TRANSPARENCY, SPECIALIZATION AND FDI

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Abstract

We develop a simple information-based model of FDI flows. On the one hand, the relative abundance of "intangible" capital in specialized industries in the source countries, which presumably generates expertise in screening investment projects in the host countries, enhances FDI flows. On the other hand, host-country relative corporate-transparency diminishes the value of this expertise, thereby reducing the flow of FDI.
The model also demonstrates that the gains for the host country from foreign direct investment [over foreign portfolio investment (FPI)] are reflected in a more efficient size of the stock of domestic capital and its allocation across firms. These gains are shown to depend crucially (and positively) on the degree of competition among FDI investors.

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I. INTRODUCTION

Foreign direct investment (FDI) has been growing faster than world GDP, and is becoming a major component of foreign investment.[2] We usually observe both one-way flows of FDI, from developed to developing economies, and two-way flows among developed economies. The purpose of this paper is to explore some unique features of foreign direct investment (FDI) associated with host-country transparency relative to the source-country and source-country specialization relative to the host-country, that make this form of foreign investment stand out among the various forms of capital flows, such as foreign portfolio investment (FPI).

We develop a simple information-based model, in which the industry specialization in the source country provides a comparative advantage to the potential foreign direct investors in eliciting good investment opportunities in the host country, relative to domestic investors and foreign portfolio investors in the host country. The advantage stems, for instance, from the ability of FDI investors to apply better industry-specific micro-management standards (an "intangible capital"). The advantage of FDI investors in their cream-skimming skills is less pronounced when corporate transparency and capital market institutions are of high quality; in which case FDI inflows are less abundant.[3]

Our model also suggests that the gains from FDI to the host country are reflected in a more efficient size of the stock of domestic capital and its allocation across firms. Domestic firms

[2] See the Australian Productivity Commission (2002) for a recent case study.

[3] See also Wei (2000), Razin and Sadka (2003), and Albuquerque (2003).

that are controlled by FDI investors are typically the “cream" (high-productivity firms). The magnitude of these non-traditional gains from trade that arise in our model depends crucially (and inversely) on the degree of competition among potential FDI investors over the domestic firms. These gains can shrink to zero if there is no such competition altogether. Also, FDI inflows could make the size of the aggregate stock of domestic capital larger than otherwise (under plausible assumptions). This result is consistent with recent empirical evidence. For instance, Borenzstein, De Gregorio and Lee (1998) and Bosworth and Collins (1999) provide such evidence for a sample of developing countries during the period 1978-1995. More recently, in a sample of developing countries, Razin (forthcoming), finds that the effect of FDI inflows on domestic investment is significantly larger than either FPI or loan inflows. He also provides evidence that FDI inflows promote efficiency: The effect of FDI on GDP growth is higher than the effect of other inflows.

Finally, we provide an empirical illustration of some implications of our model. It demonstrates how transparency and industry specialization affect bilateral FDI flows from source to host countries.

The organization of the paper is as follows. Section 2 develops a simple information-based model, which emphasizes the role of host-country relative transparency and source-country relative industry specialization in explaining the determinants of FDI and FPI flows. Section 3 compares the benefits for the host-country from receiving FDI inflows instead of FPI inflows. Section 4 provides an empirical illustration. Section 5 concludes.

II. FDI AND SKIMMING HIGH-PRODUCTIVITY FIRMS

Assume a large number (N) of *ex-ante* identical domestic firms in an industry. Each firm employs capital input (K), in the first period, in order to produce a single composite good in the second period. As usual, we assume that capital depreciates at the rate δ *(< 1)*. Output in the second period is equal to $F(K)(1+\varepsilon)$, where $F(\cdot)$ is a production function, which exhibits diminishing marginal productivity of capital (ε bounded below by -1) so that output is always non-negative. For notational ease we also assume that ε is bounded from above by 1. Suppose that ε is purely idiosyncratic, so that there is no aggregate uncertainty in the model. Consumers-investors are well diversified and will thus behave in a risk-neutral way. We denote by $G(\cdot)$ the cumulative distribution function of ε, and by $g(\cdot) = G'(.)$ the corresponding density function.

At the starting point of the decision process of agents in the first period, the productivity factor (ε) of each firm is not revealed with full accuracy. Rather, each firm receives a signal ε' about its productivity, which is common knowledge.[4] The true ε of the firm is within an interval of $\pm\beta$ around ε'. Formally, given ε' the true value of ε is distributed according to the distribution of the productivity factor, conditional on its being in the interval $(\varepsilon' - \beta, \varepsilon' + \beta)$, the conditional distribution is:

$$\varphi(\varepsilon / \varepsilon') = \frac{G(\varepsilon) - G(\varepsilon' - \beta)}{G(\varepsilon' + \beta) - G(\varepsilon' - \beta)}. \qquad (1)$$

[4] One can think of this signal as sort of encapsulated information, provided by up-to-date financial statements.

The conditional distribution $\varphi(\varepsilon|\varepsilon')$ denotes the cumulative distribution function of ε, conditional on the signal ε'. We assume that the signal ε' is distributed according to the distribution function *G(·)*.

The firm chooses the level of the capital stock (and investment), denoted by $K(\varepsilon')$, after the signal ε' is received, so as to maximize its conditional (on ε') expected market value. This maximized value is:

$$V(\varepsilon') = \int_{\varepsilon'-\beta}^{\varepsilon'+\beta} \left\{ \frac{F[K(\varepsilon')](1+\varepsilon) + (1-\delta)K(\varepsilon')}{1+r} - [K(\varepsilon') - (1-\delta)K_0] \right\} d\varphi(\varepsilon/\varepsilon') . \qquad (2)$$

Symbol δ is the rate of depreciation,[5] $(1-\delta)K_0$ is the initial stock of capital, and *r* is the world rate of interest return. The optimal $K(\varepsilon')$ is implicitly defined by the first-order condition:

$$\int_{\varepsilon'-\beta}^{\varepsilon'+\beta} \left[\frac{F'(K)(1+\varepsilon) + (1+\delta)}{1+r} - 1 \right] d\varphi(\varepsilon/\varepsilon') = 0 .$$

This expression can be simplified to:

$$F'\left[K(\varepsilon')\right][1 + E(\varepsilon/\varepsilon')] = r + \delta , \qquad (3)$$

where $E(\varepsilon/\varepsilon')$ is the conditional expected value of the productivity factor, given that this factor lies within the interval $(\varepsilon'-\beta, \varepsilon'+\beta)$, that is:

$$E(\varepsilon/\varepsilon') = \int_{\varepsilon'-\beta}^{\varepsilon'+\beta} \varepsilon d\varphi(\varepsilon/\varepsilon') . \qquad (4)$$

[5] Because of the assumption that there is a single composite good, which serves both for investment and for consumption, we implicitly allow the optimal *K* to be above $(1-\delta)K_0$.

Suppose that there is a screening (or search) technology, which, at some fixed cost per firm, can elicit the true value of the productivity factor of the firm, ε. A potential buyer can apply the technology after she acquires the firms and gains control of the domestic firm. We assume that foreign direct investors have a cutting-edge advantage over domestic investors in extracting information about the true value of the firm. If foreign direct investors acquire a domestic firm, they can apply their superior micro-management skills in order to elicit the true value of ε. This advantage stems from some sort of "intangible capital" (specialized knowledge) in this particular industry. The basic idea is that firms get involved in foreign operations in order to exploit this unique advantage that they have accumulated over time in their source country. The advantage is modeled here by specifying a lower screening cost for foreign direct investors than for domestic investors. Formally, the cost per firm for a foreign direct investor is C_F, which is assumed to be lower than C_D, the corresponding cost for a domestic direct investor (i.e., a domestic investor who gains acquires control of the domestic firm).

If the true value of ε were to be known, then the firm would choose an optimal capital stock, denoted by $K^*(\varepsilon)$, according to the marginal productivity condition:

$$F'\left[K^*(\varepsilon)\right](1+\varepsilon) = r + \delta \tag{5}$$

Given the signal ε', a potential foreign direct investor knows that the true value of ε must lie between $\varepsilon' - \beta$ and $\varepsilon' + \beta$, and that she will be able to elicit the true value of ε if she purchases the firm, at a cost C_F. Therefore, her gross bid price, given the signal ε', is described by:

$$P(\varepsilon') = \int_{\varepsilon'-\beta}^{\varepsilon'+\beta} \left\{ \frac{F\left[K^*(\varepsilon)\right](1+\varepsilon) + (1-\delta)K^*(\varepsilon)}{1+r} - \left[K^*(\varepsilon) - (1-\delta)K_0\right] \right\} d\varphi(\varepsilon/\varepsilon') \,. \quad (6)$$

Her net bid price is $P(\varepsilon') - C_F$. Because C_F is smaller than C_D, the bid price of the foreign direct investor is higher than that of the domestic investor.

Given the signal ε', the value of information to the FDI investor (that is, the value of eliciting the true productivity of the firm) is $P(\varepsilon') - V(\varepsilon')$. The associated cost is C_F. In order to incur this cost, the value of information must exceed this cost. Naturally, one would expect the value of information to rise with ε'. This is because, given the signal ε', the deviations of the productivity–independent $K(\varepsilon')$ over the interval $(\varepsilon' - \beta, \varepsilon' + \beta)$, from the productivity–dependent $K^*(\varepsilon)$ over this interval and, consequently, the deviations of $F(K^*(\varepsilon'))$ from over this interval, are magnified by the productivity factor $1+\varepsilon$. We therefore assume indeed that $P(\varepsilon') - V(\varepsilon')$ rises with ε'.[6] Hence, there exists some cutoff level of the signal, denoted by ε'_0, such that for all $\varepsilon' < \varepsilon'_0$, the bid-ask price difference $P(\varepsilon') - C_F - V(\varepsilon')$ is negative, and, similarly, for all $\varepsilon' > \varepsilon'_0$, the bid-ask price difference is positive. Thus, all the firms that receive a low-productivity signal will be retained by the original (domestic) owners, and all the firms that receive a high-productivity signal will be acquired by foreign direct investors, who manage to outbid their domestic

[6] Indeed, Ariel Burstein (2003) provided us with an illuminating numerical example in which the bid–ask price difference rises with ε', as expected.

counterparts. The cutoff level of the signal depends on the screening cost C and is defined by:

$$P[\varepsilon_0'(C)] - C = V[\varepsilon_0'(C)] \tag{7}$$

With FDI investors who can do the screening at a cost C_F per firm, the cutoff level of the signal is a function of $\varepsilon_{0F}' \equiv \varepsilon_0'(C_F)$.

The assumption that $P(\varepsilon') - V(\varepsilon')$ rises with ε' implies also that as the screening cost *(C_F)* of the FDI investors falls, the cutoff productivity level (that is, ε_{0F}') declines with C_F, as well. This means that with a fall in C_F, more firms will be acquired by FDI investors. Therefore, a lower screening cost of FDI investors gives rise to a larger volume of FDI inflows.[7] By the same token, as the signal becomes more accurate (that is, as β becomes smaller), the benefit of the screening technology, which is $P(\varepsilon') - V(\varepsilon')$, declines. We interpret a more accurate signal as an improvement in corporate transparency. The advantage of FDI investors in their cream-skimming skills is less pronounced when host-country corporate transparency improves,[8] and FDI inflows are expected to be less abundant.

After the signals are revealed, then a firm with a signal ε', below ε_{0F}', actually adjusts its capital stock to the signal-dependent, productivity-independent level $K(\varepsilon')$. But a firm,

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[7] We refer to the sum of the acquisition price of the firm and the investment in its capacity (that is financed by the FDI owner) as FDI inflows.

[8] Indeed, these results also hold in Burstein's (2003) example, albeit with a different stochastic specification.

which receives a signal ε' above ε'_{0F}, expects to adjust its capital stock to a productivity-dependent level $K^*(\varepsilon)$ with a cumulative distribution function $\varphi(\varepsilon/\varepsilon')$. The expected value of its capital stock, denoted by $E[K^*(\varepsilon)/\varepsilon']$ is given by:

$$E[K^*(\varepsilon)/\varepsilon'] = \int_{\varepsilon'-\beta}^{\varepsilon'+\beta} K^*(\varepsilon)d\varphi(\varepsilon/\varepsilon') \ . \tag{8}$$

Thus, the total expected value of the stock of capital (before signals are revealed) is:

$$K^F = \int_{-1}^{\varepsilon'_{0F}} K(\varepsilon')dG(\varepsilon') + \int_{\varepsilon'_{0F}}^{1} E[K^*(\varepsilon)/\varepsilon']dG(\varepsilon') \tag{9}$$

This is our measure of the size of domestic capital.

III. FPI INFLOWS VERSUS FDI INFLOWS

To understand the unique role of FDI, suppose now that instead of FDI inflows there are only FPI inflows. That is, assume that the world rate of interest (rate of return) continues to prevail in the home country. Management under FDI ownership, however, may be plagued by the notorious "free-rider" problem. As noted succinctly by Oliver Hart (2000), "If the shareholder does something to improve the quality of management, then the benefits will be enjoyed by all shareholders. Unless the shareholder is altruistic, she will ignore this beneficial impact on other shareholders and so will under-invest in the activity of monitoring or improving management." To capture this argument in our case, we simply assume that FPI buyers will not be willing to incur the cost of eliciting the true productivity of the firm whose equity they purchase.[9]

[9] In this paper we do not distinguish between foreign and domestic portfolio investors. For an analysis of information asymmetry between these two types of investors, which leads to the home-bias phenomenon in portfolio investment, see Razin, Sadka, and Yuen (1998).

In this case, direct domestic investors acquire and gain control of the firms with high-productivity signals. Domestic and FPI investors will be forced to acquire all the other firms with low-productivity signals. The cutoff level of the signal in this case is $\varepsilon'_{0D} \equiv \varepsilon'_0(C_D)$. Because $C_D > C_F$, it follows that $\varepsilon'_{0F} < \varepsilon'_{0D}$ [recall that $P(\varepsilon') - V(\varepsilon')$ is increasing in ε', by assumption, and see equation (7)]. Thus, the difference in investment in capacity between the two regimes lies only in the range of signals between ε'_{0F} and ε'_{0D}. The capital stock of a firm with a signal below ε'_{0F} is the same in the two regimes. The expected capital stock of a firm with a signal above ε'_{0D} will also be the same in the two regimes. But a firm, which receives a signal ε' in-between these two cutoff levels, will invest a signal-dependent $K(\varepsilon')$ in the foreign portfolio-investment regime compared to a productivity-dependent schedule, $K^*(\varepsilon)$, with a cumulative distribution $\varphi(\varepsilon/\varepsilon')$, in the FDI regime. Naturally, the latter is more efficient, in the sense that it yields a higher expected return.[10]

A. Gains to the Host Country

The economic gains from FDI, relative to FPI inflows, consist of the efficiency of investment and the lower screening cost of FDI investors. Note that because the same world interest rate, *r,* prevails in the home country in the two regimes, it follows that the gains from FDI in our case do not include the traditional gains from opening up the domestic capital market to

[10] We have assumed that the only advantage of FDI investors over direct domestic investors lies in the search/screening cost. Naturally, if we were to assume that FDI investors can also obtain better information about the true ε (we have assumed that both can accurately elicit ε), then the difference between the two regimes expands to the entire range of [-1, 1] of signals.

foreign capital inflows. (Evidently, these traditional gains are present also in the portfolio regime.) In the FDI-flow regime the firms with signals above the cutoff signal ε'_{0F} are screened; whereas in the FPI-flow regime a smaller set of firms, namely only the firms with signals above ε'_{0D} are screened (recall that $\varepsilon'_{0D} > \varepsilon'_{0F}$). Therefore, the gains to the host country stemming from the efficiency of investment is:

$$GAIN_E = \int_{\varepsilon'_{0F}}^{\varepsilon'_{0D}} \left[P(\varepsilon') - C_F - V(\varepsilon')\right] dG(\varepsilon') . \qquad (10)$$

In addition, for the firms that are screened in the two regimes (that is, the firms with signals above ε'_{0D}), the screening cost is lower under the FDI regime than under the portfolio flow regime. This gives rise to further gains from FDI, which are:

$$GAIN_C = (C_D - C_F)[1 - G(\varepsilon'_{0D})] . \qquad (11)$$

Observe that the entire gain, attributable to the lower screening cost of FDI investors is captured by the host country because of the assumed perfect competition among the FDI investors over the domestic firms. This is because competition among FDI investors must drive up the price they pay for a domestic firm to their net bid-price [that is, $P(\varepsilon') - C_F$], which exceeds the ask-price of the domestic owners [that is, $V(\varepsilon')$]; except for the cutoff firm (for which the bid price and ask price are equal to each other). Thus, the total gain to the host country from FDI is

$$\begin{aligned} GAIN_E + GAIN_C = & \int_{\varepsilon'_{OF}}^{\varepsilon'_{0D}} [P(\varepsilon') - C_F - V(\varepsilon')]\, dG(\varepsilon') \\ & + (C_D - C_F)[1 - G(\varepsilon'_{OD})] \end{aligned} \qquad (12)$$

Note, however, that in the extreme opposite case of a single FDI investor, a monopoly, she will never offer a price for a domestic firm above the price that will be offered by domestic investors, which is $P(\varepsilon') - C_D$, as long as this price is above, or equal, to the ask price of the domestic owner, which is $V(\varepsilon')$. Thus, the price at which the foreign direct investor buys a domestic firm with a signal ε' is $Max[P(\varepsilon') - C_D, V(\varepsilon')]$. Because $P(\varepsilon'_{0D}) - C_D = V(\varepsilon'_{0D})$, it follows that $P(\varepsilon') - C_D < V(\varepsilon')$ in the interval $(\varepsilon'_{0F}, \varepsilon'_{0D})$. This means that in this interval the domestic firms are purchased by the foreign direct investor at the ask price $V(\varepsilon')$. Hence, the efficiency gain of investment, $GAIN_E$, vanishes. Similarly, firms in the interval $[\varepsilon'_{OD}, 1]$ must be purchased at the price $P(\varepsilon') - C_D$ [rather than $P(\varepsilon') - C_F$ in the competitive case]. Hence, $GAIN_C$ vanishes as well. Thus, as expected, the entire gain from FDI accrues to the single FDI investor. To retain some of the gains of FDI a possible remedy for the host country is to impose some sort of a floor to the sale prices of domestic firms. Another partial remedy for the host country is to impose a (source-based) capital gains tax on FDI investors. In the intermediate case of imperfect competition among a few FDI investors but not a strict monopoly, the gains from FDI are split between the host country and the FDI investors[11].

[11] Evidently this is an extreme case. If there is an additional domestic input, say labor, the host country still gains, even in the case of a single FDI investor, through infra-marginal gains to domestic labor. However, these gains are sharply smaller than what they could have been in the case of competitive FDI investors.

B. The Size of Investment in Capacity in the Host Country

We have already established that the allocation of the capital stock (its aggregate level and distribution over firms) is more efficient in the FDI regime than in the portfolio regime. Is the capital stock also larger in the FDI regime than in the FPI regime? Recall that the fundamental difference between the two regimes is the screening cost *C*. Therefore, rephrasing the question one can ask whether a decline in the search cost increases the aggregate stock of capital. In order to answer the question, we write the aggregate stock of capital as a function of *C*, as follows [see equation (9)]:

$$\bar{K}(C) = \int_{-1}^{\varepsilon_0'(C)} K(\varepsilon')dG(\varepsilon') + \int_{\varepsilon_o'(C)}^{1} E[K^*(\varepsilon)/\varepsilon']dG(\varepsilon'), \qquad (13)$$

where, $\varepsilon_0'(C)$, $K(\varepsilon')$ and $E[K^*(\varepsilon)/\varepsilon']$ are defined by equations (7), (3) and (8), respectively.

Now, differentiate $\bar{K}(C)$, with respect to *C,* to get:

$$\frac{d\,\bar{K}(C)}{dC} = \{K[\varepsilon_0'(C)] - E[K^*(\varepsilon)/\varepsilon_0'(C)]\}g[\varepsilon_0'(C)]\frac{d\varepsilon_0'(C)}{dC} \qquad (14)$$

From equations (3) and (5) we can conclude that:

$$K[\varepsilon_0'(C)] = H\{E[\varepsilon/\varepsilon_0'(C)]\}, \qquad (15)$$

and

$$K^*(\varepsilon) = H(\varepsilon).$$

The function H(·) is defined by:

$$H(x) = (F')^{-1}\left(\frac{r+\delta}{1-x}\right).$$

The function $(F')^{-1}$ denotes the inverse of F'. Thus, we can rewrite equation (14) as:

$$\frac{d\bar{K}}{dC} = (H\{E[\varepsilon/\varepsilon_0'(C)]\} - E[H(\varepsilon)/\varepsilon_0'(C)])\, g[\varepsilon_0'(C)]\frac{d\varepsilon_0'(C)}{dC} \qquad (16)$$

If the function $H(\cdot)$ is convex, then it follows from Jensen's inequality that $d\bar{K}/dC$ is negative (because $d\varepsilon_0'/dC > 0$). Indeed, one may plausibly assume that *H* is convex (for instance, this is the case with a Cobb-Douglas production function), in which case $d\bar{K}/dC < 0$. That is: The size of investment in capacity is larger under the regime of FDI inflows than under the regime of FPI inflows.

IV. EMPIRICAL ILLUSTRATION

In this section we illustrate empirical implications of our theory. This is done in the context of FDI flows between (host-source) pairs of countries. Our theory is interpreted to suggest that foreign direct investment depends on the accuracy of the productivity signals in the host country, relative to the source country. The more accurate are the signals, the less pronounced is the advantage of FDI investors, and the less abundant are FDI flows to the host country. These signals are proxied by the level of transparency in the corporate sector in each country (see section 2). The latter is in turn represented by the median debt-equity ratio for the sample of firms covered by Worldscope for that country. The reason why we take transparency as positively correlated with the debt-equity ratio is because firms that rely more heavily on debt have to present to their creditors and the public more reliable and detailed information about their business.

As explained in section 2, a key determinant of FDI flows in our theory is the skimming - cost advantage of FDI investors over other foreign and domestic investors, which stems from "intangible capital" accumulated through industry (or niche) specialization in the source countries. The basic idea is that countries with a high degree of specialization are assumed to have high levels of intangible capital (specialized knowledge) by virtue of the fact that the productive energies of the source countries' firms have been focused on a smaller number of activities/industries (niches), thereby better exploiting the "learning-by-doing" effects. Hence a higher degree of specialization in the source country, relative to the host country, increases the cost advantage of FDI investors and is expected to generate more FDI flows to the host economy. In the illustration, we use a measure of export-industry concentration as a proxy for intangible capital.

The data employed in the illustration are drawn from a sample of 45 countries, both developing and developed countries, over the period from 1961 to 1998. The FDI data are based on the OECD reports of FDI exports from 12 OECD source countries to 45 OECD and non-OECD countries. (More details are available in Mody, Razin and Sadka (2003).)

Table 1 provides an illustration of some implications of our theory. The econometric approach is based on Razin, Rubinstein and Sadka (2003) where attention is paid to the problems that arise when FDI flows are "lumpy": FDI flows are actually observed only when they exceed a certain (unobserved) threshold. Therefore, the Heckman selection-bias method is adopted to jointly estimate the likelihood of surpassing this threshold (the "participation" equation) and the magnitude of the FDI flow, provided that the threshold was indeed

surpassed (the “gravity” equation). The coefficient of the industry concentration measure is significantly negative in the host country, but not significantly different from zero in the source country, In the participation equation. This is consistent with our hypothesis that a relatively higher industry concentration in the source relative to the host country promotes FDI. (This measure is nevertheless insignificant in the gravity equation for both countries.) The coefficient of the transparency (debt-equity) variable is significantly negative for both countries in the gravity equations, but the magnitude is higher in the host country. This is again consistent with our conclusion that a high level of transparency in the host relative to the source country promotes FDI flows. (This variable is insignificant for both countries in the participation equation.) Obviously, the consistency of the data with implications of the theory does not imply that there are no other stories which could explain the correlations.found in the data.

Table 1: Relative Transparency and Industry Concentration[1, 2]

	Panel A		Panel B
	Participation		Gravity Equation
Host Industry Concentration	- 1,98 (0.49)		-0.89 (0.85)
Source Industry Concentration	-0.228 (0.76)		-1.31 (1.09)
Host Debt-Equity Ratio	-0.00098 (0.0007)		-0.0067 (0.001)
Source Debt-Equity Ratio	0.0006 (0.0005)		-0.003 (0.0009)
Host GDP Per Capita[3]	0.06 (0.07)		0.74 (0.10)
Source GDP Per Capita[3]	2.04 (0.17)		0.58 (0.41)
Host Average Years of Schooling	0.0078 (0.03)		0.16 (0.03)
Source Average Years of Schooling	0.064 (0.039)		0.32 (0.04)
Host Population[3]	0.0028 (0.05)		0.64 (0.06)
Source Population[3]	0.774 (0.07)		0.56 (0.11)
Same Language	-0.02 (0.11)		1.36 (0.15)
Distance	-0.007 (0.0007)		-0.008 (0.0009)
Rho[4]	-0.513 (0.16)		
Sigma[4]	1.5 (0.09)		
Lambda[4]	-0.75 (0.28)		
Number of Observations	5738		
Log Likelihood[4]	-3725		

Notes:
[1] Specifications include year fixed effects
[2] Standard errors in parentheses
[3] In logs
[4] This variable pertains to the Heckman selection-bias method.

IV. CONCLUDING REMARKS

We develop a model in which foreign direct investors are better equipped than their direct domestic and portfolio counterparts, due to rich experience in the skimming of "good" firms. Employing this advantage, foreign direct investors are able to outbid direct domestic and portfolio investors for the good firms. We emphasize this feature of FDI, which is better hands-on management standards, that entails a cutting-edge advantage over portfolio investors in reacting in real time to a changing business environment. This feature is naturally more pronounced in high-productivity firms, resulting in "cream-skimming" of domestic firms by FDI investors. Note that this mechanism applies both to mergers and acquisitions and to green-field investments. The productivity signal, though, is likely to be coarser in the latter, conveying less information about the true productivity. This makes the FDI investors' advantage over their domestic direct investors counterparts even more pronounced in the case of green-field investment.

We view FDI as distinct from FPI investment with respect to the quality of monitoring the management. Foreign direct investors, by definition, acquire some significant control over the firm they invest in, whereas portfolio investors, plagued by free-rider problems, have no control. Consequently, they can apply hands-on management (or micro-management) standards that would enable them to react in real time to changing economic environments. This feature may stem from "intangible capital" accumulated through a specialization by the

foreign direct investors in a certain niche.[12] Indeed, there is some micro evidence in support of this hypothesis. For example, Djankov and Hoekman (2000) report that foreign direct investors pick the high-productivity firms in transition economies. Similarly, Griffith and Simpson (2003) find that foreign-owned manufacturing establishments in Britain, over the period 1980 to 1996, have significantly higher labor productivity than those that remain under domestic ownership. In addition, labor productivity improves faster over time and faster with age in foreign-owned establishments.

[12] See Gopinath (2004) for a different application of a search model for a study of FDI flows into developing economies.

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