

Foreign direct investment and the export-oriented industrialization in Vietnam

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Abstract

This paper aims at analyzing the contribution of the foreign-invested sector (FIS) to Vietnam's export-oriented industrial production during 2001-2006. By analyzing some key industries of Vietnam, it is found that the FIS's participation in domestic production increased in export-oriented industries. However, currently, the FIS's export production is mainly concentrated in labor-intensive industries in order to take advantage of Vietnam's cheap labor resource; and their production relies heavily on import of the production inputs. Based on the regression model which examines the determinants of Japan's outward foreign direct investment (FDI) into higher value-added industries in some Asian countries in 1985-2005, the paper gives some recommendations for Vietnam in realizing its FDI-led transformation into a higher development stage of industrial production.

Key words: Vietnam, foreign direct investment, trade balance, industrial production, flying geese.

1. Introduction

Opening the domestic market to foreign direct investment (FDI) is an important policy of the economic reform so called "Doimoi" conducted in Vietnam since 1986. As a result, immediately after the launch of "Doimoi", the Law on Foreign Investment was enacted in 1987, marking the first step in Vietnam's effort to encourage FDI into the economy for the past 20 years. As a result, a large amount of FDI has been committed in Vietnam and has played a key role in the economic achievements that Vietnam has gained.

The Vietnamese government has recognized the important role that FDI plays in the country's industrialization process. With the amount of capital, technology and management

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skill that FDI brings into Vietnam, it was considered by the government as an integral and autonomous part of the national economy and was incorporated in the long-term strategy for the socio-economic development of 2001-2010.

The FDI-based industrialization strategy, especially the FDI-based export orientation, is not uncommon in East and South East Asian countries. Many Asian countries have shifted towards FDI-based export-promotion policies since the mid-1980s after a period of import-substitution industrialization. For Vietnam, several studies have underlined a policy bias during the 1990s in favor of domestic industries, which attracted enterprises, especially foreign-invested ones, into import-substitution production rather than export-oriented production (CIE [1998], Kokko [1998], Mc Carty et al [1998]). During the 1990s, the high effective protection rates in many industries made production for the domestic market more profitable than for the export market, because it permitted sales at prices higher than world prices (Martin, Rajapatirana, and Athukorala [2003]).

Some recent studies, however, have pointed out that the contribution of the foreign-invested sector (FIS) to exports has been rising fast despite the anti-export bias. A study by Pham [2001] showed that the FIS was an important factor behind the rapid export growth of Vietnam during 1996-1998. Pham [2001] runs a regression model to show several factors that might have impacts on exports of the FIS, including the tax incentives, the domestic market protection policies, technology transfer, foreign shares in legal capital, and the country of origin of foreign investors. Additionally, a recent research by Xuan and Xing [2008] proved that the FIS significantly facilitated the expansion of Vietnam's exports to FDI source countries during 1990-2004. Using a gravity equation, they showed that a 1 percent increase in FDI inflows is expected to give rise to a 0.13 percent increase in Vietnam's exports to these countries.

While recent studies have pointed out the increasing role of the FIS in Vietnam's exports, no study has examined the participation of the FIS in the key export-oriented industries and the underlying problems in the export-oriented industrialization strategy of Vietnam. This paper attempts to fill in this gap in the literature by making an industry-based analysis of the FIS's participation and contribution to exports during 2001-2006; and providing some suggestions for the FDI-based export-oriented industrialization strategy of Vietnam. Some of the suggestions are derived from the regression result based on the flying-geese model (Akamatsu [1935]).

The remainder of the paper proceeds as follows. In section 2, we give a brief overview of the FDI in Vietnam. In section 3, we focus on the FIS's participation in key industries and its contribution to Vietnam's export. In section 4, we analyze the FDI-based industrialization process in some Asian countries. The analyses in section 3 and section 4 indicate that though still lagging far behind, Vietnam is following the industrial development path of some East and South East Asian countries. In section 5, we present the empirical test for the outward FDI from Japan to some Asian countries during 1985-2005. The empirical test is based on the flying-geese model and is conducted to examine the factors that determine FDI from Japan to the investment-accepting countries' higher value-added industries. Based on the

analysis of the FDI in Vietnam and the regression results for other Asian countries, in section 6, we give some recommendations to help Vietnam prepare for the next stage of industrial development.

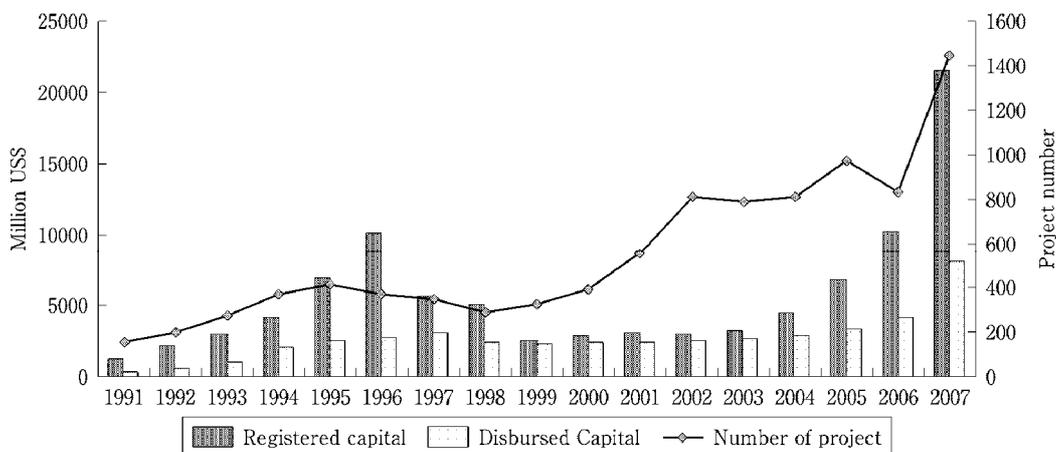
2. Overview of the foreign direct investment flows in Vietnam

Since the Law on Foreign Investment was approved in 1987, there has been substantial FDI inflow into Vietnam. From 1988 to 2007, the Vietnamese economy attracted US\$ 98.0 billion of total committed capital, while total realized capital was US\$ 45.5 billion. Notably, registered FDI reached a record high level of US\$ 20.3 billion in 2007, up by 69.1 percent from US\$ 10 billion in 2006, according to Vietnam's General Statistics Office (GSO).

As Figure 1 shows, the FDI flows can be divided into three periods. The first period was prior to 1997 when the registered capital was on an increasing trend. The size of investment projects also increased and peaked in 1996 with an average investment capital of US\$ 27.3 million per project. One element contributing to the increasing FDI is the speculative foreign capital flow into the real estate sector, mainly invested by East Asian financial groups. For example, the total registered FDI capital in real estate in 1995 was US\$ 2.7 billion, accounting for 39 percent of total FDI (Ministry of Planning and Investment of Vietnam [2007]).

From 1997 to 2003, the declining trend in FDI is commonly supposed to have been caused by the Asian financial crisis and the resulting investment downturn that Asian economies in general had to face after 1997. Total FDI capital in 1997 showed a sharp decrease of 45 percent compared to the capital registered in 1996. However, the investment decrease is observed mainly in the real estate sector due to the bubble's deflation in this sector (Leproux and Brooks [2004]). FDI in real estate fell from US\$ 3.3 billion in 1996 down to US\$ 0.3 billion in 1997. Excluding the real estate sector, the FDI registered capital only decreased by 23.4 percent from 1996 to 1997 (Ministry of Planning and Investment of Vietnam [2007]).

Figure 1: FDI registered capital and implemented capital into Vietnam



Source: Statistical Yearbook of Vietnam [2006].

Table 1: Top foreign investors in Vietnam, 1988-2006 (Unit: Percentage)

Country	Share of total projects	Share of total committed capital
Taiwan	22.7	13.4
Singapore	6.6	13.3
South Korea	18.5	12.9
Japan	10.8	12.2
Hong Kong	5.5	8.7
British Virgin Islands	4.0	5.3
France	1.1	3.9
USA	2.6	3.6
Netherlands	4.5	3.5
Malaysia	2.9	2.7
Cayman Islands	0.3	2.7
United Kingdom	1.3	2.2
Thailand	2.1	2.2

Source: Ministry of Planning and Investment of Vietnam [2007].

During 1999-2003, FDI flow was stable but remained at a much lower level compared to the previous period. The average annual FDI capital during 1999-2003 stayed at US\$ 2.9 billion, far below the 1996 level of US\$ 10.2 billion and the annual average of US\$ 5.3 billion during 1997-1998. The size of investment projects was on a declining trend and was at its lowest in 2002 with US\$ 3.7 million's registered capital per project.

Since 2004, FDI has increasingly flowed into Vietnam again. The amount of capital registered per project has also started to increase. In fact, the FDI increase since 2004 is often considered as a "second wave" of foreign investment flow into Vietnam, in expectation of Vietnam's acceptance into the World Trade Organization, which became effective in January 2007.

FDI increases not only in terms of capital but also in the number of foreign investors in Vietnam. Up to the end of 2006, investors from 77 countries and territories had their foot set in Vietnam, and Asian investors accounted for the major part of these capital flows. The top five Asian investor countries were Taiwan with 1550 projects and US\$ 8.0 billion of registered capital; Singapore (452 projects and US\$ 8.1 billion); South Korea (1,263 projects and US\$ 7.8 billion); Japan (735 projects and US\$ 7.4 billion); and Hong Kong (375 projects and US\$ 5.3 billion) (Ministry of Planning and Investment of Vietnam [2007]). Those top five Asian countries accounted for 60.6 percent of the total registered capital and 64.2 percent of total FDI projects during 1988-2006. In addition, after the signing in July 2000 of the US-Vietnam bilateral trade agreement, investment from countries such as France, United States and the Netherlands has been increasing.

Since Vietnam belongs to the South East Asia region and Asian investors have taken a major part in the FDI flow into Vietnam, it may be more suitable for Vietnam to follow the

Table 2: FDI by form of investment, 1988-2006

Form of investment	Number of projects	Commitments (million US\$)
100% foreign-owned projects	5,190	35,145
Joint-ventures	1,408	20,194
Business cooperation contracts	198	4,320
Build-operate-transfer projects	4	440

Source: Ministry of Planning and Investment of Vietnam [2007].

economic growth models in Asian countries. As will be discussed in more detail in section 5, the flying-geese model seems to be applicable to Vietnam. Attracting FDI from more advanced countries in the region, especially from Japan, can help Vietnam accelerate its catch-up industrialization process, and move to higher value-added production stages.

On the other hand, the forms of FDI in Vietnam suggest some inherent problem that will be further discussed in section 3. According to Vietnam's Law on Foreign Investment, FDI takes the following forms: 100 percent foreign-invested company, joint-ventures, and business cooperation contract (BCC)¹⁾, which are agreements whereby foreign partners contribute capital, and managerial control remains in the hands of local investors. Often mistakenly referred to as the fourth form of investment, Build-Operate-Transfer (BOT) contracts were added to the Law on Foreign Investment in December of 1992. The new Law on Foreign Investment in Vietnam which was passed in November 1996 included additions on Build-Transfer (BT) and Build-Transfer-Operate (BTO) contracts. Theoretically, BOT, BT and BTO projects may be joint ventures or 100 percent foreign-owned, but in practice, joint ventures with Vietnamese partners are more actively encouraged by the government. BOT, BT and BTO contracts are signed between one or more investors and a Vietnamese government agency mainly for the construction of infrastructure projects such as bridges, power plants, water supply plants, airports, roads and railways (Vietnam Trade Promotion Agency [2002])²⁾.

As indicated in Table 2, the investment form of 100 percent foreign-owned projects dominated during 1988-2006. In fact, the increasing prominence of 100 percent foreign-owned projects has been a tendency, which can be explained by two motivations. First, after a period of investigating and understanding the Vietnamese market, the foreign investors realized that the reliance on domestic counterparts is becoming comparatively less important. Second, foreign investors increasingly prefer the wholly-owned form after learning about the difficulties of operating with domestic counterparts, which have mainly been the state-owned enterprises (SOEs) (Leproux and Brooks [2004]).

Although Vietnam is attracting numerous foreign investors with increasing registered capital, investments have been concentrated in only a few regions. Despite the fact that FDI is present in all 64 cities and provinces of Vietnam, investors have so far located their investments mostly in urban areas where they can take advantage of the more developed infrastructure. During 1988-2005, Hanoi and Hochiminh city, respectively, attracted 17.3 percent

Table 3: Allocation of total registered FDI capital by regions, 1988-2005 (Unit : Percentage)

Regions	FDI allocation
Hochiminh city	24.0
Hanoi	17.3
Dong Nai	14.2
Binh Duong	8.1
Ba Ria-Vung Tau	6.8
Hai Phong	3.7
Quang Ngai	2.0
Quang Ninh	2.0
Others	21.9

Source : Ministry of Planning and Investment of Vietnam [2007].

and 24 percent of total registered FDI. Comparing various regions in Vietnam, the Red River Delta in the North (including Hanoi) and the South East area (including Hochiminh city) are also the two areas attracting the most FDI capital. However, FDI flow to the South East area (54.3 percent) was twice of investment in the Red River Delta (25.6 percent). In particular, the three provinces in the South East area-Dong Nai, Binh Duong and Ba Ria-Vung Tau alone, accounted for 29 percent of total FDI, far exceeding Hai Phong, Hai Duong and Vinh Phuc in the North, which in total accounted for only 6.2 percent of FDI capital. The central part of Vietnam attracted only 7.8 percent of total FDI capital which was disbursed to various provinces, with Quang Ngai having the largest share (2 percent). In fact, 78 percent of total FDI capital was invested in only 8 out of 64 regions in Vietnam during 1988-2005 (Table 3).

To sum up, this section shows that Vietnam has been attracting the so-called “second wave” of foreign direct investment. Investors from 77 countries and territories have come to Vietnam, but concentrated mainly in the South East area and the Red River Delta area in the northern part of Vietnam. Besides, Asian investors dominate the number of projects and investment amounts; and the 100 percent foreign ownership project remains the most common form of investment. The following section will analyze in more detail the participation of the FIS in some key industries and their contribution to Vietnam’s exports.

3. The foreign-invested sector’s participation in key industries and its contribution to Vietnam’s exports

3.1 The foreign-invested sector’s participation in key industries of Vietnam

This section shows that the FIS has increasingly participated in the export-oriented industries in Vietnam. The import-export structure and the role of the FIS in the domestic produc-

Table 4: The machinery industry in Vietnam

Machineries and equipment (mil US\$)	2001	2002	2003	2004	2005	2006
Domestic production (DP)	907.0	675.2	1,002.0	1,322.0	1,787.2	2,107.5
Imports	2,194.1	2,921.6	3,754.3	3,929.5	4,504.3	5782.7
Exports	598.6	446.2	617.6	874.4	1,193.1	1,643.9
Imports/DP	241.0%	433.0%	375.0%	297.0%	252.0%	274.0%
Exports/DP	66.0%	66.1%	61.6%	66.1%	66.8%	78.0%
FIS share in DP	31.2%	49.2%	54.7%	59.8%	61.7%	66.9%

Source: The United Nations' World Trade Statistics, General Statistics Office of Vietnam [2006].

Table 5: The electrical machinery industry in Vietnam

Electrical machinery (mil US\$)	2001	2002	2003	2004	2005	2006
Domestic production (DP)	1,330.3	1,628.4	2,020.9	2,661.7	3,388.5	4,249.1
Imports	1,270.5	1,388.6	2,159.4	2,616.9	2,995.2	3,654.0
Exports	526.7	627.5	898.7	1,307.3	1,543.4	2,070.9
Imports/DP	95.5%	85.3%	106.9%	98.3%	88.4%	86.0%
Exports/DP	40.0%	39.0%	44.0%	49.0%	46.0%	49.0%
FIS share in DP	58.6%	59.6%	59.5%	60.6%	61.8%	60.5%

Source: The United Nations' World Trade Statistics, General Statistics Office [2006].

tion of machinery, electrical machinery, textile-apparel, footwear, food and foodstuffs, wood, and rubber industries will be analyzed.

Those above-mentioned industries accounted for on average, 50.2 percent of total imports and 63.8 per cent of total exports in 2001-2006. Therefore, the participation of the FIS in those industries is likely to have important effects on Vietnam's trade balance.

First, the machinery and electrical machinery industries, though still largely dependent on imports of production inputs, seem to have played an important role in exports. On average, the two industries accounted for 21.4 percent of the total import value and 7.9 percent of the total export value during 2001-2006 (The United Nation's World Trade Statistics [2006]).

Table 4 and Table 5 show that the two industries have been increasingly export-oriented. The ratio of machinery and equipment exports over the industry's domestic production reached 78 percent in 2006, and the ratio of electrical machinery industry export over domestic production in 2006 was 49 percent. In addition, the share of imports over domestic production in both industries, though still stayed at high levels, showed some declining trend, except for a small increase in 2006 for the machinery industry.

It can also be observed from Table 4 and Table 5 that the FIS accounts for a major share in the domestic production of both industries. The share of the FIS in machinery and equipment production rose from around 31.2 percent to 66.9 percent between 2001 and 2006.

Table 6: The textile-apparel industry in Vietnam

Textile and Apparel (mil US\$)	2001	2002	2003	2004	2005	2006
Domestic production (DP)	2,056.4	2,526.7	3,227.6	3,965.0	4,999.2	6,700.2
Imports of fabrics and textile materials	1,539.4	2,315.8	2,720.2	3,343.4	3,845.9	4,441.2
Imports of apparel	463.2	293.8	300.0	370.1	259.8	169.3
Exports of apparel	1,819.7	2,562.2	3,386.3	4,135.8	4,558.0	5,417.1
Exports of fabrics and textile materials	354.8	443.8	487.0	649.2	750.3	1,109.0
FIS share in textile production	23.8%	26.0%	26.7%	27.6%	30.6%	33.2%
FIS share in apparel production	32.4%	39.7%	36.2%	36.0%	37.0%	39.0%
FIS share in DP	27.4%	32.0%	30.7%	31.2%	33.4%	35.8%

Source: The United Nations' World Trade Statistics, General Statistics Office [2006].

Table 7: The footwear industry in Vietnam

Footwear (mil US\$) (*)	2001	2002	2003	2004	2005	2006
Imports	329.0	281.1	277.4	283.1	278.3	230.8
Exports	1,630.2	1,912.9	2,299.2	2,725.8	3,078.6	3,654.7
FIS share in leather footwear	35.2%	40.2%	14.3%	25.8%	21.9%	22.0%
FIS share in fabric footwear	6.1%	3.8%	7.9%	15.6%	25.6%	24.1%

Source: The United Nations' World Trade Statistics, General Statistics Office [2006].

(*) Note: The value of domestic production cannot be calculated since the data for domestic production in footwear industry are only available in quantity (thousand of pairs).

Meanwhile, share in the FIS's production was around 60 percent of domestic production of electrical machinery during 2001-2006.

While the machinery and the electrical machinery industries' contribution to exports is quite recent, the textile-apparel industry and the footwear industry can be considered as traditional export-oriented industries of Vietnam. During 2001-2006, the textile-apparel industry accounted for, on average, 17.1 percent of total exports, while the average share of the footwear industry in total exports was 10.4 percent. Furthermore, both industries achieved a trade surplus during 2001-2006.

Table 6 and Table 7 show that the FIS accounted for important shares in both industries. The FIS's share in the domestic production of the textile-apparel industry rose from 27.4 percent in 2001 to 35.8 percent in 2006. On the other hand, the FIS's share in leather footwear production fluctuated during 2001-2006 and declined to 22 percent in 2006; while the share of the FIS in fabric footwear production increased by nearly 4 times from 2001 to 2006.

On the other hand, the food and foodstuffs industry also attracted an increasing share of the FIS. As indicated in Table 8, the FIS's share rose from 22.1 percent to 28.1 percent during 2001-2006. Share of the food and foodstuffs industry was quite large in total exports. During 2001-2006, while the industry shared on average 5.9 percent of total imports, it

Table 8: The food and foodstuffs industry in Vietnam

Food and foodstuffs (mil US\$)	2001	2002	2003	2004	2005	2006
Domestic production (DP)	6,203.6	6,598.8	8,025.5	9,938.2	12,899.7	15,401.0
Imports	961.5	1,140.4	1,493.4	1,804.5	2,231.8	2,660.9
Exports	4,093.0	4,256.7	4,600.3	5,449.1	6,567.5	7,763.4
Imports/DP	15.5%	17.3%	18.6%	18.2%	17.3%	17.3%
Exports/DP	66.0%	64.5%	57.3%	54.8%	50.9%	50.4%
FIS share in DP	22.1%	23.3%	24.1%	24.3%	26.2%	28.1%

Source: The United Nations' World Trade Statistics, General Statistics Office [2006].

Table 9: The wood industry in Vietnam

Wood and wood products (mil US\$)	2001	2002	2003	2004	2005	2006
Domestic production (DP)	451.4	562.9	726.4	941.4	1,235.4	1,336.0
Imports	543.9	679.7	901.6	1,207.5	1,377.1	1,659.3
Exports	295.9	337.0	351.4	458.2	540.4	681.9
Imports/DP	120.5%	120.8%	124.1%	128.3%	111.5%	124.2%
Exports/DP	65.5%	59.9%	48.4%	48.7%	43.8%	51.0%
FIS share in DP	13.0%	14.0%	15.0%	16.0%	18.0%	16.0%

Source: The United Nations' World Trade Statistics, General Statistics Office [2006].

Table 10: The rubber and plastic industry in Vietnam

Rubber and plastic products (mil US\$)	2001	2002	2003	2004	2005	2006
Domestic production (DP)	925.8	1,136.3	1,486.6	2,064.5	2,462.7	3,080.6
Imports	901.1	1,149.8	1,475.1	2,104.4	2,557.6	3,360.6
Exports	338.7	484.0	691.1	961.2	1,352.2	2,080.2
Imports/DP	97.3%	101.2%	99.2%	101.9%	103.9%	109.1%
Exports/DP	36.6%	42.6%	46.5%	46.6%	54.9%	67.5%
FIS share in DP	25.0%	24.8%	25.1%	26.1%	29.0%	34.9%

Source: The United Nations' World Trade Statistics, General Statistics Office [2006].

accounted for 22.6 percent of total exports. Table 8 demonstrates the export orientation in this industry. The ratio of exports over domestic production was above 50 percent, while the ratio of imports over domestic production stayed only around 17.4 percent for the period 2001-2006.

Though the wood industry achieved a small share in total exports (which equals 1.8 percent of total exports in 2001-2006) and still depends heavily on imports (with the share of 3.6 percent of total imports in 2001-2006), the figures also show the export orientation during 2001-2006. The ratio of exports over domestic production fluctuated but stayed at a

high level, and reached 51 percent in 2006 (see Table 9). The share of the FIS in the industry also increased during 2001-2005, though fell by 2 percent in 2006 compared to 2005.

While the participation of the FIS in the wood industry was rather modest, the share of this sector in the rubber and plastic industry increased tremendously, from 25 percent to 34.9 percent during 2001-2006 (see Table 10). The ratio of exports over domestic production in the industry rose from 36.6 percent to 67.5 percent, showing a clear export orientation.

In summary, the above analysis points out that during 2001-2006, the FIS has increasingly participated in some key export-oriented industries in Vietnam. The following section will examine the FIS's contribution to total exports; as well as the export of some industries in Vietnam.

3.2 The contribution of the foreign-invested sector to Vietnam's exports

The analysis in this section shows that the FIS can play a key role in changing the status of Vietnam's total trade balance.

First, the FIS's general export capacity can be shown in its contribution to total exports; the regional exports where FDI is concentrated, and the export revenue per employee in the foreign-invested enterprises (FIEs).

As illustrated in Table 11, the FIS's share of total exports was on an increasing trend during 1995-2006. From 27 percent in 1995, the FIS's contribution to total exports reached 57.8 percent in 2006. While the domestic sector's trade balance has always been in deficit, the FIS's trade balance has seen a surplus since 1997, and since 2003, the trade surplus has widened (Figure 2).

Additionally, the effects of FDI on exports is also stressed by the fact that the regions allocated with the most foreign capital are also those that have a large contribution to exports. For example, in 2002, the contribution to total exports of the South East area and the Red River Delta in the North were 67.7 percent and 13.9 percent, respectively. In particular, Hochiminh city accounted for 50.4 percent and Hanoi shared 9.7 percent of total exports. In total, the South East area and the Red River Delta which attracted around 80 percent of FDI capital, contributed nearly 82 percent of the country's exports (General Customs Office of Vietnam [2006]).

On the other hand, the export capacity of the FIEs is also proved by comparing the export revenue per employee of the FIEs with that of the domestic enterprises. As can be seen in Table 12, on average, the export value per employee of the FIEs was 68 times that of the domestic sector during 1997-2006.

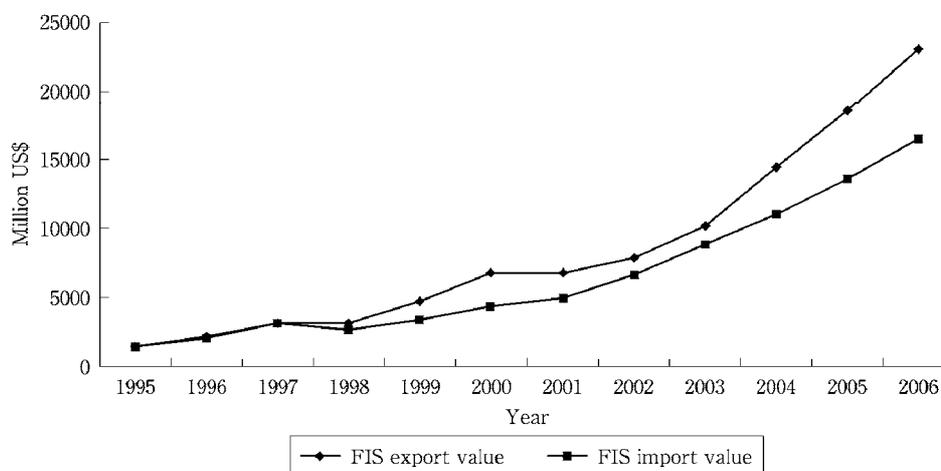
Second, the FIS's share in exports of some industries was considerable. During 2000-2006, the FIS shared 40 to 50 percent of garment exports; 50 to 60 percent of footwear exports; 100 percent in electronics and computer appliances (which belongs to the machinery industry); and 98 percent in electrical wires and cables (which belongs to the electrical machinery industry) (General Customs Office of Vietnam [2006]).

The analyses in section 3.1 and 3.2 show that during 2001-2006, the FIS increasingly participated in the key export-oriented industries of Vietnam and played an important role in

Table 11: Contribution of foreign-invested sector to GDP and export (Unit: Percentage)

Year	Contribution to GDP	Contribution to export
1995	6.3	27.0
1996	7.4	29.7
1997	9.0	34.9
1998	10.0	34.3
1999	12.3	40.6
2000	13.3	47.0
2001	13.8	45.2
2002	13.8	47.0
2003	14.5	50.4
2004	15.0	54.7
2005	16.0	57.2
2006	17.0	57.8

Source: Ministry of Planning and Investment of Vietnam [2007].

Figure 2: Export and import value of the foreign-invested sector

Source: General Statistics Office [2006].

Vietnam's exports. However, there are some points that should be noted about the contribution of the FIS to Vietnam's industrial production. First, it can be observed that the FIS did not have a dominant position in the key industries in Vietnam, except for machinery and electrical machinery. As indicated in section 3.1, the FIS shared less than 50 percent in the domestic production of textile-apparel, footwear, food, foodstuffs, wood, rubber and plastics industries. Second, it should be noted that after 20 years of opening the domestic market to foreign investors (1987-2007), Vietnam is still attracting foreign investors in labor-intensive industries. Besides natural resources like crude oil and coal, the main exports of Vietnam are

Table 12: Export revenue per capita (US\$/employee)

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
FIS	12,852	11,907	15,818	19,514	15,107	13,342	15,280	18,110	18,554	20,384
Domestic	174	176	192	205	216	226	249	293	332	394

Source: General Statistics Office and Ministry of Planning and Investment of Vietnam [2007].

products of labor-intensive industries, such as textile-garments, footwear, food and foodstuffs, and assembled electronics products. It seems that foreign investors have only been interested in using the cheap labor resource in Vietnam in producing exports to serve their domestic market or other markets.

Finally, as mentioned in section 2, the increasing prominence of 100 percent foreign-owned projects is one indicator of the lack of the interaction between local producers and foreign partners. The lack of cooperation is also reflected in the fact that while the FIS has achieved a trade surplus since 1997, the domestic enterprises have always incurred a trade deficit. It is likely that the weak linkage between local producers and foreign companies limit the spillover effects, and therefore, hinder the development of industrial production in Vietnam.

From the above analysis, it can be argued that Vietnam is facing the problem of increasing the participation of foreign investors from technology-advanced countries into the industrial production and shifting the economy towards the production of higher value-added products. This is a major issue which touches many aspects of the Vietnamese economy. As data on the Vietnamese economy are only available for the recent periods, and the economy itself is undergoing considerable changes, it is hard to conduct an empirical study on the determinants of FDI in Vietnam. Therefore, this paper attempts to approach the issue indirectly by running a regression analysis on other Asian countries, and using the regression results to draw some lessons for Vietnam.

To achieve this aim, section 4 will provide a brief analysis of the FDI-based industrialization process in some Asian countries. From the discussion in section 4, it can be argued that Vietnam is now at the early stage in the development path of those Asian countries, and therefore, it is reasonable for Vietnam to learn from those countries to prepare for its next stage of development. In section 5, a regression model which is based on the flying-geese model is conducted for the outward FDI from Japan to 8 countries in Asia during 1985-2005. The regression aims to examine the determinants of FDI from Japan to higher value-added industries in the investment-accepting countries. The result of the regression can be considered as a policy prediction for Vietnam in its coming development phase.

4. The FDI-based industrialization in some Asian countries

This section analyzes the FDI-based industrialization in some countries in the East and South East Asian region. The analysis will show some common characteristics of Asian

countries in their FDI-based industrialization process.

There is considerable literature on the FDI-based industrialization in East and South East Asian countries. Japan is not included in the analysis because it in fact minimized inward FDI and relied on licensing as a main way of technology transfer to build its own technology development capacity, and hence, achieved high growth rates and expansion of high-tech exports (Ozawa [1996]; Hernandez [2004]). Meanwhile, countries in East and South East Asia such as Taiwan, Singapore and Thailand are interested in a more speedy industrial transformation by attracting multinational corporations (MNCs) as “instant” transplinters of industrialization and establishing local linkages with those MNCs to build export-oriented industries (Ozawa [1996]).

One remarkable characteristic of many countries relying on FDI for their industrialization process is that they have had to change to export-orientation after a period implementing the import-substitution policies which often had a negative balance of payments effect. For example, Taiwan shifted from import-substitution to FDI-based export promoting policies in 1958 (Hernandez [2004]). Korea followed in the mid 1960s, but kept a more restrictive regime for foreign investment (Hernandez [2004]). In Malaysia, up to 1970, foreign investment was concentrated in primary export production and import-substituting industrialization (Hoffman and Tan [1980]). After 1970, Malaysia embarked on a vigorous program of export-oriented industrialization and the most important foreign-owned export manufacturing industry was electronics (Lim [1978]). In Thailand, most FDI was initially concentrated in production for a protected domestic market, with heavy dependence on imported machinery and inputs, and hence FDI's balance of payments contribution was minimal, if not negative (the oil and gas sector being an exception). Over time, however, the export orientation of foreign investment increased. Between 1971 and 1984, the number and share of foreign firms with export propensities of over 50 percent rose considerably, and there has been a large jump in export-oriented foreign manufacturing investments in Thailand since 1986 (Lim and Fong [1991]).

On the other hand, many countries conducting their FDI-based industrialization process are observed to follow sequential stages of industrialization, from labor-intensive industry like textiles, to higher value-added, components-intensive, assembly-based industries, such as automobiles and electronics, and finally to high-technology, innovation-driven industries, such as advanced microchips. In Taiwan, the traditional comparative advantage in labor-intensive production had completely disappeared by the beginning of the 1990s due to a serious shortage of low-skilled labor and hence a major rise of labor costs. As a result, labor-intensive production in Taiwan was transferred to South East Asian countries and the People's Republic of China. Meanwhile, Taiwan persuaded MNCs to establish their regional centers on the island, and engage in high value-added activities such as research and development (R&D) and the manufacturing of high-tech products (Roger van Hoesel [1996]). Meanwhile, foreign investment has transformed Singapore's originally very small industrial sector, moving in the 1960s into petroleum refining, metals, and food and beverages (mostly for the domestic market), in the 1970s, into more petroleum refining and petroleum products, and into labor-intensive export industries such as consumer and component electronics, textiles and gar-

ments, and shipbuilding and repairing, and in the 1980s into more skilled and capital-intensive industries such as industrial electronics, computers, and computer peripherals, high value-added petroleum products, and industrial machinery (Lim and Fong [1991]). Other examples of the sequential industrialization process can be found in Malaysia and Thailand, which moved to the higher value-added, high-tech industries when losing their advantage on labor-intensive activities (Hernandez [2004]).

Another important feature of the industrialization process in East and South East Asian countries is the ability of local entrepreneurs to gradually break into the supply chain with the MNCs operating in their countries. While the level of interaction between local firms and MNCs is different in each country, depending on the government's policies and the technological level of the host countries, the local linkage is quite common in more advanced countries like Taiwan, Singapore, and Thailand.

In the 1970s, to increase the local linkage in Taiwan, investment proposals were increasingly evaluated in terms of intensifying input-output links with local Taiwanese (Wade [1990]). In addition, strategic alliances between the MNCs and local companies were established which led to a substantial upgrading of Taiwan's industry in terms of technology transfer and a further development of its human capital (Hoesel [1996]). As a result, foreign firms increasingly purchased locally as they developed more Taiwanese suppliers. For example, during 1972-1981, local purchasing by foreign firms rose 8.2 times. In 1985 local purchasing already accounted for 53.3 percent of foreign firms' total purchase, up from 40.8 percent in 1972. In Singapore, foreign manufacturing firms have stimulated, and often nurtured, the creation of local suppliers (Lim and Pang [1982]). Those foreign firms have generated spinoffs, in the form of local employees, mostly engineers, who acquire expertise and experience while working for a MNC and then leave to establish their own business, often supplying their former employers (Lim and Fong [1991]). Local suppliers have also developed in other Asian countries, such as Thailand, despite the higher level of technology employed there (Lim and Fong [1991]). While attracting FDI into export-oriented industries, the Thai government also considered that "foreign participation should serve to supplement and strengthen local effort, not to overwhelm it" (Viravan [1978]). As a result, joint ventures with foreign companies have been a major channel through which some of Thailand's largest indigenous conglomerates established themselves; and the competition with foreign firms in the domestic market spurred local firms to greater efficiency (Lim and Fong [1991]).

In short, it can be observed that the East and South East Asian countries mentioned above share several common characteristics in their FDI-based industrial development, including the shift from import-substitution to export-oriented industries; the sequential upgrading of industrial production from labor-intensive to higher value-added industries; and the interaction between local firms and foreign companies. Since it opened the economy for foreign investors in 1987, Vietnam seems to have followed the same development path as those countries. However, as pointed out in section 2 and section 3, Vietnam is currently in the early stage of the development ladder. The participation of the FIS in export-oriented industries is not very impressive; and the interaction between local producers and foreign companies is negligible.

Meanwhile, the export-oriented production in Vietnam is still dominated by labor-intensive industries.

As a result, the question of what Vietnam should prepare in order to move up to a higher stage of development could be answered by examining other Asian countries. Based on the flying-geese model, section 5 of this paper will conduct an empirical analysis for other Asian countries in the region that are already at a higher level of industrial development.

5. Determinants of FDI - Regression model

The flying-geese model was first named by Kaname Akamatsu [1935] and is one of the well-recognized models in explaining the economic development in East Asia. The model includes three patterns of flying-geese formation: (i) a sequence of importing-domestic production-exporting (M-P-E), (ii) a sequence of product and industrial development not only in the order of “capital goods following consumer goods” but also “in the progress of from crude and simple goods to complex and refined goods”, and (iii) an “alignment of nations along the different stages of development” (Akamatsu [1961]). Kojima [2000] and other scholars have been expanding on Akamatsu’s flying geese theory. Among his extensions of the flying geese model, Kojima exhibited a pattern of “investment frontier” to show pattern of industrialization transmitted through FDI from Japan to the follower geese B, (or, Newly Industrialized Economies), C (or, Association of South East Asian Nations 4, including Indonesia, Malaysia, Thailand and Philippines), and D (or, China), according to the order of industrialization stage or per capita income level (Kojima [2000]). Here the industrial shift is assumed to occur in a sequence from X (textiles and other labor-intensive goods) to Y (steel, chemicals, and other capital-intensive goods), and further to Z (machinery and other capital/knowledge-intensive goods). After the period of catching-up process in X-industry, Japan achieved a comparative advantage in Y-industry and invested in country B’s X-industry. In the following period, Japan upgrades its comparative advantage to Z-industry and invests in country B’s Y-industry and country C’s X-industry. In the next phase, Japan’s FDI has spread widely towards country B’s Z-industry, country C’s Y-industry, and country D’s X-industry.

Vietnam belongs to the South East Asia region and is currently attracting FDI mainly from Asian countries. As mentioned in section 2, over the period of 1989-2006, the top five Asian countries accounted for 60.6 percent of the total registered capital and 64.2 percent of total FDI projects in Vietnam. Notably, Japan is among the top five investors in Vietnam and has considered Vietnam as an important destination for Japanese investment. In 2005, Vietnam ranked fourth among destinations for Japanese investment, just behind China, India and Thailand. In addition, according to a survey conducted in 2006 by the Japan External Trade Organization (JETRO), Vietnam has become the first choice for those Japanese firms that are operating in China and want to shift their investment to a third country. Besides the cheaper labor cost in Vietnam, Japanese firms that shift from China to Vietnam also seek to reduce their excessive dependence on China and spread their business risks in Asia more

evenly (Masaki [2006]).

With its increasingly important position as an investment destination for Japanese enterprises, Vietnam can be considered as an E-country (behind China) in the investment frontier. As a result, the industrial shift sequence of FDI from Japan to the follower geese can be used to forecast the next stage of FDI-led industrialization in Vietnam. Currently, FDI from Japan flows mainly into X-industry in Vietnam. It is reasonable, therefore, to expect the flow of FDI into Y-industry and even Z-industry in Vietnam, in the coming future.

There were numerous empirical research studies which examined the flying-geese patterns. However, no research has examined Kojima's argument that the pattern of industrialization transmitted through FDI from Japan to the follower geese was in accordance with the industrialization stage or per capita income level. Therefore, this section examines Kojima's argument by testing the determinants of FDI from Japan to Asian countries' Y-industry. According to Kojima [2000], the FDI flow from Japan to invest in Y-industry in follower geese B, and later on, C, started in 1985³⁾. An empirical study has been conducted on the determinants of the outward FDI from Japan to 8 Asian countries, which consist of Hong Kong, South Korea, Taiwan, Singapore, Thailand, Philippines, Malaysia and Indonesia during 1985-2005.

The conventional empirical studies on the determinants of FDI are based on the eclectic paradigm OLI framework proposed by John Dunning. Dunning [1993] argues that firms invest abroad because of O (ownership), L (locational) and I (internationalization) advantages. First, MNCs must have some firm-specific ownership advantage to compete with their rivals. Second, they must be willing to invest in one host country to take advantage of the location-specific characteristics of that host country. Finally, MNCs must have the ability to internalize the O and L advantages.

There have been numerous empirical studies examining the O and L advantages as determinants of FDI. As for the O determinants, the most relevant empirical study was conducted by Kyrkilis et al [2003]. In their paper, Kyrkilis et al [2003] analyzed the main determinants of outward FDI for five European Union members and four non-European Union countries. With the assumption that firm-specific ownership advantage is a function of the investing country's endowments, they tested the hypothesis that the outward FDI position of countries depends on the investing country's specific characteristics, such as income, the real interest rate, the exchange rate, technology, and openness of the economy. On the other hand, empirical studies examining the L determinants of FDI often used the following ten variables suggested by Dunning and Narula [1996], namely: natural and created assets; capital intensity; market size and market growth; infrastructural development; labor cost and productivity; degree of openness; government policies; political stability; profitability; and geographical proximity. This paper examines both the O and L determinants of FDI by investigating the specific characteristics of the investing country (Japan) and the investment-accepting countries. In addition to the variables that are used in Kyrkilis et al [2003], this paper also includes the wage in manufacturing and the infrastructure variables as well. It is expected that besides the cheap wage rates, other economic factors of the investment-accept-

ing countries such as GDP per capita, the level of openness, technological and the infrastructure system are the determinants of FDI from Japan into higher value-added industries. The result of the regression can bring some suggestions for the future growth path of Vietnam.

The dependent variable is the real (price-adjusted) FDI stock from Japan to 8 Asian countries. In version 1 of the regression, the independent variables include some economic variables of Japan, which are real GDP per capita (in 2000 US\$) (GDPJ), the real interest rate (IRJ), the real exchange rate (yen per US\$) (RERJ), real wages in manufacturing (in 1980 US\$) (RWJ); and some economic variables of the investment-accepting countries, which are real GDP per capita (in 2000 US\$) (GDP), openness of the economy ((Export+Import)/GDP as the proxy) (OPEN), the real interest rate (IR), the real exchange rate (local currency per US\$) (RER), real wages in manufacturing (RW), technology level (the number of patent applications by residents as the proxy) (TEC), and infrastructure (fixed line and mobile phone subscribers per 1000 people as the proxy) (INFRA). Besides, the dummy variables for each country are also added, and are labeled DHK, DKOR, DSING, DTAIW, DTHAI, DPHIL, DMALAY, to represent Hong Kong, South Korea, Singapore, Taiwan, Thailand, Philippines, and Malaysia, respectively.

In version 2 of the regression, four independent variables RWJ, RW, IRJ, IR are replaced by the real wage ratio (RWR)=RWJ/RW and the interest rate ratio (IRR)=IRJ/IR.

Data on Japan's outward FDI flow were collected from the Financial Statistics of Japan, Institute of Fiscal and Monetary policy, Ministry of Finance, 1989-2007. The real wage in manufacturing is calculated from the Statistic Yearbook of the International Labor Organization, 1985-2006. Other data are from the World Investment Report 2000-2006, the International Financial Statistics 1990-2006, Statistics Yearbook of Taiwan [2007] and extracted from the World Development Indicators 2007 CD-ROM.

The expected signs of the coefficients of the explanatory variables (excluding the dummy variables) are as follows:

Version 1:

$$\text{Log (FDIS)} = F(\text{GDPJ}, \text{IRJ}, \text{RERJ}, \text{RWJ}, \text{GDP}, \text{OPEN}, \text{IR}, \text{RER}, \text{RW}, \text{TEC}, \text{INFRA})$$

$$+ \quad - \quad - \quad + \quad + \quad + \quad + \quad + \quad - \quad + \quad +$$

Version 2:

$$\text{Log (FDIS)} = F(\text{GDPJ}, \text{IRR}, \text{RERJ}, \text{RWR}, \text{GDP}, \text{OPEN}, \text{RER}, \text{TEC}, \text{INFRA})$$

$$+ \quad - \quad - \quad + \quad + \quad + \quad + \quad + \quad +$$

The result of the regression is as follows:

Version 1:

$$\begin{aligned} \text{Log (FDIS)} = & -4.11 + 1.43 \times \log(\text{GDPJ}) - 0.2 \times \log(\text{IRJ}) - 0.17 \times \log(\text{RERJ}) \\ & (-0.62) \quad (2.04) \quad (-1.98) \quad (-0.92) \\ & + 0.3 \times \log(\text{RWJ}) + 0.43 \times \log(\text{GDP}) + 0.64 \times \log(\text{OPEN}) - 0.06 \times \log(\text{IR}) \\ & (1.02) \quad (1.55) \quad (4.14) \quad (-2.23) \\ & - 0.42 \times \log(\text{RER}) - 0.58 \times \log(\text{RW}) + 0.11 \times \log(\text{TEC}) + 0.18 \times \log(\text{INFRA}) \\ & (-2.28) \quad (-3.61) \quad (2.82) \quad (3.12) \end{aligned}$$

$$\begin{aligned}
& -4.98 \times \text{DHK} - 3.03 \times \text{DKOR} - 5.83 \times \text{DSING} - 4.81 \times \text{DTAIW} - 3.98 \times \text{DTHAI} \\
& \quad (-3.14) \quad (-3.9) \quad (-3.22) \quad (-3.72) \quad (-3.87) \\
& -4.11 \times \text{DPHIL} - 5.58 \times \text{DMALAY} \\
& \quad (-4.37) \quad (-3.67)
\end{aligned}$$

The numbers in the brackets are t-statistics values and the coefficient of determination of the regression, $R^2=0.95$.

Version 2 :

$$\begin{aligned}
\text{Log (FDIS)} = & -6.8 + 1.54 \times \log(\text{GDPJ}) + 0.03 \times \log(\text{IRR}) - 0.17 \times \log(\text{RERJ}) \\
& \quad (-1.04)(2.35) \quad (-1.41) \quad (-1.0) \\
& + 0.45 \times \log(\text{RWR}) + 0.39 \times \log(\text{GDP}) + 0.6 \times \log(\text{OPEN}) - 0.45 \times \log(\text{RER}) \\
& \quad (3.04) \quad (1.37) \quad (3.85) \quad (-2.41) \\
& + 0.1 \times \log(\text{TEC}) + 0.22 \times \log(\text{INFRA}) - 5.31 \times \text{DHK} - 3.24 \times \text{DKOR} \\
& \quad (2.4) \quad (4.2) \quad (-3.43) \quad (-4.37) \\
& - 6.23 \times \text{DSING} - 5.08 \times \text{DTAIW} - 4.13 \times \text{DTHAI} - 4.26 \times \text{DPHIL} \\
& \quad (-3.54) \quad (-4.02) \quad (-4.05) \quad (-4.58) \\
& - 5.89 \times \text{DMALAY} \\
& \quad (-3.97)
\end{aligned}$$

The numbers in the brackets are t-statistics values and the coefficient of determination of the regression, $R^2=0.94$.

The result of both versions of the regression confirms Kojima's hypothesis that FDI from Japan to the follower geese's higher value-added industries depends on the industrialization stage or per capita income level of the investment-accepting countries. This regression is statistically significant with all countries and shows that FDI from Japan has positive and statistically significant relations with the level of openness, technology and infrastructure of the investment-accepting countries.

6 . Concluding remarks

Based on the above analysis, it could be argued that while Vietnam has opened its economy to attract FDI for more than 20 years, it has not been successful in adopting the FDI-led economic growth strategy. The FIS's participation in key industries is not very considerable, and most of the FIS's production is still concentrated in labor-intensive industries, relying on imported production inputs and taking advantage of the cheap local labor resource.

As predicted by the flying geese model's second paradigm, Vietnam should be prepared to move up to the next stage i. e., accepting new industries transferred from more advanced countries like Japan, and at the same time losing some labor-intensive industries, which might be reallocated to the next follower geese.

As the regression result shows, the host country's capability can play a decisive role in attracting FDI from advanced countries like Japan into higher value-added industries. For Vietnam, several solutions should be considered by the government to accelerate the catch-up

process.

First, it is important that the government increase the openness of the economy and improve the infrastructure in order to attract FDI from Japan into higher technology industries. It is widely known that the administrative bureaucracy and poor infrastructure have caused difficulties for foreign investors in doing business in Vietnam. They are also some of the main reasons that foreign investors have not considered a full package investment i. e., investment in producing both inputs and final products in Vietnam.

Second, an investment strategy to upgrade the technological level will be the key to a successful shift into higher value-added industries. As the regression result shows, the technological level of the investment-accepting country is positively related to the FDI flow from Japan to that country. Although the regression only considers the relationship between the number of patent applications in the host countries and FDI from Japan, it may provide a useful hint about the importance of the domestic technological level.

Finally, although not mentioned in the regression model, the linkage between local partners and foreign investors should be carefully considered. As discussed in section 2 and section 3, the linkage between local producers and the FIEs need to be more extensively established in Vietnam. While the export performance of the FIS is impressive, the domestic sector still experiences a trade deficit, since the quality of domestically-produced commodities generally cannot meet international standards. It is therefore necessary to establish the linkage between local producers and the FIEs in export production. As occurred in many East and South East Asian countries, the spillover effect gained from cooperation with foreign partners will gradually help local producers improve their technology and management experience; and eventually participate in the international value chain.

Notes

- 1) Business corporate contract (BCC) is a form of cooperation between investors without establishing a company with legal person status.
- 2) Build-operate-transfer (BOT) is a form of an infrastructure construction contract signed between a state-owned organization and foreign investors, in which the investors are allowed to have the user rights upon the infrastructure that they have constructed for a specified period of time, before transferring to the state-owned organization. Build-transfer-operate (BTO) differs from BOT in that the infrastructure constructed is transferred to the state-owned organization before the investors can be authorized to use it for a specified period of time. Build-transfer (BT) is the contract in which the foreign investors transfer the infrastructure to the state-owned organization after the construction project finished, and receive payments from the state-owned organization.

Source: Investment Law [2005]

- 3) The increasing FDI flow from Japan to Asian countries since 1985 might be the result of the Plaza Accord signed in September, 1985 by France, West Germany, Japan, the United States and the United Kingdom. The five nations that signed the Plaza Accord agreed to depreciate the USD in relation to the Japanese yen and the German Deutsche Mark by intervening in the currency markets. The appreciating yen since 1985 might be a motivation for the outward FDI from Japan.

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