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## **EAST ASIAN DEVELOPMENT AND JAPANESE DIRECT INVESTMENT**

by

Thomas Andersson and  
Staffan Burenstam Linder

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Postadress  
Box 5501  
114 85 Stockholm

Gatuadress  
Industrihuset  
Storgatan 19

Telefon  
08-783 80 00  
Telefax  
08-661 79 69

Bankgiro  
446-9995

Postgiro  
19 15 92-5

# East Asian Development and Japanese Direct Investment

Thomas Andersson\* and  
Staffan Burenstam Linder\*\*

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\*The Industrial Institute of Economic and Social Research, Stockholm

\*\* The Stockholm School of Economics, Stockholm

## Abstract:

The economic success of East Asia separates this region from the rest of the developing world. The openness to trade has been paralleled by large inflows of direct investment, which is likely to have contributed to high growth, exports and savings. The Japanese investments have increased tremendously in the 1980s, motivated both by "push" effects in Japan and "pull" effects in the host countries. The absolute size as well as relative increase in these flows 1979-89 can be well explained by economic factors. Sectors with low technology and skill-intensity have received the largest flows in absolute terms, while advanced sectors have had the greatest relative increase. Applying the findings to other developing countries, a relatively low income, an acceptable growth rate and modest taxation appear favorable for attracting Japanese direct investment.

## East Asian Development and Japanese Direct Investment

### 1. Introduction

The phenomenal development in East Asia separates this region from the rest of the developing world. The explanations of what lies behind this have produced many, sometimes contradictory, allegations. Some have emphasized the efficiency of the market forces, see e.g. Burenstam Linder (1986), others the active role of the governments (Sachs, 1986). What is the least controversial is that a relatively great openness to trade has been a key factor in establishing high investment efficiency, savings and growth (Balassa, 1982 and 1991). Still, certain countries, such as the Philippines, have not succeeded in successfully pursuing such a strategy. It remains to be fully understood what has enabled most of the East Asian countries to do so.

One set of issues concern the role of capital inflows, and how they relate to openness (cf. Aizenman, 1991). Following great problems with their external balances and mounting debts, many developing countries have virtually ceased to have access to the international capital markets. A feature characterizing most countries in East Asia is the relatively large inflow of direct investment - i.e. equity investment undertaken by multinational corporations. While there have been extensive Western and Chinese investments for a long time, in the 1980s the bulk has been provided by Japanese firms. Following the appreciation of the yen and higher costs in Japan, a range of economic activities have been transferred from Japan to its Asian neighbors. In contrast to portfolio investment, direct investment constitutes not primarily a transfer of capital, but of firm-specific factors related to technology and skills in management, distribution and so forth, see Dunning (1977) or Caves (1982). The bundle of factors provided remains under the influence of the foreign investor, who also carries the risk of failure. The recipient country generally gains because of investors' inability to capture all the rents associated with their

activities, which spill over to domestic agents through wages, taxes, influences towards sharper competition, etc. At the same time, there may also be negative effects, especially when direct investment is motivated by barriers to trade, such as the establishment of monopolies, suppression of domestic entrepreneurs, and an anti-competitive bias of technology. Other negative effects may take the form of depletion of natural resources and negative external effects on the environment.

Japanese direct investment in East Asia has been viewed in different ways. According to some, it serves as a locomotive for growth in the region as a whole. The popular "flying wild geese" concept captures the idea that the transfers of goods and services within East Asia generate development by restructuring the division of labor (cf. Shinohara, 1972). Kojima and Ozawa (1984), maintained that Japanese direct investment would be more favorable to social welfare in the host countries than US investment, due to a greater emphasis on export-orientation. Kojima (1990) further argues that Japanese direct investments are in line with comparative advantage, and consequently a catalyst for growth and economic development in general. According to Naya (1990), direct investment in general has contributed to the expansion of exports in East Asia, but the policies of the host countries would have been crucial for this impact. Others argue that Japanese direct investment brings economic and political suppression, and depletes the resource basis of poor Asian countries (cf. Nester, 1990). The dominance of Japan creates a certain fear of dependency, and some resentment of the cultural influence it may inflict.

There are at least three reasons why the role of Japanese direct investment is still associated with questionmarks. First, there have been misconceptions and a general lack of understanding between Japan and the West, and the activities of the Japanese have been viewed with suspicion. This was true even before the country's military expansion in the early part of the 20th century, and it has remained true since. Second, the spurt in Japanese direct investment has come late, and there has not been time to study it sufficiently. Third, there have so far been limited and unsatisfactory data on Japanese direct investment, especially regarding its sectorial and industrial composition.

To obtain a clearer picture of the distribution and motivation of Japanese direct investment across sectors and countries, this paper examines Japanese data which has not previously been official. A fundamental question addressed concerns whether Japanese direct investment is motivated by economic conditions rather than, for example, cultural or institutional attractions. If the latter were prominent, it would not be possible to relate the pattern of direct investment to economic conditions. Thus, we will examine the usefulness of various economic variables to explain the pattern of Japanese direct investment in East Asia. It will be noted that this investment may be motivated by both "push" effects in Japan and "pull" effects in East Asia. The former include raising wages, a stronger yen, or government planning on the part of MITI.<sup>1</sup> Examples of the latter are better infrastructure and higher labor productivity in East Asia, or protected host country markets.

An interrelated issue concerns what kind of direct investment East Asia obtains. Some observers view Japan as running the risk of being "deindustrialized" because Japanese companies move activities throughout the industrial spectrum to countries with lower production costs. Others argue that industries have become so multi-faceted that advanced activities are dependent on mutual linkages between industries, and consequently do not leave Japan (cf. Shinohara, 1989). Examining the motivations of Japanese direct investment, we will take note of its sectorial composition interpreted in terms of skill- and technology-intensity. This is also potentially important for the impact on the social welfare of the host countries.

Finally, to what extent can other developing countries emulate, or at least learn from, the development in East Asia? Given that Japanese direct investments are desirable, is it possible for other developing countries to successfully attract them as well? If economic variables are of crucial importance, is it necessary to have achieved a high income level, high growth or an open economy, before Japanese direct investment can be attracted? Or are such

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<sup>1</sup> MITI, the Ministry of International Trade and Industry, has announced an "International Cooperation Program", the goal of which is to make Japanese companies cut their exports from Japan, increase imports and raise direct investment overseas.

characteristics a consequence of direct investment?

The paper is organized as follows. Section 2 reviews the development performance of the Asian Newly Industrialized Economies (ANIES) and the countries in the Association of South East Asian Nations (ASEAN)<sup>2</sup>, and the policies they have pursued. Section 3 surveys the importance of inward investments, and presents "push" and "pull" factors which may have spurred Japanese direct investment in East Asia. Data and hypotheses for empirical testing are presented in Section 4. Section 5 reports the results of some simple regressions. Section 6 summarizes and discusses implications for other developing countries.

## 2. Behind the East Asian growth miracle

The ANIEs have undergone a remarkable development in the last decades, whether measured in per capita income or other welfare indices. It has also become increasingly clear that the countries in ASEAN, with the exception of the Philippines, are following them with a good deal of success. Together with the People's Republic of China, the four ANIEs and the other four major members in ASEAN are here referred to as "East Asia". Of course, the region also includes Indochina and North Korea. Under the period studied, these countries have had centrally planned economies to a greater extent than China, and received or allowed little direct investment. Hence, they are excluded in the following.

Table 1 compares the performance of East Asia with the major economies in South Asia, which have also been more successful in economic terms than most other developing countries in the 1980s. The average annual rate of growth, the growth of exports and average gross domestic savings are given for 1980-88. As can be seen, East Asia has generally had higher growth in terms of income, but the Philippines is a clear exception. The

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2 The ANIEs are: the People's Republic of Korea, Taiwan, Hong Kong and Singapore. Except for Singapore, ASEAN consists of: Thailand, Malaysia, the Philippines, Indonesia and Brunei. The last country is here excluded, due to its small size and the special characteristics of its economy.

TABLE 1: Growth in income, growth in exports and average savings rates.

Countries	Average annual growth in GDP (per cent, 1980-88)	Average annual growth in exports (per cent, 1980-88)	Average gross domestic saving (per cent of GDP, 1980-88)
<b><u>EAST ASIA</u></b>			
<b>ANIEs</b>			
South Korea	9.9	14.7	30.0
Taiwan	7.5	13.9	34.7
Singapore	5.7	7.3	41.1
Hong Kong	7.3	12.3	28.8
<b>ASEAN</b>			
Malaysia	4.6	9.4	32.3
Thailand	6.0	11.3	22.2
Philippines	0.1	0.4	20.2
Indonesia	5.1	2.9	30.1*
China	10.3	11.9	33.2*
<b><u>SOUTH ASIA</u></b>			
Bangladesh	3.7	6.1	3.0
India	5.2	4.7	20.8
Pakistan	6.5	8.4	8.7
Sri Lanka	4.3	5.8	12.6

\* = for 1981-88.

SOURCES: The World Bank (1990) and The Asian Development Bank (1983 and 1990).

same applies to export growth, although both the Philippines and Indonesia (which suffered a fall-back in oil exports) were exceptions in this case. In South Asia, Pakistan stands out as similar to East Asia in terms of both income and export growth. The record of the other countries in South Asia is less impressive, but still respectable. The most substantial difference between the regions appears in the savings rate, where the Philippines again forms a (partial) exception. The savings rate has traditionally been high in East Asia, and the gap to other developing countries has widened in the 1980s.

A voluminous literature has sought to explain why the economic performance of the ANIEs and most of ASEAN differs markedly from other developing countries. Many studies have focused on factors that are unique to the region. These include Confucian values, the economic skills of the Chinese and Chinese minorities, the Japanese ethos, the industriousness and high level of education in the region, lack of raw materials, abundant U.S. aid, political stability, and so forth. A basic problem with these explanations is their ad hoc nature. The region is heterogeneous in every way, with countries differing in history, constitution, race, size, resource endowments, and climate. However, high growth is the typical pattern, with the exception of the Philippines. Indochina and North Korea display a very different record. China itself made impressive progress from 1979 onwards, when it adopted an ambitious reform program. Small scale rural enterprises grew spontaneously from a minuscule size to achieve a total labor force of some 90 million. These semi-private enterprises accounted for about one third of China's industrial output as of 1989. After the events in Tiananmen Square, the country seems to have halted both its reforms and economic progress for the time being. This pattern points towards a major influence of economic policies, although the importance of other factors should not be denied.<sup>3</sup>

While the specific design of policies differs, those countries which have succeeded share certain basic characteristics. The most clear-cut and general difference from other developing countries is that the ANIEs and ASEAN have pursued relatively more export-oriented policies (Balassa, 1982 and 1991). This has included promotion of sales on world markets, exposure to competition and utilization of scale advantages. Other developing countries have rather biased their incentive systems away from world markets and comparative advantage. Using indices for price distortions, it has been shown that the ANIEs and ASEAN have generally had less distorted prices than other developing countries (The World Bank, 1983).

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<sup>3</sup> Little (1981) concluded that the success of the ANIEs is entirely due to 'good policies and the people'. These are not really separate explanations, rather 'good people' have pursued good policies, and good policies have been facilitated by 'good people'.



With the exception of Hong Kong, the ANIEs and ASEAN have not practiced *laissez faire*. Export promotion has not taken place through a general liberalization of imports, but there has been a combination of exchange rate management and fiscal incentives for exports. In addition to the provision of infrastructure and other minimal functions, the governments can be said to have intervened in five broad areas. They have:

- i) set up public enterprises to produce private goods,
- ii) claimed responsibility for macroeconomic stability,
- iii) intervened in the distribution of ownership through land reform in some cases,
- iv) engaged in industrial development through industrial incentives, and
- v) encouraged inward direct investment, although generally not allowed it in all activities.

Of these five areas, it is clear that the first one has been a relatively unimportant factor in the growth of the region. The state-owned companies are not particularly "small" e.g. compared to Latin America, but their share of industry is small relative to that of the private sector, and their growth has been low throughout, with the exception of the oil sector in Indonesia (Riedel, 1988). The importance of the second and third factors has been emphasized for Japan, Taiwan and Korea (Sachs, 1986). Regarding macro-economic policy, government budgets have been kept in balance, which has contributed to high savings and low inflation rates, among other things. Nominal exchange rates have been adjusted so as to keep real exchange rates at reasonable levels. The strong public finances have allowed governments not to promote industrial growth at the cost of taxing agriculture which, rather, has been protected compared to industry. At the same time, the land reforms in South Korea and Taiwan created, as in Japan, a conservative peasantry of independent proprietary farmers which has lent support to the national governments. In this respect, the Philippine government has not followed.

The involvement of governments in the management of private industries is the hardest to evaluate. Korea, for example, has supplemented moderate protectionism with selective export promotion, achieving neutrality on the whole. Whether the economic performance would have been even better without this kind of interference we do not know.

It is clear, however, that the measures used have generally aimed at stimulating the efficiency of markets. Incentives have promoted activities in line with comparative advantage; at one point labor-intensity, at another capital-intensity. Input and output prices have been carefully maintained at the level of the world market, so as to encourage competition. The objective has not been to make life easy for business, but subsidies have been offered in exchange for clearcut requirements of progress in terms of output, exports or investment in R&D (see Andersson and Burenstam Linder, 1991, and Amsden, 1991). Meanwhile, governments have intervened to promote the bargaining position of domestic firms relative to foreign ones, and facilitated the exploitation of static and dynamic scale advantages (Hong, 1990). While this clearly applies to the ANIEs, there have been more of the usual protectionist policies in ASEAN, giving rise to vested interests which seek to maintain their privilege of not having to be competitive on world markets. This applies particularly to the Philippines under Marcos, and to Indonesia.

Concerning the last area of government influence, direct investment has been promoted through provision of various incentives, such as tax holidays and tariff reductions. Some of these have been implemented in special free trade zones. Such incentives are unlikely to exert a major influence on the location decisions of multinational firms, partly because "all" countries can be expected to do their best to attract them. See Andersson (1991), where competition between potential host countries is analyzed. After systematically reviewing incentives and investment behavior during the last decades, Contractor (1990) similarly draws the conclusion that host country incentives have not influenced the pattern of direct investment in any significant way (see also Farrell 1985, and UNCTC, 1988). Political risk, in relation to direct investment taking the form of forced divestment or expropriation, is an exception as it may discourage direct investment from being undertaken. Since the late 1970s, expropriations have become virtually non-existent in developing countries, and they have certainly ceased to be seen as a threat in East Asia.

But if government incentives do not account for the expansion of direct investment in East Asia, what does? Of course, policies still matter due to their impact on

trade and development in general. Before examining the investment behavior of the Japanese, the next section discusses the background of foreign investment flows in East Asia.

### 3. Inward investment

Foreign investment is often said to have helped to set growth off in East Asia. Most notably, there was a great deal of foreign development assistance from the United States to Japan, South Korea, Taiwan and Indonesia. Equally large or even larger official flows to other countries have not been followed by any similar spurt in growth, however. Foreign development assistance does not explain the difference in development performance between East Asia and other regions of developing countries.

TABLE 2: Debt service ratio, total direct investment and Japanese direct investment.

Countries	Debt service ratio (per cent of GDP)		Stock of total direct inv. (per cent of GDP) 1979	Stock of Japanese direct inv. (per cent of GDP)	
	1981	1989		1979	1989
<b><u>EAST ASIA</u></b>					
<b>ANIEs</b>					
Korea	21.7	11.0	2.8	1.8	2.1
Taiwan	0.0	0.0	n.a.	0.8	1.8
Singapore	0.0	0.0	24.9	7.6	22.2
Hong Kong	0.0	0.0	11.1	4.2	17.3
<b>ASEAN</b>					
Malaysia	8.2	19.9	17.0	2.4	6.7
Thailand	20.2	16.7	1.7	1.2	5.1
Philippines	33.5	27.0	6.0	1.6	3.2
Indonesia	14.1	37.0	8.3	5.4	11.8
China	6.9	12.2	0.0	0.0	0.6
<b><u>SOUTH ASIA</u></b>					
Bangladesh	14.2	22.4	0.1	0.0	0.0
India	10.4	27.3	1.9	0.0	0.0
Pakistan	14.8	24.5	3.8	0.0	0.0
Sri Lanka	13.2	20.6	3.1	0.0	0.0

SOURCE: Calculations on the basis of The World Bank (1990), The Asian Development Bank (1990), UNCTC (1983) and The Ministry of Finance (1991).

Leaving foreign development assistance aside, how large have the inflows of external capital been? Table 2 compares East and South Asia in terms of debt service ratio 1981 and 1989, the total stock of inward direct investment in per cent of GDP 1979, and the stock of Japanese direct investment in per cent of GDP as of 1979 and 1989. For three of the ANIEs, the debt service ratios were zero throughout. The 21.7 per cent recorded by Korea in 1981 reflects that this country absorbed a good deal of foreign lending in the early stages of industrialization, but the other ANIEs did not. The ASEAN-countries, however, resemble South Asia in terms of debt service ratio. Only Indonesia and the Philippines, with a low export growth atypical of the rest of East Asia, had borrowed more than South Asia as of 1989. On the other hand, only Thailand has borrowed substantially less. Comparing with export earnings, however, the borrowing of both the ANIES and ASEAN in the international credit markets stands out as very modest in relation to that of other developing countries. It is not a great deal of foreign borrowing which has enabled the ANIEs and ASEAN to outperform other developing countries.

Countries which are relatively scarce in capital have a high rate of return on the margin, and, hence, should import capital from abroad. However, it cannot be taken for granted that capital is invested effectively. Countries are *sovereign*, and may consume rather than invest, or invest so as to enhance the prestige of the ruling elite rather than generate an economic return. Common examples are the build-up of industries, monuments or buildings which are conspicuous but unproductive, or military spending which strengthens the government's grip on power. From the late 1970s onwards, current account deficits and the accumulation of large external debts have gone hand in hand with low rates of growth and a deteriorating standard of living for large parts of the population in Africa, Latin America and South Asia. Accepting direct investment, in contrast, East Asia has allowed the creditor side to maintain a relatively large degree of control over the funds provided from abroad.

Direct investment has played a major role in East Asia for a long time. In the wake of colonization there were at first substantial European investments in the extraction and trade of natural resources, especially in Indonesia, Malaysia and Singapore. The U.S.

dominated after the Second World War, focusing on the same countries, as well as on the Philippines and Taiwan. Comparing direct investment from all sources, Table 2 includes only the year 1979, as data for the different countries are not available for the late 1980s from a single source.<sup>4</sup> As of this year, East Asia had attracted considerably more direct investment than South Asia. The closed Chinese economy was an exception, and Thailand and Korea had also attracted a modest amount. Singapore, Malaysia, Hong Kong and Indonesia, on the other hand, had received exceptionally large direct investments. In addition, Chinese capital flowing to Hong Kong, Singapore and some other countries in East Asia is strongly underrepresented in the data. For Indonesia, the oil sector, which accounted for perhaps as much as 50 per cent of the stock of all foreign direct investment in the late 1970s, is not included either (cf. Andersson and Ternström, 1987). The notable difference between the regions stands out in comparisons of East Asia with most other developing countries as well.<sup>5</sup> The effects of capital flows on factor productivity and domestic savings is still a matter of controversy. Concerning the Asian countries, however, Gupta and Ismal (1983), Lee et al. (1986) and others, have found that the private flows have had a favorable impact on savings as well as factor productivity. It is, indeed, plausible that direct investment plays an important role in the East Asian development process.

Following the debt problems of most developing countries, the creditor side has responded with demands for reform before providing additional funds. Meanwhile, the attitudes towards direct investment have become more favorable, as reflected in the decline of nationalizations, reduced taxes, and the provision of investment incentives throughout the Third World (Andersson, 1991). Still, the flows of direct investment to all developing

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4 Note that the debt service ratio and the stock of direct investment in relation to GDP is not really comparable. Moreover, the data on direct investment is highly uncertain, and varies between sources.

5 Only Mexico, Brazil and Argentina have received direct investment on a scale that is comparable with that recorded by East Asia. Foreign borrowing accounted for much larger capital flows in these countries, however.

countries have declined along with the drying-up of portfolio investments. While the developing world held about 28 per cent of the total stock of direct investment in the late 1970s, its share had shrunk to about 22 per cent in the mid 1980s (UNCTC, 1988). Only East Asia has enjoyed increasing inflows. At the same time, the West's domination in the region has been broken by the expansion of the Japanese.

In the two columns to the right, Table 2 shows the remarkable increase for Japanese direct investment that has taken place in East Asia 1979-89. These data, which are reported by the Ministry of Finance in Tokyo, are subject to certain pitfalls which will be commented on in the subsequent section, but these should not bias the comparison over time. Between 1979 and 1989, the stock of Japanese direct investment in relation to the GDP of the host countries at least doubled in two of the ANIEs and in all four countries in ASEAN. The most remarkable increases were recorded in Thailand (from 1.2 to 5.1 per cent), Hong Kong (4.2 to 17.3 per cent), Singapore (7.6 to 22.2 per cent) and Malaysia (2.4 to 6.7 per cent).

Until the late 1970s, overseas direct investment made up only about 1 per cent of total fixed capital formation in Japan, which can be compared with 3 per cent in Germany or 4.5 per cent in the U.S. In 1989 the share surpassed 6 per cent in Japan, which is more than for all other major industrialized economies. The sectorial focus, which used to be mining, natural-resource related investment and manufacturing, shifted towards finance, real estate, transportation, commerce and services. In terms of regions, there has been a major shift away from the developing to the developed countries, first the United States and more recently the European Community.

Obviously, the 1980s have seen new motivations for Japanese companies to invest abroad. From the view point of East Asia, changes within Japan itself, or in Japan's relations with *other* countries, can be regarded as "push" factors. The following partly interrelated factors belong in this category:

- 1) *Financial deregulation and integration.* The overhaul of Japan's foreign exchange law in 1980, and the financial liberalization in general, has enabled Japanese financial institutions to

expand their activities on a worldwide scale, including the undertaking and servicing of direct investment. Meanwhile, the development of the Euro-currency and the Euro-bond markets together with the financial deregulation in the United States and the United Kingdom have provided opportunities for Japanese financial institutions to absorb short-term borrowing and convert it to long-term lending and investment. Most went into U.S. securities in the early 1980s, but direct investment has become an increasingly important destination in the late 1980s.

- 2) *Current account imbalances.* Huge surpluses on the Japanese side, especially after 1983, have spurred capital outflows. These have also fueled a political pressure on Japan from the U.S. and the EC to reduce its exports, further inducing direct investment for production in importing countries or exports from third countries.
- 3) *Currency alignments.* An appreciating yen vis-à-vis the dollar has favored production by Japanese companies abroad from 1985 onwards.
- 4) *Raising costs* of labor, land and other inputs in Japan. Robotization and up-grading of technology have limited the impact, but it has become relatively more favorable to move especially labor-intensive production to countries with lower costs.
- 5) *Adaptation in organization.* The Japanese have become more capable of adapting their organizations to local conditions, applying to the US and Europe as well as to Asia.

The above factors speak for a general increase in Japanese direct investment, which we have seen in the 1980s. In the developing world, however, the main destination has been East Asia. The bottom part of the two columns to the right in Table 2 shows that South Asia has attracted virtually no direct investment from Japan at all. East Asia probably enjoys an advantage due to its geographical location, but this is hardly the only reason why the Japanese focus so heavily on this region. What are the "pull" factors attracting direct investment in East Asia? At least five have been put forward in the literature:

- 1) Favorable *macro-economic conditions*, such as high growth and moderate inflation.
- 2) Sound *economic policies*, particularly open trade regimes and low taxes. In some of the ASEAN-countries, however, trade barriers have also attracted direct investment.

- 3) The ANIES and ASEAN-countries have had their *currencies* more or less pegged to the dollar, which has made operations in these countries more attractive for Japanese firms.
- 4) *Political stability*, including a high priority for economic development at the national level.
- 5) *Institutional and cultural conditions*, creating a work-ethic which could readily be taken advantage of by the Japanese.

Many of the above factors, "push" as well as "pull", are likely to have played a role. Still, we need a clearer picture of the distribution and motivations for the Japanese investments in East Asia. The next section presents data for empirical testing, and sets up the hypotheses to be examined in this paper.

#### 4. Data and hypotheses

Seeking to explain the motivations of Japanese direct investments in East Asia in greater detail, we investigate two dependent variables below. On the one hand, we study the absolute flows of Japanese direct investments 1979-89 ( $y_1$ ), on the other hand their relative increase 1979-1989 ( $y_2$ ). The former is referred to as Model 1, the latter as Model 2. For both dependent variables, the data basis is Ministry of Finance (Tokyo) statistics. It should be noted that this is based on approved, not actually implemented, investments. There is often a discrepancy between the two, with some of those approved not being undertaken at all, and others being delayed a few years. In addition, some types of loans and acquisitions of bonds are included, while repayments of these loans are not (neither are the withdrawals of equity investment). This might seriously affect panel data, and particularly investigations of mutual interactions between investment behavior and country developments. It is less troublesome for the present study, as the determinants of the average increase of approvals over an extended period of time should reflect those of the average actual implementation of investment.

Because there were no Japanese direct investments at all in the People's Republic of China in the early 1980s, this country recorded an infinitely large relative



increase in direct investment. Thus, China was from the start excluded from model 2. Inclusions of the country in model 1 worsened the results, which may indicate that this country was too different from the market economies in the region to be readily analyzed within the same framework. Thus, we exclude China to begin with, but we will still have use for this country when examining non-economic influences below.

The investment flows have been divided into five sectorial aggregates, three in manufacturing and two in non-manufacturing. These have been ranked in the following order:

- 1) Basic non-manufacturing (forestry, fishing and mining).
- 2) Basic manufacturing (food and textiles).
- 3) Resource-processing manufacturing (pulp and paper, chemicals, and ferrous and non-ferrous metals).
- 4) Advanced manufacturing (machinery, electronics, and transport machinery).
- 5) Commerce and services (commerce, banking and insurance, services and transport).

This division aims at reflecting increasing skill- and technology-intensity, as well as decreasing dependency on labor costs. Thus, we create a discrete variable ( $z_1$ ), "sector", which takes a value between 1 and 5 in accordance with the sectorial classification, see further below.

Direct investment is generally believed to be influenced by 'macro-economic' variables, such as growth, income level, domestic markets, openness in trade and investments, and taxes. Together with the sectorial variable, these are used as our explanatory variables. However, the formulation of hypotheses hinges on the special characteristics of the Japanese economy in the period studied, and how they relate to East Asia. The explanatory factors are presented in Table 3, together with some descriptive characteristics. The motivations for their inclusion, and their expected influences on the dependent variables, are as follows:

- *Average growth* ( $x_1$ ) is expected to exert an unambiguously positive effect on direct investment, as it creates a greater domestic market as well as more favorable socio-economic

conditions. If such a positive influence is actually obtained, however, we cannot rule out a simultaneity problem, in the sense that the Japanese investments may have spurred high growth rather than the other way around.

- The *income level* ( $x_2$ ) is normally positively related to direct investment. However, the Japanese direct investments in East Asia should partly be motivated by lower labor costs, which suggests that the income level exerts a negative influence on both explanatory variables.
- The economy's *size* ( $x_3$ ) can be expected to exert a positive influence on the first explanatory variable, since a greater economy should attract more direct investment in absolute terms. However, the relative increase should be negatively influenced, as a large economy should have attracted a good deal of investment before already, and the relative increase therefore be smaller.
- *Openness*, or exports in percentage of GDP, ( $x_4$ ) should exert a positive impact on investment flows in both models. In case a positive impact prevails we again have a simultaneity problem, which is returned to below. If trade barriers would rather have attracted investments, we would instead expect a negative impact.

TABLE 3: Variable definitions and descriptive statistics.

Variable	Definition	Minimum	Maximum	Mean	Standard Deviation	n
$x_1$	Average growth in GDP (per cent, 1980-88)	0.1	9.9	5.8	2.69	40
$x_2$	Income level (GDP per capita in USD, 1988)	440	9220	3970	3469	40
$x_3$	Economy size (GDP, mill. USD, 1988)	24	171	71	47.42	40
$x_4$	Openness (Exports in per cent of GDP, 1988)	18	164	65	53.13	40
$x_5$	Level of Taxation (per cent of GDP, 1988)	7.6	16.7	13.4	2.96	40

- The level of *taxation* in relation to GDP ( $x_5$ ) indicates higher costs for business in general, and should exert a negative influence in both models.
- The *sectorial* variable ( $z_1$ ) should exert a negative influence if East Asia has attracted primarily direct investments which rely on low technology and low skill-intensity. If the increasing attractiveness of East Asia for high skill- and technology-intensive sectors dominates, however, we instead expect a positive influence. This should be the most probable in Model 2, which measures relative increase.

Concerning the timing of the explanatory variables, we do not know whether investors consider past observations or form rational expectations by looking ahead. In order not to include data which did not influence investment decisions in the period of study, we disregard the first and the last years. Thus, average growth is calculated 1980-88. The other explanatory variables indicate 'level' rather than change. For these we use the "last" year, 1988, as firms would have liked to base their investment decisions on the state of affairs towards the end of the period of study. The bulk of the total investments was actually undertaken in the years 1987-89.

## 5. Empirical tests

Each one of the explanatory variables are believed to influence investors' expectations regarding the profitability of investment opportunities. However, they are merely proxies for the particular circumstances that are crucial for individual firms. Thus, we have no basis for more complex functional forms. This means that we test the following

$$(1) \quad y_i = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_1 z_1 + \mu_i$$

where  $i = 1, 2$  represents the two models. The disturbance term fulfills the usual assumptions required for ordinary least squares estimation. The  $x$ :s are the explanatory

variables, and  $z$  the sectorial variable which is discrete, taking a value from 1 to 5 in accordance with the sectorial specification above.

The results of the specification in (1) are given in Table 4. For the second model, which measures relative increase, a logarithmic transformation of the explanatory variables was undertaken to limit the dominating influence of extreme observations. The same transformation was checked for model 1 as well, but did not improve the outcome, wherefore only the untransformed relation is reported in that case. As can be seen, model 1 resulted in an adjusted  $R^2$  close to zero, and there were no significant effects at the five per cent level for any variable. Model 2, on the other hand, produced an adjusted  $R^2$  of 0.61, and significant effects except for one variable. As expected, the rate of growth was found to increase the flow of investment, while the size of the economy and the tax rate reduced it. The income level did not have any significant impact. The sectorial factor exerted a positive influence, indicating that the relative increase in investment was stronger in advanced sectors. As mentioned, a positive influence from the sectorial variable was expected to be the most probable in model 2. The "openness" variable did not have the expected positive effect, but it was negative and significant at the 5 per cent level. This indicates that "openness" was less of a motivation for Japanese direct investment in the 1980s than it had been before. This might be due to the difference in policies between countries, with the Philippines and Indonesia attracting direct investment by protecting markets. Due to the lack of a positive effect we do not have to deal with the mentioned problem of causality that is associated with this variable. For the future it remains important to clarify under what circumstances there actually is a positive impact of "openness" on investment, and when a positive impact of investment on "openness".

While model 2 generated a satisfactory outcome, the same cannot be said of model 1. One possible reason is that the influence of some country-characteristics on the absolute size of the investment flows is likely to be different in different sectors. A higher

TABLE 4: Results.

## Model 1, no logarithmic transformation

Variable	Parameter estimate	t for $H_0$ : Parameter = 0
Intercept	-1190	-0.45
x <sub>1</sub>	44.1	0.24
x <sub>2</sub>	0.11	0.10
x <sub>3</sub>	-4.37	-0.18
x <sub>4</sub>	-3.19	-0.05
x <sub>5</sub>	75.0	0.22
z <sub>1</sub>	242	1.75
F Value	0.847	
Adj R-sq.	-0.02	

## Model 2, logarithmic transformation

Variable	Parameter estimate	t for $H_0$ : Parameter = 0
Intercept	16.5	4.37
x <sub>1</sub>	0.82	4.14
x <sub>2</sub>	0.75	1.65
x <sub>3</sub>	-2.35	-4.06
x <sub>4</sub>	-2.32	-2.62
x <sub>5</sub>	-2.04	-3.15
z <sub>1</sub>	0.52	6.06
F Value	11.2	
Adj R-sq.	0.61	

Table 4. Cont. Model 1, with multiplicative explanatory variables included

Variable	Parameter estimate	t for H <sub>0</sub> : Parameter = 0	t for H <sub>0</sub> according to White
Intercept	9643	1.89	2.11
x <sub>1</sub>	167	0.46	1.26
x <sub>2</sub>	-4.64	-2.28	-1.97
x <sub>3</sub>	103	2.20	1.92
x <sub>4</sub>	277	2.18	1.94
x <sub>5</sub>	-1315	-1.96	-2.00
z <sub>1</sub>	-3368	-2.18	-2.16
z <sub>1</sub> x <sub>1</sub>	-40.9	-0.37	-1.11
z <sub>1</sub> x <sub>2</sub>	1.6	2.58	1.98
z <sub>1</sub> x <sub>3</sub>	-35.8	-2.52	-1.91
z <sub>1</sub> x <sub>4</sub>	-93.5	-2.43	-1.92
z <sub>1</sub> x <sub>5</sub>	463	2.32	2.04
F Value	2.5		
Adj R-sq.	0.29		

income level, for example, is unlikely to motivate direct investment in mining, but it should stimulate more investment in financial services. To account for this, we multiply each independent variable with the sectorial variable, creating a series of multiplicative variables. These are expected to account for a major impact on the absolute size of the investment flows, measured in model 1. In model 2, they may matter less, as direct investments before 1979 were also affected by such multiplicative effects.

The estimates obtained with the multiplicative variables included in model 1 are presented in the third section of Table 4, still without logarithmic transformation (logs increased adjusted R<sup>2</sup>, but led to fewer significant effects). As expected, the multiplicative

variables did not add much to model 2.<sup>6</sup> Due to a problem with heteroskedasticity, following the construction of the new variables, we used White's (1980) estimator to compute heteroskedasticity-consistent standard errors. The t-values obtained with this method are given in the fourth column. As can be seen, the results of model 1 turn out considerably stronger with the multiplicative variables included, and controlling for the heteroskedasticity affects the outcome only marginally.<sup>7</sup> Adjusted  $R^2$  is only 0.29, but all effects have the expected signs and are significant at the five per cent level, except for the rate of growth (and the multiplicative growth-sector variable), which has the expected positive sign but is insignificant. The sectorial factor exerts a negative influence, meaning that there are smaller flows in absolute terms in advanced sectors. The multiplicative variables throughout have the reverse signs of the respective macro-economic variables taken alone.

So far, we have not included any examination of the extent to which different countries, or kinds of countries, in themselves exert any impact on the investment flows. Such influences would be expected to the extent that institutional and cultural factors are of major importance. Unfortunately, this cannot be investigated in any thorough way without panel data, i.e. year-by-year data on dependent as well as independent variables, where each country's influence can be captured through a fixed effect. Such data enables a detailed examination of shifts over time and interdependency in the flows to different countries. At the same time, it is extremely sensitive to the formulation of expectations, i.e. whether these are based primarily on past events or foresight concerning the future. In contrast to the regularly published data, those used here allow us to construct panel data as a sectorial division is given in each country for each year. While this is the natural next step, we here focus on studying the average trends in Japanese direct investments 1979-89. A tentative test

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6 This estimation is not reported here. The only tangible difference is that the sectorial variable ceased to be significant and that adjusted  $R^2$  increased to 0.67.

7 Some of the variables ceased to be significant at the 5 per cent level, but they remained so at the 10 per cent level. We abstain from this qualification in the further reasoning.

of country-specific effects is undertaken by dividing the countries into groups, and include these as dummies in the above regressions. Three dummies are used, representing the following country-groups:

- 1) the city-states, Hong Kong and Singapore,
- 2) the other ANIEs, Taiwan and Korea, and
- 3) the large "growth-economies" in Southeast Asia, Malaysia, Thailand and Indonesia.

The Philippines is not classified, being atypical of East Asia in terms of both political, social and economic stability. The limited number of countries included creates problems with multicollinearity, however. We therefore add our observations on China, which are available for model 2. The Philippines and China consequently become representatives of the "base case", relative which the attractiveness of the other countries is "measured". Various observations of attitudes towards foreign investors among the general public as well as in the bureaucracies, lead us to expect that 1) and possibly 3) would be the most associated with a positive effect on direct investment, while 2) may be less so. Re-running the most successful test on model 2 (displayed in the second section of Table 4) with China and the given country group-dummies included, an acceptable result is obtained. The adjusted  $R^2$  raises to 0.67, the same variables are significant as in Table 4 for model 2, and the signs are the same. Unexpectedly, however, all the dummies exert a significant negative impact!

This finding might be considered disappointing as at least two of the three country dummies, if anything, would be thought of as exerting a positive impact. It seems hard to argue that the Philippines and China would be associated with more attractive country-specific characteristics than e.g. Singapore and Hong Kong. It must be concluded that our results lend no support whatsoever to the view that non-economic, country-specific factors would exert a major influence on the investment decisions of the Japanese in East Asia. On the contrary, our results indicate that a good deal of the variation in these investment flows can be attributed to the influence of economic variables. To study country-specific influences in depth and detail we need to explore panel data, however.



## 6. Summary and concluding remarks

The ANIEs and the countries in ASEAN, with the exception of the Philippines, have recorded a favorable development compared to other developing countries during the last decades. Government policies have in most instances actively stimulated competitiveness in world markets and given rise to less distorted prices. Concerning capital inflows, neither the foreign development assistance nor the borrowing in the international capital markets have been exceptionally large, but there has been considerably more direct investment than in other regions in the developing world. It is plausible that this has contributed high investment efficiency, growth in income and exports, and high savings. From the early 1980s, the bulk has been provided by Japanese firms, which between 1979 and 1989 at least doubled their stock in relation to GDP in two of the ANIES, and in all of ASEAN. The reason is not government incentives directed specifically at foreign firms, but there are "push" effects in Japan as well as other "pull" effects in East Asia.

The paper has further examined the economic motivations behind Japanese direct investment in East Asia, using data not previously official. Both the absolute size of Japanese direct investment 1979-1989 (model 1), and their relative increase between these years (model 2), have been studied across the ANIEs and ASEAN. The most successful results obtained with ordinary least squares for each model are presented in Table 5. The absolute flows were larger in sectors based on low technology and skill-intensity, but the relative increase was greater in advanced sectors. Thus, there is still more Japanese direct investment in less advanced activities, but those in more advanced ones seem to be catching up. The lower the level of income in the host country the larger the absolute flow of investment, although there was no significant impact on the relative increase. The level of taxation was negatively related to investment, as expected. Concerning growth and openness, neither of these variables exerted the expected significant effects in both models. In fact, openness was negatively related to the relative increase in model 2. For this reason,

TABLE 5: Summary of the expected and realized effects, sign and significance.  
Non-significance in parentheses (5 per cent level).

Variable	Absolute flows (model 1)		Relative increase in flows (model 2)	
	Expected	Signs Obtained	Expected	Signs Obtained
x <sub>1</sub> (growth)	+	(+)	+	+
x <sub>2</sub> (income level)	-	-	-	(+)
x <sub>3</sub> (size)	+	+	-	-
x <sub>4</sub> (openness)	+	+	+	-
x <sub>5</sub> (taxation)	-	-	-	-
z <sub>1</sub> (sector)	-	-	-/+	+

we abstain from dealing with the problem of determining whether direct investment is attracted by growth and openness, or giving rise to it. Resolving such issues requires, in any case, studies of panel data. The inclusion of country-group dummies, finally, gave no indication that country-specific factors would have exerted a significant positive influence on Japanese direct investment within East Asia.

Regarding implications for other developing countries, one must be careful in extending the results to other regions and types of countries than those represented in East Asia. To the extent that the findings are applicable to other parts of the developing world, countries with relatively low income but acceptable growth rates and modest levels of overall taxation, should stand a chance of attracting Japanese direct investment. It may be counter-argued that other developing countries have an inevitable draw-back in terms of their geographical location. Although this is a valid argument for countries which are land-locked or isolated islands, it hardly applies to the majority of countries. Moreover, it is likely to lose a great deal of whatever importance it may once have had. The ongoing development process in East Asia continuously shifts factor costs and comparative advantages, to which

not only Japanese companies adapt. In recent years, there have been rapidly increasing flows of direct investment from Korea, Taiwan, Hong Kong and Singapore to the less developed countries in the region. As East Asia proceeds along the path of growth, higher labor costs and economic restructuring, there will be new opportunities for other regions. This is not to say that direct investment should serve as a substitute for foreign development assistance and other capital flows to less developed countries. It is unrealistic to expect direct investment on such a grand scale. In addition, satisfactory infra-structure as well as economic and social stability is necessary for countries to be attractive locations for multinational firms on a long-term basis.

It can also be noted that a sound economy makes host country regimes more capable of negotiating mutually acceptable terms with foreign investors. The economic debacle in countries like the Philippines and Indonesia may have contributed to their strategies to attract foreign investors by protection, giving rise to concentrated domestic markets dominated by multinational firms. It is well-known that such investments may be detrimental to the welfare of the host country (see e.g. Batra, 1986), while investments attracted under free trade should be more favorable. It is beyond the scope of this study to examine the welfare implications of direct investment in detail, however. The fact that large markets, high income levels or country-specific attractions have not been crucial for obtaining Japanese direct investment within East Asia may in any case be viewed as promising from the perspective of other developing countries.

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