Università degli Studi di Modena e Reggio Emilia
Dipartimento di Economia Politica

Materiali di discussione

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

by

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January 2009

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Immigrant links, diasporas and FDI. Evidence from five European countries

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November 2009

Abstract This paper studies the effects of migration on the bilateral FDI of France, Germany, Italy, Spain and the UK. By using five datasets covering different time spans going from 1990 to 2006, it analyses the effect on FDI of networks of immigrants from developed and developing countries and, for Italy and Spain, of emigrants' networks as well. General results are that the FDI of the UK, Germany and France are affected by immigrants' networks, while those of Italy and Spain are tied to their diasporas. Immigrants foster FDI only through their skilled component. This holds for both OECD and non-OECD immigrants, showing that networks may partially compensate for the negative effects of the brain drain affecting poor countries.

Keywords: migration, networks, skills, diasporas, FDI

JEL classification: F21, F22, F23

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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, several Western European countries have attracted immigration flows. Initially people have arrived from ex-colonies and developing countries, but also from the poorest areas of Europe. Nowadays, the whole Western Europe attracts immigrants from the outside world.

During the past, however, Western Europe has been a land of emigration. Since the mid nineteenth century, people in search of a new and better life departed from the UK, France, Germany, Greece, Portugal and other countries, and massively left from Italy, Ireland and Spain. While most of these migration outflows ended before World War II, the Italian one persisted until the beginning of the 1970s, and those from Spain and Ireland until the 1980s. In modern history, no other area of the world has had such large and varied movements of populations, outwards and then inwards. 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 appear to have significant effects on transactions (Trefler, 1995; Obsfeld and 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 when 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 flows of 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, 2009b), 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, 2009a). Both lines of research have provided evidence in support of the basic hypothesis on migrant networks.

According to the findings of this strand of literature, 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, Germany, Italy, Spain and the UK. 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 (Kugler and Rapoport, 2007; Javorcik et al., 2006 and Docquier and Lodigiani, 2009) is that skilled immigrants may have a higher impact on the bilateral FDI.

Two well-known regularities of the world economy are that global FDI tend to cluster within the group of developed economies and migration flows are mainly directed towards these 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 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 the educational attainment of emigrants, we cannot measure the separate influence of individuals 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 while the FDI of the UK, France and Germany are affected by the immigrant links, those of Spain and especially Italy depend on the ties with their respective diasporas. Also, the splitting of immigrant populations into skilled and unskilled immigrants reveals a common pattern: 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. The further division of skilled immigrants into OECD and non-

[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.

OECD networks shows that both have positive effects, with a relative importance that depends on the country under analysis. This implies that skilled networks from developing economies can positively affect the bilateral FDI with their countries of origin.

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 is more recent, 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.

[2] The *Eurostat* estimated figure for 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.

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 in between. 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.

Turning now to emigration, Table 1 shows that Italian emigrants reside in OECD countries more than Spanish ones (78.5% and 46.2% respectively). 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 show that the two variables, immigration and emigration, are reciprocally 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 a literature on gravity and FDI that 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). This augmented version of the gravity model is particularly suited for our analysis, which includes developed and developing countries.

Following the basic hypothesis of the gravity model, we expect *tgdp* to show a positive coefficient, as the level of the transactions between two countries is supposed to be higher the bigger the economic dimension of the two. 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*.

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

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:

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

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

[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.

indicating the partner countries' membership to 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 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, i.e. the number of immigrants (*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, 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.

When both the immigrant and the emigrant variables are included among the regressors, we do not have prior expectations about the relative importance of the two. The results may depend on the type of migration and on the characteristics of the transnational links. A factor that might obviously affect the strength of migrants' ties is time, but these effects may vary non linearly. On the one hand, immigrants may need time to settle in the host country and develop economic ties with home, on the other hand,

after decades and even generations since the arrival, and since the building of the initial transnational link, they may loose interest into preserving or reinvigorating them (Blanes, 2006; Murat, Pistoresi and Rinaldi, 2009, Gould, 1994). Without a general hypothesis on the effect of time on networks, we assume that both the 'old' emigration networks and the 'recent' immigration ones have positive effects on the bilateral FDI.

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], i.e. before the period covered in our analysis, disaggregated by country of origin and level of educational attainment,. 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 corresponding instrument (total migration, skilled and unskilled migration)[6].

The first stage is therefore:

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

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

where *network* is the (logarithm of the) network variable instrumented, *immig90_EU15* is the corresponding instrumental variable concerning previous migration to the EU-15, 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. When there is no evidence of an endogeneity issue, both the IV and the OLS estimates are consistent, and 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 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*

[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.

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

The final regression models for both inward and outward FDI for the five countries are presented in Table 2. A wider set of regressions has been run for each country following the incremental approach explained above, and are included in the Appendix[8].

As far as the outward FDI are concerned, Table 2 shows no clear common pattern across the five countries as for the prevalence of either the horizontal or the vertical model of investments abroad. The coefficients of *tgdp* are positive when significant, but the signs and significance of the coefficients of *sq_gdpdiff* and *pcgdpdiff* tend to differ, even within each country, so altogether no robust evidence in

[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..

favour of a particular model of investment is provided. The variable *dist*, which is a proxy for both tangible and invisible costs of 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 British multinationals are eager to invest in faraway economies. For Italy and Spain, a 10% increase in distance is associated with a 5.4% decrease in investments abroad, for the UK a 10% increase in distance implies an increase by almost 7% in FDI[9]. The coefficients of the variable *openness* are non-significant, showing the absence of a clear pattern of substitution or complementarity between the openness to trade of the partner economies and the amount of foreign investments they receive. Similarly, membership of the recipient country to the EU15 and OECD (intended to capture the effects of the OECD countries that do not belong to the EU15) does not appear to encourage investments there from the five countries.

As for the cultural and institutional variables, we note that the level of French outward FDI is much higher in those countries that share a common language (in Model 1: the coefficient for French being spoken in the partner country is 2.34, colonial ties positively affect Spanish investments abroad (in Model 4, the coefficient on *Dcolotie* is 3.44), while British FDI seem to be lower in Commonwealth economies than in non-Commonwealth ones (Model 5), which is consistent with the findings of Girma and Yu (2002) regarding trade.[10] The share of Christians in the population of the partner economy, which again is supposed to capture a cultural similarity between countries, appears to be somehow relevant only for Italian firms investing abroad (in Model 3, an increase by 10 percentage points of the Christian population in the foreign country increases Italian FDI there by above 14%)[11]. As expected, the quality of institutions in the partner economy is a positive factor in attracting FDI from three of the

[9] Here and in the rest of the paper we will compute the exact percentage variation in predicted FDI as $\exp(\hat{\beta})-1$.

[10] 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).

[11] However, this result is not robust across different specifications, as shown in Table A3.

five countries under analysis; the coefficient of the variable *governance* is highly significant for France, Germany and Spain, with values ranging from 2.9 to 6.2.

Our main variable of interest, the networks of immigrants, confirms our prior expectations and reveals some interesting features. The overall picture supports our basic hypothesis: skilled immigrants seem to positively affect direct investments from their hosting economies to their countries of origin, which is consistent with the findings of Kugler and Rapoport (2007), Javorcik et al. (2006) and Docquier and Lodigiani (2009). This is particularly true for the UK, with skilled immigrants from both OECD and non-OECD countries having a major positive impact on the level of British outward FDI. A significant effect is found for German FDI as well, but only for individuals coming from non-OECD countries. 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 generated by emigration. A weaker evidence for the effect of skilled foreign-born individuals is found also for Spain, this time involving only the network of migrants from OECD countries.

No consistent pattern emerges for unskilled immigrants. The only robust result concerns the UK (see also Table A5), in which case we find a negative (although only weakly significant) coefficient. 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. A positive relationship is found for Italy, but this result is not robust to different model specifications (see Table A3).

We now turn to the inward FDI equations (Models 6 to 10 of Table 2). Again, no consistent pattern in favour of either a horizontal or a vertical model of investment emerges. Each country seems to be characterized differently. Distance appears to have a negative impact on inward FDI, and this effect is significant for Italy, Spain and the UK, while it is not for France and Germany (as happened for the outward FDI).. Again, the variable *openness* is in general not significant, with the exception of the British inward FDI, where it is negative but has only a 10% significance level. The dummy *OECD* is

never significant, while the EU15 dummy is positive and significant at the 10% for Germany. . The common language is a positive factor affecting the investments from abroad in both Spain and the UK, while it is not significant for France. The presence of colonial ties does not appear to be important.

As for outward FDI, a similarity as far as religion is concerned appears to positively affect inward FDI only for Italy, but again the variable only has a 10% significance level (Model 8). For the other four countries, on the other hand, the coefficients of *governance* are positive and significant, implying that countries where the quality of the institutions is higher tend to have firms that invest more abroad.

Once more, we find evidence in favour of our hypothesis concerning the role of migrant networks, and it appears to be more generalized than for the analysis on outward FDI. Here, all countries but Italy seem to benefit from the presence of skilled immigrants in terms of investments from abroad. For France, Germany and Spain, the coefficients for individuals born in OECD countries is higher than for non-OECD countries, which is expected as OECD members tend to be richer than non members and therefore can invest more. In any case, both groups of highly-educated immigrants seem to convey economic opportunities: a 1% increase in the number of skilled foreign-born individuals from OECD and non-OECD countries generates an increase by 4.77% and 2.59% respectively in French inward FDI; for Germany, the percentages are 2.47 and 1.17; for Spain, both are around 4%. For the UK, only migrants coming from non-OECD countries seem to have an effect, which can be easily explained by the presence of many Commonwealth nations in this group. This impact appears to be much bigger than that for the other countries though: with a 1% increase in the stock of foreign-born, inward FDI soar by 12.50%.

No clear pattern emerges as far as unskilled migrants are concerned. The coefficients of the related variable (*lowskilled_immi*) are generally negative, but they are either not significant or only weakly so[12]. The only exception is Spain, which shows a negative coefficient with a 5% significance level.

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

[12] In any case, the results do not appear to be robust to different specifications of the model, as shown in the Appendix.

significant for both countries, in the outward and inward regressions. These findings not only confirm our expectations, but are also stronger than those concerning the networks of highly-educated 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. Those related to the networks of immigrants were non-significant and no difference arises when including the networks of emigrants. 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 share of Christians in the population of the partner countries positively 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 3.40%, and the inward FDI by 4.45%. 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 FDI 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 by 11% in the country's inward FDI. In the outward equations, a 10% increase in emigrants towards OECD countries leads to an increase by 8.26% in FDI and in non-OECD networks to an increase of 13% (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. This would hold only if the phenomenon of emigration from these countries is similar to the Italian and Spanish ones in terms of characteristics and intensity of the links. It must be considered, however, that a likely reason why these other three European countries do not have registries of their citizens abroad, comparable to those of Italy and Spain, may be simply that they do not have such strong diasporas.[13]

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 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[14].

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 involving their countries of origin; in the other, applicable to Italy and Spain, bilateral FDI are strongly influenced by the countries' emigrant population.

[13] 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).

[14] 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.

In the regressions concerning the UK, France and Germany, the aggregate stock of immigrants is generally non-significant. The splitting of the variable into skilled and unskilled individuals reveals the stronger positive effect of the former, and the negative or non-significant effect of the latter. In the regression on the FDI of Italy and Spain, 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 immigrants and emigrants mostly 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 networks are active could reveal a tendency of diversion rather of creation of overall FDI.

Migrant networks affect the FDI of the five countries independently of the world areas they are tied to. The coefficients of both OECD and non-OECD skilled immigrants or emigrants tend to be significant and statistically similar. This implies that migrant networks help to bridge the FDI gap between developed and developing countries and, in the case of skilled migration, to partly compensate for the negative effect of the brain drain for the immigrants' countries of origin. This latter effect 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 created by skilled immigrants, the other of pure diaspora effects. 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, skilled individuals or 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 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 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	0.646	0.452 **	0.113	1.028	1.648 ***	1.277 ***	0.776 *	0.168	1.596 **	2.603 **
_NONOECD	(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 R^2	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% 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	0.424	0.424	0.512	0.514	0.617	0.465	0.816	0.810
_NONOECD	(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		0.336 *		0.382 *		0.823 ***		0.809 ***
_NONOECD		(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 R^2	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% significance level; heteroskedasticity robust standard errors are in the parentheses.

Table A1 - Immigrant networks and FDI - France

Dependent var.:	**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			0.646			1.277 ***
_NONOECD			(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 R^2	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% significance level; heteroskedasticity robust standard errors are in the parentheses.

Table A2 - Immigrant networks and FDI - Germany

Dependent var.:	**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 *
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 R^2	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% significance level; heteroskedasticity robust standard errors are in the parentheses.

Table A3 - Immigrant networks and FDI - Italy

Dependent var.:	**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			0.113			0.168
_NONOECD			(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 R^2	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% significance level; heteroskedasticity robust standard errors are in the parentheses.

Table A4 - Immigrant networks and FDI - Spain

Dependent var.:	**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	3.603 ***	3.000 ***	2.776 ***	3.980 ***	3.130 ***	3.107 ***
	(0.815)	(0.818)	(0.847)	(0.628)	(0.733)	(0.800)
l_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)
l_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)
l_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)
l_IMMIGRANTS	0.112			-0.215		
	(0.181)			(0.198)		
l_LOWSKILLED_IMMI		-0.690	-0.685		-1.398 **	-1.391 **
		(0.551)	(0.553)		(0.605)	(0.615)
l_SKILLED_IMMI		1.057			1.610 **	
		(0.642)			(0.763)	
l_SKILLED_IMMI_OECD			1.282 *			1.628 **
			(0.692)			(0.801)
l_SKILLED_IMMI			1.028			1.596 **
_NONOECD			(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 R^2	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% significance level; heteroskedasticity robust standard errors in parentheses.

Table A5 - Immigrant networks and FDI - United Kingdom

Dependent var.:	**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			1.648 ***			2.603 **
_NONOECD			(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 R^2	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% significance level; heteroskedasticity robust standard errors in the parentheses.

Appendix - List of partner countries

France (years: 1990, 1999)

Albania	Cyprus	Laos *	Romania
Algeria *	Czech R.	Latvia	Russian Fed.
Angola	Denmark	Lebanon *	Saudi Arabia
Argentina	Djibouti + *	Libyan Ar. Jam.	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 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	United Kingdom
Colombia	Ivory C. +*	Paraguay	United States
Comoros *	Japan	Peru	Uruguay
Congo. Rep. + *	Kazakhstan	Philippines	Venezuela
Congo. Dem.R. *	Kenya	Poland	Vietnam *
Costa Rica	Korea. S.	Portugal	
Croatia	Kuwait	Qatar	

Germany (years: 1991-2006)

Algeria	Egypt	Liberia	Saudi Arabia
Argentina	El Salvador	Libyan A. Jam.	Serbia and Mont.
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-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	United Kingdom
Croatia	Japan	Peru	United States
Cyprus	Kazakhstan	Philippines	Uruguay
Czech Republic	Kenya	Poland	Uzbekistan
Denmark	Korea. S.	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 R.	Korea. S.	Singapore	Venezuela
Denmark	Libya	Slovak Republic	

Spain (2003-2006)

Algeria	France	Mexico +*	Slovakia
Argentina +*	Germania	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	Poland	Ukraine
Cyprus	Latvia	Portugal	United Ar. E.
Czech R.	Lebanon	Romania	United States
Denmark	Libyan Arab Jam.	Russia	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 R.
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 R.	Italy	Norway	US +
Denmark	Japan	Panama	Zimbabwe +
Egypt	Kenya + °	Poland	
Estonia	Korea (South)	Portugal	

+ Dummylanguage. * Dummycolonialtie. ° Dummycommonwealth

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