WORKING PAPER SERIES

The hub continent?
Immigrant networks,
emigrant diasporas and FDI

Sara Flisi and Marina Murat

The hub continent? Immigrant networks, emigrant diasporas and FDI.

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Abstract This paper studies the effects of immigrant networks on the bilateral FDI of France, Germany, Italy, Spain and the UK, and, for Italy and Spain, also of the emigrant diasporas. It analyses the effects of skilled and unskilled immigrants and of networks linked to developing and developed countries. Results show that the FDIs of the UK, Germany and France are affected by the networks of skilled immigrants, while those of Italy and Spain are prompted only by the emigrant diasporas. Networks linked to OECD and non-OECD countries have similar effects.

May 2010

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Trust matters. Modern technology allows instant, cheap communication. Yet although anyone can place a long-distance call, not anyone knows whom to call, or whom to trust. Ethnic networks can address this problem. 'The hub nation', The Economist, Apr 22nd 2010

I. Introduction

From the mid nineteenth to the mid twentieth century, Western Europe was a land of emigration, while more recently it has become a major destination area for international migrants. In modern history, no other part of the world has had such large and varied movements of populations, first outwards and then inwards. The question is, how does this affect the European economy, and more specifically, does it influence its market interactions with the rest of the world?

Since formal barriers to international economic exchanges have gradually come down over the last few decades, informal impediments have become apparent. Recent literature has shown that the latter are due to social, cultural and institutional differences between countries, and have significant negative effects on transactions (Trefler, 1995; Obsfeld and Rogoff, 2000). A counteracting force that tends to lower these invisible barriers are the migrant communities, which typically build links between their origin and destination countries. More precisely, they develop transnational networks where information on opportunities concerning the origin and destination economies circulates more easily and efficiently than through the international price system (reviews are in Rauch, 2001; Wagner et al., 2002). Networks also exert social control over the actions of their members, which reduces opportunism and the risks associated with international transactions (Granovetter, 1973).

Empirical research has focused especially on the influence of networks on international trade (a partial list includes Gould, 1994; Head and Ries, 1998; Rauch and Trindade, 2002; Blanes, 2006; Wagner, Head and Ries, 2002; Murat and Pistoresi, 2009b; Tadesse and White, 2008), but some studies have analysed their impact on foreign direct investments (FDI) (Gao, 2003; Tong, 2005; Buch et al., 2006; Murat and Pistoresi, 2009a). Both lines of research have provided evidence in support of the basic hypothesis that migrant networks smooth international economic transactions and, where this is the

case, Western Europe could benefit from the transnational ties built by its immigrant and emigrant networks.

This paper addresses this issue by investigating the relationship between migrant networks and the bilateral FDIs of five European countries – France, Germany, Italy, Spain and the UK – with the countries of origin and destination of immigrants and emigrants. 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 on the FDIs of Italy and Spain.

The skills-based distinction arises from the hypothesis that skilled immigrants may have a higher impact on the bilateral FDI than the whole migrant network. As investments abroad are more complex, costly and risky than pure trade, and more likely to be affected by larger information asymmetries, it seems reasonable to think that higher levels of skills and educational attainment can be required to overcome these barriers. El Yaman, Kugler and Rapoport (2007), Kugler and Rapoport (2007), Javorcik et al. (2006), Docquier and Lodigiani (2009) and Docquier and Rapoport (2007) find evidence in support of this hypothesis.

Another implication of the networks theory is that migrant links should be more effective when they help to overcome the higher invisible barriers that exist between more dissimilar countries. Girma and Yu (2002) and Dunlevy (2006) find empirical support for this proposition when examining the bilateral trade of the UK and the US respectively. The five countries we investigate are OECD members, which may find higher institutional and cultural barriers in the transactions with the less developed non-OECD countries. If this is so, the effectiveness of the ties built by migrant networks should be higher when they are related to non-OECD rather than OECD countries.

Our main findings are that the FDIs of France, Germany and the UK are affected by the links of immigrants, but those of Spain and Italy in particular depend on the ties with their respective diasporas. These different network mechanisms may be related to the past histories of international migration and the economic expansion of the two groups of countries. The splitting of immigrant stocks into skilled

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and unskilled individuals reveals a pattern that is consistent with previous studies: skilled immigrants generally have a positive, and in most cases significant, influence on bilateral FDI, while unskilled immigrants often have non-significant or negative effects. The further division of skilled immigrants into OECD and non-OECD networks shows that both tend to have positive effects, with no general prevalence of non-OECD networks.

The paper is structured as follows: Section II presents the main issues and the descriptive statistics; Section III describes the empirical model; Section IV illustrates the data; Section V shows the main results of the regressions and in Section VI we offer our conclusion. The Appendix contains the detailed regressions for each country and the list of partner economies considered in each dataset.

II. Migrant networks, diasporas and investments abroad

Western Europe has a relatively short history of immigration. It became noticeable in the UK, France and Germany as of the Fifties and Sixties in particular, and has rapidly increased since then. Initially, immigrants arriving into the UK were mainly from the Commonwealth, those arriving into France were mainly from Southern Europe and the former colonies, and those arriving into Germany were mainly from other European countries and the Middle East. Immigration in Italy and Spain is a more recent phenomenon, but it has grown so rapidly over the last two decades that the share of immigrants in terms of the overall population is now quite significant.[1] Today, Western Europe attracts migration from all over the world.

Table 1 contains some descriptive statistics, based on the data used in our empirical analysis, related to the latest census year in each country. Among the countries we investigated, Germany has the biggest immigrant community, with almost 6.4 million individuals, while Italy has only 1.1 million. The country with the highest number of skilled immigrants is the UK, with nearly one million highly-educated immigrant individuals, representing 33% of the foreign-born population. Italy, on the other hand, had only around 123,000 skilled immigrants, making up 13.8% of the immigrant population.

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[1] Foreign individuals represent the 5.6% of the total population in France, 8.2% in Germany, 4.6% in Italy, 9.5% in Spain and 5.2% in the UK (OECD International Migration Outlook, 2005).

When we disaggregate immigrants according to their country of origin's membership to the OECD, we see that in France and in the UK, the immigrants' native countries are equally divided into OECD members and non-member states. Germany has the largest OECD share, while the opposite occurs in Italy and Spain, where non-OECD immigrants are the vast majority. Less than 10% of these individuals in Italy are highly skilled. In the UK, however, the share of skilled individuals among the immigrant population from non-OECD countries is more than three times as high.

Emigration from Europe is a much less recent phenomenon. For about a century and until World War II, people from the UK, France and Germany emigrated because of their countries' colonial and economic expansion abroad.[2] Mass migration from Italy and Spain, on the other hand, occurred because of the lack of work opportunities at home, and mainly took place between 1870 and 1970 in Italy; in Spain it persisted until the 1980s, at which point it gradually subsided (Del Boca and Venturini, 2005). Unlike the former three countries, Italy and Spain have built and still maintain close links with their diasporas. Emigrants and their offspring can maintain citizenship of their home countries and hold the right to vote in parliamentary elections. Also, Italian emigrants have had their own parliamentary representatives since 2006. The governments of both countries keep detailed official records of the diasporas, which include the years of registration of emigrants and their progeny in each foreign country of residence. This makes this paper's analysis on emigrant stocks feasible, because we utilize data extracted from these records. As far as the distribution of emigrants is concerned, Table 1 shows that Italians abroad reside in OECD countries more than Spanish ones (78.5% against 46.2%). Our data show that immigration and emigration are independent variables through both time and space: the correlation coefficients between the two are -0.072 for Italy and 0.081 for Spain. This lack of correlation mirrors the different time periods in which each phenomena took place and the different directions of the old emigration and the recent immigration movements: emigrant communities are

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[2] Emigration from the three countries had different characteristics. People that permanently emigrated from the UK during the last centuries have mostly merged with the host country populations. At the other extreme, the existence of old German communities abroad is still quite perceptible but their institutional links with the homeland are weak. The same applies to French emigration, with the further difference (in respect to the first two countries) that it was never a mass movement (Sowell, 1996).

mainly present in OECD member states, Latin America and, for the Italian ones, in Australia and South Africa, while immigrants largely originate from Africa, Eastern Europe, Asia and, in part, Latin America.

Bilateral FDIs have substantially increased with the globalization of the world markets. The UK, France and - to a lesser degree - Germany, have, however, longer and better-established histories of investing abroad and hosting foreign investments. As is shown in Table 1, the FDI stocks of these three countries, especially the outward investments, are much larger than those of Spain and Italy. The Table also confirms the well known phenomenon that higher barriers or lower economic opportunities hinder the flow of investments going from the rich to the developing countries. In our data, there is a strong clustering of the five countries' FDIs, both inward and outward, within the group of OECD economies: above 90% of the bilateral FDIs of our countries takes place with other member states, the only exception being the Spanish outward FDI, one third of which are directed to non-OECD countries.

III. The empirical specification

The choice of variables of the base gravity model draws on a literature that distinguishes between 'vertical' and 'horizontal' models of foreign investments. Here, firms invest horizontally to sell the same goods sold at home abroad, and make vertical investments to exploit relative factor endowment differences. Horizontal FDIs are generally supposed to take place between similar countries while the opposite applies to vertical FDIs (Barba Navaretti and Venables, 2004). This is suited for our analysis, which distinguishes between developed and developing countries. Following Markusen and Maskus (2002) and Gao (2003), we include the sum of the GDP of the countries considered (*tgdp*) as an indicator of the size of the economies, the squared difference of GDPs (*sq_gdpdiff*) as a measure of similarity, and the difference in per capita GDP (*pcgdpdiff),* which corresponds to the variables' positive difference (zero otherwise) between the sending and receiving countries as a proxy of differences in relative factor endowments. In this literature, the horizontal model is consistent with a positive coefficient of *tgdp* (since the level of the transactions between two countries is supposed to be higher

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the bigger the economic dimension of the two), a negative coefficient of *sq_gdpdiff* and a negative coefficient of *pcgdpdiff* (since transactions should be higher when differences in the countries' GDP and factor endowments are lower). The vertical FDI model predicts positive coefficients of the two variables in differences, the *sq_gdpdiff* and the *pcgdpdiff*, and makes no predictions on the coefficient related to the size of the market. Another base variable of the gravity model is distance, *dist.* Calculated as the great circle distance between capital cities of the countries of origin and destination of the FDI, it is meant to capture all the measurable and invisible transaction costs related to travel and communication, but also profitable differences in endowments or market opportunities between the two countries. *A priori*, its coefficient can take both positive and negative values.

The base model is then augmented with a range of other factors which can, in principle, influence the FDI, including the economic characteristics of the origin and host countries, 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:

$$
\begin{aligned}
FDI_{it} = {}& \beta_0 + \beta_1 \times tgdp_{it} + \beta_2 \times sq\_gdpdiff_{it} + \beta_3 \times pcgdpdiff_{it} + \beta_4 \times dist_i + \beta_5 \times openness_{it} + \\
& + \beta_6 \times Deu15_i + \beta_7 \times Doecd_i + \beta_8 \times Dlang_i + \beta_9 \times Dcolotie_i + \beta_{10} \times religion_i + \beta_{11} \times governance_i + \\
& + \gamma \times network_{it} + \rho \times D_t + u_t
\end{aligned} \tag{1}
$$

where all variables except dummies and the indexes *religion* and *governance* are expressed in logarithms; *i* and *t* are subscripts for the partner country and year, D_t are time dummies. [3]

FDI_{it} is the stock of foreign direct investments from the country of origin to the country of destination (for outward FDIs, the country of origin is one of the 5 economies under investigation, and the host country is the partner *i*, while for inward FDIs the opposite applies). *Openness,* the share of exports plus imports in each country's GDP, is an indicator of the countries' commercial propensity to trade. Its relation with the FDI can be of complementarity or substitutability: more integration in the world economy and lower trade barriers can foster FDI, but more open markets can also be accessed through trade alone: hence we do not formulate a hypothesis on the sign of the coefficient. The set of

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[3] As in Tong (2005), we define the dependent variable as *ln* (FDI + 1) to retain observations with zero amount of FDI.

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 religious and cultural similarity *(religion),* two dummies capturing the presence of past colonial ties (*Dcolotie*) and of a common language (*Dlang*) with the foreign economies (for France and the UK), and dummies indicating the partner countries' membership to economic and political regional areas as 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 model is then further augmented to include our variables of interest (*network*). In the simplest specification, we add in the stock of immigrants 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, emigrants, as well as immigrants, are expected to have positive and significant effects on bilateral FDI.

Because of the complexity of investment operations abroad, the networks of skilled immigrants are expected to have a higher impact than those of low-skilled immigrants, for both outward and inward FDI. Immigrant stocks are therefore split into skilled (*skilled_immi)* and unskilled (*lowskilled_immi)* subsets. Skilled individuals are defined as those holding a qualification corresponding to Levels 5 or 6 of the ISCED 1997 classification, i.e. a tertiary education qualification. We further divide the stocks of immigrants into OECD and non-OECD networks. A higher dissimilarity between our five OECD countries and the non-OECD economies should make the links of networks related to the latter type of countries more effective. When the two variables of immigration and emigration are included among the regressors, we expect them both to have positive and significant coefficients. Depending on the country's past histories and on the relative strength of emigration and immigration, one of the two coefficients can be higher or more significant than the other, but no general assumptions can be made in

this respect. We distinguish between OECD and non-OECD emigrants but, because data on emigrants' education levels are not available, we do not split the emigrant stocks into skilled and unskilled.

A main concern in this kind of empirical analysis is endogeneity, which may arise from the presence of omitted variables, simultaneity or reverse causality. For example, the liberalization of restrictions in a country may simultaneously attract foreign investments and facilitate emigration (Bhattacharya and Groznik, 2008), or workers can be transferred abroad after the opening of a new branch of the firm they work for. The literature frequently resorts to fixed effect estimation (see, among others, Combes et al., 2005; Wagner et al., 2002) or first-differencing (Kugler and Rapoport, 2007) to control for the presence of time-constant omitted variables. These techniques would force us to drop time-invariant variables, as *dist*, *governance* and *religion,* that are relevant to our analysis and, at the same time, would not solve the potential problem of reverse causality. We therefore choose to deal with it by using the instrumental variables (IV) estimation approach. We also use time dummies, D_t, to capture a variety of time-variant omitted variables that may affect the foreign investments of our countries of interest and of the partner economies.

Following Javorcik et al. (2006), we use the overall stock of immigrants from partner country i living in the EU-15 in 1990 as the main instrument for the immigrant stock from i in each of the five countries.[4] Since the stocks of immigrants in major destination countries tend to be correlated, the instrument should be linked to the size of the immigrant population in each country through the set of factors inducing migration, without, on the other hand, being a determinant of each country's bilateral FDI. The share of the aggregate immigrant stock corresponding to each of our five countries seems to be sufficiently low not to make the instrument a simple 'replication' of the potentially endogenous variable: 14% of the foreign-born in the EU-15 lived in France, 33% in Germany, 5% in Italy, 8% in Spain, 16% in the UK. Depending on the type of immigration variable to be instrumented (total, skilled and unskilled), we employ the corresponding instrument.

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[4] 1990, the earliest year for which this information is available, is either previous or coincides with the first year of the datasets' time spans.

A second instrument we use is population density in the origin country, which can be a relevant push factor for emigration, because it can denote a possible congestion effect, or the lack of adequate land ownership in countries with high shares of rural population (Chojnicki, 2004).[5]

The first stage is therefore:

$$network_{it} = \alpha_0 + \alpha_1 \times immig90\_EU15_i + \alpha_2 \times pop\_dens_i + \delta \times controls + \varepsilon_t \qquad (2)$$

where *network* is the immigrant network variable instrumented, *immig90_EU15* is the corresponding instrumental variable concerning previous migration to the EU-15, *pop_dens* is the density of population in the partner country, and *controls* is the set of exogenous variables of the main regression. Both instruments are expressed in logarithms, (1) is now the structural equation.

We cannot control for the potential endogeneity of the emigrant variables with similar instruments to those used for immigration because they would be of no use. Instead, we utilize the lagged values of the emigrant variable for Italy, the only country for which we have observations. More precisely, we use the emigrant stock of Italians who were registered at the *Registry of Italian Citizens Residing Abroad* the first year of its existence, 1990, under the hypothesis that emigration followed a rather stable pattern over time.

Whenever possible, 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 the first and second stage regressions. For the sake of brevity, we do not show both the IV and the OLS estimates; we show the latter when there is no evidence of endogeneity, as it is more efficient, and we present the IV estimates when endogeneity is detected.

IV. The Data

Our study utilizes five different sets of data - one for each of our countries of interest: France, Germany, Italy, the UK and Spain - and records extracted from different national and international data

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[5] The costs of obtaining a national passport in the migrants' country of origin are an additional potential instrument (Javorcik et al., 2006), but these data are only available for a small number of the countries we consider.

sources. This makes the entire information set wider, however the partner economies and time periods considered for each country vary according to the availability of data regarding our main variables of interest (details are in the Appendix). Specifically, we include all partner countries with at least one observation on the immigrant stock and on either the inward or outward FDI stocks. With this selection criterion, the samples are sufficiently representative to prevent concerns regarding sample selection bias: the bilateral FDIs included in the Italian dataset amount to about 90% of the country's total FDI while, for the other four countries, the percentage ranges from 96% to 98%.

The main sources of immigration figures are national censuses and statistics (from ISTAT for Italy, INSEE for France, ONS for the UK)*, the Department for Work and Immigration (*Ministerio de Trabajo e Inmigraciòn*) for Spain, and the Registry of Foreign Residents for Germany (*Ausländerzentralregisters*, AZR)*. Information about the immigrant population's level of educational attainment is drawn from 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 data on the stocks of Italian emigrants are from the AIRE (*Registry of Italian Citizens Residing Abroad*), while those on Spanish emigrants are from the CERA (*Censo Electoral Residentes Ausentes*).

Figures on bilateral FDIs are taken from *Source OECD International Direct Investment Statistics - International direct investment by country Vol. 2009 release 01* for France and Italy, from *UNCTAD WID Country Profiles and National Statistics* for Germany and the UK, from the Department for Industry, Tourism and Trade (*Ministerio de Turismo, Industria y Comercio*) for Spain. Data on GDPs in current prices and per capita GDPs are from the *IMF – World Economic Outlook Database*. The distance measure is drawn from the *USDA-ARS United States Department of Agriculture* – Agricultural Research Service website.

Data on the Christian religion share in each country and 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 6.3, Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania*, August 2009. Figures used for the instruments in the IV approach are from the dataset of Docquier and Marfouk (2006) as far as the stock of immigrants in the EU is concerned, from the *World Bank – World Development Indicators* for population density, and from AIRE for the lagged Italian emigrant stock.

V. Key findings

Table 2 depicts the final regression models, testing the relevance of immigrant networks for both inward and outward FDIs for the five countries, while the full set of regressions, run for each country following the incremental approach explained above, are included in the Appendix. All the estimates depicted in Table 2 are from OLS regressions because tests show that no endogeneity issue arises.[6]

Relatively to the outward FDIs, results regarding the networks of immigrants, our main variables of interest, confirm our prior expectations: more precisely, with the exception of Italy, the FDIs of our European countries are significantly influenced by the transnational links of their immigrant communities. These effects are depicted in Model 5 for the UK, Model 2 for Germany, Model 4 for Spain and, in relation to the aggregate stock, in Table A1 for France.

In addition, as expected, these ties are stronger and effective when they concern skilled immigrants. The variable's coefficients are positive and significant in the regressions regarding the UK (Model 5), Germany (Model 2) and Spain (Model 4), which is consistent with Kugler and Rapoport (2007), Javorcik et al. (2006) and Docquier and Lodigiani (2009), and confirms the hypothesis that investments abroad are especially boosted by the networks of skilled individuals. On the other hand, no homogeneous pattern emerges in relation to unskilled immigrants. The variable's coefficient is negative and significant, although only weakly, just for the UK (Model 5 and Table A5). Negative values,

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[6] IV estimates are instead provided for the French and German outward FDIs and UK inward FDI when using the aggregate stock of immigrants in Tables A1, A2 and A5. Together with Table 3, they show that at least one instrument is positive and significant at the 1% level in all IV regressions. The values of the first stage *F* statistic depict the relevance of the instrument. The test shows evidence in favour of the exogeneity of the instruments when both instruments are significant. However, when the IV approach is preferable to OLS (as reported in the Tables), only one of the instruments is significant and we cannot implement the *J*-test for overidentifying restrictions.

indicating a possible 'substitution' effect between low-skilled immigration and investments abroad have also been found by Kugler and Rapoport (2007) for the US and Girma and Yu (2002), in relation to UK trade.[7]

Unlike the results of Girma and Yu (2002) and Dunlevy (2006), the assumption that transnational networks are more effective when they bridge less similar economies - for the purposes of this paper, partner countries not belonging to the OECD group - is not generally supported by our findings. The sole exception is Germany (Model 2), where only the non-OECD coefficient is positive and significant, with a value of 0.45. For the UK, the OECD and non-OECD immigrant coefficients are both above 1.6, with 1% and 5% significance levels, while, for Spain, only OECD immigrants appear to matter, with a significance at the 10% level.

Again we find evidence in the inward equations (Models 6 to 10) in favour of our hypothesis concerning the role of immigrant networks, with characteristics that partly replicate those of the outward models. In particular, all countries but Italy seem to benefit from the existence of transnational links to attract investments from abroad. Also in this case, the bilateral FDI are prompted by the networks of skilled immigrants: the variable's coefficients are positive and significant in the regressions concerning the four countries above. Turning now to the OECD, non-OECD partition, for France (Model 6), Germany (Model 7) and Spain (Model 9), the networks linked to both these groups of countries convey economic opportunities with neither of the two having a clear dominance. More specifically, a 1% increase in the foreign-born individuals from OECD and non-OECD countries generates an increase by about 4.8% and 2.6% respectively in France, 2.5% and 1.2% in Germany, and slightly more than 3% in Spain. Only for the UK, the non-ECD immigrants matter more than the OECD ones: a 1% increase in the number of skilled non-OECD foreign-born in the country raises the inward FDI by about 12.5%. Again, no clear pattern, if not that of a 'substitution' with investments from abroad, emerges from the unskilled migrants coefficients. The coefficients of the *lowskilled_immi*

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[7] Coefficients on unskilled individuals remain non-significant when disaggregated into OECD and non-OECD, hence Table 2 depicts only the results concerning the splitting of skilled immigrants.

variable are negative in the five countries, and are significant only in the regressions regarding Germany, at the 10% level (Model 7), and Spain, at the 5% level (Model 9). [8]

We now consider the additional source of transnational links represented by emigrants, which we can analyse for Italy and Spain only. Given the lack of data on skills, the variables are not disaggregated by educational attainment. Results are shown in Table 3, where, in all specifications, the coefficients for emigration variables are positive and significant for both countries and for the inward and outward FDIs, confirming our expectations that the diasporas' links, despite the bulk of emigration having ceased about half a century ago, are still effective. Moreover, the values of the coefficients are even higher than those regarding immigration in the group of the other three countries.

These results, together with those of Table 2, clearly show that, for the Italian firms investing abroad and for the foreign firms investing in Italy, these are the only transnational links that count; in Table 2 above, the coefficients of the immigrant variables were non-significant even without the emigrant stocks included in the regressions. Instead, in the specifications of Table 3, a 1% increase in the presence of emigrants in partner countries increases the Italian outward FDI by 0.46%, and the inward FDI by 0.51%. Similarly to the results concerning immigration, the splitting of the stocks of Italian emigrants into *emigrants-OECD* and *emigrants-nonOECD* gives positive and significant coefficients in both cases and for both the outward and inward FDI (Models 2 and 4 of Table 3), despite the impact of the second group appearing to be higher.

Immigrant networks appeared to affect Spain's bilateral FDI in Table 2, where they were the only proxy for transnational networking activity, but in Table 3, with the inclusion of the emigrant stocks in the regressions, they reveal to be non-robust and lose their significance. Results are that the diaspora links have the stronger - and only - influence on the country's bilateral FDI: these variable's coefficients are significant at the 1% level in all specifications, while those of immigrants, in Table 2, were significant only in some specifications and at the 5 and 10% levels. More specifically, in Models 5 to 8 of Table 3, a 1% increase in the stock of Spanish emigrants abroad leads to a 1.11% increase in the

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[8] We compute exact percentage variations in predicted FDI as $\exp(\hat{\beta}) - 1$.

country's inward FDI. In the outward equations, a 1% increase in emigrants towards OECD countries determines a 0.93% increase in FDI, while for non-OECD networks it raises them by 1.5% (Model 6). It can be noted that there is no substantial difference between the effects of OECD and non-OECD networks. As with Italy, emigrants residing in both developed and developing countries strongly influence the country's FDI.

As already stated above, we cannot perform IV regressions for Spain because of the lack of good instruments. However, as for Italy, foreign investments are a much more recent phenomenon than emigration, which largely dates back to the past century. This would also suggest that the causality between emigration and FDI captured in our regressions regarding Spain is not likely to go in the wrong direction.

It might be inferred from the above findings that, were data on emigrants available for the other three countries, similar results on diaspora links would apply. However, this would only be valid if their emigration phenomena were similar to those of Italy and Spain in terms of width, intensity and strength of transnational links, which does not seem to be the case if we look at the respective emigration histories. Furthermore, the very absence of comparable registries of the citizens residing abroad for these other three European countries seems to reinforce this view.

Regarding the coefficients of our control variables, Table 2 shows the absence of a homogeneous pattern concerning the prevalence of either the horizontal or the vertical model of investments abroad, both in the inward and outward equations. The coefficients of *tgdp* are positive whenever significant, but the signs and significance of *sq_gdpdiff* and *pcgdpdiff* tend to differ across countries, without giving robust evidence in favour of either of the two models. The signs are consistent with the horizontal model of investments abroad in the UK regressions, but two out of the three coefficients are not significant (Model 5 in Table 2, and also Table A5).

Some interesting results emerge from the coefficients of the variable distance, *dist*. Both in the inward and outward equations, values are negative and significant in the regressions concerning Italy and Spain (Models 3-4 and 8-9), demonstrating that Italian and Spanish firms tend to prefer nearby

markets for their investments abroad. On the other hand, the variable has a positive and significant impact on the UK's outward FDI, showing that UK multinationals are willing to invest in faraway economies. The same coefficient becomes negative in inward specifications, indicating that the country's FDI from abroad tends to originate from closer states. The level of *openness* of the partner countries does not appear to be particularly relevant, except for the France outward FDI (Model 1) and UK inward FDI (Model 10), with opposite signs, but only a weak significance. Membership to the EU15 appears to positively affect inward FDI in Italy and Germany, but, again, only weakly in these cases; the OECD dummy is never significant, except in some specifications of Tables A1-5.

The colonial past of the UK, France and Spain emerges from the common language, *Dlang*, and colonial ties, *Dcolotie*. The former has a positive and significant effect for the outward and inward bilateral FDI of Spain, the latter for the outward FDI of France and the inward FDI of the UK. Consistently with the findings of Girma and Yu (2002) concerning trade, the coefficient of the dummy Commonwealth (*Dcolotie* in the UK regressions) is negative for the outward FDI of the UK. The level of *governance* of the partner economies positively affects the bilateral FDI of all our countries, except in Italy, where, instead, the coefficient of the cultural variable, *religion*, is positive and significant in both the inward and outward equations. It must be noted, however, that the latter result is not robust to the inclusion of the emigrant variable into the regressions; Table 3 shows that the influence of the religious similarity on the country's bilateral FDI is more effectively captured by the diaspora of Italians abroad.

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. Our main findings are that the countries investigated seem to follow two different models: one is based on the links of skilled immigrants and involves the UK, France and Germany, the other relies on diaspora ties and concerns Italy and Spain. A

common result is that our countries' bilateral FDIs are affected by networks tied to both developed and non-OECD countries.

Why do these two groups of countries differ? The evidence seems to suggest that history matters. Past emigration from the UK, France and, in part, Germany followed the colonial and expansionary policies of their home countries, while from Italy and Spain it was determined by lack of work opportunities at home. These labour emigrants were interested in maintaining strong and institutional ties with the home countries, which in turn relied on them for economic operations abroad. On the other hand, emigrants from the first three states had weaker ties with the homeland and assimilated more easily with the populations of the destination countries.

The difference between the two models of international economic relations is also captured by the different effects of the distance variable on the FDI in our regressions: it is negative for Italy and Spain, positive for the UK's outward investments and non-significant for the France and Germany outward FDI. A factor related to these results may be the smaller average dimension of Italian and Spanish firms relatively to those of the other three countries.

While, in principle, both immigrant or emigrant networks may have positive effects on the economy, not all outcomes are efficient. In particular, several immigrant communities in Spain and especially in Italy originate from the growing and emerging world markets; the ineffectiveness of the links they potentially provide may signal situations of missed economic opportunities not necessarily offset by those offered by the diasporas. The article from the Economist cited above also reads, '[e]thnic networks can have drawbacks. If they are a means of excluding outsiders, they can be stultifying'.

Similarly, policies aiming solely at the restraint of immigration flows can be myopic, they do not contemplate the gains that migrant networks can bring to the economy.

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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	% skilled immig. [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 from the five datasets. The size of each sample varies according to data availability.

Year of reference: latest census for France (1999), Germany and UK (2001); 2002 for Italy, 2003 for Spain.

[2] Share of skilled migration = Skilled immigrants / Immigrants.

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	3.889 ***	3.270 ***	-1.067	2.655 ***	0.303	2.337 **	2.256 ***	-0.194	2.834 ***	2.172 ***
	(1.413)	(0.558)	(2.339)	(0.908)	(0.947)	(1.089)	(0.745)	(2.944)	(0.726)	(0.597)
l_sq_GDPDIFF	-0.286	-0.587 ***	0.906	-0.416 *	-0.077	-0.266	-0.544 **	0.486	-0.392 **	-0.253 ***
	(0.181)	(0.164)	(1.073)	(0.209)	(0.089)	(0.256)	(0.220)	(1.338)	(0.179)	(0.063)
l_PCGDPDIFF	0.081	0.035	-0.066	0.246 **	-0.149 **	0.262 **	0.230 ***	0.323 ***	0.066	0.102 *
	(0.095)	(0.046)	(0.060)	(0.119)	(0.068)	(0.105)	(0.061)	(0.102)	(0.144)	(0.054)
l_DIST	0.195	0.133	-0.644 ***	-0.905 **	0.516 *	-0.040	-0.245	-0.688 **	-1.614 ***	-1.034 ***
	(0.370)	(0.153)	(0.201)	(0.440)	(0.292)	(0.447)	(0.238)	(0.292)	(0.529)	(0.332)
l_OPENNESS	0.895 *	0.521	-0.040	-0.401	0.312	0.511	-0.143	-0.640	-1.271	-1.058 *
	(0.527)	(0.367)	(0.517)	(0.787)	(0.523)	(0.478)	(0.410)	(0.602)	(0.812)	(0.572)
DEU15	0.513	0.384	0.614	0.944	0.604	0.964	1.073 *	1.128 *	0.715	0.175
	(1.049)	(0.432)	(0.409)	(0.711)	(0.828)	(0.763)	(0.581)	(0.627)	(1.062)	(0.494)
DOECD	-0.511	1.770	2.035	-1.430	-0.718	-3.881	-4.457	0.501	-1.775	16.250
	(4.628)	(1.934)	(2.288)	(2.504)	(4.742)	(3.288)	(2.676)	(2.707)	(3.010)	(9.866)
DLANG	2.427 **			0.693	0.432	0.811			1.218	1.338 *
	(1.158)			(0.838)	(0.522)	(1.028)			(1.121)	(0.788)
DCOLOTIE[1]	-2.019			2.930 ***	-1.552 *	-0.712			2.108 *	0.837
	(1.256)			(0.809)	(0.838)	(1.116)			(1.143)	(0.512)
RELIGION	0.894	0.359	1.251 ***	0.605	0.675	0.009	-0.618	1.279 **	0.666	-1.317
	(0.796)	(0.383)	(0.408)	(0.937)	(0.744)	(0.763)	(0.617)	(0.576)	(1.198)	(0.939)
GOVERNANCE	4.752 **	2.868 ***	0.701	6.396 ***	1.617	3.010 **	3.787 **	0.334	5.227 ***	7.411 ***
	(2.009)	(0.802)	(1.202)	(1.849)	(1.571)	(1.476)	(1.658)	(1.882)	(1.878)	(1.957)
l_LOWSKILLED_IMMI	0.069	0.002	0.163	-0.669	-0.769 *	-0.615	-0.484 *	-0.228	-1.453 **	-0.630
	(0.452)	(0.162)	(0.192)	(0.562)	(0.398)	(0.375)	(0.276)	(0.228)	(0.579)	(0.381)
l_SKILLED_IMMI_OECD	0.610	0.368	-0.253	1.232 *	1.703 **	1.754 ***	1.243 ***	0.017	1.598 **	0.780
	(0.872)	(0.265)	(0.342)	(0.699)	(0.721)	(0.644)	(0.354)	(0.367)	(0.747)	(0.549)
l_SKILLED_IMMI_NONOECD	0.647	0.452 **	0.063	0.979	1.648 ***	1.277 ***	0.776 *	0.201	1.414 *	2.603 **
	(0.444)	(0.194)	(0.231)	(0.644)	(0.459)	(0.400)	(0.405)	(0.335)	(0.744)	(0.962)
Time dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
const	-57.348 ***	-34.506 ***	-0.028	-7.177	-8.403	-31.473 **	-14.283	2.087	5.652	-28.377
	(19.902)	(8.089)	(5.995)	(8.847)	(14.175)	(15.746)	(9.723)	(6.437)	(7.329)	(18.688)
Adjusted R²	0.406	0.725	0.652	0.565	0.410	0.543	0.673	0.803	0.670	0.755
Number of observations	173	1319	177	257	119	173	799	177	197	78

Notes: *** 1%, ** 5%, * 10% significant level; cluster-robust standard errors in parentheses.   [1] Dummycommonwealth for the UK

Table 3 - Emigration and FDI

	Italy				Spain			
Dependent var.:	Outward FDI		Inward FDI		Outward FDI		Inward FDI	
Specification:	*OLS*	*OLS*	*IV*	*IV*	*OLS*	*OLS*	*OLS*	*OLS*
Explanatory var.	*Model 1*	*Model 2*	*Model 3*	*Model 4*	*Model 5*	*Model 6*	*Model 7*	*Model 8*
l_TGDP	-0.014	0.293	0.703	1.348	1.501 *	1.598 *	1.525 **	1.507 **
	(2.318)	(2.391)	(2.686)	(2.858)	(0.789)	(0.811)	(0.618)	(0.590)
l_sq_GDPDIFF	0.330	0.192	-0.030	-0.325	-0.145	-0.181	-0.141	-0.137
	(1.081)	(1.118)	(1.209)	(1.295)	(0.150)	(0.152)	(0.095)	(0.096)
l_PCGDPDIFF	0.009	-0.006	0.260 ***	0.278 ***	0.329 ***	0.295***	0.080	0.076
	(0.062)	(0.063)	(0.094)	(0.100)	(0.084)	(0.072)	(0.125)	(0.132)
l_DIST	-0.541 ***	-0.547 ***	-0.574 *	-0.583 *	-0.368	-0.391	-1.343 **	-1.344 **
	(0.169)	(0.161)	(0.299)	(0.294)	(0.298)	(0.298)	(0.506)	(0.511)
l_OPENNESS	0.548	0.628	0.008	0.166	0.754	0.815	-1.061	-1.082
	(0.529)	(0.555)	(0.657)	(0.691)	(0.543)	(0.551)	(0.718)	(0.717)
DUMMYEU15	0.621	0.633	1.105 *	1.135 *	0.374	0.210	0.627	0.644
	(0.399)	(0.405)	(0.646)	(0.670)	(0.462)	(0.475)	(0.773)	(0.787)
DOECD	3.780 *	4.635 *	2.301	3.885	0.931	1.265	-1.496	-1.589
	(2.203)	(2.574)	(2.456)	(2.992)	(1.756)	(1.876)	(2.481)	(2.580)
DLANG					-0.557	-0.622	-0.119	-0.104
					(0.656)	(0.651)	(1.004)	(1.022)
DCOLOTIE					0.935 *	0.887 *	1.458	1.453
					(0.548)	(0.527)	(1.044)	(1.034)
RELIGION	0.215	0.118	0.177	-0.034	0.433	0.494	-0.109	-0.076
	(0.536)	(0.558)	(0.745)	(0.829)	(0.756)	(0.745)	(0.943)	(0.995)
GOVERNANCE	0.155	0.100	-0.595	-0.611	4.074 ***	3.618 **	3.341 *	3.436 *
	(1.063)	(1.040)	(1.773)	(1.759)	(1.476)	(1.426)	(1.793)	(2.009)
l_LOWSKILLED_IMMI	-0.077	-0.051	-0.473 *	-0.441	-0.477	-0.375	-1.182 **	-1.208 *
	(0.228)	(0.246)	(0.255)	(0.263)	(0.527)	(0.552)	(0.587)	(0.634)
l_SKILLED_IMMI_OECD	-0.056	-0.056	0.223	0.232	0.689	0.730	0.959	0.967
	(0.302)	(0.305)	(0.373)	(0.373)	(0.632)	(0.616)	(0.699)	(0.702)
l_SKILLED_IMMI_NONOECD	0.432 *	0.434 *	0.577 *	0.600 *	0.646	0.470	0.757	0.806
	(0.236)	(0.234)	(0.330)	(0.323)	(0.603)	(0.664)	(0.765)	(0.855)
l_EMIGRANTS	0.378 ***		0.410 ***		0.824 ***		0.749 ***	
	(0.118)		(0.130)		(0.154)		(0.158)	
l_EMIGRANTS_OECD		0.334 **		0.346 **		0.658 ***		0.771 ***
		(0.129)		(0.144)		(0.158)		(0.175)
l_EMIGRANTS_NONOECD		0.437 ***		0.528 ***		0.918 ***		0.723 ***
		(0.160)		(0.195)		(0.215)		(0.265)
Time dummies	yes	yes	yes	yes	yes	yes	yes	yes
const	-5.954	-7.098	-3.085	-5.656	-15.786 **	-15.767 **	6.940	7.106
	(5.940)	(6.564)	(6.270)	(7.260)	(6.732)	(6.650)	(7.411)	(7.410)
Adjusted R²	0.718	0.718	0.826	0.824	0.682	0.684	0.751	0.750
N. of observations	177	177	177	177	248	248	189	189
Instrumental variables			Emig. '90	Em. OECD '90 Em. NonO. '90				
First-stage F stat.			1444.31	629.73				
p-value			0.000	0.000				

Notes: *** 1%, ** 5%, * 10% significant level; cluster-robust standard errors in parentheses.

APPENDIX

Table A1 - Immigrant networks and FDI - France

Dependent var.:	Outward FDI			Inward FDI		
Specification:	*IV*	*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 ***	3.889 ***	3.800 ***	3.128	2.337 **
	(0.922)	(0.881)	(1.413)	(0.876)	(0.880)	(1.089)
l_sq_GDPDIFF	-0.245	-0.283	-0.286	-0.305	-0.298	-0.266
	(0.168)	(0.171)	(0.181)	(0.217)	(0.251)	(0.256)
l_PCGDPDIFF	-0.013	0.079	0.081	0.258 **	0.227	0.262 **
	(0.094)	(0.089)	(0.095)	(0.100)	(0.102)	(0.105)
l_DIST	0.386	0.200	0.195	-0.232	-0.113	-0.040
	(0.409)	(0.368)	(0.370)	(0.462)	(0.440)	(0.447)
l_OPENNESS	0.992 *	0.890 *	0.895 *	0.438	0.568	0.511
	(0.535)	(0.521)	(0.527)	(0.485)	(0.469)	(0.478)
DUMMYEU15	-0.026	0.489	0.513	1.192	1.258	0.964
	(0.953)	(0.924)	(1.049)	(0.799)	(0.841)	(0.763)
DOECD	-1.216	-0.790	-0.511	-0.320	-0.307	-3.881
	(0.906)	(0.851)	(4.628)	(0.863)	(0.855)	(3.288)
DLANG	3.020 ***	2.411 **	2.427 **	1.030	1.012	0.811
	(1.108)	(1.074)	(1.158)	(1.056)	(0.968)	(1.028)
DCOLOTIE	-2.956 **	-1.997	-2.019	-0.868	-0.992	-0.712
	(1.272)	(1.147)	(1.256)	(1.139)	(1.018)	(1.116)
RELIGION	0.865	0.892	0.894	-0.023	0.047	0.009
	(0.872)	(0.790)	(0.796)	(0.786)	(0.773)	(0.763)
GOVERNANCE	5.101 **	4.755 **	4.752 **	3.205 **	2.943	3.010 **
	(2.064)	(2.007)	(2.009)	(1.483)	(1.477)	(1.476)
l_IMMIGRANTS	1.014 ***			0.464 **		
	(0.301)			(0.200)		
l_LOWSKILLED_IMMI		0.059	0.069		-0.483	-0.615
		(0.385)	(0.452)		(0.334)	(0.375)
l_SKILLED_IMMI		0.650			1.233	
		(0.427)			(0.399)	
l_SKILLED_IMMI_OECD			0.610			1.754 ***
			(0.872)			(0.644)
l_SKILLED_IMMI _NONOECD			0.647			1.277 ***
			(0.444)			(0.400)
Time dummies	Yes	yes	yes	yes	yes	yes
const	-54.335 ***	-56.503 ***	-57.348 ***	-48.791 ***	-42.026 ***	-31.473 **
	(12.107)	(12.948)	(19.902)	(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	Immig. to EU15 ('90)					
First-stage F statistic	110.700					
p-value	0.000					

Notes: *** 1%, ** 5%, * 10% significance level; cluster-robust standard errors in parentheses.

Table A2 - Immigrant networks and FDI - Germany

Dependent var.:	Outward FDI			Inward FDI		
Specification:	*IV*	*OLS*	*OLS*	*OLS*	*OLS*	*OLS*
Explanatory variables	*Model 1*	*Model 2*	*Model 3*	*Model 4*	*Model 5*	*Model 6*
I_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)
I_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)
I_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)
I_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)
I_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)
DOECD	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	3.311	2.877 ***	2.868 ***	4.619 ***	4.152 **	3.787 **
	(0.859)	(0.800)	(0.802)	(1.698)	(1.783)	(1.658)
I_IMMIGRANTS	0.609			0.175		
	(0.181)			(0.166)		
I_LOWSKILLED_IMMI		0.000	0.002		-0.473	-0.484 *
		(0.162)	(0.162)		(0.308)	(0.276)
I_SKILLED_IMMI		0.441 **			0.902 **	
		(0.191)			(0.368)	
I_SKILLED_IMMI_OECD			0.368			1.243 ***
			(0.265)			(0.354)
I_SKILLED_IMMI _NONOECD			0.452 **			0.776 *
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	Immig. to EU15 ('90)					
First-stage F statistic	43.180					
p-value	0.000					

Notes: *** 1%, ** 5%, * 10% significance level; cluster-robust standard errors in parentheses.

Table A3 - Migrant networks and FDI - Italy

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*
l_TGDP	0.247	-1.371	-1.067	1.801	-0.380	-0.194
	(2.131)	(2.258)	(2.339)	(2.613)	(2.900)	(2.944)
l_sq_GDPDIFF	0.270	0.993	0.906	-0.422	0.541	0.486
	(1.008)	(1.068)	(1.073)	(1.195)	(1.334)	(1.338)
l_PCGDPDIFF	-0.024	-0.088	-0.066	0.258 ***	0.336 ***	0.323 ***
	(0.066)	(0.068)	(0.060)	(0.087)	(0.103)	(0.102)
l_DIST	-0.470 **	-0.549 ***	-0.644 ***	-0.520 **	-0.631 **	-0.688 **
	(0.226)	(0.201)	(0.201)	(0.253)	(0.257)	(0.292)
l_OPENNESS	0.390	-0.041	-0.040	-0.053	-0.646	-0.640
	(0.408)	(0.521)	(0.517)	(0.541)	(0.595)	(0.602)
DUMMYEU15	0.988 *	0.635	0.614	1.342 **	1.141 *	1.128 *
	(0.543)	(0.421)	(0.409)	(0.608)	(0.642)	(0.627)
DOECD	-0.395	-0.032	2.035	-1.140 **	-0.700	0.501
	(0.415)	(0.421)	(2.288)	(0.542)	(0.602)	(2.707)
RELIGION	1.029 **	1.170 ***	1.251 ***	1.052 *	1.228 **	1.279 **
	(0.393)	(0.389)	(0.408)	(0.583)	(0.589)	(0.576)
GOVERNANCE	0.834	0.357	0.701	1.319	0.147	0.334
	(1.020)	(1.309)	(1.202)	(1.720)	(1.854)	(1.882)
l_IMMIGRANTS	0.138			-0.087		
	(0.134)			(0.142)		
l_LOWSKILLED_IMMI		0.217	0.163		-0.196	-0.228
		(0.183)	(0.192)		(0.222)	(0.228)
l_SKILLED_IMMI		-0.107			0.101	
		(0.252)			(0.296)	
l_SKILLED_IMMI_OECD			-0.253			0.017
			(0.342)			(0.367)
l_SKILLED_IMMI_NONOECD			0.063			0.201
			(0.231)			(0.335)
Time dummies	yes	yes	yes	yes	yes	yes
const	-3.414	1.866	-0.028	-3.803	3.088	2.087
	(5.124)	(5.502)	(5.995)	(5.122)	(5.838)	(6.437)
Adjusted R²	0.624	0.648	0.652	0.784	0.803	0.803
Number of observations	197	177	177	197	177	177

Notes: *** 1%, ** 5%, * 10% significant level; cluster-robust standard errors in 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*
l_TGDP	3.448 ***	2.895 ***	2.655 ***	3.848 ***	2.983 ***	2.834 ***
	(0.871)	(0.860)	(0.908)	(0.648)	(0.685)	(0.726)
l_sq_GDPDIFF	-0.463 **	-0.419 *	-0.416 *	-0.443 **	-0.387 **	-0.392 **
	(0.232)	(0.217)	(0.209)	(0.194)	(0.182)	(0.179)
l_PCGDPDIFF	0.219 *	0.240 *	0.246 **	0.112	0.061	0.066
	(0.115)	(0.121)	(0.119)	(0.119)	(0.145)	(0.144)
l_DIST	-1.050 **	-0.980 **	-0.905 **	-1.557 ***	-1.671 ***	-1.614 ***
	(0.428)	(0.445)	(0.440)	(0.508)	(0.513)	(0.529)
l_OPENNESS	-0.428	-0.354	-0.401	-1.175	-1.188	-1.271
	(0.784)	(0.790)	(0.787)	(0.846)	(0.836)	(0.812)
DUMMYEU15	1.220	1.133	0.944	1.341	0.768	0.715
	(0.792)	(0.791)	(0.711)	(0.929)	(1.023)	(1.062)
DOECD	0.562	0.361	-1.430	-0.257	-0.432	-1.775
	(0.759)	(0.782)	(2.504)	(0.990)	(1.030)	(3.010)
DLANG	1.020	0.819	0.693	1.708	1.314	1.218
	(0.882)	(0.871)	(0.838)	(1.044)	(1.156)	(1.121)
DCOLOTIE	3.184 ***	2.892 ***	2.930 ***	2.286 *	2.016	2.108 *
	(0.870)	(0.850)	(0.809)	(1.219)	(1.211)	(1.143)
RELIGION	0.924	0.658	0.605	0.699	0.748	0.666
	(0.890)	(0.933)	(0.937)	(1.233)	(1.212)	(1.198)
GOVERNANCE	5.735 ***	6.106 ***	6.396 ***	3.910 **	5.128 ***	5.227 ***
	(1.749)	(1.809)	(1.849)	(1.671)	(1.848)	(1.878)
l_IMMIGRANTS	0.090			-0.417 *		
	(0.186)			(0.244)		
l_LOWSKILLED_IMMI		-0.667	-0.669		-1.487 **	-1.453 **
		(0.559)	(0.562)		(0.560)	(0.579)
l_SKILLED_IMMI		1.007			1.499 **	
		(0.644)			(0.711)	
l_SKILLED_IMMI_OECD			1.232 *			1.598 **
			(0.699)			(0.747)
l_SKILLED_IMMI_NONOECD			0.979			1.414 *
			(0.644)			(0.744)
Time dummies	yes	yes	yes	yes	yes	yes
const	-10.067	-8.495	-7.177	0.288	4.339	5.652
	(8.305)	(8.601)	(8.847)	(8.296)	(7.491)	(7.329)
Adjusted R²	0.553	0.564	0.565	0.640	0.670	0.670
Number of observations	261	257	257	201	197	197

Notes: *** 1%, ** 5%, * 10% significant level; cluster-robust standard errors in parentheses.

Table A5 - Immigrant networks and FDI - United Kingdom

Dependent var.:	Outward FDI			Inward FDI		
Specification:	*OLS*	*OLS*	*OLS*	*IV*	*OLS*	*OLS*
Explanatory variables	*Model 1*	*Model 2*	*Model 3*	*Model 4*	*Model 5*	*Model 6*
I_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)
I_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)
I_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)
I_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)
I_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)
DOECD	0.470	-0.250	-0.718	-1.573	-1.248	16.250
	(1.206)	(1.291)	(4.742)	(1.066)	(0.917)	(9.866)
DLANG	0.528	0.410	0.432	3.140 ***	1.199	1.338 *
	(0.537)	(0.511)	(0.522)	(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	0.770	1.688	1.617	8.052 ***	6.886 ***	7.411 ***
	(1.777)	(1.822)	(1.571)	(1.740)	(1.793)	(1.957)
I_IMMIGRANTS	0.650 ***			-0.417		
	(0.227)			(0.297)		
I_LOWSKILLED_IMMI		-0.765 *	-0.769 *		-0.717 **	-0.630
		(0.388)	(0.398)		(0.350)	(0.381)
I_SKILLED_IMMI		1.670 ***			1.051 *	
		(0.525)			(0.610)	
I_SKILLED_IMMI_OECD			1.703 **			0.780
			(0.721)			(0.549)
I_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				Immig. to EU15 ('90)		
First-stage F statistic				17.53		
p-value				0.000		

Notes: *** 1%, ** 5%, * 10% significance level; cluster-robust standard errors in parentheses.

Appendix - List of partner countries

France (years: 1990, 1999)

Albania	Cyprus	Laos *	Romania
Algeria *	Czech Rep.	Latvia	Russian Fed.
Angola	Denmark	Lebanon *	Saudi Arabia
Argentina	Djibouti + *	Libya	Senegal + *
Australia	Egypt	Lithuania	Singapore
Austria	Finland	Luxembourg	Slovak Rep.
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 R. *
Cambodia *	Iceland	Netherlands	Taiwan
Cameroon + *	India *	New Zealand	Thailand
Canada	Indonesia	Niger + *	Togo + *
Central Afr. R. + *	Iran	Nigeria	Tunisia *
Chad + *	Ireland	Norway	Turkey
Chile	Israel	Pakistan	Ukraine
China *	Italy	Panama	UK
Colombia	Ivory C. +*	Paraguay	United States
Comoros *	Japan	Peru	Uruguay
Congo. Rep. + *	Kazakhstan	Philippines	Venezuela
Congo. Dem.R. *	Kenya	Poland	Vietnam *
Costa Rica	Korea (South)	Portugal	
Croatia	Kuwait	Qatar	

Germany (years: 1991-2006)

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

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	UK
Croatia	Japan	Russian Fed.	United States
Czech Rep.	Korea (South)	Singapore	Venezuela
Denmark	Libya	Slovak Rep.	

Spain (2003-2006)

Algeria	France	Mexico +*	Slovak Rep.
Argentina +*	Germany	Moldova	Slovenia
Australia	Greece	Monaco	South Africa
Austria	Hungary	Morocco*	Sri Lanka
Belgium	Iceland	Mozambique	Sudan
Bolivia +*	India	Netherlands	Sweden
Brazil	Indonesia	New Zealand	Switzerland
Bulgaria	Iran	Nicaragua +*	Syria
Canada	Ireland	Norway	Taiwan
Chile +*	Israel	Pakistan	Tanzania
China	Italy	Panama +*	Thailand
Colombia +*	Jamaica*	Paraguay +*	Tunisia
Costa Rica+*	Japan	Peru +*	Turkey
Croatia	Kenya	Philippines*	UK
Cuba +*	Korea (South)	Poland	Ukraine
Cyprus	Latvia	Portugal	United Ar. E.
Czech Rep.	Lebanon	Romania	United States
Denmark	Libya	Russian Fed.	Uruguay +*
Dominic.R+*	Lithuania	Saudi Arabia	Venezuela +*
Ecuador +*	Luxembourg	Senegal	Vietnam
Egypt	Malaysia	Serbia and Mont.	
Finland	Malta	Singapore	

United Kingdom (years: 1990, 1995, 2001)

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

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