

Maurice Kugler and Hillel Rapoport*
Migration and FDI: complements or substitutes?†

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Abstract

In a global context, migration and FDI substitute one another in the matching process between workers and firms. However, since migrants participate in the labor force in the destination country, they can both convey information on their home country (including the quality of its workforce and institutions) and develop business networks favoring economic transactions between their home and host countries. Through these channels emigration can facilitate future FDI inflows. We first present a stylized model for a small open economy illustrating these offsetting effects in a framework with endogenous skills. Using international data on migration and FDI for the period 1990-2000, we find strong robust evidence of dynamic complementarity between skilled emigration and FDI. We also find evidence of contemporaneous substitutability between unskilled migration and FDI in the case of intra-EU15 factor flows.

*Maurice Kugler: Department of Economics, University of Southampton, and Center for International Development, Harvard University. e-mail: mdk1@soton.ac.uk. Hillel Rapoport: Department of Economics, Bar-Ilan University, CADRE, University of Lille 2, and CReAM, UCL. e-mail: hillel@mail.biu.ac.il.

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1 Introduction

During the 1990's, there has been a tremendous increase in the international movements of factors and goods, with international trade and factor flows growing much more rapidly than output. Grossly, the growth rate of international trade has been twice that of world output between 1990 and 2000; even more remarkable is the growth of global FDI flows, which has been triple the growth rate of international trade flows over the period. As a result, between 1990 and 2000, the world export/GDP and FDI/GDP ratio have been multiplied by 1.5 and 3 respectively. International migration is also on the rise, as revealed for example by the fact that the total number of foreign-born individuals residing in OECD countries (i.e., the OECD immigration stock) has increased by 50 percent over the same period. The latter figure is remarkable because in contrast to the liberalization trend that has characterized trade and FDI, restrictive immigration policies have instead been introduced by most receiving countries with the double objective of decreasing the quantity and increasing the quality of immigration (Faini, 2004). Only the second of these objectives has been achieved; indeed, the number of highly-skilled immigrants (foreign-born individuals with tertiary education) living in an OECD member country has increased by 70 percent between 1990 and 2000, but the number of low-skill migrants has risen too, although at a lower pace (28 percent) (Docquier and Marfouk, 2005).

This paper investigates whether migration and foreign direct investment (FDI) are substitutes, as standard trade models would predict (either jobs flow to workers or workers to jobs) or complements, as recent socio-economic literature on the role of diasporas in favoring capital inflows and technology diffusion to the migrants' origin countries would seem to suggest. In a standard trade-theoretic framework, the relationship between migration and trade as well as between migration and FDI is a relationship of substitutability. Indeed, trade contributes to factor price equalization and therefore lowers incentives for factor mobility; at the same time, factor movements (beyond the Rybszinski cone) reduce price differentials and, hence, the scope for trade. Similarly, capital is expected to flow to where the type of labor used intensively in production is abundant and, other things equal, workers will supply their labor services where the highest salary can be obtained. Through such mechanisms, migration and FDI are substitute ways to match workers and employers located in different countries. In addition, recent studies suggest that there are FDI spillovers on upstream industries in developing countries (e.g., Kugler, 2000, 2005, Smarzynska, 2004). To the extent that such spillovers induce adoption of more skill-intensive technologies, they may magnify the substitution effect between skilled migration and FDI. On the other hand, there is a growing literature emphasizing that migrant networks facilitate bilateral economic transactions through their removing of informational and cultural barriers between host and origin countries. Such a "diaspora externality" has long been recognized in the sociological literature and, more recently, by economists in the field of international trade. In many instances indeed, and, as explained, in

contrast to the predictions of standard trade models, trade and migration appear as complements (e.g., Gould, 1994, Lopez and Schiff, 1998). Interestingly, such a complementarity has been shown to prevail mostly for trade in heterogeneous goods, where ethnic networks help overcoming information problems linked to the very nature of the goods exchanged (Rauch and Casella, 2003, Rauch and Trindade, 2002).

In a similar spirit, migration may also facilitate the formation of the types of business links which lead to FDI project deployment in a particular location. Hence, while emigration of workers into a country may mitigate to some extent the incentives for FDI from the host to the origin country of migrants, their sheer presence in the host country can be a catalyst to establish the required links to achieve efficient distribution, procurement, transportation and satisfaction of regulations. An important barrier to a multinational corporation's viability to set up a subsidiary in a developing country can be uncertainty. To the extent that migrants integrate to the business community, a network can emerge whereby migrants liaise between potential investors and partners (both private and public) in various aspects of setting up a production facility in the country of origin of the migrant. Hence, migration can facilitate in the long run the outflow of FDI from the destination to the origin country. Such mechanisms through which migration and FDI seem to complement each other, as migrants insert into business networks, are described in sectoral case-studies, notably in the case of the software industry (Saxeenian, 2001, Arora and Gambardella, 2004, Commander et al., 2004b).¹ While the channel just described would seem to apply mainly to skilled migrants, there are other channels through which unskilled migrants may also contribute to relax information constraints on FDI. Indeed, their sheer participation in the destination country's labor force reveals information about the characteristics of workers in their home country, thereby reducing uncertainty about the profitability of FDI. Hence, both skilled and unskilled migration can convey information to facilitate FDI inflows to the home country.

How is the relationship of substitutability or complementarity between migration and FDI affected by the skill composition of migration and by the sectoral composition of FDI? Surprisingly, these issues have so far been relatively neglected in the literature. Focusing on the impact of trade liberalization episodes on migration in a cross-section of countries, Lopez and Schiff (1998) concluded to a relationship of complementarity between trade and unskilled migration and to a relationship of substitutability between trade and skilled migration, but did not explore the pattern of FDI in relation to migration. More recently, Aroca and Maloney (2005) found a negative correlation between FDI flows from the US to Mexico and unskilled migration from Mexico to the US. Finally, Kugler and Rapoport (2006) investigated the migration-FDI relationship for U.S.-rest of the world bilateral flows using census data on the immigration stocks

¹If verified, this is another channel – alongside remittances, return migration, and the effect of migration prospects on education investment – through which skilled migration affects growth and welfare in the sending countries. See Rapoport and Docquier (2004) and Commander et al. (2004a) for recent surveys of the new brain drain economic literature.

in 1990 and 2000 and Commerce Department data on FDI outflows towards a series of destination countries throughout the 1990s. They show that manufacturing FDIs towards a given country are negatively correlated with current unskilled migration, as trade models would predict, while FDIs in the service sector are positively correlated with the initial U.S. skilled immigration stock of that country.

On the whole, our working assumption is that the relationship between migration and FDI is characterized by the offsetting effects of contemporaneous substitutability and dynamic complementarity. In Section 2 we first present a two-country (North-South) stylized model that captures the main mechanisms through which international movements of labor and capital can be linked. The aim of this theoretical framework is to derive testable predictions as to the links between migration and FDI. Section 3 presents the data used for the empirical analysis; the main data sources we use are OECD bilateral data on FDI between 1990 and 2000 and OECD bilateral data on immigration stocks by skill level in 1990 and 2000. Section 4 discusses our empirical strategy and presents the results. The results are consistent with the predictions of the theoretical framework in that past skilled migration is associated with an increase in FDI inflows. We also find supportive evidence of substitutability between current unskilled migration and FDI when we restrict the sample to intra-EU15 factor flows. Section 5 concludes.

2 Theoretical framework

Consider a small open developing economy where, at each period, a composite good is produced according to a Cobb-Douglas technology with constant returns to scale:

$$Y_t = A(H_t)K_t^{1-\alpha}L_t^\alpha$$

with $L_t = N_t H_t$, the stock of labor measured in efficiency units and H_t the average number of such units (or average level of human capital) per worker. In this setting, skilled and unskilled workers are perfect substitutes and total factor productivity depends on human capital externalities. Normalizing the number of efficiency units to 1 for unskilled workers and denoting by $h > 1$ the skill premium and by P the proportion of skilled, we have $H_t = 1 + P_t(h - 1)$.

Assuming competitive markets and denoting by k the capital to labor ratio, factor returns are given by:

$$\begin{aligned} r_t &= (1 - \alpha)A(H_t)k_t^{-\alpha} \\ w_t &= \alpha A(H_t)k_t^{1-\alpha} \end{aligned}$$

The economy is open in that capital is perfectly mobile internationally and developing in that, due to a persistent technology gap, the wage rate (or wage per efficient unit of labor) is higher in a more advanced economy which represents a potential

destination for migrants.² By contrast, labor is imperfectly mobile internationally due to the presence of migration costs (possibly coupled to liquidity constraints that prevent profitable migration investments) and to the fact that destination countries restrict immigration both quantitatively and qualitatively (i.e., selective immigration policy). Wage-differentials, migration costs and immigration policy determine the pattern of migration (i.e., whether migrants have more or less than average skills).

International capital flows are such that the domestic interest rate is equal to the international interest rate augmented by a country premium π that captures the extent of transaction costs as well as a variety of risks associated to internal institutional factors such as misgovernance, political instability, corruption, and quality of inputs, including workforce and general infrastructure.

With $r_t = r^* + \pi_t$, we have, therefore:

$$\begin{aligned} k_t &= \left[\frac{(1-\alpha)A(H_t)}{r^* + \pi_t} \right]^{\frac{1}{\alpha}} \equiv k(\pi_t, H_t) \\ w_t &= \alpha \left[\frac{1-\alpha}{r^* + \pi_t} \right]^{\frac{1-\alpha}{\alpha}} [A(H_t)]^{\frac{1}{\alpha}} \equiv w(\pi_t, H_t) \end{aligned}$$

with the derivatives $k'_1 < 0$, $k'_2 > 0$ and $w'_1 < 0$, $w'_2 > 0$.

The equilibrium stock of capital in the economy is thus given by:

$$K_t = k_t L_t = \left[\frac{(1-\alpha)A_t L_t^\alpha}{r^* + \pi_t} \right]^{\frac{1}{\alpha}}$$

with:

$$A_t = A(H_t),$$

$L_t = (N_t - M_t^U - M_t^S)H_t$, where M_t^U and M_t^S denote the number of unskilled and skilled migrants,

$H_t = \frac{N_t(1-P_t) - M_t^U + N_t P_t h - M_t^S h}{N_t - M_t^U - M_t^S}$ is the average level of human capital after migration is netted out,

$P_t = P\{h, E_{t-1}(m_t^S) - E_{t-1}(m_t^U)\}$, where $E_{t-1}(m_t^i)$, $i = S, U$, is the migration rate by skill level for a given period as expected when the education decision is made,³ and

$\pi_t = \pi\{X_t, M_{t-1}^U, M_{t-1}^S\}$ where X_t is a vector of country characteristics such as the quality of governance, political instability, etc. that impact on the country-risk premium and $\pi'_S, \pi'_U < 0$ to capture the "diaspora effects" (decreased in information

²The destination country is assumed to be large. That is, its domestic prices and wages are assumed to be unaffected by international factor flows to/from one single country.

³Indeed, starting with Mountford (1997), Stark et al. (1997, 1998), Vidal (1998) and Beine et al. (2001, 2003), a growing literature has demonstrated that migration prospects may boost domestic enrollment in higher education and possibly increase net human capital formation at home thanks to the additional incentives to invest in education in the presence of migration opportunities. See also Commander et al. (2004a) and Docquier and Rapoport (2004) for recent surveys of this literature.

and other transaction costs thanks to past skilled and unskilled migration) detailed in the previous section.

Noting that:

$$\frac{\partial H_t}{\partial M_t^S} = -\frac{h-1}{(N_t - M_t^U - M_t^S)^2} [N_t(1 - P_t) - M_t^U] < 0$$

$$\frac{\partial H_t}{\partial M_t^U} = \frac{h-1}{(N_t - M_t^U - M_t^S)^2} [N_t P_t - M_t^S] > 0$$

$$\frac{\partial H_t}{\partial P_t} = -\frac{N_t(h-1)}{(N_t - M_t^U - M_t^S)^2} > 0$$

and using

$$\ln K_t = \frac{1}{\alpha} \ln(1 - \alpha) + \frac{1}{\alpha} \ln A_t + \ln(N_t - M_t^U - M_t^S) + \ln H_t - \frac{1}{\alpha} \ln(r^* + \pi_t),$$

the above expressions allow us to envision the causal relationships between migration and FDI that are the focus of our empirical analysis and to design our empirical strategy accordingly. Given that in our setting the skill composition of the labor force is endogenous (i.e., depends on migration prospects), the relationships between migration and FDI will depend on the way people form their expectations about future migration possibilities. We therefore distinguish below between myopic and rational expectations.

2.1 Myopic expectations

Let us first assume that people form their expectations about their chances of future migration based on the emigration rates observed among the previous generation and make their education decisions accordingly. Formally, $E_{t-1}(m_t^S) = \frac{M_{t-1}^S}{N_{t-1}P_{t-1}}$ and

$$E_{t-1}(m_t^U) = \frac{M_{t-1}^U}{N_{t-1}(1-P_{t-1})}.$$

In this case, we have:

$$\frac{\partial \ln K_t}{\partial M_t^S} = \left[\frac{1}{\alpha} \frac{A'}{A_t} + \frac{1}{H_t} \right] \frac{\partial H_t}{\partial M_t^S} - \frac{1}{N_t - M_t^U - M_t^S} < 0$$

$$\frac{\partial \ln K_t}{\partial M_{t-1}^S} = \left[\frac{1}{\alpha} \frac{A'}{A_t} + \frac{1}{H_t} \right] \frac{\partial H_t}{\partial P_t} \frac{\partial P_t}{\partial M_{t-1}^S} - \frac{1}{\alpha} \frac{1}{r^* + \pi_t} \frac{\partial \pi_t}{\partial M_{t-1}^S} > 0$$

$$\frac{\partial \ln K_t}{\partial M_t^U} = \left[\frac{1}{\alpha} \frac{A'}{A_t} + \frac{1}{H_t} \right] \frac{\partial H_t}{\partial M_t^U} - \frac{1}{N_t - M_t^U - M_t^S} \leq 0$$

$$\frac{\partial \ln K_t}{\partial M_{t-1}^U} = \left[\frac{1}{\alpha} \frac{A'}{A_t} + \frac{1}{H_t} \right] \frac{\partial H_t}{\partial P_t} \frac{\partial P_t}{\partial M_{t-1}^U} - \frac{1}{\alpha} \frac{1}{r^* + \pi_t} \frac{\partial \pi_t}{\partial M_{t-1}^U} \leq 0$$

In words, the predictions of our model with myopic expectations are that skilled migration and FDI should display a relationship of contemporaneous substitutability and of dynamic complementarity while the sign of the correlation between unskilled migration and FDI are unclear.

The first of the above results is that FDI inflows within a given period should be negatively correlated with skilled migration outflows. This negative sign is the sum of two negative effects that may be termed a *N - effect* (through the size of the labor force) and a *H - effect* (through the average level of human capital): first, any migration outflow, be it skilled or unskilled, would decrease the domestic return to capital and therefore generate a compensating outflow of capital, and more so for skilled migration as a second negative effect kicks in through *H*, which enters twice in the expression of $\frac{\partial \ln K_t}{\partial M_t^S}$. Indeed, as is well known and documented, a skilled labor force is a key determinant of FDI inflows as it contributes to the capacity of the home

economy to adopt new technologies, an effect often referred to as the technological externality arising from human capital formation.⁴ All else equal, a more skilled emigration will lower the proportion of skilled in the home population and, therefore, through a decrease in H , will serve as a deterrent to FDI.

The second result is that FDI inflows should be positively correlated with the stock of immigrants from a given country residing in the investors' home country at the beginning of the period. This positive sign is the sum of two positive effects that may be termed an *incentive effect*, through which past skilled migration encourages current education investment, and a *network or π -effect* thanks to the participation of skilled migrants to business networks along the lines described in our introduction.

The last two results indicate no clear sign for the correlation between unskilled migration and FDI. On the one hand, unskilled migration outflows within a given period have an ambiguous effect on FDI inflows throughout the period due to the counteracting impacts of a positive *H-effect* (all else equal, more unskilled migration increases the average level of human capital among remaining residents) and a negative *N-effect*. On the other hand, past unskilled migration (the initial stock of unskilled immigrants) has an ambiguous impact on future FDI due to the counteracting influence of a negative *incentive effect* (as a greater unskilled migration probability decreases the expected return to education) and of a positive *network or π -effect* thanks to the informational signal sent by unskilled migrants about the quality of the labor force in their home country.

2.2 Rational expectations

Let us now assume that people form rational expectations about their chances of future migration, that is, they perfectly anticipate the consequences of their education decisions on migration propensities. Formally, $E_{t-1}(m_t^S) = \frac{M_t^S}{N_t P_t}$ and $E_{t-1}(m_t^U) = \frac{M_t^U}{N_t(1-P_t)}$. The proportion of educated within a given generation is now given by the following implicit function:

$G(P_t, M_t^S, M_t^U) \equiv P_t - P[h, m] = 0$, where $m = (\frac{M_t^S}{N_t P_t} - \frac{M_t^U}{N_t(1-P_t)})$ is the differential in migration probability between skilled and unskilled workers and $P'_m > 0$. With these understandings, we have:

$$\frac{\partial P_t}{\partial M_t^S} = -\frac{\partial G / \partial M_t^S}{\partial G / \partial P_t} = -\frac{-P'_m / N_t P_t}{1 - P'_m [-m_t^S / P_t + m_t^U / (1 - P_t)]} > 0$$

$$\frac{\partial P_t}{\partial M_t^U} = -\frac{\partial G / \partial M_t^U}{\partial G / \partial P_t} = -\frac{-P'_m / N_t (1 - P_t)}{1 - P'_m [-m_t^S / P_t + m_t^U / (1 - P_t)]} < 0$$

Note that $\frac{\partial P_t}{\partial M_t^S} > 0$ and $\frac{\partial P_t}{\partial M_t^U} < 0$ since $P'_m [\frac{m_t^U}{1 - P_t} - \frac{m_t^S}{P_t}] < 1$ given the higher emigration propensity of skilled workers ($m^S > m^U$) and the fact that it is reasonable to assume that in developing countries the proportion of educated is lower than one half ($P_t < 1 - P_t$).

⁴See for example Klenow and Rodriguez-Clare (2004) for both a theoretical framework and survey of the empirical literature on this issue.

With rational expectations we therefore obtain the following predictions:

$$\begin{aligned}\frac{\partial \ln K_t}{\partial M_t^S} &= \left[\frac{1}{\alpha} \frac{A'}{A_t} + \frac{1}{H_t} \right] \left(\frac{\partial H_t}{\partial M_t^S} + \frac{\partial H_t}{\partial P_t} \frac{\partial P_t}{\partial M_t^S} \right) - \frac{1}{N_t - M_t^U - M_t^S} \leq 0 \\ \frac{\partial \ln K_t}{\partial M_{t-1}^S} &= -\frac{1}{\alpha} \frac{1}{r^* + \pi_t} \frac{\partial \pi_t}{\partial M_{t-1}^S} > 0 \\ \frac{\partial \ln K_t}{\partial M_t^U} &= \left[\frac{1}{\alpha} \frac{A'}{A_t} + \frac{1}{H_t} \right] \left(\frac{\partial H_t}{\partial M_t^U} + \frac{\partial H_t}{\partial P_t} \frac{\partial P_t}{\partial M_t^U} \right) - \frac{1}{N_t - M_t^U - M_t^S} \leq 0 \\ \frac{\partial \ln K_t}{\partial M_{t-1}^U} &= -\frac{1}{\alpha} \frac{1}{r^* + \pi_t} \frac{\partial \pi_t}{\partial M_{t-1}^U} > 0\end{aligned}$$

In words, the predictions of our model with rational expectations are that past migration and FDI should display a relationship of dynamic complementarity (for both skilled and unskilled migration) while the sign of the correlation between contemporaneous flows of migration and FDI is unclear (again, for both skilled and unskilled migration).

The first of the above results is that the sign of the relationship between FDI inflows within a given period and migration outflows during the same period is unclear. This ambiguous effect is the sum of a negative *externality or H-effect*, of a positive *incentive effect* and of a negative size or N-effect. substitutability.

The second result is that as in the case of myopic expectations, FDI inflows should be positively correlated with the stock of immigrants from a given country residing in the investors' home country at the beginning of the period. This positive sign is now explained only through the *network or π -effect* thanks to the participation of skilled migrants to business networks along the lines described in our introduction.

The third result indicates no clear sign for the correlation between contemporaneous unskilled migration and FDI. This is the sum of a positive *externality or H-effect* (all else equal, more unskilled migration increases the average level of human capital among remaining residents), of a negative incentive effects and of a negative *size or N-effect*.

Finally, past unskilled migration (the initial stock of unskilled immigrants) is shown to increase future FDI due to the positive *network or π -effect* thanks to the informational signal sent by unskilled migrants about the quality of the labor force in their home country.

As may be seen from the comparison between the two models, the only robust theoretical prediction is that of a dynamic complementarity between skilled migration and FDI. We now turn to the empirical estimations.

3 Data description

The main data sources we use are OECD bilateral data on migration and FDI for the period 1990-2000. FDI data are collected from OECD country reports and taken from Razin et al. (2004). The FDI data are based on the OECD reports of FDI exports from 12 OECD source countries to 45 OECD and non-OECD countries. Migration data is based on a new dataset on international migration by educational attainment, namely, on the World Bank sponsored Docquier and Marfouk (2006) (henceforth

DM) dataset. DM collected data on immigration by education level and country of birth from nearly all OECD countries in 1990 and 2000. Census, register and survey data reporting immigrants' educational levels and countries of birth were used for 27 OECD countries in 2000 (which account for 98 percent of the OECD immigration stock) and 24 countries in 1990 (91 percent). For the few remaining countries for which census data were not available, existing data by country of birth were splitted across educational levels on the basis of the regional structure or of the OECD average.

The main control variables we use are standard host and source country variables as well as proximity and other bilateral variables. For the host countries of FDI: GDP, GDP per capita, ethnic fractionalization, and indices of economic (economic risk, average tax rate), financial (financial risk, debt/equity ratio) and institutional development (political risk, corruption). For the source country of FDI: GDP per capita. Bilateral controls include imports and exports between pairs of countries at the beginning and the end of the period studied, gaps in human capital levels, geographic and longitudinal distance, dummies for whether the two countries share the same language or have colonial ties. We supplement this by interacting all migration variables with their share of the total stock/flow of migrants from i to j . We expect the coefficient of this interaction term to take the opposite sign with respect to the relevant migration variable. This is a direct consequence of our prior on the potential channels through which past migration may affect future FDI. As explained, skilled migrants may take part in business networks and facilitate contacts with the political and business elite in their home country. We expect this effect to be stronger if skilled emigrants from i to j are just a fraction of total emigration from i to j , which increases the likelihood of their being well connected to the home country business and political elite. Hence, while we expect past skilled migration to positively affect future FDI, we expect this potential "elitist network effect" to kick in and be captured by a negative sign of this interaction term (in both the selection and the flow equation). Similarly, while we expect past unskilled migration to relax informational constraints on potential FDI, we expect this "revelation effect" to be reduced when unskilled workers represent a larger share of migrants, which would be captured by a negative sign in both equations. Finally we include host and source countries fixed effects. Table A1 in the Appendix gives all the variables definitions and data sources. Table A2 gives the list of countries included in the sample by host-source status with respect to FDI. Table 1 below gives the descriptive statistics.

[INSERT TABLE 1]

4 Empirical methodology

Our empirical investigation is in the tradition of the gravity equation specification, but with adjustments for selection bias. As is well known from the empirical literature on the determinants of trade or FDI, gravitational forces can be very small, but not zero, whereas trade or FDI flows between $i - j$ pairs of countries is quite often zero.

Early empirical literature estimating the parameters of interest by ordinary least squares has either ignored pairs with no FDI flows, or treated these cases as either measurement errors or literally indicating zero flows.⁵ This view is consistent with models that ignore the role of set-up cost, as argued in Razin et al. (2004), or of transaction and information costs, as developed in this paper. In such models the empty flow cells are either zeros, or a consequence of measurement errors, likely with a small volume of capital flow. Note that if measurement errors are not correlated with the explanatory variables then the estimated parameters are not biased, although they are imprecisely estimated. Tobit estimation techniques, on the other hand, acknowledge that there is a truncation in the data (censoring), but assumes it is exogenous. The Tobit results, therefore, show what the naive regressions would be, and will yield biased estimates if selection is endogenous. The Heckman correction for selection allows instead for checking if the bias is as expected by theory. Our argument here is that migration reduces transaction costs between countries through informational and business networks channels and may therefore not only increase FDI towards their home country but also explain whether FDI take place at all. TO BE COMPLETED.

5 Results

As mentioned above, OLS and Tobit estimates are likely to yield biased results of the effect of migration on FDI. They are reported in Table A3 and A4 of the Appendix. We focus in the section on the results obtained using the Heckman procedure to account for possible endogenous selection. We present the results for the whole sample and for two sub-samples restrict to the case where country i is a developing country (with GDP per capita in 1990 lower than \$10,000) and country j a developed country (the North-South sample), and to intra-european transactions only (the EU15 sample). Finally, we use two alternative classifications for skill levels. A 3-level classification using the primary, secondary and tertiary distinction, and a 2-category classification where migrants with primary and secondary education level are pooled and defined as "unskilled" while migrants with tertiary education are defined as "skilled". For each specification, we estimate two equations:

- A "flow equation" where we regress the (log of the) change in FDI over the period 1990-2000 between migration source country i and migration host-country j over the stock of migrants from country i to country j in 1990 and the change in that stock between 1990 and 2000 (or "flow of migrants"). All migration variables are split by skill level, expressed in logs, and interacted with their share of the total stock/flow of migrants from i to j .

⁵We largely borrow this short methodological discussion from Razin et al. (2004).

- A "selection equation" where we regress the probability of having FDI taking place between country i and country j on the same set of variables except for the flow of migrants (and the corresponding interaction terms with the share of each educational category in total emigration).

Table 2 and 3 give the results for the whole sample and the two sub-samples using the 3-level and the 2-level classifications only. Focusing on "robust" results only (i.e., where the classification used does not affect the sign and significance of the effects), the main results are as follows:

1. There is strong evidence of dynamic complementarity between skilled migration and FDI. The sign of the coefficient is positive and significant at the five percent threshold (and generally at the one percent threshold) in all specifications. The elasticity of FDI to past skilled migration is about 3 in the North-South case. It is higher (between 2.5 and 3) for the whole sample and the EU15 sample when we use the skilled/unskilled classification than when we use the 3-level classification (.6 to .7). In addition, in five out of six specifications, past skilled migration is shown to significantly increase (each time at the one percent threshold) the likelihood of observing FDI in the subsequent period. The only exception is the North-South case, for which the coefficient is positive but not significant. In contrast, there is no robust result on the relationship between current skilled migration and FDI, which is however consistent with theory.
2. There is strong evidence of contemporaneous substitutability between unskilled migration and FDI in the intra-EU15 sub-sample, the estimated elasticity being much higher with the skilled/unskilled classification (-2.4 against -.4). For the other sub-samples the results depend on the skill classification adopted. No robust evidence is found either for the relationship between past unskilled migration and FDI. However, past unskilled migration is shown to significantly increase the likelihood of having FDI taking place in the subsequent period in nearly all specifications (five out of six), the only exception being (again) the for the North-South sub-sample with the 3-level classification.
3. To have a better sense of the total effect, we combine the results for the selection and the flow equation to obtain the expected effect of migration on FDI. TO BE COMPLETED.
4. Finally, the interaction terms always take a sign opposite to the sign of the coefficient on the corresponding migration variable. In particular, regarding the relationship of dynamic complementarity between skilled migration and FDI, the coefficient on the interaction term is negative and highly significant in all specifications, both in the flow equation and in the selection equation. Hence, the effect of past skilled migration on FDI is magnified when skilled emigrants represent a relatively small fraction of total migration, a result that we interpret as providing supportive evidence of an "elite network effect", as outlined above.

Regarding the dynamic relationship between unskilled migration and FDI, the sign of the coefficient is also negative and significant in nearly all cases, both in the flow and in the selection equation. This is also according to expectations and provides suggestive evidence of a "revelation effect", as outlined above.

6 Concluding remarks

Since international factor flows are jointly determined by technology deployment and endowment differentials, it is natural to study at the same time capital and labor movements between countries. Yet, one potential determinant of FDI which has rarely been studied is migration. The most obvious link is that to match workers and vacancies which are in different countries, either employees have to relocate to where jobs are or investments need to be undertaken to create jobs where potential employees are. In particular, FDI will flow to where the type of labor used intensively in production is abundant. At the same time, other things equal, workers will supply their labor services where the highest salary can be obtained. Through this mechanism FDI and migration are substitute ways to match workers and employers located in different countries.

Another effect that runs in the opposite direction is that migration might facilitate the formation of the types of business links which lead to FDI project deployment in a particular location. Hence, while emigration of workers into a country may mitigate to some extent the incentive for FDI outflow from the destination country of migrants to the origin country, the presence of migrants can be a catalyst to establish the required links to achieve efficient distribution, procurement, transportation and satisfaction of regulations. An important barrier to a multinational corporation's viability to set up a subsidiary in a developing country can be uncertainty. To the extent that migrants integrate to the business community, a network can emerge whereby migrants liaise between potential investors and partners (both private and public) in various aspects of setting up a production facility in the country of origin of the migrant. Hence, migration can facilitate in the long run the outflow of FDI from the destination to the origin country. Through this mechanism FDI and migration complement each other. Whether migration is associated with a net increase in FDI inflows or not, and with whether FDI take place at all, is an empirical matter. Using international data on migration and FDI for the period 1990-2000, we find strong robust evidence of dynamic complementarity between skilled emigration and FDI. This is suggestive, therefore, of an additional positive feedback effect from the brain drain for sending countries. We also find evidence of contemporaneous substitutability between unskilled migration and FDI in the case of intra-EU15 factor flows. Interestingly, interaction terms between the migration variables by skill level and the corresponding share of that skill level in total emigration from a given country are negative and highly significant, which is supportive of an "elite network effect" (for skilled migrants) and of an "information revelation effect" as osuggestive of suggested

by the recent sociological literature on the diaspora externality

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Table 1: Summary Statistics

FDI and Migrants Composition by Education: Stocks and Flows				
VARIABLE	MEAN	DEVIATION	MINIMUM	MAXIMUM
Δ FDI	5.552341	2.119192	0.1373322	10.98373
FDI ₉₀	1.847399	2.660103	0	10.27754
Δ M PRIM	0.232537	1.880197	-7.150702	10.69591
Δ M SEC	0.7634225	1.820834	-8.149313	11.26516
Δ M TER	0.7557382	1.75345	-7.603399	10.0101
M PRIM ₉₀	5.506225	3.400213	0	14.25432
M SEC ₉₀	5.102116	3.263089	0	13.53907
M TER ₉₀	5.250778	3.363774	0	13.13872
Δ M unskilled	0.7461908	1.59513	-1.605898	11.0205
Δ M skilled	1.074669	1.52797	-2.448539	10.0101
M unskilled ₉₀	6.143132	3.339276	0.6931472	14.65247
M skilled ₉₀	5.250778	3.363774	0	13.13872
Financial ₉₀	37.96248	7.960011	15.39	50
Economic ₉₀	36.27695	5.869413	16.11	46.79
Political ₉₀	71.81861	14.25368	39.80667	93.22334
Corruption ₉₀	4.088139	1.276045	1.833333	6
host GDP ₉₀	546.6442	1261.101	2.520986	7940.557
source GDP ₉₀	5.974998	1.197051	3.833172	8.979738
host GDP/Cap ₉₀	2.207704	1.361999	0.115956	3.790192
source GDP/Cap ₉₀	2.916843	0.7011827	0.8985121	3.790192
longitude	73.19233	60.67828	0	292.99
distance	102.0638	72.79558	50.123	364.242

Definitions: Δ FDI is the change in the log of FDI over the 1990-2000 period in the migrants' source country. FDI₉₀ is the log of FDI flow in the year 1990. Δ M_e is the change over the 1990-2000 period of the log of the stock of migrants in FDI-sending country with *e* being educational attainment (henceforth, *e* = PRI, SEC and TER for primary, secondary and tertiary respectively), and M_e₉₀ is the log of the stock of migrants in the FDI-sending country in 1990 with *e* being educational attainment. Δ M_s is the change over the 1990-2000 period in the log of the stock of migrants in FDI-sending country with *s* being the skill level (henceforth, *s* = unskilled and skilled), and M_s₉₀ is the log of the stock of migrants in the FDI-sending country in 1990 with *s* representing the skill level). Financial₉₀, Economic₉₀, Political₉₀ and Corruption₉₀ correspond to the financial, economic, political and corruption indices in the FDI-host country in 1990.

Table 2: Heckman Estimation - Primary/Secondary/Tertiary Classification*Dependent Variable:* FDI (prices adjusted - in logs)

	Whole Sample		North-South		EU15 sample	
	Flow Equation	Selection Equation	Flow Equation	Selection Equation	Flow Equation	Selection Equation
ΔM PRIM	0.363*** (0.113)	-	-0.758*** (0.218)	-	-0.404*** (0.145)	0.880 (2.049)
ΔM SEC	1.068** (0.451)	-	-1.972* (1.178)	-	1.878*** (0.473)	-4.732** (2.213)
ΔM TER	-0.982*** (0.377)	-	0.399*** (0.863)	-	-0.173 (0.427)	11.972*** (2.392)
M PRIM ₉₀	-0.167 (0.434)	1.767* (1.072)	-1.897** (0.962)	-1.279 (1.110)	-1.272*** (0.507)	0.0001** (0.0001)
M SEC ₉₀	0.682* (0.402)	-2.743*** (1.119)	-0.954*** (1.131)	-2.597*** (0.933)	1.314*** (0.453)	0.226 (0.417)
M TER ₉₀	0.721*** (0.464)	3.957*** (1.053)	3.040*** (0.999)	5.870*** (1.234)	0.590*** (0.527)	0.939*** (0.133)
ΔM PRIM* $\Delta(M$ PRIM/TOT)	0.091* (0.054)	-	0.672** (0.118)	-	0.0159*** (0.062)	-
ΔM SEC* $\Delta(M$ SEC/TOT)	-0.882*** (0.292)	-	1.639** (0.695)	-	-0.913*** (0.301)	-
ΔM TER* $\Delta(M$ TER/TOT)	0.360 (0.243)	-	0.234 (0.440)	-	-0.605*** (0.259)	-
PRIM ₉₀ *(M PRIM/TOT) ₉₀	-0.143 (0.219)	-1.0003*** (0.551)	0.739 (0.527)	1.239** (0.556)	1.005*** (0.062)	-2.344** (0.924)
SEC ₉₀ *(M SEC/TOT) ₉₀	-0.143 (0.179)	-0.056 (0.503)	1.103* (0.566)	-0.139 (0.453)	-0.659*** (0.217)	-0.853 (1.200)
TER ₉₀ *(M TER/TOT) ₉₀	-0.662*** (0.239)	-2.124*** (0.551)	-1.465*** (0.536)	-3.098*** (0.654)	-0.629** (0.282)	-0.477 (1.033)
host GDP ₉₀	-0.0002*** (0.0001)	0.0002*** (0.0003)	0.0004* (0.0002)	-0.0002 (0.002)	-0.0001 (0.0001)	0.0001 (0.0001)
source GDP ₉₀	-0.018 (0.123)	0.259 (0.256)	0.558*** (0.047)	0.665*** (0.046)	-0.052 (0.138)	0.226 (0.416)
host GDP/Cap ₉₀	0.050 (0.249)	0.504*** (0.073)	0.376*** (0.0067)	-0.004 (0.007)	0.838*** (0.290)	0.939*** (0.133)
source GDP/Cap ₉₀	0.397 (0.349)	-2.854*** (0.545)	0.194 (0.205)	0.738*** (0.172)	-0.761** (0.387)	-2.434*** (0.923)
Financial ₉₀	-0.007 (0.007)	0.049*** (0.011)	-0.043*** (0.011)	0.015 (0.013)	-0.015** (0.007)	0.122*** (0.002)
Economic ₉₀	-0.012 (0.009)	-0.042*** (0.011)	-0.030** (0.012)	0.021 (0.014)	-0.275*** (0.010)	-0.112** (0.025)
Corruption ₉₀	-0.169** (0.077)	-0.044*** (0.010)	0.839*** (0.110)	0.492*** (0.109)	0.286*** (0.087)	-0.009 (0.178)
Political ₉₀	-0.020** (0.009)	0.146** (0.102)	0.014 (0.012)	0.027** (0.011)	-0.020** (0.010)	-0.043** (0.002)
Host Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Source Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes
No of Observations	7249		2741		4401	

Definition: $(M e/TOT)_{90}$ is the ratio of $M e$ to total migrants in 1990 where e = primary, secondary and tertiary. *) significant at the 10%, **) significant at the 5%, ***) significant at the 1%

Table 3: Heckman Estimation - Skilled/Unskilled Classification*Dependent Variable:* FDI (prices adjusted - in logs)

	Whole Sample		North-South Sample		EU15 sample	
	Flow Equation	Selection Equation	Flow Equation	Selection Equation	Flow Equation	Selection Equation
ΔM unskilled	-0.900*** (0.250)	-	2.823*** (0.367)	-	-2.408*** (0.326)	-
ΔM skilled	0.677* (0.370)	-	-6.406*** (0.815)	-	2.682*** (0.433)	-
M unskilled ₉₀	2.442*** (0.586)	3.400*** (0.883)	1.080*** (0.336)	2.439** (0.967)	1.646*** (0.653)	9.079*** (1.583)
ΔM skilled	2.457*** (0.635)	1.286*** (0.915)	2.827** (1.320)	1.000 (0.971)	3.129*** (0.855)	7.442*** (2.085)
ΔM unskilled * $\Delta(M$ unskilled/TOT)	0.588*** (0.139)	-	-0.941*** (0.352)	-	1.231*** (0.178)	-
ΔM skilled * $\Delta(M$ skilled/TOT)	-0.226 (0.260)	-	4.863*** (0.473)	-	-1.588*** (0.289)	-
M unskilled ₉₀ * $(M$ unskilled/TOT) ₉₀	-2.731*** (0.409)	-3.496*** (0.661)	-2.968*** (0.739)	-2.329*** (0.679)	-1.820*** (0.535)	-10.676*** (1.741)
M skilled ₉₀ * $(M$ skilled/TOT) ₉₀	-1.793*** (0.358)	-1.027* (0.516)	-1.540*** (0.786)	-1.270*** (0.547)	-2.340*** (0.491)	-6.035*** (1.334)
host GDP ₉₀	-0.0002*** (0.0001)	0.0003*** (0.0001)	0.001*** (0.002)	0.334*** (0.058)	-0.0001 (0.286)	70.261*** (9.570)
source GDP ₉₀	-0.1002 (0.126)	0.098 (0.286)	0.796*** (0.045)	0.001*** (0.0002)	-0.083 (0.142)	-15.847*** (3.718)
host GDP/Cap ₉₀	-0.106 (0.252)	0.880 (0.064)	0.655*** (0.068)	-0.190 (0.123)	0.847*** (0.286)	0.0003*** (0.001)
source GDP/Cap ₉₀	1.222*** (0.356)	-3.715*** (0.536)	0.134 (0.166)	0.423*** (0.037)	-0.128 (0.395)	0.040 (0.434)
Financial ₉₀	-0.008 (0.007)	-0.051*** (0.011)	-0.011 (0.013)	0.041*** (0.011)	-0.0168** (0.007)	1.235*** (0.102)
Economic ₉₀	0.001 (0.008)	0.040*** (0.010)	-0.058*** (0.012)	-0.036*** (0.011)	-0.002 (0.010)	-0.797 (0.956)
Corruption ₉₀	0.105 (0.106)	0.058*** (0.003)	0.548** (0.256)	0.024*** (0.001)	0.031 (0.113)	0.078*** (0.016)
Political ₉₀	0.004 (0.012)	-0.322*** (0.028)	-0.071*** (0.024)	-0.230*** (0.021)	0.028** (0.012)	-0.102*** (0.018)
Host Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Source Country Dummies	Yes	Yes	Yes	No	Yes	Yes
No of Observations	6357		2616		3714	

Definition: $(M s/TOT)_{90}$ is the ratio of $M s$ to total migrants in 1990 where s = unskilled and skilled *) significant at the 10%, **) significant at the 5%, ***) significant at the 1%

APPENDIX

Table A1: Data Description

$\Delta Y_{i,j,t}$	The flow of FDI between 1990 and 2000 from FDI-source country j to FDI-host country i , deflated by the MUV and expressed in logs
$\Delta prim_mgr_{i,j,t}$	The flow of migrants with primary education from migration-source country i to migration-host country j between 1990 and 200, expressed in logs
$\Delta sec_mgr_{i,j,t}$	the flow of migrants with secondary education from migration-source country i to migration-host country j between 1990 and 2000, expressed in logs
$\Delta ter_mgr_{i,j,t}$	The flow of migrants with tertiary education from migration-source country i to migration-host country j between 1990 and 2000, expressed in logs
$prim_mgr_{i,j,t}$	The stock of migrants with primary education from migration-source country i to migration-host country j between in 1990, expressed in logs
$sec_mgr_{i,j,t}$	The stock of migrants with secondary education from migration-source country i to migration-host country j between in 1990, expressed in logs
$ter_mgr_{i,j,t}$	The stock of migrants with tertiary education from migration-source country i to migration-host country j between in 1990, expressed in logs
$\Delta unskilled_mgr_{i,j,t}$	The flow of unskilled migrants from migration-source country i to migration host country j between 1990 and 2000, expressed in logs. It is equal to the log sum of the primary and secondary educated migrant flows.
$\Delta skilled_mgr_{i,j,t}$	The flow of skilled migrants from migration-source country i to migration host country j between 1990 and 2000, expressed in logs. It is equal to $\Delta ter_mgr_{i,j,t}$
$unskilled_mgr_{i,j,t}$	The stock of unskilled migrants from migration-source country i to migration host country j in 1990, expressed in logs. It is equal to the log sum of the primary and secondary educated migrant stocks.
$skilled_mgr_{i,j,t}$	The stock of skilled migrants from migration-source country i to migration host country j in 1990, expressed in logs. It is equal to the log sum of the primary and secondary educated migrant stocks.

Data Description (continued)

$\Delta exp_{i,j,t}$	The flow of commodity exports from migration-source country i to migration-host country j between 1990 and 2000, deflated by the export price index and expressed in logs
$\Delta imp_{i,j,t}$	The flow of commodity imports from migration-source country i to migration-host country j between 1990 and 2000, deflated by the import price index and expressed in logs
$exp_{i,j,t-1}$	The flow of commodity exports from migration-source country i to migration-host country j in 1990, deflated by the export price index and expressed in logs
$imp_{i,j,t-1}$	The flow of commodity imports from migration-source country i to migration-host country j in 1990, deflated by the import price index and expressed in logs
GDP_{it}	GDP of migration-source country in 1990 (deflated by the Manufacturing Export Unit Value Index)
GDP / Cap_{it}	GDP per Capita of migration-source country in 1990 (deflated by the Manufacturing Export Unit Value Index)
GDP / Cap_{jt}	GDP per Capita of migration-host country in 1990 (deflated by the Manufacturing Export Unit Value Index)
$\left(\frac{Pop_{prim}}{Pop_{total}} \right)_{i,t} - \left(\frac{Pop_{prim}}{Pop_{total}} \right)_{j,t}$	The difference in the proportion of primary level human capital to total human capital between migration-source and host countries in 1990, expressed in logs
$\left(\frac{Pop_{ter}}{Pop_{total}} \right)_{i,t} - \left(\frac{Pop_{ter}}{Pop_{total}} \right)_{j,t}$	The difference in the proportion of tertiary level human capital to total human capital between migration-source and host countries in 1990
$Political_{i,t}$	FDI-host country political risk rating in 1990
$Corruption_{i,t}$	FDI-host country corruption risk rating in 1990
$Financial_{i,t}$	FDI-host country financial risk rating in 1990
$Economic_{i,t}$	FDI-host country economic risk rating in 1990
$Ethnic_i$	FDI-host country ethnic fractionalization index (constant)
$(Debt / Equity)_{i,t}$	FDI-host country mean debt equity ratio in 1990
$distance_{ij}$	Great circle distance between FDI-host and source, expressed in logs
$colonial_{ij}$	Dummy for colonial relationship between FDI-host and source
$longitude_{ij}$	The Longitudinal distance between FDI partners, expressed in logs
$language_{ij}$	Dummy for common language between FDI partners
tax_{it}	Average tax in exporting country i in 1990, expressed in logs

Table A3: OLS Estimation (Migrants classified as Primary/Secondary/Tertiary Education)

Dependent Variable: FDI (prices adjusted - in logs)		
	Full Sample ¹⁾	Sub-Sample ²⁾
$\Delta prim_mgr_{i,j,t}$ (log)	0.161*** (0.047)	-0.077** (0.032)
$\Delta sec_mgr_{i,j,t}$ (log)	-0.312*** (0.074)	-0.200*** (0.051)
$\Delta ter_mgr_{i,j,t}$ (log)	0.355*** (0.056)	0.462*** (0.050)
$prim_mgr_{i,j,t}$ (log)	-0.601*** (0.037)	0.265*** (0.026)
$sec_mgr_{i,j,t}$ (log)	-0.014*** (0.064)	-0.245*** (0.040)
$ter_mgr_{i,j,t}$ (log)	0.0356 (0.054)	0.231*** (0.036)
Ethnic_frac90 *log(primary_90)	-2.78e-08*** (1.06e-08)	-4.53e-8*** (1.22e-08)
Ethnic_frac90 *log(secondary_90)	-7.10e-08*** (2.95e-08)	-8.51e-08*** (3.23e-08)
Ethnic_frac90 *log(tertiary_90)	-5.25e-08*** (1.37e-08)	-6.53e-08*** (1.68e-08)
Political_Index90 *log(primary_90)	-2.66e-07*** (5.64e-08)	-3.15e-07*** (7.17e-08)
Political_Index90 *log(secondary_90)	-2.86e-07*** (5.64e-07)	-2.53e-07** (1.02e-07)
Political_Index90 *log(tertiary_90)	-4.79e-08** (1.95e-08)	-1.51e-07*** (3.29e-08)
Corruption_index90 *log(primary_90)	-7.21e-07*** (3.42e-07)	-3.15e-06*** (5.51e-07)
Corruption_index90 *log(secondary_90)	-5.43e-06*** (1.45e-06)	-5.43e-06*** (1.84e-06)
Corruption_index90 *log(tertiary_90)	-5.08e-06*** (1.03e-06)	-5.76e-06*** (1.27e-06)
Host Dummies	Yes	Yes
Source Dummies	Yes	Yes
Observations	3552	2636
R ²	0.79	0.70

N.B. White standard errors are reported in parentheses); and h-s primary/tertiary educated pop. differences were dropped from the regression due to colinearity. *) significant at 10%, **) significant at 5%, ***) significant at 1%

1) All sample included, 2) Country pairs with no positive FDI flows are excluded from the sample.

Table A4: OLS Estimation (Migrants classified as being skilled/unskilled)

Dependent Variable: FDI (prices adjusted - in logs)		
	Full Sample ¹⁾	Sub-Sample ²⁾
$\Delta unskilled_mgr_{i,j,t}$ (log)	-0.068 (0.053)	-0.068 (0.052)
$\Delta skilled_mgr_{i,j,t}$ (log)	0.346*** (0.050)	0.346*** (0.049)
$unskilled_mgr_{i,j,t}$ (log)	0.231** (0.103)	0.231** (0.103)
$skilled_mgr_{i,j,t}$ (log)	-0.795*** (0.118)	-0.795*** (0.118)
Ethnic Fractionalization90 *log(Unskilled 90)	-1.37e-08*** (1.53e-08)	-3.94e-09 (1.17e-08)
Ethnic Fractionalization90 *log(Unskilled 90)	-1.34e-07*** (3.98e-08)	-1.01e-07*** (1.48e-08)
Political Risk 90 *log(Unskilled 90)	-4.30e-07*** (7.88e-08)	-4.48e-07*** (6.24e-08)
Political Risk 90 *log(Unskilled 90)	-4.21e-07*** (9.99e-08)	-3.47e-08* (1.81e-08)
Corruption Risk 90 *log(Unskilled 90)	-2.48e-06*** (5.51e-07)	-1.01e-06*** (3.27e-07)
Corruption Risk 90 *log(Skilled 90)	-8.00e-06*** (2.40e-06)	-8.31e-06*** (1.13e-06)
Host Country Dummies	Yes	Yes
Source Country Dummies	Yes	Yes
Observations	3552	2636
R ²	0.87	0.76

N.B. White standard errors are reported in parentheses); and h-s primary/tertiary educated pop. differences were dropped from the regression due to colinearity. *) significant at 10%, **) significant at 5%, ***) significant at 1%

1) All sample included, 2) Country pairs with no positive FDI flows are excluded from the sample.

Table A5: Tobit Estimation (Migrants classified as having Primary/Secondary/Tertiary Education)

	Dependent Variable: FDI (prices adjusted - in logs)	
	Censor at Zero	Censor @ Lowest Positive FDI Value ¹⁾
$\Delta prim_mgr_{i,j,t}$ (log)	0.161*** (0.043)	0.157*** (0.043)
$\Delta sec_mgr_{i,j,t}$ (log)	-0.312*** (0.069)	-0.306*** (0.070)
$\Delta ter_mgr_{i,j,t}$ (log)	0.355*** (0.055)	0.351*** (0.009)
$prim_mgr_{i,j,t}$ (log)	-0.014 (0.038)	-0.018 (0.039)
$sec_mgr_{i,j,t}$ (log)	-0.076*** (0.059)	-0.070*** (0.059)
$ter_mgr_{i,j,t}$ (log)	0.0356** (0.047)	0.355*** (0.047)
Ethnic_frac90 *log(primary_90)	-2.78e-08** (1.44e-08)	-3.27e-08*** (1.55e-08)
Ethnic_frac90 *log(secondary_90)	-7.10e-08** (3.71e-08)	-1.85e-07*** (3.60e-08)
Ethnic_frac90 *log(tertiary_90)	-5.25e-08*** (2.05e-08)	-9.74e-08*** (1.88e-08)
Political_Index90 *log(primary_90)	-4.79e-08* (2.90e-08)	-5.09e-07*** (7.02e-08)
Political_Index90 *log(secondary_90)	-2.86e-07*** (9.65e-08)	-4.25e-07*** (9.64e-08)
Political_Index90 *log(tertiary_90)	-5.25e-08*** (2.05e-08)	-5.09e-07*** (7.02e-08)
Corruption_index90 *log(primary_90)	-7.21e-07 (5.23e-07)	-2.15e-06** (1.01e-06)
Corruption_index90 *log(secondary_90)	-5.43e-06*** (1.75e-06)	-7.50e-06*** (1.80e-06)
Corruption_index90 *log(tertiary_90)	-5.08e-06*** (1.33e-06)	-9.46e-06** (1.25e-06)
Host Dummies	Yes	Yes
Source Dummies	Yes	Yes
Observations	4454	3819

Censor equal to the log value of the lowest positive FDI flow (= 0.137), 2) h-s skilled/unskilled population differences dropped due to collinearity *) significant at 10%, **) significant at 5%, ***) significant at 1%

Table A6: Tobit Estimation (Migrants classified as being skilled/unskilled)

Dependent Variable: FDI (prices adjusted - in logs)		
	Censor at Zero	Censor @ Lowest Positive FDI Value ¹⁾
$\Delta unskilled_mgr_{i,j,t}$ (log)	-0.111** (0.048)	-0.004 (0.045)
$\Delta skilled_mgr_{i,j,t}$ (log)	0.483*** (0.051)	0.252*** (0.047)
$unskilled_mgr_{i,j,t}$ (log)	-0.120 (0.114)	0.395*** (0.096)
$skilled_mgr_{i,j,t}$ (log)	0.462*** (0.045)	0.146*** (0.042)
Ethnic Fractionalization90 *log(Unskilled 90)	-3.28e-08** (1.42e-08)	0.003 (0.007)
Ethnic Fractionalization90 *log(Unskilled 90)	-6.61e-08*** (2.03e-08)	-0.001 (0.008)
Political Risk 90 *log(Unskilled 90)	-2.18e-07*** (7.46e-08)	-0.032*** (0.006)
Political Risk 90 *log(Unskilled 90)	-2.24e-07** (9.68e-08)	0.226 (0.049)
Corruption Risk 90 *log(Unskilled 90)	-8.41e-07 (5.18e-07)	0.006 (0.344)
Corruption Risk 90 *log(Skilled 90)	-4.20e-06*** (1.33e-06)	-0.002* (0.001)
Host Country Dummies	Yes	Yes
Source Country Dummies	Yes	Yes
Observations	4454	3819

1) Censor is equal to the log of value of the lowest positive FDI flow (= 0.1373322), 2) h-s skilled/unskilled population differences were dropped due to collinearity *) significant at 10%, **) significant at 5%, ***) significant at 1%.