Migrant Networks and Foreign Direct Investment

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Abstract

Although there exists a sizeable literature documenting the importance of ethnic networks for international trade, little attention has been devoted to studying the effects of migrants on foreign direct investment (FDI). The presence of migrants can stimulate FDI by promoting information flows across international borders and by serving as a contract enforcement mechanism. This paper investigates the link between the presence of migrants in the US and US FDI in the migrants' countries of origin, taking into account the potential endogeneity concerns. The results suggest that US FDI abroad is positively correlated with the presence of migrants from the host country. The data further indicate that the relationship between FDI and migration is stronger for migrants with tertiary education.

JEL codes: F21, F22, F23

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1. Introduction

The decline in transportation and communications costs and the reduction in policy induced barriers have led to a rapid increase in the flow of goods, capital, people and knowledge across international boundaries. Although an extensive literature has explored the effects of these forces, little attention has been paid to the more subtle linkages and feedback mechanisms that have been shaping the global economy. One of such linkages is the influence of migration on foreign direct investment (FDI), which is the focus of this paper.

A growing body of research has documented a positive association between the presence of ethnic networks and international trade. In contrast, the link between migration and FDI remains relatively unexplored. The main premise of the literature is that international transactions are plagued with informal trade barriers, in addition to formal trade barriers such as transportation costs and tariffs. Among these barriers are the difficulties associated with provision of information on many issues, including potential market opportunities, and with enforcing contracts across national boundaries. As argued by Gould (1994), Head and Ries (1998), Rauch and Trindade (2002) and Combes et al. (2005), the presence of people with the same ethnic or national background on both sides of a border may alleviate these problems. Their language skills and familiarity with a foreign country can significantly lower communication costs. The information they possess about the market structure, consumer preferences, business ethics and commercial codes in both economies can be invaluable in identifying new business opportunities. Their social links, networking skills and knowledge of the local legal regime decrease the costs of negotiating and enforcing contracts. In short, business and social networks that span national borders can help overcome many contractual and informational barriers and stimulate mutually beneficial international transactions.

Foreign direct investment activities face even larger information asymmetries than international trade transactions. Direct investment generally requires a long-term focus and interactions with diverse group of economic agents from suppliers, workers and consumers to government officials. The investor needs to have detailed knowledge of retail, labor and input markets as well as the legal and regulatory regimes in the host country.[1] Contractual and informational problems can be quite severe and that is why variables related to governance and

[1] Gordon and Bovenberg (1996, p. 1059) argue that "When foreigners try to acquire a firm in the [host] country, they can easily end up being overcharged by domestic owners, who have access to better information not only about that specific firm, but also about future government policies affecting the firm. . . . Foreigners' lack of knowledge can result also in a less efficient use of real resources, due for example to their poorer ability to forecast market demand in a new setting or to deal with idiosyncratic aspects of the domestic contract law, the local distribution system and supply network, and local customs governing labor relations."

legal regimes are found to be among the most important determinants of FDI flows into a country.[2] For all these reasons, it is natural to expect a positive relationship between migration and FDI, yet surprisingly the link between the two is a relatively unexplored area.[3] The handful of studies that examine the link between migration and FDI, discussed in detail in the next section, usually find a positive relationship between the two variables.

This paper contributes to the existing literature by explicitly taking into account the endogeneity problem that has been ignored in the previous studies. Endogeneity arises since migration and FDI flows can influence each other. On the one hand, FDI inflows bring capital, new technology and know-how and in this way stimulate economic growth in host countries (provided some conditions are fulfilled, as pointed out by Alfaro et al. 2004). Entry of multinationals can also produce better employment opportunities and higher paying jobs. Therefore, FDI inflows can lower the incentives to migrate. On the other hand, the presence of FDI can have a positive effect on migration as local employees can be transferred by their foreign employer to the company headquarters or its other subsidiaries abroad. Their experience of working for a multinational can also ease the employees' move to other countries. The presence of multinational firms in a country can encourage workers to acquire skills appropriate for the global economy – such as learning foreign languages – which would facilitate their migration. These effects are likely to be stronger for highly educated workers who possess the skills required by foreign multinationals. Yet none of the existing studies (reviewed in the next section) have addressed the potentially critical issue of endogeneity.[4]

In this paper, we examine the relationship between the presence of migrants in the US and the US foreign direct investment in 56 countries around the world. To address the potential endogeneity of migration with respect to FDI, we employ the instrumental variable approach. Our instruments include: the costs of acquiring a national passport in the migrants' country of origin,

[2] See for instance, Wei (2000) and Javorcik and Wei (2009).

[3] The importance of migrant networks for FDI flows is also reflected in anecdotal evidence. For instance, Singh (2006) reports: "Many times top management of Indian origin in the U.S. was asked to start up the offices in India, usually in emerging industrialized cities such as Bangalore and Hyderabad. For example, a return migrant who had worked for Yahoo office in the U.S. for five years set up Yahoo's development center in Bangalore." Similarly, China's leading maker of silicone chips, Semiconductor Manufacturing International Corporation (SMIC), "was founded in 2000 by Richard Chang, a Taiwan-born American citizen, who spent 20 years working for Texas Instruments. Having built chip foundries or "fabs" in Taiwan, Italy, Japan and elsewhere, he decided to do the same in China." (Cox 2007, p.6).
The results of a recent survey of Indian software industry show that 14% of firms received investment from Indians domiciled in a developed country and in a quarter of those cases, such investment accounted for over half of new investment (Commander et al. 2004).

[4] Buch et al. (2003) is a notable exception. The study attempted to address the endogeneity problem by using the Arellano-Bond GMM estimator. However, the tests of overidentifying restrictions rejected the validity of the GMM approach.

the total migrant stock from each source country present in the US 30 years earlier normalized by the total population size of the source country, distance to the European Union (EU), presence of a US military base in the migrant country of origin 20 years earlier, a dummy indicating whether the migrant's country of origin allows its citizens to hold dual citizenship.

Our results suggest that the presence of migrants in the US increases the volume of US FDI in their country of origin. The magnitude of the effect is economically meaningful, as a one percent increase in the migrant stock is associated with a 0.35 – 0.42 percent increase in the FDI stock. The effect appears to be stronger for skilled migrants, that is, those with at least a college education. A one percent increase in the number of migrants with tertiary education increases FDI by 0.41 – 0.52 percent. Furthermore, a 10 percent rise in the share of tertiary educated migrants (keeping total number of migrants constant) increases the FDI stock in their country of origin by an additional 0.3 percent.

Migration of educated people (the so-called brain-drain), particularly from developing countries to developed ones, is generally perceived as having a negative effect on the home country. This effect may be somewhat mitigated by flows of remittances from migrants, which generate significant income for many developing countries. Our results suggest that there exists another positive effect of migration. The presence of a diaspora can serve as a channel of information transfer across international borders and thus contribute to greater integration of their home country with the global economy through larger presence of FDI.[5]

In addition to extending the literature on ethnic networks and FDI, our study contributes to the literature on the linkages between factor mobility and international trade. Factor mobility and trade emerge as substitutes or complements in various models, depending on the underlying assumptions on technology, factor endowments and mobility.[6] Our results suggest that interactions between the movements of the underlying factors of production – labor and capital in this case – also need to be taken into account.

This study is structured as follows. The next section briefly reviews the related literature. Section 3 describes the empirical strategy, while section 4 presents the data used. The empirical results are discussed in section 5. The final section presents the conclusions.

[5] For a recent survey of the literature on the economic consequences of migration for sending countries see Hanson (2008).
[6] For example, Markusen (1986) argues that substitutability is a special case of factor proportions models.

2. Related literature

The theoretical literature on multinational enterprises focuses on the trade-off between the fixed cost of setting up production facilities abroad and the benefit of avoiding trade costs (in the case of horizontal FDI) or the benefit of cheaper production factors (in the case of vertical FDI). Firms invest abroad when the gains from relocating production outweigh the costs of maintaining capacity in multiple markets.[7]

The fixed cost of setting up production capacity in a foreign location includes not only the cost of building physical production facilities but also the cost of gathering information on the prevailing business conditions, local regulations, labor relations, availability of suppliers, etc. The cost of gathering information can be quite substantial, as reflected in the finding that information asymmetries hinder international capital flows (Portes et al. 2001, Portes and Rey 2005, Gelos and Wei 2005). Moreover, FDI flows have been shown to be "substantially more sensitive to information frictions than investment in portfolio equity and debt securities" (Daude and Fratzscher 2008). Similarly, the effectiveness of investment promotion efforts has been in part attributed to their ability to attenuate information asymmetries (Harding and Javorcik 2008).

Ethnic networks, which serve as a conduit of information across national borders, can reduce the costs of obtaining information and thus lower the fixed cost of undertaking FDI. The role of ethnic networks in reducing information asymmetries has been first documented in the context of international trade. Gould (1994) found that both US exports and imports were positively correlated with the stock of migrants from the partner country present in the US. Head and Ries (1998) reached a similar conclusion when examining Canadian data, as did Combes et al. (2003) using information on intra-regional economic activity in France. Rauch and Trindade (2002) distinguished between the effect of networks as a conduit of information and a contract enforcement mechanism. They showed that the presence of ethnic Chinese networks mattered more for trade in differentiated products than for trade in homogenous commodities. Given that it is harder to assess the attributes of differentiated products, their findings suggests that in addition to serving as an information channel, ethnic networks may provide implicit contract guarantees and deter opportunistic behavior among its members.[8]

The literature on the link between ethnic networks and FDI is quite small. It includes studies by Bhattacharya and Groznik (2008) and Buch et al. (2006) who find a positive relationship between the two variables. It also encompasses a study by Kugler and Rapoport

[7] As the theory of the multinational enterprise is too vast to be reviewed here, we refer the reader to Markusen (2002) and Barba Navaretti (2004) for an overview as well as to the recent work by Helpman, Melitz and Yeaple (2004).

[8] See a survey of the literature by Rauch (2001) for more details.

(2007) who find that migration and FDI inflows are negatively correlated contemporaneously but that migration is associated with an increase in future FDI. Kugler and Rapoport regress the growth in capital financed with US FDI in country k in the 1990s on the stock of migrants from country k present in the US in 1990 and the change in this stock between 1990 and 2000. Their sample includes 55 countries. They use three dependent variables: total FDI, FDI in manufacturing and FDI in services. They distinguish between migrants with primary, secondary and tertiary education. They find a positive relationship between total US FDI and the stock of migrants with primary and tertiary education, but no significant relationship for the change in the stock of migrants. When FDI in manufacturing is considered, the stock of migrants with tertiary education has a positive effect. In contrast, the change in the stock of migrants with secondary education negatively affects FDI. In the case of services, the stock of migrants with tertiary education has a positive effect on FDI and the change in this stock has a negative impact on FDI.

Two other studies focus explicitly on ethnic Chinese networks. Gao (2003) finds a positive relationship between the stock of FDI in China and the population share of ethnic Chinese in the cross-section of source countries. Tong (2005) shows that the strength of ethnic Chinese networks between country pairs, measured with the number of ethnic Chinese in both countries, is positively correlated with the cumulative amount of their reciprocal FDI.

3. Estimation Strategy

The basic question we seek to examine is whether the volume of US FDI abroad is influenced by the stock of migrants from the partner country present in the US, after controlling for other characteristics of the partner country. To do so we estimate the following model

$$ln\ FDI_{ct} = \alpha + \delta_1\ ln\ Migrants_{ct} + X_{ct}\,\Pi + \alpha_t + \varepsilon_{ct}$$

where the dependent variable is the stock of US FDI in country *c* at time *t* measured in terms of (i) the value of total assets of non-bank affiliates of non-bank US parents, or (ii) the volume of sales of non-bank affiliates of non-bank US parents. The dependent variable enters the equation in the log form. The explanatory variable of interest is the logarithm of the stock of migrants from country *c* present in the US at time *t*. Depending on the specification, we use the information on the total stock of migrants, the stock of migrants with at least tertiary education or both the total stock of migrants and the share of migrants with tertiary education. The information on FDI and migrants is available for two years: 1990 and 2000.

We include several control variables, specific to the partner country *c*, commonly used in the literature on FDI determinants. These are: log of the population size to capture the potential market size of the country, log of GDP per capita to proxy for the purchasing power of consumers

in the partner country, the average inflation during the 5 year period to control for macroeconomic stability, and an index of the severity of armed conflict taking place in the host country in the preceding decade. We also include proxies for the fixed cost of entering the host country: (i) a dummy for English speaking countries intended to capture difficulties of obtaining information about business conditions, (ii) log of distance to the US to capture the transaction costs related to travel, communications and a cultural distance, and (iii) an index of the quality of the business climate in the host country. Additionally, the model includes a dummy for the year 1990 (α_t).

We employ the instrumental variable approach because we are concerned about the endogeneity of the migrant stock. Our first instrument is the cost of obtaining a national passport in the partner country in 2005, which is the only year for which such information is available. This cost is normalized by the country's GDP per capita in 1990 or 2000 to match the timing of the FDI figures. The passport cost is expressed in 1990 and 2000 US dollars, respectively. High passport fees are likely to constitute a barrier to emigration, particularly for the poorer segment of the population. McKenzie (2007) shows that high passport costs are associated with lower levels of outward migration and tend to be correlated with other emigration barriers imposed by countries.

The second instrument we use is the 30-year lag of the total stock of migrants from each partner country present in the US. The migrant stock is normalized by the total population size of the source country at that time. History of migration to the US as well as the presence of earlier generations of migrants is likely to encourage future migration, mainly due to the family reunification programs. This pull factor is going to be stronger if the diaspora is larger relative to the size of the partner country' population. The choice of this instrument is supported by the evidence on networks playing an important role in stimulating migrant flows (see Munshi 2003, Orrenius and Zavodny 2005, Hanson and McIntosh 2007). This instrument is time varying.

Our next instrument is the logarithm of the distance to the EU. As the EU and the US are alternative migration destinations, we expect to find that proximity to the EU discourages migration to the US.

Further, we use the presence of a US military base in 1970 and 1980 (i.e., a 20-year lag with respect to the migration variable) in the partner country. As argued by Ozden and Neagu (2008), the presence of military personnel is likely to lead to an influx of migrants under family reunification regulations because American personnel marry citizens of the country where they

are stationed and then bring them along with their relatives to the US.[9] It is also possible that US immigration laws treat more favorably nationals of countries engaged in military cooperation with the US. The presence of a military base is an indicator variable taking on the value of one if the number of US troops stationed in a partner country exceeded thousand people. It is a time-varying instrument.

Our final instrument is an indicator variable taking on the value of one if the partner country allows its migrants to have dual citizenship. The rules implemented by the migrants' home countries on obtaining dual citizenship are expected to be good predictors of the migrants' presence in the US. The ability to keep the original citizenship, even after acquiring the US citizenship, is likely to encourage migration. This variable is time invariant.

Finally, in order to instrument for the share of migrants with tertiary education, we use a 30-year lag of the variable, which is a time-varying instrument.

4. Data

The data used in this study are based on several sources. The figures on migrant stock come from the US Census conducted in 1990 and 2000. We use the data collected by means of the so called 'long questionnaire' that includes very detailed information on the social and economic status and the country of origin of foreign-born individuals living in the US.[10] The Public Use Microdata Sample (PUMS) files, made available by the Census Bureau, contain records representing a 5% sample of the occupied and vacant housing units in the US and the people in the occupied units. The file contains individual weights for each person and housing unit, which when applied to the individual records, expand the sample to the relevant total.[11]

Based on the population weights attached to each individual observation in the Census sample, foreign-born individuals in our data represent around 4.5 million people in the US. The data also contain information about the individual's industry of employment and the education level. There are nine separate education levels listed in the Census, and we aggregate them into two main categories: (i) college or above and (ii) less than college education. Thus we are able to calculate the stock of migrants from each country of origin in each education category present in the US in 1990 and 2000.

[9] In contrast to other categories of migrants, immigration of spouses, minor children and parents of adult US citizens is numerically unrestricted (Jasso and Rosenzweig 1986).
[10] Two types of questionnaires are used in the US Census: a short form which asks a limited number of questions of every person interviewed and a long form which includes a large number of detailed questions and is filled out by one in six persons interviewed.
[11] The data were downloaded from www.ipums.org where they were made available by Ruggles et al. (2009).

In the baseline model, we focus on aggregate figures, but in an alternative specification, we also use information on the migrant's industry of employment. There are close to 300 industries listed in the Census. We aggregate them into ten sectors to match the sectoral breakdown of the FDI data. Based on the information on an individual's age and year of arrival, we construct their date of entry into the US labor market.[12] In this way, we construct the migrant stock for each industry, year and country of origin.

In our instrumental variable approach, we utilize information from the 1960 and the 1970 Census on foreign-born individuals present in the US. The figures are normalized by the origin country population size in the respective year.

Information on US FDI abroad comes from the Bureau of Economic Analysis, which collects figures on total assets and sales of non-bank affiliates of non-bank US companies for each partner country. The figures are available at the aggregated and the sector level. The data can be disaggregated into ten industries which are finance, food, information technology, chemicals, electronic and electrical equipment, machinery, fabricated metals, wholesale trade, transportation equipment, and services. As the industry classification changed in 1998, we include only the industries that were present throughout the whole period. To match the availability of the Census information on the migrants' country of origin as well as the timing of the Census data, we focus on figures for 56 host countries in 1990 and 2000. Our dataset has the form of a quasi-panel with a maximum of two observations available per country.

Turning to other host country characteristics, figures on the population size, GDP per capita (in current US dollars) and consumer price inflation are from the World Bank's *World Development Indicators*. We use the average rate of inflation for the five-year period surrounding the year in question (e.g., the average for 1988-1992 corresponds to the data for 1990). The quality of the business climate is measured using the average of the following governance indicators developed by Kaufman, Kraay and Mastruzzi (2004): voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption. The indicators are available for alternating years in the 1996-2004 period. They range from –2.5 to 2.5 with higher numbers corresponding to higher quality of governance in the country. We use the 1996 data for 1990, and the 2000 data for 2000.

The conflict variable is an index constructed based on the information available at www.prio.no, "Armed Conflict Version 2.1." compiled by Gleditsch, Wallensteen, Eriksson, Sollenberg and Strand (2002). The index takes on values from 0 (no conflict) to 3 (severe

[12] We consider the year of arrival and the year of the completion of the highest education degree. We take the larger of the two numbers as the year of entry into the US labor market.

conflict) depending on the depth of the conflicts in which the country was involved during the 1980s and 1990s, respectively.

The data on the distance between the US and the partner country come from Andrew Rose's dataset available at http://faculty.haas.berkeley.edu/arose/. The distance between the EU and the partner country corresponds the distance between each non-EU partner country and Germany. The distance between EU countries has been assigned the value of zero. The data come from the dataset used by Dollar and Kraay (2002).[13]

The dummy for English speaking countries takes on the value of one if the share of the population speaking English is above 20%, and zero otherwise. It is based on the information reported by Crystal (2003), Eurobarometer Survey (2006) and the CIA's *World Factbook* 2006.

The figures on passport fees were provided by McKenzie (2005) and normalized by the country's GDP per capita in 1990 or 2000 expressed in US dollars.[14] The dual citizenship indicator was constructed based on Renshon (2005), US Office of Personnel Management (2001), and Mazzolari (2006). In the few cases not covered by these sources, information from Wikipedia was used. The data on military bases were obtained from the Personnel and Procurement Statistics prepared and published by the US Department of Defense Statistical Information Analysis Division.[15]

The summary statistics for all variables are presented in Table 1.

5. Results

5.1. Baseline specification

We begin our analysis with an OLS model and present the results for three sets of regressions. Each set uses a different definition of the migration variable and within each set we employ two alternative dependent variables: the total assets of US affiliates abroad and the sales of US affiliates abroad. In the first set of regressions (columns 1 and 2 in Table 2), the variable of interest is the total stock of migrants from the partner country *c* present in the US at time *t*. The second set uses the stock of country *c's* migrants with tertiary education living in the US at time *t* (columns 3 and 4). The third set employs both the aggregate stock of migrants from the partner country *c* present in the US at time *t* as well as the share of tertiary educated migrants in the total stock of migrants from the partner country *c* present in the US at time *t* (columns 5 and 6).

[13] We add one before taking the log of the distance.
[14] The information on fees pertains to 2005. To make the figures comparable to the GDP per capita data we express the fees in 1990 and 2000 US dollars, as appropriate.
[15] The publication is entitled Worldwide Manpower Distribution by Geographical Area (M05) and can be found at http://siadapp.dmdc.osd.mil/personnel/Pubs.htm.

The presence of migrants with a college education appears to be positively correlated with the US FDI in their country of origin. This effect is statistically significant in both specifications. In contrast, the aggregate stock of migrants does not have a statistically significant effect on either of the FDI variables. When two measures of migration (the total migrant stock and the share of college educated migrants) are entered into the same model, both bear positive signs but neither reaches conventional significance levels.

The other control variables have the expected signs. We find that countries with large markets (in terms of the population size and the GDP per capita) attract more FDI. Both variables are significant at the one percent level. The remaining control variables are not statistically significant with the exception of the distance to the US, which enters with a negative sign, and the time dummy which suggests that FDI stock in 2000 exceeded that of a decade earlier. The negative effect of distance on the volume of FDI may be interpreted as reflecting the higher fixed cost of doing business in physically and culturally distant markets. The regressions have a satisfactory explanatory power with the R-squared ranging from 0.76 to 0.81.

The results of the OLS regressions suggest that the presence of tertiary educated migrants in the US may be reducing the costs of outward FDI and stimulating US FDI destined for their countries of origin. In contrast, migration in general seems to have no discernible effect on the US FDI. However, these estimations are likely to distort the true effect of migration, because they ignore the endogeneity that may be present between FDI and migration. To account for this possible endogeneity, we will use the instrumental variable approach in section 5.3.

5.2. Sectoral distribution of migrants

Our dataset allows us to identify the sectoral composition of FDI present in each partner country as well as the sector of employment of migrants present in the US. We utilize this information to check whether the relationship we found at the aggregate level is also present at the industry level. Specifically, we regress the stock of FDI in sector *s* in country *c* at time *t* on the presence of migrants from country *c* employed in the US in sector *s* at time *t*. The model includes partner country and industry fixed effects, so we remove the time-invariant English and distance variables used in the previous estimation. Standard errors are clustered at the country-industry level. The results are presented in Table 3.

The results suggest that the presence of all types of migrants, not just those with tertiary education, is positively correlated with FDI in their countries of origin. In all six specifications, we find a positive relationship between FDI in a given sector in a given partner country and the stock of migrants from the partner country employed in this sector in the US. To coefficient on

the migrant stock is statistically significant at the one percent level in all specifications. Moreover, when the total sectoral stock is entered jointly with the share of educated migrants, we find that both variables bear positive and statistically significant coefficients.

One may be concerned that not accounting for bilateral trade might lead to an upward bias in the coefficient on migration due to trade being a conduit of information and being linked to the presence of migrants. We are less concerned about this issue because the previous literature argued that the causality runs from the presence of migrants to bilateral trade. Nevertheless, in Table A in the Appendix we present a set of results where we control the share of the partner country in the US trade in sector *s*.[16] This variable enters as a 10-year lag to attenuate concerns about the potential endogeneity of trade with respect to FDI.

We find that including this additional control leads to a slightly higher magnitude of the estimated migration effect. In all cases, the coefficients of interest are statistically significant. The coefficient on the trade variable is positive and statistically significant as well. In additional specifications (not reported to save space) we experimented with different measures of trade (a 5- instead of a 10-year lag, logarithm of the value of the bilateral trade rather than the trade share). In all cases, the coefficients on the migration variables remained positive and statistically significant. In all but two cases, the estimated coefficients were slightly larger than those found in Table 2.[17]

5.3. Instrumental variable approach

We are concerned about the potential endogeneity of migration with respect to FDI, therefore, in our main specification we employ the instrumental variable approach (see Table 4). We start by instrumenting for the total migrant stock in the US. We present three sets of results, each with a different set of instruments. The results from the first stage (restricted to coefficients on IVs to save space) suggest that our instruments perform quite well. In columns 3-6, they explain a significant portion, between 25% and 29%, of the variation in the aggregate migrant stock. The underidentification test (Kleibergen-Paap statistics) confirms that our estimation does

[16] Both imports and exports are included. The original data came from the WITS data base available from the World Bank. Trade figures in the SITC classification were matched with the International Surveys Industry (ISI) classification in which the US BEA presents the FDI data.

[17] Migrants and economic sectors are not uniformly spread across the US states but rather tend to cluster in certain regions within the country. Therefore, countries might attract FDI in sectors that are clustered in areas in which their migrants are concentrated. Sectoral regressions bring us closer to capturing this link than the regressions at the aggregate level. Ideally, we would like to conduct our analysis at the industry-region level, but unfortunately the data on FDI do not allow us to identify the US states from which investments originate.

not suffer from a weak instrument problem. The instrument suitability is not rejected by the overidentification test.

All instruments bear the expected signs. We find a negative and statistically significant relationship between the passport cost and the migrant stock. A large share of migrants present in the US 30 years earlier, relative to the population size in the country of origin, is positively correlated with the current migrant stock. Countries located farther away from the EU are more likely to send migrants to the US. There is a positive relationship between the presence of a US military base 20 years earlier and the current migrant stock. The ability to have a dual citizenship is also positively linked to the presence of migrants. All of these coefficients are statistically significant. The only exception is the coefficient on distance which fails to reach conventional significance levels in the first two specifications.

In the second stage, we find that the total migrant stock is a good predictor of the US FDI in the migrants' country of origin. This effect is statistically significant in all six regressions. A one percent increase in the migrant stock is associated with a 0.35 – 0.42 percent increase in the FDI stock in our preferred specifications (columns 3-6). As for the other control variables, they exhibit similar sign and significance patterns as in the OLS specification.

In Table 5, we present the IV results for the specification including the stock of migrants with tertiary education. The first stage results are very similar to those obtained in the previous table. Again, the instruments perform quite well. They explain a third of the variation in the stock of highly educated migrants in our preferred specifications. As before, the under- and overidentification tests confirm the suitability of our instruments. In all specifications, we find a statistically significant and positive relationship between the presence of migrants with tertiary education and the US FDI in their country of origin. The magnitude of the effect is larger than in the case of the total migrant stock: a one percent increase in the number of migrants with tertiary education increases FDI by about 0.41 – 0.52 percent (we refer to our preferred specifications in columns 3-6). The higher elasticity of FDI with respect to skilled migrants is intuitive, as college educated migrants may be better positioned both financially and socially to assist US companies and entrepreneurs in investing abroad.

This pattern is confirmed in Table 6 where we include in the model both the total migrant stock and the share of skilled migrants in the total migrant stock. Both variables bear positive coefficients. Each of them is in statistically significant in all, except for one, specification. The magnitudes of the coefficients are also economically meaningful. A one percent increase in the total migrant stock is associated with around a 0.5 percent increase in the FDI stock. In the case of skilled migrants, the corresponding effect is higher. A ten-percent rise in the share of tertiary

educated migrants in the migrant population increases the FDI stock in their country of origin by an additional 0.3 percent.

The first stage results for the total migrant stock, presented in Table 6, are very similar to those obtained earlier. As for the first stage results for the share of educated migrants, the share is positively linked to its 30-year lag. It is negatively correlated with the ability to obtain dual citizenship and the presence of US military bases. It is positively correlated (albeit the effect is not always statistically significant) with the passport cost, suggesting that the less educated find it more difficult to pay high passport fees. Other instruments are not statistically significant.

Overall, the IV results are stronger in terms of their statistical significance and the magnitude of the estimated effects relative to the OLS results. In our view, the difference between the OLS and the IV estimates reflects the fact that FDI creates new and better paying jobs as well as additional business opportunities thus discouraging would-be migrants from leaving the country. This may happen through several channels. First, by bringing additional capital and expanding the productive capacity of the country greenfield FDI leads to creation of new work places.[18] Second, employees of foreign affiliates tend to enjoy higher remuneration than employees of indigenous firms.[19] Third, FDI creates new business opportunities for local firms that become suppliers to foreign affiliates. FDI can benefit the supplying sectors through productivity spillovers (Javorcik 2004). Fourth, the presence of multinationals can provide information about foreign markets thus lowering the cost of becoming an exporter for local firms and in this way opening doors to new earning opportunities (Aitken, Hanson and Harrison 1997). All of these opportunities created by the presence of FDI mean that staying in the home country may become a more attractive option for would-be migrants and thus the total emigration is likely to be negatively correlated with FDI. Not taking this relationship into account leads to *underestimating* the true effect of migrant presence in the FDI source country on the FDI in the migrants' country of origin, which explains why the IV results are stronger.[20]

[18] Evidence from Indonesia suggests that FDI in the form of acquisitions also results in large employment increases (see Arnold and Javorcik 2009).

[19] For instance, Lipsey and Sjöholm (2004) find that foreign-owned establishments in Indonesia pay a higher price for labor of a given education level, relative to domestic establishments, and that most of this wage differential is attributable to ownership rather than plant characteristics. Girma and Görg (2007), who focus on food and electronics sectors in the UK, find that acquisitions by US multinationals have sizable effects on skilled and unskilled wages, though no such effects are found for acquisitions by European multinationals.

[20] One might wonder whether our estimates could be driven by refugees. If the conditions leading to large outflows of refugees are still present, they may discourage FDI inflows. This is, however, unlikely to be an issue in our dataset. Our dataset includes only a handful of countries (Russia, Thailand, Poland and China) that sent refugees to the US during the time period covered by the study. Moreover, excluding them from the sample does not affect the magnitudes of the coefficients. This is most likely due to the fact that we are

In sum, we conclude that there exists a positive relationship between the presence of migrants in the US and the stock of FDI in their country of origin. This effect is particularly strong in the case of migrants with college education. Our analysis suggests that ignoring the endogeneity issue tends to underestimate the effect of migration on FDI.

5.4. Robustness checks

To check the robustness of our results, we reestimated all regressions excluding Mexico. Mexico has a special status vis-à-vis the US, relative to other partner countries included in the analysis, both as a sender of the largest migratory flows and as a recipient of significant levels of FDI. The special relationship between the US and Mexico is due to the geographic proximity, membership in the NAFTA as well as a large differential in the level of economic development which prompts a large number of Mexicans to cross the border in search of a better life in the US. The results, not reported here to save space, do not differ significantly from the results of the original model. Therefore, we conclude that our findings are not driven by the figures for Mexico.

6. Conclusions

The purpose of this paper is to examine whether migrant networks have a positive effect on foreign direct investment destined for the migrants' country of origin. To study this question, we use data on the US FDI abroad and the presence of migrants in the US. We take into account the potential simultaneity between FDI and migration. We instrument for the migrant presence in the US using information on passport costs, dual citizenship rules, military presence, lagged migrant presence in the US, and the distance to the EU, an alternative migration destination.

Our results suggest that the US FDI abroad is positively correlated with the presence of migrants from the host country. This finding is consistent with the hypothesis that ethnic networks serve as an important channel of information about business conditions and opportunities abroad. Our findings further indicate that the relationship between FDI and migration is stronger in the case of migrants with tertiary education, thus suggesting that the presence of an educated diaspora may have a positive effect on the integration its country of origin with the global economy.

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controlling for the presence and severity of armed conflict in the partner country during the preceding decade.

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Table 1. Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Sales of US affiliates (millions US dollars)	100	42,052	73,565	659	423,180
Total assets of US affiliates (millions US dollars)	99	61,605	155,248	390	1,340,784
Total migration to the US	100	175,193	465,394	3,424	4,065,104
Tertiary migration to the US	100	48,412	76,219	1,479	451,891
Share of tertiary migration to US in total migration to US (%)	100	38.710	16.822	3.710	74.150
Distance to the US (miles)	100	5,347	2,283	1,076	9,450
Conflict	100	0.420	0.843	0	3
GDP per capita in current US dollars	100	11,059	10,308	295.962	37,409
Population (millions)	100	78,1	209	0.256	1,260
Inflation (% points)	100	0.584	2.933	-0.019	24
Governance	100	0.681	0.864	-1.273	1.949
English	100	0.600	0.492	0	1
Share of passport cost in GDP per capita	98	1.363	2.126	0.098	10.318
Share of migration to the US in origin country population (1960/1970) (%)	100	1.022	1.757	0.001	12.037
Share of tertiary migration to US in origin country population (1960/1970) (%)	100	0.066	0.092	0.000	0.434
Share of tertiary migration to US (1960/1970) (%)	100	15.463	13.945	1.149	59.350
Distance to the EU (km)	100	5,798	4,713	0	18,114
US military base presence	100	0.270	0.446	0	1
Dual citizenship	100	0.390	0.490	0	1

Table 2. OLS specification: Aggregate level

	ln Total assets	ln Sales	ln Total assets	ln Sales	ln Total assets	ln Sales
	(1)	(2)	(3)	(4)	(5)	(6)
ln Total migration to the US	0.084	0.096			0.141	0.122
	(0.097)	(0.076)			(0.102)	(0.080)
ln Tertiary migration to the US			0.191*	0.134*		
			(0.105)	(0.080)		
Share of tertiary migration to the US					0.013	0.006
					(0.008)	(0.007)
ln GDP per capita	0.934***	0.935***	0.935***	0.931***	0.923***	0.930***
	(0.123)	(0.116)	(0.122)	(0.116)	(0.126)	(0.118)
ln Population	0.620***	0.641***	0.547***	0.614***	0.564***	0.616***
	(0.091)	(0.079)	(0.095)	(0.076)	(0.094)	(0.080)
Conflict	-0.111	-0.079	-0.127	-0.084	-0.119	-0.082
	(0.105)	(0.098)	(0.105)	(0.099)	(0.109)	(0.101)
Inflation	0.001	-0.001	0.003	-0.001	0.005	0.001
	(0.018)	(0.023)	(0.019)	(0.023)	(0.019)	(0.024)
Governance	0.151	0.156	0.141	0.154	0.178	0.168
	(0.231)	(0.201)	(0.231)	(0.199)	(0.228)	(0.199)
ln Distance to the US	-0.29	-0.249	-0.285*	-0.300*	-0.459*	-0.326
	(0.214)	(0.194)	(0.163)	(0.160)	(0.252)	(0.226)
English	0.059	0.127	-0.04	0.085	-0.078	0.067
	(0.232)	(0.191)	(0.245)	(0.189)	(0.237)	(0.182)
Dummy for 1990	-0.850***	-0.502***	-0.794***	-0.468***	-0.754***	-0.457***
	(0.189)	(0.154)	(0.190)	(0.155)	(0.193)	(0.156)
Constant	-7.078***	-8.270***	-6.824***	-7.612***	-5.719**	-7.670***
	(2.414)	(1.731)	(1.934)	(1.354)	(2.682)	(1.930)
Observations	99	100	99	100	99	100
R-squared	0.76	0.81	0.77	0.81	0.77	0.81

Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 3. OLS specification: Sectoral level

	ln Total assets	ln Sales	ln Total assets	ln Sales	ln Total assets	ln Sales
	(1)	(2)	(3)	(4)	(5)	(6)
ln Total migration to the US	0.498***	0.479***			0.508***	0.486***
	(0.112)	(0.117)			(0.112)	(0.118)
ln Tertiary migration to the US			0.340***	0.310***		
			(0.083)	(0.084)		
Share of tertiary migration to the US					0.048**	0.048*
					(0.024)	(0.026)
ln GDP per capita	0.882**	0.861**	0.851**	0.825**	0.839**	0.816**
	(0.385)	(0.412)	(0.388)	(0.417)	(0.375)	(0.399)
ln Population	-3.192**	-2.198*	-2.680**	-1.752	-1.580	-0.553
	(1.298)	(1.303)	(1.248)	(1.272)	(1.503)	(1.569)
Conflict	-0.196	-0.199	-0.195	-0.192	-0.231	-0.232
	(0.199)	(0.210)	(0.199)	(0.210)	(0.195)	(0.205)
Inflation	-0.005	-0.020	-0.01	-0.024	-0.009	-0.024
	(0.019)	(0.025)	(0.019)	(0.025)	(0.020)	(0.026)
Governance	-0.253	-0.130	-0.235	-0.151	-0.080	0.048
	(0.482)	(0.471)	(0.499)	(0.484)	(0.488)	(0.472)
Dummy for 1990	-0.915***	-0.830***	-0.747***	-0.686***	-0.354	-0.264
	(0.160)	(0.158)	(0.162)	(0.160)	(0.333)	(0.367)
Constant	52.001**	33.13	44.951**	27.35	22.406	3.000
	(21.038)	(20.897)	(20.390)	(20.549)	(25.228)	(26.497)
Country fixed effects	yes	yes	yes	yes	yes	yes
Industry fixed effects	yes	yes	yes	yes	yes	yes
Observations	764	773	764	773	764	773
R-squared	0.76	0.75	0.76	0.75	0.76	0.75

Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 4. IV specification: Total migration

Stage I dependent variable	**ln Total migration to the US**					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Passport cost	-0.115**	-0.115**	-0.133***	-0.133***	-0.158***	-0.158***
	[0.047]	[0.047]	(0.041)	(0.041)	(0.045)	(0.045)
Share of migration to the US in origin	0.082*	0.082*	0.128**	0.128**	0.115**	0.115**
country population (30-year lag)	[0.046]	[0.046]	(0.057)	(0.057)	(0.052)	(0.052)
ln Distance to the EU	0.048	0.048	0.101***	0.101***	0.104***	0.104***
	[0.031]	[0.031]	(0.035)	(0.035)	(0.035)	(0.035)
US military base			1.032***	1.032***	1.031***	1.031***
			(0.230)	(0.230)	(0.232)	(0.232)
Dual citizenship					0.427**	0.427**
					(0.182)	(0.182)
Stage II dependent variable	**ln Total assets**	**ln Sales**	**ln Total assets**	**ln Sales**	**ln Total assets**	**ln Sales**
ln Total migration to the US	0.667*	0.502*	0.421**	0.391**	0.385**	0.352**
	[0.389]	[0.305]	(0.193)	(0.171)	(0.194)	(0.170)
ln GDP per capita	1.035***	1.000***	1.002***	0.985***	0.997***	0.979***
	[0.161]	[0.132]	(0.136)	(0.123)	(0.134)	(0.122)
ln Population	0.284	0.400**	0.438***	0.470***	0.461***	0.494***
	[0.251]	[0.194]	(0.137)	(0.124)	(0.134)	(0.122)
Conflict	-0.213*	-0.137	-0.178	-0.121	-0.172	-0.115
	[0.125]	[0.111]	(0.109)	(0.105)	(0.108)	(0.103)
Inflation	0.02	0.009	0.015	0.007	0.014	0.006
	[0.025]	[0.030]	(0.020)	(0.027)	(0.020)	(0.026)
Governance	0.042	0.087	0.079	0.104	0.084	0.110
	[0.291]	[0.223]	(0.254)	(0.211)	(0.250)	(0.208)
ln Distance to the US	0.584	0.353	0.227	0.191	0.174	0.134
	[0.599]	[0.472]	(0.308)	(0.281)	(0.311)	(0.273)
English	-0.256	-0.107	-0.091	-0.033	-0.066	-0.006
	[0.427]	[0.332]	(0.280)	(0.249)	(0.273)	(0.240)
Dummy for 1990	-0.767***	-0.418**	-0.815***	-0.440***	-0.822***	-0.447***
	[0.219]	[0.171]	(0.189)	(0.158)	(0.189)	(0.158)
Constant	-15.901***	-14.216***	-12.582***	-12.710***	-12.086***	-12.180***
	[5.769]	[4.591]	(3.198)	(2.774)	(3.274)	(2.737)
Observations	98	98	98	98	98	98
Shea partial R-squared	0.079	0.079	0.252	0.252	0.293	0.293
Underidentification test (Kleibergen-Paap)	7.50	7.50	13.73	13.73	21.01	21.01
p-value	0.058	0.058	0.008	0.008	0.001	0.001
Overidentification test	0.49	1.28	0.91	1.36	1.05	1.60
p-value	0.783	0.528	0.823	0.714	0.903	0.809

Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 5. IV specification: Tertiary migration

Stage I dependent variable	**ln Tertiary migration to the US**					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Passport cost	-0.091**	-0.091**	-0.104***	-0.104***	-0.121***	-0.121***
	[0.040]	[0.040]	(0.033)	(0.033)	(0.036)	(0.036)
Share of tertiary migration to the US in origin country population (30-year lag)	3.111***	3.111***	3.542***	3.542***	3.488***	3.488***
	[0.912]	[0.912]	(1.090)	(1.090)	(1.040)	(1.040)
ln Distance to the EU	0.074***	0.074***	0.114***	0.114***	0.116***	0.116***
	[0.023]	[0.023]	(0.027)	(0.027)	(0.028)	(0.028)
US military base			0.831***	0.831***	0.835***	0.835***
			(0.210)	(0.210)	(0.213)	(0.213)
Dual citizenship					0.273*	0.273*
					(0.160)	(0.160)
Stage II dependent variable	**ln Total assets**	**ln Sales**	**ln Total assets**	**ln Sales**	**ln Total assets**	**ln Sales**
ln Tertiary migration to the US	0.613**	0.429**	0.521***	0.423***	0.507***	0.410***
	[0.245]	[0.184]	(0.179)	(0.145)	(0.178)	(0.149)
ln GDP per capita	0.981***	0.957***	0.976***	0.957***	0.975***	0.956***
	[0.134]	[0.116]	(0.130)	(0.117)	(0.129)	(0.117)
ln Population	0.292*	0.428***	0.353***	0.432***	0.363***	0.440***
	[0.176]	[0.122]	(0.137)	(0.110)	(0.134)	(0.111)
Conflict	-0.204*	-0.125	-0.191*	-0.124	-0.189*	-0.122
	[0.118]	[0.110]	(0.113)	(0.110)	(0.112)	(0.109)
Inflation	0.017	0.006	0.015	0.006	0.015	0.006
	[0.023]	[0.027]	(0.021)	(0.027)	(0.021)	(0.027)
Governance	0.073	0.114	0.083	0.115	0.085	0.116
	[0.251]	[0.198]	(0.243)	(0.200)	(0.242)	(0.199)
ln Distance to the US	0.016	-0.096	-0.044	-0.100	-0.053	-0.108
	[0.239]	[0.199]	(0.198)	(0.182)	(0.197)	(0.180)
English	-0.322	-0.13	-0.245	-0.125	-0.233	-0.114
	[0.345]	[0.267]	(0.299)	(0.254)	(0.298)	(0.253)
Dummy for 1990	-0.661***	-0.351**	-0.696***	-0.353**	-0.702***	-0.358**
	[0.209]	[0.168]	(0.194)	(0.162)	(0.196)	(0.164)
Constant	-9.535***	-9.279***	-9.137***	-9.256***	-9.075***	-9.200***
	[2.135]	[1.708]	(1.941)	(1.597)	(1.956)	(1.598)
Observations	98	98	98	98	98	98
Shea partial R-squared	0.195	0.195	0.333	0.333	0.354	0.354
Underidentification test (Kleibergen-Paap)	17.72	17.72	20.23	20.23	25.20	25.20
p-value	0.001	0.001	0.000	0.000	0.000	0.000
Overidentification test	0.01	0.49	0.32	0.49	0.41	0.55
p-value	0.997	0.785	0.956	0.922	0.982	0.968

Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 6. IV specification: Total migration and share of migrants with tertiary education

Stage I dependent variable	**ln Total migration to the US**					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Passport cost	-0.116**	-0.116**	-0.134***	-0.134***	-0.164***	-0.164***
	[0.049]	[0.049]	(0.042)	(0.042)	(0.047)	(0.047)
Share of migration to the US	0.086*	0.086*	0.133**	0.133**	0.122**	0.122**
in origin country population (30-year lag)	[0.045]	[0.045]	(0.056)	(0.056)	(0.050)	(0.050)
Share of tertiary migration to US (30-year lag)	0.007	0.007	0.007	0.007	0.013	0.013
	[0.011]	[0.011]	(0.010)	(0.010)	(0.011)	(0.011)
ln Distance to the EU	0.038	0.038	0.090***	0.090***	0.085**	0.085**
	[0.033]	[0.033]	(0.034)	(0.034)	(0.035)	(0.035)
US military base			1.034***	1.034***	1.036***	1.036***
			(0.235)	(0.235)	(0.245)	(0.245)
Dual citizenship					0.497***	0.497***
					(0.184)	(0.184)
Stage I dependent variable	**Share of tertiary migration to the US**					
Passport cost	0.955	0.955	1.066	1.066	1.422**	1.422**
	[0.629]	[0.629]	(0.684)	(0.684)	(0.706)	(0.706)
Share of migration to the US in origin country	-0.05	-0.05	-0.348	-0.348	-0.215	-0.215
population (30-year lag)	[0.429]	[0.429]	(0.438)	(0.438)	(0.417)	(0.417)
Share of tertiary migration to US (30-year lag)	0.376***	0.376***	0.372***	0.372***	0.301***	0.301***
	[0.096]	[0.096]	(0.104)	(0.104)	(0.097)	(0.097)
ln Distance to the EU	0.836**	0.836**	0.502	0.502	0.572	0.572
	[0.406]	[0.406]	(0.408)	(0.408)	(0.385)	(0.385)
US military base			-6.583**	-6.583**	-6.597**	-6.597**
			(2.668)	(2.668)	(2.546)	(2.546)
Dual citizenship					-5.905***	-5.905***
					(2.085)	(2.085)

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Table 6. IV specification: Total migration and share of migrants with tertiary education. Continued.

Stage II dependent variable	**ln Total assets**	**ln Sales**	**ln Total assets**	**ln Sales**	**ln Total assets**	**ln Sales**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
ln Total migration to the US	0.619*	0.423	0.547**	0.498**	0.581***	0.522***
	[0.349]	[0.275]	(0.220)	(0.197)	(0.222)	(0.198)
Share of tertiary migration to the US	0.030	0.031*	0.032*	0.029*	0.029*	0.027*
	[0.020]	[0.017]	(0.017)	(0.015)	(0.017)	(0.015)
ln GDP per capita	0.983***	0.942***	0.971***	0.956***	0.979***	0.961***
	[0.156]	[0.141]	(0.147)	(0.137)	(0.148)	(0.136)
ln Population	0.262	0.396**	0.304*	0.352**	0.286*	0.341**
	[0.224]	[0.175]	(0.166)	(0.154)	(0.166)	(0.155)
Conflict	-0.204	-0.122	-0.193	-0.134	-0.198	-0.137
	[0.129]	[0.120]	(0.127)	(0.126)	(0.129)	(0.126)
Inflation	0.025	0.013	0.023	0.014	0.024	0.014
	[0.025]	[0.029]	(0.025)	(0.030)	(0.025)	(0.031)
Governance	0.135	0.187	0.151	0.170	0.139	0.162
	[0.263]	[0.214]	(0.246)	(0.210)	(0.252)	(0.213)
ln Distance to the US	-0.064	-0.359	-0.206	-0.209	-0.113	-0.145
	[0.720]	[0.563]	(0.405)	(0.342)	(0.411)	(0.334)
English	-0.46	-0.297	-0.427	-0.332	-0.432	-0.335
	[0.376]	[0.286]	(0.331)	(0.291)	(0.339)	(0.295)
Dummy for 1990	-0.579**	-0.23	-0.580**	-0.229	-0.588***	-0.234
	[0.231]	[0.188]	(0.226)	(0.191)	(0.227)	(0.190)
Constant	-10.256	-7.991	-8.957**	-9.360***	-9.796**	-9.932***
	[6.736]	[5.469]	(4.005)	(3.435)	(4.103)	(3.368)
Observations	98	98	98	98	98	98
Shea partial R-squared 1	0.085	0.085	0.287	0.287	0.325	0.325
Shea partial R-squared 2	0.251	0.251	0.326	0.326	0.357	0.357
Underidentification test (Kleibergen-Paap)	5.16	5.16	13.53	13.53	21.36	21.36
p-value	0.161	0.161	0.009	0.009	0.001	0.001
Overidentification test	1.10	0.57	1.29	0.59	1.76	0.98
p-value	0.577	0.753	0.732	0.898	0.78	0.913

Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%

Appendix

Table A: OLS specification: Sectoral level. Controlling for the country's share in US trade in a given sector.

	ln Total assets	ln Sales	ln Total assets	ln Sales	ln Total assets	ln Sales
	(1)	(2)	(3)	(4)	(5)	(6)
ln Total migration to the US	0.599***	0.570***			0.624***	0.589***
	[0.126]	[0.129]			[0.123]	[0.129]
ln Tertiary migration to the US			0.361***	0.332***		
			[0.089]	[0.089]		
Share of tertiary migration to the US					0.091***	0.076**
					[0.029]	[0.032]
ln GDP per capita	1.053**	0.775	0.997**	0.736	0.934**	0.688
	[0.467]	[0.482]	[0.485]	[0.495]	[0.441]	[0.457]
ln Population	-4.528***	-3.570**	-3.908***	-3.188**	-1.397	-0.976
	[1.578]	[1.573]	[1.504]	[1.542]	[1.871]	[1.911]
Conflict	-0.052	-0.101	-0.035	-0.082	-0.108	-0.151
	[0.218]	[0.247]	[0.214]	[0.244]	[0.204]	[0.234]
Inflation	0.002	0.001	-0.007	-0.006	-0.007	-0.007
	[0.018]	[0.021]	[0.018]	[0.020]	[0.018]	[0.021]
Governance	0.555	0.524	0.51	0.421	0.896	0.787
	[0.532]	[0.527]	[0.560]	[0.553]	[0.549]	[0.540]
Dummy for 1990	-0.737***	-0.693***	-0.555***	-0.552***	0.318	0.192
	[0.195]	[0.185]	[0.202]	[0.191]	[0.397]	[0.432]
Share of US trade (10 year lag)	5.613**	6.429**	6.862***	7.363***	5.628**	6.469**
	[2.439]	[2.724]	[2.455]	[2.730]	[2.456]	[2.733]
Constant	71.764***	55.741**	62.489**	51.878**	14.708	8.284
	[25.646]	[25.399]	[24.550]	[25.119]	[31.280]	[32.139]
Country dummies	yes	yes	yes	yes	yes	yes
Industry dummies	yes	yes	yes	yes	yes	yes
Observations	502	509	502	509	502	509
R-squared	0.775	0.767	0.769	0.762	0.779	0.77

Robust standard errors in parentheses * significant at 10%; ** significant at 5%; *** significant at 1%