in logit and probit models. *Economics Letters*, *80*, 123-129.

Almus, M., & Nerlinger, E. (1999). Growth of new technology-based firms: which factors matter?. *Small Business Economics*, *13*, 141-154.

Arribas, I., & Vila, J.E. (2007). Human capital determinants of the survival of entrepreneurial service firms in Spain. *International Entrepreneurship and Management Journal*, *3*, (3), 263-276.

Assaad, R., & Roushdy, R. (2009). An analysis of sample attrition in the Egypt Labor Market Panel Survey 2006. In R. Assaad (Ed.), *The Egyptian Labor Market Revisited* (pp. 303-316). Cairo: The American University in Cairo Press.

Astebro, T., & Bernhardt, I. (2003). Start-up financing, owner characteristics, and survival. *Journal of Economics and Business*, *55*, (4), 303-319.

Audretsch, D. B., & Mahmood, T. (1995). New firm survival: new results using a hazard function. *Review of Economics and Statistics*, *77*, 97-103.

Beck, T., & Demigurc-Kunt, A. (2006). Small and medium-sized enterprises: Access to finance as a growth constraint. *Journal of Banking and Finance*, *30*, 2931-2943.

Brüderl, J., & Preisendörfer, P. (1998). Network Support and the Success of Newly Founded Business. *Small Business Economics*, *10*, (3), 213-225.

Brüderl, J., Preisendörfer, P., & Ziegler, R. (1992). Survival Chances of Newly Founded Business Organizations. *American Sociological Review*, *57*, (2), 227-242.

Carrasco, R. (1999). Transitions to and from self-employment in Spain. *Oxford Bulletin of Economics and Statistics*, *61*, 315-341.

Colombo, M., & Grilli, L. (2005). Founders' human capital and growth of new technology-based firms: a competence based view, *Research Policy*, *34*, 795-816.

Démurger, S., & Xu, H. (2011). Return Migrants: The Rise of New Entrepreneurs in Rural China. *World Development*, *39*, (10), 1847-1861.

Dustmann, C., & Kirchkamp, O. (2002). The optimal migration duration and activity choice after re-migration. *Journal of Development Economics*, *67*, (2), 351-372.

El Mahdi, A. (2002). Towards Decent Work in the Informal Sector: The Case of Egypt. Employment Paper 2002/5, Geneva: ILO.

El Mahdi, A. (2006). MSEs Potentials and Success determinants in Egypt 2003-2004: Special reference to gender differentials. ERF Research Report 0418.

El Mahdi, A., & Rashed, A. (2009). The changing economic environment and the development of micro and small enterprises in Egypt 2006". In R. Assaad (Ed.), *The Egyptian Labor Market Revisited* (pp. 87-106). Cairo: The American University in Cairo Press.

Filmer, D., & Pritchett, L. (2001). Estimating Wealth Effects without Income or Expenditure Data or Tears: Education Enrollment in India. *Demography*, *38*, (1), 115-132.

Gourieroux, C., Monfort, A., Renault, E., & Trognon, A. (1987). Generalized Residuals. *Journal of Econometrics*, *34*, 5-32.

Greene, W.H. (1998). Gender Economics Courses in Liberal Arts Colleges: Further Results. *Journal of Economic Education*, *29*, (4), 291-300.

Greene, W.H. (2003). *Econometric Analysis* (Fifth ed.), Upper Saddle River: Prentice Hall.

Gubert, F., & Nordman, C.J. (2011). Return Migration and Small Enterprise Development in the Maghreb. In S. Plaza, & D. Ratha, (Eds.), *Diaspora for Development in Africa* (pp. 103-126). Washington: The World Bank.

Hanson, G.H., & McIntosh, C. (2010a). Birth Rates and Border Crossings: Latin American Migration to the US, Canada, Spain, and the UK. NBER Working Paper No. 16471.

Hanson, G.H., & McIntosh, C. (2010b). The Great Mexican Emigration. *The Review of Economics and Statistics*, *92*, (4), 798-810.

Hatton, T.J., & Williamson, J.G. (1998). *The Age of Mass Migration: Causes and Economic Impact*. New York: Oxford University Press.

halshs-00693988, version 1 - 3 May 2012

Holtz-Eakin, D., Joulfaian, D., & Rosen, H.S. (1994). Sticking it out: Entrepreneurial survival and liquidity constraints. *Journal of Political Economy*, *112*, 53-75.

Ilahi, N. (1999). Return migration and occupational change. *Review of Development Economics*, *3*, 170-186.

Kilic, T., Carletto, C., Davis, B., & Zezza, A. (2009). Investing back home: return migration and business ownership in Albania. *Economics of Transition*, *17*, (3), 587-623.

Liedholm, C. (2002). Small Firm Dynamics: Evidence from Africa and Latin America. *Small Business Economics*, *18*, 227-242.

Maddala, G. (1983). *Limited dependent and qualitative variables in econometrics*. Cambridge: Cambridge University Press.

Mahmood, T. (2000). Survival of Newly Founded Businesses: A Log-Logistic Model Approach. *Small Business Economics*, *14*, 223-237.

Mata, J., Portugal, P., & Guimaraes, P. (1995). The survival of new plants: start-up conditions and post-entry evolution. *International Journal of Industrial Organization*, *13*, 459-482.

McCormick, B., & Wahba, J. (2001). Overseas work experience, savings and entrepreneurship amongst returnees to LDCs. *Scottish Journal of Political Economy*, *48*, 164-178.

McCormick, B., & Wahba, J. (2003). Return International Migration and Geographical Inequality: The Case of Egypt. *Journal of African Economies*, *12*, 500-532.

Mead, D., & Liedholm, C. (1998). The dynamics of micro and small enterprises in developing countries. *World Development*, *26*, (1), 61-74.

Mesnard, A. (2004). Temporary migration and capital market imperfections. *Oxford Economic Papers*, *56*, 242-262.

Meyer, G. (2000). Survival of small-scale manufacturing in Cairo during structural adjustment. Results from a long term study. CERAW Working Paper No. 2021, University of Mainz.

Monfardini, C., & Radice, R. (2008). Testing Exogeneity in the Bivariate Probit Model: Monte Carlo Evidence. *Oxford Bulletin of Economics and Statistics*, *70*, (2), 271-282.

Nadim, A., & Seymour, R. (2008). Defining Entrepreneurial Activity: Definitions Supporting Frameworks for Data Collection. OECD Statistics Working Paper No. 2008/01.

Nassar, H. (1991). Return Migration in Egypt. Labour Information System Project, CAPMAS.

Nassar, H. (2005). Migration, Transfers and Development in Egypt. CARIM Research Report 2005/01.

Nassar, H. (2008). Temporary and Circular Migration: the Egyptian Case. CARIM Note 2008/09.

Piracha, M., & Vadean, F. (2010). Return Migration and Occupational Choice: Evidence from

halshs-00693988, version 1 - 3 May 2012

Albania. *World Development*, *38*, (8), 1141-1155.

Schiller, B.R., & Crewson, P.E. (1997). Entrepreneurial Origins: a Longitudinal Inquiry. *Economic Inquiry*, *(35)*, 523-532.

Schutjens, V., & Wever, E. (2000). Determinants of new firm success?. *Papers in Regional Science*, *79*, (2), 135-153.

Soderbom, M., Teal, F., & Harding, A. (2006). The Determinants of Survival among African Manufacturing Firms. *Economic Development and Cultural Change*, *54*, (3), 533-555.

Taylor, M.P. (1999). Survival of the Fittest? An Analysis of Self-Employment Duration in Britain. *The Economic Journal*, *109*, (454), 140-155.

Taylor, M.P. (2001). Self-Employment and Windfall Gains in Britain: Evidence from Panel Data. *Economica*, *68*, (272), 539-565.

Terza, J., Bazu, A., & Rathouz, P. (2008). A two stage residual inclusion estimation: addressing endogeneity in health econometric modeling. *Journal of Health Economics*, *27*, 531-543.

van Praag, M. (2003). Business Survival and Success of Young Small Business Owners. *Small Business Economics*, *21*, 1-17.

Vijverberg, W., & Haughton, J. (2004). Household Enterprises in Vietnam: Survival, Growth, and Living Standards. In N. Agrawal, D. Dollar, & P. Glewwe, (Eds.), *Economic growth, poverty, and household welfare in Vietnam* (pp. 95-132), Washington: The World Bank.

Wahba, J. (2007). Returns to Overseas Work Experience: The Case of Egypt. In C. Özden, & M. Schiff, (Eds.), *International Migration, Economic Development and Policy* (pp. 235-258), Washington: The World Bank.

Wahba, J. (2009). An Overview of Internal and International Migration in Egypt. In R. Assaad (Ed.), *The Egyptian Labor Market Revisited* (pp. 157-176), Cairo: The American University in Cairo Press.

Wahba, J., & Zenou, Y. (2009). Out of Sight, Out of Mind: Migration, Entrepreneurship and Social Capital. CReAM Discussion Paper Series No. 30/09 (September 2011 revision).

Wilde, J. (2000). Identification of multiple equation probit models with endogenous dummy regressors. *Economics Letters*, *69*, 309-312.

World Bank (2011). *World Development Indicators*. Washington: The World Bank.

halshs-00693988, version 1 - 3 May 2012

Table 1: Attrition and observable characteristics, probit model

Variables	Attrition
Age	0.090**
	(2.13)
Female	-0.507***
	(-3.43)
Education, low	-0.300**
	(-2.24)
Education, intermediate	-0.013
	(-0.09)
Education, high	0.044
	(-0.29)
Migration experience	0.129
	(0.80)
Sampling weights	Yes
Spatial dummies	Yes
Observations	1,071

Notes: t-test in parentheses
*** p < 0.01, ** p < 0.05, * p < 0.1
Source: author's elaboration on ELMPS 2006

Table 2: Characteristics of entrepreneurs by migrant status, 1998.

Variable	Non migrant	Returnee	t-test
Age	42.5	39.7	-2.57***
Female, percent	16.4	0.9	-7.71***
Urban areas, percent	53.0	45.7	0.91
Greater Cairo, percent	13.0	11.7	-0.59
Education, percent			
None	46.7	15.7	
Low	20.9	18.6	
Intermediate	19.7	49.8	
High	12.7	15.9	
Skills, percent	22.3	22.0	-0.04
Asset index	44.7	50.3	1.75*
First job	88.4	68.0	-2.39**
Shared property	8.5	18.8	-1.61
Establishment of the enterprise			
prior to 1970	13.1	0.8	
1970-1989	42.2	47.3	
after 1990	44.7	51.9	
Sector			
Trade	56.0	47.2	
Manufacturing	16.7	16.0	
Service	13.7	20.5	
Transport	8.0	11.2	
Others	5.6	5.1	
Number of employed hh members	1.2	1.3	0.61
Employs external workers, percent	26.6	35.5	1.21
Estimated value of capital			
Low	47.2	25.0	
Medium	27.4	41.5	
High	25.4	33.5	
Observations	669	64	

Notes: Sampling weights included, ***p < 0.01, ** p < 0.05, * p < 0.1
Source: author's elaboration on ELMPS 2006

halshs-00693988, version 1 - 3 May 2012

halshs-00693988, version 1 - 3 May 2012

Table 3: Working status of entrepreneurs whose entrepreneurial activity did not survive, 2006.

Status	Per cent
Employed	*62.3*
Employee, private sector	24.2
Employee, public sector	23.5
Employer, agricultural sector	6.8
Unpaid family worker	7.8
Unemployed	*2.2*
Out of the labour force	*35.5*
Housewife	11.1
Retired, less than 65 years	7.8
Above 65 years and does not want to work	9.2
Disabled, permanent	2.8
Temporary disabled	2.1
Student, full time	0.3
Does not want to work	0.6
Other	1.6
Observations	232

Notes: Sampling weights included
Source: author's elaboration on ELMPS 2006

Table 4: Description of the variables

Variable	Definition
Age	Age in 1998, years
Education, none	Dummy, =1 if individual has no formal education
Education, low	Dummy, =1 if individual has less than intermediate education
Education, intermediate	Dummy, =1 if individual has less than tertiary education
Education, high	Dummy, =1 if individual has tertiary education
Female	Dummy, =1 if individual is female
Married	Dummy, =1 if individual is married
Skills	Dummy, =1 if individual has acquired a specific skill out of school
Asset index	Obtained through PCA, rescaled between 0 and 100
First job	Dummy, =1 if employer or self-employed as first job
Migration experience	Dummy, =1 if individual has worked or lived abroad prior to 1998
Shared property	Dummy, =1 if property of the enterprise is shared with non hh members
Age of the enterprise, young	Dummy, =1 if enterprise established after 1990
Age of the enterprise, medium	Dummy, =1 if enterprise established between 1970 and 1989
Age of the enterprise, old	Dummy, =1 if enterprise established prior to 1970
Capital, low	Dummy, =1 if estimated value of capital is < LE1,000
Capital, medium	Dummy, =1 if estimated value of capital LE1,000-LE10,000
Capital, high	Dummy, =1 if estimated value of capital is > LE10,000
Sector	Trade, manufact,, service, transport, constr., finance, mining
Governatorate	Categorical variable, enumerates Egyptian governatorates
Population growth	Rate of growth of the population in the year of birth of each individual
Oil price	Real price of crude oil in the year when the individual was aged 21

halshs-00693988, version 1 - 3 May 2012

Table 5: Probability of survival of the entrepreneurial activity, probit model

Variables	(1) Survival	(2) Survival	(3) Survival
Age	-0.010	-0.009	-0.001
	(0.008)	(0.008)	(0.007)
Education, low	-0.210	-0.176	-0.177
	(0.200)	(0.187)	(0.180)
Education, medium	-0.375*	-0.303	-0.318
	(0.221)	(0.197)	(0.197)
Education, high	-0.175	-0.062	-0.050
	(0.296)	(0.240)	(0.230)
Female	-0.588***	-0.618***	-0.730***
	(0.202)	(0.198)	(0.190)
Shared property	-0.633***	-0.621***	
	(0.211)	(0.213)	
Age of the enterprise, medium	0.508***	0.525***	
	(0.154)	(0.157)	
Age of the enterprise, old	0.184	0.186	
	(0.261)	(0.259)	
Number of employees	0.128***	0.145***	
	(0.048)	(0.046)	
First job	0.727***	0.737***	0.792***
	(0.206)	(0.206)	(0.200)
Skills	0.749***	0.787***	0.696***
	(0.220)	(0.214)	(0.204)
Capital, medium	0.022		
	(0.166)		
Capital, high	0.128		
	(0.210)		
Asset index	0.003		
	(0.005)		
Migration experience	0.639***	0.641***	0.633***
	(0.225)	(0.225)	(0.223)
Sampling weights	Yes	Yes	Yes
Spatial dummies	Yes	Yes	Yes
Sector dummies	Yes	Yes	Yes
Observations	695	695	695

Notes: standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source: author's elaboration on ELMPS 2006

halshs-00693988, version 1 - 3 May 2012

Table 6: Probability of survival of entrepreneurial activity, recursive bivariate probit

	(1)		(2)		(3)	
Variables	Survival	Migration	Survival	Migration	Survival	Migration
Age	-0.011	-0.012	-0.009	-0.012	-0.001	-0.013
	(0.007)	(0.010)	(0.007)	(0.010)	(0.006)	(0.010)
Education, low	-0.257	0.374	-0.216	0.372	-0.210	0.367
	(0.193)	(0.318)	(0.180)	(0.320)	(0.175)	(0.319)
Education, intermediate	-0.523**	0.969***	-0.445**	0.977***	-0.439**	0.975***
	(0.225)	(0.287)	(0.199)	(0.286)	(0.197)	(0.286)
Education, high	-0.249	0.824***	-0.135	0.823***	-0.117	0.816***
	(0.285)	(0.283)	(0.233)	(0.285)	(0.229)	(0.288)
Female	-0.466**	-1.273***	-0.503**	-1.278***	-0.642***	-1.358***
	(0.217)	(0.477)	(0.207)	(0.448)	(0.191)	(0.441)
Shared property	-0.594***		-0.590***			
	(0.196)		(0.195)			
Age of the enterprise, medium	0.487***		0.507***			
	(0.141)		(0.147)			
Age of the enterprise, old	0.221		0.218			
	(0.246)		(0.245)			
Number of employees	0.121***		0.137***			
	(0.044)		(0.042)			
First job	.704***		0.711***		0.779***	
	(0.209)		(0.206)		(0.197)	
Skills	0.691***		0.730***		0.655***	
	(0.207)		(0.199)		(0.193)	
Capital, medium	0.022					
	(0.153)					
Capital, high	0.081					
	(0.191)					
Asset index	0.003					
	(0.004)					
Migration experience	1.748***		1.706***		1.507***	
	(0.446)		(0.395)		(0.333)	
Married		1.411***		1.441***		1.509***
		(0.490)		(0.467)		(0.445)
Population growth		0.550**		0.552**		0.575**
		(0.240)		(0.241)		(0.247)
ρ	-0.735		-0.700		-0.560	
Wald test, H_0: $\rho = 0$	2.115		3.087*		5.345**	
Sampling weights	Yes	Yes	Yes	Yes	Yes	Yes
Spatial dummies	Yes	Yes	Yes	Yes	Yes	Yes
Sector dummies	Yes	No	Yes	No	Yes	No
Observations	695		695		695	

Notes: standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source: author's elaboration on ELMPS 2006

halshs-00693988, version 1 - 3 May 2012

Table 7: Probability of survival of entrepreneurial activity, recursive bivariate probit.

	(1)		(2)		(3)	
Variables	Survival	Migration	Survival	Migration	Survival	Migration
Age	-0.009	-0.009	-0.008	-0.009	-0.001	-0.010
	(0.008)	(0.011)	(0.008)	(0.012)	(0.007)	(0.012)
Education, low	-0.291	0.351	-0.240	0.356	-0.225	0.369
	(0.196)	(0.317)	(0.181)	(0.317)	(0.178)	(0.313)
Education, intermediate	-0.587***	1.041***	-0.495***	1.055***	-0.490**	1.046***
	(0.216)	(0.269)	(0.187)	(0.272)	(0.193)	(0.277)
Education, high	-0.404	0.885***	-0.261	0.890***	-0.235	0.883***
	(0.283)	(0.276)	(0.226)	(0.280)	(0.226)	(0.285)
Female	-0.474**	-1.060**	-0.524**	-1.086**	-0.680***	-1.193***
	(0.225)	(0.501)	(0.208)	(0.443)	(0.194)	(0.452)
Shared property	-0.543***		-0.545***			
	(0.188)		(0.189)			
Age of the enterprise, medium	0.499***		0.520***			
	(0.138)		(0.144)			
Age of the enterprise, old	0.146		0.144			
	(0.238)		(0.239)			
Number of employees	0.116***		0.134***			
	(0.043)		(0.042)			
First job	0.689***		0.699***		0.773***	
	(0.194)		(0.194)		(0.192)	
Skills	0.523***		0.573***		0.518***	
	(0.198)		(0.189)		(0.189)	
Capital, medium	0.031					
	(0.150)					
Capital, high	0.085					
	(0.178)					
Asset index	0.004					
	(0.005)					
Migration experience	1.768***		1.703***		1.518***	
	(0.377)		(0.323)		(0.333)	
Married		0.804*		0.866**		0.989**
		(0.436)		(0.407)		(0.413)
Oil price		0.013***		0.013***		0.013***
		(0.004)		(0.004)		(0.004)
ρ	-0.828		-0.770		-0.621	
Wald test, H_0: $\rho = 0$	2.313		4.713**		5.997**	
Sampling weights	Yes	Yes	Yes	Yes	Yes	Yes
Spatial dummies	Yes	Yes	Yes	Yes	Yes	Yes
Sector dummies	Yes	No	Yes	No	Yes	No
Observations	663		663		663	

Notes: standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source: author's elaboration on ELMPS 2006

halshs-00693988, version 1 - 3 May 2012

Table 8: 2SRI estimation, first and second stage

	Population growth				Real oil price			
		(1)	(2)	(3)		(1)	(2)	(3)
Variables	Migration	Survival	Survival	Survival	Migration	Survival	Survival	Survival
Age	-0.010	-0.011	-0.010	-0.001	-0.008	-0.011	-0.009	-0.002
	(0.011)	(0.008)	(0.008)	(0.007)	(0.013)	(0.008)	(0.008)	(0.007)
Education, low	0.387	-0.250	-0.214	-0.221	0.427	-0.286	-0.245	-0.237
	(0.316)	(0.202)	(0.190)	(0.182)	(0.308)	(0.209)	(0.194)	(0.186)
Education, intermediate	1.037***	-0.523**	-0.457**	-0.491**	1.122***	-0.606**	-0.534**	-0.545**
	(0.276)	(0.242)	(0.225)	(0.220)	(0.274)	(0.241)	(0.221)	(0.216)
Education, high	0.820***	-0.233	-0.127	-0.125	0.915***	-0.406	-0.279	-0.251
	(0.289)	(0.302)	(0.248)	(0.237)	(0.287)	(0.314)	(0.249)	(0.238)
Female	-1.523***	-0.510**	-0.537***	-0.641***	-1.379***	-0.529**	-0.560***	-0.688***
	(0.452)	(0.204)	(0.201)	(0.194)	(0.458)	(0.210)	(0.206)	(0.198)
Shared property		-0.633***	-0.624***			-0.605***	-0.598***	
		(0.211)	(0.211)			(0.209)	(0.209)	
Age of the enterpr., medium		0.500***	0.517***			0.515***	0.535***	
		(0.156)	(0.159)			(0.156)	(0.160)	
Age of the enterprise, old		0.205	0.205			0.147	0.149	
		(0.260)	(0.258)			(0.258)	(0.257)	
Number of employees		0.130***	0.145***			0.128***	0.144***	
		(0.049)	(0.046)			(0.049)	(0.047)	
First job		0.790***	0.797***	0.856***		0.796***	0.802***	0.857***
		(0.205)	(0.206)	(0.200)		(0.207)	(0.208)	(0.202)
Skills		0.740***	0.774***	0.682***		0.579***	0.617***	0.546***
		(0.220)	(0.213)	(0.204)		(0.217)	(0.211)	(0.203)
Capital, medium		0.025				0.027		
		(0.167)				(0.169)		
Capital, high		0.096				0.090		
		(0.212)				(0.207)		
Asset index		0.003				0.004		
		(0.005)				(0.005)		
Married	1.491***				0.998**			
	(0.466)				(0.465)			
Population growth	0.547**							
	(0.259)							
Real oil price					0.013***			
					(0.004)			
Migration experience		1.790**	1.819**	1.948***		1.926***	1.955***	1.913***
		(0.727)	(0.734)	(0.741)		(0.704)	(0.714)	(0.735)
Generalized residuals		-0.105*	-0.108*	-0.121*		-0.127**	-0.129**	-0.124**
		(0.062)	(0.063)	(0.063)		(0.060)	(0.061)	(0.062)
Sampling weights	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spatial dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector dummies	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Observations	695	695	695	695	663	663	663	663

Notes: standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source: author's elaboration on ELMPS 2006

Table 9: 2SRI, second stage. Robustness checks.

Variables	(1) Males	(2) First job	(3) 15-49	(4) After 1970
Age	-0.019**	-0.010	0.004	-0.009
	(0.009)	(0.009)	(0.013)	(0.009)
Education, low	-0.256	-0.227	-0.094	-0.294
	(0.219)	(0.199)	(0.227)	(0.206)
Education, intermediate	-0.543**	-0.574**	-0.368	-0.559**
	(0.241)	(0.228)	(0.237)	(0.230)
Education, high	-0.263	-0.136	-0.059	-0.271
	(0.262)	(0.307)	(0.261)	(0.258)
Shared property	-0.577***	-0.581**	-0.677***	-0.754***
	(0.223)	(0.232)	(0.237)	(0.219)
Age of the enterprise, medium	0.689***	0.731***	0.494***	0.546***
	(0.176)	(0.181)	(0.183)	(0.164)
Age of the enterprise, old	0.422	0.225	0.185	
	(0.297)	(0.274)	(0.385)	
Number of employees	0.165***	0.118**	0.211***	0.193***
	(0.050)	(0.047)	(0.063)	(0.056)
Skills	0.673***	0.568***	0.598**	0.651***
	(0.226)	(0.214)	(0.255)	(0.240)
Migration experience	1.914***	2.026***	1.744**	2.244***
	(0.735)	(0.761)	(0.780)	(0.770)
Female		-0.634***	-0.463*	-0.428*
		(0.219)	(0.238)	(0.224)
First job	0.798***		0.819***	0.878***
	(0.214)		(0.238)	(0.226)
Generalized residuals	-0.131**	-0.117*	-0.109	-0.149**
	(0.061)	(0.065)	(0.067)	(0.065)
Sampling weights	Yes	Yes	Yes	Yes
Spatial dummies	Yes	Yes	Yes	Yes
Sector dummies	Yes	Yes	Yes	Yes
Observations	573	559	525	590

Notes: Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source: author's elaboration on ELMPS 2006

halshs-00693988, version 1 - 3 May 2012