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Migrant Intentions to Return: The Role of Migrant Social Networks *

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Abstract

Social ties are potentially an important determinant of migrants' intentions to return to their home country. This relationship has, however, not been addressed in the economics literature on international migration. This study examines the absolute and relative importance of migrant social networks, at both destination and origin, on migrant return intentions. Using rich data on social networks of immigrants, we explore the effects of heterogeneous characteristics of social network members on different time horizons for return. After controlling for unobserved heterogeneity and reverse causality biases, we find that the social network at home seems to be the most important determinant of the migrant's intention to return home within five to ten years.

JEL classification: D8, F22, J15, J61.

Keywords: International migration, Return migration, Return intentions, Social networks.

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1. Introduction

According to the most recent OECD International Migration Outlook (2015), the level of legal permanent immigration to OECD countries reached 4.3 million individuals in 2014. Among these, 1 million per year entered the EU, thereby matching the inflow to the USA. At the same time, the yearly figures of foreign-born leaving an OECD country are substantial and can range from 20% to 75% of the immigrant stock (OECD, 2008). Furthermore, between 20% and 50% of the inflow will return to the country of origin five years after their arrival (Dustmann and Görlach, 2015).

International migration is therefore an issue of great relevance, and has been an object of study under many lenses. A great deal of the economics research on international migration has focused on explaining the determinants of actual migration patterns.¹ But very few studies have undertaken the study of migratory intentions (as opposed to actual migratory movements) and the formation process of such migration decisions.

Studying the intention to move across countries, rather than the actual movement, provides a net advantage. On the one hand, migrant intentions are more subject to changes over time that can be difficult to predict given the very nature of individual intentions. On the other hand, migrant intentions provide a cleaner measure for migration decisions. Indeed, investment, consumption, and labor supply decisions are often conditioned by current intentions, rather than by “final realizations”, as discussed by Dustmann (2000). Moreover, by focusing on migration intentions, we are able to study return migration patterns, which

¹ See, for example, Sjaastad (1962), Harris and Todaro (1970), Borjas (1987), Borjas and Bratsberg (1996), Chiquiar and Hanson (2005), Yang (2006), Batista (2008), or McKenzie et al. (2014).

usually requires following migrants over time for several years. This is an expensive process and often eschewed by researchers, which mainly focus their attention on immigration dynamics.² A way to elude this imbalance and to shed additional light on the partially unexplored area of return migration comes from focusing on migrants' intentions. In this paper we join these two neglected aspects of the migration experience.

The literature widely recognizes the pivotal role of social networks in affecting migratory decisions. In particular, networks facilitate the migration process and enhance it by attracting new immigrants to the host country. Networks affect migration decisions through at least three different channels. They provide information, support in the job market, and safety at both destination and origin. Nevertheless, there is no clear understanding of the underlying mechanisms through which social ties work. Our research question arises naturally in this framework. We wish to know: what is the absolute and relative importance of networks at destination and at origin on return migration decisions? In particular, we aim at understanding whether there is a clear distinction between the effect due to the network at destination and the one attributable to the network at home. Our claim is that the two networks can be depicted as two “pull” factors.

In order to analyze the two network effects on the migrant intention to return, we define the intention to return with three different time horizons. This allows us to detect whether the network effects holds in shorter relative to longer horizons. We also study the

² A few exceptions are Borjas and Bratsberg (1996), Dustmann (1997), and Dustmann and Kirchkamp (2002), Mesnard (2004), Yang (2006), and Batista, McIndoe-Calder and Vicente (2016).

impact of networks in detail, looking closely at the network characteristics in order to better identify the nature of the network effects we examine.

We use a rich dataset representative of the immigrant population in the greater Dublin area, which includes detailed data on the social networks of immigrants. This allows examining the effects of heterogeneous characteristics of social network members on different time horizons for return intentions. Ireland is an interesting case too study as it receives immigrants from more than a hundred countries, with diverse levels of national income and cultural background. Moreover, return migration is a salient phenomenon: among individuals who immigrated between 1993 and 1998, 60.4% returned to their home country after five years (OECD, 2008).

Our results show that the network at origin helps to explain the migrant intention to return within five and ten years, while network at destination seems to have no influence. A larger network at home decreases the likelihood of the migrant to return home. In particular, an increase of one member in the network size at the migrant's country of origin will decrease the likelihood of the migrant to return home within the next ten years by almost 20 pp. Our results indicate that the widespread idea of networks easing migration does not seem to hold when we look at return migration.

The remainder of the article is structured as follows: the next section presents a brief literature review of the existing work on return migration and social networks. The third section is dedicated to the methodology and the fourth section to the descriptive statistics. In

the fifth section we present and discuss the results. In the last section we draw the conclusions from our investigation.

2. Literature review

Migration decisions are as complex as the variety of factors they are based on. Migrating is a decision that is taken at the individual level and it takes into consideration many different elements from the surrounding, as initially proposed by Sjaastad (1962) and Harris and Todaro (1970).

Toward the end of the 1980s, researchers started focusing on immigration and its non-random selection processes, both in terms of observable characteristics – such as in Borjas (1987), Borjas and Bratsberg (1996) or Chiquiar and Hanson (2005) – and of unobservable characteristics – such as in Batista (2008) or Bertoli et al. (2013). More recently the literature on the determinants of migration has broadened to examine both the origin and destination countries, adopting increasingly more field and natural experiments as sources of exogenous variation – as in Yang (2006) and McKenzie et al. (2014).

Yang (2006) examines how households use migration as a technology for saving purposes, and the way this influences return migration decisions. By examining the impact of an exogenous exchange rate shock on actual return migration, Yang seeks to clarify the determinants of return migration between target earners and life-cycle migrants. He finds that migration allows household-investments back home. Complementary to Yang's (2006) contribution, Gibson and McKenzie (2011) report that among highly skilled individuals the life-cycle reasons predominate. According to their findings, return migration seems to be determined more by preferences and local amenities than purely by individual gains in

income (Dustmann, 2000). In addition, Dustmann and Kirchkamp (2002) show that wages in the host country are indirectly proportional to the optimal migration duration. There is in fact a decreasing marginal benefit of migration. Moreover, they find that the higher the schooling level, the shorter the optimal migration period will be.

Another focal point in the literature has been the role of human capital in the context of international migration. Return migration can be a way to capitalize in the country of origin on the skills that have been accumulated during the migration experience. Batista, Lacuesta, and Vicente (2012) provide strong evidence in support of the hypothesis of human capital gains deriving from migration. Their results are consistent with the theoretical model developed by Dustmann, Fadlon, and Weiss (2010), in which return migration responds to human capital accumulation. They show that when the human capital endowment of individuals can be improved more efficiently abroad, their return to the home country will be delayed. McKenzie and Rapoport (2007) provide further evidence on the human capital gain coming from migration.

When we consider unobservable migrant characteristics, selection into migration is not easy to detect and isolate. Studying self-selection patterns among Mexican migrants to the USA, McKenzie and Rapoport (2010) find that – depending on whether the migrant lives in a highly or poorly networked community – the probability of migration is directly proportional to the education level in low networks communities and indirectly proportional to education of the migrant in communities that are highly networked. Therefore, a larger network means more incentives to migrate at any educational level. At the same time, by dealing with networks, one has to bear in mind that there is a double selection problem; one

is into migration and the other into the network. Other studies on individual unobservable characteristics – e.g. the entrepreneurial spirit of the migrant – and the key role they play in return migration are Dostie and Léger (2009) and Batista, McIndoe-Calder, and Vicente (2016).

Social networks play a crucial role in shaping migration decisions. A key feature of their formation process is their non-randomness. On the contrary, their growth process is driven mainly by factors related to ethnicity and geography (Marmaros, Sacerdote 2006; Jackson, Rogers 2007). Notwithstanding, these, together with homophily, can also lead to less integration and cause segregation (Currarini, Jackson, Pin 2009). Furthermore, depending on the level of integration in the job market and on the very nature of the networks themselves, the migration experience can be more or less successful. Consequently, depending on how successful the integration process was, a migrant could consider re-migrating or returning home (Borjas, Bratsberg 1996).

The most comprehensive definition for the several functions served by social networks is the one of mitigating migration costs (Sjaastad, 1962). There are three potential channels, through which social networks can affect migration decisions.

First, networks catalyze information (Bloch et al. 2008). In addition, by defining the borders of social ties, homophily influences how information is spread within and across the networks (Currarini et al., 2009). Networks can be particularly effective as a source of information in the labor market,³ providing more and better job opportunities and thereby influencing the success of the migration experience (Umblis, 2012). Further evidence shows

³ For an extensive literature revision, see Dolfin and Genicot (2006).

how more networks lead to more job opportunities and better wages (Munshi, 2003; Batista and Costa, 2016).

Second, social networks influence migration decision by determining the migrant integration in the host country. Homophily assumes a crucial role with respect to network effect estimation, as it represents a source of correlated unobservables jointly with social norms (Manski, 1993; Cai et al., 2015). Goel and Lang (2009) demonstrate how immigrants already present facilitate the assimilation of newly arriving migrants. At the same time though, networks can also lead to segregation for particular ethnic enclaves, leading to poorer jobs and exclusion (Borjas, 2000).

Third, networks can be an insurance mechanism that helps to reduce the risk associated with migrating (Umblijs, 2012). Furthermore, social ties can work as a very peculiar risk management platform based on mutual and self-enforcing informal insurance agreements (Bloch et al., 2008). At the same time, networks at home represent a way to insure too, guaranteeing a successful reintegration process of the migrant once he gets back home (Batista and Umblijs, 2016). In addition, Fafchamps and Gubert (2007) show that networks facilitate insurance against risk, yet individuals do not choose the composition of their networks in order to maximize the income gain coming from risk sharing.

3. Empirical strategy

This paper examines the central hypothesis that the migrant social network at the destination and the one at the origin influence the migrant decision to return to the origin country. More specifically, considering the functions through which networks operate, we

expect to see earlier return intentions at a stage where the network at home is small, since with a bigger network at home, the migrant can still benefit from it, relying on different contacts in case of need. The same dynamic should hold at the destination, where a larger network implies stronger ties from which the migrant can still benefit. Therefore, he would postpone the return.

In order to empirically evaluate this hypothesis, we proceed by building an econometric model that allows us to estimate the nature and the direction of the existing relationships:⁴

$$y_{it} = \alpha_{it} + \beta_{ij}x_{1ij} + \gamma_{ij}x_{2ij} + \delta_i Z_i + \varepsilon_{it}$$

where y_{it} represents a binary variable summarizing the migrant's intention to return with respect to three different time horizons t ; α_{it} is the constant term for the specification. x_{1ij} and x_{2ij} are the dependent variables representing networks at destination and at home, respectively;⁵ Z_i stands for the vector of controls, while ε_{it} represents the stochastic error term of the model.

The model distinguishes the effects of one network relative to the other by estimating the existing relationship between the outcome under analysis and both types of network simultaneously. In our econometric analysis we include a vector of control variables including observable and unobservable characteristics that might affect the formation of

⁴ We also estimate separate models that consider only the network at destination or the one at origin. By considering one network at a time, these models allow us to detect the absolute importance of both networks, although they are subject to omitted variable bias. Therefore, the core model of our analysis considers both networks at once.

⁵ Index j represents different definitions for the network based on its characteristics

return intentions.⁶ As we further describe in the section on descriptive statistics, we take into consideration various definitions for both the dependent and the independent variables.

Since migration intentions can vary with respect to different time frameworks, we are able to better identify the nature of the relationship under analysis by putting it into a time perspective. Thus, we define return intentions according to three different horizons. The first refers to whether the migrant intends to return ever. The second considers the returning intention within the next five-year period, and the third extends the period up to ten years, and it is regarded for the purpose of our study as a comprehensive proxy for medium run return decision dynamics. Similarly, it is possible to define networks in several ways.⁷ We define the network as network size. By doing this we can detect the effect of having a larger or smaller network in terms of migrant intentions to return. Therefore, network size can be regarded as a proxy for network effect intensity. Nevertheless, networks are much more complicated structures than simple clusters of contacts. Therefore, for a deeper understanding of the mechanics underlying the network effect, we disassemble the network size, gathering its members according to characteristics that we consider key. The compositional analysis we set up takes into account two main aspects that can influence the nature of the relationship between the migrant and her network.

⁶ We control for individual characteristics (gender, age, years of schooling, spousal status, religion) and household and network characteristics (number of children, household income, a dummy variable for having sent remittances abroad during the last year). We also control for variables that we consider proxies for unobservables such as entrepreneurship, ability and risk-aversion (e.g. years spent in host country, intention to stay at arrival, and a risk-aversion proxy represented by a lottery-game [see Supplementary Appendix]).

⁷ For each migrant, the network at destination includes household members, friends and acquaintances, and contacts already present in the host country before arrival. The network at home gathers family members and friends.

A first crucial aspect of this relationship is the effort that the migrant invests in maintaining contact with her network members. It is therefore interesting to look at those members that are not part of the family⁸ and hence those that the migrant can include or exclude from her network more freely. Keeping in touch with these network members represents an interest choice with respect to the functions that the network exerts, as we discussed in the previous section.

A second element that must be borne in mind when dealing with social ties is how effective the network is in accomplishing one of its main functions, providing job solutions. As stressed above, jobs represent a pivotal factor in most migrants' decision to stay or leave. Therefore, the choice of restricting the network to just working members follows naturally.

As mentioned above, we provide estimates for three different outcomes and several definitions of networks. We first analyze the relationship between return intentions and migrant networks within a Linear Probability Model (LPM) based framework.⁹ We are interested in knowing the magnitude of the coefficients related to the network effects *ceteris paribus*. The main challenge faced by our econometric strategy comes from potential endogeneity. We identify two different sources of endogeneity.

The first source of endogeneity we consider stems from the reverse causality problem, which affects networks at both destination and at home. The simple fact that migrants maintain contact with people in their country of origin may be the result of a wish to go back.

⁸ We define family in two manners: first, we consider immediate family members (parents, spouse, children, and siblings); second, we extend the definition to other relatives.

⁹ Probit estimation yields similar results in terms of sign, magnitudes, and significance levels.

The size of the network can depend on the intention of the migrant to return earlier or later to her country of origin. The same holds for networks at destination, whereby migrants can choose to include or exclude certain people depending on their wish to be more integrated or to return sooner. This considered, we face the problem that our outcome could influence the explanatory variables. In order to overcome this threat to identification, we will follow a two-stage least squares approach.

A second possible source of endogeneity comes from unobserved simultaneity. In this regard, individual preferences and characteristics play a central role. For instance, a person with strong preferences for local amenities and consumption at the country of origin against the same goods at the country of destination could decide to build a larger or smaller network at destination in order to hasten or delay the return. Similarly, risk-preferences are important factors of unobserved heterogeneity. More risk-averse individuals will probably rely on stronger social ties and their risk aversion is likely to affect the return intention. Moreover, because some people can develop more social abilities than others do, they may have larger networks and their individual characteristics might influence the intention to return as well. Also, as reported in several studies on homophily and discrimination, more educated people may have larger or more educated networks. This is a further channel by which networks can influence return purposes and vice versa. The way we choose to deal with both endogeneity sources is to use an instrumental variable approach, since it allows us to show robustness of our results in face of both potential reverse causality and unobserved heterogeneity.

In order to be valid, the instrument has to be highly correlated with the instrumented variable, while it needs to be exogenous with respect to the dependent variable. In other

words, it has to be uncorrelated with the error term. For the network at destination, following Woodruff and Zenteno (2007) and McKenzie and Rapoport (2007), we use the stock of immigrants living in the country ten years before. In our case, it corresponds to the stock of migrants present in the host country 10 years before the survey is conducted. To build the instrument, we use census data from the database on Trends in International Migrant Stock: Migrants by Destination and Origin.¹⁰

We instrument the size of the network at home with the average self-reported cost of calling a network member on the telephone back in their home country. This instrument entails individual variation since it gathers the average self-reported costs that each migrant has to sustain by calling the different network members. As a valid instrument, it is correlated with the network size, since it entails the number of contacts the migrant has. At the same time, it is uncorrelated with the intention to return since it is very unlikely that a detail such as the cost of a call will affect such an important decision.

4. Data and descriptive statistics

Our study uses the dataset from Batista and Narciso (2016). Their representative sample gathers information at the individual level on about 1,500 adult immigrants of non-Irish and non-British nationality living in the Greater Dublin Area. For the purpose of our research, we consider the baseline sample, which includes 1,491 observations that were collected between February 2010 and December 2011.

¹⁰ United Nations, Department of Economic and Social Affairs, Population Division (2013), POP/DB/MIG/Stock/Rev.2013.

Migrants from 110 different nationalities are part of this cross-sectional sample. As shown in Table 1, there are four main nationalities represented: Nigerian 19%, Polish 10%, Indian 6%, and South African 5%. On average, the migrants are 32 years old women who are not married, while the proportion of males is 45%. Regarding the household composition, 53% of the respondents do not have children. Among those who do have children, the most common case is of only one child (18% of the sample).

The migrants in the sample are mainly highly educated individuals, 70% of which pursued a post-secondary or even a university degree. Only 5% of the sample stopped at the lower secondary degree or before. Almost half of the sample (48%) are taking part in training programs that are not an English course, and 18% are students. For the employed individuals, the average monthly individual income is about € 1,200 and the weekly average working-hours amount to 23. Among the migrants interviewed, 37% work in the tertiary sector, while 10% work in the commercial area and another 10% are unemployed.

Only migrants whose year of arrival fell between 2000 and six months before the beginning of the interviewing process in 2011 were considered eligible to be included in the sample. On average, the participants in the study came to Ireland at the age of 27, and at the time of the interview had spent five years in Ireland. As shown in Table 1.C, 80% of the respondents in the sample had considered ever returning to their home country, while almost 40% intended to return within five years.

The dataset collects information not only on migrants and their households, but also on their networks' members. We consider as being part of the network at destination,

members of the same household of the migrant, people the migrant is in contact with, and the contacts the migrant had before migrating to Ireland. In like fashion, the migrant's family members and other people she is in contact with form the network at home. In order to keep temporal consistency between the dependent and the explanatory variables of our models, we consider current network measures. An interesting piece of information reflects the importance of networks for these migrants. Around 82% of respondents do not have siblings living in Ireland, while 70% have between one and four siblings living in the migrant country of origin.

5. Estimation Results

In this section, we present the results of the econometric analysis. We first consider the LPM specification from the model based on both network sizes. Following this, the results from the IV approach are shown. Finally, we report the results from the compositional analysis.

At the LPM stage, both networks determine the general intention to return to the home country, with a coefficient of -0.01 for host country networks and -0.03 for home country networks. Both networks yield negative signs, and therefore our claim of the networks acting as two "pull" factors seems to find support. Moreover, the home network has a greater magnitude. When restricting the time framework to returning in five or ten years, we do not find significant results, as shown in Table 2.a.

To check the robustness of our LPM estimates regarding the previously highlighted potential endogeneity reasons, we instrumented the network at destination for the past stock

of migrants and the network at home for the average cost of calling. Using this estimation strategy, the size of network at destination no longer helps to explain the intention to return. This is equally valid for each of the three time-frameworks. Only the network at home explains the intention to return. Looking at the broader definition of return intention, we do not find significance. Now, we find strong and consistent evidence only when we restrict the intention to return within the next five and ten years. An increase of one member in the size of the network at home seems to decrease the probability of the migrant to return home within the next five years by 9 percentage points (pp). If we consider the migrant's intention to return within the next ten years, the estimated coefficient more than doubles. An increase of one member in the home network size decreases the probability of returning to the country of origin by 19.4pp, significant at the 1% level.

5.1 Compositional analysis

The nature of the network effects that have been detected so far could be due in part to the choice of using the general network size as dependent variable. Therefore, we need to proceed with a compositional analysis of the migrant networks in order to better identify their role in explaining the intention to return.

We consider three main categories for a narrower definition of network: highly educated network members, working network members, and non-family-member individuals.¹¹

¹¹ We further define network size as non-immediate family members (parents, spouse, siblings and children), non-extended-family members (immediate-family plus other relatives). Also, we consider working members and working members that are not living in the same household of the migrant. For further details, see Tables in the Estimation Results section.

We first look at the number of highly educated people defined as number of network members with at least a primary university degree. For the LPM specifications, even after having considered the vector of controls and the fixed effects, the coefficients for the network sizes do not achieve significant results overall. In addition, at the IV stage highly educated home network size does not return significant estimates (see Table 3).

We could further dissect the network and cluster its members into two groups, those that are part of the same family of the migrant and those that are not. The latter group represents the contacts the migrant has to put greater effort into keeping contact with. In Table 7 we consider as being part of the family all those members that are considered relatives by the respondent.¹² In Table 6 we define network as the number of non-family members living outside the migrant household. Although there are no significant findings for the general intention to return, significant values for the intention to return within five and ten years are found to be in line with the estimates of the general definition of both networks' sizes. Network at the origin returns negative estimates. However, when considered jointly, the instruments do not pass the weakness test. After considering the interaction term, no significance is found. Estimates from Table 7 are in line with those from Table 6 in terms of sign, magnitudes, and significance. Therefore, there is no difference between the two definitions of family.

6. Concluding remarks

¹² Ibid.

This paper examined the role of social ties in determining migrant intentions to return to the country of origin. The main conclusion we can draw from our study is that the migrant social network in the home country has more weight than the network in the host country in determining the migrant's intention to return. More precisely, the relationship between the intention to return and the network at home, measured as the number of network members, is indirectly proportional – i.e. the larger the network, the more the migrant tends to delay her return. We found that one more network member reduces the probability of return within five years by 9pp. We observe the network effect to be stronger when the migrant considers the intention to return within the next ten years. As the network at home seems to be the one that determines the intention to return, this pattern can be explained as if the migrant home network decreases over time, and hence, the more time that passes, the more importance the network acquires. For all specifications we find that the home network effect on the return intention at ten years is about twice that at five years horizon. An increase of one member in the network at home decreases the probability to return within ten years by 19.5 pp. Regarding the social network at destination, there is no strong evidence that this affects the probability of return migration, perhaps partly due to the choice of the instrumental variable.

We can interpret the negative relationship between the network in the country of origin and the probability of return migration as follows. If the migrant maintains many contacts at home, she can prolong her stay overseas without jeopardizing the safety provided by the home network. With the passing time of, the home network can decrease in size; therefore, the fewer contacts become even more important as they represent a way to ensure a safe return back home. This result is similar in spirit to that obtained by Batista and Umblijs

(2016), who found that remittances are used as insurance to maintain the support of networks in the origin country.

Studying the network effects over several time horizons, we find consistency in the estimates across different definitions of networks. After finding negative and significant estimates for the size of the network at origin, seeking to disentangle the puzzle around the network effect, we broke the general definition of network size into three categories: highly educated, working, and non-family-member individuals. We find that an increase in the home network size – defined as number of members who do not belong to the migrant family – reduces the probability of return within five and ten years by about 20pp and 40pp, respectively. Although the associated regressions still seem to suffer from possible endogeneity problems, these results are in line with the main finding of our study. We further allow the network size to interact with an indicator of risk-aversion. The different estimations do not provide significant results, and we can therefore conclude that risk does not bias the home network effect we presented. Overall, this paper emphasizes the importance of social ties – particularly those outside the family circle – at the country of origin in ensuring a safe and successful return.

Keeping in mind the potential effect of networks on return intentions, there are important economic implications, especially for origin countries – which usually correspond to the so-called less developed countries. Return migration can affect origin countries especially regarding the quality of institutions as presented by Batista and Vicente (2011) and Batista, Seither, and Vicente (2016). Rauch and Trindade (2002) show particular benefits for the home country in terms of international trade after return as an effect of networking.

In addition, Batista et al. (2016) show that there are clear gains in entrepreneurial capacity after migrants return. Therefore, governments of migrant-sending countries may wish to promote these contacts as a way to motivate return in order to benefit their countries.

References

- Baccara, Mariagiovanna, and Leeat, Yariv.** 2013. "Homophily in Peer Groups", *American Economic Journal: Microeconomics*, vol. 5(3): pp. 69-96.
- Batista, Catia.** 2008. "Why Doesn't Labor Flow from Poor to Rich Countries? Micro Evidence from the European Integration Experience", *Oxford Economics Working Paper*, no. 402.
- Batista, Catia, and Pedro C. Vicente.** 2011. "Do Migrants Improve Governance at Home? Evidence from a Voting Experiment", *World Bank Economic Review*, vol. 25(1): pp. 77-104.
- Batista, Catia, Aitor Lacuesta, and Pedro C. Vicente.** 2012. "Testing the 'brain gain' hypothesis: Micro evidence from Cape Verde", *Journal of Development Economics*, vol. 97(1): pp. 32-45.
- Batista, Catia, and Gaia Narciso.** 2016. "Migrant Remittances and Information Flows: Evidence from a Field Experiment", *World Bank Economic Review*, Forthcoming.
- Batista, Catia, Tara McIndoe-Calder, and Pedro C. Vicente.** 2016. "Return Migration, Self-Selection and Entrepreneurship in Mozambique", *Oxford Bulletin of Economics and Statistics*, Forthcoming.
- Batista, Catia, Julia Seither, and Pedro C. Vicente.** 2016. "Migration, Institutions and Social Networks in Mozambique", *NOVAFRICA Working Paper*.
- Batista, Catia, and Janis Umblijs.** 2016. "Do Migrants Send Remittances as a Way of Insurance? Evidence from a Representative Immigrant Survey", *Oxford Economic Papers*, vol. 68(1): pp. 108-130.
- Batista, Catia, and Ana Costa.** 2016. "Assessing the Role of Social Networks on Migrant Labor Market Outcomes", *NOVAFRICA Working Paper* 1601.
- Bertoli, S., Fernández-Huertas Moraga, J. and F., Ortega.** 2013. "Crossing the border: Self-selection, earnings and individual migration decisions," *Journal of Development Economics*, vol. 101(C), pages 75-91.
- Bloch, Francis, Garance, Genicot and Debraj, Ray.** 2008. "Informal insurance in social networks," *Journal of Economic Theory*, vol. 143(1): pp. 36-58.
- Borjas, George J.** 1987. "Self-selection and the Earnings of Immigrants", *American Economic Review*, vol. 77(4): pp. 531-53.
- Borjas, G. J., and B. Bratsberg.** 1996. "Who leaves? The outmigration of the foreign born", *Review of Economics and Statistics*, vol. 78(1): pp. 165-176.
- Borjas, G. J.** 2000. "Ethnic enclaves and assimilation", *Swedish Economic Policy Review*, vol. 2: pp. 89-122.

- Cai, Jing, Alain De Janvry, and Elisabeth Sadoulet.** 2015. "Social Networks and the Decision to Insure." *American Economic Journal: Applied Economics*, vol. 7(2): pp. 81-108.
- Carrell, Scott E., and Bruce Sacerdote.** 2013. "Why Do College Going Interventions Work?," *NBER Working Paper* 19031.
- Currarini, Sergio, Matthew O. Jackson, and Paolo Pin.** 2009. "An economic model of friendship: Homophily, minorities, and segregation", *Econometrica*, vol. 77(4): pp. 1003–1045.
- Dolfin, Sarah, and Garance Genicot.** 2010. "What Do Networks Do? The Role of Networks on Migration and "Coyote" Use," *Review of Development Economics*, vol. 14(2): pp. 343-359.
- Dostie, Benoit, and Pierre Thomas Léger.** 2009. "Self-Selection in Migration and Returns to Unobservable Skills" *Journal of Population Economics*, vol. 22(4): pp. 1005-1024.
- Dustmann, Christian.** 2000. "Temporary Migration and Economic Assimilation", *Swedish Economic Policy Review*, vol. 7: pp. 213-244.
- Dustmann, Christian and Oliver Kirchkamp.** 2002. "The optimal migration duration and activity choice after re-migration." *Journal of Development Economics*, vol. 67(2): pp. 351–372.
- Dustmann, Christian, Itzhak Fadlon and Yoram Weiss.** 2010. "Return Migration, Human Capital Accumulation and the Brain Drain", *CREAM Discussion Paper* 1013.
- Dustmann, Christian and Joseph-Simon Görlach.** 2015. "The Economics of Temporary Migrations," *CESifo Working Paper* 5188.
- Fafchamps, Marcel, and Flore Gubert.** 2007. "The formation of risk sharing networks," *Journal of Development Economics*, vol. 83(2): pp. 326-350.
- Gibson, John, and David McKenzie.** 2011. "The microeconomic determinants of emigration and return migration of the best and brightest: Evidence from the Pacific," *Journal of Development Economics*, vol. 95(1): pp. 18-29.
- Goel, Deepti, and Kevin Lang.** 2009. "Social Ties and the Job Search of Recent Immigrants," *NBER Working Paper* 15186.
- Jackson, Matthew O., and Brian W. Rogers.** 2007. "Meeting Strangers and Friends of Friends: How Random Are Social Networks?," *American Economic Review*, vol. 97(3), pp. 890-915.
- Manski, Charles.** 1993. "Identification of Endogenous Social Effects: The Reflection Problem", *Review of Economic Studies*, vol. 60(3): pp. 531-542.
- Marmaros, David, and Bruce Sacerdote.** 2006. "How Do Friendships Form?," *Quarterly Journal of Economics*, vol. 121 (1): pp. 79–119.

- McKenzie, David, and Hillel Rapoport.** 2007. "Network effects and the dynamics of migration and inequality: Theory and evidence from Mexico", *Journal of Development Economics*, vol. 84(1), pp. 1-24.
- McKenzie, David, and Hillel Rapoport.** 2010. "Self-Selection Patterns in Mexico-U.S. Migration: The Role of Migration Networks." *Review of Economics and Statistics*, vol. 92(4): pp. 811-821.
- McKenzie, David, Caroline Theoharides, and Dean Yang.** 2014. "Distortions in the International Migrant Labor Market: Evidence from Filipino Migration and Wage Responses to Destination Country Economic Shocks," *American Economic Journal: Applied Economics*, vol. 6(2): pp. 49-75.
- Munshi, Kaivan.** 2003. "Networks in the Modern Economy: Mexican Migrants in the U.S. Labor Market", *Quarterly Journal of Economics*, vol. 118(2): pp. 549-599.
- Organisation for Economic Cooperation and Development.** 2008. "International Migration Outlook 2008". OECD Publishing.
- Organisation for Economic Cooperation and Development.** 2015. "International Migration Outlook 2015". OECD Publishing.
- Rauch, J.E., and V. Trindade.** 2002. "Ethnic Chinese Networks in International Trade", *Review of Economics and Statistics*, vol. 84: pp. 116-130.
- Sjaastad, Larry.** 1962. "The Costs and Returns of Human Migration", *Journal of Political Economy*, vol. 70(5): pp. 80-93.
- Umblijs, Janis.** 2012. "The Effect of Networks and Risk Attitudes on the Dynamics of Migration", *Oxford IMI Working Paper 54*.
- Woodruff, Christopher, and Rene Zenteno.** 2007. "Migration networks and microenterprises in Mexico", *Journal of Development Economics*, vol. 82(2): pp. 509-528.
- Yang, Dean.** 2006. "Why Do Migrants Return to Poor Countries? Evidence from Philippine Migrants' Responses to Exchange Rate Shocks", *Review of Economics and Statistics*, vol. 88(4): pp. 715-735.

Appendix

Table 1.a

Country of birth	Frequency	Percentage
Nigeria	291	19.52
Poland	162	10.87
India	91	6.10
South Africa	72	4.83
Others	875	58.68
Total	1,491	100

Table 1.b

VARIABLES	N	Mean	St. Dev	Min	Max
Age	1,491	32.59	8.025	18	72
Age at arrival	1,489	27.24	7.58	8	68
Years already in Ireland	1,489	5.35	2.86	0	11
Years of schooling	1,483	14.687	2.798	0	17
Individual income	1,356	1175.07	1124.56	0	10500
Household income (w/o resp.)	1,077	1127.67	1746.26	0	17500
Weekly working hours	1,375	23.42	16.94	0	70
Number of children	1491	0.94	1.25	0	7
Size of network at destination	1,446	4.261	2.656	1	14
Size of network at home	1,459	2.300	1.305	1	10
Siblings living outside Ireland	1,118	2.55	2.28	0	17
Siblings living in Ireland	1,119	0.29	0.83	0	10
Value remitted last year	1458	572.76	1675.2	0	20000
Lottery game contribution	1,271	4.22	2.81	0	10

Table 1.c

VARIABLES	Frequency	Percentage
Female	807	54.12
Married	632	42.39
Student	232	18.55
Training – no English course	718	48.51
Unemployed	126	8.45
Follows a religion	1,060	87.46
Initial intention: staying for less than five years	716	51.55
Initial intention: staying forever	150	12.27
Initial intention: staying between five and ten years	225	18.41
Initial intention: staying for less than ten years	235	19.23
Current intention: return	1,116	81.46
Current intention: return within five years	515	37.59
Current intention: return within ten years	779	56.86
Contributed to the lottery game	995	78.28
Has remitted during last year	504	34.57
Remits weekly or monthly	251	17.22

Main Estimation Results

The following holds for each of the tables:

- Instruments used in IV regression are the same for every specification: stock of migrants living in Ireland in 2000 for network at destination and self-reported average cost of calling home for network at origin.
- Controls are the same for every regression: individual characteristics (gender, age, years of schooling, spousal status, religion), household and network characteristics (number of children, household income, a dummy variable for having sent remittances abroad during the last year); proxies for unobservable characteristics (years spent in host country, intention to stay at arrival, risk-aversion proxy).
- Standard errors in parentheses, clustered at the enumeration area level.
*** p<0.01, ** p<0.05, * p<0.1

Table 2. Network as size

VARIABLES	LPM	IV
	<u>Intends to return</u>	
Network size dest	-0.0132* (0.00717)	-0.0514 (0.0474)
Network size home	-0.0274* (0.0161)	-0.114 (0.0760)
Constant	0.854*** (0.190)	1.154*** (0.285)
	<u>Intends to return within 5 years</u>	
Network size dest	-0.00403 (0.00759)	0.0127 (0.0427)
Network size home	-0.00245 (0.0127)	-0.0936* (0.0562)
Constant	0.634*** (0.174)	0.761*** (0.241)
	<u>Intends to return within 10 years</u>	
Network size dest	-0.0126 (0.00998)	-0.0145 (0.0526)
Network size home	-0.0268 (0.0170)	-0.194*** (0.0753)
Constant	0.636*** (0.178)	0.929*** (0.304)
Observations	752	681
Controls	YES	YES
FE	YES	YES
F-statistic on excluded instruments		10.526

Table 3.a Network as number of highly educated members

VARIABLES	LPM	IV
	Intends to return	
Num. highly educated dest	-0.00836 (0.00891)	-0.461 (1.319)
Num. highly educated home	-0.00987 (0.0163)	-0.684 (1.297)
Constant	0.812*** (0.187)	1.398 (1.662)
	Intends to return within 5 years	
Num. highly educated dest	-0.00638 (0.00753)	0.198 (0.605)
Num. highly educated home	-0.0174 (0.0159)	0.0954 (0.578)
Constant	0.610*** (0.179)	0.390 (0.732)
	Intends to return within 10 years	
Num. highly educated dest	-0.0152 (0.00918)	-0.156 (0.884)
Num. highly educated home	-0.00688 (0.0174)	-0.491 (0.900)
Constant	0.527*** (0.189)	0.733 (1.092)
Observations	651	598
Controls	YES	YES
FE	YES	YES
F-statistic on excluded instruments		0.090

Table 4. Network as working members

VARIABLES	LPM	IV
	<u>Intends to return</u>	
Num working dest	-0.00771 (0.0102)	-0.0319 (0.0506)
Num working home	0.0104 (0.0146)	-0.316 (0.222)
Constant	0.921*** (0.182)	0.874*** (0.288)
	<u>Intends to return within 5 years</u>	
Num working dest	-0.00905 (0.00941)	0.0194 (0.0364)
Num working home	0.0260** (0.0129)	-0.197 (0.159)
Constant	0.696*** (0.211)	0.681*** (0.255)
	<u>Intends to return within 10 years</u>	
Num working dest	-0.0122 (0.0115)	-0.00159 (0.0603)
Num working home	0.0121 (0.0154)	-0.456 (0.279)
Constant	0.580*** (0.217)	0.498 (0.311)
Observations	646	590
Controls	YES	YES
FE	YES	YES
F-statistic on excluded instruments		2.621

Table 5. Network as working members living outside the household

VARIABLES	LPM	IV
	<u>Intends to return</u>	
Num working not in hh dest	-0.0147 (0.0107)	-0.0514 (0.0526)
Num working not in hh home	0.0115 (0.0140)	-0.239 (0.182)
Constant	0.751*** (0.179)	0.648*** (0.249)
	<u>Intends to return within 10 years</u>	
Num working not in hh dest	-0.0170* (0.00941)	0.00677 (0.0457)
Num working not in hh home	0.0265** (0.0124)	-0.202 (0.136)
Constant	0.602*** (0.164)	0.588*** (0.209)
	<u>Intends to return within 10 years</u>	
Num working not in hh dest	-0.0248* (0.0132)	-0.0223 (0.0682)
Num working not in hh home	0.0137 (0.0148)	-0.415* (0.229)
Constant	0.521*** (0.169)	0.389 (0.262)
Observations	752	681
Controls	YES	YES
FE	YES	YES
F-statistic on excluded instruments		3.373

Table 6. Network as non-family members living outside the household

VARIABLES	LPM	IV
	Intends to return	
Num non-fam not in hh dest	-0.0114 (0.00745)	-0.0792 (0.0509)
Num non-fam not in hh home	-0.0289 (0.0178)	-0.269 (0.246)
Constant	0.816*** (0.179)	1.174*** (0.319)
	Intends to return within 5 years	
Num non-fam not in hh dest	-0.00206 (0.00786)	-0.00809 (0.0453)
Num non-fam not in hh home	-0.0213 (0.0143)	-0.226* (0.134)
Constant	0.632*** (0.167)	0.752*** (0.269)
	Intends to return within 10 years	
Num non-fam not in hh dest	-0.0147 (0.00999)	-0.0591 (0.0666)
Num non-fam not in hh home	-0.0396** (0.0189)	-0.465* (0.273)
Constant	0.614*** (0.179)	0.929** (0.413)
Observations	752	681
Controls	YES	YES
FE	YES	YES
F-statistic on excluded instruments		2.627

Table 7. Network as number of members who are not relatives living outside the household

VARIABLES	LPM	IV
	<u>Intends to return</u>	
Num non-relatives not in hh dest	-0.0125 (0.00770)	-0.0617 (0.0563)
Num non-relatives not in hh home	-0.0352* (0.0190)	-0.178 (0.204)
Constant	0.818*** (0.183)	1.045*** (0.264)
	<u>Intends to return within 5 years</u>	
Num non-relatives not in hh dest	-0.00412 (0.00774)	0.0169 (0.0487)
Num non-relatives not in hh home	-0.0367** (0.0161)	-0.237* (0.144)
Constant	0.641*** (0.172)	0.637** (0.253)
	<u>Intends to return within 10 years</u>	
Num non-relatives not in hh dest	-0.0180* (0.00943)	-0.0151 (0.0655)
Num non-relatives not in hh home	-0.0596*** (0.0168)	-0.424** (0.211)
Constant	0.627*** (0.182)	0.697** (0.304)
Observations	752	681
Controls	YES	YES
FE	YES	YES
F-statistic on excluded instruments		3.110

Supplementary Appendix

Lottery Game:

Question L014 from the survey (Batista, Narciso; 2015, Oxford WP):

“Finally, please consider what you would do in the following situation.

Imagine that you had won **100,000 Euros in the lottery**.

Almost immediately after you collect the winnings, you receive the following financial offer from a reputable bank, the conditions of which are as follows:

- There is the chance to **double the money within two years**.
- It is equally possible that you could **lose half of the amount invested within two years**.

You have the opportunity to **invest the full amount, part of the amount, or reject the offer**.

L014: What share of your lottery winnings would you be prepared to invest in this financially risky, yet lucrative, investment?”

Nothing, I would decline the offer	0
100 Euros	1
500 Euros	2
1,000 Euros	3
5,000 Euros	4
10,000 Euros	5
20,000 Euros	6
40,000 Euros	7
60,000 Euros	8
80,000 Euros	9
All 100,000 Euros	10
Missing [Note: Do not read the Missing.]	99