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Immigrant Links, Diasporas and FDI. An Empirical Investigation on Five European Countries

Marina Murat and Sara Flisi

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An Empirical Investigation on Five European Countries

Sara Flisi*, Marina Murat**

Abstract This paper studies the effects of migration on the bilateral FDI of five European countries, Germany, Italy, France, UK and Spain. It is based on five datasets with time spans going from 1990 to 2006. It analyses the impacts of skilled and less-skilled immigrants, of skilled networks from developed and developing countries and, for Italy and Spain, of emigrants. Results are that skilled immigrants, originating from both developed and developing countries, have positive and robust effects on the bilateral FDI of the UK, Germany and France. The FDI of Italy and Spain are influenced by their respective diasporas.

* *University of Modena and Reggio Emilia, University of Nottingham.*
** *University of Modena and Reggio Emilia, RECent*,
** corresponding author: e-mail: marina.murat@unimore.it, tel. +390592056884, fax +390592056947, Department of Economics, Viale Berengario, 51. 41100 Modena, Italy

Perhaps you have taken children with you to your new home; others may have been born to you there. Our country, Italy, regards all these your children as its subjects.
Bollettino dell'Emigrazione, 1910, No. 18.

He was born in Thailand, lives in South Africa and carries a UK passport. But Jag Johal, chief executive of investment firm CBA Capital Partners, has undeniable ties to India. "I speak Hindi and Punjabi. My parents live in Delhi. I visit at least once a year," said Mr Johal. "There are a lot of people like me."
Financial Times Asia-Pacific, January 9, 2007

I. Introduction

Since the end of World War II, Western Europe has attracted immigration from various parts of the world. People have arrived especially from the ex-colonies and the developing countries, but have also migrated intensively within Europe, especially from the poorest to the richest areas. Originally, the preferred destinations were France, the UK, Germany, Luxembourg, Belgium and other northern European countries, while during the last two decades the presence of foreigners has also increased rapidly in Italy, Spain, Ireland, Greece and Portugal. Nowadays, the whole western part of the continent attracts immigrant inflows.

It was, however, a land of emigration during the nineteenth and first half of the twentieth centuries. A large number of people in search of a new and better life departed from the UK, France, Germany, Greece and Portugal, and massive numbers left from Italy, Ireland and Spain. The net balance of emigration remained positive in Italy until the beginning of 1970, and in Spain and Ireland for at least another decade, before turning in favour of immigration. No other area of the world, in modern history, has had such large and varied movements of populations, inwards and outwards. The question then is, how does this affect the European economy, and more specifically, does it influence its economic interactions with the rest of the world?

As formal barriers to international economic exchanges have gradually come down during the last few decades, informal impediments have become apparent. They are due to social, cultural and institutional differences between countries, and their effects on transactions are significant (Trefler, 1995; Obsfeld, Rogoff, 2000). Recent sociological and economic studies show that migrant communities typically tend to build links between their origin and destination countries. More precisely, migrants develop transnational networks, within which relevant economic information on economic opportunities concerning the home and residence economies flows (reviews are in Rauch, 2001; Wagner et al., 2002). Information flows more easily and efficiently than through the international price system, especially if the transnational ties are built between very different or distant countries (Girma and Yu, 2002; Dunlevy, 2006). Immigrant communities, furthermore, tend to exert social control over the actions of their members, which reduces opportunism and the risks

associated to international transactions. Hence, by lowering the informal barriers, migrant links may boost international trade in goods, services and capital.

Empirical research has focused especially on the influence of networks on international trade (a partial list includes; Head and Ries, 1998; Rauch and Trindade, 2002; Blanes, 2006, Murat and Pistoresi, 2007), but other studies have analysed the impact of transnational ties on the foreign direct investments (FDI) of countries (Gao, 2003; Tong, 2005; Buch *et al.* 2006, Murat and Pistoresi, 2008). Both lines of research have provided evidence in support of the basic hypothesis on migrant networks.

According to the findings of this line of research, Western Europe should be significantly and positively affected by the transnational ties built by its immigrant and emigrant networks. This paper addresses this issue by focusing on networks and the bilateral FDI with the countries of origin and destination of, respectively, immigrants and emigrants. It focuses on five European countries, France, the UK, Germany, Italy and Spain. In particular, we focus on the separate influence of skilled and unskilled immigrants, the specific effects of skilled immigrants originating from developed and developing countries and, finally, the influence of emigrant networks. The latter are analysed only in relation to two out of the five countries, Italy and Spain.

The skill-based distinction arises from the observation that investments abroad are more complex, costly and risky than pure trade and, therefore, are more likely to be undertaken by individuals with higher education levels and skills. A frequent hypothesis of recent studies is that skilled immigrants may have a higher impact on the bilateral FDI; among these: Kugler and Rapoport, 2007; Javorcik et al., 2006 and Docquier and Lodigiani, 2009.

Two well-known regularities of the world economy are that global FDI tend to cluster within the group of developed economies, while migration flows mainly from poor to rich countries. We split the networks of skilled immigrants in relation to the level of development of their countries of origin, distinguishing in particular between OECD and non-OECD economies. This allows us to check for the specific influence of non-OECD skilled immigrants, and to asses whether they contribute, through network effects, to narrowing the existing FDI gap between rich and developing countries. A narrowing of the FDI gap would also partially compensate for the *brain drain* that the skilled migration implied in the first place (Docquier and Rapoport, 2007; Arora and Gambardella, 2005; Commander et al. 2004; Saxenian, 2001).

Data on emigration are available only for Italy and Spain, two economies that experienced massive emigration flows during the nineteenth and twentieth centuries.[1] A common feature of these two nations is that they have maintained tight links with their external diasporas and, as a

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[1] Another interesting country from this point of view is Ireland. However, there are no records on the Irish diaspora comparable to those on the Italian and Spanish ones.

consequence, that they keep detailed official records on emigrants. This availability of data has made this paper's analysis on emigrants feasible. We check for the separate effects of emigrants residing in developed and developing countries but, because of a lack of reliable data on education, we cannot measure the separate influence of emigrants with different levels of skills.

In contrast with other papers, which use a single database to measure the exchanges between several receiving and sending countries (Docquier and Lodigiani, 2009; Tong, 2005; Rauch and Trindade, 2002), our study utilizes five different sets of data, one for each of our countries of interest. This allows us to draw our figures from a wider overall pool of information. We use the same regression equations, techniques and tests for each country, hence, although the cross-country results are not strictly comparable, they can still be discussed in a unified setting.

Our main findings are that the coefficients on skilled and unskilled immigrants show a common pattern across our five countries: skilled immigrants generally have a positive, and in most cases significant, influence on bilateral FDI, while unskilled immigrants have non-significant and in some cases negative effects. This is consistent with previous studies on skilled and unskilled migration. The splitting of skilled immigrants into OECD and non-OECD networks shows that both have positive effects and, in particular, that skilled networks from developing countries can significantly affect the bilateral FDI with their countries of origin. Finally, Italy and Spain, but especially Italy, appear to rely substantially on the links supplied by the respective transnational ethnic networks, rather than on those potentially provided by immigrants. This improves our understanding on the possible roles of diasporas.

The paper is structured as follows. Section II presents the main issues and the descriptive statistics. Section III contains the empirical model. Section IV illustrates the data. Section V presents the main results of the regressions while Section VI concludes. The Appendix contains the detailed regressions on each country and the list of partner economies considered in each dataset.

II. Migrant networks, diasporas and investments abroad

Immigration in France, the United Kingdom, Germany, Italy and Spain has increased substantially during the last two decades, but for some of these countries it was an important phenomenon even before then. Since the end of the Second World War, immigrants have arrived in the UK from various areas of the world and especially from its ex-colonies and the Commonwealth, in France principally from Southern Europe and its ex-colonies, and in Germany mainly from some European countries and the Middle East. Immigration in Italy and Spain has a shorter past history,

but it has grown so rapidly that the presence of immigrants within the overall population is now quite significant.[2]

Italy and Spain also differ from the first three countries in that they were countries of massive emigration. Migration from Italy took place mainly during the hundred years from 1870 to 1970, while from Spain it lasted until the 80s of the last century. Both nations have built and continue to maintain close links with their diasporas. Italian and Spanish emigrants and their descents living permanently abroad can retain citizenship of their home countries. They hold the right to vote in the home countries' parliamentary elections and, from 2006, Italian emigrants also have their own parliamentary representatives. Both countries keep detailed records of their diasporas, which include the years of registration of emigrants and their progeny and their foreign countries of residence. The data on emigrants utilised in this paper are extracted from these records.

Similarly, the FDI in and out of the five economies have substantially increased with the globalization of the world markets, but the UK, France and, to a lesser degree, Germany, have longer and well-established histories of investing abroad and receiving foreign investments. Table 1 contains some descriptive statistics based on the five datasets. They show that these three countries' FDI are larger than those of Spain and Italy. However, if considered in per-capita terms (figures not in the Table), only those of Italy remain significantly below those of the other economies.

Table 1 also shows that, as expected, there is a strong clustering of the five countries' FDI, both inward and outward, within the group of OECD economies. The shares of the outward FDI directed to non-OECD countries out of the total FDI are, at the two extremes, 6,7% for Italy and 32,3% for Spain. Similarly, the shares of the total FDI originating from non-OECD economies are 1,44% for Italy and 9,38% for Spain. The figures for the other countries lie between the two extremes. The distribution of immigrants in terms of countries of origin has the opposite shape: the shares of immigrants originating from non-OECD countries tend to be higher. In this respect, Italy is at the upper end, with 82% of immigrants being non-OECD, while Germany is at the lower end, with only 30% of immigrants originating from non-OECD countries.

The distribution of immigrants in terms of skills also reveals some interesting patterns: in this case, the highest shares of immigrant population and also the highest absolute values of skilled immigrants are found in the UK, (33% and 999.224 respectively), while the lowest are those of Italy (13,8% and 122.570 respectively). Furthermore, the share of *non-OECD* skilled immigrants is also higher in the UK than in the other countries while it is lowest in Italy, despite the fact that this country has the highest share of non-OECD immigrants.

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[2] The *Eurostat* estimated figure for of resident foreigners relative to the total population during 2005 is about 5% in Spain, Italy and the UK, and above 7% in France and Germany.

Turning now to emigration, Table 1 shows that Italian emigrants reside in OECD countries more than Spanish ones (78,5% of Italian emigrants and 46,2% of Spanish emigrants are in OECD countries). Our raw data also show that, outside the OECD, Italian emigrants are present mainly in Latin American countries, Australia and South Africa while emigrants from Spain are more concentrated in Latin American countries. The data also shows that the two variables, immigration and emigration, are mutually independent. They are non-correlated through both time and space in the two databases. While the values for emigrant stocks are high from the initial years and grow slowly through time, those of immigrants are initially low and grow very rapidly. Also, emigrant communities are present mostly in developed and Latin American countries, while immigrants originate mostly from north African, African, East European, Asian countries and, also, Latin America. The correlation values between emigration and immigration in the two databases are - 0,072 in Italy and 0,081 in Spain.

III. The empirical specification

We start from a version of the gravity model based on Markusen and Maskus (2002) and Gao (2003). We therefore include the sum of the GDP of the countries involved in the FDI (*tgdp*) as an indicator of the size of the economies, and the squared difference of GDPs (*sq_gdpdiff*), as a measure of similarity; following Gao (2003), we also add in the difference in per capita GDP (*pcgdpdiff*)[3], as a proxy of differences in relative factor endowments or factors' productivity. The choice of these variables is based on recent literature on gravity and FDI, which distinguishes between "vertical" and "horizontal" models of foreign investments. In it, firms invest "horizontally" because of market proximity motivations, i.e. to sell abroad the same goods sold at home, while they make "vertical" investments to exploit relative factor endowment differences. Most horizontal FDI are supposed to take place between similar countries while the opposite applies to vertical FDI (Barba Navaretti and Venables, 2004). The horizontal model is consistent with a positive coefficient of *tgdp*, a negative coefficient of *sq_gdpdiff* and a negative coefficient of *pcgdpdiff*. The vertical model of FDI predicts positive coefficients of the two variables in differences, the *sq_gdpdiff* and the *pcgdpdiff*. This version of the gravity model is useful for our analysis, which includes developed and developing countries.

The gravity model is then augmented with a range of other factors which can in principle influence FDI, including the economic characteristics of the origin and host markets, their cultural and institutional features and, in particular, our main variables of interest: the international networks of migrants. Thus, the specification of our model is:

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[3] This variable is the positive difference (zero otherwise) between the sending and receiving countries of investments.

$$FDI_{it} = \beta_0 + \beta_1 \times tgdp_{it} + \beta_2 \times sq\_gdpdiff_{it} + \beta_3 \times pcgdpdiff_{it} + \beta_4 \times dist_i + \beta_5 \times openness_{it} +$$
$$+ \beta_6 Deu15_i + \beta_7 Doecd_i + \beta_6 \times Dlang_i + Dcolotie_i + \beta_7 \times religion_i + \beta_8 \times governance_i +$$
$$+ \gamma \times network_{it} + \rho \times D_t + u_t$$

where *FDI*, distance, openness and variables related to *gdp* and network are expressed in logarithms[4]; *i* and *t* are subscripts for the partner country and year, D_t are time dummies.

FDI_{it} is the stock of foreign direct investment from the country of origin to the country of destination (for outward FDI, the country of origin is one of the 5 economies under investigation, and the host country is the partner *i*, while for inward FDI the link goes the opposite way). *dist* is the great circle distance between capital cities of the countries of origin and destination of the FDI, which is meant to capture all the measurable and invisible transaction costs related to travel and communication, but may also capture profitable differences in endowments. Its coefficient, therefore, is not signed a priori. *openness* is the share of exports plus imports in each country's *gdp*, which is a measure of the commercial openness of countries. In principle, bilateral FDI and trade can be complements or substitutes; hence, again, no assumptions are made on the sign of this variable.

The set of indicators we use to control for cultural and institutional similarities between countries includes a standardized composite index (*governance*) to indicate the quality of foreign countries' institutions; the share of Christian religion in each partner country as a proxy for religion and culture *(religion);* in the regressions for France and the UK, two dummies capturing the presence of past colonial ties (*Dcolotie*) and of a common language (*Dlang*) with the foreign economies; and dummies indicating the partner countries' membership of economic and political regional areas, the European Union of 15 members (*Deu15)* and the OECD (*Doecd*). These dummies are supposed to capture trade and political agreements, but also similarities among member countries not picked up by the institutional and cultural variables listed above. On the assumption that similarity boosts investments abroad, the expected signs of the cultural, institutional and regional variables are positive.

The gravity model is then further augmented to include our variables of interest (*network*). In the simplest specification, we add in the immigrant stock from each partner country (*immigrants*). A subsequent specification will also include, for Italy and Spain, the stocks of Italian and Spanish emigrants residing in each foreign country (*emigrants)*. Following the theory of networks,

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[4] Since taking the logarithm would lead to negative values for observations for which the total stock of FDI acquires a value lower than unity and the lack of observations when total stocks are equal to zero, we add one before taking the log.

emigrants, as well as immigrants, are expected to have positive and significant effects on bilateral FDI.

Because of the complexity of investment operations abroad, networks of skilled immigrants are expected to have a higher impact than those of low-skilled immigrants, for both outward and inward FDI. Hence, the stocks of immigrants are split into the *skilled_immi* and *lowskilled_immi* subsets. Because data on emigrants' education levels are not available, the same operation is not performed for the emigrant stocks.

As seen previously, the biggest share of world FDI remains within the group of developed economies. We split the stocks of skilled immigrants into OECD and non-OECD networks (the same operation could be performed for the unskilled, but, as will become clear in the next paragraph, it would not lead to significant insights). The splitting will help to reveal whether the movements of people between developed and developing countries, through skilled networks, tend to narrow the FDI gap between the two regions.

We do not expect either the immigrant or the emigrant coefficients to be stronger in the regressions where both variables are present, but they should be both positive and significant. It may be thought that immigration in both Italy and Spain is a relatively recent phenomenon and that this may work against the strong influence of networks, especially if the immigrant communities are still not well-established in the host countries (Blanes, 2006; Murat, Pistoresi and Rinaldi, 2008). However, the bulk of emigration occurred in a fairly distant past, and time may also work *against* the tightness of transnational links (Gould, 1994).

The time dummies D_t are meant to capture a variety of macroeconomic and FDI policy factors that affect the foreign investments of our countries of interest and of the partner economies. Possible omitted variables that vary through time but affect our five European countries and their foreign partners are subsumed in these dummies. One potential issue in this empirical analysis is endogeneity, which may arise from the presence of omitted variables (Bhattacharya and Groznik, 2008), measurement error, or simultaneity. We therefore resort to the Instrumental Variable (IV) approach to control for this issue for the immigrants variable. Finding a good instrument in this context can be difficult, in particular due to lack of data. Following Javorcik et al. (2006), we use the stock of immigrants living in the EU-15 in 1990[5], disaggregated by country of origin and level of educational attainment, before the period covered in our analysis. The IV variable should be correlated with the size of the immigrant population, via the set of possible factors inducing migration, but, as the authors state, it is not expected to explain the FDI. It can therefore be considered exogenous. Depending on the type of migration variable to be instrumented, we use the

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[5] For Spain, we use the data for 2000, as the period covered in the analysis is subsequent to this year.

corresponding instrument (total migration, skilled and unskilled migration)[6]. The second instrument is the population density in the countries of origin of immigrants, traditionally considered as a significant push factor for emigration.

The first stage is therefore:

$$network_{it} = \alpha_0 + \alpha_1 \times immig90\_EU15_i + \alpha_2 \times pop\_dens + \delta \times controls + \varepsilon_t$$

where *network* is the (logarithm of the) network variable instrumented, *immig90_EU15* is the corresponding instrumental variable concerning previous migration to the EU-15, *pop_dens* is the (logarithm of the) population density in the home country, and *controls* is the set of exogenous variables of the main regression.

We run both OLS and IV regressions, testing for endogeneity through the Hausman test and the test for no correlation between the error terms in first and second stage regressions. The complete regressions for each country are in the Appendix. When there is no evidence of an endogeneity issue, both the IV and the OLS estimates are consistent. We show the latter since it is by definition more efficient. When endogeneity is detected, the IV estimates are presented, and we include the values of the first stage *F* statistic, utilized to check for the relevance of the instruments[7].

IV. The Data

The partner countries and time periods considered in each dataset, regarding France, Germany, Italy, the United Kingdom and Spain, vary according to data availability. The partner economies of each of our five countries and the time span covered are listed in the Appendix.

The main sources of immigration figures are national censuses and the OECD Database on immigrants and expatriates, *Total population by nationality and country of birth (detailed countries* and *Population 15+ by nationality, country of birth (detailed countries) and educational attainment*. The latter data are available for a single year, corresponding to the last census, 1999 for France, 2001 for Italy and the UK. For Germany, figures are from the *Microcensus*, and cover the years 1999-2002. Data on immigration in Spain are from the *Ministerio de Trabajo e Inmigraciòn*. The data on the stocks of Italian emigrants are from the AIRE (*Registry Office of Italians Residing*

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[6] We do not utilize the other two instruments used in Javorcik et al. (2006), i.e. the cost of obtaining a national passport in the country of origin of migrants, because the data are available only for a smaller set of countries, and population density, which in our sample is never significant and therefore not a relevant instrument (see Appendix).

[7] We never show the *J*-test for over-identifying restrictions, used to (partially) control for instrument exogeneity, because in the cases when the TSLS approach is required, only one of the instruments (the stock of immigrants in the EU) is significant; therefore the endogenous variable is not overidentified, and the test cannot be carried out.

Abroad), while those on Spanish emigrants are from the CERA (*Censo Electoral Residentes Ausentes*).

Figures on bilateral FDI are taken from *Source OECD International Direct Investment Statistics - International direct investment by country Vol. 2005 release 01* for France, and from *UNCTAD WID Country Profiles and National Statistics* for the other countries (for Germany, these rely on "International Capital Links", Special Statistical Publication 10, *Deutsche Bundesbank*, April 2005; for the UK, on *Foreign Direct Investment - Business Monitor MA4, Office for National Statistics*). The data on the bilateral FDI of Spain are from the *Ministerio de Turismo, Industria y Comercio*. Data on GDP, in current prices, and per capita GDP are taken from the *IMF – World Economic Outlook Database*. The distance measure is taken from the *USDA-ARS United States Department of Agriculture* – Agricultural Research Service website.

Data on the share of the Christian religion in each country and the governance indicators are taken from the *CIA World Factbook* and from *World Bank Institute, Governance & Anti-Corruption - Aggregate Governance Indicators 1996-2005*, respectively. Data on openness are from the A. Heston, R. Summers and B. Aten, *Penn World Table Version 6.2, Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania*, September 2006. Figures used for the instruments in TSLS are from the dataset of Docquier and Marfouk (2006) as far as the stock of immigrants in the EU is concerned, and from the *World Bank – World Development Indicators* for the population density.

V. Key findings

We now discuss the results listed in Table 2, which regard both the inward and outward bilateral FDI for the five countries and depict the coefficients of the final regression models. They are extracted from a wider set of regressions, which have been run for each country following the incremental approach and are in the Appendix[8].

The outward FDI will be considered first. The Table shows that there is not a clear or shared pattern across the five countries indicating the prevalence of either the horizontal or the vertical model of investments abroad. The coefficients of the *tgdp* variables are positive when significant, but the signs and significance of the coefficients of *sq_gdpdiff* and *pcgdpdiff* tend to differ, even within each country. The *dist* variable, which is a proxy of both tangible and invisible costs of

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[8] In Table 2, all the estimates are from OLS regressions because tests show that no endogeneity issue arises. In Tables A1-5, IV estimates are depicted in relation to four cases: the outward FDI for France, Germany and Italy, and the inward FD for the UK. The network variable included is *immigrants*. We do not report the first stage of these regressions, but in all cases, the instrument , which is the size of the immigrant population in the EU-15 in 1990 by country of origin, shows coefficients that are positive (ranging from 0,40 to 0,75) and significant at the 1% level, as confirmed by the first stage F-statistic shown in the Tables. The population density, on the other hand, is never significant when IV is required, and therefore is not included.

geographical distance between countries, has significant coefficients in the regressions regarding three economies, Italy, Spain and the UK, but with opposite signs. They show that Italian and Spanish firms tend to prefer nearby markets for their investments abroad, while UK multinationals are eager to invest in faraway economies. For Italy and Spain, a 10% increase in distance is associated with an 8% decrease in investments abroad, for the UK a 10% increase in distance implies an increase of 5% in FDI. The coefficients of the *openness* variable are non-significant, showing the absence of a clear pattern of substitution or complementarity between investments abroad and the openness to trade of the partner economies. Similarly, membership of the EU15 and OECD (intended to capture the effects of the OECD countries that do not belong to the EU15) has no effect on the investments abroad of the five countries.

The coefficients of the cultural and institutional variables are as follows: France's outward FDI are positively influenced by the presence of French-speaking populations in foreign countries (in Model 1: investments towards a country where French is the official language are 23% higher when compared to non-French speaking countries), colonial ties are highly significant for Spain's investments abroad (in Model 4, the coefficient on *Dcolotie* is 3,44), while UK FDI are lower in Commonwealth economies than in non-Commonwealth ones (Model 5). This is consistent with the observations of Girma and Yu, 2002, regarding trade.[9]

Religion only matters for Italian firms investing abroad (in Model 3, an increase by 10% in the size of the Christian population in the foreign country increases Italian FDI by almost 9%). On the other hand, as expected, governance is a positive factor in attracting FDI from all our countries; the coefficient of the variable is highly significant for France, Germany and Spain, with values ranging from 2,9 to 6,2.

Our main variables of interest, the networks of immigrants, confirm our prior expectations and reveal some interesting features. In Table 2, they are split into skilled and unskilled immigrants and the latter are subdivided into OECD and non-OECD networks. Regarding skills, the overall picture supports our prior assumptions: skilled immigrants positively affect direct investments from their hosting economies to their countries of origin. Table 2 shows that the coefficients (of both OECD and non-OECD variables) are positive in the regressions of all countries except Italy, and that they are significant for the UK (Model 5), Spain (Model 4) and Germany (Model 2). These

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[9] Our raw data show that French is the official or administrative language in three out of the first ten countries in order of importance for France's outward FDI (which are, respectively: USA, Belgium, UK, Netherlands, Germany, Switzerland, Spain, Italy, Luxembourg and Brazil). Two of the first ten countries for Spain's outward FDI are ex colonies (the list is: Netherlands, UK, Luxembourg, Portugal, Brazil, Mexico, Argentina, Ireland, France and Switzerland).

results are also consistent with the findings of Kugler and Rapoport (2007), Javorcik et al. (2006) and Docquier and Lodigiani (2009).[10]

Furthermore, the networks originating in developing countries (*skilled_immi_nonOECD*) have positive effects on the bilateral FDI of all our economies. Coefficients are significant in the UK and Germany regressions, with values of 1,6% and 0,45% respectively. This seems to suggest that skilled immigrants living in these economies help to bridge the existing FDI "divide" with their countries of origin. Also, through this channel, they partly compensate for the brain drain implied by emigration. The coefficients of the OECD skilled immigrants are also mostly positive (except for Italy), but are significant only for Spain and the UK.

Unskilled immigrants, on the other hand, generally have non-significant and negative effects on our five countries' bilateral FDI. Coefficients are negative and weakly significant in the regression concerning the UK (Model 5 of Table 2). Negative values, indicating a possible "substitution" effect between low-skilled immigration and investments abroad, have also been found by Kugler and Rapoport (2007) for the U.S.

We now turn to the inward FDI equations (Models 6 to 10 of Table 2). Also in this case, a generalized prevalence of the horizontal or vertical model does not emerge. Each country seems to be characterized differently. Distance has a negative sign in all cases, and is also significant in the regressions regarding the UK, Italy and Spain; it was also negative and significant in the outward equations of Italy and Spain (From Table 1, these are also the countries with lowest levels of FDI, inward and outward). As for the outward FDI, the *openness* variable is in general only slightly significant. The dummies *EU15* and *OECD* are positive and significant only for Germany (*EU15*) and the UK (*OECD*). Language is a positive factor affecting the investments from abroad in both Spain and the UK, while the dummy for Colonies/Commonwealth (*Dcolotie*) is not significant for either France or the UK.

Reflecting the outward regressions, *religion* positively affects foreign investments into the Italian market: an increase of 10% in the share of people of Christian religion in the partner countries increases investments in Italy by 12% (Model 8). In Table 2, *governance* is influential in the inward regressions as it was for the outward FDI: the variable's coefficients are positive and significant in all regressions, excepting those regarding Italy.

The patterns exhibited by our main variables of interest, immigration, are similar to those seen for the outward equations with one more country involved: France. Hence, our expectations on immigrant networks are confirmed once more, and with wider support from the evidence.

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[10] The aggregate variable *immigrants* has a positive and significant coefficient in the regression concerning the outward FDI of France (Model 1, Table A1). The coefficients of the variables for skilled and unskilled immigrants are both positive.

More precisely, in Models 6 to 10, for all countries but Italy the coefficients for skilled immigrants are positive and generally significant. Especially in the UK, the communities of skilled immigrants strongly affect the inward FDI originating in their home countries. This concerns the non-OECD networks in particular: a 10% increase in the stock of non-OECD immigrants increases the UK's inward FDI by 26%, while the influence of OECD skilled immigrants is positive but non-significant. The immigration of skilled individuals originating from non-OECD countries and especially from the Commonwealth economies has a long and well-established tradition in the UK. In France and Germany, OECD networks of skilled immigrants have stronger effects than non-OECD ones. Coefficients for France (Model 6) are 1,7% for OECD and 1,3% for non-OECD. respectively. For Germany (Model 7), coefficients are 1,24% for OECD and 0,78% for non-OECD (respectively at the 1% and 10% significance level).

Spain's inward FDI are positively and significantly affected by both OECD and non-OECD networks of skilled immigrants, with no statistical difference between the two coefficients (Model 9). Spain's skilled non-OECD immigrants originate mainly from Latin American countries, which are also the source economies of a significant share of the country's non-OECD inward FDI. Similarly to the outward regressions, in Models 6 to 10 of Table 2, regarding the inward equations, the signs of the coefficients for low-skilled immigrants (*lowskilled_immi*) are negative. They are also significant in the regressions regarding Spain, Germany, France and the UK. As above, these results may suggest that the positive network effects of the low-skilled immigrant communities residing in these countries are too weak to positively affect the FDI, and that a "substitution" effect in production prevails (Kugler and Rapoport, 2007). Hence, considering the inward FDI of the four countries, the coefficients of non-OECD skilled immigrants tend to be lower than OECD ones, except for the UK, where non-OECD networks are both stronger and more significant.

We now consider a different source of network effects on FDI, those of emigrants. The results for Italy and Spain are shown in Table 3, which reveals that the variable's coefficients are positive and significant for both countries, in the outward and inward regressions. These findings not only confirm our expectations, but are also stronger than those of skilled immigrants. The above positive coefficients on skilled immigrants regarding Spain lose their significance when emigrants are included in the regressions.

The inclusion of the *emigrants* variable in the regressions concerning Italy does not change the coefficients of the other variables. In particular those of the immigrant variables remain non-significant and stable. However, the coefficient of the cultural proxy *religion* loses its significance. It should be remembered that in Table 2, Italy was the only country where the *religion* variable in

the partner countries affected both the inward and outward FDI. The cultural factors previously included in "religion" now appear to be captured more directly by the *emigrants* variable.

More precisely, a 10% increase in the presence of emigrants in partner countries increases the Italian outward FDI by 3%, and the inward FDI by 3,7%. These results show that, in fact, the information and enforcement services provided by migrants do matter for Italian firms investing abroad and for firms investing in Italy, but only when they are provided by Italian networks. The splitting of the stocks into *emigrants_OECD* and *emigrants_nonOECD* leads to positive and significant coefficients in both cases, for both outward and inward FDI (Models 2 and 4 of Table 3). The influence of the non-OECD networks appears to be slightly higher than that of the OECD emigrants in the outward regression (Model 2).

The effect of the diaspora on Spain's bilateral FDI appears to be even stronger than in the Italian case. In Models 5 to 8 of Table 3, a 10% increase in the stock of Spanish emigrants abroad leads to an increase of about 8% in the country's inward FDI equations. In the outward equations, a 10% increase in OECD emigrants leads to an increase of 6% in bilateral FDI and in non-OECD networks to an increase of 8,23% (Models 5 and 6). Therefore, emigrants residing both in developed and in developing countries strongly influence the country's FDI. This, together with the diminished immigrant effects in Table 3, seems to suggest that, similarly to the case of Italy, the information and enforcement services provided by the national diaspora are preferred to those provided by the immigrant communities.

It might be inferred from this that the same results could apply to the other three countries, France, Germany and the UK, were the data on nationals abroad also available for them. It must be considered, however, that a likely reason why these three European countries do not have registries on their citizens abroad, comparable to those of Italy and Spain, may be simply that they do not have such strong diasporas.[11]

Moreover, while these results on Italian and Spanish emigrants can be taken just as further evidence confirming the predictions of networks theory, the countries' strong preferences for emigrant links can also bear another interpretation, which is that the two economies are missing relevant opportunities of accessing the emerging markets from which many immigrants originate. It

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[11] The emigration phenomenon has not been homogenous for the three countries considered. Emigration from the UK during the last centuries has mostly merged with the host country populations. At the other extreme, the existence of old German communities abroad is still quite perceptible, but their links with the homeland are weaker than those of Italians and Spaniards. The same applies to French emigration, with the difference with respect to the first two countries that it was never a mass movement (Sowell, 1996).

also shows that non-OECD immigrants living in Italy and Spain are not significantly contributing to narrowing the FDI "divide" with their countries of origin.[12]

VI. Conclusions

This paper has analysed the effects of immigrant networks on the bilateral FDI of five European countries and, for two of them, those of the emigrant diasporas. Its main findings are that the countries analyzed seem to follow two different models: in one, involving the UK, France and Germany, skilled immigrants have a positive and significant influence on the bilateral FDI exchanges with their countries of origin; in the other, applicable to Italy and Spain, bilateral FDI are strongly influenced by the countries' external diasporas.

In the first three countries the aggregate stock of immigrants is generally non-significant, only the splitting of the variable into skilled and unskilled individuals reveals the positive effect of the former, and the negative or non-significant effect of the latter. In the two countries where the diaspora model holds, the aggregate stocks of emigrants have positive effects, regardless of skill levels. Hence, while the findings concerning the first three countries respond to our expectations and confirm the previous results in the literature, those concerning the second two were not entirely expected. Our ex-ante conjectures were that both types of networks, of immigrants and emigrants, would influence the countries' FDI. This was more so because the geographic distributions of the two groups do not overlap; economic operators were expected to find it convenient to refer to immigrants for some sets of foreign countries and to emigrants for others. The finding that only the latter network is active could reveal that overall FDI are being "diverted" rather than created.

On the other hand, a clear, shared pattern does not emerge from the splitting of the skilled immigrant stocks into OECD and non-OECD networks. The mixed results may be due to countries' specific characteristics, especially regarding their past and more recent histories of immigration and investments abroad. In particular, the role of non-OECD networks in contributing to bridge the FDI gap between rich and less developed economies appears to be stronger in the UK, and less important in Germany and France.

Why the network links prevailing in each group of countries differ is an issue that can be addressed by future research. This paper has shown that there are different degrees and combinations of network activity across the five countries, with the UK and Italy standing at two opposite extremes, one of strong links of skilled immigrants, the other of pure diaspora effects.

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[12] This seems to follow especially from the regressions on Italy: even in Table 2, where the influence of emigrants is absent, immigrants do not affect the FDI. In the case of Spain, the weakness of immigrant effects (from Table 2 to Table 3) may be due to the partial geographical overlapping of emigrants and immigrants in some Latin American countries.

Possible causes may include the production structure of the economies and the characteristics of the immigrant population. The average size of firms and multinationals, large in the UK and small in Italy, and the immigrants' role in the country, part of the skilled population or just raw labour force, may also count.

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Table 1 - Summary statistics of some variables of interest [1]

	Inward FDI (mln USD)		Outward FDI (mln USD)		Emigrants	
France						
Total	240.519	100%	326.346	100%		
OECD	236.496	98,33%	297.167	91,06%		
Non OECD	4.023	1,67%	29.179	8,94%		
Germany						
Total	274.789	100%	619.990	100%		
OECD	270.120	98,30%	575.956	92,90%		
Non OECD	4.669	1,70%	44.034	7,10%		
Italy						
Total	105.038	100%	148.270	100%	2.346.249	100%
OECD	103.524	98,56%	138.297	93,27%	1.840.604	78,45%
Non OECD	1.514	1,44%	9.973	6,73%	505.645	21,55%
Spain						
Total	244.235	100%	194.405	100%	1.050.527	100%
OECD	221.327	90,62%	131.047	67,41%	485.295	46,20%
Non OECD	22.908	9,38%	63.358	32,59%	565.232	53,80%
United Kingdom						
Total	483.457	100%	811.599	100%		
OECD	474.259	98,10%	751.032	92,54%		
Non OECD	9.198	1,90%	60.567	7,46%		

	Immigrants		Skilled immigrants	Share of skilled migration[2]
France				
Total	4.174.651	100%	694.372	17,39%
OECD	2.044.143	48,97%	275.727	14,06%
Non OECD	2.130.508	51,03%	418.645	20,61%
Germany				
Total	6.386.690	100%	764.206	14,25%
OECD	4.474.056	70,05%	482.174	12,91%
Non OECD	1.912.634	29,95%	282.032	17,33%
Italy				
Total	1.100.821	100%	122.570	13,79%
OECD	199.295	18,10%	53.719	29,20%
Non OECD	901.526	81,90%	68.851	9,77%
Spain				
Total	1.573.556	100%	268.890	19,71%
OECD	396.400	25,19%	99.923	27,99%
Non OECD	1.177.156	74,81%	168.967	16,77%
United Kingdom				
Total	3.260.944	100%	999.224	33,02%
OECD	1.841.522	56,47%	547.084	32,39%
Non OECD	1.419.422	43,53%	452.140	33,82%

[1] Data are referred to the samples used in the empirical analysis.
 The size of each sample varies according to data availability
 Data concern the year of the latest census (France: 1999; Germany and UK: 2001), except for Italy (2002) and Spain (2003)
[2] The share of skilled migration is calculated on immigrants aged 15 and over
 (Skilled immigrants / Immigrants aged 15 and over)

Table 2 - Migrant networks and FDI

Dependent variable:	Outward FDI					Inward FDI				
Country	France	Germany	Italy	Spain	UK	France	Germany	Italy	Spain	UK
Explanatory variables	*Model 1*	*Model 2*	*Model 3*	*Model 4*	*Model 5*	*Model 6*	*Model 7*	*Model 8*	*Model 9*	*Model 10*
l_TGDP	3.747 **	3.270 ***	-1.120	2.776 ***	0.303	2.337 **	2.256 ***	-1.393	3.107 ***	2.172 ***
	(1.522)	(0.558)	(2.548)	(0.847)	(0.947)	(1.089)	(0.745)	(3.045)	(0.800)	(0.597)
l_sq_GDPDIFF	-0.152	-0.587 ***	0.982	-0.413 *	-0.077	-0.266	-0.544 **	1.115	-0.338 **	-0.253 ***
	(0.144)	(0.164)	(1.175)	(0.212)	(0.089)	(0.256)	(0.220)	(1.383)	(0.166)	(0.063)
l_PCGDPDIFF	0.125	0.035	-0.052	0.243 **	-0.149 **	0.262 **	0.230 ***	0.360 ***	0.048	0.102 *
	(0.112)	(0.046)	(0.060)	(0.121)	(0.068)	(0.105)	(0.061)	(0.119)	(0.150)	(0.054)
l_DIST	0.118	0.133	-0.783 ***	-0.771 *	0.516 *	-0.040	-0.245	-0.791 ***	-1.368 **	-1.034 ***
	(0.378)	(0.153)	(0.221)	(0.448)	(0.292)	(0.447)	(0.238)	(0.328)	(0.528)	(0.332)
l_OPENNESS	0.777	0.521	-0.120		0.312	0.511	-0.143	-0.941		-1.058 *
	(0.542)	(0.367)	(0.520)		(0.523)	(0.478)	(0.410)	(0.650)		(0.572)
DUMMYEU15	0.571	0.384	0.342	0.963	0.604	0.964	1.073 *	1.066	0.351	0.175
	(1.090)	(0.432)	(0.446)	(0.714)	(0.828)	(0.763)	(0.581)	(0.663)	(1.016)	(0.494)
DUMMYOECD	-0.638	1.770	3.069	-1.394	-0.718	-3.881	-4.457 ^	0.801	-0.539	16.250 ^
	(4.677)	(1.934)	(2.695)	(2.373)	(4.742)	(3.288)	(2.676)	(2.963)	(2.924)	(9.866)
DUMMYLANG	2.338 **					0.811			2.638 **	1.338 *
	(1.167)					(1.028)			(1.270)	(0.788)
DUMMYCOLOTIE[1]	-1.947			3.439 ***	-1.552 *	-0.712				0.837
	(1.269)			(0.842)	(0.838)	(1.116)				(0.512)
RELIGION	0.982	0.359	0.886 *	0.629	0.675	0.009	-0.618	1.190 *	0.846	-1.317
	(0.809)	(0.383)	(0.453)	(0.904)	(0.744)	(0.763)	(0.617)	(0.598)	(1.260)	(0.939)
GOVERNANCE_Std	4.537 **	2.868 ***	1.792	6.161 ***	1.617	3.010 **	3.787 **	0.557	4.655 **	7.411 ***
	(2.085)	(0.802)	(1.300)	(1.823)	(1.571)	(1.476)	(1.658)	(2.240)	(1.842)	(1.957)
l_LOWSKILLED_IMMI	0.080	0.002	0.265	-0.685	-0.769 *	-0.615 ^	-0.484 *	-0.164	-1.391 **	-0.630 ^
	(0.450)	(0.162)	(0.181)	(0.553)	(0.398)	(0.375)	(0.276)	(0.247)	(0.615)	(0.381)
l_SKILLED_IMMI_OECD	0.621	0.368	-0.365	1.282 *	1.703 **	1.754 ***	1.243 ***	-0.098	1.628 **	0.780
	(0.879)	(0.265)	(0.361)	(0.692)	(0.721)	(0.644)	(0.354)	(0.419)	(0.801)	(0.549)
l_SKILLED_IMMI_NONOECD	0.646	0.452 **	0.113	1.028	1.648 ***	1.277 ***	0.776 *	0.168	1.596 **	2.603 **
	(0.442)	(0.194)	(0.262)	(0.642)	(0.459)	(0.400)	(0.405)	(0.375)	(0.779)	(0.962)
Time dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
const	-59.725 ***	-34.506 ***	-1.221	-10.949 *	-8.403	-31.473 **	-14.283	3.158	-5.554	-28.377
	(22.269)	(8.089)	(5.871)	(5.911)	(14.175)	(15.746)	(9.723)	(6.990)	(4.596)	(18.688)
Adjusted R²	0.406	0.725	0.599	0.565	0.410	0.543	0.673	0.768	0.656	0.755
Number of observations	173	1319	135	257	119	173	799	135	197	78

Notes: *** 1%, ** 5%, * 10%, ^ 11% significant level; heteroskedasticity robust standard errors are in the parentheses.

[1] Dummycommonwealth for the UK

Table 3 - Emigration and FDI

	Italy				Spain			
Dependent variable:	**Outward FDI**		**Inward FDI**		**Outward FDI**		**Inward FDI**	
Explanatory variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
l_TGDP	0.019	0.260	-0.315	-0.227	1.391 *	1.468 *	1.711 ***	1.712 ***
	(2.687)	(2.764)	(2.708)	(3.028)	(0.748)	(0.757)	(0.613)	(0.609)
l_sq_GDPDIFF	0.387	0.277	0.517	0.477	-0.174	-0.207	-0.091	-0.092
	(1.261)	(1.304)	(1.216)	(1.369)	(0.150)	(0.153)	(0.089)	(0.092)
l_PCGDPDIFF	0.019	0.010	0.297 ***	0.299 ***	0.327 ***	0.298 ***	0.055	0.056
	(0.067)	(0.069)	(0.106)	(0.106)	(0.085)	(0.076)	(0.127)	(0.130)
l_DIST	-0.680 ***	-0.684 ***	-0.660 *	-0.661 *	-0.588 ^	-0.624 *	-1.088 **	-1.088 **
	(0.206)	(0.199)	(0.339)	(0.339)	(0.359)	(0.365)	(0.488)	(0.486)
l_OPENNESS	0.362	0.426	-0.334	-0.313				
	(0.514)	(0.543)	(0.674)	(0.741)				
DUMMYEU15	0.378	0.376	1.088 ^	1.089 ^	0.419	0.282	0.377	0.375
	(0.447)	(0.447)	(0.655)	(0.659)	(0.485)	(0.499)	(0.746)	(0.768)
DUMMYOECD	4.534 *	5.120 *	2.393	2.582	0.527	0.786	-0.346	-0.337
	(2.662)	(3.045)	(2.758)	(3.171)	(1.723)	(1.799)	(2.343)	(2.400)
DUMMYLANG							0.725	0.724
							(0.935)	(0.953)
DUMMYCOLOTIE					0.838	0.779		
					(0.716)	(0.689)		
RELIGION	0.012	-0.059	0.142	0.117	0.471	0.524	-0.102	-0.106
	(0.559)	(0.577)	(0.756)	(0.813)	(0.780)	(0.775)	(0.948)	(0.959)
GOVERNANCE	1.632	1.639	-0.176	-0.162	4.671 ***	4.325 ***	2.785	2.775
	(1.484)	(1.515)	(2.137)	(2.164)	(1.564)	(1.493)	(1.794)	(1.939)
l_LOWSKILLED_IMMI	0.075	0.096	-0.383	-0.377	-0.491	-0.405	-1.086 *	-1.083 ^
	(0.210)	(0.224)	(0.267)	(0.262)	(0.531)	(0.560)	(0.623)	(0.661)
l_SKILLED_IMMI_OECD	-0.209	-0.211	0.095	0.095	0.696	0.731	0.895	0.895
	(0.328)	(0.331)	(0.423)	(0.424)	(0.630)	(0.616)	(0.766)	(0.771)
l_SKILLED_IMMI_NONOECD	0.424	0.424	0.512	0.514	0.617	0.465	0.816	0.810
	(0.264)	(0.264)	(0.371)	(0.373)	(0.607)	(0.672)	(0.815)	(0.888)
l_EMIGRANTS	0.293 **		0.368 ***		0.749 ***		0.805 ***	
	(0.127)		(0.135)		(0.148)		(0.169)	
l_EMIGRANTS_OECD		0.264 **		0.360 **		0.602 ***		0.803 ***
		(0.128)		(0.159)		(0.153)		(0.204)
l_EMIGRANTS_NONOECD		0.336 *		0.382 *		0.823 ***		0.809 ***
		(0.192)		(0.194)		(0.203)		(0.253)
Time dummies	yes	yes	yes	yes	yes	yes	yes	yes
const	-6.759	-7.670	-1.982	-2.324	-9.170 *	-8.700 *	-2.633	-2.629
	(6.145)	(6.806)	(6.743)	(7.982)	(4.753)	(4.490)	(4.063)	(4.041)
Adjusted R²	0.636	0.633	0.797	0.795	0.678	0.679	0.745	0.744
Number of observations	135	135	135	135	248	248	189	189

Notes: *** 1%, ** 5%, * 10%, ^ 11% significant level; heteroskedasticity robust standard errors are in the parentheses.

Table A1 - Migrant networks and FDI - France

Dependent variable:	Outward FDI			Inward FDI		
Specification:	*TSLS*	*OLS*	*OLS*	*OLS*	*OLS*	*OLS*
Explanatory variables	*Model 1*	*Model 2*	*Model 3*	*Model 4*	*Model 5*	*Model 6*
l_TGDP	3.274 ***	3.827 ***	3.747 **	3.800 ***	3.128	2.337 **
	(0.922)	(0.881)	(1.522)	(0.876)	(0.880)	(1.089)
l_sq_GDPDIFF	-0.245	-0.283 ^	-0.152	-0.305	-0.298	-0.266
	(0.168)	(0.171)	(0.144)	(0.217)	(0.251)	(0.256)
l_PCGDPDIFF	-0.013	0.079	0.125	0.258 **	0.227	0.262 **
	(0.094)	(0.089)	(0.112)	(0.100)	(0.102)	(0.105)
l_DIST	0.386	0.200	0.118	-0.232	-0.113	-0.040
	(0.409)	(0.368)	(0.378)	(0.462)	(0.440)	(0.447)
l_OPENNESS	0.992 *	0.890 *	0.777	0.438	0.568	0.511
	(0.535)	(0.521)	(0.542)	(0.485)	(0.469)	(0.478)
DUMMYEU15	-0.026	0.489	0.571	1.192	1.258	0.964
	(0.953)	(0.924)	(1.090)	(0.799)	(0.841)	(0.763)
DUMMYOECD	-1.216	-0.790	-0.638	-0.320	-0.307	-3.881
	(0.906)	(0.851)	(4.677)	(0.863)	(0.855)	(3.288)
DUMMYLANG	3.020 ***	2.411 **	2.338 **	1.030	1.012	0.811
	(1.108)	(1.074)	(1.167)	(1.056)	(0.968)	(1.028)
DUMMYCOLOTIE	-2.956 **	-1.997	-1.947	-0.868	-0.992	-0.712
	(1.272)	(1.147)	(1.269)	(1.139)	(1.018)	(1.116)
RELIGION	0.865	0.892	0.982	-0.023	0.047	0.009
	(0.872)	(0.790)	(0.809)	(0.786)	(0.773)	(0.763)
GOVERNANCE_Std	5.101 **	4.755 **	4.537 **	3.205 **	2.943	3.010 **
	(2.064)	(2.007)	(2.085)	(1.483)	(1.477)	(1.476)
l_IMMIGRANTS	1.014 ***			0.464 **		
	(0.301)			(0.200)		
l_LOWSKILLED_IMMI		0.059	0.080		-0.483	-0.615 ^
		(0.385)	(0.450)		(0.334)	(0.375)
l_SKILLED_IMMI		0.650			1.233	
		(0.427)			(0.399)	
l_SKILLED_IMMI_OECD			0.621			1.754 ***
			(0.879)			(0.644)
l_SKILLED_IMMI_NONOECD			0.646			1.277 ***
			(0.442)			(0.400)
Time dummies	yes	yes	yes	yes	yes	yes
const	-54.335 ***	-56.503 ***	-59.725 ***	-48.791 ***	-42.026	-31.473 **
	(12.107)	(12.948)	(22.269)	(13.008)	(12.898)	(15.746)
Adjusted R²	0.379	0.413	0.406	0.511	0.542	0.543
Number of observations	173	173	173	173	173	173
Instrumental variables	Migration to EU15 ('90)					
First-stage F statistic	110.700					

Notes: *** 1%, ** 5%, * 10%, ^ 11% significant level; heteroskedasticity robust standard errors are in the parentheses.

Table A2 - Migrant networks and FDI - Germany

Dependent variable:	Outward FDI			Inward FDI		
Specification:	*TSLS*	*OLS*	*OLS*	*OLS*	*OLS*	*OLS*
Explanatory variables	*Model 1*	*Model 2*	*Model 3*	*Model 4*	*Model 5*	*Model 6*
l_TGDP	2.889	3.142 ***	3.270 ***	3.528 ***	2.822 ***	2.256 ***
	(0.577)	(0.536)	(0.558)	(0.713)	(0.714)	(0.745)
l_sq_GDPDIFF	-0.596	-0.585 ***	-0.587 ***	-0.613 ***	-0.530 **	-0.544 **
	(0.158)	(0.169)	(0.164)	(0.231)	(0.218)	(0.220)
l_PCGDPDIFF	-0.020	0.030	0.035	0.197 ***	0.191 ***	0.230 ***
	(0.050)	(0.046)	(0.046)	(0.057)	(0.057)	(0.061)
l_DIST	0.356	0.146	0.133	-0.398	-0.314	-0.245
	(0.219)	(0.148)	(0.153)	(0.247)	(0.243)	(0.238)
l_OPENNESS	0.697	0.523	0.521	-0.315	-0.152	-0.143
	(0.393)	(0.367)	(0.367)	(0.403)	(0.423)	(0.410)
DUMMYEU15	-0.012	0.340	0.384	1.051 *	1.210 **	1.073 *
	(0.446)	(0.422)	(0.432)	(0.606)	(0.554)	(0.581)
DUMMYOECD	0.759	1.077 **	1.770	-0.630	-0.609	-4.457 ^
	(0.559)	(0.452)	(1.934)	(0.808)	(0.849)	(2.676)
RELIGION	0.804	0.342	0.359	-0.427	-0.666	-0.618
	(0.450)	(0.378)	(0.383)	(0.712)	(0.641)	(0.617)
GOVERNANCE_Std	3.311	2.877 ***	2.868 ***	4.619 ***	4.152 **	3.787 **
	(0.859)	(0.800)	(0.802)	(1.698)	(1.783)	(1.658)
l_IMMIGRANTS	0.609			0.175		
	(0.181)			(0.166)		
l_LOWSKILLED_IMMI		0.000	0.002		-0.473	-0.484 *
		(0.162)	(0.162)		(0.308)	(0.276)
l_SKILLED_IMMI		0.441 **			0.902 **	
		(0.191)			(0.368)	
l_SKILLED_IMMI_OECD			0.368			1.243 ***
			(0.265)			(0.354)
l_SKILLED_IMMI_NONOECD			0.452 **			0.776 *
			(0.194)			(0.405)
Time dummies	yes	yes	yes	yes	yes	yes
const	-33.250	-32.682 ***	-34.506 ***	-29.202 ***	-23.521 ***	-14.283
	(7.210)	(7.595)	(8.089)	(8.752)	(8.499)	(9.723)
Adjusted R²	0.698	0.725	0.725	0.638	0.664	0.673
Number of observations	1314	1319	1319	799	799	799
Instrumental variables	Migration to EU15 ('90)					
First-stage F statistic	43.180					

Notes: *** 1%, ** 5%, * 10%, ^ 11% significant level; heteroskedasticity robust standard errors are in the parentheses.

Table A3 - Migrant networks and FDI - Italy

Dependent variable:	Outward FDI			Inward FDI		
Specification:	*TSLS*	*OLS*	*OLS*	*OLS*	*OLS*	*OLS*
Explanatory variables	*Model 1*	*Model 2*	*Model 3*	*Model 4*	*Model 5*	*Model 6*
l_TGDP	-4.886	-1.645	-1.120	0.602	-1.707	-1.393
	(5.076)	(2.408)	(2.548)	(2.772)	(2.935)	(3.045)
l_sq_GDPDIFF	2.642	1.154	0.982	0.196	1.219	1.115
	(2.349)	(1.141)	(1.175)	(1.272)	(1.354)	(1.383)
l_PCGDPDIFF	-0.024	-0.081	-0.052	0.284 ***	0.379 ***	0.360 ***
	(0.081)	(0.069)	(0.060)	(0.099)	(0.120)	(0.119)
l_DIST	0.170	-0.656 ***	-0.783 ***	-0.577 **	-0.717 **	-0.791 ***
	(0.605)	(0.195)	(0.221)	(0.287)	(0.289)	(0.328)
l_OPENNESS	1.140	-0.116	-0.120	-0.265	-0.952	-0.941
	(0.822)	(0.524)	(0.520)	(0.586)	(0.640)	(0.650)
DUMMYEU15	0.551	0.372	0.342	1.264 *	1.092	1.066
	(0.535)	(0.464)	(0.446)	(0.650)	(0.687)	(0.663)
DUMMYOECD	0.222	-0.063	3.069	-1.476 **	-0.942	0.801
	(0.801)	(0.467)	(2.695)	(0.647)	(0.717)	(2.963)
RELIGION	0.403	0.749	0.886 *	0.912	1.119 *	1.190 *
	(0.691)	(0.500)	(0.453)	(0.613)	(0.616)	(0.598)
GOVERNANCE	3.738 **	1.278	1.792	1.823	0.254	0.557
	(1.839)	(1.470)	(1.300)	(2.028)	(2.176)	(2.240)
l_IMMIGRANTS	1.063 ^			-0.070		
	(0.637)			(0.155)		
l_LOWSKILLED_IMMI		0.360 **	0.265		-0.111	-0.164
		(0.164)	(0.181)		(0.243)	(0.247)
l_SKILLED_IMMI		-0.157			0.015	
		(0.261)			(0.344)	
l_SKILLED_IMMI_OECD			-0.365			-0.098
			(0.361)			(0.419)
l_SKILLED_IMMI_NONOECD			0.113			0.168
			(0.262)			(0.375)
Time dummies	yes	yes	yes	yes	yes	yes
const	-16.309	1.545	-1.221	-3.159	4.642	3.158
	(10.439)	(5.275)	(5.871)	(5.483)	(6.267)	(6.990)
Adjusted R²	0.341	0.590	0.599	0.750	0.769	0.768
Number of observations	150	135	135	150	135	135
Instrumental variables	Migration to EU15 ('90)					
First-stage F statistic	3.680					

Notes: *** 1%, ** 5%, * 10%, ^ 11% significant level; heteroskedasticity robust standard errors are in the parentheses.

Table A4 - Migrant networks and FDI - Spain

Dependent variable:	Outward FDI			Inward FDI		
Specification:	*OLS*	*OLS*	*OLS*	*OLS*	*OLS*	*OLS*
Explanatory variables	*Model 1*	*Model 2*	*Model 3*	*Model 4*	*Model 5*	*Model 6*
I_TGDP	3.603 ***	3.000 ***	2.776 ***	3.980 ***	3.130 ***	3.107 ***
	(0.815)	(0.818)	(0.847)	(0.628)	(0.733)	(0.800)
I_sq_GDPDIFF	-0.461 *	-0.415 *	-0.413 *	-0.393 **	-0.337 **	-0.338 **
	(0.235)	(0.219)	(0.212)	(0.177)	(0.167)	(0.166)
I_PCGDPDIFF	0.215 *	0.239 *	0.243 **	0.107	0.047	0.048
	(0.116)	(0.122)	(0.121)	(0.120)	(0.150)	(0.150)
I_DIST	-0.897 **	-0.850 *	-0.771 *	-1.270 **	-1.381 ***	-1.368 **
	(0.448)	(0.453)	(0.448)	(0.497)	(0.517)	(0.528)
DUMMYEU15	1.251	1.162	0.963	0.900	0.364	0.351
	(0.785)	(0.791)	(0.714)	(0.823)	(0.939)	(1.016)
DUMMYOECD	0.643	0.402	-1.394	-0.089	-0.310	-0.539
	(0.731)	(0.769)	(2.373)	(0.962)	(1.049)	(2.924)
DUMMYLANG				3.271 ***	2.644 **	2.638 **
				(1.192)	(1.245)	(1.270)
DUMMYCOLOTIE	3.974 ***	3.504 ***	3.439 ***			
	(0.828)	(0.843)	(0.842)			
RELIGION	1.016	0.705	0.629	0.901	0.859	0.846
	(0.852)	(0.890)	(0.904)	(1.334)	(1.278)	(1.260)
GOVERNANCE_Std	5.392 ***	5.883 ***	6.161 ***	3.216 **	4.644 **	4.655 **
	(1.737)	(1.795)	(1.823)	(1.582)	(1.805)	(1.842)
I_IMMIGRANTS	0.112			-0.215		
	(0.181)			(0.198)		
I_LOWSKILLED_IMMI		-0.690	-0.685		-1.398 **	-1.391 **
		(0.551)	(0.553)		(0.605)	(0.615)
I_SKILLED_IMMI		1.057 ^			1.610 **	
		(0.642)			(0.763)	
I_SKILLED_IMMI_OECD			1.282 *			1.628 **
			(0.692)			(0.801)
I_SKILLED_IMMI_NONOECD			1.028			1.596 **
			(0.642)			(0.779)
Time dummies	yes	yes	yes	yes	yes	yes
const	-14.312 **	-11.920 **	-10.949 *	-9.711 **	-5.658	-5.554
	(5.585)	(5.813)	(5.911)	(4.637)	(4.363)	(4.596)
Adjusted R²	0.552	0.564	0.565	0.626	0.658	0.656
Number of observations	261	257	257	201	197	197

Notes: *** 1%, ** 5%, * 10%, ^ 11% significant level; heteroskedasticity robust standard errors are in the parentheses.

Table A5 - Migrant networks and FDI - United Kingdom

Dependent variable:	Outward FDI			Inward FDI		
Specification:	OLS	OLS	OLS	TSLS	OLS	OLS
Explanatory variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
l_TGDP	0.557	0.339	0.303	1.996 ***	1.772 ***	2.172 ***
	(0.804)	(0.774)	(0.947)	(0.701)	(0.588)	(0.597)
l_sq_GDPDIFF	-0.091	-0.080	-0.077	-0.365 ***	-0.232 ***	-0.253 ***
	(0.155)	(0.094)	(0.089)	(0.101)	(0.070)	(0.063)
l_PCGDPDIFF	-0.192 ***	-0.147 **	-0.149 **	0.091 *	0.130 **	0.102 *
	(0.069)	(0.067)	(0.068)	(0.051)	(0.051)	(0.054)
l_DIST	0.706 **	0.517 *	0.516 *	-1.256 ***	-0.837 **	-1.034 ***
	(0.324)	(0.291)	(0.292)	(0.390)	(0.378)	(0.332)
l_OPENNESS	0.108	0.308	0.312	-2.170 ***	-1.069 *	-1.058 *
	(0.597)	(0.542)	(0.523)	(0.559)	(0.626)	(0.572)
DUMMYEU15	0.847	0.598	0.604	0.534	0.278	0.175
	(0.808)	(0.826)	(0.828)	(0.502)	(0.532)	(0.494)
DUMMYOECD	0.470	-0.250	-0.718	-1.573	-1.248	16.250 ^
	(1.206)	(1.291)	(4.742)	(1.066)	(0.917)	(9.866)
DUMMYLANG				3.140 ***	1.199	1.338 *
				(0.834)	(0.959)	(0.788)
DUMMYCOMMONWEALTH	-0.958	-1.575 *	-1.552 *	0.302	0.576	0.837
	(0.830)	(0.918)	(0.838)	(0.619)	(0.583)	(0.512)
RELIGION	0.284	0.687	0.675	-2.149 **	-0.906	-1.317
	(0.815)	(0.722)	(0.744)	(1.047)	(0.957)	(0.939)
GOVERNANCE_Std	0.770	1.688	1.617	8.052 ***	6.886 ***	7.411 ***
	(1.777)	(1.822)	(1.571)	(1.740)	(1.793)	(1.957)
l_IMMIGRANTS	0.650 ***			-0.417		
	(0.227)			(0.297)		
l_LOWSKILLED_IMMI		-0.765 *	-0.769 *		-0.717 **	-0.630 ^
		(0.388)	(0.398)		(0.350)	(0.381)
l_SKILLED_IMMI		1.670 ***			1.051 *	
		(0.525)			(0.610)	
l_SKILLED_IMMI_OECD			1.703 **			0.780
			(0.721)			(0.549)
l_SKILLED_IMMI_NONOECD			1.648 ***			2.603 **
			(0.459)			(0.962)
Time dummies	yes	yes	yes	yes	yes	yes
const	-11.059	-9.105	-8.403	6.047	-8.781	-28.377
	(11.283)	(10.546)	(14.175)	(11.622)	(11.396)	(18.688)
Adjusted R²	0.369	0.415	0.410	0.696	0.724	0.755
Number of observations	119	119	119	78	78	78
Instrumental variables				Migration to EU15 ('90)		
First-stage F statistic				21.920		

Notes: *** 1%, ** 5%, * 10%, ^ 11% significant level; heteroskedasticity robust standard errors are in the parentheses.

Appendix - List of partner countries

France (years: 1990, 1999)

Albania	Cyprus	Lao People's Dem. Rep.	Romania
Algeria	Czech Republic	Latvia	Russian Federation
Angola	Denmark	Lebanon	Saudi Arabia
Argentina	Djibouti	Libyan Arab Jamahiriya	Senegal
Australia	Egypt	Lithuania	Singapore
Austria	Finland	Luxembourg	Slovak Republic
Belarus	Gabon	Madagascar	Slovenia
Belgium	Germany	Malaysia	South Africa
Benin	Greece	Mali	Spain
Bolivia	Guinea	Mauritania	Sri Lanka
Brazil	Haiti	Mauritius	Sweden
Bulgaria	Hong Kong	Mexico	Switzerland
Burkina Faso	Hungary	Morocco	Syrian Arab Rep.
Cambodia (Kingdom of)	Iceland	Netherlands	Taiwan
Cameroon	India	New Zealand	Thailand
Canada	Indonesia	Niger	Togo
Central African Republic	Iran (Islamic Rep. of)	Nigeria	Tunisia
Chad	Ireland	Norway	Turkey
Chile	Israel	Pakistan	Ukraine
China	Italy	Panama	United Kingdom
Colombia	Ivory Coast	Paraguay	United States
Comoros	Japan	Peru	Uruguay
Congo, Rep. of	Kazakhstan	Philippines	Venezuela
Congo, Dem. Rep. of the	Kenya	Poland	Vietnam
Costa Rica	Korea, Rep. of (South)	Portugal	
Croatia	Kuwait	Qatar	

Germany (years: 1991-2006)

Algeria	Egypt	Liberia	Saudi Arabia
Argentina	El Salvador	Libyan Arab Jamahiriya	Serbia and Montenegro
Australia	Estonia	Liechtenstein	Singapore
Austria	Finland	Lithuania	Slovak Republic
Bangladesh	France	Luxembourg	Slovenia
Belarus	Ghana	Macedonia	South Africa
Belgium	Greece	Malaysia	Spain
Bolivia	Guatemala	Malta	Sri Lanka
Bosnia-Herzegovina	Honduras	Mexico	Sweden
Brazil	Hungary	Morocco	Switzerland
Bulgaria	Iceland	Netherlands	Syrian Arab Republic
Cameroon	India	New Zealand	Taiwan
Canada	Indonesia	Nicaragua	Tanzania, United Rep. Of
Chile	Iran (Islamic Rep. of)	Nigeria	Thailand
China	Ireland	Norway	Tunisia
Colombia	Israel	Pakistan	Turkey
Costa Rica	Italy	Panama	Ukraine
Côte d'Ivoire	Jamaica	Paraguay	United Kingdom
Croatia	Japan	Peru	United States
Cyprus	Kazakhstan	Philippines	Uruguay
Czech Republic	Kenya	Poland	Uzbekistan
Denmark	Korea, Rep. of (South)	Portugal	Venezuela
Dominican Republic	Latvia	Romania	Vietnam
Ecuador	Lebanon	Russian Federation	

Italy (years: 2002-2005)

Albania	Egypt	Luxembourg	Slovenia
Algeria	France	Malaysia	South Africa
Argentina	Germany	Mexico	Spain
Australia	Greece	Morocco	Sweden
Austria	Hungary	Netherlands	Switzerland
Brazil	India	Norway	Thailand
Bulgaria	Indonesia	Philippines	Tunisia
Canada	Iran	Poland	Turkey
Chile	Ireland	Portugal	Ukraine
China	Israel	Romania	United Kingdom
Croatia	Japan	Russian Federation	United States
Czech Republic	Korea, Rep. of (South)	Singapore	Venezuela
Denmark	Libya	Slovak Republic	

Spain (2003-2006)

Algeria	Filippine	Marocco	Serbia e Montenegro
Arabia Saudita	Finlandia	Messico	Singapore
Argentina	Francia	Moldavia	Siria
Australia	Germania	Monaco	Slovenia
Austria	Giappone	Mozambico	Sri Lanka
Belgio	Grecia	Nicaragua	Stati Uniti
Bolivia	India	Norvegia	Sudafrica
Brasile	Indonesia	Nuova Zelanda	Sudan
Bulgaria	Iran	Paesi Bassi	Svezia
Canada	Irlanda	Pakistan	Svizzera
Cile	Islanda	Panama	Tailandia
Cina	Israele	Paraguay	Taiwan
Cipro	Italia	Perù	Tanzania
Colombia	Jamaica	Polonia	Tunisia
Corea del Sud	Kenia	Portogallo	Turchia
Costa Rica	Lettonia	Regno Unito	Ucraina
Croazia	Libano	Repubblica Ceca	Ungheria
Cuba	Libia	Repubblica Dominicana	Uruguay
Danimarca	Lituania	Repubblica Slovacca	Venezuela
Ecuador	Lussemburgo	Romania	Vietnam
Egitto	Malesia	Russia	
Emirati Arabi	Malta	Senegal	

United Kingdom (years: 1990, 1995, 2001)

Australia	Finland	Latvia	Russian Federation
Austria	France	Lithuania	Singapore
Belgium	Germany	Luxembourg	Slovak Republic
Bermuda	Ghana	Malaysia	Slovenia
Brazil	Greece	Malta	South Africa
Canada	Hong Kong	Mauritius	Spain
Chile	Hungary	Mexico	Sweden
China	India	Netherlands	Switzerland
Colombia	Indonesia	New Zealand	Thailand
Cyprus	Ireland	Nigeria	Tunisia
Czech Republic	Italy	Norway	United States
Denmark	Japan	Panama	Zimbabwe
Egypt	Kenya	Poland	
Estonia	Korea, Rep. of (South)	Portugal	

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