

Title	Does the host country gain from Foreign Direct Investment (FDI)? Evidence of FDI spillover effects in Vietnam
Sub Title	
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Publisher	Society of Business and Commerce, Keio University
Publication year	2002
Jtitle	Keio business review Vol.40(2002), ,p.1- 24
JaLC DOI	
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Notes	
Genre	Journal Article
URL	https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=AA00260481-20020000-0001

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Does the host country gain from Foreign Direct Investment (FDI)? Evidence of FDI spillover effects in Vietnam*

By

Nguyen, Kim Anh

Abstract

Inward FDI is said to bring about externalities to the host economies. There are many empirical studies about such impacts but we hardly find any studies concerning the case of Vietnam. This empirical study attempts to examine these impacts on Vietnam's economy during 1989-1996. The cross-sectional data from the national census of about 1.9 million businesses and enterprises operating in Vietnam in 1994-1995, and Vietnam's 1989 and 1996 Input-Output tables are employed on intra- and inter-industry and intra-region approaches. The study provides the following results: Firstly, it is not easy to identify the intra-industry spillover created by FDI on entire industry in general. However, in particular, the negative intra-industry impacts occur in sub-sectors of provincial State enterprises, private enterprises and Ltd. Companies. Secondly, on the provincial base, negative intra-provincial impacts are observed in the entire domestic sector, especially in the South. The negative impacts may be in terms of crowding-out effect or causing demonstration effect. Thirdly, FDI may contribute to generate positive inter-industry spillover in the form of backward and/or forward linkage effects in some industries, yet it may cause negative impact on a certain primary industry in terms of shrinking employment and Gross National Product (GNP), adversely impacting the balance of payment in the long-run. Finally, regarding policy-relevant implication, this paper also points out that the limitation of the spillover effects may be caused by the redundant incentives favoring FDI sector and less management skill. As for developing host countries, GNP per capita may more a more important indicator than GDP per capita on setting out the target of economic growth.

Key Words

FDI Spillover, Intra-inter-industry approach, North-South regional approach, SE-Non-SE sectors, Crowding-out effect, Demonstration effect.

*The author presented this paper at the Special Conference for Doctoral Student held by Graduate School of Business and Commerce of Keio University on March 27th, 2001. She would like to express her deep thanks for the valuable comments of Professor H. IDE professor K. KARAKI, Professor K. SHINPO, Professor Y. WAKE, Professor Y. HIGUCHI and other participants attending the conference.

1. Introduction

The endogenous growth model suggests that the economic growth does not only depend on capital and labor growth but also on human capital accumulation and knowledge spillover, which are considered as endogenous variables. Likewise spillover from inward FDI may affect the host country's economic growth.

FDI¹ has been regarded as “the representation of the transmission to the host country of a package of capital, managerial skills, and technical skills” (Johnson, 1972); a major channel for the access to advanced technologies by host countries and, hence, plays a central role in the technological progress of those countries (Borensztein et al. 1998); “an engine for economic growth” (Balasubramanyam et al, 1999) or “a catalyst for industrial development” (Makusen & Vernables, 2000). Apart from direct impacts like addition to capital formation and the generation of employment and tax contribution, FDI also creates positive externalities to the host economy like the training of labor and management or investment in human capital, which may then become available to the host economy; possibly speeding up the transfer of technology; creating competition in the host market and linkage effects with the local economy. Nevertheless, FDI does not always bring about positive impacts to the host economy, but negative impacts as well. Since Multinational Corporations (MNCs) have specific-firm ownership like advanced technology, management skills, the access to the international market; “while these firms are likely to be more efficient than their rivals, they also gain market power so that the benefits of competition are lost” (Hymer, 1960).

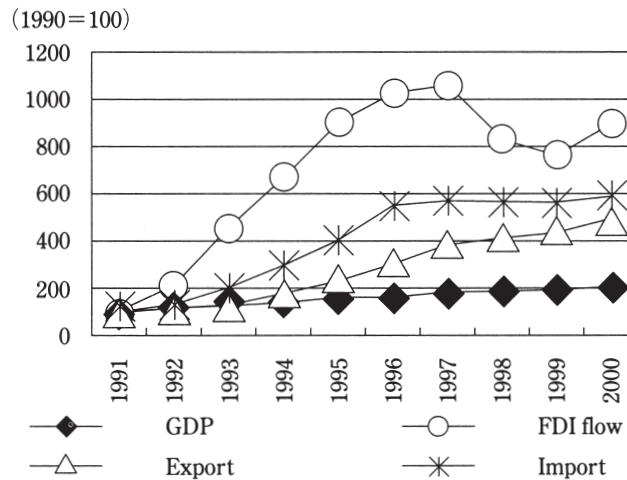
There are many empirical studies investigating FDI spillovers to host countries, the results vary by cases. MacDougall (1960) found that while FDI increases total real wages of labor; most of labor's gain is just redistribution from domestic owners of capital, since the marginal product of capital, and hence the profit rate falls as a result of the inflow of foreign capital. The host country's gain from the capital inflow is relatively small. On the contrary, John Dunning's studies (1958, 1993) maintain the idea that inward FDI tends to act as a stimulus to enhance the technical efficiency of local firms that must compete against multinational corporations.

Magnus Blomstrom (1989) studied Mexico's manufacturing industry and suggests that labor productivity in local plants is associated with the presence of foreign owned multinationals. Thus it indicates the existence of spillover's efficiency benefits from FDI. In Uruguay, there is no sign of technology spillover in the entire manufacturing industry, yet the positive spillovers occur in sub-samples of plants with moderate technical gap (Kokko, Tansini and Zejan-1996). In Morocco, joint ventures exhibit higher levels of productivity than their domestic counterparts. However, higher levels of foreign investment are not associated with rising productivity among domestic firms in the second half of the 1980s (Haddad and Harrison- 1993).

Apart from the intra-industry approach like most of the above literature, the externalities created by FDI to the host economy are also examined on the inter-industry approach. Schive (1990); Schive & Majumdar (1990) and Sun (1996) examine the backward linkage effect in Taiwan and in China. They confirm that FDI generates linkage efficiency without forming enclaves in China and Taiwan, except for that in

¹As this paper focuses on inward FDI, from here on the term FDI shall mean “inward FDI”, unless stated otherwise.

Figure 1.1. Major Index



Export Processing Zones. So how about FDI's externalities in Vietnam and why spillovers are so important?

In the mid-1980s, FDI flows to Asia increasingly followed the policy liberalization of countries in this region and the appreciation of the Yen in 1985. The FDI flow to developing countries in Asia accounted for about 60% of total FDI to developing countries in 1996. China emerged as the largest developing recipient countries in 1997. Vietnam also, step by step, is opening her economy by promulgating "Renovation Policy" ("Doimoi Policy") in 1986 and the "Law on Foreign Direct Investment in Vietnam" in 1987. Vietnam soon became a new potential host country in the region in the early 1990s. Like other transition economies, Vietnam's government is encouraging FDI with the aim of solving the bottleneck of capital and technology shortage. FDI increases rapidly along with the sustainable growth of the economy since 1989-1997. 1994-1997-the peak period of FDI, which contributed one-third of the country's gross investment (see Fig.1.1). rather higher than its share in other Asian countries capital formation i.e. 31.1% in Vietnam while it is just 14.3%, 7%, 6.8% and 6.1% in China, Indonesia, Thailand and the Philippines respectively. Thus it is said that Vietnam has depended much on FDI.

Unquestionably, FDI brought positive direct impacts on Vietnam economic growth in the 1990s, for example FDI sector shared about 10% of GDP; over 30% of industrial output, approximate 23% of export and supplies jobs for about 350 thousand employees in 1999-2000 (Fig.1.2). Nevertheless, once some political or economic problems arise, the withdraw of investment in mass by foreign investors may occur, in turn, the host country may suffer from budget deterioration and/or economic depression like the case of Brazil in the 1980s and some Asian countries during the recent economic crisis. Therefore, if FDI flows in and creates indirect impacts on domestic sector and both domestic and FDI sectors develop together, in the long-run the host country may be able to maintain the sustainable economic growth. Such spillover is considered as positive. However, FDI spillovers are not always positive as above-mentioned, such negative impacts may take the form of crowding-out effect to domestic sector in product (output and/or input), capital and/or labor markets.

Figure 1.2. Direct Impacts of FDI

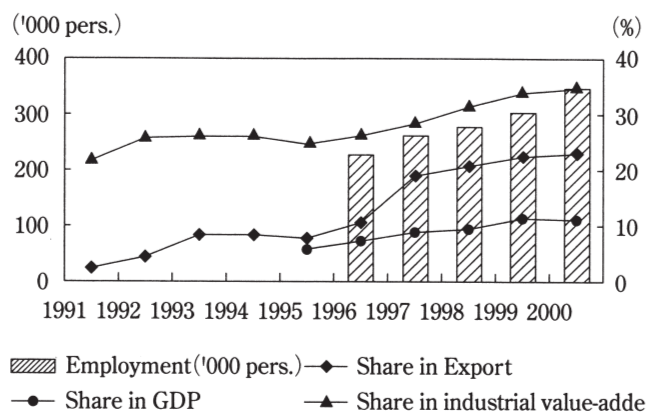
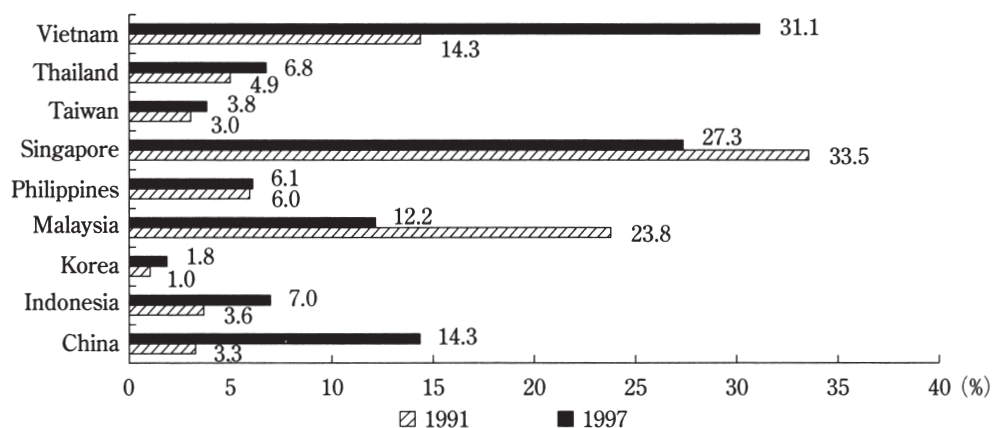


Figure 1.3. FDI Share in Gr. Domestic Capital Formation



In Vietnam FDI's share in the gross domestic capital formation increased from 14.3% in 1990 to 31.1% in 1997, while it was 3.3% and 14.3% in China, 4.9% and 6.8% in Thailand respectively (Fig.1.3). Thus it is said that Vietnam depends too much on FDI. This study attempts to examine whether Vietnam's domestic sector captured positive or negative spillovers from FDI? On the investor's side, while blamed with the stagnation of State sector, which remains the leading role in the economy, foreign investors highly appreciated the flexibility of the Southern enterprises, which operated under market mechanism and were familiar with FDI long before the country's reunification. This consequently led to 80% of FDI in industrial and service industries flowing to the South in 1994. Therefore, FDI may create different impacts in such different regions and sectors.

As for the policy implementation, fiscal and financial incentives are the main measures to attract FDI as in other developing host countries, however such measures

may cause the distortion of capital allocation (Brewer, 1998). Thus this paper concentrates on 1989–1996 period, which marks the entering and the peaking points of FDI inflow to Vietnam and covers these 3 main issues: (1) How does FDI impact domestic sector on industrial and regional bases? (2) Does it create linkage effect to domestic sector? (3) Does FDI deserve the incentives and suit the industrial development strategy?

The paper is divided into 5 chapters with the Introduction as the first. The chapter Two investigates FDI spillovers on intra-region approach including North–South region dummies. Chapter Three covers the issue of spillover on intra-industry approach on the entire industry as well as on SE- and Non-SE sub-sectors. Chapter Four gives a rough picture of the linkage effects of FDI to the domestic economy between 1989–1996. The paper ends up by providing summary of study and remarks on industrial and FDI policies implication. Now, let us start with the FDI impact on Northern–Southern production.

2. FDI Intra-region Spillover

This chapter attempts to examine and explain the FDI spillovers to provincial domestic enterprises, which includes provincial SE and Non-SE (excluding the Central government enterprises), and also try to find the difference in FDI spillover between the Northern region and the Southern region.

2-1. Historical background of the North–South economic growth before and since “Doimoi”

2-1-1. The North–South economic characteristics before reunification

The North is endowed with mineral resources. In 1954, when the country was divided into two parts under Geneva Agreement, the North economy was badly damaged after the 9-year-war with France. The central planned mechanism was applied since then. The long-term industrial policy (1962) was: “priority should be given to a rational development of heavy industry; industrial development should be combined with agricultural development, light industry should be developed simultaneously with heavy industry”. The target was set for the 1st five-year plan 1961–1965. The 1961–1970 plan’s target was to widely equip the economic branches with machinery; to meet the basic daily needs of the people for food, clothing, dwelling, education and public health and to create the necessary conditions in technology and personnel for the next period of development. The 1961–1964 industrial investment was tripled between 1955 and 1960. Heavy industry was promoted, as a result, electricity generation was doubled, and engineering output increased 2.5 fold; some chemical enterprises were built, heavy industrial branches were developed. Light industry supplied 90% of domestic demand for consumer goods. Industrial production increased at an average annual rate of 14.6% and heavy industry increased 19.3%; light industry increased 10.4%. From 1965 to 1975 the economy operated as a war-time economy, and it was badly destroyed by American air attack. During this time heavy industry was still concentrated and relied on foreign funds mainly in terms of aid.

The South is a region of farmland without large mineral deposits². The South’s

²Oil and gas have been explored and exploited since the 1980s.

economy was under market mechanism. The main target was to expand production of light industry: like foodstuffs, paper, furniture, assembling and maintaining conventional machinery vehicle like motorcycles, motor-boats, manufacturing metal goods and processing fertilizer. In 1961-1964—the special war period, industry was developed to meet the demand of the armed forces. Foodstuffs, beverages, and textiles were strongly developed with advanced technology. In 1965, U.S troop were brought en masse into the South, these industries were further expanded, especially those of beverages, cigarettes and gourmet powder. In 1969, the U.S. began to “Vietnamize” the war, Saigon administration focused on the restoration of factories destroyed by the war and building a number of heavy industry enterprises like the electricity plants in Baclieu, Thu Duc and Danhim, and the Bien Hoa metal works. FDI was called in., the Saigon administration also imported more equipment and technology for engineering, chemical, foods and furniture enterprises.

Before 1975, industrial development policies were carried out with these results: Engineering enterprises were built (small or large size) specializing in the assembly of cars, small tractors, sewing machines, radio, TV sets. Some establishments were fairly modernly equipped to serve armed forces: Bason shipyard for repairing military ships and the Tan Son Nhat aviation technology center for checking and repairing planes. The metallurgy sector came into being with the establishment of small metal and steel rolling enterprises in Bienhoa and Danang. The electricity sector took shape with a number of small oil-thermo power generation plans. Food and light industry enterprises developed vigorously and contributed the majority of the industrial output. During 20 years of war, industrial output exceeded 10% of GNP. Industrial development mainly depended on foreign aid, and the U.S. was the major channel. Foreign aid made up 50% of GNP.

2-1-2. Industrial policy since 1976

In 1976-1985, the model of the command economy of the North was applied through the whole country. The IVth National Congress of the Communist Party in Dec. 1976 assessed Vietnam economic situation as follows: “ Although in the whole country, in one respect or another, there have appeared elements of large-scale production, small production remains predominant (i.e. material and technical bases remain small and weak). Work is still done chiefly by hand. Labor productivity is very low; labor division is undeveloped; heavy industry remains small and scattered, not yet capable of undertaking technical transformation with regard to the various branches of the national economy. Industry and agriculture have not yet integrated. Agriculture was mainly relied on water rice cultivation; the level of irrigation and mechanization was low. Livestock has developed very slowly”. The industrial policy was to focus on “priority development of heavy industry in a rational manner on the basic of the development of agriculture and light industry”, this implies “stepping up industrialization” like the former Soviet Union’s model. Nevertheless, after 1980 when all these targets failed, did the 5th National Congress of the Party decide to adjust industrial policy.

In 1981-1985, in the whole country, agriculture was considered as “the forefront” and light industry especially consumer goods production was paid the first attention. Heavy industrial branches which support agriculture and light industries were encouraged. However, in 1976-1985 investment structure was tended to give priority to heavy

industry (accounting for 70% while light industry accounted for 30%). As for capital accumulation, national income covered 92.6% of domestic expenditure in 1976 and 96.2% in 1980; the remaining relied on foreign aid. The whole domestic investment capital was funded by foreign aid and loan. Nevertheless, a domestic fund at a ratio of one to one was required in order to absorb foreign aid. The government had no way but to issue money (this was called “healthy inflation”). On the whole economy as well as in industry, the efficiency of funds was decreased. Industrial policy failed to lay out measures to raise the efficiency of capital utilization, which was already at a very low level.

In 1979, the system of “full allocation and full delivery”³ was abolished and a new system was adopted: the State reduced the rate of fund allocation from the State budget and the factories raised the balance of capital through credit loans from the bank. However, this also failed to increase efficiency; e.g. in 1976–1980 the efficiency of one Dong of fixed assets decreased by 15.3% per year and by 4.1% per year in 1981–1985.

2-1-3. Economic growth since “Doimoi”

The whole country switched to the market-oriented mechanism in 1986. It was declared at the VIth Congress of Communist Party in 1986 that: “*Production must be linked with the market, every economic activities must be cost-accounted, economic organizations and enterprises must be cost accountable and make profits for reinvestment*”.

Ha Noi and Hai Phong in the North; Ho Chi Minh City, Ba Ria-Vung Tau and Binh Duong in the South are the major industrial regions in Vietnam. These areas accounted for roughly two-fifths of heavy industrial output and three-fifths of light industrial production in 1989. The larger share of total industrial production is located in the South, but we should make it clear that heavy industry is rather evenly distributed: 47% in the North and 53% in the South, while two-thirds of light industrial output is in the South. Much of the heavy industry in the North is located outside the major industrial cities, producing 35% of national heavy industry output. Most of this is concentrated in a small number of large-scale enterprises in the North, including electricity plants in Quang Ninh and Ha Son Binh, chemical and fertilizer plants in Vinh Phu and Ha Bac, and the large coal production facilities in Quang Ninh. Light industry is distributed among a large number of smaller sized firms located around the country, but there is a heavy concentration in Ho Chi Minh City, which it is by far the most important industrial center, accounting for 41% of total light industry output.

Now let see how FDI impacts on provincial enterprises.

2-2. The North-South-Region production model for domestic sector (DS)

2-2-1. Theoretical framework and model specification

By 1995, FDI flowed into 40 out of 52 provinces and cities in Vietnam⁴. We expect that FDI to each province or city, more or less, influenced that region’s domestic sector⁵ (DSr). Unquestionably, the impacts may be different in different regions owing

³“full allocation, full delivery” means the government supplied all demand for capital and expenditure of enterprises and recovered all profits, exceeding funds and depreciations costs.

⁴After 1995, Vietnam was rearranged to 61 provinces and cities.

⁵From here on abbreviation of DSr is used instead of Domestic Sector by province and city.

to the different location of industries and natural endowment, different condition of infrastructure and weather, volume of FDI and also the level of human capital as well as industrialization. Nevertheless, apart from those reasons, Vietnam is a special case, which may induce different absorption rates of spillover by regions.

The whole country switched to market mechanism and the open policy was adopted in 1986. DSr in the North is still adjusting to the new mechanism. Yet enterprises in the South dealt with this system long before 1975. In addition, FDI had been drawn into the South between 1969 and 1975; therefore there may be difference in management skills in the South and in the North. Before reunification, there were different industrial development strategies as mentioned above, which led to a different industry mix in these two parts. Likewise, FDI may create different levels of spillover to DSr in North and in the South. So to make it short, we put forward the hypothesis that The DSr in the Northern regions and the Southern regions may experience different spillovers caused by FDI.

Based on the new growth model, we have the provincial production function⁶ for DSr that production of one region (Ydr) is affected by labor force (Ldr), physical capital (Kdr). Now FDI flows in and FDI sector (FDr) and DSr operate separately. FDI presence may not cause any change to Kdr and/or Ldr but directly impacts on DSr's output (Ydr) through creating spillover effects. Supposing DSr's all input factors remain unchanged, now FDI inflows and DSr's Ydr changes, we may explain that the presence of FDI brings about externalities to DSr's production. The externality, or in other words the costless factor, may be in the forms of knowledge spillovers, transfer of management skill, market information, advertisement know-how etc. We can specify the model on the linear-log equation as follows:

$$\text{Log}(Rdr) = c + \text{log}(Mdr) + \text{log}(INFdr) + \text{log}(Ldr) + \text{log}(FDr) + RDUM + u1 \quad (\text{eq.2.1})$$

Where dr stands for regional domestic sector. Rdr is revenue proxying for the DSr's output (Ydr). Ldr denotes the number of employees, Kdr is divided into 2 elements: Mdr is fixed capital stock spent on Machinery and equipment, and INFdr is fixed capital stock spent on site and warehouse, so that we can find which element is more important for DSr's growth. FDr describes the presence of provincial FDI sector (FSr)⁷ denoted by FSr's fixed capital spent on machinery and equipment (Mfr). Mfr indicates spillovers induced by FSr's technology intensity and capital goods investment. RDUM is a regional dummy, which is 0 for the Southern region, and 1 for the Northern region.

2-2-2. Data source and calculation

We employ data of the national census of 1.9 million businesses and enterprises operating in Vietnam in 1994-1995⁸. DSr includes 17988 domestic enterprises, out of which 3110 are provincial state enterprises (SEs) (excl. Central government enter-

⁶The original production function (Jacob Marschak and William H. Adrews ? 1944) explains how much K and L affect production at given rate of rent and wage or with a certain production behavior. This study emphasizes on analyzing the spillover of FDI to domestic sector's production or in other words the costless factor that domestic sector capture from FDI inflow, so we suppose that other Kd and Ld are given. We owed deep thanks to Prof. K. Shimpo for his valuable advice on applying two-stage-least-squared method testing this assumption. The test showed no impacts of FDI on Kd and Ld.

⁷From here on the term FSr shall mean provincial FDI sector.

⁸Main Facts and Features on the Extent and Effectiveness of 1.9 million Businesses and Enterprises in Vietnam's Territory. 1997. The Statistical Publishing House. Hanoi.

prises), 14878 are non-state enterprises (non-SEs). FSr includes 687 enterprises are in the form of 100% foreign owned enterprises, joint-venture enterprises, and corporation and business-contracted enterprises. By 1994, 40 out of 52 provinces and cities experience FDI, however, FDI has already operated in 37 provinces and cities, therefore, in order to examine the intra-regional spillover from FDI, therefore we just take such 37 provinces and cities into consideration. The data is classified on average provincial level for both DSr and FSr. Rdr, Mdr, INFdr and Mfr are as of Dec. 1994 in million VND; Ldr is number of employees in January 1995. The calculation results in the following regression function:

$$\begin{aligned} \text{Log(Rdr)} = & 3.2304 + 0.7036 \log(\text{Mdr}) - 0.1265 \log(\text{INFdr}) + 0.1998 \log(\text{Ldr}) \\ & (2.82) \quad (2.12) \quad (0.457) \quad (0.667) \\ & - 0.698 \text{RDUM} - 0.0743 \log(\text{Mfr}) + u1 \\ & (-3.018) \quad (-2.102) \\ & \text{Adj. } R^2 = 0.8396 \\ & 36/37 \text{ samples} \\ & t\text{-values are in parenthesis} \end{aligned}$$

Mdr is statistically significant and positive as we expected, while INFdr and Ldr are insignificant means that DSr should further emphasizes on capital goods investment rather than site and warehouse and labor accruement. The significant and negative RDUM implies the larger revenue of the Southern region. One remarkable point drawn out from the empirical study is Mfr turns out to have a minus sign. The more the FSr invests on machinery, the less the DSr has revenue. This may be explained as a negative impact of FDI on DSr, as the more Mfr the FSr brings in, the more inputs like materials, infrastructure etc. are required by FSr. Consequently, the DSr met more difficulties in acquiring inputs than before, which in turn resulted in the shrinking of DSr's revenue. In this case, we may say there were crowding-out effects in the input market⁹.

2-2-3. The North and the South, which captured more externalities from FDI?

2-2-3-a. Model specification

The negative sign of RDUM's in the previous section and the above-mentioned typical characteristics of each region require a further analysis of whether the South captures better impacts from FDI? The model in section 2-2-2. is applied again with a new dummy (SDUMse for the South and NDUMse for the North) replacing RDUM. The dummy is 1 for state-owned enterprises (SE) and 0 for non-state-owned enterprises (Non-SE). The log-linear production functions for the North and the South are described as follows:

$$\text{Log(Rdn)} = b_1 + b_2 \log(\text{Mdn}) + b_3 \log(\text{INFdn}) + b_4 \log(\text{Ldn}) + b_5 \log(\text{FDIn}) + \text{DUMNse} + u3 \quad (\text{eq. 2.2})$$

$$\text{Log(Rds)} = a_1 + a_2 \log(\text{Mds}) + a_3 \log(\text{INFds}) + a_4 \log(\text{Lds}) + a_5 \log(\text{FDIs}) + \text{DUMSse} + u2 \quad (\text{eq. 2.3})$$

⁹We also made a rough test on crowding-out effect in output market and found that there is no impacts caused by FSr's Revenue on DSr's Revenue. The spillover on output market is under analysis with the hope to provide additional results on FDI impacts in Vietnam's economic growth.

2-2-3-b. Data source

The data are classified into two subsets: the Northern regions and the Southern regions. The samples of the DSr are at average levels of provincial SOEs, cooperatives, private enterprises and ltd. Companies separately, and the samples of the FSr are at average level of regional FSr's enterprises. As for 17 provinces and city in the North, there are 66 samples making from data of 5256 domestic enterprises and 222 FDI enterprises. The DSr alone consists of 1543 SOEs making 17 samples; 976 cooperatives—17 samples; 1289 private enterprises—17 samples and 1448 limited companies—15 samples.

As for 20 provinces and cities in the South, we have 79 samples making from data of 12732 domestic enterprises and 465 FDI enterprises. The DSr comprises of 1567 SOEs making 20 samples; 748 cooperatives—19 samples; 7750 private enterprises—20 samples; and 2667 ltd companies—20 samples. FDI presence in the North and in the South is also proxied by FS's fixed capital investing on Machinery in the North (Mfn) and in the South (Mfs).

2-2-3-c. Empirical results and explanation

For the Northern region

$$\begin{aligned} \text{Log(Rdn)} = & 2.32 + 0.38\text{log(Mdn)} + 0.41\text{log(INFdn)} + 0.09\text{log(Ldn)} + 0.03\text{log(Mfrn)} \\ & (5.11) \quad (2.52) \quad (2.62) \quad (0.75) \quad (0.86) \\ & + 0.78\text{DUMNse} \\ & (3.36) \end{aligned}$$

Adj. R² = 0.924

61/66 samples

t-values are in parenthesis

In the North, the positive and significant DUMse explains that the state sector remains important and larger than non-state sector. Both Mdn and INFdn are significant and have positive impacts on production, but Ldn is insignificant. As a matter of fact that labor force in the North accounts for about 38% of the provincial DS's total labor force, but shares just 10% of provincial DS's total Revenue. FDI although has positive coefficient, it is insignificant, therefore it is difficult to identify the spillover from FDI to DSr in the North.

For the Southern region

$$\begin{aligned} \text{Log(Rds)} = & 3.67 - 0.24\text{log(Mds)} + 0.78\text{log(INFds)} + 0.5\text{log(Lds)} - 0.063\text{log(FDIs)} \\ & (6.59) \quad (-2.29) \quad (7.54) \quad (3.57) \quad (-2.34) \\ & + 0.27\text{DUMSse} \\ & (1.09) \end{aligned}$$

Adj. R² = 0.85

77/79 samples

t-values are in parenthesis

On the contrary, in the South, DUMse is insignificant identifying that it is not so different between SEs and Non-SEs. As a matter of fact that SEs were originated from Non-SEs since the reunification of the country. One important point is, both Mds and Mfs are significant but have minus impacts. This means the more the DSr invests on machinery, the less the revenue it gains. And at the same time, the more Mfr

brought in by FSS, the less revenue the DSr in the South experiences. Therefore, the DS in the South not only faces the crowding-out effect in the input market as mentioned before, but also suffers from mis-investment or demonstration effect possibly caused by a large amount of FDI.

What we may draw out from this section is, though enterprises in the South had experienced market economic mechanism, they used to engage in labor-intensive industries like light and consumer goods industries, once a large amount of FDI flows in (i.e. capital stock of FS in the South accounts for about 89.7% of total FS's fixed capital in the country in 1994) and brings in advanced technology in capital-intensive industries, the DS tries to catch up FS by investing more on capital goods (fixed capital spent on Machinery per employee in the South is about 14.9 million VND; while it is just 8.7 million in the North), nevertheless the more the investment, the less revenue the South gains. Obviously the DSr in the South still faces problems on management and investment strategy. The regression results also prove that the South should focus more on enlarging labor force and expanding the sites, while the North should emphasize on capital goods.

Obviously we cannot ignore that a province or a city is affected more or less also depends on FDI's industrial location in the area, next part will proceed on intra-industry spillover.

3. FDI spillover on intra-industry approach

In this chapter, we examine the intra-industry spillover to domestic sector on 2 issues: a) the spillover to the entire domestic sector; b) the spillover to individual sub-sectors like Central governmental enterprises (GSEi), provincial State-enterprises (PSEi), Cooperatives (CEi), Private enterprises (PEi) and Ltd. Companies (LTDi).

3-1. Intra-industry spillover to the entire domestic sector (DSi)

3-1-1. Variables and model specification

The productivity efficiency is affected by physical capital intensity, human capital accumulation and knowledge spillover. The level of knowledge spillover may be affected by the presence of FDI, since FDI flows into one industry may, more or less, creates spillover to domestic sector in the same industry. In order to absorb such spillover, human capital accumulation of domestic sector (DS) is one important factor, as the higher the employees are qualified, the more advanced and higher level of technological and managerial diffusion they understand and absorb.

In pioneer literature, the labor productivity (V) is often measured by output over employees (Kokko, 1994; 1996) or value-added over employees (Blomstrom & Persson, 1983). Unfortunately, we lack such data; therefore, the average labor productivity of DS_i in industry i (V_i) is proxied by revenue per employee of DS_i in that industry. Human capital is proxied by labor quality (LQ_i), which is measured by the ratio of total trained¹⁰ over total employees¹¹. For capital intensity variable (KI), we employ fixed capital per employee of DS_i and capital intensity (KI) is also divided into 2

¹⁰The trained employees are those who have graduated from universities, colleges and job-training centers.

¹¹As in the pioneer literatures, the authors argue that FS recruits higher ratio of skilled workers than DS. We tested this argument by regressing the function $LQ_i = a + FDI + u$ and found that FDI has no impacts on LQ of the entire industry. In this paper, we supposed that LQ of DS_i is equal to LQ of the entire industry.

elements: MI (fixed capital spent on Machinery and equipment) and INF1 (fixed capital spent on site and warehouse). Finally, the FDI presence is denoted by FSi's fixed capital spent on Machinery per one domestic employee (MfLdi). These proxies denote the externalities on every employee in the DSi, consequently on labor productivity. Now let other variables as given we can summarize the model by the following log-linear function:

$$\text{Log}(Vdi) = c_1 + c_2 \log(Mldi) + c_3 \log(INF1di) + c_4 \log(Lqi) + c_5 \log(MfLdi) + u_3 \quad (\text{e.q.3.1})$$

3-1-2. Evidences of entire intra-industry externalities

All variables quoted are as of Dec. 1994, except L is from Jan. 1995. The DSi includes 22852 of all SE (incl. GSEs and PSEs)_i and Non-SE_i, engaged in the concerned industry and FSi includes 686 enterprises. The result is shown below:

$$\begin{aligned} \text{Log}(Vdi) = & 3.64 + 0.16 \log(Mldi) + 0.52 \log(INF1di) + 0.49 \log(Lqi) - 0.035 \log(MfLdi) + u_3 \\ & (5.32) \quad (1.18) \quad (2.72) \quad (2.46) \quad (-0.42) \\ & \text{Adj. } R^2 = 0.28 \\ & 44 \text{ samples} \\ & t\text{-values are in parenthesis} \end{aligned}$$

Surprisingly that Mldi turns out to be insignificant, while INF1di and LQi are significant and positive as we expected. MfLdi has a negative sign but insignificant. The model is succeeded at 28.6%. Thus in this case, FDI spillover is not clearly defined.

3-2. State sector (SE) and Non-State sector: Who captured more spillover efficiency?

*"It took over one hundred years to build this pyramid"—said the tourist guide.
"Sure, it was a governmental project, indeed"—said an American.*

That is just a humorous story; nevertheless, is it true that SEs always operates less efficiently than Non-SEs? And likewise, Non-SE may actively capture more spillover efficiency from FDI? This section will provide answers to those questions in the case study of Vietnam.

3-2-1. Overview of SE and Non-SE sectors in Vietnam

In the long period before transition, Vietnam's economy was characterized by nationalization and collectivization based on "socialist transformation". State and collective ownership were dominant but were realized in the mid-1980s to be unsuitable for economic growth. Since the early 1980s, the non-state sector was accepted and "third plan¹²" was introduced into the state sector. All this actually meant the loosening of State control and led to the positive effect of promoting industrial growth in 1981-1985.

The VIth Congress of the Communist Party in 1986 stated that "the State sector plays the leading role...The State sector actively expands businesses associating with other sectors, guiding the later into the orbit of socialism". The State sector permitted small capitalists to use their capital and technical & management know-how to organize production and business activities in some branches, wherever necessary in

¹²Third plan means enterprises can sell over-planned output to the market at the market price.

the country. This was the initial change of views as regards to the multi-sectoral economy. Since then, the government has encouraged Non-SE to engage in most of economic sectors even infrastructure.

In the 1990s, the share of SE's employment decreased from 2.1 million out of 30.23 million people in 1990 and 1.85 million out of 35.56 million people in 1996¹³. It remains an important source of employment and output, especially in the industrial sector. In 1985, when FDI had not yet entered the picture, industrial output of SEs and Non-SE were 64% and 36% accordingly. Since 1989-1998, the share of SEs, Non-SEs and FDI changed from 56%, 33% and 11% in 1989 to 48%, 23% and 29% in 1997 respectively. SE really plays a major role in the whole economy.

Now let us see how it works as compared with Non-SE.

3-2-2. Empirical results

In this section, we divided data of SE and Non-SE into 5 sub-sectors: a) Central government enterprises (GSEi) includes 1908 enterprises in 44 industries, b) Provincial state enterprises (PSEi)-3835 enterprises in 41 industries, c) Cooperatives (CEi)—1863 cooperatives in 35 industries, d) Private companies (PEi)—10956 companies in 38 industries, d) Ltd. Companies (Ltdi)—4350 companies in 37 industries. The model of section 3-2 is revised, this time LQi is excluded from productivity function of sub-sector with the reason that LQi of the industry is far different from that of each sub-sector especially of Non-SE. The regression result is shown in Table 3.1. While Mldi is insignificant and INFLdi is significant in GSEi, PSEi and CEi, the case is adverse in PEi and Ltdi. MfLdi is significant and negative in PSEi, PEi and Ltdi but positive and insignificant in GSEi, and negative and insignificant in CEi. Let us have a closer look

Table 3.1. Regression results

	C	Mldi	INFLdi	MfLdi	R ²
	Central government Sub-sector.				
log(Vgi) (42/43 samples)	1.757883 <i>3.908819</i>	0.201857 <i>1.462278</i>	0.661752 <i>3.62196</i>	0.000765 <i>0.008207</i>	0.468218 <i>0.426235</i>
	Provincial State Sub-sector				
log(Vpse) (40/41 samples)	2.163688 <i>5.286804</i>	0.238906 <i>1.390958</i>	0.758189 <i>4.10376</i>	-0.205725 <i>-2.542032</i>	0.526572 <i>0.48712</i>
	Cooperative Sub-sector				
log(Vci) (32/35 samples)	2.299113 <i>4.702013</i>	0.021014 <i>0.092473</i>	0.587628 <i>2.264188</i>	-0.100766 <i>-0.731138</i>	0.17863 <i>0.090626</i>
	Private company Sub-sector				
log(Vpi) (38 samples)	2.045258 <i>3.840872</i>	0.418711 <i>2.289009</i>	0.27173 <i>1.610885</i>	-0.233829 <i>-1.955238</i>	0.2417 <i>0.174791</i>
	Ltd. Company Sub-sector				
log(VLtdi) (36/37 samples)	1.32518 <i>2.113797</i>	0.911268 <i>3.556111</i>	0.19729 <i>1.661874</i>	-0.291866 <i>-2.724893</i>	0.439652 <i>0.387119</i>
Note: t-value and Adjusted R ² are in italics					

¹³World Bank 1994; 1997.

at individual sub-sector.

Actually GSEi shares approximate 76% in DSI's total fixed capital (FCdi) only 46.7% in DSI's total revenue (Rdi), the insignificant Mdi may indicate the inefficiency of capital goods investment in this sub-sector, and the insignificance of MfLdi does not mean FDI does not impacts on this sub-sector but may be this sub-sector has been supported by the government in all markets. PSEi is the second largest sub-sector accounting for 15.7% in FCdi and 35.7% in Rdi. This sub-sector has higher capital productivity than GSEi but still has problem in capital goods investment, and what is more, it also faces negative impacts from FDI. Let aside CEs which has very small share in both FCdi and Rdi (1.5% and 1.8% respectively), PEi and Ldi sharing 4.7% and 5.4%, and 2.1% and 10.4% in FCdi and Rdi respectively requires further investment in machinery and equipment and faces with negative impacts from FDI. The insignificance of MfLdi in some sub-sectors does not mean FDI spillover does not occur but possibly some industries experience positive impacts and some others suffer from negative impacts.

To sum it up, the originated State sub-sectors inefficiently invest in Mdi, while the Non-state sector does better. Only GSEi, which accounts for the largest part in FCdi and Rdi, did not suffer negative impacts, in general, and may captured positive impacts from FDI. This may be reasoned that this sub-sector engaged in industries favoring with linkage effect created by FDI in concerned industries or it was well supported by the Government in all markets. On the contrary, the negative impacts on Non-State sub-sector required further equal treatment by the government.

4. FDI Spillover on Inter-industry approach

In the previous chapters, we have investigated FDI spillover efficiency on intra-industry and region approaches, now how above the inter-industry impacts or the linkage effects from FDI—This issue was examined by Schive Chi (1990); Schive Chi and Badiul A. Majumdar (1990) and Haishun Sun (1996). Those authors emphasized the backward linkage effects in the case of Taiwan and China and came to the conclusion that FDI in Export Processing Zones (Taiwan) indeed creates foreign enclaves; while Sun (1996) maintained that there is no sign of foreign enclave in China. They all found an increase of local content rates embodied in products, which over time indicates FDI creates high backward linkage effects to local sustainable economy.

Now we shall analyze the contribution of FDI to economic structural change and the linkage effects created by FDI inflow. The methodology combines decomposing sources of economic growth (Chenery-1957) together with linkage effect analysis.

4-1. Theoretical framework

Chenery (1957) decomposed the sources of economic growth into 4 sources: domestic demand-push; export-expansion; import-substitution and change in intermediate input coefficients. If the growth of one industry growth is driven by export expansion, such industry is called export-led industry; and likewise, if import-substitute is the major source of growth, the industry is called import-substitution industry, and so forth. Using Chenery's model (1979) and Kubo and Robinson's (1979) equation, we can confirm by which source the economic growth arose.

$$\begin{aligned}
X &= AX + D + E + m(AX + D) \\
X &= (I - m)AX + (I - m)D + E \\
\text{let } \mu &= I - m \\
X &= (I - \mu A)^{-1}(\mu D + E) \\
\text{Let } (I - \mu A)^{-1} &= B_d
\end{aligned} \tag{1}$$

Thus the growth of the economy between two points of time is denoted by $\Delta X = X_2 - X_1$. According to Kubo and Robinson's (1979) equation¹⁴, the decomposed can be expressed as followed $\Delta X = B_{d2}\mu_2\Delta D + B_{d2}\Delta E + B_{d2}\mu_2\Delta A X_1 + B_{d2}\Delta\mu Y_1$

Where X is total output, D is consumption, E denotes export, m is ratio of Import in total domestic demand (incl. intermediate input and final demand). B_d is the Leontief inverse matrix of domestic production. μ is the ratio of domestic supply. The four terms in the above equation denote four sources of growth: ΔD implies expansion of domestic demand, ΔE is Export expansion, ΔA is change of intermediate input coefficients and $\Delta\mu$ is change of the import substitution ratio. So if FDI flows greatly to industries, which contribute a large portion to economic growth on the industrialization and trade expansion, we may argue that FDI possibly create positive impacts. However, it is insufficient, as FDI also affects other industries through linkage relation.

The linkage theories classify linkages into two types: backward and forward linkages. Backward linkage¹⁵ is concerned with a derived input demand by a given industry. Forward linkage concerns output supply by a given industry. Linkages refer to the inter-sectoral relations or potential inter-sectoral relations. These factors include the nature and relative prices of products, development of markets and government policies. In general, manufacturing industries have higher backward linkage effects than primary industries, which tend to have relatively high forward linkages effects. Primary industries produce higher value-added products. Once FDI flow into one industry, it brings about impacts to that industry directly but also influences other industries in terms of increasing demand for, and supply to other industries. If FDI contributes to increase the demand for intermediate inputs supplied by other industries without increasing net imports, we may say FDI creates backward linkage effects to the domestic sector. And if it supplies more to other industries without increasing its net imports, we may say FDI contributes to generate forward linkage effect in that industry.

In analyzing the linkage effects created by FDI in China, Schive (1996) just

¹⁴Zakariah, A. Rashid & A. E. Elameer (1999).

¹⁵Backward linkage is measured by the following formula:

$$Y_{bi} = \frac{1/n \sum_i r_{ij}}{1/n^2 \sum_i \sum_j r_{ij}} = \frac{\sum_i r_{ij}}{1/n \sum_{ij} r_{ij}}$$

and Forward linkage is measured by the below formulation:

$$Y_{fi} = \frac{1/n \sum_j r_{ij}}{1/n^2 \sum_i \sum_j r_{ij}} = \frac{\sum_j r_{ij}}{1/n \sum_{ij} r_{ij}}$$

where r_{ij} denotes the i^{th} row and j^{th} column element of the Leontief inverse matrix $(I - A)^{-1}$, n is number of sectors. If $Y_{bi} > 1$, it indicates that an investment in j^{th} sector will induce more than the average backward linkage effects. And if $Y_{fi} > 1$, it implies that the i^{th} sector tends to be more heavily drawn by the expansion of the economy. In other words, the output of sector i^{th} will be used widely as inputs of other sectors, but if it is smaller than 1, the output of the given industry is just used as for final consumption. (Haishun Sun—ibid.)

emphasized the backward linkage effects. Schive came to conclusion that FDI had generated positive spillover to China's local economy. Nevertheless, it does not mean only backward linkages generate good impacts; forward linkage effects may also. For example, the manufacturing industry may not only have backward but also forward linkage effect when it develops. As its products substitute for imports, which used to be other industries' inputs, and if its production cost reduces, it may substitute other inputs and reduce production costs of other industries. In other words, domestic sectors will be more competitive. In addition, primary industry does not have much backward, but forward linkage, so the forward linkage effect may occur.

This chapter investigates the backward and/or forward linkages at two points of time: 1989 and 1996. We argue that if there is a large amount of FDI to a certain industry, which moves toward industrialization and liberalization, at the same time backward and/or forward linkage effects occur, it may be concluded that the industry benefits from FDI inflow. In addition, the change of value-added by industries is analyzed to confirm the impacts of FDI.

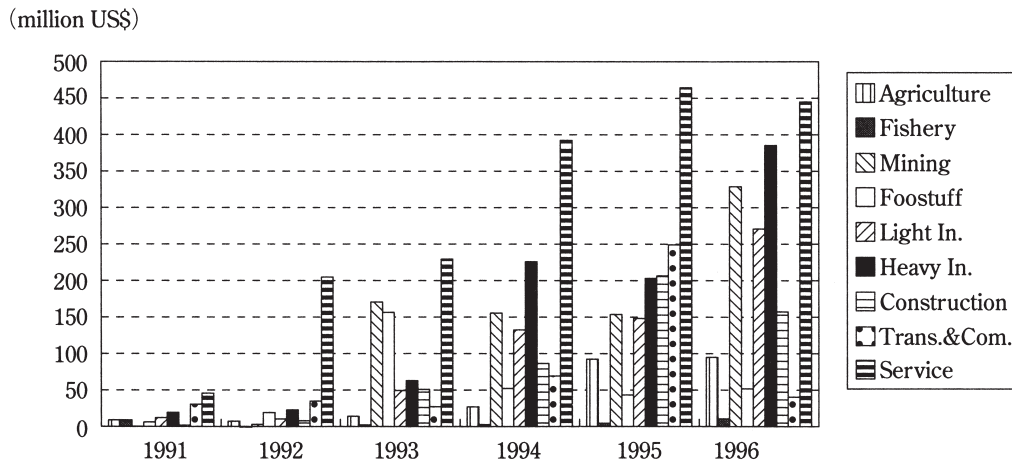
4-2. Industrial strategy and FDI inflow in 1989-1996

Domestic and foreign situation: Soviet Union and East European socialist countries—the main partners of Vietnam's economy, were in the most difficult situation economic inferiority to the Western countries while proceeding with perestroika and reform programs. However, economic and political situation in these countries worsened. Many ASEAN countries had escaped poverty and, in a dynamic course of economic growth, taken part in international and regional labor division and cooperation. This compelled Vietnam to undertake deep-reaching and all-encompassing economic-political reforms in order to integrate actively and equitably into the international economy. Both the nation's errant industrial policy and the crisis in the socialist countries made the economy worse.

Industrialization was considered the central task of the period of transition to socialism in Vietnam. The errors of an industrial policy relying too much on the development of heavy industry were gradually identified. The VIth Congress (1986) asserted that: "The overriding task and the general objective of the remaining years of the initial stage are to stabilize the socio-economic situation on all aspects, to continue building the necessary premises for the acceleration of socialist industrialization in the subsequent stage." Furthermore, "production must be reorganized simultaneously with building a number of new, necessary material technical bases, a rational economic structure must be created, which is geared to boosting agricultural production, especially food, stepping up the production of consumer goods and export commodities".

It was the first time the government's decision had been directed to the implementation of three-target programs: food, consumer goods and exports commodities, Vietnam economy was shifted to forming an agro-industrial-service structure. Primary attention was given to agriculture to meet the urgent demand for food, for raw materials for the production of consumer goods and for exports. Heavy industry was developed selectively in conformity with economic capacity and in order to lay the foundation for economic development in subsequent years. Infrastructure and services received more attention. In the initial years, FDI mainly focused on oil & gas and on hotels. Then FDI in manufacturing and processing sectors increased (e.g. FDI in heavy

Figure 4.1. FDI Flow by Industry



and light industry was 21% and 15% in total realized capital in 1996—see Fig.4.1). The government imposed incentives to FDI in export, high technology, infrastructure, products with high local content, and in areas with limited infrastructure.

4-3. Empirical study of FDI's inter-industry impacts

We use the 1989 and 1996 Input-Output tables published by Vietnam's General Statistical Office in 1992 and 1999 respectively. The tables using producer's price are quoted. We use consumer price index instead of the unavailable wholesales price index to adjust the table 1996. The 1989 table contains 54 economic activities and the 1996 table has 97 while FDI is classified into 15 groups. To simplify the work we classify activities into 10 large industries: (1) Agriculture, (2) Fishery; (3) Mining; (4) Foodstuff; (5) Light Industry; (6) Heavy Industry; (7) Other manufacture; (8) Construction; (9) Transportation & Communication; (10) Service.

4-3-1. Source of economic growth between 1989-1996

The result of decomposing factors of growth shows that between 1989-1996, 65% of the economic growth was driven by domestic demand-push and 35% by export expansion (Fig.4.2). Foodstuff, Light industry and Heavy industry contributed much to the growth (Fig.4.3). Light and Mining industries were pushed by export expansion accounting for 58% and 72%. Other industries experienced domestic demand-push (Table 4.1). This trend coincided with the government's strategy. In general, manufacturing sector (including Foodstuff, Light industry, Heavy industry and other manufacturing) accounted for 42% of total production change between 1989-1996. Moreover, Heavy industry grew due to domestic demand expansion and also due to direct input coefficient change, which accounted for 24.6%. This implies the industrialization of the economy. Thus the large amount of FDI to this sector during 1989-1996 did contribute to the industrialization of the economy.

4-3-2. Linkage effects: (see Fig.4.4)

This paper focuses on domestic sector, so we excluded import from total demand

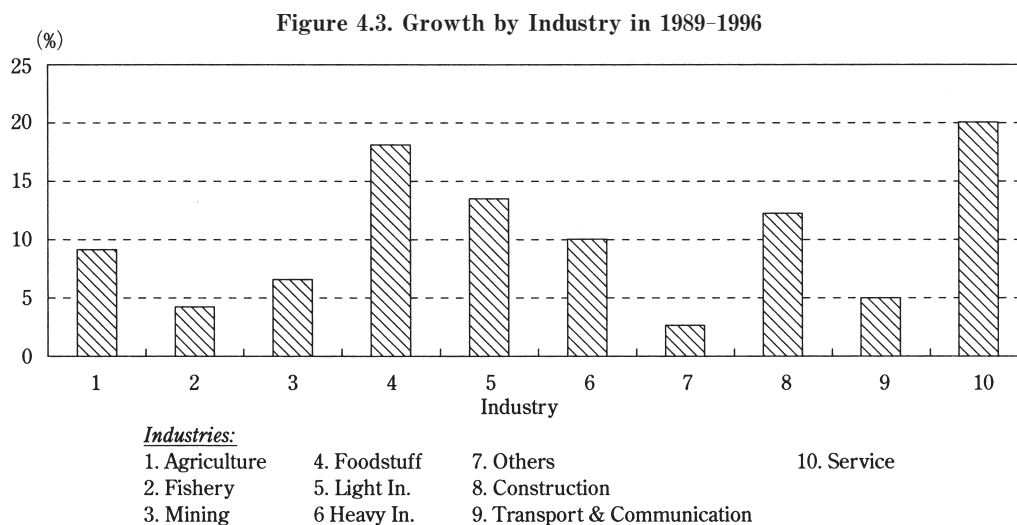
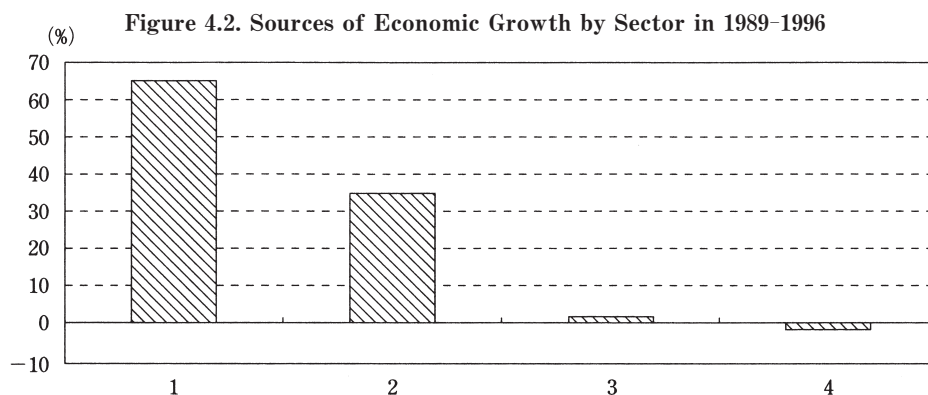
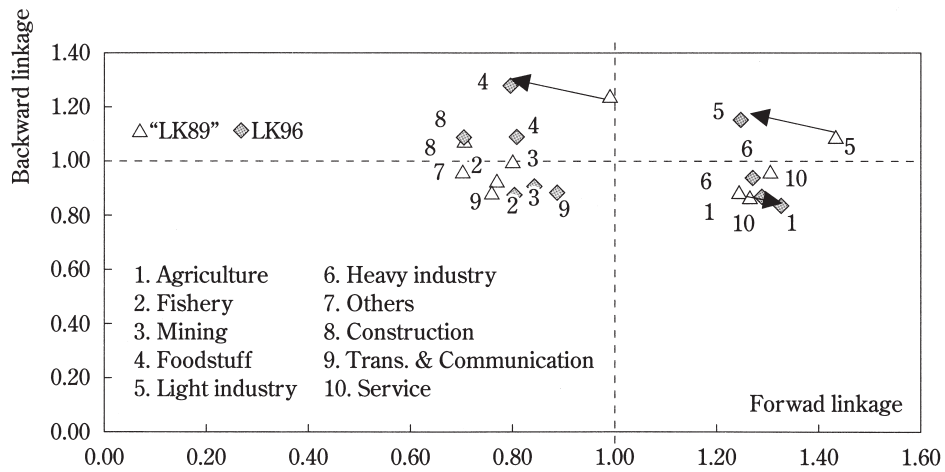


Table 4.1. Sources of Growth by Industry (%)

	C	I	FD	EX	A	IM	Share
Agri. & Forestry	69	7	76	49	-7	-17	9
Fishery	71	1	72	31	-4	0	4
Mining	0	18	18	72	-15	26	6
Food & foodstuff	73	2	74	31	-6	1	18
Light Industry	17	26	43	58	0	0	13
Heavy Industry	27	27	54	19	25	2	10
Other	61	17	78	2	18	2	2
Construction	-2	102	100	0	0	0	12
Trans. & Com.	18	14	32	56	20	-8	5
Service	60	10	70	32	3	-6	20
Total	41	24	65	35	2	-1	100

Note: C Domestic Consumption push I Capital formation expansion E Export expansion
 A Direct input coefficient change IM Import substitution Share: share in total growth of the economy

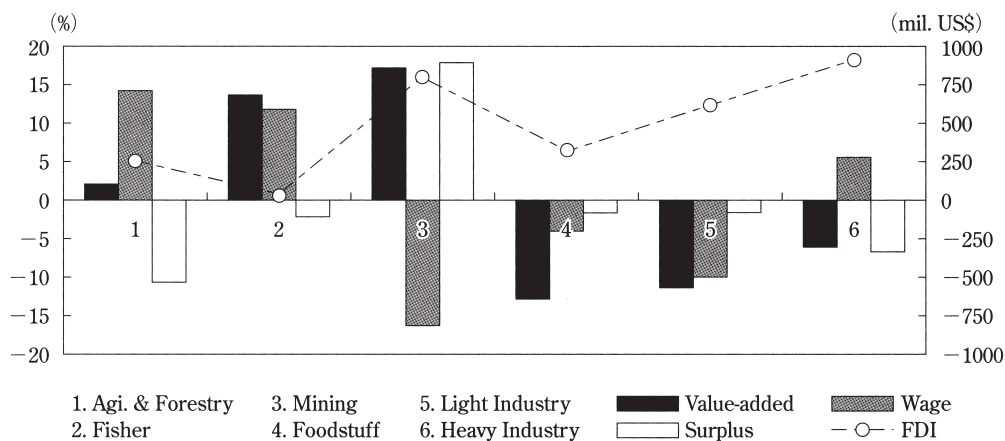
Figure 4.4. Linkage Effect



with the assumption that the import dependency is the same in both intermediate and final demand. The figures showing forward linkages in Agriculture was 1.25 in 1989 and 1.33 in 1996. In Light industry, backward linkage effect occurred increasing from 1.10 in 1989 to 1.16 in 1996. Actually, FDI drawn to Agriculture and Light Industries though accounted for 4.3% and 11% of total realized FDI during 1989-1996 (Fig.4.1) might be a large share in those industries' capital accumulation and forward and backward linkage effects did arise in these two industries. Therefore, it is reasonable to conclude that FDI possibly generated positive impacts to these industries.

Nevertheless, FDI flowed considerably to Mining industry (sharing 14.1% in total realized FDI in 1989-1996), where there should have been high forward linkage with other industries; in fact, its forward linkage was still about 0.8. The Mining industry is mainly engaged with coal, oil and gas. For coal mining, the over-supply in terms of exports as well as domestic supply in 1998 forced the Coal Corporation to reduce production in 1999. At the same time, all the exploited crude oil was exported because there was no downstream production sector. Since 1998, the government has been promoting coal and gas-fired electricity. This problem of low forward linkage of coal may partly be solved for coal branch through increased domestic demand for coal as a direct input. To support this trend, the government strongly encourages and provides incentives to foreign investment in the extraction and processing of these minerals, particularly the mining and processing of those minerals used in infrastructure projects.

The result of factor decomposing proves that Mining is export-led as per the Government's strategy. Its value-added increase is surpassed by the increase of operating surplus; FDI flowed greatly into this sector (Fig.4.5). Between 1989-1996, the coefficient of value-added increased by 17%, the operating surplus coefficient was up by 18% but compensation for employees was reduced by 17% (Table 4.2). This is not a positive impact at all. While export-expansion is the main source of growth of the industry and generating much higher operating surplus, the increasing FDI flows to this industry may result in the growth of Gross domestic product (GDP). However, such impact is more than offset by negative consequences to Gross National Product (GNP)

Figure 4.5. Value added, operating surplus change and FDI stock in 1989-1996**Table 4.2. Change of Value-added Coefficients between 1989-1996**

	VA	W	OS	D+IT
Agriculture	0.02	0.14	-0.11	-0.02
Fishery	0.14	0.12	-0.02	0.04
Mining	0.17	-0.17	0.18	0.16
Foodstuff	-0.13	-0.04	-0.02	-0.07
Light In.	-0.11	-0.10	-0.01	0.00
Heavy In.	-0.06	0.06	-0.06	-0.05
Others	-0.25	-0.26	-0.01	0.02
Construction	-0.07	-0.12	0.01	0.04
Trans. & Com.	0.05	-0.01	-0.02	0.08
Service	-0.03	0.12	-0.16	0.05
Subtotal	-0.08	-0.02	-0.06	0.01

Note:
 VA: Value-added
 W: Wage & salary
 OS: Operating Surplus
 D+IT: Depreciation & Indirect Tax

and balance of payment in the long-run, when the operating surplus is to be transmitted to the home country as profit, especially in the case of Mining industry, where FDI shares 78% in this industry's total output value and almost 100% in Oil & Gas (Table 4.3).

In addition, while operating surplus was up by 18%, compensation for employment was down by 16%. The more capital-intensive the industry, the greater the enhancement to the reduction in employment may occur. This should be treated carefully, especially in the case of developing countries. To prevent immiserizing growth like Iran, Brazil's oil industry employment should be taken seriously into account while pushing up GDP growth. Besides, it should be born in mind that, Mining industry is an export-led industry; therefore, FDI in this industry is favored with tax incentives. The above investigation points out that incentives are redundant, as the high rate of return is rather attractive to investors. If such incentives are maintained, they cause unfair competition to the domestic sector, not to mention the loss of budget revenue.

Table 4.3. FDI sector's share in industrial output (%)

	1995	1996	1997	1998*
Share in total	25.09	26.73	28.92	31.82
Mining	77.83	78.01	77.75	81.43
in oil & gas	99.69	99.73	99.78	99.81
Foodstuff	16.66	17.69	18.66	19.13
Light	13.82	15.08	20.13	23.31
Heavy	20.56	23.56	25.17	28.05

Source: Department of Industry General Statistical Office. 1999. Results of Survey on Industry 1998. Statistical Publishing House. Hanoi, pp. 15-16; 45-46.

5. Conclusion and remarks

Our empirical study shows FDI did create positive direct impacts on economic growth in Vietnam during 1989-1996. As for the indirect impacts, both positive and/or negative externalities are identified on intra-and inter-industry and intra-region bases. The intra-region study deals with the issue of FDI impact on production by province. It could not identify clearly whether the impact is positive or negative in the North, where FDI accounts about 10% of total FDI. On the contrary, it shows the negative impact in the South, which might be in term of crowding-out effect occurring in input market or demonstration-effect. As a large amount of FDI (89% of total FDI) flowed in the South might cause difficulties to DS in purchasing inputs, further more DS tried to catch up with FDI sector in the competition by upgrading facilities, which consequently might induce mis-investment. in market Parallel to that it confirms State-sector in the North still played more important role, however it is not so in the South as the matter of fact that the State sector in the South was originated from Non-State sector since the reunification of the country.

On intra-industry approach, the paper could not point out clearly the impacts on the domestic sector in the entire industry; however the negative impacts is found in sub-sectors of provincial State enterprises, Private companies, Ltd companies. The sub-sector of Central government enterprises accounted for 57% of DS's fixed capital and 45% of DS's total revenue seemed to absorb positive spillovers in some industries but negative spillover in others. Such conclusion does imply that this sub-sector operated so effectively as the empirical analysis proved that its capital goods investment was not efficient, so its partly succeed might arise from great support by the government or because it engaged in industries which received linkage effects from FDI inflow to the concerned industries.

Applying input-output analysis approach, the study proves that FDI contributed to economic structural change in the trend of industrialization and trade expansion. In 1989-1996, domestic demand was the major source of economic growth accounting for 65% of output growth; export-expansion was second contributing 35%; the change of direct input coefficients was moderate at 2%. However, the tendency of economic growth is positive.

FDI into Agriculture and Light industry made up about 20% of FDI stock in 1989-1996; it did generate positive impacts to these industries. The impacts are in the form of promoting the industries towards industrialization and trade-expansion while

Table 4.4. Vietnam's Balance of Payment

(Mn. US dollars)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Merchandise exports, fob	1320	1731	2042	2475	2985	4054	5198	7330	8955	9300	11540
Merchandise imports, fob	-1670	-1772	-2105	-2535	-3532	-5244	-7543	-10480	-10313	-10080	-10460
Trade balance	-350	-41	-63	-60	-547	-1190	-2345	-3150	-1358	-780	1080
Other goods, service & income	-237	-356	-160	-71	-484	-278	-150	-468	-1162	-530	-1008
Credit											2828
Debit											-3836
Unrequited transfers		138	90	123	264	302	627	1200	885	1022	1181
Private			35	59	70	170	474	1050	710	869	1050
Official		138	55	64	194	132	153	150	175	153	131
Current balance	-587	-259	-133	-8	-767	-1166	-1868	-2418	-1635	-288	1253
Capital account	299	121	-59	271	-180	897	1807	2306	1972	2426	1368
Direct investment	100	120	220	260	300	1048	1780	1803	2100	1735	1484
Portfolio investment											
Other long-term capital	412	-47	-191	52	-597	-275	-284	279	392	950	2
Other short-term capital	-213	48	-88	-41	117	124	311	224	520	-259	-118
Net errors and omissions	66	-4	142	-197	-109	-140	-115	125	-21	-1492	-1022
Overall balance	-222	-142	-50	66	-1056	-409	-176	13	316	646	1599
Allocation of SDRs											
Monetary movements	222	142	50	-66	1056	409	176	-13	-316	-646	-1599

Source: Key Indicators of Development Asian and Pacific Countries (2000), p.389.

creating backward and forwards linkage effects. Obviously Central government enterprises accounting for 47% of DSI's total revenue in this industry gained such positive spillover from FDI. On the contrary, positive impacts from FDI did not occur in Mining industry, where a great deal of FDI flowed in. The Mining industry's growth was pushed by export expansion. The value-added coefficient was up, especially the operating surplus, but forward linkage and compensation for employees was down. As in general, the greater FDI flows to this industry, the more it add to value-added or GDP growth; nevertheless, the greater part of value-added came out from operating surplus, which in turn will be transmitted to home countries. In the long-run, if it is continued, it may have negative consequences for GNP or balance of payment. We can see from balance of payment that the profit transmission embodied in the section of other goods, services and income climbs from US\$ 237 million in 1989 to US\$ 1162 million in 1997 and US\$ 1008 million in 1999 (Table 4.4).

Regarding policy implementations, redundant incentive occurs in Mining industry and export-promotion policy causes the misreading of FDI impacts. This should be corrected as it causes unfair competition to domestic enterprises in this industry. The moderate absorption of spillover efficiency by region with unfavorable infrastructure and lack of qualified labor proves that incentives are still necessary to correct market failure in investment allocation by foreign investors. Investment on human capital especially training-on-job requires due emphasis.

In general, the long-term strategy shows the difference with other the same stage developing countries: Vietnam does not only emphasizes export-led industries, but she is simultaneously building an industrial base-albeit, still at low level. By the way, we should make a note that, while promoting capital-intensive industries, it is necessary for developing countries to make good use of the labor force-one of the production factors. Otherwise, it may induce negative consequences to economic growth in the long-term like Iran, Brazil and some other countries endowed with natural resources

in the 1980s. Therefore, building the downstream industries requires more concentration.

This study has provided some conclusions relating to FDI spillover to production and productivity as well as suggestions on policy application; yet further study on TFP to see how FDI affects on technological change and on the impact on trade, which shall further explain more the benefit or loss from inward FDI.

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