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## **Extending The Second Wing: The Outward Direct Investment of Singapore\***

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## CONTENTS

<b>ABSTRACT</b>	3
<b>1. INTRODUCTION</b>	4
<b>2. STATISTICS ON SINGAPORE'S FDI</b>	4
<b>3. SINGAPORE'S OUTWARD FDI: AN OVERVIEW</b>	7
<b>4. GOVERNMENT POLICY ON OUTWARD FDI</b>	9
<b>5. EXPLAINING SINGAPORE'S FDI: EARLIER RESEARCH</b>	10
<b>6. DETERMINANTS OF SINGAPORE'S OUTWARD FDI: AN EMPIRICAL STUDY</b>	12
<b>7. CONCLUSIONS</b>	16
<b>REFERENCES</b>	

## ABSTRACT

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The outward FDI of Singapore have increased rapidly during the last few decades, a development that strongly contributes to deeper integration of the country's economy with that of other countries in the region. A good deal of investment is targeting other parts of the world as well, especially Western Europe and the United States. Among the reasons for the increasing FDI have been mentioned the small domestic markets, the high costs of labor and land the opportunities that are emerging in neighbouring countries. Moreover, it has been Government policy to promote building an "external wing" for Singapore. In terms of equity capital this "wing" now corresponds to about 12 percent of the domestic economy of Singapore. In this paper an attempt at explaining the determinants of Singapore's FDI using a systematic econometric approach was made. The results suggest that access to (more or less) protected markets does not seem to be important for Singapore investors. The labor costs seem to play some role, however, as can be expected, but membership in ASEAN does not, as such, encourage Singapore FDI. Much of the variation in FDI to different countries remains unexplained, however. Although one may speculate about the role of national security strategy as a reason for this, we do not really know to what extent this may be the case. Finally, because of statistical reasons, as well as due to a somewhat shaky theoretical framework, the results should be interpreted with great caution and are, at best, tentative. More research is certainly needed before more solid arguments can be presented.

Key words: Singapore, foreign direct investment.

## 1. INTRODUCTION

Anybody who discusses foreign direct investment (FDI) in the context of Singapore is probably inclined to think in terms of inward investment into the Republic. After all, Singapore is one of the leading recipients of FDI in Asia and is known to have been able to utilise multinational firms as an effective device for development. However, the country has become an increasingly important source of outward investment as well, a large part of which has been made in the Asia Pacific region. In fact, Singapore's outward FDI have not been much smaller than its inward FDI during recent years (UNCTAD 2001). This is another, and more deep-going form of regional integration than mere intra-regional trade.

The reasons for Singapore's FDI are not difficult to envisage at a general level. The problem of a small domestic market, paired with rapidly changing comparative advantages, forces structural changes that can partly be taken care of by locating production in neighbouring countries. Investment in developed countries, in turn, may be related to technology transfer: Acquiring new technology may be facilitated by operating in already advanced countries (cf. Dunning, van Hoesel and Narula 1998). From the mid 1980s on the Government began to stress the need for companies to go regional (see, e.g., Sitathan 2002) and in the early 1990s the Singapore government embarked on an explicit strategy of developing an external economy, a "second wing" in order to utilise opportunities in the region and to reduce the vulnerability of the economy. Considerable investment in the developed market economies has taken place as well.

Despite the availability of a good statistical database very little has actually been written about Singapore's outward FDI. The objective of this paper is therefore twofold. First, the objective is to give a descriptive account of the FDI during the last couple of decades, which is the period covered by available data. Second, some tentative attempts at understanding the driving forces of the investment are undertaken, with the starting point in the theories of foreign investment.

## 2. STATISTICS ON SINGAPORE'S FDI

Data on Singapore's FDI are available from 1976 in the Government publication Singapore's Investment Abroad (Government of Singapore, various years). The statistics give data on several aspects of foreign investment such as geographical and industrial distribution, number of affiliates, domestic versus foreign-owned firms as investors, etc. However, due to the development of survey method and coverage the information available has become more complete but, at the same time not entirely comparable over the whole period. (Government of Singapore 1995: 13).

The statistics presently distinguish between the following categories of FDI:

D1 (Direct investment) = Paid-up shares in overseas subsidiaries and associates + net amount due from foreign branches;

D2 (Direct equity investment) = D1 + attributable reserves of overseas subsidiaries and associates;

D3 (Total direct investment) = D2 + lending to overseas subsidiaries and associates (Govt of Singapore 1995:13).

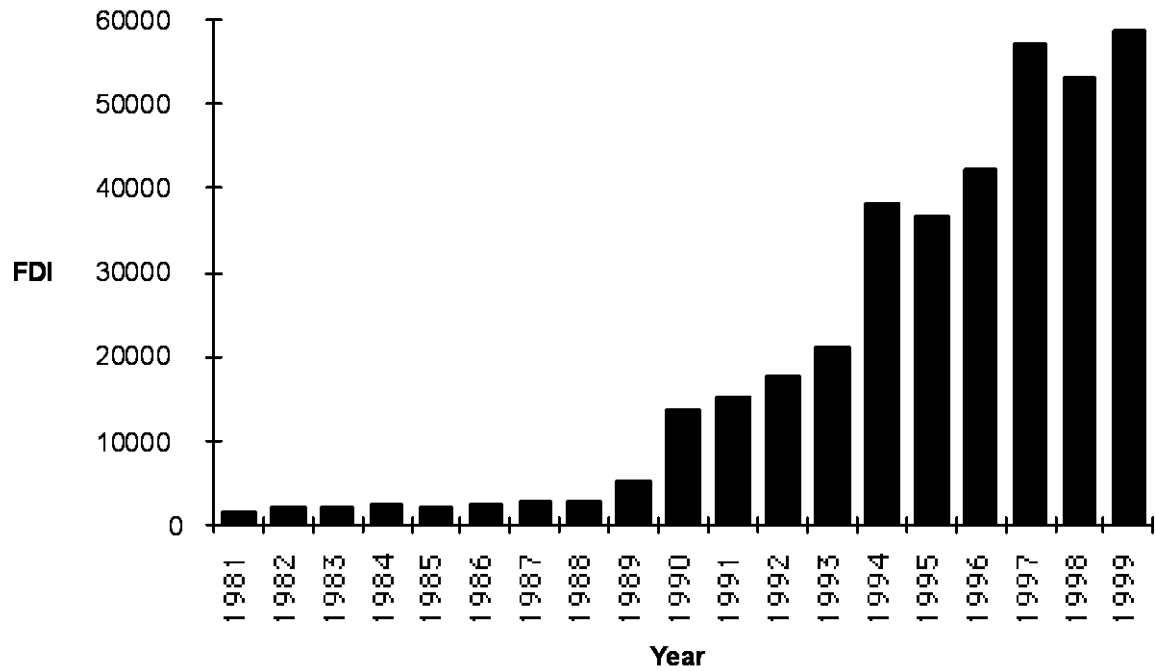
The figures up to 1990 cover only D1. From 1990 information on D3 (and D2) is available as well. The emphasis of the statistics is on FDI stock. The relation between D1 and D3 was around 70 percent in the 70s but has subsequently declined and stabilised between 50 and 60 percent (Govt of Singapore, various years). Financial institutions were covered by the survey for the first time in 1994, which partly explains the observed jump in FDI figures that year (see below).

Compared to FDI statistics of other countries the quality of the Singapore figures is good. However, errors and omissions cannot be ruled out entirely and the available figures are not complete in some important respects (such as geographical distribution). In particular it may be noted that a sizeable part of the Singapore FDI are in overseas holding companies<sup>1</sup>, whose further activities remain largely unknown.

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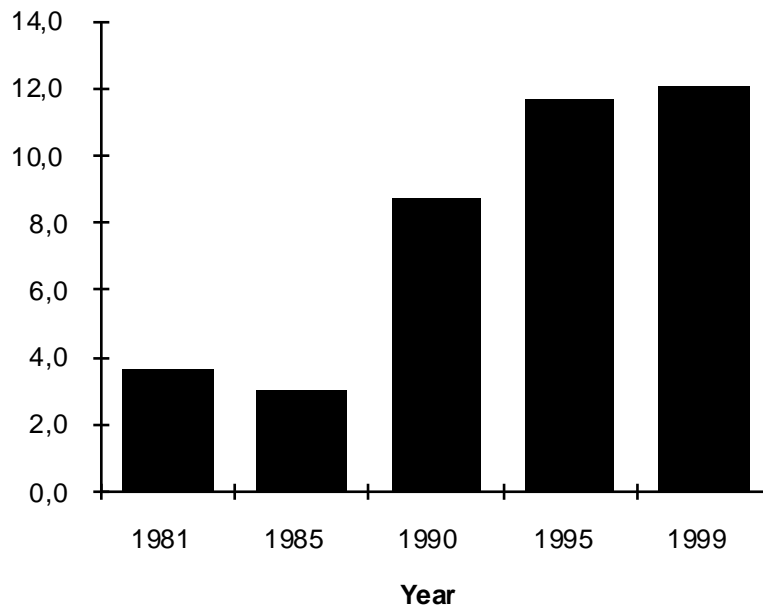
<sup>1</sup> For example, in 1999 the financial sector represented about 57 percent of total FDI. We know that this sector consists “mainly” of holding companies, but the exact share is not reported.

Figure 1. Singapore's FDI, 1981–1999 (equity investment, stock), million S\$



Note: Due to changes in firm and factual coverage there are discontinuities in 1990 and 1994.

Figure 2. External equity investment as a percentage of domestic equity capital, various years



Note: Due to changes in firm and factual coverage there are discontinuities in 1990 and 1994.

### 3. SINGAPORE'S OUTWARD FDI: AN OVERVIEW

As shown in Figure 1, Singapore's outward FDI have grown at an impressive rate since the early 80s—even considering existing discontinuities in the data series<sup>2</sup>. The relative size of the “second wing” can be approximated by relating the outward equity investment to the value of domestic equity capital in Singapore. The increase has been considerable over the years, as evident from Figure 2. However, due to changes in coverage of the FDI surveys the actual increase has been somewhat less impressive than suggested by the figure. During recent years, the relation has been around 12 percent. (The ratio of D3 to GDP in 1995 was 38.1 percent.) Whether this is a satisfactory figure or not, given the strategic goal of the Government, mentioned above, is unclear and has not, to the best of my knowledge, been commented on.

Table 1 illustrates the regional distribution of the Republic's outward equity investment. While the Singapore FDI has always had, and still has, a strong Asian bias, this emphasis has been on the decrease over the years. About 60 percent of the country's FDI still goes to Asia, as compared to close to 80 percent twenty years ago. There has been a gradual structural change in this investment, however. Despite the fact that ASEAN has admitted more members over the years and now comprises all ten countries of Southeast Asia, its relative share has been on the decline trend wise, with the interesting exception of the early 90s, which saw an increase. The AFTA agreement, which was conceived in 1992, is a possible reason for this. Another factor is the SIJORI “growth triangle”<sup>3</sup>. Okposin (1999: 154) estimates the share of SIJORI in Singapore's FDI in ASEAN at more than 50 percent. The figure seems plausible but it is uncertain what the estimate is based on. The great advantage of SIJORI is the combination of cheap labor costs and closeness to the advanced urban services of Singapore (see, e.g., Pomfret 1996). The ascendance of “other Asia” as a host for Singaporean FDI reflects, of course, the increasing importance of China, combined with economic weakness of Southeast Asia after the Asian crisis, and it is likely that the share of this category will continue to increase for some time.

The developed economies of Europe and the United States are fairly important directions for Singapore FDI as well. In this case it is likely that access to technology and other know-how plays a role, not only production and market related advantages. Although the Singapore economy is usually regarded as very US oriented the share of Europe as a host for FDI is actually, and somewhat surprisingly, more prominent. The category of “others” has mostly represented between 20 and 30 percent. This is a disparate group as tax havens, type Cayman Islands, are included here.

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<sup>2</sup> This notwithstanding, its *relative* importance in the region comprising South, East and Southeast Asia has declined (because of increasing investment from China (incl. Hong Kong) and Taiwan). In 1996, before the Asian crisis, Singapore's share of the outward FDI flow from this region was about 14 percent. In 2002 only 5 percent. There are large year-to-year variations, though.

<sup>3</sup> SIJORI is a semi-formal subregional co-operation zone comprising Singapore, the Malaysian state of Johor and the Indonesian Riau Province. The term, “growth triangle” was first used by now Prime Minister Goh Chok Tong of Singapore in 1989 (ASEAN Secretariat 1997: 140) and has since been widely used to denote subregional co-operation zones in general.

Table 1. Geographical distribution of Singapore's FDI (equity investment), 1981–1999, percentages

	<b>ASEAN</b>	<b>Other Asia</b>	<b>Europe</b>	<b>USA</b>	<b>Others</b>
<b>1981</b>	64,3	12,6	3,0	1,9	18,2
<b>1982</b>	59,1	16,9	2,8	2,1	19,1
<b>1983</b>	55,6	18,8	2,6	2,1	20,8
<b>1984</b>	55,9	19,3	3,0	2,3	19,5
<b>1985</b>	50,2	26,1	4,0	2,9	16,9
<b>1986</b>	44,5	26,2	6,4	2,5	20,3
<b>1987</b>	39,9	24,6	12,1	2,3	21,1
<b>1988</b>	40,6	25,0	10,1	3,6	20,7
<b>1989</b>	33,5	23,5	5,8	5,5	31,7
<b>1990</b>	26,2	25,3	8,0	5,1	35,4
<b>1991</b>	26,3	22,4	9,1	8,6	33,6
<b>1992</b>	27,6	24,3	8,3	9,0	30,8
<b>1993</b>	27,9	26,1	7,3	8,3	30,4
<b>1994</b>	31,8	25,9	10,3	6,3	25,8
<b>1995</b>	33,8	24,5	10,4	5,5	25,7
<b>1996</b>	29,5	27,5	12,8	5,4	24,8
<b>1997</b>	24,2	29,6	14,2	4,6	27,4
<b>1998</b>	24,0	36,0	7,0	5,1	27,9
<b>1999</b>	23,3	35,7	8,3	6,4	26,3

Note: Due to changes in firm and factual coverage there are discontinuities in 1990 and 1994.

In discussions of Singapore's FDI the fact that a big share of the country's firms are subsidiaries of overseas companies is sometimes mentioned as a factor that implicitly questions whether it is really justified to speak of Singapore's investment. The share of wholly or majority-owned foreign firms has varied somewhat over the years, declining from 54 percent in 1990 to 44 percent of total value in 1998. A regular feature is that the number of foreign affiliates is larger for the wholly or majority-owned domestic firms but the average size of the investment is larger for the foreign firms (Government of Singapore 2001). To the extent FDI are determined by economic incentives, the question whether an investing firm is domestic or foreign should not really matter much, however.

#### 4. GOVERNMENT POLICY ON OUTWARD FDI

The Singapore Government's policy on FDI is closely related to its relentless efforts to secure the international competitiveness of the island state. A crucial part of this work is about structural change and industrial upgrading, which, in turn, is a necessary part of successful economic development. When the relative factor endowments of Singapore change, its industrial structure has to change as well. The Government has recognized this pressure towards change and has not tried to keep down, e.g., wages in order to preserve competitiveness in labor-intensive industries<sup>4</sup>. This implies that low-end industrial activities, in order to survive, have to move to locations with lower land and labor costs. Less developed neighboring countries with very different comparative advantages are then a solution. Less labor intensive functions—including general management—can be retained in Singapore. At the high end of manufacturing, technology transfer is important. Through FDI in advanced economies Singapore companies may facilitate acquiring of new technology.

The Government's policy towards outward FDI has been geared to facilitating and pioneering establishment of foreign affiliates at both ends of the spectrum. The government-linked companies (GLCs) were not seldom used as spearheads in the process, paving the way for other companies. This activity has probably been of significance as a support for private projects, although it has not always been an unambiguous success (Sitathan 2002). The immediate neighbors as well as other Asian countries (especially China and India) have been emphasized as main target countries. The role of the Government and governmental organizations in changing the mindset of Singaporeans towards venturing overseas has also been important (Sitathan 2002).

After the recession in the mid 1980s the Government began to pay explicit attention to outward FDI. In 1988 the International Direct Investment (IDI) programme was conceived. Incentives included an "overseas tax incentive", allowing firms to cut their losses through tax write-offs, tax exemptions for foreign income repatriated to Singapore as well as feasibility grants for appointing consultants to evaluate FDI opportunities (Okposin 1999: 89).

In 1993 a Committee to Promote Enterprise Overseas was set up. Its work resulted in several suggestions aimed at facilitating venturing overseas for Singapore firms. Obstacles were identified and the merits of various incentives were studied, as well as the possible catalytic role of the Government (Tan 1995).

According to Prime Minister Goh Chok Tong, the key principles for Singapore's regionalization strategy are the following (Tan 1995):

- 1) Investment should be spread out;
- 2) Investment should build upon strength in the traditional areas;
- 3) Investors should go into markets with a long-term view;

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<sup>4</sup> During times of recession the Government has often resorted to reducing indirect labour costs, however, as a stabilisation measure.



4) Singapore investment must benefit the host countries (e.g., in the form of training or technology transfer);

5) Singapore companies must be good corporate citizens.

More concretely, the regionalization effort of the Government included several different measures (Chia 1996, Tan 1995, Tan 1995/96: 11-18):

- Taking the lead in venturing overseas. Many activities were in infrastructural development, for instance setting up industrial parks in China, India, Riau and Vietnam;
- Forming business fora at the government (or regional or municipal) level;
- Facilitating for local SMEs (for example, the Economic Development Board (EDB) set up an International Business Development Strategic Business Unit (SBU); GLCs and statutory boards may form partnerships and consortia, selling expertise, identifying business opportunities, providing access to government officials, etc.);
- Collaboration with Western multinational companies (MNCs). (The latter become tenants in industrial parks, forming partnerships with Singapore companies, using Singapore as their regional headquarters);
- Providing financial assistance and incentives, e.g., the Local Enterprise Finance (LEF) (Overseas) scheme<sup>5</sup>. There are also a number of fiscal incentives, such as tax exemption for up to 10 years. Capital losses from the sale of shares can be deducted from the investor's other income, double deduction of certain expenditures (feasibility studies, establishment of overseas office etc.) is allowed. Tax exemption is granted for gains from investment of shares, dividends from foreign investment and interest from convertible loan stock
- Personal and family support related to, e.g., education of children and to reconciling problems of National Service and frequent overseas traveling.

## 5. EXPLAINING SINGAPORE'S FDI: EARLIER RESEARCH

Research results on Singapore's outward FDI are surprisingly scarce, considering the fact that these are quite substantial. The statistical survey reports provide an excellent data base and overview of the facts as they stand, but do not really attempt to explain what has been going on, apart from some basic observations. Thus the small size of the Singapore economy which makes firms dependent on expanding to foreign markets if they want to grow has been mentioned. In that context the promising prospects of especially neighboring Asian markets has also been stressed. Additionally, investment is seen as a way of overcoming labor scarcity and the threat of protectionism. The need to relocate to lower-cost production sites (in terms of labor, land and raw materials) in order to maintain a competitive edge is mentioned as well (Govt of Singapore 1991, 1995, 1997).

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<sup>5</sup> The scheme was actually set up before the Committee, in 1992, but was reviewed as part of its work.

As to more analytical approaches, Aggarwal (1985) Lee (1991, 1994), Pang and Komaran (1985) and Lim and Teoh (1986) dealt with various aspects of Singapore's outward FDI. Although useful, all these are rather dated by now, however. This is also the case for two MBA theses by Komaran (1986) and Ee (1991), respectively.

Somewhat newer contributions are Tan (1995) and Tan (1995/1996), who concentrate on the political economy and government strategy of FDI and Chia (1996) who deals with intra-ASEAN FDI and emphasizing, by and large, the same basic factors driving the outward FDI that were mentioned already. Also the unilateral liberalization that took place in ASEAN after the mid 1980s was mentioned as a facilitating factor for regional FDI. Chia (2000) touches on Singapore FDI only in passing while mentioning the same type of factors again, but also the economic and political security aspect. The common trait of these studies is that they do not offer much formal empirical testing of the explanations suggested. Tan (1995), however, reports the results of a survey from 1991, made at the Nanyang Technical University, which provides primary information on why Singapore firms choose to globalize. Unfortunately the results turned out not to be that informative, probably because of the design of the questionnaire<sup>6</sup>.

The most thorough recent analysis is Okposin (1999). His approach was to investigate individual firms with the aim of determining which "push" and "pull" factors influence their decision to invest abroad. Possible differences in that respect between domestic and foreign firms were also looked into. Unfortunately, the GLCs declined participating in the study. This is not without significance, since the GLC represent a big share (we do not know exactly how big) of domestic companies' FDI and may possibly have a broader strategy as to, e.g., "the national interest" than private firms (cf. Chia 2000, Okposin 1999: 93, Tan 1995/96: 32).

According to Okposin's results, the most prominent push factors were, in order of importance, labor shortage, high labor cost, high land and rental cost, the Government's industrial restructuring strategy and the limited domestic market. Government support was deemed the least important factor with a very low score. The leading pull factors, in turn, were: Availability of cheap labor, political stability, cheap land and raw material, large market and shared language, culture and religion<sup>7</sup>. It is interesting that factors like tax incentives and trade barriers and market protection—often regarded as crucial for FDI—were perceived as the least important factors. (Okposin 1999:125). When domestic and foreign firms are taken separately some differences can be noticed<sup>8</sup>, although the rank correlation between the importance of different factors for the two groups is fairly high.

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<sup>6</sup> According to the survey the reasons for globalising were: to expand operations, seek new opportunities, gain competitive advantage across frontiers, diversify, increase market share, support Singapore government policy, enjoy economies of scale, for survival purposes, to take advantage of tax incentives offered by the Singapore government, compensate for too much local competition (Tan 1995).

<sup>7</sup> The last factor suggests that the actors in both home and host country are likely to be ethnic Chinese.

<sup>8</sup> The biggest differences are found in the cases of "shared language etc." (more important for domestic companies) and "good infrastructure" (more important for foreign companies) (Okposin 1999:137-38). In both cases the differences are easy to understand.

## 6. DETERMINANTS OF SINGAPORE'S OUTWARD FDI: AN EMPIRICAL STUDY

The aim of this chapter is to determine factors at the macro level that can explain the FDI of Singapore to different host countries. (No attempt is made to explain the total volumes of FDI.) In spite of the fact that economists have been interested in foreign investment for several decades there is no universally accepted theory, however. Instead there are many different theories, dealing with different aspects of the investment problem. Most, but not all of them start out from the decision problem of a single firm. Should it produce at home and export its products, export its technology or go abroad itself? If it does decide to go abroad, what host country should it choose? As noted by Lizondo (1991), most of the theories have some empirical support but no single theory has been able to decisively refute its rivals. For surveys of the theories on FDI, see, e.g., Agarwal (1980), Blomström, Kokko and Zejan (2000), and Lizondo (1991).

The difficulties of empirically assessing the determinants of FDI are well known, beginning from the unsettled field of theoretical explanations. The investments are influenced by factors in both home and host economies as well as by economic-political measures and purely political issues. The starting point for the present analysis was Dunning's so-called eclectic theory (see, e.g. Dunning 1988). This is because it embraces, more or less explicitly, many of the hypotheses on FDI central in several other theories and also because Dunning's model during recent years has been used extensively to the point of obtaining a position as "standard procedure".

According to the eclectic approach FDI are explained by a combination of three types of factors: ownership, internalization and location advantages. The ownership advantages are firm-specific advantages, such as technology, brand name, managerial or marketing know-how, etc., determining a firm's competitive advantage over other companies. Internalization factors explain why a firm may be unwilling to license its technology. Such factors are, e.g., the risk of abuse by the licensee and the difficulties and cost for monitoring the license agreement. Location advantages, finally, makes it advantageous to use ownership and internalization advantages at a certain location, where they can be combined with local factors of production. Favorable factor prices, transport costs and the institutional and political environment are examples of such advantages. A FDI requires that all these three factors are present—otherwise it would be preferable either to produce at home and export the goods or to license the technology instead of venturing overseas.

The operationalisation of Dunning's model is far from easy, however. One problem is that the model focuses on a firm, not on the FDI of a whole economy. Worse, however, is that the theoretical concepts used in the model do not have obvious empirical counterparts. One has to make do with a set of rather crude proxies, which makes interpretation of the results uncertain. The "solution" of this problem here was to use a set of variables which have been used in several studies before, which at least gives some possibilities to compare the results with those of other authors. The choice of explanatory variables follows that of Dobson (1993) and Thompson and Poon (1998) to a great extent<sup>9</sup>.

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<sup>9</sup> Variables related to internalisation advantages are difficult to assign at the macro level and are not included here. Dobson (1993), studying Japanese FDI, used cumulative Japanese FDI to capture this aspect, arguing that earlier Japanese investments made it possible for new investors to take advantage of familiar suppliers etc.

The variables selected, and rationales for selecting them, were as follows:

FDI = Foreign Direct Investment (D3) (stock); this is the dependent variable.

MKT = Size of the host country market, measured by the gross domestic product of the host country. (Although this variable has no unambiguous justification in theory—except in a world with high trade barriers—is usually included, in one form or another, in empirical models of FDI, and is usually significant as well (Lizondo 1991). One tentative explanation is that an investor who wants to supply a whole region from a limited number of production units is likely to locate in the big countries first.) The coefficient should have a positive sign.

MKTG = Growth of the market, measured by the growth rate of the GDP over the preceding ten years. The rationale is that a rapid growth of a market suggests that the competition for buyers is less intense than in a stagnating market. The expected sign of the coefficient is positive.

MEXP/EXP = The ratio between manufactured exports<sup>10</sup> and total exports. This is the proxy chosen for market-related ownership advantage, following Dobson (1993) and Thompson and Poon (1998). The argument is that the more advanced a country's export structure is (the higher the MEXP/EXP ratio) the more technically advanced would the local competition be and the less scope for ownership advantage for the investor would there be. The sign of the coefficient should be negative.

MIMP/IMP = The ratio between manufactured imports and total imports. This is a proxy for import substitution, used originally by Urata (1991). The idea is that a low level of the measure indicates a protective trade regime which, in turn, should induce firms to invest and produce locally instead of exporting<sup>11</sup>. A negative coefficient should therefore be expected.

LABCOST = Labor cost per worker in manufacturing during five preceding years, or closest period available in the statistics). This variable is rather obvious, as low labor costs is routinely put forth as a reason for FDI. The sign should be negative.

FREE = an index of “economic freedom” was included, in order to capture the significance of strong institutional foundations<sup>12</sup>. The index goes from 1 to 5 with a lower value representing a higher degree of “freedom”. The figures provided by the Heritage Foundation (O’Driscoll, Holmes and O’Grady 2002) were used when available, otherwise transformed values from Gwartney et al. (1996) were used. (Chaining two indices should not matter much since the index basically provides a rank ordering.) The expected sign of the coefficient is negative.

A dummy, ASEAN, was introduced to capture possible effects of the ASEAN integration schemes (see, e.g., ASEAN Secretariat 1997).

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<sup>10</sup> “Manufactured” exports and imports refer to SITC groups 5–8.

<sup>11</sup> In the literature varying explanations for what should be expected from the sign has been expressed, often with unclear justifications, see Dobson (1993) and Thompson and Poon (1998).

<sup>12</sup> Factors included in the index are: Corruption, non-tariff trade barriers, fiscal burden of government, rule of law, regulatory burden, restrictions on banks, labour market regulations and black market activities (O’Driscoll, Holmes and O’Grady 2002: ch. 5).

Furthermore, two dummies were used as shift variables as data from several years were used in the estimations. Basically these are intended to (roughly) correct for the different overall level of FDI in different years, including differences due to changing coverage.

Table 2. Regression results

Independent variable	Run I	Run II
Constant	-4.471 (-0.623)	-2.868 (-0.531)
MKT	0.147 (0.762)	
MKTG	0.001 (0.003)	
MEXP/EXP	-0.144 (-0.255)	
MIMP/IMP	3.432 (2.670)**	3.113 (2.759)***
LABCOST	-0.472 (-1.938)*	-0.367 (-2.526)**
FREE	-0.999 (-1.409)	-0.876 (-1.520)
ASEAN	-0.023 (-0.038)	
D1	-1.273 (-2.094)*	-1.246 (-2.431)**
D2	0.351 (0.785)	0.365 (0.876)
R <sup>2</sup> (adj.)	0.31	0.377
F statistic	2.899**	5.591***

Note: t-values in parentheses. \*\*\*, \*\* and \* denote significance at 1, 5 and 10 percent, respectively.

In order to overcome the problem with a small number of observations, data from 1990, 1995 and 1999 were pooled<sup>13</sup>. It should be noted that Singapore's FDI are not reported separately for all countries but for a selection only, the "most important" host countries. The sample is therefore not random, which is another cause for caution when the results are interpreted. The model was estimated in a log linear form as some preliminary experiments suggested problems with heteroskedasticity for a simple linear model. The independent variables were checked for intercorrelation but no problems could be detected there.

The results of the regression runs are reported in Table 2. Run I denotes the results of the full model and Run II reports the results when obviously insignificant variables are left out.

Because of circumstances explained above, any conclusions from the estimations must be drawn with great caution and are very tentative. All in all, the explanatory value of the model is modest although not extremely poor considering the cross-section type of data that were used. However, a large part of the FDI could not be explained with this type of model which may, for example, contribute to a general perception that economic and political security reasons play a role in Singapore's investment strategies (as carried out by GLCs and statutory boards)<sup>14</sup>. It seems that the market size related variables are not of any significance in the case of Singapore, in opposite to what has been found in studies on many other countries. Ownership advantage, as measured here, does not play any role either. This could mean that the location advantages are the important ones for the Singapore investors. It may also be, however, that the crucial ownership advantage of Singapore firms is familiarity with Asian business culture(s) but such a variable would have been difficult to introduce here. It may be noted that the same variable behaved ambiguously also in Thompson and Poon (1998).

Protectionist trade policy, as measure by MIMP/IMP is highly significant, but the sign of the coefficient is positive, not negative, as expected. This means that import-substituting policies do not seem to attract Singapore investors who apparently choose to go mainly for countries with relatively liberal trade policies. A conclusion may be that the investors are aiming more at the world markets than at the protected local markets. The institutional conditions, captured in FREE, seem to have the expected influence but the coefficient is not significant at conventional levels<sup>15</sup>. Labor costs (LABCOST) appear with the expected sign (negative). Finally, membership of ASEAN as such does not appear to be an important determinant of Singapore's FDI, although a large part of the FDI actually goes to these countries. Comparing Run I with Run II shows that leaving out clearly insignificant variables does not change the general picture. In fact, the estimated coefficients remained roughly unchanged.

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<sup>13</sup> A rather long interval between the years selected was preferred in order to have enough variability in the independent variables.

<sup>14</sup> This does not necessarily mean that profitability concerns are less important than otherwise but that the strategic horizon may be longer than for a private company.

<sup>15</sup> The level of significance is 17 percent in Run I and 14 percent in Run II.

## 7. CONCLUSIONS

The outward FDI of Singapore have increased rapidly during the last few decades, a development that strongly contributes to a deeper integration of the country's economy with that of other countries in the region. A good deal of investment is targeting other parts of the world as well, especially Western Europe and the United States. Among the reasons for the increasing FDI have been mentioned the small domestic markets, the high cost of labor and land the opportunities that are emerging in neighboring countries. Moreover, it has been Government policy to promote building an "external wing" for Singapore. In terms of equity capital this "wing" now represents about 12 percent of the domestic economy of Singapore. In this paper an attempt at explaining the determinants of Singapore's FDI using a systematic econometric approach was also made. The results suggest that access to (more or less) protected markets does not seem to be important for Singapore investors. The labor costs seem to plays some role, however, as can be expected, but membership in ASEAN does not, as such, encourage Singapore FDI. Much of the variation in FDI to different countries remains unexplained, however. Although one may speculate about the role of national security strategy as a reason for this, we do not really know to what extent this may be the case. Finally, because of statistical reasons, as well as due to a somewhat shaky theoretical framework, the results should be interpreted with great caution and are, at best, tentative. More research is certainly needed before more solid arguments can be put forth.

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