

# Asian foreign direct investment and the 'China effect'

# 11

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## Introduction

Since the 1990s and especially after China's accession to the World Trade Organisation (WTO), China has become one of the most-favoured destinations for foreign direct investment (FDI). In 2008, FDI inflows into China reached US\$92.4 billion. In 2009, despite the global economic recession, which severely affected world FDI flows, China still attracted US\$90 billion of FDI inflows. By the end of 2009, China had attracted a total of US\$760 billion in FDI inflows,<sup>1</sup> making it by far the largest FDI recipient among the developing countries in the world.

There are, however, increasing concerns that China's FDI success has been excessive, thereby crowding out FDI inflows into other countries. Several of China's neighbouring Asian economies have raised concerns that the emergence of China has not only diverted FDI away from them but has encouraged their own domestic investors to leave their economies, resulting in a continuous loss of manufacturing industries and jobs, and further weakening their economies.

A growing China can add to other countries' FDI inflows by creating more opportunities for production networking and by raising the demand for raw materials and resources. At the same time, low Chinese labour costs can lure multinational enterprises (MNEs) away from other Asian economies when the MNEs consider alternative locations for low-cost export platforms. Theoretically, competition for any resource flow can obviously occur when the resource in question is available in limited amounts. This 'zero-sum' hypothesis is, however, difficult to justify in the case of FDI. For example, FDI inflows accounted for only 12.3 per cent of world gross fixed capital formation in 2008 (UNCTAD 2009), and additional FDI resources can be easily diverted from domestic resources and other international capital flows should investment opportunities arise.

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1 At constant 1990 US dollar prices.

This chapter examines empirically the question of whether the success of China in attracting FDI inflows has diverted FDI away from—or has been complementary to FDI inflows into—other Asian economies. The next section presents an overview of FDI inflows into China during the past three decades and discusses the current literature on the effects of FDI inflows into China on FDI inflows elsewhere. The subsequent section sets out the framework of analysis, the hypotheses, the empirical model and the variable specification. Following this is a presentation and discussion of the regression results, before some conclusions are drawn.

## The growth of FDI inflows into China

As shown in Figure 11.1, the growth of FDI inflows into China from 1982 to 2009 can be broadly divided into three phases: the experimental phase from 1982 to 1991, the boom phase from 1992 to 2001 and the post-WTO phase from 2002 to 2009.

During the experimental phase, FDI inflows into China were at a low level but grew steadily. They were concentrated mainly in the south-eastern coastal areas, particularly in the four special economic zones (SEZs).<sup>2</sup> In the second phase, FDI inflows into China increased rapidly during 1992–96, but slowed after 1997 and declined in 1999 and 2000, followed by a moderate recovery in 2001. The slowdown of FDI inflows into China during 1997–2000 was caused mainly by the East Asian financial crisis. After China's entry into the WTO, with the implementation of its WTO commitments and broader and deeper liberalisation in trade and investment, FDI inflows into China increased rapidly—from US\$46.9 billion in 2001 to US\$92.4 billion in 2008, before declining to US\$90 billion in 2009 in the aftermath of the global financial crisis.

China's success in attracting FDI inflows, particularly after its WTO accession, has caused increasing concerns that it has come at the expense of other developing countries, particularly its neighbouring Asian developing economies. An increasing number of empirical studies have focussed on the effects of FDI inflows into China on those into other countries (see, for example, Chantasawat et al. 2004; Cravino et al. 2007; Eichengreen and Tong 2005; Resmini and Siedschlag 2008; Mercereau 2005; Zhou and Lall 2005; Wang et al. 2007). These studies differ in the measurement of FDI flows and in estimation techniques.

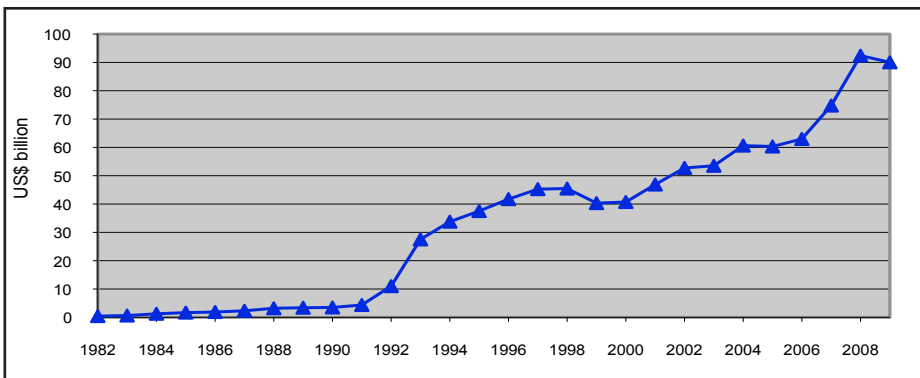
Chantasawat et al. (2004) use data for eight Asian economies—Hong Kong, Taiwan, Republic of Korea, Singapore, Malaysia, Philippines, Indonesia and

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2 The four special economic zones are Shenzhen, Zhuhai, Shantou in Guangdong Province and Xiamen in Fujian Province.

Thailand—in addition to China for the period 1985–2001. They estimate equations for China's FDI inflows and other Asian economies' FDI inflows using two-stage least squares. They find that the level of China's FDI is positively related to the levels of these economies' inward FDI, although this 'China effect' is generally not the most important determinant of inward FDI into these economies. Policy and institutional factors such as openness, corporate tax rates and the level of corruption tend to be more important. Zhou and Lall (2005) and Wang et al. (2007) estimate panel models to investigate the effect of FDI inflows into China on FDI inflows into other Asian economies. They also find that, on average, FDI inflows into China have raised rather than diverted FDI inflows into neighbouring economies.

**Figure 11.1 FDI inflows into China (at current prices)**



Note: The data do not include FDI inflows into the finance sector.

Sources: National Bureau of Statistics (NBS) various years, *China Statistical Yearbook*, China Statistics Press, Beijing.

Mercereau (2005) also investigates the impact of China's emergence on FDI inflows into Asia, using data from 14 Asian economies from 1984 to 2002 and using a number of econometric methods, including ordinary least squares (OLS) with fixed country effects, dynamic panels with a lagged endogenous variable and instrumental variables. In contrast with the above studies, he does not find a positive relationship between China's FDI inflows and FDI inflows into other Asian economies. He does not find evidence, however, that China's success in attracting FDI has been at the expense of other economies 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 development are not associated with increased crowding out by China either. Some economic fundamentals, such as healthy government balances and low inflation, help explain the allocation of FDI inflows among Asian economies.

Eichengreen and Tong (2005) employ a gravity model and show that the emergence of China as a leading FDI destination has encouraged FDI inflows into other Asian economies via supply-chain production linkages. They also find evidence, however, suggesting that FDI inflows into China have diverted FDI inflows away from Europe. They explain this diversion effect by the negative impact of distance on supply-chain production linkages. In contrast, Resmini and Siedschlag (2008) estimate an augmented gravity model to analyse the effects of FDI inflows into China originating in Organisation for Economic Cooperation and Development (OECD) economies on FDI inflows into the European Union and other economies for the period 1990–2004. Their results suggest that on average, FDI inflows into China have been complementary to FDI inflows into other host countries and into the European Union as well. This complementary relationship is, however, not constant across countries, but is instead weaker in Europe than outside it; also these complementarities follow a decreasing trend over the analysed period.

Finally, Cravino et al. (2007) examine the effect of foreign capital stock in China on the Latin American and Caribbean countries and find no evidence of FDI diversion from OECD countries—in particular from the United States—into China at the expense of the Latin American and Caribbean countries. While the growth of capital stocks in China originating from the OECD was faster than in Latin American and Caribbean countries for the period 1990–97, this relative growth has slowed since then.

The above empirical studies indicate that there is little to suggest that China's FDI success has crowded out FDI inflows into other countries. On the contrary, there is strong empirical evidence that, on average, FDI inflows into China have been complementary to FDI inflows into other host countries, especially into China's neighbouring economies.

## Framework of analysis and the empirical model

This study uses a gravity model to investigate the impact of FDI inflows into China on FDI inflows into other Asian developing economies. Apart from being used extensively in studies of trade flows, the gravity model has been used in studies of FDI flows. As elaborated by Dunning's (1993) 'OLI' explanation of FDI, many factors influence the flows of FDI. Since these factors are located in different areas, the general argument for the use of the gravity model in line with the OLI framework is that each factor can be categorised as a source-country factor (reflected in ownership and internalisation advantages) or a host-economy factor (reflected in location advantages). Source-country factors reflect

the capacity of a source country to conduct FDI in all possible host economies, while host economy factors are characteristics of the overall attractiveness of a host economy for FDI inflows from all source countries.

Based on the gravity model and the OLI framework in explaining FDI, the fundamental model used here can be written as Equation 11.1.

### Equation 11.1

$$\ln \text{FDI}_{*j} = \beta_0 + \beta_1 \ln X_* + \beta_2 \ln X_j$$

In Equation 11.1,  $\text{FDI}_{*j}$  is the magnitude of total FDI inflows from all source countries into host economy  $j$ ,  $X_*$  are the aggregate source country variables and  $X_j$  are host economy variables.

Since source country  $i$ 's variables,  $X_i$ —which measure the overall outward investment potential of source country  $i$ —are determined by its own technological and economic development levels, the key feature of these variables is that they are common to all outward FDI of source country  $i$  and are independent of factors in the destination countries. Therefore, the aggregate source-country variables,  $X_*$ , become a constant for each of the host economies—although one that changes over time. In the real implementation, we use the world total FDI outflows (WFDIOUT) of all source countries to capture the effects of source-country variables,  $X_*$ . We adopt the log-linear form as the basic functional form to connect the magnitude of FDI inflows from all source countries to host economy  $j$  to the relevant explanatory variables (aggregate source-country variables and host economy variables).

## The hypotheses

As shown in many studies, the location factors determining FDI inflows into developing economies are mainly market size, economic growth, per capita income, labour costs, resource endowments, economic and political stability, and investment incentives offered by the host country government. In the following, we examine briefly how each of these location factors plays an important role in determining the magnitude of FDI inflows into developing host economies.

### Market size and economic growth of host economies

The main argument for the importance of market size as a location factor in the determination of inflows of FDI is based primarily on economies of scale: larger economies can provide more opportunities to realise and explore economies of scale, to realise the specialisation of productive factors and to absorb more

efficiently the technology that foreign investors desire to introduce. Therefore, we expect that the magnitude of FDI inflows will be greater the larger is the market size of the developing host economy. The significance of this argument is, however, debatable in open economies. This is because in open economies, enterprises and industries can realise and explore economies of scale through international markets instead of relying only on the domestic market—and this point is especially relevant in the East and South-East Asian economies. As a result, instead of using gross domestic product (GDP) or per capita GDP as the measure of market size, we use the real rate of economic growth to capture this location variable.

A high rate of economic growth is an indicator of development potential, which is expected to be an important location determinant affecting FDI inflows. First, the higher level of economic growth represents a better overall economic condition of the host economies, which is attractive to foreign investors. Second, a higher level of economic growth is an indicator of improving conditions in local infrastructure, which is fundamental for attracting FDI inflows. Third, a higher level of economic growth implies a fast expansion of the market size, a rapid rise in domestic demand and a growing purchasing power of the host economies' consumers, which is an important determinant of market-oriented FDI. Clearly, markets that are expected to grow faster will tend to attract higher levels of inward FDI. Therefore, the hypothesis is that there is a positive relationship between inward FDI and economic growth in the developing host economy. In this study, the real GDP growth rate, denoted by GR, is used as the comprehensive measure of development potential in the host economy under study.

## Factor costs in host economies

In the FDI literature, the most important factor cost in the determination of FDI inflows is the wage rate, especially when FDI is export oriented. Therefore, the relevant factor cost in the decision to locate FDI in the host economy is that of labour costs. In particular, lower labour costs are expected to induce higher levels of FDI inflows, especially for export-oriented FDI. A lower wage rate could, however, also be accompanied by lower productivity, and thus the efficiency wage might not in fact be low. Therefore, the best measure of labour costs is the 'efficiency wage' rather than the absolute wage rate. The efficiency wage can be measured directly as Equation 11.2.

### Equation 11.2

$$EW_j = \frac{W_j}{\Pi_j}$$

In Equation 11.2,  $EW_j$  is the average efficiency wage in host economy  $j$ ,  $W_j$  is the absolute wage rate in host economy  $j$  and  $\Pi_j$  is the average productivity of labour in host economy  $j$ . The efficiency wage as a measure of labour costs has the advantage of being unit free.

There are two major problems involved in international cross-country comparisons of wage rates and labour productivity. One is the different price level in different countries and another is the different exchange rate, especially in developing countries. To avoid these problems, this study uses total labour earnings as a percentage of total value added in each developing economy as the corresponding measure of the efficiency wage.<sup>3</sup> In fact, according to the above definition for the efficiency wage, the measure of total earnings as a percentage of total value added is exactly the average efficiency wage in the developing host economies.<sup>4</sup> In this study, we expect the efficiency wage to be negatively related to the level of FDI inflows into host developing economies.

## Country risk (country credit rating)

Studies of FDI in developing countries have put particular emphasis on indicators of economic and political risk (such as Lucas 1993; Singh and Jun 1995). Country risk comprises three main elements: macroeconomic stability—for example, economic growth, inflation and exchange rate risk; institutional stability, such as policies towards FDI, tax regimes, the transparency of legal regulations, intellectual property protection and the scale of corruption; and political stability, ranging from indicators of political freedom to measures of surveillance and revolutions. While there is a variety of ways in which country risk can be approximated for empirical studies, a common approach relies on country credit ratings, which provides information available to firms at the time of their investment decision.

Country credit ratings are developed by Institutional Investors, which has published credit ratings twice a year since 1979 to assess the creditworthiness of about 150 countries, based on a survey of some 100 international bankers' perceptions of creditworthiness, including economic, financial and socio-political stability criteria. The resulting score scales from zero (very high chance of default) to 100 (least chance of default). Participants' responses are adjusted according to their institutions' assets, with heavier weights on those institutions with worldwide exposure and sophisticated country-analysis

3 Total labour earnings are calculated as the wage rate multiplied by total employment. The data for wage rates and employment are from ILO (n.d.). The data for total value added are from United Nations Statistical Division (n.d., *National Accounts*). The calculation is based on local currency and current prices.

4 The derivation of the average efficiency wage is as follows:  $EW = W/\Pi = (Y/L) / (V/L) = Y/V$ , in which  $EW$  is efficiency wage,  $W$  is the wage rate,  $\Pi$  is labour productivity,  $Y$  is total labour earnings,  $V$  is total value added and  $L$  is total labour.



systems. This study uses the credit rating of the host country to measure the investor's perception of country-specific risk. The hypothesis is that the lower is the country risk (the higher is the country credit rating) the higher will be the level of FDI inflows. The country credit rating, denoted as CDR, is compiled from various issues of *Institutional Investor* magazine.

## The empirical model and variable specification

To investigate the effects of FDI inflows into China on FDI inflows into other Asian developing economies, we add FDI inflows from all source countries into China—denoted as FDICHN—as an independent variable into the equation.

There are at least two aspects that need to be considered here. First, in examining in which low-wage export platform to locate, MNEs can choose between investing in China versus investing in another developing Asian economy. In this case, the MNEs will study all the factors that will make an economy desirable as a site for low-cost production. Investing in China will then reduce the FDI inflows into another Asian developing economy. The sign of FDICHN, according to this argument, is negative. We call this the 'investment-diversion effect'.

The second aspects are the production and resource linkages between a growing China and the other Asian developing economies. In manufacturing, this takes the form of further specialisation and growing fragmentation of the production processes. An investor sets up factories in both China and another Asian developing economy to take advantage of their respective competitiveness in distinct stages of the production process. Components and parts are then traded among China and other Asian developing economies. An increase in FDI inflows into China is then positively related to an increase in FDI inflows into other Asian developing economies. A different but complementary argument is that as China grows, its market size increases and its demand for minerals and resources rises accordingly. Subsequently, MNEs rush into China to produce and to sell in China. At the same time, other MNEs also invest in other Asian developing economies to extract minerals and resources to export to China. This line of reasoning leads to the prediction that the sign of FDICHN will be positive. We call this the 'investment-creation effect'. Theoretically, we cannot determine *a priori* the net effect of investment creation and investment diversion for China. It is thus important to examine this issue empirically.

To investigate the China effect on FDI inflows into other Asian developing economies, we use Equation 11.3 as the empirical model.



**Equation 11.3**

$$\ln \text{FDI}_{*j,t} = \beta_0 + \beta_1 \ln \text{FDICHN}_{*,t-k} + \beta_2 \ln \text{WFDIOUT}_t + \beta_3 \ln \text{GR}_{j,t-k} + \beta_4 \ln \text{EW}_{j,t-k} + \beta_5 \ln \text{CDR}_{j,t-k} + v_j + \varepsilon_{j,t}$$

The dependent variable, denoted as  $\text{FDI}_{*j,t}$ , is the aggregate inflow of FDI from all source countries into Asian developing host economy  $j$  in year  $t$ . The value of FDI—and all the relevant following variables—is measured in constant 1990 US dollar prices. There are five independent variables. The independent variables of GR, EW and CDR are hypothesised and defined in the above section. We include the world total FDI outflows (WFDIOUT) as an independent variable to control the aggregate supply-side effect of FDI on FDI inflows into Asian developing host economies. The dependent and independent variables are summarised in Appendix Table 11.1.

The independent variables, except WFDIOUT, are lagged  $k$  years. This model assumes that the effect of the independent variables at time  $t-k$  appears only within period  $t$  and is fully completed within that period. The relationship shown in Equation 11.3 will be examined for  $k = 1$ —the most likely appropriate lag. The independent variable WFDIOUT, which is world total FDI outflows, is determined by the source-side factors and is independent from host-economy determinants; therefore, the current value ( $k = 0$ ) will be employed in the regression equation. The estimated coefficients of  $\ln \text{FDICHN}_{*,t-k}$ ,  $\ln \text{WFDIOUT}_{*,t}$ ,  $\ln \text{GR}_{j,t-k}$ ,  $\ln \text{EW}_{j,t-k}$  and  $\ln \text{CDR}_{j,t-k}$  variables are elasticities. The econometric regression analysis below uses panel data and a fixed-effects model in order to eliminate the economy-specific and time-invariant factors that could affect FDI inflows.

## Regression results and explanations

In this empirical study, there are 12 Asian developing economies in the sample and the time period is from 1992 to 2008. The 12 economies are Bangladesh, Hong Kong, India, Indonesia, Malaysia, Pakistan, the Philippines, Singapore, South Korea, Sri Lanka, Taiwan and Thailand. The fixed-effects regression results are reported in column 1 of Table 11.A1. The model fits the data well. All the independent variables have the expected signs and are statistically significant.

As a robustness check, the regression is also run without the four South Asian developing economies: Bangladesh, India, Pakistan and Sri Lanka. The regression results remain very similar to those with the four South Asian developing economies in the sample and are reported in column 2 of Table 11.1. The model performs well: the independent variables have the expected signs and, except for the variable GR, are statistically significant.

Our main variable of interest, *FDICHN*, is positive and highly significant in both regressions. A 10 per cent increase in the FDI inflows into China would raise FDI inflows into the East, South and South-East Asian economies by about 4.8 per cent. Despite considerable concerns that an increase in FDI inflows into China has been at the expense of other Asian economies, this suggests that flows into those economies have increased as a result of DFI flows to China during the period of analysis.

**Table 11.1 Regression results of the effects of FDI inflows into China on FDI inflows into East, South and South-East Asian developing economies, 1992–2008, fixed-effects (dependent variable  $FDI_{*j,t}$ )**

Variables	(1)	(2)
Constant	–7.61 (–1.72)*	–12.84 (1.96)*
LFDICHN	0.48 (2.73)***	0.47 (2.44)**
LWOFDI	0.23 (4.33)***	0.21 (3.07)***
LGR	0.48 (2.17)**	0.36 (1.24)
LEW	–1.00 (–2.40)**	–1.02 (–2.02)**
LCDR	2.42 (2.42)**	3.86 (2.15)**
No. of observations	170	108
No. of groups	12	8
R2: within	0.54	0.43
between	0.82	0.42
overall	0.76	0.40
F-statistics	31.15***	15.77***

\* statistically significant at 0.10 level (two-tail test)

\*\* statistically significant at 0.05 level (two-tail test)

\*\*\* statistically significant at 0.01 level (two-tail test)

Notes: Standard errors adjusted for clustering on group; t-statistics are in parentheses.

The observed relationship could be linked to the increased resource demand by a rapidly growing Chinese economy and the production-networking activities among the Asian economies. As Table 11.2 shows, Asian economies have become increasingly important suppliers of China's growing demand for raw materials. For some resources, the Asian economies are the major suppliers to China—for example, Indonesia and Malaysia for animal, vegetable fats and oils, Taiwan, India and Pakistan for textiles and India, Indonesia and South Korea for mineral products. Therefore, China's fast economic growth associated with high demand for raw materials could generate great opportunities for MNEs to conduct resource-based FDI in Asian economies.

**Table 11.2 China's imports of raw materials from Asian economies (US\$ million)**

	1995	2000	2005	2008
<b>All 12 Asian economies</b>				
Animal, vegetable fats and oils (HS 15)	954 (36)	804 (67)	2131 (64)	7092 (63)
Mineral products (HS 25, 26, 27)	2958 (41)	5614 (23)	16 433 (18)	43 072 (17)
Pulp of wood and paper products (HS 47, 48)	1367 (43)	2684 (40)	2386 (23)	2495 (15)
Textiles (HS 52, 54, 55)	5290 (53)	5893 (62)	5932 (42)	5830 (43)
<b>Indonesia</b>				
Animal and vegetable fats (HS 15)	70 (3)	245 (21)	749 (23)	2482 (22)
Mineral products (HS 25, 26, 27)	766 (11)	1104 (5)	2282 (2.5)	5269 (2)
Pulp of wood and paper products (HS 47, 48)	180 (6)	928 (14)	893 (8)	1068 (7)
<b>Malaysia</b>				
Animal and vegetable fats (HS 15)	732 (28)	471 (39)	1271 (38)	4084 (36)
<b>Singapore</b>				
Mineral products (HS 27)	1123 (24)	852 (4)	2206 (3)	4325 (3)
<b>South Korea</b>				
Mineral products (HS 27)	398 (8)	2016 (10)	3506 (6)	9945 (6)
<b>Taiwan</b>				
Textiles (HS 54)	1046 (31)	1268 (35)	1359 (36)	1120 (31)
<b>Thailand</b>				
Mineral products (HS 27)	7.6 (0.2)	383 (2)	806 (1)	1803 (1)
<b>India</b>				
Mineral products (HS 26)	153 (8)	373 (12)	5509 (21)	14 314 (17)
Textiles (HS 52)	24 (1)	186 (7)	275 (4)	1130 (15)
<b>Pakistan</b>				
Textiles (HS 52)	173 (5)	398 (14)	581 (8)	599 (8)

Notes: Figures in parentheses are shares in China's total imports of the commodities. HS 15 = animal, vegetable fats and oils, cleavage products, and so on; HS 25 = salt, sulphur, earth, stone, plaster, lime and cement; HS 26 = ores, slag and ash; HS 27 = mineral fuels, oils, distillation products, and so on; HS 47 = pulp of wood, fibrous cellulosic material, waste, and so on; HS 48 = paper and paperboard, articles of pulp, paper and board; HS 52 = cotton; HS 54 = manmade filaments; HS 55 = manmade staple fibres.

Source: Author's calculations using data from United Nations Statistics Division n.d., *COMTRADE*, Commodity Trade Statistics Database, United Nations, New York and Geneva, <<http://unstats.un.org/unsd/comtrade/default.aspx>>

The evidence of production networking among China and other Asian economies can be found in the substantial two-way trade in intermediate and final goods

in the same industries among those economies. Many of the Asian economies—particularly those in East and South-East Asia—are heavily involved in vertical specialisation, particularly in the industries of electronics equipment (HS 85). As shown in Table 11.3, the value and shares of two-way trade in the electronic equipment industries between China and Asian economies have been substantial. The economic ties of mutual dependence among them have been deepening rapidly since the 1990s. The significance of the China effect in the level of FDI inflows into Asian economies could reflect such interdependence.

It is impossible to ascertain from the above regression results whether the China effect is driven primarily by resource demand or by production networking; this remains a topic for further research. The central result, however, still holds: an increase in FDI inflows into China is positively and significantly related to FDI inflows into other Asian economies. In other words, in recent decades, the investment-creation effect has dominated the investment-diversion effect, so Chinese and Asian FDI inflows have been complementary.

As for the location variables, the regression results provide strong support for the hypotheses. The market growth rate (GR) is a positive and statistically significant location determinant in affecting the magnitude of FDI inflows into Asian economies, with the results implying that the higher and faster the growth of an economy, the higher will be the level of FDI inflows.

A host economy's efficiency wage (EW)—the proxy for labour cost—is a negative statistically significant determinant of the magnitude of FDI inflows that a country receives. This indicates that FDI is responsive to differences in efficiency wages across Asian economies. It also reveals that taking advantage of Asian economies' cheap labour is one of the main motives for foreign investors in Asian developing economies.

A country's credit rating (CDR) is found to exert a large influence on the magnitude of FDI inflows into Asian economies. Economic, financial, institutional, social and political stabilities with high creditworthiness can be considered the most influential tools to promote FDI since they have a direct impact on the security and profitability of FDI projects.

Finally, the variable of world total FDI outflows (WFDIOUT) is positive and statistically significant. This signifies the impact of an overall supply-side effect on the inflows of FDI to Asian economies.

It is also interesting to note that, although FDI inflows into China have a positive and statistically significant effect on FDI inflows into other Asian economies, the China effect is not the most important factor determining FDI inflows into these Asian economies. The empirical regression results suggest that, all else being equal, the marginal effect of the host economies' location variables on FDI inflows into their economies is much larger than that of the China effect.

The marginal effect of the efficiency wage is approximately two times and the country credit rating is five to eight times as large as that of the China effect, respectively.

**Table 11.3 Two-way trade between China and Asian economies in electric and electronic equipment industries (HS 85)**

	Exports to China (US\$ million)	Share in total exports to China (%)	Imports from China (US\$ million)	Share in total imports from China (%)
<b>Hong Kong</b>				
1995	1957	22.8	5736	15.9
2000	3203	34.0	10 507	23.6
2005	4478	36.6	43 029	34.6
2008	4153	32.1	80 225	42.1
<b>Malaysia</b>				
1995	202	9.75	190	14.83
2000	2097	38.27	927	36.14
2005	12 664	63.03	2641	24.90
2008	17 226	53.66	4938	23.02
<b>Philippines</b>				
1995	10	3.62	84	8.16
2000	860	51.28	438	29.92
2005	9146	71.06	1482	31.61
2008	14 353	73.59	2386	26.13
<b>Singapore</b>				
1995	499	14.69	548	15.66
2000	1457	28.79	1745	30.29
2005	6370	38.57	6653	40.00
2008	6443	31.94	9763	30.22
<b>South Korea</b>				
1995	1103	10.72	473	7.07
2000	5089	21.93	1942	17.20
2005	25 774	33.55	8241	23.47
2008	37 648	33.57	18 426	24.92
<b>Taiwan</b>				
1995	2005	13.56	485	15.66
2000	6413	25.15	1088	21.59
2005	28 877	38.67	4887	29.53
2008	41 507	40.17	7637	29.52
<b>Thailand</b>				
1995	53	3.29	113	6.45
2000	816	18.63	416	18.55
2005	3706	26.49	1695	21.68
2008	5976	23.29	2962	18.95

Source: Author's calculations using data from United Nations Statistics Division n.d., *COMTRADE*, Commodity Trade Statistics Database, United Nations, New York and Geneva, <<http://unstats.un.org/>

[unsd/comtrade/default.aspx](http://unsd/comtrade/default.aspx)>

## **Implications for future FDI inflows into China and Asian economies**

The results in the previous section imply that the positive impact of the China effect on FDI inflows into Asian economies could be linked to the increased resource demand by a rapidly growing Chinese economy and the production-networking activities among the Asian economies. These two channels generating the positive China effect on FDI inflows into the Asian economies—especially into the Association of South-East Asian Nations (ASEAN)—will be strengthened in the next two decades.

First, with the creation and implementation of the ASEAN–China Free Trade Area (ACFTA) on 1 January 2010, the economic relationship between ASEAN and China entered a new era. The ACFTA covers agreements on trade in goods and services and investment, which will accelerate and intensify the economic integration and result in rapid development and expansion in trade and investment between ASEAN and China. Apart from the ACFTA, China has bilateral free-trade agreements with a number of Asian economies, including Pakistan, Thailand, Singapore, Hong Kong and Macao, and is proposing to negotiate bilateral free-trade agreements with India, South Korea and Taiwan. The reduction and elimination of barriers to trade and investment—to the extent that preferential trading agreements actually have this effect—will not only lead to an expansion of trade and investment among China and other Asian economies, it will create investment opportunities for third parties to invest in Asia—in China and elsewhere—in order to get into and take advantage of the enlarged Asian free-trade areas.

Second, one of the major driving forces behind the economic integration of the Asian economies is the fast growth of the Chinese economy. China's economic growth and strong investment expansion are energising the region and providing the Asian economies with an expanding and diversified market. According to a report by the Cabinet Office of the Japanese Government (NIKKEI.com 2010), the Chinese economy is predicted to grow 9.1 per cent annually in the decade from 2010 and 7.9 per cent annually in the 2020s. As a result, China is expected to generate 23.9 per cent of the world's GDP in 2030—becoming the largest economy in the world. The fast growth of the Chinese economy will continue to have a substantial impact on the Asian economies. On the one hand, as China's economy grows, it will increase the demand for consumer goods as the income of the Chinese people increases. On the other hand, China's rapid growth will also increase demand for resources and raw materials to support the continuing expansion of production. Both will generate great opportunities not only for

Asian economies to increase exports to the Chinese markets, but for MNEs to invest in Asian economies in order to produce goods and extract resources to supply the Chinese markets.

Third, with the fast and deep integration among the Chinese and other Asian economies, production-networking activities—particularly in vertical specialisation—will intensify with each of the economies specialising in the production of those goods in which it has a comparative advantage. Currently, China and other Asian economies have already developed substantial two-way trade in the electric and electronic equipment industries. In the years ahead, with the upgrading and restructuring of the industrial structures in China and Asian economies, it is highly likely that the two-way trade between China and other Asian economies will expand into other industries—for example, automobiles and machinery and equipment. This structural change and upgrading of industries throughout Asia will provide huge opportunities for MNEs to invest in China and other Asian economies based on their comparative advantages and competitiveness.

Fourth, with rapid economic growth, a high rate of capital accumulation and a huge accumulation of foreign reserves, China has gradually become an increasingly important supplier of outward FDI. During the period 2004–08, China's outward FDI increased from US\$5.5 billion to US\$55.9 billion—increasing more than nine times. Most of China's outward FDI flowed into Asian economies—accounting for 71.4 per cent of China's total outward FDI stock at the end of 2008. With rapid economic growth, the next two decades will witness a rapid increase in FDI outflows from China. On the one hand, China will accelerate industrial restructuring and upgrading. Some labour-intensive manufacturing activities and industries will gradually lose competitiveness due to the combined effects of increasing labour costs and shrinking labour forces with an ageing population. As a result, these labour-intensive industries will move out of China and invest in other economies, with other Asian developing economies the most likely candidates. On the other hand, China's rapid economic growth will continue to increase the demand for resources and raw materials. To meet this demand, China will increase investment overseas to expand and secure the supply of resources and raw materials. Asian economies with rich resource endowments will be the primary destinations for China's outward investment, with China becoming an increasingly important investor in Asia as a consequence. Overall, then, the relationship between China and Asian economies in terms of FDI is likely to remain complementary in the next 20 years.



## Conclusions

The vast volume of FDI inflows into China in the past three decades has been a source of celebration for some and of concern for others. Has China really crowded out FDI inflows into other Asian economies or has it been more of a win-win story? This chapter has built on an extensive literature seeking to answer this question by conducting an empirical analysis to test the hypotheses based on the location advantages of the OLI explanation of FDI. The three main findings can be summarised as follows.

First, for the location determinants of FDI inflows into Asian developing economies, the regression results provided strong support for the acceptance of our hypotheses. The main findings are: economies with faster economic growth, higher creditworthiness or lower country risk in terms of economic, financial, institutional, social and political stability attracted relatively more FDI inflows, while higher efficiency wages or lower labour productivity deterred FDI inflows during the period of analysis: 1992–2008.

Second, the regression results have shown that FDI inflows into China have a statistically significant positive effect on FDI inflows into other Asian economies. This positive and complementary effect of FDI inflows into China on FDI inflows into other Asian economies could be linked to the increased resource demand in a growing China and the production-networking activities among the Asian economies. While the results did not allow the relative strength of these two linkages to be determined, it is likely that this positive China effect stems from a combination of both, leading to the central result that this effect is about investment creation, not investment diversion. This complementarity implies that much of the concern about Chinese FDI is unfounded.

Third, although FDI inflows into China have had a positive and statistically significant impact on FDI inflows into other Asian economies, the China effect is not the most important factor determining FDI inflows into the Asian economies. The empirical regression results suggest that, all else being equal, the marginal effect of the host economies' location variables on FDI inflows into their economies is much larger than that of the China effect. Host economies' location variables—such as fast economic growth, lower labour costs accompanied with higher labour productivity, lower country risk with economic, financial, institutional, social and political stability—play the fundamental role in attracting FDI inflows.

In the next two decades, China's economic growth and strong investment expansion will energise the region and will provide the Asian economies and other countries with an expanding and diversified integrated Asian market.

Overall, with the rapid and deepening integration among the Chinese and other Asian economies, the positive China effect on FDI inflows into other Asian economies will continue.

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**Appendix Table 11.A1 Variable list of the impact of FDI inflows into China on FDI inflows into other Asian developing host economies**

Variable name	Specification of variables	Sources
Dependant variable FDI <sup>*</sup> <sub>j,t</sub>	Total FDI inflows from all source countries into Asian developing host economy j in year t (millions of US dollars at 1990 prices).	Various issues of United Nations, World Investment Report.
Independent variables FDICHN <sup>*</sup> <sub>,t</sub>	Total FDI inflows from all source countries into China in year t (millions of US dollars at 1990 prices).	Various issues of United Nations, World Investment Report.
WFDIOUT <sup>*</sup>	World total FDI outflows in year t (millions of US dollars at 1990 prices).	Same as above.
GR <sub>j,t</sub>	Annual real growth rate of GDP of Asian developing host economy j in year t (per cent).	United Nations Statistical Division (n.d., National Accounts)
EW <sub>j,t</sub>	Efficiency wage of Asian developing host economy j in year t (per cent).	Calculated from ILO (n.d.) and United Nations Statistical Division (n.d., National Accounts)
CDR <sub>j,t</sub>	Country credit rating index of Asian developing host economy j in year t (scale of 0–100, with 100 representing the least chance of default or the best credit worthiness).	Compiled from various issues of Institutional Investor.