

# B e r i c h t e

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## The Role of Direct Foreign Investment in Developing East Asian Countries

By

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### I. Introduction

**D**irect foreign investment (DFI) is one of the most contentious economic and political issues in less developed countries (LDCs). There is a substantial amount of theoretical and empirical research on the extent, causes and consequences of DFI in LDCs. Much of it has, appropriately, focused on the micro-economics of foreign investment, frequently employing the case study approach for a small number of industries in one country. One reason for this is that published statistics on the subject are seriously deficient. Unlike international merchandise trade flows, DFI data are scattered, home and host country sources frequently provide contradictory information, and uniform definitions have not been adopted. The deficiencies are particularly severe the greater the attempted level of disaggregation, by country or industry.

Nevertheless, a considerable amount of statistical information on DFI is published, both by international bodies (several UN agencies, the OECD) and by host countries. The latter are generally of two types: first, approvals data issued by the countries' investment regulatory boards (usually a board of investments or Central Bank); and secondly, production and employment data for the major manufacturing industries from the industrial census, classified by country of ownership<sup>1</sup>. Surprisingly few of the micro, empirical studies have attempted to draw on this data base.

In this paper we assemble the available information from country and international sources, and attempt to integrate it, where applicable, into the theoretical literature and the extensive recent empirical research. In synthesizing the statistical information and the recent research, we will address the

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*Remark:* For helpful comments on earlier drafts we are grateful to seminar participants at the Australian National University and the University of Malaya, and to H.W. Arndt.

<sup>1</sup> The shortcomings of these data are summarized in the Appendix.

following questions: how important is DFI to host countries, in relation to aggregate resource flows and to domestic production? Do the major investors in the region differ in their motives for investment? Does the pattern of DFI across major manufacturing industries conform broadly to that predicted by the theory of DFI? What have been the recent trends in intra-firm international trade and what is the significance of this form of trade?

Our paper is concerned with DFI since the late 1960s for the eight major non-socialist LDCs of East Asia<sup>1</sup>: the three Northeast Asian countries – Hong Kong, Republic of Korea (hereafter Korea), Taiwan and the original five ASEAN member countries Indonesia, Malaysia, the Philippines, Singapore, and Thailand<sup>2</sup>. This has been the fastest growing region outside the Middle East during the last decade, and all countries have adopted relatively liberal policies towards capital and technology flows. It has also been the most rapidly growing regional recipient of DFI. According to estimates for 116 LDCs prepared by the UN Centre on Transnational Corporations, this region's share of DFI more than doubled between 1967 and 1978, from 7.5 per cent to 18.4 per cent. Seven of the countries included in this study (Taiwan was excluded) accounted for almost three-quarters of the stock of DFI in the 23 Asian countries included in the UN Study [UN CTC, 1983a] for 1978.

Our organization is as follows. Section II examines the magnitude of DFI inflows in relation to total resource flows and investments. In Section III the DFI data are disaggregated according to investing country and industrial sector for each country in the region. Section IV focuses on foreign investment in the manufacturing sector of the region. Finally, in Section V, the interrelationship between international trade and investment flows is considered.

## II. Direct Foreign Investment and Resource Mobilization

How important have DFI flows been in the context of aggregate resource mobilisation in the region? We can answer this question in two ways: first, by examining DFI inflows in relation to total resource inflows for each country and over time; and secondly, by comparing these flows with corresponding figures on gross domestic investment (GDI).

On the former, a useful data source is the annual publication of the Organisation for Economic Co-operation and Development [OECD, var. issues], which disaggregates net resource inflows by major category and source. The data are presented in Table 1 for the period 1969–1983 for official (that is, governments and international development organisations) and

<sup>1</sup> Prior to this, statistics on DFI were even more sparse and unreliable than they are now, and in the earlier colonial period the major foreign investor in each country was the colonial power. (Callis [1942] examined patterns of DFI up to World War Two.)

<sup>2</sup> The newest member of ASEAN, Brunei, is omitted because of data deficiencies and because, in any case, DFI is directed almost entirely to its petroleum industry.

Table 1 - *Total Net Resource Flows to Western Pacific Developing Countries, 1969-1983<sup>a</sup>*

	1969-1971	1972-1976	1977-1980	1981-1983
<b>ASEAN</b>				
Indonesia .....	521.4	1 647.6	1 136.0	3 679.9
official .....	90.6	47.1	88.2	37.8
private .....	9.4	52.9	11.8	62.2
(direct investment) .....	(13.7)	(32.2)	(5.5)	(42.3)
Malaysia .....	80.4	245.5	446.5	1 255.8
official .....	71.3	49.7	44.0	20.7
private .....	28.7	50.3	56.0	79.3
(direct investment) .....	(31.3)	(36.7)	(21.4)	(20.4)
Philippines .....	225.8	469.8	974.7	1 098.7
official .....	64.1	57.6	48.9	68.3
private .....	35.9	42.4	51.1	32.3
(direct investment) .....	(12.4)	(20.5)	(18.3)	(10.8)
Singapore .....	81.3	165.5	444.7	1 106.4
official .....	55.3	34.4	14.0	1.6
private .....	44.7	65.6	86.0	98.4
(direct investment) .....	(19.4)	(42.8)	(65.1)	(53.0)
Thailand .....	208.7	142.3	746.6	1 397.7
official .....	53.4	74.9	68.0	57.4
private .....	46.6	25.1	32.0	43.6
(direct investment) .....	(6.1)	(16.8)	(11.3)	(12.4)
<b>Northeast Asia</b>				
Hong Kong .....	229.1	213.2	597.2	1 412.0
official .....	30.8	27.0	2.0	2.6
private .....	69.2	73.0	98.0	97.4
(direct investment) .....	(11.7)	(54.0)	(46.1)	(57.2)
Korea .....	547.2	846.3	1 328.5	1 533.8
official .....	73.2	66.1	56.5	65.0
private .....	26.8	33.9	43.5	35.0
(direct investment) .....	(3.1)	(12.8)	(0.1)	(12.0)
Taiwan .....	186.2	255.1	234.9	565.6
official .....	47.0	41.6	74.5	29.5
private .....	53.0	58.4	25.5	70.5
(direct investment) .....	(10.1)	(8.3)	(29.3)	(15.7)
<b>Total</b> .....	<b>2 080.1</b>	<b>3 985.3</b>	<b>5 909.1</b>	<b>12 049.9</b>
official .....	66.8	51.6	53.9	36.5
private .....	33.2	48.4	46.1	63.5
(direct investment) .....	(10.4)	(26.5)	(17.9)	(31.3)

<sup>a</sup> Yearly averages, U.S. \$ mill. in every first line, per cent of total thereafter.

Source: Calculated from OECD [var. issues].

private sources, including DFI. Several important conclusions emerge from the data.

First, all countries have been major recipients of capital inflows – in recent years averaging more than \$1 billion annually for all countries except Taiwan – but the composition of the inflows has varied considerably within the region. At one extreme are the two high income city states, Hong Kong and Singapore. For them, official sources now play a very minor role, especially in the case of Hong Kong, while DFI constitutes between one-half and two-thirds of the total net capital inflow. In the other six countries, official sources are relatively more important, although their share in the total is generally declining<sup>1</sup>. Except for the city states, the contribution of DFI in aggregate inflows is quite small. In none of the other six countries has it exceeded one third of the total, except for commodity-induced booms in Indonesia in the early 1980s and Malaysia in the mid-1970s.

Secondly, there is considerable variation in the region in the importance of DFI relative to other forms of private capital inflows. For example, since the mid-1970s DFI has accounted for about two-thirds of net private capital inflow in the case of Singapore, but less than one-sixth in Korea<sup>2</sup>. In only two cases – Indonesia and Malaysia in the period 1969–1971 – has DFI exceeded private flows, indicative of net private capital (exclusive of DFI) outflows.

What factors account for variations in DFI flows within the region? Theory provides little guidance in answering this question. Young [1978] attempted to test the importance of several possible explanatory variables, and concluded that profitability, relative wage rates and tariff protection were the most important. Problems in the measurement of all three variables, however, illustrate the difficulties with this approach<sup>3</sup>. A more promising alternative may lie in Pangestu's attempt to adapt the trade intensity approach to inter-country variations in investment [Pangestu, 1980]. Using this framework, she

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<sup>1</sup> The share of official sources in the total inflow increased marginally between the periods 1972–1976 and 1977–1980 only because the share for the major recipient country, Indonesia (which has accounted for between 25 and 40 per cent of total inflows), rose during this period. Only the Philippines and Thailand registered a larger share of official inflows in the early 1980s compared to the period around 1970, but the share for Thailand fell after the mid-1970s. The increasing official share for the Philippines presumably reflects the fact that, by the early 1980s, it was the least attractive country in the region for foreign investors.

<sup>2</sup> Korea and Singapore represent, in effect, polar extremes. For a general elaboration of the contrast between the two countries, see Parry [1983]. For a more detailed examination of foreign investment see, in the case of Singapore, numerous papers by Chia Siow Yue [e.g., 1981], and for Korea, Westphal *et al.* [1979].

<sup>3</sup> In the case of profitability, aggregated, *observed* (ex post) figures bear no relationship to *expected* profitability, which is the relevant concept for investors. Similarly, labour costs rather than wage rates are the more appropriate variable. Finally, effective protection rates – including non-tariff measures – rather than nominal tariffs (the variable adopted by Young) are the best indicator of the protection regime.

found a high intensity of investment flows between Japan and ASEAN, which was explained by both high complementarity in industrial structure (especially in petroleum and mining) and, especially, high country bias. By contrast, the large United States investment in the region primarily reflected its global importance as a foreign investor. Nevertheless, the predictive power of the intensity approach will be more limited the more disaggregated the analysis.

While private capital flows are generally of greater relative importance at higher levels of per capita income, no such relationship emerges in the case of per capita income and DFI shares. Although DFI is important in the two high income city states, it is also very significant in the region's poorest country, Indonesia, but much less important in the rapidly growing Korean economy. It appears that the general policy environment is a key explanatory factor, although one which is not easily amenable to quantitative testing. For example, foreign investment in Indonesia grew rapidly after the 1967 regulation providing a wide range of incentives for foreign investors. In the increasingly regulated environment after 1970, however, there was a marked slow-down in new investments, apart from rapid oil-induced growth in the mid-1970s and early 1980s. The Philippines became an increasingly unattractive destination for foreign investors from the late 1970s, owing to political uncertainties and a sluggish economic performance. In other countries, increased foreign investment flows have been associated with general policy liberalisations, including the introduction of investment incentives, and an emphasis on manufactured exports. This pattern was especially evident in Taiwan after 1960 [Riedel, 1975] and in Malaysia from the late 1960s [Hoffmann, Tan Siew Ee, 1980].

A third conclusion concerns the importance of "new forms" of capital and technology transfer [Oman, 1983]. The argument here is that there has been a shift away from the "old" DFI package in which foreign firms were the majority shareholders in their overseas investments and the sole source of foreign technology. This is said to reflect host government pressures, the increased importance of state enterprises in the "commanding heights" of some key LDCs in the region, the preferences of multinational corporations (MNCs), and the recycling of the huge OPEC surpluses. The "new forms" argument suggests there have been two important changes. First there is now greater "unpackaging" of foreign capital and technology, that is, domestic firms (particularly, but not only, state enterprises) purchase technology through licensing agreements and obtain their capital through international borrowings. Secondly, joint venture arrangements, in which the foreign partner is a minority share-holder, are more common. An especially important factor facilitating this trend over the last two decades is the increased number of potential foreign investor countries willing to accept such arrangements. We shall return to this issue in the next section.

Is there empirical support for the "new forms" argument in East Asia? The evidence is mixed but in general suggests that it is not particularly important.

On the question of unpackaging, this trend would be expected to show up in a declining proportion of DFI in total private capital inflows, as capital borrowings becoming relatively more important than equity investments. This has in fact been occurring in certain countries, including Malaysia and the Philippines. But as Table 1 indicates there is no general trend in that direction; in fact, for the region as a whole, although the proportion has fluctuated considerably, the general trend has been in the opposite direction<sup>1</sup>.

There are no comprehensive data on the significance of joint ventures in the region, but two countries, Korea and Singapore, provide useful information. In Singapore, over the period 1968–1980, the importance of wholly foreign-owned firms rose appreciably relative to minority and majority-owned foreign firms, the former especially so [see Department of Statistics, var. issues]. In Korea, the share of firms with minority foreign ownership in all foreign investment remained approximately constant from 1968 to 1980 [UN CTC, 1983b, p. 355].

These “new forms” are likely to become increasingly common in certain industries, although it is not clear that their aggregate importance will increase. On the demand side, as already noted, government preferences may hasten the emergence of new forms. But on the supply side the trends are more difficult to predict. One of the driving forces for “unpackaging” – that of recycling the OPEC surpluses – is now less important than it was in the 1970s (see Helleiner [1983] for a discussion of this point). The same applies to the existence of negative or very low positive real interest rates, which were present for much of the 1970s. But joint venture arrangements, in which foreign firms have a minority equity, are likely to become more widespread, and the international market for technology should expand so much so that Dunning [1982, p. 372] has recently observed that some of the “giant MNEs of today will be the dinosaurs of tomorrow”. Much depends on the structure of the industry concerned, however. Where relatively few potential suppliers exist, the bargaining power of the MNC is enhanced and that of the host country reduced. Thus, as Dunning [1982, p. 370] concludes, “the integrated MNE should remain a dominant force in technology and information intensive industries”.

The relative importance of DFI to the host countries may also be assessed by examining its contribution to domestic capital formation. In Table 2 the DFI totals (from Table 1) are compared with GDI for each country and over the same period. The main conclusion is that DFI flows are only a tiny fraction of GDI. This is especially so if the city states and Indonesia (where oil and oil-induced development in the mid-1970s and early 1980s contributed

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<sup>1</sup> This is, of course, only one side of the picture. Fuller empirical verification would require information on technology flows, and whether they are “affiliated” or “unaffiliated” transactions. We have examined the limited U.S. data on this subject elsewhere [Hill, Johns, 1983].

Table 2 – *Share of Direct Foreign Investment in Gross Domestic Investment, 1969–1982<sup>a</sup>*

	1969–1971	1972–1976	1977–1980	1981–1982
Hong Kong .....	4.3	6.9	6.3	7.9
Korea .....	0.8	2.3	n	1.1
Taiwan .....	1.3	0.5	0.9	0.7
Indonesia .....	6.0	11.4	0.6	8.0
Malaysia .....	3.4 <sup>b</sup>	4.5	2.4	3.1
Philippines .....	1.8	2.7	2.4	1.0
Singapore .....	2.2	3.7	9.3	9.1
Thailand .....	0.6 <sup>c</sup>	0.8	3.5	2.1
All countries <sup>d</sup> .....	2.1	8.1	1.5	4.0

<sup>a</sup> Per cent. – <sup>b</sup> 1971 only. – <sup>c</sup> 1970 and 1971 only. – <sup>d</sup> Weighted average. – n = less than 0.1 per cent.

Sources: Foreign investment flows from Table 1; gross domestic investment data from ADB [var. issues].

to large DFI inflows) are excluded. For the remaining five countries, the contribution of DFI to domestic capital formation is negligible and no clear trend is apparent.

Both sets of statistics tend to understate the importance of DFI in the region, however. The financial flows do not allow for the fact that foreign investors' equity contribution may be in the form of technology or management services, they exclude ploughed-back profits by foreign-owned firms (likely to be especially important where foreign exchange controls restrict profit remittances), and they do not include borrowing by these firms on domestic – that is, host country – capital markets (although this practice is increasingly discouraged by most governments). How else may the importance of DFI be assessed?

Two additional measures, widely discussed in the literature but on which little systematic information is collected, are, first, the share of MNCs in each country's exports and, secondly, their share more generally in output and employment. We shall examine these in the following sections.

### III. A Disaggregation of Foreign Investment Flows

Which are the major investing countries in the region and over time? In which economic sectors are the investments located? What are the characteristics and motives of the major foreign investors? To answer these questions we must refer to host country data which, in contrast to the data used in Table 1, sometimes refer only to approvals by the relevant regulatory authority in each country, rather than to realised investments.

## 1. DFI by Home Country

Foreign investment is dominated by the region's two economic superpowers, Japan (especially) and the United States (Table 3). In most countries they are the two largest investors, accounting in more than half the countries for the majority of investment approvals in each period. Their predominance is especially evident in Hong Kong and Korea. The major exceptions to this conclusion are Thailand, where investment from Taiwan and other regional LDCs has been significant, and Singapore and Malaysia, where European (especially United Kingdom) investment continues to be important.

Shortcomings in the published statistics limit the conclusions which can be drawn from these tables regarding home country trends, but two points may be emphasized. First, with a few exceptions, the two major investors have retained their predominant position over time. In fact, on an annual basis (data not presented here), Japan's share increased quite rapidly from 1967 to at least the mid-1970s, the increase more or less compensating for the decline in the United States' share<sup>1</sup>. Secondly, no clear trend emerges regarding the importance of European and other Asian investors, and the data are fragmentary particularly for the latter group. European investors are generally not especially important, except in the somewhat special case of Singapore (and probably Malaysia). It is likely that investment by other regional LDCs is significant and increasing, particularly "Chinese" investment from Hong Kong, Singapore and Taiwan. Moreover, data on DFI from these countries do not include an unknown but probably significant volume of funds recorded as domestic investment, but which in reality originates from overseas and are channelled through the domestic Chinese business community<sup>2</sup>. Conversely, as Thee Kian Wie [1984] observes for Indonesia, the DFI figures from these

<sup>1</sup> The omission of Indonesia's petroleum sector – the major sector in one of the most important recipient countries – from the data in Table 3 should be emphasized. It results in a substantial understatement of the United States' share in regional investment because it is the major investor in this sector. Two recent papers [Thee Kian Wie, 1984; Hill, 1984] have attempted to rectify this omission. The inclusion of oil has a dramatic effect on country shares of foreign investment, according to Hill's [1984] estimate for the period from 1980 to mid-1983. The shares were for the U.S. 14.1 and for Japan 27.0 per cent when oil was excluded, but 58.4 and 10.9 per cent, respectively, when oil was included. Since no estimates for the period prior to 1980 are available, the data in Table 3 are retained for comparative purposes. However, it is likely that the U.S. was the dominant investor for the entire period.

<sup>2</sup> The problem of obtaining reliable estimates of the importance of DFI from third world countries is amply illustrated by the guesstimate of Wells [1983, p. 2] – that by 1980 such investment was "at least \$ 5–10 billion". UN CTC [1983a, pp. 65–66] provides estimates of the *stock* of DFI from West European and Asian LDCs for seven of the eight countries in this study. The figures differ from ours because they are stock estimates for one year only, and because they do not use identical data sources. But those figures also confirm the conclusion that there is no general trend in the share of either group of countries in the region's investments. Significant recipients of DFI from Asian LDCs (major investors in parentheses) include Indonesia (Hong Kong and the Philippines), Malaysia (Singapore) and Thailand (Taiwan).

Table 3 - DFI by Source Country

	Source Country/Region (per cent)				
	U.S.	Japan	Europe	Other Asia	Other
	1967-1971				
Hong Kong <sup>c</sup> . . . . .	53.5	22.4	16.2	3.0	4.9
Korea . . . . .	17.1	56.1	12.6	0.6	13.5
Taiwan . . . . .	34.7	15.9	19.3	n. a.	18.8
Indonesia <sup>d</sup> . . . . .	28.3	17.0	8.5	30.4	15.8
Singapore <sup>e</sup> . . . . .	27.2	6.9	36.2	n. a.	29.7 <sup>a</sup>
	1972-1976				
Hong Kong <sup>c</sup> . . . . .	48.0	17.2	15.3	13.2	6.3
Korea . . . . .	12.3	66.7	12.2	0.6	8.6
Taiwan . . . . .	22.3	19.2	11.2	n. a.	44.6 <sup>a</sup>
Indonesia <sup>d</sup> . . . . .	0	59.8	12.8	23.9	3.4
Philippines <sup>f</sup> . . . . .	24.7	44.5	17.3	13.4	0.1
Singapore <sup>e</sup> . . . . .	33.7	20.2	28.1	n. a.	18.0 <sup>a</sup>
Thailand <sup>h</sup> . . . . .	15.6	34.7	n. a.	13.5	36.2
	1977-1982				
Hong Kong <sup>c</sup> . . . . .	44.6	24.0	17.8	6.7	6.9
Korea . . . . .	40.7	33.1	14.1	5.4	6.6
Taiwan . . . . .	31.1	18.8	5.1	n. a.	45.0 <sup>a</sup>
Indonesia <sup>d</sup> . . . . .	9.0	51.0	14.3	24.1	1.5
Malaysia <sup>e</sup> . . . . .	8.6	19.9	n. a.	n. a.	71.5
Philippines <sup>f</sup> . . . . .	21.2	17.3	30.7	11.6	0.3
Singapore <sup>e</sup> . . . . .	30.7	n. a.	40.4	n. a.	28.9 <sup>b</sup>
Thailand <sup>h</sup> . . . . .	5.2	14.0	n. a.	4.9	75.9

<sup>a</sup> Includes other Asia. - <sup>b</sup> Includes all non-United States and European Investments. - <sup>c</sup> The data refer only to the industrial sector, and do not include all foreign investments. Investment from the People's Republic of China is excluded. The data refer to averages of actual (realised) investments. The data for 1967-1971 refer only to 1971. - <sup>d</sup> The data exclude the petroleum and banking sectors. They are based on investment approvals, adjusted for actual capital movements. - <sup>e</sup> The data are for approved industrial sector investment only. - <sup>f</sup> Australia is included in "Other Asia" - <sup>g</sup> The data are not available for all years, they refer only to the industrial sector, and they are averages of actual (realised) investments. - <sup>h</sup> The country data 1972-1976 refer to 1960-1976; the sector data to 1975-1976. Other Asia refers only to Taiwan. All data relate to investment approvals.

Source: Hong Kong: Department of Trade, Industry and Customs, Annual Statistical Review. Hong Kong, var. issues; Korea: Ministry of Finance, Status of Foreign Investment Authorization, var. issues; Taiwan: Statistical Data Book, Republic of China, var. issues; Indonesia: Bank Indonesia, Statistik Ekonomi-Keuangan Indonesia, var. issues; Malaysia: Malaysian Industrial Development Authority, Annual Report, var. issues; Philippines: Securities and Exchange Commission, Republic of the Philippines; Singapore: Singapore Statistical Bulletin and the Economic Development Board; Thailand: Annual Report of the Board of Investment, var. issues.

countries may be inflated, to the extent that they include domestic capital ostensibly recorded as foreign investment to take advantage of additional investment incentives. Nevertheless, recent changes to Indonesia's tax laws result in broadly similar treatment for both forms of investment, so this factor is likely to be less important in the future. The residual "other countries" also includes some minor neighbouring investors (mainly Australia, Canada and India), a few tax havens (e.g., the Bahamas), and some Middle East capital (most of which, however, enters the region in the form of loan rather than equity capital).

What are the major characteristics of the principal investing countries and regions? On the basis of an analysis of the investment approval data at a more disaggregated level (not presented here) and the recent literature on the subject, several points may be made. We shall concentrate on Japan, the U.S. and regional developing countries.

There are a number of distinctive features of Japanese investment<sup>1</sup>. The first is, of course, Japan's rapid emergence as the major capital exporter to the region in a little over a decade. There are several explanations for this phenomenal growth – the strengthening of Japan's balance of payments and the government's reluctance to revalue led to a liberalisation of controls on capital outflow; accelerating real wage increases rendered many labour-intensive industries uncompetitive, and DFI was seen as a means of utilising accumulated managerial and technical expertise in these industries; land availability and pollution considerations led to the relocation of some activities (for example, aluminium smelting); increasingly the government came to see DFI as an important vehicle for fulfilling Japan's objective of resource security; and finally these changes coincided with a more liberal attitude towards foreign investment by some Asian countries.

Several aspects of Japanese DFI deserve comment. The great bulk of its investment was until recently located in developing countries, and Asia has been the largest recipient region. Japan's concern to ensure continued supplies of raw materials has resulted in extensive investment in natural-resource based industries (mining, petroleum, timber) in some countries, for export to its own market<sup>2</sup>. The largest proportion of Japanese DFI is located in the manufacturing sector and, at least initially, much of this was in relatively labour-intensive industries, especially food and textiles, and pollution-intensive activities such as chemicals. Some institutional aspects also distinguish it from other developed country investors, the most important being the role of large trading companies in much of the investment, and the apparent willingness of Japanese

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<sup>1</sup> These have been widely discussed in the literature. See Ozawa [1979], Sekiguchi [1979], Sekiguchi and Krause [1980] and references therein.

<sup>2</sup> The proportion of its investments in this area is nevertheless lower than that of the U.S. But the important point is the market orientation of Japanese investments, as compared to the U.S.

investors to enter into joint venture (including minority ownership) arrangements with local partners.

By contrast, U.S. DFI in the region began earlier, especially in the case of its former colony the Philippines. Globally it is concentrated more heavily in developed countries and, among developing regions, in Latin America. Within the Western Pacific about one half of its DFI is in mining, smelting and petroleum. The proportion in manufacturing has been declining substantially since the late 1960s, and the main growth area has been the service sector. Traditionally its foreign investments were in higher technology industries, principally serving the host country's domestic market, the objective of investment being to maximise the economic rents arising from its superior technology.

There has been much discussion of the implications of differences between Japanese and U.S. DFI. Some writers [e.g. Ozawa, 1979] have argued that the Japanese DFI experience requires a reformulation of monopolistic theories of DFI, which derive from the work of Hymer [1976]. According to this view, the theory is deficient because much of the Japanese DFI occurs in relatively labour-intensive industries in which the "technology gap", which supposedly confers a competitive advantage on foreign firms, is minimal. Lecraw [1983] finds circumstantial evidence to support these differences in a survey of 153 MNCs in the manufacturing sectors of the five original ASEAN member countries. There was a positive and significant correlation between intensity of investment by U.S. and European firms and industrial concentration as well as research and development intensity. By contrast, the correlation was negative for firms from Japan and LDCs. The general theory is not invalidated by the Japanese experience, however. All foreign firms must possess competitive advantages in order to overcome the intrinsic costs of "being foreign". Japanese investments in these industries simply suggest that the investors are exploiting different "firm-specific advantages", which may take the form of managerial know how rather than production technology. The large number of Japanese executives in their overseas operations, relative to investors from other developed countries, would appear to support this proposition<sup>1</sup>.

The best known thesis developed to explain U.S. and Japanese DFI differences is that of Kojima [see, e.g. Kojima, 1977, Chs. 4 and 5]. Kojima argues that Japanese manufacturing DFI occurs in relatively labour-intensive industries rendered uncompetitive in Japan by rising real wages. Much of this investment is allegedly "trade-creating" in that it is found in export-oriented

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<sup>1</sup> See Ozawa [1979, pp. 212-218] for a discussion of this issue. The issue of expatriate employment in Japanese MNCs has attracted a good deal of attention in the literature - and criticism from countries in which the firms invest. See especially Tsurumi who reports from a survey in the early 1970s [Tsurumi, 1976, p. 261] that, in some cases, Japanese firms have five or six times the number of expatriate employees compared to similar European and North American firms overseas. However, he attributes the difference to the peculiar communication requirements of Japanese firms rather than to an attempt to minimise technology spin-offs to potential host country competitors.

projects which cater to the Japanese and other developed country markets. By contrast, Kojima argues U.S. DFI tends to locate in import-substituting, high technology industries, and it is frequently undertaken by large MNCs whose domestic market structure is oligopolistic. He therefore maintains that U.S. DFI is "anti trade-creating" because of its heavy domestic market orientation.

Kojima's description of Japanese and U.S. manufacturing DFI is consistent with some of the empirical evidence. But on the question of the export-orientation of the two countries' investors, his assertions are not supported by the data, at least for the Asian region (Table 4). The data are scattered, not entirely comparable and rather dated (and qualitative evidence suggests that Japanese overseas investments have become more export-oriented as the host countries' trade regimes have moved in that direction). Nevertheless, in every case for which a comparison is available, the Japanese companies have a much stronger domestic-market orientation than those of the U.S.<sup>1</sup>

Differences between the Kojima-Ozawa theory and the monopolistic theory arise in part because they are addressing different issues [Lee, 1984]. Whereas the former is a macro explanation of the pattern of foreign investment, the latter seeks to identify the firm-specific advantages which account for the structure of foreign investment flows. But in any case the welfare implications of the Kojima thesis are equally contentious. "Japanese-style" DFI may well be more beneficial to LDCs than U.S. investment because the technology accords better with the factor endowment of the host country, although the higher expatriate staffing by Japanese firms may retard the pace of technological diffusion. And even if Japanese DFI were more "trade-creating", this is not necessarily a criterion of economic welfare<sup>2</sup>. More importantly, such differences that do occur in their patterns of DFI reflect the different structures and stages of development of the two economies, as Lee [1983] has recently argued on the basis of a Korean manufacturing case study. As Japan catches up and indeed overtakes U.S. technology levels in certain fields, it is likely that differences in their manufacturing DFI will narrow. The rapid increase in Japanese DFI in North America and Western Europe – in response, partly, to problems of market access and trade frictions – is one indication of Japan's technological progress.

In fact, it is likely that what Kojima identifies as "Japanese-style" investment will in the future be undertaken increasingly by other LDCs. As we have

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<sup>1</sup> More detailed information for Singapore, from the Department of Statistics [var. issues], also supports this conclusion. Comparing the ratio of direct exports to total sales of foreign investors through to 1980, Japanese companies are less export-oriented than those from either the U.S. or Western Europe. Thee's [1984] study for Indonesia also supports our conclusions derived from Table 4.

<sup>2</sup> For an early critique of the Kojima hypothesis, see Arndt [1974]. See also Sekiguchi and Krause [1980] and comments by R. Findlay and B. Smith and references cited therein.

Table 4 – Sales Destination of Japanese and United States Affiliates in Asia<sup>a</sup>

Region/Country	Year	Local Market	Export Markets		
			Total	Home Country <sup>b</sup>	Other Countries
All industries					
Asia <sup>c</sup> : Japan .....	1979	61.3	38.7	17.3	21.4
U.S. ....	1977	39.1	60.0	34.5	26.5
Manufacturing					
Asia: Japan .....	1979	66.7	33.3	10.0	23.3
Hong Kong: Japan ..	1973	29.0	70.3	0.4	69.9
Korea: Japan .....	1973	52.4	47.7	34.4	13.3
U.S. ....	1977	31.7	68.3	36.6	31.7
Taiwan: Japan .....	1973	46.6	53.7	44.0	9.7
U.S. ....	1977	28.6	71.4	56.8	14.6
Indonesia: Japan ...	1973	96.0	4.0	3.9	0.1
U.S. ....	1977	59.1	40.8	1.9	38.9
Malaysia: Japan ....	1973	87.3	12.6	7.8	4.8
U.S. ....	1977	23.8	76.2	45.6	30.6
Philippines: U.S. ...	1977	74.2	25.8	14.4	11.4
Singapore: Japan ...	1973	62.5	37.1	4.9	32.2
U.S. ....	1977	6.8	93.2	62.1	31.1
Thailand: Japan ....	1979	91.1	9.3	2.9	6.4

<sup>a</sup> Per cent of sales. - <sup>b</sup> Refers to sales in investors' home country (i.e. Japan for Japanese firms, U.S. for U.S. firms). - <sup>c</sup> Refers to all developing Asian countries in case of Japan. The U.S. data refer to all developing Asian and Pacific countries.

Source: U.S. Department of Commerce [1981]; Japan: MITI [var. issues]; Sakurai [1982] for manufacturing, all countries except Thailand; Chinwanno and Tambunlerchai [1983] for Thailand manufacturing.

seen, DFI by developing countries in the region is already significant in some countries. There is evidence to suggest that the motives, explanations and nature of such DFI in Asia resemble that of Japanese ventures of the 1960s. The advantages they possess – ability to adapt to the small market LDC environment, familiarity with the commercial and production setting, and lower overheads – differ from developed country investors (see Lall *et al.* [1983] and Wells [1983, Chs. 3–5] for an elaboration). There are other similarities with the early Japanese experience. The resource-poor LDC investors, Korea and Taiwan, have used foreign investment as a means of achieving resource security and furthering their trading objectives, but in

manufacturing their investments are aimed primarily at the domestic market<sup>1</sup>. They are more willing to accept joint venture arrangements, presumably because their more standardised technology confers less bargaining power in their negotiations with host country interests. Nevertheless, there is considerable diversity in the pattern and nature of LDC investors, as the country studies on Hong Kong, India, Argentina and Brazil in Lall *et al.* [1983] illustrate.

On balance, there is little doubt that the rise of third world multinationals is potentially a positive development for host countries. In some areas, the benefits may be limited: LDC firms are generally not located on the "technology frontier", and they appear to be slower in transferring technology to the host country possibly because, like the early Japanese model, they also employ a relatively high proportion of expatriate management; nor can they facilitate access to the large developed country markets as can investors originating from these countries. But apart from appropriate factor proportions and products and other benefits, perhaps their greatest contribution is that they increase the diversity of DFI sources – admittedly for industries which are not at the frontier of new technology – and hence enhance the bargaining power of host countries<sup>2</sup>.

## 2. DFI by Sector

Table 5 shows the composition of DFI flows by sector for the five countries in the region for which data are available. Manufacturing is the major sectoral recipient in each of these countries, except in the case of mining in the Philippines in the mid-1970s and petroleum in Indonesia. The importance of manufacturing is somewhat overstated because, even for countries which do publish statistics on other sectors, their coverage is generally not complete. Nevertheless, its dominant role is to be expected, for several reasons. In the resource-poor NICs, limited alternative investment opportunities exist, at least in agriculture and mining. Some countries limit the entry of foreign capital in natural resource projects and also in certain tertiary sectors (e.g., the media, banking). And, perhaps most important, all countries have adopted vigorous industrialisation strategies, generally emphasizing manufactured exports, which have required an infusion of foreign technology (though not necessarily capi-

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<sup>1</sup> For an examination of Korean and Taiwanese DFI, see Jo [1981] and Ting Wen-Lee and Schive [1981], respectively. One exception to the assertion that manufacturing DFI by LDCs is primarily oriented towards the domestic market is the phenomenon of "quota hopping", that is, when LDC investors relocate overseas as a means of ensuring continuing access to developed country markets. Chen [1983] reports that this has been a motive for some Hong Kong DFI.

<sup>2</sup> Information on LDC foreign investors is still limited. Apart from Lall *et al.* [1983], Wells [1983] and Kumar and McLeod [1981], see also Agmon and Kindleberger [1977], Lall [1982] and UNCTAD [1982].

tal). Since manufacturing is the major sectoral recipient, it is appropriate to examine the composition of DFI within this sector in more detail.

Table 5 - DFI by Sector (per cent)

	Agriculture	Mining	Manufacturing	Services
1967-1971				
Korea .....	1.3	0	82.5	16.2
Taiwan .....	0.2	0	77.7	22.1
Indonesia .....	24.1	39.6	28.1	8.2
Philippines .....	1.1	23.4	33.0	42.6
1972-1976				
Korea .....	0.9	0.3	75.4	23.5
Taiwan .....	0.6	0	82.0	17.5
Indonesia .....	5.8	15.4	67.7	11.1
Philippines .....	3.6	1.7	54.9	39.8
Thailand .....	22.4	n.a.	63.6	14.0
1977-1982				
Korea .....	1.0	0.2	66.3	32.5
Taiwan .....	0.2	0	72.0	27.8
Indonesia .....	5.7	9.0	79.6	5.6
Philippines .....	8.6	2.8	37.9	50.8
Thailand .....	14.1	n.a.	75.0	10.9

Source and notes: See Table 3.

#### IV. Foreign Investment in Manufacturing

This section addresses two issues: the distribution of DFI within each country's manufacturing sector over time, and the relative importance of foreign firms in manufacturing industries. Data on the former are available for most countries, but at a high level of aggregation and one which does not always classify industries according to identifiable economic characteristics. Data on the latter are available for only three countries, and for just one year.

Data on the distribution of DFI within manufacturing are provided in Table 6. Despite the unsatisfactory classification, some general inferences may be made regarding the role of DFI in the region's industrialization. First, although food industries dominate manufacturing in the early stages of industrialisation, there is generally limited scope for foreign investment. There are at least two explanations for this: much of the technology in these industries is relatively simple, and hence the possibility that foreign firms will possess firm-specific advantages is limited; and consumer preferences and

income levels are such that it is difficult to promote international brand name products, with a few exceptions such as beverages and tobacco<sup>1</sup>. Secondly, in the case of textiles, clothing and footwear (TCF) the role played by DFI has varied considerably over time. In the four more industrialised NICs, it was quite important in most cases until the mid-1970s, when increasing real wages reduced these countries' comparative advantage in the production of labour-intensive products. In the other four countries the share of DFI going to TCF might be expected to rise as they become increasingly competitive as compared to the NICs although, conversely, these industries are often not characterised by strong firm-specific advantages, which attract MNCs. In any case, the limited data do not suggest such a trend<sup>2</sup>. Thirdly, the NIC's more advanced industrial structure and poorer resource endowment is reflected in the high shares of more sophisticated products such as electrical and transport equipment and machinery. This group's share in the NICs is generally between one-third and one-half (except in the special case of Singapore because of the importance of petroleum refining) of total DFI, much higher than the remaining countries for which data are available.

Apart from the data limitations already referred to, information on the changing distribution of DFI flows within manufacturing is not necessarily indicative of the role of foreign investment in the process of industrialisation because changing DFI shares may simply reflect changes in the structure of the manufacturing sector. A more useful analysis of the role of foreign investment therefore focuses on inter-industry variations in the share of foreign firms. Here we must refer to industrial census statistics. Unfortunately, only three countries – Korea, Indonesia, and Malaysia – publish this information, and for the latter two it is rather dated.

Table 7 summarizes the results at the three-digit ISIC level for the three countries. There is considerable inter-country variation, both in aggregate and for individual industries. In general, foreign investment plays a modest role in Indonesian and (especially) Korean manufacturing<sup>3</sup>, but it is very important in Malaysia. Table 7 also illustrates the limitations of using the *flow* data on

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<sup>1</sup> The two exceptions to this generalisation about the importance of DFI in food products are the Philippines and Thailand. In both countries, and especially the former, there has been extensive DFI in agri-business, the food production and processing elements of which are included in manufacturing.

<sup>2</sup> The phenomenal growth of TCF in Indonesia after the policy liberalisation of 1966–1968 is reflected in its very high share during the first period. But this was mainly a catch-up phase after the previous sluggish growth; Indonesia's inability to penetrate world export markets for TCF is reflected in that group's steadily declining share thereafter.

<sup>3</sup> Recall that the Indonesian figure is overstated because only large and medium firms are included. The omission of petroleum refining (ISIC 353) does not lead to an understatement in foreign firms' share in total manufacturing, because these firms generally undertake service contracts in the exploration and extraction stages to the state-owned oil enterprise (Pertamina), rather than refining.

Table 6 - *DFI within Manufacturing (per cent)*

Country	Food	Textiles, Clothing, Footwear	Chemical	Wood, Paper and Products	Metal Products	Non- Metallic Minerals	Electrical and Transport Equip- ment and Machinery	Other
1967-1971								
Hong Kong ..	0.7	21.2	1.5	3.0	5.0	0	37.0	31.6
Korea .....	1.8	6.8	19.4	0	15.0	26.9	26.6	3.6
Taiwan .....	0.1	6.4	14.0	0.4	30.2 <sup>a</sup>	2.6	45.6	0
Indonesia ...	11.2	34.9	15.8	2.2	21.4	12.9	n. a.	1.6
Singapore ...	4.0	14.8	7.9	10.7	5.0 <sup>a</sup>	36.9	16.6	4.3
Thailand ....	12.0	29.6	17.1	n.a.	← 24.0 →		5.8	17.1
1972-1976								
Hong Kong ..	5.9	8.9	20.5	3.3	5.5	0	34.9	21.0
Korea .....	0.4	13.5	34.3	0.1	7.0	9.4	32.6	1.9
Taiwan .....	1.7	7.7	16.8	1.3	22.7 <sup>a</sup>	11.1	38.8	0
Indonesia ...	5.7	24.8	8.7	4.4	44.6	11.7	n. a.	0.2
Philippines ..	29.9 <sup>l</sup>	n. a.	22.6	n. a.	← 45.8 →			1.7
Singapore ...	3.5	5.0	4.4	4.5	18.3 <sup>a</sup>	38.3	19.9	6.1
Thailand ....	12.0	43.8	4.4	n.a.	← 23.9 →		8.2	7.7
1977-1982								
Hong Kong ..	5.5	10.9	4.1	2.2	3.5	0	45.3	28.5
Korea .....	7.8	1.1	31.4	0.2	4.7	8.9	40.5	0
Taiwan .....	3.9	3.5	20.6	0.3	9.9 <sup>a</sup>	22.8	39.0	0
Indonesia ...	3.2	11.7	31.8	6.0	37.2	7.5	n. a.	0
Malaysia ....	9.3	3.8	4.4	4.1	10.8	32.6	18.7	16.2
Philippines ..	17.8	n. a.	20.3	n. a.	← 49.6 →			12.3
Singapore ...	3.9	1.4	6.5	3.6	12.9 <sup>a</sup>	41.4	27.5	2.7
Thailand ....	23.1	28.2	3.6	n.a.	← 22.6 →		16.5	6.0

<sup>a</sup> Also includes machinery and equipment, other than electrical.

Source: As for Table 3, except for the Philippines, which are from the Board of Investments, Republic of the Philippines [unpubl. statistics]. Petroleum refining is included in non-metallic minerals.

DFI in Tables 1 and 2 as a proxy for estimating the *stock* of DFI at a given point in time. One reason for this is that current flow data take no account of the existing (in the case of Table 1, pre-1969) stock of DFI. Another is that they exclude ploughed-back profits and technology transfers in lieu of equity contributions.

What factors account for variations in DFI shares within and between countries? Spatially, there has been a heavy concentration of foreign investors in footloose, labour-intensive manufacturing activities located within export

Table 7 – Shares of Foreign Ownership in Manufacturing, Selected Countries

Industry		Share of Value Added (per cent)		
Code	Description	Indonesia (1974)	Korea (1979)	Malaysia (1974)
311/312	Food manufacturing	11.4	6.2	40.8
313	Beverages	58.3	1.1	88.6
314	Tobacco	37.6	1.6	91.0
321	Textiles	24.3	10.1	22.8
322	Wearing apparel	7.6	6.5	34.5
323	Leather and leather products	1.2	1.5	29.9
324	Footwear	53.2	5.6	4.7
331	Wood and wood products	13.2	0.3	6.3
332	Furniture (non-metallic)	1.6	0.1	17.5
341	Paper and paper products	28.3	7.5	61.4
342	Printing and publishing	0.7	2.9	13.1
351	Basic chemicals	1.6	48.4	82.4
352	Other chemical products	40.1	10.1	86.6
353	Petroleum refineries	n. a.	91.8	n. a.
354	Miscellaneous petroleum and coal products	n. a.	6.8	n. a.
355	Rubber products	21.4	1.9	60.1
356	Plastic products	10.7	9.9	11.8
361	Pottery, china and ware	0	14.8	14.0
362	Glass and glass products	70.5	30.6	0
363	Cement	7.4	0	0
364	Structural clay products	0	0	0
369	Non-metallic mineral products	0	2.0	75.9
371	Iron and steel basic industries	0	2.7	} 64.5
372	Non-ferrous metal	80.5	17.3	
381	Fabricated metal products	24.0	7.7	43.0
382	Machinery (except electrical)	14.4	18.6	50.1
383	Electrical machinery	58.7	33.5	88.0
384	Transport equipment	34.3	13.7	5.4
385	Measuring and optical equipment	0	14.8	n. a.
390	Other	56.9	11.4	n. a.
	Total	23.0	13.3	56.3

*Note:* The data refer to foreign firms' share of value added. Their share of employment is much lower because these firms' operations are more capital intensive than those of locally owned firms. The data for Indonesia refer only to firms employing 20 or more workers; those for Malaysia to Peninsular Malaysia only.

*Source:* Indonesia: Biro Pusat Statistik, Sensus Industri 1974/75; Korea: Economic Planning Board, Mining and Manufacturing Census (information kindly supplied by Dr. E. Y. Park); Malaysia: Department of Statistics, Survey of Manufacturing Industries, Peninsular Malaysia, 1974.

processing zones (EPZs). In fact, scattered statistical evidence suggests that EPZs are dominated by wholly foreign-owned firms. In Malaysia, for example, they constituted 71 per cent of the firms and accounted for 91 per cent of employment in 1978 [Datta-Chaudhuri, 1982]. In the main Philippine EPZ

(Bataan) these firms numbered almost half of the total in 1980 [Castro, 1982], while in the small Jakarta (Indonesia) zone two-thirds of the firms were wholly foreign-owned in 1982 [Warr, 1983].

Apart from the special case of EPZs, what other factors explain DFI variations? The ranking of DFI shares between countries differs substantially, as would be expected given the countries' resource endowments, stages of industrialisation, and government policies (including the role of state enterprises). Nevertheless, some general conclusions do emerge. First, foreign investment is significant in two main types of industries. One is where international brand name consumer products are important. This includes beverages (ISIC 313), tobacco (314) and, to a lesser extent, other chemicals (352, which includes soaps and detergents). The other category is high technology industries, where the scope for "unpackaging" in the form of licensing activities is limited. This includes petroleum refining (353) – although Indonesia and Malaysia, as oil exporters, have more leverage with foreign firms – basic chemicals (351), non-ferrous metals (372) and machinery (383-4). A second conclusion is that for a range of "traditional", generally labour-intensive products, DFI plays a fairly small role. These industries include textiles, clothing and footwear (321-4), wood products and furniture (331-2), and printing and publishing (342)<sup>1</sup>.

There have been several attempts to explain the pattern of intra-industry variations in DFI shares (Caves [1974] is the best known example). The theory of foreign investment predicts that foreign firms will locate in industries in which, through the possession of firm-specific advantages, their competitive position relative to domestic firms is greatest. These advantages include technology (including proprietary technology), managerial skills, brand names and, in the case of export-oriented firms, knowledge of international markets. Econometric investigation has generally identified the factors underlying these advantages – research and development expenditure in the case of technology, advertising in the case of brand names – to be good predictors of DFI shares. Frequently, the industries exhibiting high DFI shares are also characterised by high ratios of seller concentration. This arises because the variables contributing to such concentration (through high barriers to entry) also explain the importance of DFI<sup>2</sup>.

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<sup>1</sup> There are some exceptions to this generalisation, which need to be explained by the particular circumstances of each country. In the case of Indonesia, for example, the high figure for footwear is explained by the presence of the large Bata shoe factory, while the relatively high figure for textiles is due to extensive foreign investments in the more capital-intensive components (spinning and synthetic fibres) in the late 1960s and early 1970s.

<sup>2</sup> The only systematic examination of the relationship between concentration and DFI shares for East Asian LDCs is that of Lall [1978] on Malaysia. There is a problem regarding the direction of causality in the relationship, but Lall finds that the two variables are positively associated and argues

While general explanations of the intra-industry variations in DFI shares observed in Table 7 are possible, rigorous testing in developing countries is much more difficult (Lall and Mohammad [1983] is one of the few studies in this area). There are formidable data and conceptual obstacles to such modelling exercises. In the first place, as we have seen, only a limited number of LDCs publish DFI shares data, and then only in cross-sectional form. A second difficulty is in obtaining reliable information on industry characteristics from the host countries, or in using benchmark data from developed countries. For these reasons, rigorous attempts to explain inter-industry variations in DFI shares observed in Table 7 will have to await improvements in the data base.

### V. MNC Exports and Intra-Firm International Trade

Increased foreign investment in manufacturing and the adoption of export-oriented industrialisation strategies in East Asia have focused attention on MNC control over exports and intra-firm international trade. (MNC control over imports is equally important, but on this the data are even more deficient.) Neither is a new phenomenon. They have long been important in the closely-integrated economies of Western Europe and North America, and intra-firm trade was a feature of much foreign investment in the extractive and agricultural sectors of developing countries during the colonial era. But they are now contentious issues for governments – particularly in LDCs – which are concerned to maximise the potential benefits of MNC operations. LDC governments allege that control over the direction and magnitude of their international trade is much reduced by the operations of MNCs, and that transfer pricing (i.e., the pricing of intermediate and final products between MNC affiliates) through intra-firm trade facilitates MNC evasion of taxation, foreign exchange and other regulations.

Two questions require examination in this context. First, how important is intra-firm trade? Data limitations preclude a complete examination, but we shall pull together the available information for East Asia in this section. Secondly, is it an important issue, i.e., from the point of view of government policy and economic theory does increased intra-firm trade matter? Policy-makers in host countries would obviously prefer arms-length transactions because, in theory at least, they are more easily subject to scrutiny<sup>1</sup>. It is

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(plausibly, we believe) on *a priori* grounds that high concentration is unlikely to be a determinant of foreign investment. Lecraw [1983] also found foreign ownership and seller concentration to be positively related in his five-country ASEAN study.

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<sup>1</sup> Although one wonders how important this is given the widespread taxation and other evasion which occurs in the *domestic* transactions of some countries.

possible that non-market international decision-making may produce different outcomes with regard to the volume, pattern and pricing of trade as compared to reliance on the market for several reasons. One is that MNCs aim for profit maximisation globally rather than with reference to one plant's operation, and hence recorded profits in a given country might be expected to depend in part on that country's marginal tax rates relative to those of other countries in which a firm has operations. Another is that foreign exchange regulations may affect the manner in which MNC subsidiaries remit their profits and charge for expatriate management services. But we know of no major study which has examined these issues in East Asia<sup>1</sup>. The industrial organisation literature on vertical integration – or, more generally, vertical control of markets [see Warren-Boulton, 1978] – may provide some indication of why firms choose to rely on markets, vertically-integrated operations, or some arrangement in between these two extremes.

The data on intra-firm trade are rather limited, but the two major investors in the region, Japan and the United States, do publish some statistics. The U.S. statistics, by far the more comprehensive, refer to both intra-firm exports to the U.S. and total exports of U.S. majority-owned foreign affiliates (MOFAs – firms with at least a 50 per cent U.S. equity) by region and for a few major countries but, currently, only up to 1977<sup>2</sup>. The data on intra-firm imports to the U.S. are presented in Table 8, in all cases expressed as a percentage of total U.S. merchandise imports for the relevant commodities and regions. The data are published by the U.S. Department of Commerce, based on a sample of 260 U.S. MNCs and their 5,600 overseas affiliates. The latest information published to date is for the year 1976<sup>3</sup>.

Two main conclusions emerge from the Table. First, a significant proportion (between one-quarter and one-third) of U.S. imports takes the form of intra-firm transactions, and this figure appears to be increasing slightly over time. Secondly, the trade is of relatively greater importance for LDCs, substantially so if the special case of Canada, which inflates the figure for developed countries, is excluded. Well over one-half of Canadian exports to the U.S. take the form of intra-firm transactions, whilst the proportion for

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<sup>1</sup> A much cited study of MNCs and transfer pricing on (mainly) the pharmacy industry in four Latin American countries is Vaitsos [1974]. However, its results may be of only limited applicability to other countries and (especially) industries. The most extensive study of intra-firm trade is Helleiner [1981], but in his concluding chapter he concedes that little is known regarding the implications of transfer pricing for both economic policy and theory.

<sup>2</sup> The total exports of U.S. MOFAs include both intra-firm and arms-length exports to the U.S. and all other countries.

<sup>3</sup> See Chung [1978] and earlier articles by the same author for an explanation of MOFA sales data. Helleiner [1981] provides the most complete analysis of the data.

Table 8 - *United States Imports from U.S. Affiliates Abroad as a Proportion of all Imports from the Area (per cent)*

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
I. Total Imports from:										
Developed Countries	25.4	24.6	25.4	25.4	26.5	24.1	25.5	24.7	28.5	28.3
Developing Countries	28.9	27.6	27.7	22.6	33.3	29.5	32.5	37.4	37.2	30.2
Asia and Pacific	10.5	9.1	8.0	10.2	15.4	17.3	16.9	20.3	24.9	21.2
Total	27.0	25.9	26.4	24.9	28.1	25.7	28.1	31.6	32.7	29.7
II. Manuf. Impt. from:										
Developed Countries	21.8	21.5	24.3	22.9	23.7	22.9	23.7	23.3	25.5	25.8
Developing Countries	10.6	9.3	7.3	7.9	8.2	8.6	9.6	9.4	9.3	8.2
Asia and Pacific	5.3	n. a.	3.4	4.4	4.7	5.8	7.5	7.4	6.0	4.8
Total	20.2	19.8	21.9	20.7	21.5	20.5	21.0	20.3	22.3	21.8

Source: Chung [1978] and references cited therein for U.S. affiliates' exports; ASEAN-Australia Project and Australia-Japan Research Centre, Australian National University, Data Bank, for U.S. Imports.

other developed countries is about 10 per cent. The corresponding figure for Japanese exports is only about one per cent, reflecting the influence of past Japanese government restrictions on the inflow of direct foreign investment. Thus the percentage for LDCs is about three times that of developed countries excluding Canada.

Intra-firm trade is therefore significant, and appears to be growing quite fast in the case of developing Asian and Pacific countries. However, the main reason for the increase for LDCs has been the sharp rise in the price of oil, a commodity which accounts for a very high percentage of U.S. trade with LDCs (84 per cent in 1975), and which in its crude or refined form is generally excluded from the conventional definition of manufacturing (that is, SITC 5-8 less 68). This is clearly shown in the manufacturing data in Table 8. The proportion for LDC manufacturing is much smaller than that of developed countries and shows no upward trend. Moreover, the proportion for developing Asia and Pacific countries is less than that of developing countries as a whole, presumably reflecting the greater relative importance of U.S. DFI in the manufacturing industries of Latin America.

The U.S. data suggest that this country's MNCs have played an unimportant role in the rapid growth of manufactured exports from developing Asia, at least to the U.S. market, and that intra-firm trade in manufactures is principally a developed country phenomenon. (Lall [1978], using a different data base, reaches a similar conclusion.) But the U.S. data require qualification. They refer to sales of U.S. affiliates to the U.S., which may both overstate or understate the importance of intra-firm transactions. They may overstate because some of the affiliates' exports may be to unaffiliated buyers. They

may understate because they refer only to transactions of majority-owned affiliates; that is, they exclude sales of minority-owned affiliates<sup>1</sup> and sales to U.S. purchasers where international subcontracting arrangements represent a substitute for equity linkages. Also, the data are generally based on "transactions prices", which may be either higher or lower than market prices. It is not possible to determine the precise magnitude of these factors, but it would appear unlikely that the data in Table 8 understate the significance of intra-firm trade. It should also be noted that the published data are highly aggregated, and that for particular countries and commodities the percentage would be much higher.

Unfortunately the Japanese data are not as comprehensive as those of the U.S., but it is possible to obtain some indication of the importance of intra-firm trade in manufactures. As would be expected, intra-firm trade is of far greater importance in the case of Japan, in one year accounting for more than one-third of its total imports of manufactures (Table 9). No data are provided for the major industry groups, but it is likely that the percentage for those industries in which Japanese investments are heavily concentrated is very high indeed. Why are the proportions significantly higher in the case of Japan? Japanese investments in minerals and commodities are frequently vertically integrated as a means of ensuring supply security to the Japanese market, but this is less important in the case of manufacturing. The main explanation would appear to be that, as already noted, much of the invest-

Table 9 - *Japanese Manufactured Imports from Affiliates in Asia as a Proportion of all Manufactured Imports from Asia*

Year	1974	1975	1976	1977	1978	1979	1980
per cent	12.6	19.8	16.4	31.6	36.7	28.0	23.8

*Note:* For 1976 and 1977 no breakdown on the destination of Japanese subsidiaries' sales is provided. The percentage exported to Japan has been interpolated from the years 1975 and 1978.

*Sources:* Japan: MITI (annual) for Japanese subsidiaries' exports, and unpublished statistics supplied by MITI; ASEAN-Australian Project and Australia-Japan Research Centre, Australian National University, Data Bank, for Japanese imports.

<sup>1</sup> An indication of the possible degree of understatement because of this factor is given in a new set of unpublished data reported by Helleiner [1981] concerning "related-party (defined as minimum five per cent ownership) trade". In 1975, for example, related-party exports to the U.S. as a percentage of total U.S. imports were 40 per cent higher than the corresponding percentage for MOFA exports. It is not possible to generate extensive time series data using the related-party figures. Nevertheless, to the extent that the pressure for localisation and joint ventures is greater in LDCs, the related-party data may be the more relevant data source for the analysis of intra-firm trade.

ment has occurred in labour-intensive industries in which the comparative advantage of the domestic Japanese manufacturing industry has been eroded. While locating overseas primarily to service the local market (Table 4), these firms also have superior knowledge of and access to the Japanese market, buttressed by international subcontracting networks and by the role of the *Soga Shosha* (on which see Yoshihara [1983]). In fact, their knowledge of the Japanese market constitutes an additional type of firm-specific advantage (discussed in Section III. 1), which appears to be of considerable importance given the high intra-firm trade proportions and the rapidly growing Japanese market for imported manufactures. It is also possible that Japanese firms are able to circumvent non-tariff barriers which obstruct imports from non-Japanese affiliates, although we are unaware of any study which has addressed this issue.

## VI. Conclusion

The purpose of this paper has been to provide an overview of the role and extent of foreign investment in East Asian developing countries. We have not been concerned with the costs and benefits of DFI. Rather, we have attempted to integrate the scattered and limited information on DFI into recent empirical research on the subject. Many of the issues concerning DFI can be examined only through detailed case studies, and our paper is intended to be complementary to such research.

Several conclusions emerge from our study. First, DFI constitutes a substantial but still relatively minor source of the total resource inflows to the region, and a very small proportion of total domestic investment. Secondly, although there have been changes in the "packaging" of capital and technology inflows, these changes do not appear to be as great as is sometimes suggested. Thirdly, there are significant differences in the nature and extent of DFI among the investing countries. Fourthly, the importance of DFI varies markedly within the manufacturing sector, and these variations can be explained, at a general level, with reference to the theory of DFI. Fifthly, the phenomenon of intra-firm trade in manufacturing does not appear to be particularly important in the case of United States investment, but it is significant in the rapidly expanding Japanese investments abroad.

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