

ECONOMICS WORKING PAPER

Determinants of Singapore's Outward FDI

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Abstract

Outward foreign direct investment (OFDI) has been an important element in Singapore's economic strategy since the 1990s, with the government providing direct and indirect support to support the internationalization process. Recent OFDI trends indicate that China has become an important destination for Singapore. In ASEAN, Singapore's main investment markets are Indonesia, Malaysia and Thailand. The Singapore's OFDI has important sectoral dimensions, supported by evidence from econometric analysis. It is also important to distinguish between OFDI stock and flows. Further research is needed to understand the erratic behavior of flows in the region.

Keywords: Outward FDI, FDI Policy, Singapore

1. Introduction

For a long time, inward foreign direct investment (IFDI) has more often been studied than outward foreign direct investment (OFDI) in Southeast Asia as most countries in the region are developing countries. IFDI can generate technology transfer and positive spillovers to domestic firms (Blomstrom and Kokko 1997; Alfaro et al. 2003) and promotes economic growth in developing countries (Balasubramanyam, Salisu and Sapsford 1996). Most Southeast Asian countries are still experiencing net inward FDI, with the exception of Singapore. From a comparative advantage perspective, Singapore is a small and open economy with factor endowments skewed towards human and physical capital. Thus, it is not surprising that the country has received and still receives the largest amounts of OFDI in the region. However, given the uniqueness of the Singaporean economy – a city state entrepôt and regional financial center – a question that arises is whether the country's experience is similar to that of other countries.¹ This question can be answered partially by an econometric analysis of the determinants of Singapore's OFDI.

A number of studies have been conducted on this issue, both qualitatively and quantitatively. None of these studies have, however, covered sectoral OFDI beyond the Global Financial Crisis (GFC). This paper seeks to examine the state and determinants of Singapore's OFDI using a dynamic panel data estimation for the period 1994-2012. This study compares the determinants of OFDI stock and flow. It also provides an analysis of total and sectoral OFDI to uncover sector-specific determinants.

The outline of the rest of the paper is as follows. Section 2 presents a discussion on the Singaporean government policy toward OFDI. Trends and patterns are discussed in Section 3. The general and country-specific literature on the determinants of OFDI is discussed in Section 4. This is followed by a presentation of the modeling strategy employed in Section 5. The empirical results are discussed in Section 6. Section 7 concludes.

2. Government Policy Towards OFDI

Singapore's policy of promoting OFDI is rooted in its post-independence economic history. The city-state's approach towards OFDI was nurtured under the auspices of a government that recovered from its first serious recession in 1985, determined to guard against the vicissitudes of the global economy.

Since its independence, Singapore's core economic strategy has been to remain adaptable to changing circumstances in order to keep abreast of global and regional competition. Its economic development is characterised by a constant struggle against a lack of natural resources and the limitations associated with its small land size and population. In the 1960s and the early 1970s, the city-state focused on the manufacture of labour-intensive products such as food, paper, simple electronics, textiles, and wood. By the 1970s, international competition, protectionism, unpredictable energy costs, and labour scarcity threatened Singapore's labour-intensive industries and prompted an adjustment of its economic strategy. The economy began to concentrate on higher value-added industries from the mid-1970s – such as chemicals, precision engineering equipment, and shipbuilding – but these still utilized large numbers of unskilled workers.

It was only from 1979 – under a plan known as Singapore's "Second Industrial Revolution" – that Singapore moved from labour-intensive manufacturing towards more capital-intensive manufacturing, in order to increase the productivity of its limited labour resources (Chia 2005). It planned to achieve this by raising wages, improving the education sector, investing in physical infrastructure, and providing fiscal incentives for companies to shift towards high value-added production. Despite experiencing considerable economic gains in the early 1980s, Singapore faced an extreme recession in 1985 – its first experience of negative economic growth since independence – caused by a global economic slowdown, intensifying international competition, and high local operating costs without corresponding productivity increases. Additionally, the recession was exacerbated by the high-wage policy of the "Second Industrial Revolution".

This setback forced Singapore to rethink its economic strategy; a committee was formed in April 1985 to assess the state of Singapore's economy and identify new growth areas. In February 1986,

the committee published a report – the proposals of which were later officially adopted – that recommended the economy move beyond manufacturing to become an exporter of services, especially business and financial services (Ministry of Trade and Industry Singapore 1986, pp. 12-13). More importantly, the report endorsed the export of capital in order to exploit opportunities beyond Singapore’s shores (Ministry of Trade and Industry Singapore 1986, p. 17). This involved the reduction of taxes on the remittance of foreign income to encourage profit remittance back to Singapore, and thus stimulate offshore investment (Ministry of Trade and Industry Singapore 1986, p. 94). Therefore, the idea of engaging in OFDI was introduced in and gradually gained state support from as early as the mid-1980s.

It was in the early 1990s, after decades of struggling against its land and labour constraints, that the importance of reaping the benefits of OFDI – by investing in land-, labour-, and technology-abundant countries – became urgent. On 8 January 1993, then-Senior Minister Lee Kuan Yew gave the first major policy speech on the need for Singapore to develop its external wing by investing in foreign high growth markets as had its competitors – Hong Kong, Korea, and Taiwan (Lee 1994, pp. 1-2). Soon after, in the same year, Singapore accelerated the drive to promote OFDI with the formation of a special Committee to Promote Enterprise Overseas. It provided suggestions on how to stimulate overseas enterprise by examining the role of the state in facilitating such activities – through tax incentives and partnerships (Tan 1995, p.22). Heeding the Committee’s proposals, the Minister for Finance introduced a variety of tax credit, deduction, and exemption schemes in the 1993 Budget (Tan 1995, p. 24). In a rather far-sighted measure, the Committee’s final 1993 report also focused on how the state could provide personal and family support for Singaporeans venturing overseas and develop an entrepreneurial spirit amongst Singaporeans (Ministry of Finance Singapore 1993).

The state-led promotion of OFDI also included roles for government agencies such as the Economic Development Board (EDB) and the Trade Development Board (TDB). The Committee’s final 1993 report recommended that EDB focus on both inward and outward investments, which remains one of its core functions to date. On the other hand, TDB was to focus on facilitating trade and exports (Ministry of Finance Singapore 1993). However, with the shift away from manufacturing exports, TDB was restructured in 2002 into International Enterprise

Singapore (IE Singapore), which focuses on the internationalisation of Singapore companies (IE Singapore 2015). Both organisations remain key agencies that spearhead the state's OFDI initiatives.

Despite the shock of the Asian Financial Crisis (AFC) – which severely affected Singapore companies with regional operations – the government remained committed to strengthening its external wing. A 1998 report by the Committee on Singapore's Competitiveness concluded that: “Developing an external wing is a key strategy to hone Singapore's competitiveness and strengthen our economic resilience” (Ministry of Trade and Industry Singapore 1998, p. 64). However, the crisis demonstrated the importance of diversifying Singapore's OFDI portfolio geographically to spread risks and avoid similar region-centric mishaps. The 1998 report recommended companies to tap on opportunities in the Asia-Pacific and beyond – to emerging economies such as China, India, Latin America, and Eastern Europe – in order to “achieve efficiency in resource allocation and diversify risks from economic shocks in any one region” (Ministry of Trade and Industry Singapore 1998, pp. 63-64).

Presently, Singapore has continued to develop its external economy, as it restructures its economy towards service-led and higher-value added activities. Recently, under the Singapore Budget for 2015, the Government announced three tax-incentive schemes – worth an estimated S\$240 million – to help Singapore companies internationalise. These are schemes to raise grant levels for SMEs, co-share risks and initial costs, and a new tax incentive to support the internationalisation of larger Singapore companies (Ministry of Finance Singapore 2015, pp. 43-44).

Overall, the government's policies on OFDI have brought about significant increase in the country's OFDI. This is discussed in the next section.

3. Singapore's OFDI Trends and Patterns

Trends

The stock of Singapore's investment abroad has increased consistently over the years (Figure 1).² Of the various types of investment abroad, OFDI, measured as direct investment stock, remains the most important type of investment (Figure 2). Whilst direct investment stock shows an overall and consistent increase over time, the annual direct invest flow – in absolute terms (Figure 3) as well as a percentage of GDP (Figure 4) - has been rather erratic.

In terms of destination country, China has emerged as the single most important country (Figure 5). China (including Hong Kong) accounts for about 28.0 per cent of Singapore's outward investments in 2012. Singaporean OFDI in China grew rapidly after diplomatic relations between China and Singapore were established in 1990 (Chia 2011). Other important destinations are United Kingdom (9.3 per cent) and Australia (8.3 per cent).

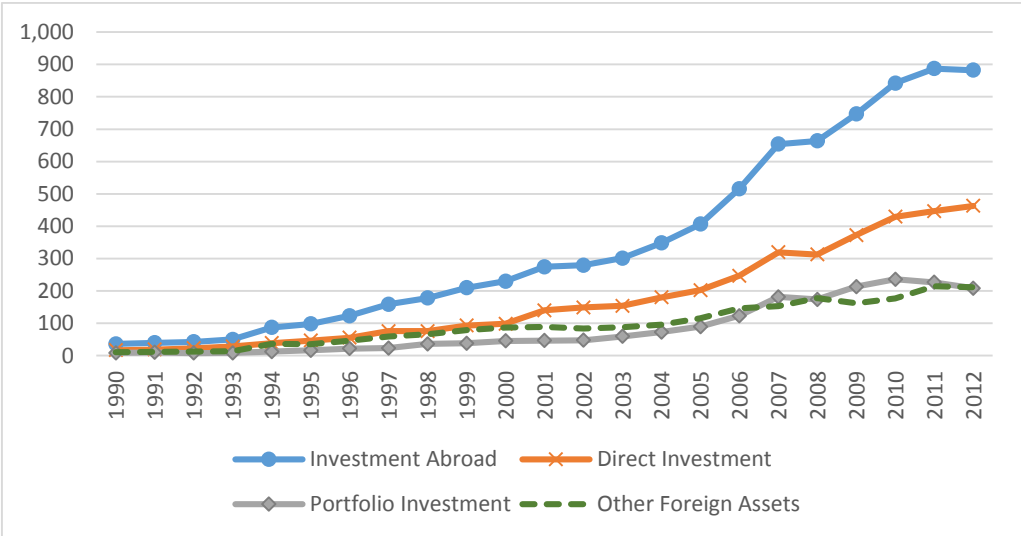
ASEAN countries account for 22 per cent of Singapore's OFDI in 2012. The top three investment destinations are Indonesia (8.1 per cent in 2012), Malaysia (7.0 per cent) and Thailand (4.0 per cent). They account for 87.4 per cent of Singapore's investments into ASEAN countries. Thus, it can be argued that ASEAN economic integration has not had much effect on Singapore's OFDI, as the stock has remained relatively low in countries other than the three aforementioned (Table 1). The percentage share has even declined for countries such as Malaysia and Thailand, especially after the GFC. The only exception is Indonesia, which saw a resurgence in Singaporean OFDI since 2007. Incidentally, Indonesia was also the least affected by the GFC among countries in ASEAN.

Aside from an overall trends analysis, it might also be interesting to examine the sectors Singapore invests in. As discussed in Appendix 1, there are two ways in which Singapore's OFDI has been classified. In terms of investors' activity, much of the OFDI comes from investors in the financial and insurance services (Table 2). This sector continues to be important when OFDI is classified in terms of the activity abroad (in host country). The financial and insurance services sector

accounted for 44.9 per cent of total OFDI in 2012. The second most important sector is manufacturing, which accounted for 21.4 per cent.

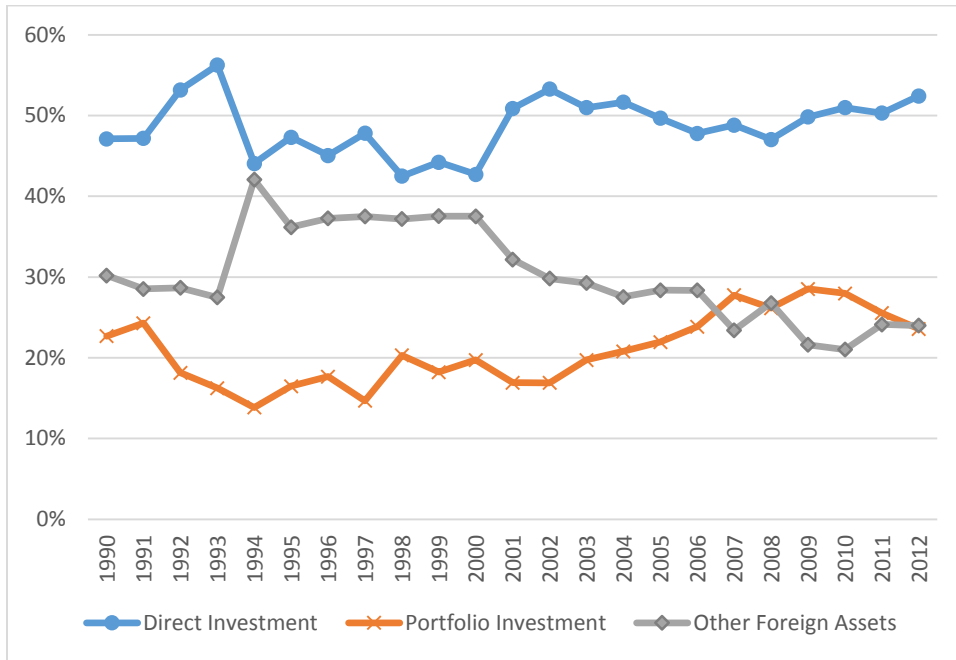
It is also useful to examine whether the sectoral composition of Singapore’s OFDI varies from country to country. An analysis of the key destination countries reveals that there are generally two groups of country destination (Table 3). The first are destination countries where primary investments are in financial and insurance services. Such destination countries include United Kingdom and Hong Kong. The second group are countries in which OFDI are more diversified with significant contributions to the manufacturing sector. This includes country destinations such as China, Indonesia, Malaysia and Thailand.

Figure 1: Singapore's Investment Abroad (SGD billion)



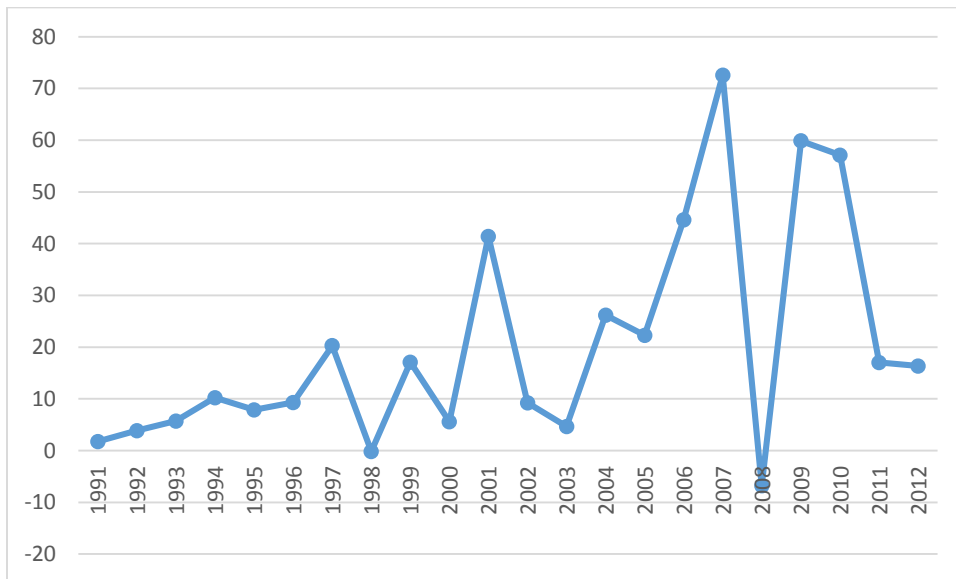
Source: Singapore Department of Statistics

Figure 2: Composition of Singapore's Investment Abroad



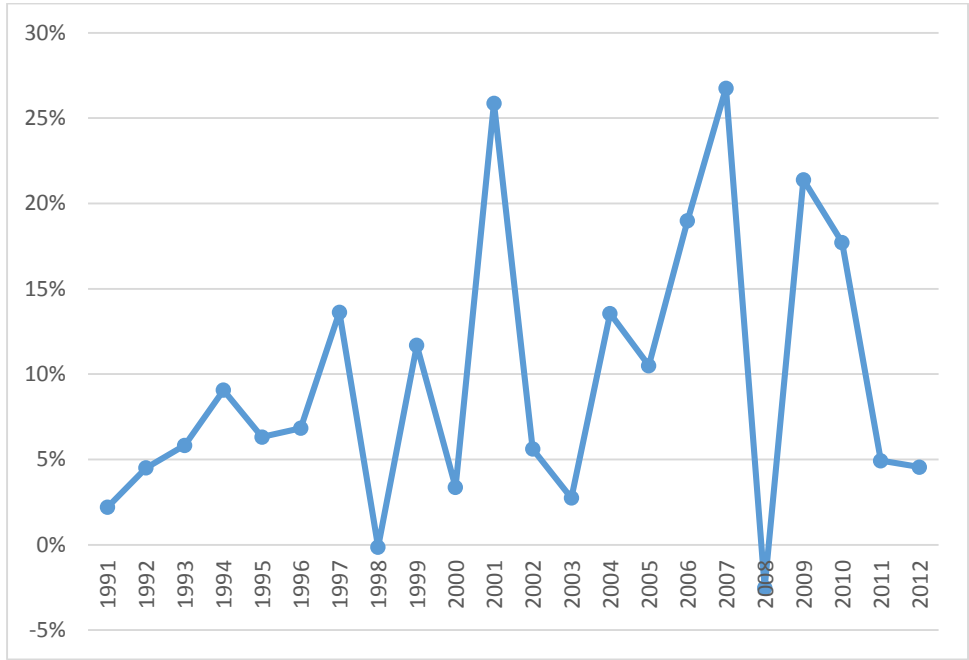
Source: Singapore Department of Statistics

Figure 3: Singapore's OFDI Flow (SGD billion)



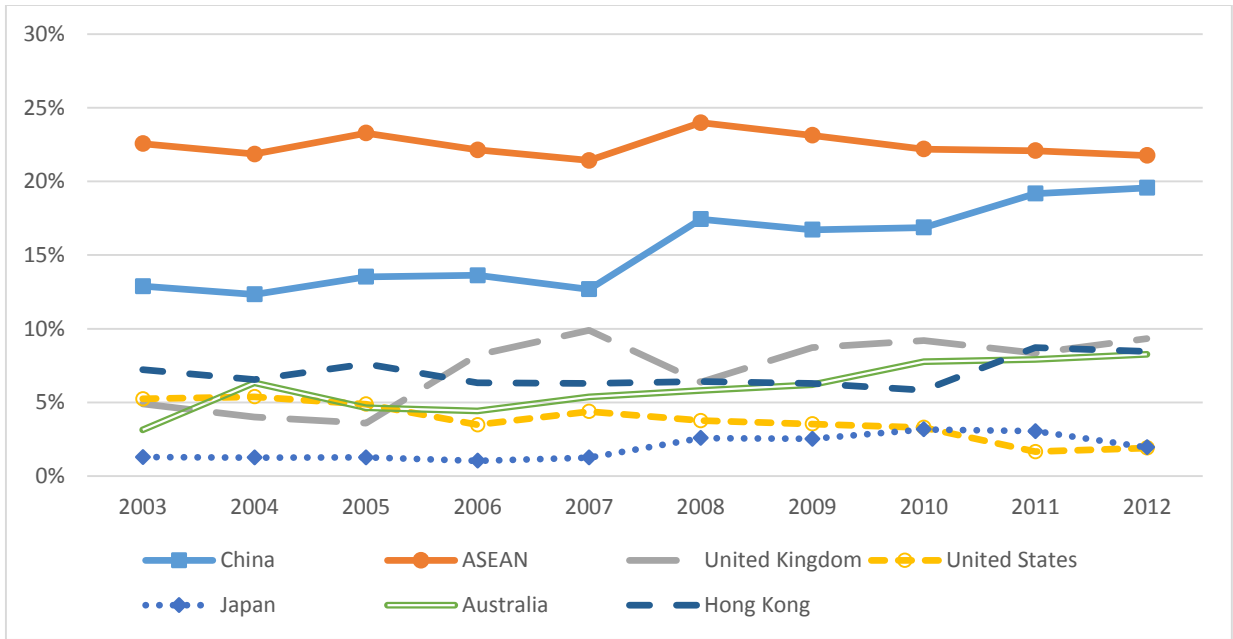
Source: Singapore Department of Statistics

Figure 4: OFDI Flow as a Percentage of GDP



Source: Singapore Department of Statistics

Figure 5: Main OFDI Stock Country Destinations (percentage share)



Source: Singapore Department of Statistics

Table 1: ASEAN Country Share of Singaporean OFDI Stock, 1997-2012

(percentage share)

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Brunei Darussalam	0.10	0.08	0.09	0.10	0.04	0.10	0.04	0.04	0.03	0.05	0.06	0.05	0.05	0.04	0.03	0.03
Cambodia		0.16	0.16	0.11	0.16	0.17	0.15	0.07	0.06	0.06	0.05	0.09	0.07	0.06	0.05	0.05
Indonesia	8.60	5.93	5.94	5.56	5.44	5.17	6.70	6.65	7.26	6.79	6.33	7.15	7.57	7.30	7.81	8.05
Laos		0.02	0.00	0.01	0.00	0.03	0.04	0.05	0.05	0.05	0.05	0.07	0.06	0.05	0.05	0.04
Malaysia	11.75	11.39	9.19	9.92	8.09	8.95	8.83	8.18	8.31	7.44	7.14	7.81	7.12	6.91	6.89	6.99
Myanmar		0.84	0.87	1.05	0.75	0.71	0.74	0.39	0.73	0.40	0.50	0.40	0.59	1.32	0.97	0.81
Philippines	1.42	1.72	2.47	2.60	1.96	1.92	2.05	1.63	1.61	1.36	1.29	1.37	1.34	1.22	1.20	1.07
Thailand	1.66	2.63	3.56	3.56	3.23	2.76	3.06	4.01	4.38	5.32	5.33	6.15	5.49	4.65	4.40	3.99
Vietnam	1.10	1.39	1.24	1.09	0.76	0.93	0.95	0.85	0.85	0.68	0.67	0.91	0.84	0.64	0.68	0.73

Source: Singapore Department of Statistics; Note: (s) – negligible

Table 2: Singapore's OFDI by Sector, 2012

(percentage share)

	Activity of Investor	Activity Abroad
Manufacturing	3.8	21.4
Construction	0.4	0.3
Wholesale & Retail Trade	7.9	8.0
Accommodation & Food	0.4	1.0
Transport & Storage	1.6	2.7
Information & Communications	(s)	4.4
Financial & Insurance Services	77.5	44.9
Real Estate Activities	2.0	8.5
Professional, Scientific & Technical, Administrative & Support Services	2.6	1.8
Others	(s)	7.1
	96.1	100.0

Source: Singapore Department of Statistics; Note: (s) – negligible

Table 3: Sectoral Composition of Singapore's OFDI for Main Destination Countries, 2012

(percentage share of total OFDI stock to each country)

	China	UK	Hong Kong	Australia	Indonesia	Malaysia	Thailand	Total
Manufacturing	48.5	-0.3	1.9	2.5	28.7	32.4	30.7	21.4
Construction	0.3	0.0	0.1	0.0	0.0	0.3	0.4	0.3
Wholesale & Retail Trade	12.3	0.6	20.5	10.1	4.0	8.6	11.4	8.0
Accommodation & Food	0.4	0.0	0.0	0.0	0.7	1.6	2.9	1.0
Transport & Storage	2.0	0.4	2.3	2.1	1.9	1.0	2.0	2.7
Information & Communications	0.3	0.4	2.1	21.9	0.0	0.5	3.7	4.4
Financial & Insurance Services	8.7	67.6	67.0	40.3	29.9	49.2	45.8	44.9
Real Estate Activities	22.3	0.1	0.0	5.0	6.1	2.5	1.3	8.5
Professional, Scientific & Technical, Administrative & Support Services	2.2	0.3	0.6	0.5	0.9	1.4	0.3	1.8
Others	2.9	0.0	0.0	16.2	18.8	2.5	1.6	7.1

Source: Singapore Department of Statistics

4. Factors Affecting Singaporean OFDI

4.1 The Theoretical and Empirical Literature on IFDI and OFDI

The theories on outward foreign direct investment are, in a sense, the same as the theories of IFDI. Instead of examining the determinants of IFDI from a host country perspective, the theories of OFDI take the perspective of the home country. The theories of IFDI are very diverse in levels of analysis (macro, industry or firm) and sources (economics and international business studies).³ The neoclassical trade theory focuses on the differences in relative factor endowment and how this drives FDI as capital move from economies with low returns on capital to those with high returns to capital (Faeth 2009). A number of macro factors could affect IFDI flow such as taxes, exchange rate and interest rate. Other aggregate level variables that could be important are GDP, GDP per capita, GDP growth, trade barriers, transport cost and physical proximity. These variables are regarded as being related to market sizes. The theoretical justification for the inclusion of such variables in IFDI models could be through the gravity model (Kleinert and Toubal 2010).

Theories of IFDI from international business studies tend to be more micro-oriented. These include the influential works of John Dunning (1973) who proposed an eclectic theory of IFDI based on three groups of factors, namely, ownership advantages, location advantages and internalisation advantages. Ownership advantages take the form of multinational enterprises' (MNEs) propriety assets (that confer competitive advantages in host countries) whilst location advantages are factors that makes it more profitable to produce a good in host country than export it from the home country. Internalisation advantages are factors that make firms prefer internalising production rather than outsourcing it.

The theoretical literature also often makes the distinction between horizontal and vertical FDI. The former refers to FDI that substitutes exports from the home country with FDI to produce for the host country market. Vertical FDI refers to fragmentation of the production chain to take advantage of the differences in cost of production across the supply chain in different countries. Thus, the market size of host country is important for horizontal but not vertical FDI.

In general, the empirical evidence that has emerged provides evidence for the role of the following macro factors as determinants of IFDI - country size, transport cost, tax rates, openness to trade, and exchange rate appreciation. At the micro-level, scale economies, firm size, R&D intensity, capital intensity, labour skills and experience have been found to be important factors determining IFDI (Faeth 2009). Finally, there is also evidence that government policies affect many of the factors that affect both IFDI and OFDI. Of those macro variables that are measurable, tax rates and investment incentives have been identified as having a significant effect on FDI. There is another set of government policies that is less studied – home-country policies to encourage OFDI. This is examined further in the next subsection.

4.2 Literature on Singapore's OFDI

A few studies on Singapore's OFDI have been published since the late 1990s. One of the earliest studies on Singapore's OFDI is the study by Low, Ramstetter and Yeung (1998); they examined such investments by country of the capital source during the period 1981-1991. This is particularly important for an *entrepôt* economy such as Singapore in which a large proportion of the country's OFDI may come from MNEs rather than locally-owned firms. The study also found that MNEs share of OFDI was 26 per cent in 1985 but grew rapidly in the late 1980s to 51 per cent in 1991. It was further noted that government-linked corporations (GLCs) dominate OFDI by locally controlled firms in Singapore. However, no statistics were available on the extent of GLC involvement in OFDI.

Another early study is that of Yeung (1999) who examined Singapore's OFDI from a "regulationist perspective".⁴ In the study, Singapore's OFDI or "regionalisation strategy" is seen as a solution to economic crises caused by foreign-capital-driven and export-oriented industrialization. With regards to OFDI, the government's "Regionalization 2000" strategy or "Second Wing" was launched in 1993 to enhance the business and scale economies of firms based in Singapore. This strategy was a formalisation and intensification of an on-going process in which GLCs partnered with private sector firms to invest abroad (Yeung 1999; Pereira 2005). These GLCs include Temasek Holdings, Singapore Airlines and Singapore Technologies Pte Ltd. Leung also identified three forms of regionalisation, namely, (i) private-sector-led regionalisation, (ii) partnership

between private firms and GLCs to undertake regional investment projects; and (iii) state or private firms' investment in development of industrial sites. These strategies also reduce the cost and risks of Singaporean firm venturing abroad.

By early 2000s, with larger datasets becoming available, scholars began undertaking econometric analyses of Singapore OFDI. The earliest example of this is the paper by Blomqvist (2002), a study which covered the years 1990, 1995 and 1999 (pooled data). The empirical part of the paper attempts to estimate the determinants of OFDI stock. The explanatory variables used in the study include GDP of host country, ten-year growth rate of host country, ratio between manufactured exports to total exports, ratio between manufactured imports and total imports (proxy for import substitution), labour cost per worker in host country, economic freedom index and a dummy variable for ASEAN host countries. The only explanatory variables that are statistically significant are manufactured imports and total imports ratio (+) and labour cost (-).

An OFDI gravity model is used by Ellingsen, Likumahua and Nunnenkamp (2006) to investigate the determinants of OFDI as well as the relationship between OFDI stock and trade. The authors used data covering the period 1990-2003. In their estimation of the determinants of FDI stock, the statistically significant variables include population (+), distance (-), lagged FDI (+), proportion of population of Chinese origin (+) and ASEAN dummy variable (-). When regressing trade (imports and exports) against lagged OFDI stock, the authors found a positive relationship between trade and OFDI – suggesting that a complementary relationship exists between OFDI and trade. With the availability of longer datasets, more recent studies have utilised the time series properties of Singaporean OFDI. Kueh, Chin and Liew (2010) undertake an econometric analysis of the macro determinants of Singapore's aggregate OFDI using data from UNCTAD's World Investment Report covering the period 1975-2007. Explanatory variables that are statistically significant in the long-run include: national income (+); trade openness (+); interest rate (+); and exchange rate (-/appreciation).

The study by Lee (2010) uses the bounds testing approach (based on ARDL framework) to examine the reverse causality between OFDI and economic growth. The OFDI data takes the form of annual net outflows of FDI as a percentage of GDP for the period 1972-2006. The OFDI data

is obtained from World Development Indicators Online. Using the Granger causality test, the author finds that increased OFDI leads to higher GDP per capita for Singapore. However, higher GDP per capita could result in a decline in OFDI.

5. Modelling the Determinants of OFDI

The existing literature on OFDI, both general and specific to Singapore, suggests that data availability constrains empirical work. OFDI data for Singapore is only available at the aggregated level. Bilateral OFDI stock and flow data is used for this study.

The basic model for the determinants of bilateral OFDI between country i (Singapore) and country j can be estimated using the following specification:

$$OFDI_{ij,t} = \beta_0 + \beta_1 OFDI_{ij,t-1} + \beta_2 FTA_{ij,t} + \beta_3 X_{ij,t} + \varepsilon_{ij,t}$$

where FTA represents the existence of a free trade agreement (between Singapore and destination country), X is the vector of factors that can affect OFDI and ε is the random error term. The OFDI data is from the Department of Statistics, Singapore. The variables in X include the GDP of Singapore and the GDP of OFDI destination countries, GDP per capita of Singapore and destination countries, bilateral exchange rate (host currency per Singapore dollar) and destination country corporate tax rate. All data for these variables are obtained from the World Bank with the exception of tax rate and FTA. The tax rate is average corporate tax rate in destination countries and is obtained from KPMG's Corporate and Indirect Tax Rate Surveys. The bilateral exchange rate variable is obtained from the World Bank database and is constructed by taking the ratio of annual average (based on monthly averages) of the Singapore Dollar relative to the US Dollar.⁵ The FTA variable is a dummy variable constructed from the existence of FTA between Singapore and the OFDI destination countries. This is summarized in Appendix 2.

This study uses the Arellano-Bond dynamic panel-data method to estimate the above relationship. In terms of expected signs, current OFDI is likely to be positively correlated with lagged OFDI. If FTA has an effect on OFDI, the coefficient is likely to be positive. The gravity-type models suggest that GDP and GDP per capita are likely to be positively related to OFDI. The results from the existing literature on the complementarity between trade and OFDI also suggest a positive

relationship between the trade ratio and OFDI. The coefficient for the real exchange rate is likely to be negative indicating that higher levels of OFDI are associated with an appreciation in the Singaporean Dollar. Some of the factors determining OFDI are likely to be different for different sectors such as finance and manufacturing. Thus, aside from estimating the determinants for total OFDI, separate estimations are undertaken for key sectors such as finance and manufacturing.

Finally, unlike previous studies, both stock and flow data are used in this study. As the stock data is likely to have more persistence due to its cumulative nature, the results from flow and stock OFDI may be different.

6. Empirical Results

The empirical results are presented below by two categories: OFDI stock; and OFDI flows.

6.1 OFDI Stock

The results OFDI stock is summarized in Table 4. As expected, lagged OFDI is statistically significant for all four estimations. The GDP variable is only significant with a positive sign for total OFDI and retail OFDI. The latter is consistent with the idea that retail OFDI is attracted to host country market size. Interestingly, the GDP per capita variable is negative and significant – indicating that OFDI could be attracted to host country with low average income – perhaps indicating lower cost of production in these countries. The corporate tax rate is only significant for manufacturing and retail OFDI. The negative sign for this variable suggests that higher corporate tax rate in host country discourages Singapore’s OFDI to these countries. FTA is also found to have positive effect on OFDI especially for the retail sector.

6.2 OFDI Flows

Estimation of the determinants of OFDI flow reveal that the results are slightly different from those of OFDI stock (Table 5). The lagged OFDI variable has a negative sign indicating that a deceleration of OFDI flows with higher levels of OFDI flows. Interestingly, finance OFDI flows have a negative relationship with GDP and a positive relationship with GDP per capita. This suggests that higher OFDI flows towards countries with lower GDP (smaller economies) but with

higher income – a form of market-seeking activity. FTA has a negative sign for manufacturing but positive for retail. This is puzzling and needs further research.

Table 4: Determinants of OFDI Stock - Arellano-Bond Dynamic Panel-Data Estimation

VARIABLES	(1) OFDI Total	(2) OFDI Manuf	(3) OFDI Finance	(4) OFDI Retail
OFDI Total L1	0.583*** (0.0609)			
OFDI Manuf L1		0.588*** (0.0684)		
OFDI Finance L1			0.545*** (0.0631)	
OFDI Retail L1				0.413*** (0.0665)
GDP	2.503** (1.173)	1.698 (1.314)	1.003 (1.626)	6.675*** (1.318)
GDP PC	-2.289* (1.322)	-1.520 (1.582)	-0.0865 (1.931)	-6.274*** (1.528)
Exch Rate	6.45e-06 (4.50e-05)	2.39e-05 (5.16e-05)	1.19e-05 (6.98e-05)	-3.22e-06 (5.35e-05)
Tax	-0.00943 (0.00737)	-0.0232** (0.0103)	0.00382 (0.0115)	-0.0197** (0.00858)
FTA	0.212** (0.0985)	0.0496 (0.130)	-0.0236 (0.148)	0.295** (0.129)
Constant	-43.39** (20.06)	-28.88 (21.97)	-22.97 (27.42)	-120.6*** (22.37)
Observations	132	106	114	119
Number of id	16	14	15	15

Note: *, ** and *** indicate significance at 10 per cent, 5 per cent and 1 per cent level, respectively. Standard errors are in parentheses.

Table 5: Determinants of OFDI Flow - Arellano-Bond Dynamic Panel-Data Estimation

VARIABLES	(1) OFDI Total	(2) OFDI Manuf	(3) OFDI Finance	(4) OFDI Retail
OFDI Total L1	-0.295*** (0.112)			
OFDI Manuf L1		-0.0741 (0.163)		
OFDI Finance L1			-0.289* (0.149)	
OFDI Retail L1				-0.150 (0.149)
GDP	-7.116 (5.324)	3.162 (10.15)	-30.14*** (9.847)	6.323 (7.353)
GDP PC	5.998 (6.393)	-0.223 (11.60)	30.83*** (11.84)	-13.04 (9.772)
Exch Rate	0.000175 (0.000408)	-0.000810 (0.000555)	-0.000113 (0.000296)	0.00124* (0.000642)
Tax	-0.00374 (0.0538)	0.0538 (0.0974)	0.0737 (0.0823)	-0.0428 (0.0865)
FTA	0.518 (0.554)	-1.638** (0.825)	0 (0)	2.927*** (1.122)
Constant	142.3 (88.82)	-79.19 (181.0)	549.4*** (167.8)	-53.11 (117.4)
Observations	65	41	42	47
Number of id	13	10	12	13

Note: *, ** and *** indicate significance at 10 per cent, 5 per cent and 1 per cent level, respectively. Standard errors are in parentheses.

7. Conclusion

Singapore's outward FDI policies since the mid-1980s have been fairly reactive in nature. The initiatives undertaken to support OFDI were primarily responses to external stimuli rather than pre-emptive measures. Singapore's foray into outward foreign investment — concentrated in neighbouring Asian countries — was precipitated by the 1985 recession and exacerbated by the country's factor endowments. Similarly, the shift towards OFDI opportunities beyond the Asia-Pacific region only transpired after the AFC in 1998 compelled Singapore to reconsider its concentration on Asia-based assets and diversify its investments. The Singaporean government has provided direct and indirect support for the country's OFDI. Singaporean GLCs have played a major role in the OFDI strategy of the country.

Singapore's OFDI has increased substantially over time in tandem with the rise in the country's GDP per capita. In recent years, China has become increasingly important as an investment destination for Singapore. Among ASEAN countries, the three most important country destinations are Indonesia, Malaysia and Thailand. Singapore's investments also have important sectoral dimensions that differ across countries. On the one hand, OFDI in financial and insurance services are mostly concentrated in more developed economies such as United Kingdom and Hong Kong. On the other hand, OFDI in manufacturing is directed mostly towards less developed economies such as China, Indonesia, Malaysia and Thailand. This is also reflected in the econometric analysis of the determinants of OFDI in terms of the significance of explanatory variables in the different sectors. Furthermore, it appears to be important to distinguish between OFDI stock and flow. Further research is needed to understand the erratic behavior of OFDI flows in the region.

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Appendixes

Appendix 1: Singapore's OFDI Data – Sources and Definitions

Data Source

Singapore Department of Statistics (SDOS) has been publishing data on Singapore's investment abroad since 1976. The data is based on an annual survey of both local and foreign-owned enterprises that are incorporated in Singapore.

Definitions

The SDOS adopts a financial approach to measuring FDI. In this approach, FDI is measured in terms of equity and ownership-related financial transactions rather than capital expenditure on fixed assets. This also means that only actual investments are measured rather than committed investments.

Singapore's OFDI is measured in terms of direct investment abroad which has been defined as “an investment in which a Singapore direct investor owns 10 per cent or more of the ordinary shares or voting power in an overseas direct investment enterprise”.⁶

Direct investment abroad comprises two components, namely:

- Direct equity investment abroad
- Net lending between the Singapore direct investor and overseas enterprise

Data on OFDI is available by sectors. Two sectoral classifications are provided, namely, in terms of the activity of investor (in Singapore) and activity abroad (in host country).

Published Data

Aggregate data on Singapore investment abroad is available for three major categories, namely, (i) direct investment, (ii) portfolio investment, and (iii) other foreign assets.

The OFDI data for country destinations are available for direct investment abroad and direct equity investment. Data on OFDI by country destination and sectoral/industrial classification are also available for direct investment abroad. However, the sectoral/industrial classification applies to the type of activities investors in Singapore are involved in (host country industry definition). This classification is available for ten industries are offered.

Appendix 2: List of Singapore's FTAs

ASEAN Free Trade Area (AFTA)

ASEAN-Australia-New Zealand FTA (AANZFTA)

ASEAN-China (ACFTA)

ASEAN-India (AIFTA)

ASEAN-Japan (AJCEP)

ASEAN-Korea (AKFTA)

Australia (SAFTA)

China (CSFTA)

Costa Rica (SCRFTA)

GCC (GSFTA)

Hashemite Kingdom of Jordan (SJFTA)

India (CECA)

Japan (JSEPA)

Korea (KSFTA)

New Zealand (ANZSCEP)

Panama (PSFTA)

Peru (PeSFTA)

Switzerland, Liechtenstein, Norway and Iceland (ESFTA)

Trans-Pacific SEP (Brunei, New Zealand, Chile, Singapore)

United States (USSFTA)

¹ For example, is the country's experience similar to that of Japan, South Korea and Taiwan? A survey of the literature on these countries and other NIEs is provided by Hill and Jongwanich (2014).

² The data sources and definitions for Singapore's OFDI are explained in Appendix 1.

³ See Faeth (2009), Kleinert and Toubal (2010), and Hill and Jongwanich (2014) for discussions of the theoretical literature.

⁴ The regulationist perspective, which is influenced by Marxist economics, seeks to examine capitalism from a variety of angles such as capital-labour nexus, intercapitalist competition, monetary-credit relationships, globalisation of capital and state intervention.

⁵ An increase in the value of the bilateral exchange variable (between Singapore and a given trading partner) indicates a depreciation of the Singapore Dollar against the currency of the trading partner (i.e. more Singapore Dollar is needed to purchase a unit of the trading partner's currency).

⁶ This definition is broadly consistent with how economists define FDI as "investments in which a firm acquires a majority or at very least a controlling interest in a foreign firm" (Markusen 2008).