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FDI Flows to Asia: Did the Dragon Crowd Out the Tigers?

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Abstract

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China's dramatic success in attracting foreign direct investment (FDI) has raised concerns that it has success diverted FDI from other countries in Asia. We develop a new methodology to estimate crowding out, and we use it to investigate the impact of China's emergence on FDI flows to Asia using data from 14 Asian economies from 1984 to 2002. The results suggest that China did not have much impact on FDI to other countries. In particular, low-income economies, which compete with China for low-wage investment, and countries with low levels of education or scientific development do not seem to have been especially affected.

JEL Classification Numbers: F02; F21; F30; F36

Keywords: FDI; China; diversion; crowding out

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"There is a tendency in Malaysia to say 'well, we are not attracting enough
foreign direct investment because it is all going to China'. That is true..."
Mr. Mahatir Mohamad, former Prime Minister of Malaysia (2003)

"We seem to be suffering somewhat from the diversion of investment away
from ASEAN [towards China]."
Mr. Supachai Panitchpakdi, former Deputy Prime Minister of Thailand (2000)

"The current trend of [European] investment flowing into China diverts flows
from ASEAN countries."
Mr. Pascal Lamy, former E.U. Trade Commissioner (2003)

I. INTRODUCTION

Many developing countries have been eager to attract foreign direct investment (FDI). This is
hardly surprising given the potential benefits of FDI. FDI flows are not as volatile as other
types of flows; they can boost technology transfers and growth (Borensztein, De Gregorio,
and Lee, 1998); and they can raise domestic investment (Bosworth and Collins, 1999).

China quickly became a major magnet for FDI once it reformed its capital account, opening
its door to foreign investors. China's share of FDI in developing Asia rose from about 10
percent in the early 1980s to over 50 percent by the early 1990s (see Figures 1 and 2).
Indeed, China was the world's top destination for FDI in 2002.

China's success in attracting FDI has raised concerns that its success has been at the expense
of other countries in the region. The above quotes are but a few examples of what has
become common wisdom. An increase in FDI flows to China does not have to imply a
reduction in flows to other nations, however. First, a large share of FDI to China comes from
overseas Chinese who might not have invested in other economies (Hong Kong SAR, Taiwan
Province of China, and Singapore account for over 50 percent of total FDI in China). Second,
China's development may have increased foreign investment in the countries that supply
China with the inputs needed for its growth, such as raw materials or components that are
assembled in China.

Little work has been done on the implications of China's successful reform of its capital
account for FDI flows to other countries. McKibbin and Woo (2003) simulate the impact of
China's accession to the Wolrd Trade Organization on FDI flows to ASEAN countries. As
usual with simulations, the results (in our case the impact of China's development on other
countries) depend on the assumptions on which the simulations are based. Chantasasawat et
al. (2004) estimate crowding out by China for eight Asian economies from 1985 to 2001.
They find that the level of China's foreign investment is positively related to the levels of the
other economies' inward direct investment. But we show that the way they assess crowding
out by China is problematic.

Figure 1. FDI to China, 1982-2002 (in billions of U.S. dollars)
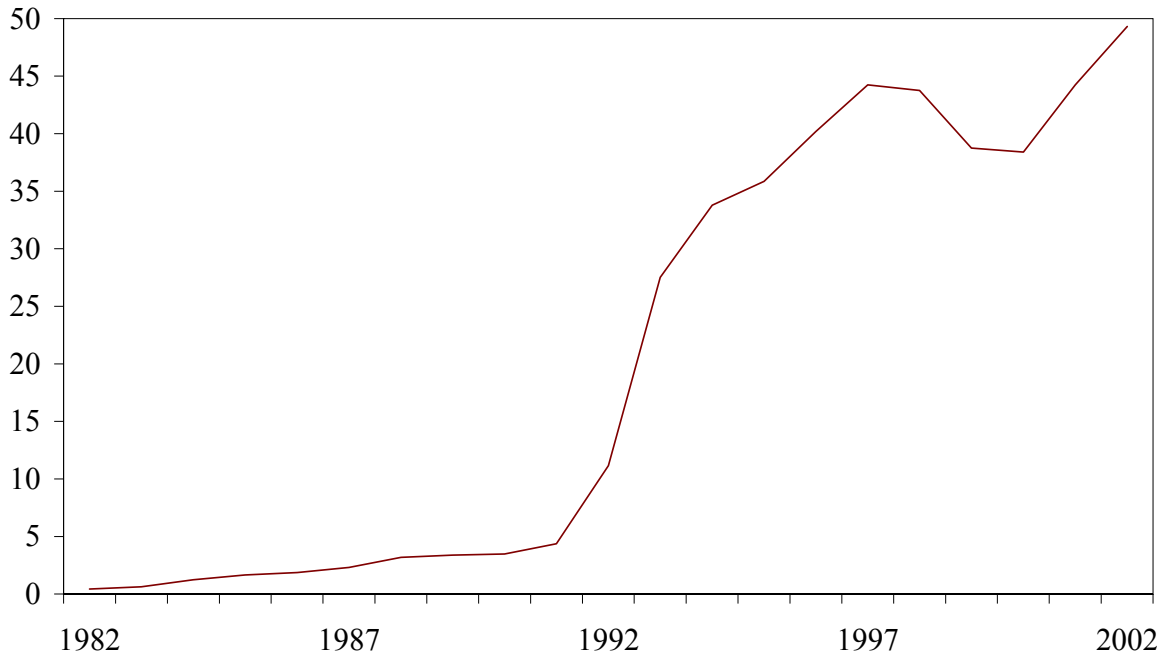
Source: IMF

Figure 2: FDI to China as a Percent of Emerging Asia's Total, 1982-2002
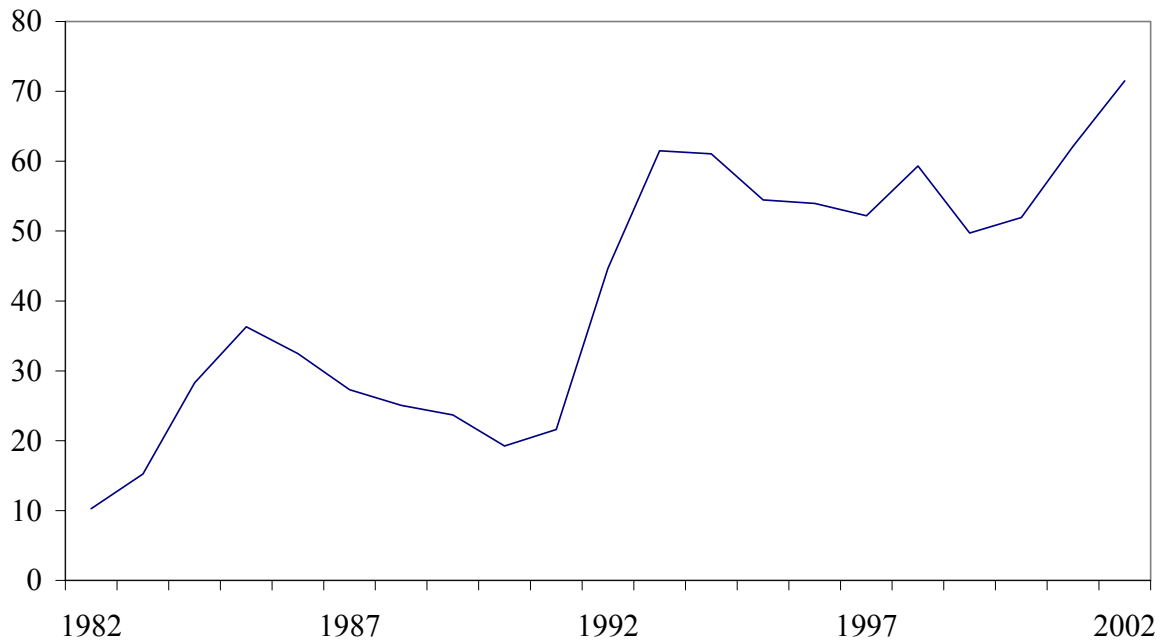
Source: IMF and author's calculations

To estimate crowding out is tricky. We discuss various estimation strategies and the problems associated with each of them. Building on our discussion, we suggest a new methodology to estimate crowding out. We then apply this methodology to investigate the impact of China's emergence on FDI flows to other economies in the region. Our dataset covers 14 Asian economies from 1984 to 2002. We estimate what economies, if any, were affected and how large the impact was. It is sometimes argued that low-income countries, which compete with China for low-wage investment, suffer more from China's competition, while countries that invest more in human capital and research and development are less affected. We investigate this issue by assessing whether low levels of GDP per capita, of education, or of scientific development are associated with increased diversion of FDI flows by China.

Overall, the results suggest that the success of China's capital account reform did not have much impact on flows to other countries. We find that the average diversion of FDI flows across countries is significant. But estimating diversion for each country suggests that crowding out by China was concentrated on two countries only (Singapore and Myanmar), while other countries do not appear to have been affected. There is also no evidence that low-income economies have suffered more than higher income ones. Low investment in education or in sciences is not associated with increased crowding out by China either.

The paper is organized as follows. Section 2 introduces our empirical framework, discusses how to estimate crowding out, and presents the data. Section 3 assesses whether China's emergence diverted flows to other countries, and discusses other determinants of FDI. Section 4 concludes.

II. ESTIMATION METHODOLOGY AND DATA

A. Estimating Crowding Out

There is no generally accepted theory of FDI. Many studies adopt a reduced form specification (see Kamaly 2003 for an excellent survey), and estimate the following equation:

$$fdi_{j,t} = \beta X_{j,t} + \varepsilon_{j,t}, \tag{1}$$

where $fdi_{j,t}$ is gross FDI (expressed either in logarithm or as a share of GDP) to country j at time t, $X_{j,t}$ is a vector of potential explanatory variables, and $\varepsilon_{j,t}$ is an error term.

A natural way to estimate crowding out by China is to add an indicator of FDI flows to China to the regressors in equation (1). But to find an appropriate indicator of FDI flows to China is tricky.

Chantasasawat et al. (2004) estimate equation (1) in logarithms and use log FDI flows to China to capture crowding out (Eichengreen, Rhee and Tong, 2004, use a similar approach to estimate the impact of China on exports to other Asian countries). The problem with a logarithmic specification is that it assumes that crowding out depends on the rate of change of FDI flows to China rather than the level of these flows, which is unwarranted. For

example, such a specification assumes that a 100 percent increase in Chinese FDI from 500 million dollars to 1 billion dollar —as happened in the early 1980s— has the same impact on other countries as a 100 percent increase in Chinese FDI from 10 billion dollars to 20 billion dollars - as happened in the early 1990s. But obviously, one would expect an increase in flows to China by 10 billion dollars to have potentially more impact on other economies than an increase by 0.5 billion. As a consequence, estimating crowding out requires that the model be specified in levels rather than in logs —an issue we will go back to later. Another potential issue with such an estimation strategy is that coefficient on the logarithm of FDI to China might capture global shocks affecting all economies in the region or a trend, which would bias the coefficient upwards.

Ahearne et al. (2003) estimate the impact of China on exports of other countries using the rate of growth of exports. But an estimation based on rates of growth suffers from the same problems as the ones with a logarithmic specification.

Chantasasawat et al. (2004) also estimate crowding out by using a country's share of FDI to the region in the left-hand side (LHS) and China's FDI (in log) on the right-hand side (RHS). But given the large size of FDI flows to China, an increase in FDI to China mechanically reduces the share of other countries (as the authors acknowledge). Therefore, a negative sign on the corresponding coefficient cannot be taken as evidence that China diverts FDI from other nations.

Other natural indicators of FDI flows to China are also problematic. Nominal FDI is a non-stationary (possibly explosive) variable that needs to be scaled. Using the FDI to GDP ratio in China (when estimating equation (1) with FDI over GDP as the dependent variable) assumes that, for a given level of FDI to China, crowding out is inversely related to the size of the Chinese economy, which is unwarranted. This ratio might also capture global factors affecting all countries in the region or a common, which would again bias the coefficient upwards.

Scaling FDI to China with the GDP of the LHS country is an interesting option. But it assumes that China diverts the same amount of FDI (in dollars) from all countries, regardless of their size (so that China is assumed to divert as much foreign money from Papua New Guinea as from Korea, even though the Korean economy is 100 times as large as that of Papua New Guinea). This indicator could therefore only be used to estimate crowding out for each country, but not to estimate average crowding out across countries. This indicator also suffers from possible biases. The endogeneity of the denominator (which is also the denominator of the LHS variable), and global shocks or common trends on FDI on both sides of the equation might result in an upwards bias. Using instrumental variables might help alleviate this problem, however.

So what indicators could we use to estimate average as well as country-specific crowding out? Our discussion highlights two things. First, a specification in logs is not appropriate, and we should therefore estimate equation (1) using FDI as a share of GDP instead. Second, FDI to China is a good candidate, but it needs to be scaled by an appropriate factor. We suggest

the two following scaling factors: the combined GDP of other countries in the region, and total FDI to the region. We will now discuss the rationale for these choices.

Our first indicator, FDI to China over the combined GDP of other countries in the region, assumes that diversion (in absolute amount) is proportional to the size of an economy relative to the region. Writing α the fraction of FDI to China that comes at the expense of other countries in the region, the total amount of FDI diverted from other Asian economies is the following:

$$\text{Total FDI diverted from other Asian economies} = \alpha \ FDIChina_t \tag{2}$$

The share of country i's GDP in regional GDP is: $\dfrac{GDP_{i,t}}{\sum\limits_{j\in\{\text{all countries}\setminus\text{China}\}} GDP_{j,t}}$ \hfill (3)

Assuming that diversion from country i is proportional to the size of its economy relative to the region, the amount of FDI diverted from country i is given by multiplying equation (3) by (4):

$$\text{FDI diverted from country } i = \alpha \ FDIChina_t \ \frac{GDP_{i,t}}{\sum\limits_{j\in\{\text{all countries}\setminus\text{China}\}} GDP_{j,t}} \tag{4}$$

Dividing both sides of equation (4) by $GDP_{i,t}$ shows that the parameter for crowding out, α, can be estimated by regressing $\dfrac{FDI_{i,t}}{GDP_{i,t}}$ on $\dfrac{FDIChina_t}{\sum\limits_{j\in\{\text{all countries}\setminus\text{China}\}} GDP_{j,t}}$. A potential issue is that the estimated value of α might capture common shocks or trends on FDI or GDP on both sides of the equation. We use instruments to alleviate the problem.

Our second indicator, FDI to China over total FDI to the region (i.e., China's share of total FDI to the region), has an intuitive interpretation. If FDI to China diverts flows from other countries, China's share of FDI should enter the regression with a negative sign. If FDI to China does not reduce flows to other countries, China's share of FDI should be irrelevant to other countries and be insignificant in the regression. Using the ratio of FDI to China over total FDI to the region also eliminates potential biases coming from common shocks or trends on FDI flows to China and to other nations. A somewhat less appealing aspect of this indicator is that it assumes that diversion decreases when total flows to the region increase. Also, China's share is theoretically endogenous, since its denominator includes FDI to the LHS country. We handle this possibility by using instrumental variables.

We estimate the impact of China on FDI flows to other countries using both indicators. When estimating diversion by country, we also use FDI to China scaled by the GDP of the LHS country.

B. Empirical Specification

We estimate the following equation:

$$fdi_{j,t} = \delta\, fdi_{j,t-1} + \beta X_{j,t} + \alpha China_t + \mu_j + \varepsilon_{j,t} \tag{5}$$

$(j=1, ...,13$ and $t=1984,...,2002)$,   where:

$fdi_{j,t}$: FDI to GDP ratio of country j at time t,
$X_{j,t}$: vector of explanatory variables,
$China_t$: indicator of FDI flows to China as discussed above,
μ_j: country j dummy,
and $\varepsilon_{j,t}$: error term.

The variables in the vector $X_{j,t}$ are FDI determinants suggested by the literature (see Kamaly, 2003, for a survey, and references therein). These determinants are inflation, budget balance, official reserves, GDP growth, GDP per capita as a share of the United States', change in real exchange rate, ratio of money over GDP, corruption, socioeconomic conditions, government stability, business environment, country dummies, bond yields in the G3, and lagged FDI. Inflation, as well as budget balance and official reserves as a share of GDP, capture the role of macroeconomic conditions (Lensik and White, 1998). Real GDP growth is a proxy for returns on investment (Gastanaga, Nugent, and Pashamova, 1998). GDP per capita as a share of China's is a proxy for relative wage levels in the absence of sufficient data on wages.[2] Changes in the real exchange rate measure variations in a country's external competitiveness. A high money to GDP ratio is assumed to reflect abundant domestic credit, reducing the need for FDI. Corruption and poor socioeconomic conditions could deter FDI (Wei 1999, and 2001), while government stability and a favorable business environment could promote it (Hausmann and Fernandez-Arias, 2000). Country dummies capture country-specific effects. A weighted average of bond yields in G3 countries is a proxy for the opportunity cost of investing in Asia (Fernandez-Arias, 1996). Taxes on foreign investment would have been relevant as well, but little data are available. Finally, we add lagged FDI, as FDI flows are likely to be serially correlated (Kamaly, 2003).

We also assess whether investment in human capital and in new technologies attracts more FDI (Noorbakhsh and Paloni 2001). Data availability being limited, we estimate a separate model. The indicators we use are the rates of secondary and tertiary education, as well as publications in scientific journals per capita.

All regressors are lagged once because of the lag between a foreign investment decision and its implementation. Lagging the regressors also avoids endogeneity issues, since some regressors could be affected by FDI.

Panel estimation
We estimate equation (5) using ordinary least squares (OLS) with fixed country effects. We test for heteroscedasticity using a White test. A White test is not very powerful, however, and we run a Breusch-Pagan test to test for the special form of heteroscedasticity associated with

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[2] GDP per capita is sometimes used instead. However, relative GDPs takes into account the fact that the competition takes place in a given year (that, say, the Philippines 1984 GDP per capita is low compared to Korea's GDP per capita in 2002 is irrelevant for the competition the Philippines faces in 1984). Using relative GDPs avoids this problem.

global shocks affecting all economies in the region contemporaneously. The White and Breusch-Pagan tests always reject heteroscedasticity, and the robust OLS and generalized least squares (GLS) estimates are very similar to the OLS ones. We therefore do not report these estimates in our tables.

OLS might not be appropriate, however, because equation (5) includes lagged FDI as a regressor, which is correlated with the disturbance. The relatively long time dimension of the sample (1984 to 2002) suggests that the resulting bias and inconsistency are unlikely to be significant issues, as discussed by Arellano and Bond (1991). But we nonetheless estimate equation (5) using the estimator designed by Arellano and Bond (1991) for dynamic panels with a lagged endogenous variable as a check.

Another issue is that our indicators of flows to China might be endogenous, as we already discussed. We use instrumental variables to handle the issue. Our instruments are lagged value of corruption, business environment, socioeconomic conditions, and government stability in China. They are exogenous to developments in LHS countries and correlated with our indicator of FDI flows to China (the average correlation is about 0.45 in absolute value), and should therefore be valid instruments.

C. Data

The main data sources are the IMF's International Financial Statistics (IFS) and World Economic Outlook (WEO) databases, as well as the World Bank's World Development Indicators (WDI). We use the indicators for corruption, investment conditions, government stability, and socioeconomic conditions compiled by the PRS Group, a private company. The appendix presents the data in greater detail.

The study covers all Asian economies with a population greater than 4 million, except Japan. These economies are: Bangladesh, China, India, Indonesia, Korea, Malaysia, Myanmar, Papua New Guinea, Philippines, Singapore, Sri Lanka, Taiwan Province of China, Thailand, and Vietnam.[3] The sample includes annual observations for the period 1984-2002.[4]

III. ESTIMATION RESULTS

China's remarkable ability to attract FDI is largely perceived as diverting flows away from other countries in the region. In this section, we investigate whether this assertion is confirmed by the data.

A. Average Diversion

First, we estimate the average diversion across countries. Table 1 presents the results. The IV estimate on the coefficients on our two indicators of flows to China are negative and

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[3] Cambodia, Hong Kong SAR, Lao, and Nepal are not included because of insufficient data.

[4] PRS Group data starts in 1984, restricting our coverage to the aforementioned period.

significant at the 5 percent level of confidence. A 10 percent increase in China's FDI market share appears to have lowered annual flows to other nations by about 0.4 percent of GDP on average. Given that China's market share rose from an average of 26 percent in the (pre-liberalization) period 1984-91 to one of 56 percent in 1992-2002, China's negative impact on flows to other countries was around 1.3 percent of GDP a year on average. Results for the specification using FDI to China over total GDP of other countries as a regressor suggest that the increase in average flows to China before and after 1991 reduced flows to other nations by about 2.1 percent of GDP a year on average.

B. Diversion by Country

Second, we estimate diversion for each country. Table 2 presents the results. The IV estimates suggest that crowding out by China was concentrated on two countries only - Singapore and Myanmar —while other countries have not been significantly affected. The results are robust to our three specifications of FDI flows to China (China's share of total FDI to the region, FDI to China over total GDP of other countries, as well as FDI to China over the GDP of the LHS country).[5]

Estimating diversion for each country reduces the degrees of freedom, possibly making the estimates noisy. To save degrees of freedom, we estimate equation (5) allowing for only three different levels of diversion: one for Singapore, one for Myanmar, and the average diversion across other nations. The results confirm that China's emergence does not seem to have significantly reduced FDI to countries other than Singapore and Myanmar (Table 3). The impact on Singapore and Myanmar is large, however. We compute the estimated impact associated with the increase of average flows to China before and after 1991.[6] This impact is broadly similar in the three specifications. The estimated reduction of flows to Singapore is 2.8, 1.9 to 2.3[7], and 2.0 percent of GDP a year using China's share of total FDI to the region, FDI to China over total GDP of other countries, and FDI to China over the GDP of the LHS country as a regressor, respectively. The estimated reduction of flows to Myanmar is 3.9, 4.2, and 4.5 percent of GDP a year for the same three specifications, respectively.

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[5] China's impact on Indonesia appears significant at the 10 percent level when using FDI to China over the GDP of the LHS country as a regressor, but the impact is not significant with the other two indicators. Moreover, the impact is also not significant when estimating the equation allowing for four levels of diversion: one for Indonesia, one for Singapore, one for Myanmar, and the average diversion across other nations.

[6] The interpretation of the coefficients in the tables is as follows. The coefficient on China's share of total GDP to the region suggests that a 10 percent increase in China's FDI market share appears to have lowered annual flows to Singapore and Myanmar by about 0.9 and 1.3 percent of GDP, respectively. The coefficient on FDI to China over the GDP of the LHS country suggests that an increase in flows to China by 1 billion dollars reduces flows to Singapore by 57 million dollars and to Myanmar by 8 million. The coefficient on FDI to China over total GDP of other countries has a less intuitive economic interpretation.

[7] The estimated coefficient differs a bit in Tables 3 and 4.

Why does China's emergence seem to have negatively affected FDI flows to Singapore and Myanmar but not to other countries? The role of overseas Chinese in FDI in China might explain the effect on Singapore. Overseas Chinese account for a significant share of foreign investment in China (Tseng and Zebregs, 2003). They invest in China because they have family connections or at least linguistic and cultural ties. Some of these overseas Chinese are similarly connected to Singapore. If these investors focus their investment on regions to which they are connected, a decision to invest in China might indeed come at the expense of investing in Singapore. But this argument does not explain why Taiwan Province of China, which is part of the same cultural zone, does not seem similarly affected. A possible explanation relates to the role of Taiwanese investors. Taiwan Province of China is a large investor in China. But the political situation led to restrictions on investment in China. Taiwanese investors have tried to circumvent these restrictions by investing in China through Hong Kong SAR and Singapore (so that Taiwanese FDI into China gets recorded as, say, Taiwanese investment into Singapore and Singaporean investment into China). The restrictions on Taiwanese investment have been eased progressively. When a restriction is lifted, total Taiwanese FDI to China increases, but Taiwanese FDI to Singapore decreases, as the need to invest through Singapore is reduced. This would help explain the negative relationship between flows to China and flows to Singapore —and would also explain why FDI flows to Taiwan Province of China do not seem affected by China's success.

The case of Myanmar is trickier. Political developments in the country have led many traditionally large suppliers of FDI (including the United States and the European Union) to severely restrict FDI in Myanmar. The imposition of new restrictions plays a role in the dynamics of foreign investment in the country, but is obviously unrelated with developments in China. The fact that Singapore is the second largest foreign investor in Myanmar might partially account for the diversion of FDI to China. China and Hong Kong SAR are the two main destinations of Singaporean investment, and an increase in flows to these places might reduce flows to Myanmar.

C. Impact of GDP per Capita, Sciences and Education on Diversion

In this section, we investigate whether some characteristics make countries more subject to Chinese crowding out. It is sometimes argued that low-income economies, which compete with China for low-wage investment, suffer more from China's competition, while countries that invest more in human capital and research and development are less affected. We investigate this issue by estimating whether low GDP per capita as a share of China's (a proxy for relative wages), in education or in scientific development are associated with increased diversion of FDI flows by China. To do so, we add to the baseline regression our indicator of FDI to China multiplied by the corresponding variable (GDP per capita as a share of China's, rates of secondary and tertiary education, and publications in scientific journals per capita).

The results are presented in Tables 4 to 7. Low-income economies do not appear to have suffered more from diversion than higher income ones. Low levels of secondary or tertiary education or fewer scientific publications per person are not associated with increased crowding out by China either. OLS and Arellano-Bond estimates of the impact of scientific

publications on diversion are significant for one indicator of flows to China. But this result is not robust. First, the IV estimate is not significant. Second, no estimate is significant with the other indicator of flows to China. And the significant coefficients become insignificant when dropping Singapore out of the sample (Singapore is the country with the highest number of scientific publications per capita) (Table 6).

D. Other Determinants of FDI

Our results also suggest that some economic fundamentals help explain the allocation of FDI flows among Asian economies. Healthy government balances, an appreciating real exchange rate, and low inflation seem to be associated with increased FDI. Low interest rates in the G3 also has a positive impact on flows to the region.

Surprisingly, openness appears to be associated with lower levels of FDI. A possible explanation is that openness correlates with the degree of sophistication of the financial system, which in turn might be negatively correlated with FDI, as argued by Hausmann and Fernandez-Arias (2000). Also, a real exchange rate appreciation increases FDI flows, while one might have expected that the resulting loss in international competitiveness would deter future FDI. It might be that an appreciation of the real exchange rate signals further appreciation that would bring capital gains to foreign investors who invest in the country. OLS and Arellano-Bond (though not IV) estimates suggest that scientific publications may increase FDI. But this result is driven by Singapore only: in the estimation excluding Singapore, the corresponding variable is no longer significant (Table 6).

IV. Conclusion

We investigate the impact of China's emergence on FDI flows to Asia using data from 14 Asian economies from 1984 to 2002. We do not find much evidence that China's success in attracting FDI has been at the expense of other countries in the region. China does not seem to have diverted flows from countries in the region, with the exception of Singapore and Myanmar. Low-wage economies, which compete with China for low-wage investment, do not appear to have been particularly affected by China's emergence. Low levels of education or scientific developments are not associated with increased crowding out by China either. Some economic fundamentals help explain the allocation of FDI flows among Asian countries, however, which suggests that countries might attract more FDI by improving these fundamentals.

The unprecedented emergence of a country as large as China raises the issue of how it will affect other economies in the region and elsewhere. While the development of China might create opportunities for other countries, many governments —especially in other emerging economies— perceive China's rise as a threat to their own well-being. With India following China on the road to reform, analyzing the regional and global impact of economic reform in these two demographic giants will become increasingly relevant. This paper is a contribution to this early but growing body of academic literature. Possible ways of extending the analysis include assessing whether the increase in FDI to China had an impact on some particular sectors of the economy, as well as estimating how FDI to China enhance regional trade, as investment in China spurs demand for capital goods from other nations.

Appendix I. Data Sources

Variable	Source
FDI	Mostly from IFS. We replace missing values by the entry in the Lane-Milesi-Ferretti database, when available. 1999-2002 figures for Taiwan Province of China come from the WEO database.
Corruption	From PRS group. Ranges from 0 (most corrupt) to 6.
Government Stability	From PRS group. Ranges from 0 (least stable) to 12.
Socioeconomic conditions	From PRS group. Reflects unemployment, consumer confidence, poverty. Ranges from 0 (worst conditions) to 12.
Business environment	From PRS group. Reflects contract viability, expropriation risk, profits repatriation and payment delays. Ranges from 0 (worst conditions) to 12.
Openness	Computed as the sum of imports and exports over GDP. Computed using data from WEO.
GDP per capita as a share of China's	Computed using data from IFS.
RER change	Computed as the rate of change of real exchange rate. The real exchange rate is calculated as the ratio of the product of nominal exchange rate by U.S. consumer price index (CPI) to the country's CPI. Data from WEO.
Reserves	Reserves as share of GDP, using data from WEO.
Growth	Real GDP growth, computed using WEO's GDP in constant prices.
Inflation	Computed as the rate of change of the CPI.
Government balance	Computed using WEO data as central government balance over GDP. In the case of Thailand, we use general government balance to make up for lack of data.
Money	Computed as money supply over GDP using WEO data.
G3 bond yield	GDP weighted average of bond yields for the U.S., Japan and Germany. The bond data comes from IFS.
Scientific publications	Publications in scientific journals per capita, from WDI.[8]
Secondary and tertiary education	Secondary and tertiary school enrollment rates, from WDI.[9]

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[8] Does not include Taiwan Province of China. Data is available from 1987 to 2000.

[9] Data does not include Taiwan Province of China Data covers the period 1991-2001, but is missing for some countries after 1997.

Appendix II. Tables

Table 1. Impact of China on FDI Flows to Asia: Average Impact.

Indicator of FDI flows to China	China's share of total FDI to the region			FDI to China / total GDP of other economies		
	OLS[1]	A-Bond[2]	IV[3]	OLS[1]	A-Bond[2]	IV[3]
Lagged FDI	0.309***	0.276***	0.296***	0.320***	0.289***	0.299***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
China indicator	-0.025**	-0.024**	-0.042**	-0.355	-0.284	-1.156**
	(0.013)	(0.028)	(0.017)	(0.130)	(0.288)	(0.022)
Corruption	0.002	0.004*	0.003*	0.002	0.003*	0.003*
	(0.129)	(0.068)	(0.076)	(0.174)	(0.092)	(0.053)
Government stability	-0.001	-0.001*	-0.001	-0.001	-0.001	-0.001
	(0.116)	(0.083)	(0.157)	(0.138)	(0.100)	(0.402)
Socioeconomic conditions	0.001	0.000	0.001	0.001	0.001	0.001
	(0.491)	(0.670)	(0.532)	(0.390)	(0.579)	(0.300)
Business environment	-0.000	-0.000	-0.000	-0.001	-0.001	-0.000
	(0.776)	(0.870)	(0.976)	(0.586)	(0.640)	(0.774)
Openness	-0.015*	-0.020**	-0.012	-0.016**	-0.022**	-0.011
	(0.065)	(0.021)	(0.139)	(0.047)	(0.013)	(0.211)
GDP per capita relative to China's	-0.000	-0.000	-0.000	-0.001	-0.001	-0.000
	(0.303)	(0.410)	(0.431)	(0.262)	(0.305)	(0.552)
RER change	0.028**	0.029***	0.028**	0.029***	0.030***	0.033***
	(0.010)	(0.008)	(0.010)	(0.008)	(0.006)	(0.004)
Reserves	0.026	0.008	0.027	0.022	0.005	0.019
	(0.206)	(0.727)	(0.182)	(0.291)	(0.848)	(0.384)
Growth	-0.026	-0.028	-0.030	-0.024	-0.025	-0.031
	(0.504)	(0.481)	(0.451)	(0.545)	(0.533)	(0.448)
Inflation	-0.059*	-0.044	-0.062*	-0.054	-0.039	-0.051
	(0.070)	(0.207)	(0.061)	(0.101)	(0.266)	(0.130)
Government balance	0.163***	0.133**	0.174***	0.166***	0.139**	0.212***
	(0.005)	(0.037)	(0.003)	(0.005)	(0.034)	(0.002)
Money	0.005	0.015	0.009	0.003	0.010	0.009
	(0.693)	(0.373)	(0.515)	(0.843)	(0.549)	(0.529)
G3 bond yield	-0.293***	-0.361***	-0.364***	-0.320**	-0.366***	-0.613***
	(0.003)	(0.001)	(0.002)	(0.011)	(0.009)	(0.003)
Bangladesh	0.043***		0.052***	0.040***		0.064***
	(0.000)		(0.000)	(0.002)		(0.001)
India	0.047***		0.055***	0.044***		0.066***
	(0.001)		(0.001)	(0.003)		(0.001)
Indonesia	0.048***		0.056***	0.046***		0.065***
	(0.001)		(0.000)	(0.002)		(0.000)

Indicator of FDI flows to China	China's share of total FDI to the region			FDI to China / total GDP of other economies		
	OLS[1]	A-Bond[2]	IV[3]	OLS[1]	A-Bond[2]	IV[3]
Korea	0.051***		0.056***	0.050***		0.063***
	(0.003)		(0.001)	(0.004)		(0.001)
Malaysia	0.082***		0.085***	0.082***		0.093***
	(0.000)		(0.000)	(0.000)		(0.000)
Myanmar	0.091***		0.101***	0.088***		0.111***
	(0.000)		(0.000)	(0.000)		(0.000)
Papua NG	0.074***		0.080***	0.072***		0.090***
	(0.000)		(0.000)	(0.000)		(0.000)
Philippines	0.059***		0.066***	0.056***		0.076***
	(0.000)		(0.000)	(0.000)		(0.000)
Singapore	0.136***		0.130***	0.141***		0.134***
	(0.000)		(0.001)	(0.000)		(0.001)
Sri Lanka	0.064***		0.071***	0.062***		0.083***
	(0.000)		(0.000)	(0.000)		(0.000)
Taiwan P.O.C.	0.040		0.037	0.044		0.046
	(0.222)		(0.259)	(0.178)		(0.179)
Thailand	0.056***		0.062***	0.054***		0.070***
	(0.000)		(0.000)	(0.001)		(0.000)
Vietnam	0.084***		0.092***	0.082***		0.102***
	(0.000)		(0.000)	(0.000)		(0.000)
Observations	212	198	212	212	198	212

***, **, and * indicate significance at the 1, 5 and 10 percent levels, respectively.

[1]: OLS= Ordinary Least Squares
[2]: A-Bond=Arellano-Bond
[3]: IV= Instrumental Variables

Table 2. Impact of China on FDI Flows to Asia: Impact by Economy.

Indicator of FDI flows to China	China's share of total FDI to the region		FDI to China / total GDP of other economies		FDI to China / GDP of LHS economy	
Coefficient (p-statistics)	OLS[1]	IV[2]	OLS[1]	IV[2]	OLS[1]	IV[2]
Lagged FDI	0.310***	0.281***	0.312***	0.247***	0.295***	0.249***
	(0.000)	(0.000)	(0.000)	(0.002)	(0.000)	(0.002)
China's impact: Bangladesh	-0.027	-0.014	-0.485	-0.251	-0.010	-0.003
	(0.295)	(0.668)	(0.353)	(0.682)	(0.405)	(0.861)
China's impact: India	-0.011	-0.015	-0.262	-0.380	-0.036	-0.077
	(0.633)	(0.624)	(0.554)	(0.507)	(0.707)	(0.630)
China's impact: Indonesia	-0.018	-0.032	-0.576	-1.040	-0.055	-0.086*
	(0.480)	(0.343)	(0.246)	(0.105)	(0.137)	(0.060)
China's impact: Korea	-0.030	-0.037	-0.432	-0.570	-0.098	-0.146
	(0.253)	(0.251)	(0.394)	(0.328)	(0.401)	(0.292)
China's impact: Malaysia	0.005	-0.051	-0.008	-1.285*	0.016	-0.057
	(0.847)	(0.162)	(0.989)	(0.081)	(0.563)	(0.107)
China's impact: Myanmar	-0.092***	-0.132***	-1.581**	-2.319***	-0.000	-0.008**
	(0.009)	(0.005)	(0.029)	(0.004)	(0.802)	(0.035)
China's impact : Papua NG	-0.026	0.020	-0.424	0.218	0.000	0.001
	(0.379)	(0.629)	(0.398)	(0.762)	(0.951)	(0.577)
China's impact: Philippines	0.009	0.004	0.203	-0.036	0.018	0.002
	(0.750)	(0.918)	(0.719)	(0.957)	(0.434)	(0.930)
China's impact: Singapore	-0.098***	-0.094***	-0.718	-1.068*	-0.029	-0.057*
	(0.001)	(0.006)	(0.186)	(0.095)	(0.304)	(0.081)
China's impact: Sri Lanka	-0.014	-0.017	-0.287	-0.465	-0.001	-0.003
	(0.563)	(0.585)	(0.539)	(0.429)	(0.890)	(0.567)
China's impact: Taiwan P.O.C.	0.023	-0.021	-0.323	-0.434	-0.032	-0.035
	(0.561)	(0.584)	(0.734)	(0.568)	(0.839)	(0.772)
China's impact: Thailand	-0.007	0.004	0.271	0.185	0.040	0.018
	(0.774)	(0.905)	(0.565)	(0.771)	(0.246)	(0.643)
China's impact: Vietnam	0.003	-0.044	1.147	-1.300	0.058	-0.016
	(0.972)	(0.348)	(0.638)	(0.199)	(0.230)	(0.238)
Corruption	0.001	-0.000	0.001	-0.000	0.002	0.001
	(0.714)	(0.992)	(0.612)	(0.875)	(0.371)	(0.672)
Government stability	-0.001	-0.000	-0.001	0.000	-0.001	-0.000
	(0.169)	(0.723)	(0.465)	(0.857)	(0.296)	(0.668)
Socioeconomic conditions	0.001	0.001	0.001	0.001	0.001	0.001
	(0.294)	(0.454)	(0.181)	(0.433)	(0.245)	(0.480)
Business environment	0.000	-0.001	-0.001	-0.001	-0.001	-0.002
	(0.962)	(0.456)	(0.486)	(0.306)	(0.243)	(0.188)
Openness	-0.027***	-0.021**	-0.024**	-0.016	-0.029**	-0.016
	(0.007)	(0.032)	(0.028)	(0.145)	(0.011)	(0.150)
GDP per capita relative to China's	-0.000	-0.001**	-0.000	-0.001*	-0.001	-0.001*
	(0.675)	(0.036)	(0.332)	(0.066)	(0.236)	(0.058)

Indicator of FDI flows to China	China's share of total FDI to the region		FDI to China / total GDP of other economies		FDI to China / GDP of LHS economy	
Coefficient (p-statistics)	OLS[1]	IV[2]	OLS[1]	IV[2]	OLS[1]	IV[2]
RER change	0.030**	0.030***	0.029**	0.028**	0.034***	0.030***
	(0.011)	(0.008)	(0.015)	(0.012)	(0.004)	(0.008)
Reserves	0.039	0.032	0.015	0.027	0.030	0.041*
	(0.106)	(0.144)	(0.561)	(0.240)	(0.244)	(0.070)
Growth	-0.015	-0.018	-0.007	-0.014	-0.010	-0.015
	(0.706)	(0.656)	(0.875)	(0.729)	(0.815)	(0.705)
Inflation	-0.050	-0.068**	-0.032	-0.062*	-0.031	-0.058
	(0.148)	(0.048)	(0.373)	(0.075)	(0.393)	(0.102)
Government balance	0.165***	0.174***	0.154**	0.155**	0.145**	0.146**
	(0.007)	(0.004)	(0.015)	(0.011)	(0.020)	(0.018)
Money	-0.017	0.002	-0.003	-0.000	0.001	0.002
	(0.359)	(0.917)	(0.914)	(0.985)	(0.973)	(0.879)
G3 bond yield	-0.369***	-0.250***	-0.370***	-0.270***	-0.272**	-0.221**
	(0.001)	(0.009)	(0.005)	(0.009)	(0.033)	(0.027)
Bangladesh	0.050***	0.039**	0.043***	0.035**	0.040***	0.033**
	(0.002)	(0.029)	(0.003)	(0.011)	(0.005)	(0.019)
India	0.049**	0.047**	0.043**	0.044***	0.038**	0.042**
	(0.010)	(0.022)	(0.016)	(0.009)	(0.031)	(0.020)
Indonesia	0.054***	0.054***	0.052***	0.053***	0.051***	0.051***
	(0.002)	(0.004)	(0.002)	(0.001)	(0.001)	(0.001)
Korea	0.062***	0.071***	0.055***	0.059***	0.056***	0.059***
	(0.004)	(0.004)	(0.008)	(0.007)	(0.007)	(0.007)
Malaysia	0.092***	0.111***	0.093***	0.102***	0.090***	0.096***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)
Myanmar	0.138***	0.143***	0.112***	0.116***	0.084***	0.114***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Papua NG	0.092***	0.066***	0.083***	0.069***	0.077***	0.065***
	(0.000)	(0.005)	(0.000)	(0.001)	(0.000)	(0.001)
Philippines	0.056***	0.053***	0.054***	0.053***	0.050***	0.049***
	(0.001)	(0.003)	(0.001)	(0.001)	(0.002)	(0.001)
Singapore	0.199***	0.208***	0.181***	0.173***	0.188***	0.165***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.001)
Sri Lanka	0.073***	0.070***	0.067***	0.066***	0.062***	0.061***
	(0.000)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
Taiwan P.O.C.	0.057	0.060*	0.061	0.057	0.053	0.045
	(0.110)	(0.100)	(0.122)	(0.114)	(0.187)	(0.202)
Thailand	0.060***	0.051**	0.052***	0.048***	0.048**	0.045**
	(0.003)	(0.013)	(0.008)	(0.008)	(0.014)	(0.011)
Vietnam	0.085*	0.101***	0.052	0.101***	-0.001	0.094***
	(0.090)	(0.000)	(0.386)	(0.000)	(0.987)	(0.000)
Observations	212	212	212	212	212	212

***, **, and * indicate significance at the 1, 5 and 10 percent levels, respectively.

[1]: OLS= Ordinary Least Squares
[2]: IV= Instrumental Variables

Table 3. Impact of China on FDI Flows to Myanmar, to Singapore and to Other Economies.

Indicator of FDI flows to China	China's share of total FDI to the region			FDI to China / total GDP of other economies		
Coefficient (p-statistics)	OLS[1]	A-Bond[2]	IV[3]	OLS[1]	A-Bond[2]	IV[3]
Lagged FDI	0.319***	0.296***	0.304***	0.326***	0.295***	0.311***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
China's impact: Singapore	-0.094***	-0.098***	-0.097***	-0.738	-0.765	-1.261**
	(0.001)	(0.000)	(0.004)	(0.151)	(0.160)	(0.042)
China's impact: Myanmar	-0.100***	-0.088**	-0.130***	-1.682**	-1.435*	-2.282***
	(0.003)	(0.012)	(0.005)	(0.013)	(0.051)	(0.004)
China's impact: other economies	-0.011	-0.007	-0.018	-0.246	-0.152	-0.412
	(0.266)	(0.566)	(0.179)	(0.319)	(0.608)	(0.154)
Corruption	0.000	0.002	0.000	0.001	0.002	-0.000
	(0.984)	(0.370)	(0.930)	(0.703)	(0.307)	(0.964)
Government stability	-0.001	-0.001	-0.000	-0.001	-0.001	-0.000
	(0.178)	(0.169)	(0.532)	(0.305)	(0.230)	(0.876)
Socioeconomic conditions	0.001	0.001	0.001	0.001	0.001	0.001
	(0.247)	(0.335)	(0.495)	(0.207)	(0.349)	(0.578)
Business environment	0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.947)	(0.942)	(0.788)	(0.684)	(0.667)	(0.750)
Openness	-0.022***	-0.030***	-0.023***	-0.018**	-0.025**	-0.022**
	(0.009)	(0.002)	(0.007)	(0.046)	(0.016)	(0.013)
GDP per capita relative to China's	-0.000	-0.000	-0.001**	-0.000	-0.000	-0.001*
	(0.686)	(0.865)	(0.039)	(0.417)	(0.452)	(0.055)
RER change	0.027**	0.029**	0.031***	0.026**	0.028**	0.030***
	(0.016)	(0.011)	(0.005)	(0.024)	(0.016)	(0.006)
Reserves	0.034*	0.028	0.029	0.019	0.008	0.023
	(0.096)	(0.213)	(0.164)	(0.367)	(0.753)	(0.275)
Growth	-0.021	-0.026	-0.016	-0.018	-0.019	-0.014
	(0.570)	(0.498)	(0.665)	(0.645)	(0.635)	(0.719)
Inflation	-0.057*	-0.041	-0.064**	-0.051	-0.035	-0.063*
	(0.072)	(0.228)	(0.047)	(0.121)	(0.319)	(0.055)
Government balance	0.161***	0.146**	0.166***	0.161***	0.143**	0.156***
	(0.004)	(0.018)	(0.003)	(0.006)	(0.027)	(0.006)
Money	-0.003	-0.001	-0.000	-0.003	0.001	-0.002
	(0.786)	(0.940)	(0.972)	(0.822)	(0.941)	(0.871)
G3 bond yield	-0.332***	-0.410***	-0.271***	-0.340***	-0.398***	-0.305***
	(0.001)	(0.000)	(0.003)	(0.007)	(0.005)	(0.002)

Indicator of FDI flows to China	China's share of total FDI to the region			FDI to China / total GDP of other economies		
Coefficient (p-statistics)	OLS[1]	A-Bond[2]	IV[3]	OLS[1]	A-Bond[2]	IV[3]
Bangladesh	0.040***		0.040***	0.038***		0.039***
	(0.001)		(0.000)	(0.003)		(0.000)
India	0.045***		0.047***	0.043***		0.045***
	(0.001)		(0.001)	(0.004)		(0.001)
Indonesia	0.046***		0.048***	0.044***		0.047***
	(0.001)		(0.000)	(0.002)		(0.001)
Korea	0.049***		0.060***	0.047***		0.059***
	(0.003)		(0.000)	(0.006)		(0.001)
Malaysia	0.089***		0.097***	0.085***		0.096***
	(0.000)		(0.000)	(0.000)		(0.000)
Myanmar	0.136***		0.142***	0.113***		0.118***
	(0.000)		(0.000)	(0.000)		(0.000)
Papua NG	0.079***		0.082***	0.074***		0.080***
	(0.000)		(0.000)	(0.000)		(0.000)
Philippines	0.059***		0.062***	0.056***		0.061***
	(0.000)		(0.000)	(0.000)		(0.000)
Singapore	0.182***		0.211***	0.152***		0.187***
	(0.000)		(0.000)	(0.000)		(0.000)
Sri Lanka	0.067***		0.069***	0.063***		0.068***
	(0.000)		(0.000)	(0.000)		(0.000)
Taiwan P.O.C.	0.048		0.061*	0.051		0.063*
	(0.135)		(0.061)	(0.125)		(0.057)
Thailand	0.056***		0.060***	0.054***		0.060***
	(0.000)		(0.000)	(0.001)		(0.000)
Vietnam	0.085***		0.086***	0.080***		0.084***
	(0.000)		(0.000)	(0.000)		(0.000)
Observations	212	198	212	212	198	212

***, **, and * indicate significance at the 1, 5 and 10 percent levels, respectively.

[1]: OLS= Ordinary Least Squares
[2]: A-Bond=Arellano-Bond
[3]: IV= Instrumental Variables

Table 4. Impact of China on FDI Flows to Asia: Role of GDP per Capita in Diversion.

Indicator of FDI flows to China	China's share of total FDI to the region			FDI to China / total GDP of other economies		
Coefficient (p-statistics)	OLS[1]	A-Bond[2]	IV[3]	OLS[1]	A-Bond[2]	IV[3]
Lagged FDI	0.309***	0.272***	0.316***	0.319***	0.291***	0.311***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
China indicator	-0.018	-0.010	-0.021	-0.378	-0.198	-0.553
	(0.139)	(0.462)	(0.172)	(0.167)	(0.545)	(0.102)
China indicator *GDP per capita	-0.001	-0.002*	-0.001	0.003	-0.008	-0.004
	(0.302)	(0.095)	(0.314)	(0.868)	(0.663)	(0.854)
Corruption	0.002	0.003*	0.001	0.002	0.003*	0.001
	(0.231)	(0.089)	(0.456)	(0.182)	(0.084)	(0.424)
Government stability	-0.001	-0.001*	-0.001	-0.001	-0.001	-0.001
	(0.110)	(0.089)	(0.265)	(0.143)	(0.104)	(0.490)
Socioeconomic conditions	0.001	0.000	0.000	0.001	0.001	0.000
	(0.494)	(0.697)	(0.715)	(0.393)	(0.583)	(0.868)
Business environment	-0.000	-0.000	-0.000	-0.001	-0.001	-0.000
	(0.801)	(0.815)	(0.797)	(0.588)	(0.588)	(0.799)
Openness	-0.018**	-0.027***	-0.018**	-0.016*	-0.024**	-0.016*
	(0.037)	(0.005)	(0.034)	(0.078)	(0.018)	(0.068)
GDP per capita relative to China's	0.000	0.000	-0.000	-0.001	-0.000	-0.001*
	(0.957)	(0.519)	(0.485)	(0.309)	(0.526)	(0.098)
RER change	0.030***	0.033***	0.031***	0.029**	0.031***	0.031***
	(0.007)	(0.003)	(0.005)	(0.010)	(0.006)	(0.006)
Reserves	0.027	0.012	0.030	0.021	0.008	0.027
	(0.183)	(0.591)	(0.148)	(0.301)	(0.745)	(0.195)
Growth	-0.025	-0.025	-0.023	-0.024	-0.024	-0.022
	(0.519)	(0.525)	(0.552)	(0.543)	(0.553)	(0.569)
Inflation	-0.057*	-0.035	-0.062*	-0.054	-0.038	-0.061*
	(0.079)	(0.311)	(0.060)	(0.102)	(0.288)	(0.066)
Government balance	0.162***	0.139**	0.156***	0.166***	0.141**	0.144**
	(0.005)	(0.028)	(0.007)	(0.005)	(0.030)	(0.013)
Money	0.007	0.017	0.007	0.002	0.010	0.005
	(0.611)	(0.316)	(0.585)	(0.860)	(0.557)	(0.731)
G3 bond yield	-0.304***	-0.389***	-0.234**	-0.320**	-0.367***	-0.263***
	(0.003)	(0.001)	(0.012)	(0.011)	(0.009)	(0.007)
Bangladesh	0.041***		0.039***	0.040***		0.038***
	(0.001)		(0.001)	(0.002)		(0.001)
India	0.045***		0.044***	0.044***		0.043***
	(0.002)		(0.002)	(0.003)		(0.002)

Indicator of FDI flows to China	China's share of total FDI to the region			FDI to China / total GDP of other economies		
Coefficient (p-statistics)	OLS[1]	A-Bond[2]	IV[3]	OLS[1]	A-Bond[2]	IV[3]
Indonesia	0.047***		0.046***	0.046***		0.045***
	(0.001)		(0.001)	(0.002)		(0.001)
Korea	0.050***		0.058***	0.049***		0.055***
	(0.003)		(0.001)	(0.004)		(0.002)
Malaysia	0.084***		0.088***	0.081***		0.084***
	(0.000)		(0.000)	(0.000)		(0.000)
Myanmar	0.090***		0.088***	0.088***		0.086***
	(0.000)		(0.000)	(0.000)		(0.000)
Papua NG	0.075***		0.075***	0.072***		0.072***
	(0.000)		(0.000)	(0.000)		(0.000)
Philippines	0.059***		0.058***	0.056***		0.057***
	(0.000)		(0.000)	(0.000)		(0.000)
Singapore	0.141***		0.159***	0.140***		0.152***
	(0.000)		(0.000)	(0.000)		(0.000)
Sri Lanka	0.064***		0.064***	0.062***		0.061***
	(0.000)		(0.000)	(0.000)		(0.000)
Taiwan P.O.C.	0.037		0.046	0.045		0.046
	(0.262)		(0.163)	(0.177)		(0.159)
Thailand	0.056***		0.057***	0.054***		0.055***
	(0.000)		(0.000)	(0.001)		(0.000)
Vietnam	0.084***		0.083***	0.082***		0.081***
	(0.000)		(0.000)	(0.000)		(0.000)
Observations	212	198	212	212	198	212

***, **, and * indicate significance at the 1, 5 and 10 percent levels, respectively.

[1]: OLS= Ordinary Least Squares
[2]: A-Bond=Arellano-Bond
[3]: IV= Instrumental Variables

Table 5. Impact of China on FDI Flows to Asia: Role of Scientific Development in Diversion.

Indicator of FDI flows to China	China's share of total FDI to the region			FDI to China / total GDP of other economies		
Coefficient (p-statistics)	OLS[1]	A-Bond[2]	IV[3]	OLS[1]	A-Bond[2]	IV[3]
Lagged FDI	0.210**	0.191**	0.264***	0.248***	0.231**	0.278***
	(0.015)	(0.029)	(0.002)	(0.004)	(0.011)	(0.002)
China indicator	-0.010	-0.010	-0.019	-0.106	-0.060	-0.339
	(0.485)	(0.531)	(0.431)	(0.758)	(0.881)	(0.507)
China indicator *scientific publications	-0.583**	-0.599**	-0.349	-5.363	-5.554	-7.524
	(0.020)	(0.017)	(0.285)	(0.231)	(0.240)	(0.251)
Scientific publications	0.450***	0.467***	0.280	0.253*	0.267*	0.282
	(0.008)	(0.006)	(0.132)	(0.090)	(0.087)	(0.100)
Corruption	0.001	0.002	0.002	0.001	0.002	0.002
	(0.448)	(0.318)	(0.365)	(0.487)	(0.413)	(0.402)
Government stability	-0.002*	-0.002*	-0.001	-0.001	-0.001	-0.001
	(0.085)	(0.098)	(0.202)	(0.127)	(0.154)	(0.261)
Socioeconomic conditions	0.000	0.000	0.000	0.000	0.000	0.000
	(0.904)	(0.867)	(0.829)	(0.816)	(0.819)	(0.933)
Business environment	0.002	0.002	0.001	0.001	0.001	0.001
	(0.196)	(0.199)	(0.427)	(0.353)	(0.358)	(0.377)
Openness	-0.022*	-0.024*	-0.018	-0.019	-0.020	-0.018
	(0.073)	(0.063)	(0.149)	(0.144)	(0.149)	(0.152)
GDP per capita relative to China's	-0.001	-0.001	-0.002***	-0.001**	-0.001**	-0.002***
	(0.135)	(0.164)	(0.004)	(0.026)	(0.031)	(0.004)
RER change	0.033***	0.033***	0.029**	0.031**	0.031**	0.029**
	(0.008)	(0.008)	(0.019)	(0.016)	(0.018)	(0.020)
Reserves	0.027	0.017	0.012	0.008	-0.002	0.012
	(0.475)	(0.663)	(0.737)	(0.821)	(0.951)	(0.738)
Growth	-0.047	-0.048	-0.049	-0.051	-0.052	-0.047
	(0.311)	(0.301)	(0.294)	(0.280)	(0.298)	(0.317)
Inflation	-0.091**	-0.087*	-0.093**	-0.093**	-0.090*	-0.092**
	(0.033)	(0.051)	(0.032)	(0.034)	(0.056)	(0.035)
Government balance	0.209***	0.197**	0.194***	0.190**	0.179**	0.182**
	(0.004)	(0.013)	(0.009)	(0.013)	(0.036)	(0.013)
Money	0.060	0.061	0.040	0.036	0.033	0.037
	(0.477)	(0.480)	(0.640)	(0.674)	(0.723)	(0.664)
G3 bond yield	-0.217	-0.221	-0.121	-0.184	-0.159	-0.142
	(0.238)	(0.288)	(0.473)	(0.420)	(0.542)	(0.448)
Bangladesh	0.029		0.029	0.027		0.026
	(0.141)		(0.163)	(0.208)		(0.193)

Indicator of FDI flows to China	China's share of total FDI to the region			FDI to China / total GDP of other economies		
Coefficient (p-statistics)	OLS[1]	A-Bond[2]	IV[3]	OLS[1]	A-Bond[2]	IV[3]
India	0.028		0.030	0.028		0.027
	(0.273)		(0.263)	(0.298)		(0.315)
Indonesia	0.035		0.036	0.035		0.034
	(0.115)		(0.127)	(0.146)		(0.143)
Korea	0.038		0.051*	0.043		0.051*
	(0.164)		(0.074)	(0.127)		(0.072)
Malaysia	0.076**		0.081**	0.079**		0.080**
	(0.023)		(0.022)	(0.023)		(0.023)
Myanmar	0.091***		0.087***	0.088***		0.084***
	(0.001)		(0.002)	(0.002)		(0.002)
Papua NG	0.067***		0.065**	0.064**		0.062**
	(0.007)		(0.012)	(0.014)		(0.014)
Philippines	0.050**		0.049**	0.047**		0.047**
	(0.025)		(0.039)	(0.046)		(0.044)
Singapore	0.121**		0.158***	0.141**		0.156***
	(0.032)		(0.006)	(0.013)		(0.007)
Sri Lanka	0.054**		0.053**	0.051*		0.050*
	(0.036)		(0.049)	(0.059)		(0.059)
Thailand	0.046**		0.048*	0.046*		0.047*
	(0.046)		(0.052)	(0.056)		(0.056)
Vietnam	0.081***		0.076***	0.076***		0.073***
	(0.001)		(0.003)	(0.003)		(0.003)
Observations	158	145	158	158	145	158

***, **, and * indicate significance at the 1, 5 and 10 percent levels, respectively.

[1]: OLS= Ordinary Least Squares
[2]: A-Bond=Arellano-Bond
[3]: IV= Instrumental Variables

Table 6. Impact of China on FDI Flows to Asia: Role of Scientific Development in Diversion, Excluding Singapore.

Indicator of FDI flows to China	China's share of total FDI to the region			FDI to China / total GDP of other economies		
Coefficient (p-statistics)	OLS[1]	A-Bond[2]	IV[3]	OLS[1]	A-Bond[2]	IV[3]
Lagged FDI	0.307***	0.278***	0.291***	0.299***	0.266***	0.291***
	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
China indicator	-0.014	-0.009	-0.021	-0.019	0.057	-0.021
	(0.374)	(0.559)	(0.343)	(0.952)	(0.859)	(0.343)
China indicator *scientific publications	0.217	-0.251	1.028	-4.898	-11.739	1.028
	(0.828)	(0.802)	(0.322)	(0.750)	(0.442)	(0.322)
Scientific publications	0.060	0.304	-0.318	0.312	0.458	-0.318
	(0.916)	(0.586)	(0.540)	(0.434)	(0.240)	(0.540)
Corruption	0.001	0.003	0.001	0.001	0.003	0.001
	(0.475)	(0.163)	(0.512)	(0.665)	(0.221)	(0.512)
Government stability	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	(0.103)	(0.124)	(0.167)	(0.119)	(0.154)	(0.167)
Socioeconomic conditions	0.001	0.001	0.000	0.000	0.001	0.000
	(0.615)	(0.547)	(0.761)	(0.687)	(0.572)	(0.761)
Business environment	0.002*	0.003**	0.002*	0.002*	0.003**	0.002*
	(0.056)	(0.044)	(0.051)	(0.055)	(0.043)	(0.051)
Openness	-0.003	-0.003	-0.004	-0.005	-0.004	-0.004
	(0.784)	(0.828)	(0.748)	(0.682)	(0.753)	(0.748)
GDP per capita relative to China's	0.000	-0.000	0.000	-0.000	-0.001	0.000
	(0.942)	(0.834)	(0.854)	(0.951)	(0.573)	(0.854)
RER change	0.021*	0.021*	0.022**	0.023**	0.022**	0.022**
	(0.057)	(0.051)	(0.043)	(0.037)	(0.038)	(0.043)
Reserves	-0.001	-0.011	-0.007	-0.011	-0.023	-0.007
	(0.973)	(0.762)	(0.845)	(0.766)	(0.521)	(0.845)
Growth	-0.090**	-0.093**	-0.093**	-0.090**	-0.096**	-0.093**
	(0.031)	(0.020)	(0.026)	(0.031)	(0.017)	(0.026)
Inflation	-0.112***	-0.108***	-0.108***	-0.107***	-0.103***	-0.108***
	(0.003)	(0.003)	(0.004)	(0.005)	(0.004)	(0.004)
Government balance	0.206***	0.184***	0.196***	0.201***	0.177**	0.196***
	(0.002)	(0.007)	(0.003)	(0.004)	(0.011)	(0.003)
Money	-0.032	-0.027	-0.036	-0.029	-0.021	-0.036
	(0.670)	(0.714)	(0.628)	(0.707)	(0.776)	(0.628)
G3 bond yield	0.001	0.064	0.049	0.042	0.127	0.049
	(0.997)	(0.717)	(0.741)	(0.836)	(0.539)	(0.741)

Indicator of FDI flows to China	China's share of total FDI to the region			FDI to China / total GDP of other economies		
Coefficient (p-statistics)	OLS[1]	A-Bond[2]	IV[3]	OLS[1]	A-Bond[2]	IV[3]
Bangladesh	0.018		0.017	0.010		0.017
	(0.338)		(0.348)	(0.603)		(0.348)
India	0.024		0.025	0.016		0.025
	(0.304)		(0.293)	(0.509)		(0.293)
Indonesia	0.019		0.019	0.013		0.019
	(0.351)		(0.352)	(0.543)		(0.352)
Korea	0.003		0.004	-0.003		0.004
	(0.917)		(0.879)	(0.904)		(0.879)
Malaysia	0.048		0.052*	0.047		0.052*
	(0.107)		(0.089)	(0.122)		(0.089)
Myanmar	0.085***		0.085***	0.077***		0.085***
	(0.000)		(0.000)	(0.002)		(0.000)
Papua NG	0.042*		0.044*	0.036		0.044*
	(0.058)		(0.057)	(0.108)		(0.057)
Philippines	0.029		0.030	0.023		0.030
	(0.149)		(0.152)	(0.258)		(0.152)
Sri Lanka	0.037		0.037	0.031		0.037
	(0.114)		(0.116)	(0.200)		(0.116)
Thailand	0.023		0.025	0.019		0.025
	(0.274)		(0.259)	(0.376)		(0.259)
Vietnam	0.058***		0.059***	0.052**		0.059***
	(0.007)		(0.008)	(0.019)		(0.008)
Observations	143	131	143	143	131	143

***, **, and * indicate significance at the 1, 5 and 10 percent levels, respectively.

[1]: OLS= Ordinary Least Squares
[2]: A-Bond=Arellano-Bond
[3]: IV= Instrumental Variables

Table 7. Impact of China on FDI Flows to Asia: Role of Education in Diversion.

Indicator of FDI flows to China	China's share of total FDI to the region			FDI to China / total GDP of other economies		
Coefficient (p-statistics)	OLS[1]	A-Bond[2]	IV[3]	OLS[1]	A-Bond[2]	IV[3]
Lagged FDI	0.303***	0.140	0.311***	0.317***	0.154	0.306**
	(0.010)	(0.324)	(0.009)	(0.008)	(0.286)	(0.012)
China indicator	-0.031	-0.024	0.027	-0.059	-0.566	0.350
	(0.466)	(0.578)	(0.630)	(0.951)	(0.589)	(0.754)
China indicator *secondary education	0.000	0.000	-0.001	0.007	0.005	-0.016
	(0.836)	(0.960)	(0.409)	(0.667)	(0.778)	(0.522)
China indicator *tertiary education	-0.000	-0.001	0.001	-0.015	-0.023	0.014
	(0.794)	(0.553)	(0.577)	(0.627)	(0.523)	(0.634)
Secondary education	0.001	0.001	0.001*	0.001	0.001	0.001**
	(0.295)	(0.312)	(0.071)	(0.134)	(0.174)	(0.047)
Tertiary education	0.001	0.001	0.000	0.001	0.001	0.001
	(0.414)	(0.599)	(0.738)	(0.274)	(0.549)	(0.506)
Corruption	0.002	-0.001	0.002	0.002	-0.001	0.002
	(0.494)	(0.875)	(0.506)	(0.510)	(0.858)	(0.489)
Government stability	-0.003**	-0.001	-0.002*	-0.003*	-0.000	-0.002
	(0.031)	(0.697)	(0.094)	(0.062)	(0.820)	(0.126)
Socioeconomic conditions	0.001	0.002	0.001	0.002	0.002	0.001
	(0.404)	(0.406)	(0.389)	(0.376)	(0.353)	(0.398)
Business environment	0.005**	-0.001	0.004*	0.004*	-0.001	0.004*
	(0.048)	(0.783)	(0.093)	(0.073)	(0.709)	(0.099)
Openness	-0.029*	-0.074***	-0.029*	-0.029*	-0.073**	-0.028
	(0.088)	(0.008)	(0.095)	(0.089)	(0.011)	(0.116)
GDP per capita relative to China's	-0.000	0.000	-0.000	-0.001	0.000	-0.000
	(0.719)	(0.822)	(0.601)	(0.573)	(0.975)	(0.657)
RER change	0.053***	0.038**	0.061***	0.060***	0.040**	0.061***
	(0.005)	(0.045)	(0.001)	(0.002)	(0.033)	(0.001)
Reserves	0.020	-0.064	0.022	0.006	-0.069	0.020
	(0.712)	(0.390)	(0.662)	(0.911)	(0.369)	(0.697)
Growth	-0.002	-0.119	0.007	0.014	-0.098	0.010
	(0.978)	(0.218)	(0.928)	(0.853)	(0.308)	(0.890)
Inflation	0.020	-0.172**	0.030	0.048	-0.154*	0.035
	(0.786)	(0.048)	(0.678)	(0.506)	(0.087)	(0.620)
Government balance	0.272**	0.301**	0.265**	0.297**	0.286*	0.263**
	(0.020)	(0.045)	(0.025)	(0.012)	(0.064)	(0.027)
Money	0.048	-0.198	0.071	0.044	-0.197	0.061
	(0.687)	(0.183)	(0.560)	(0.713)	(0.201)	(0.612)
G3 bond yield	-0.220	-0.493	-0.008	0.039	-0.460	-0.016
	(0.450)	(0.216)	(0.969)	(0.926)	(0.413)	(0.944)

Indicator of FDI flows to China	China's share of total FDI to the region			FDI to China / total GDP of other economies		
Coefficient (p-statistics)	OLS[1]	A-Bond[2]	IV[3]	OLS[1]	A-Bond[2]	IV[3]
Bangladesh	-0.000		-0.045	-0.035		-0.038
	(0.991)		(0.258)	(0.481)		(0.277)
India	-0.014		-0.064	-0.052		-0.057
	(0.791)		(0.189)	(0.374)		(0.202)
Indonesia	-0.017		-0.065	-0.056		-0.059
	(0.759)		(0.191)	(0.354)		(0.200)
Korea	-0.077		-0.125*	-0.122		-0.121*
	(0.343)		(0.075)	(0.169)		(0.077)
Malaysia	0.026		-0.026	-0.009		-0.020
	(0.698)		(0.677)	(0.895)		(0.743)
Myanmar	0.054		0.001	0.014		0.008
	(0.325)		(0.989)	(0.811)		(0.862)
Papua NG	0.049		0.003	0.015		0.010
	(0.318)		(0.941)	(0.780)		(0.812)
Philippines	-0.031		-0.080	-0.074		-0.074
	(0.627)		(0.157)	(0.293)		(0.165)
Singapore	0.065		0.015	0.036		0.019
	(0.529)		(0.876)	(0.742)		(0.848)
Sri Lanka	-0.004		-0.055	-0.041		-0.049
	(0.946)		(0.307)	(0.511)		(0.330)
Thailand	-0.014		-0.060	-0.053		-0.054
	(0.815)		(0.258)	(0.424)		(0.282)
Vietnam	0.030		-0.018	-0.008		-0.011
	(0.583)		(0.710)	(0.887)		(0.811)
Observations	107	76	107	107	76	107

***, **, and * indicate significance at the 1, 5 and 10 percent levels, respectively.

[1]: OLS= Ordinary Least Squares
[2]: A-Bond=Arellano-Bond
[3]: IV= Instrumental Variables

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