Macroeconomic Determinants of Direct Investment Abroad of Singapore

Jerome Swee-Hui Kueh[1], Chin-Hong Puah[2], Venus Khim-Sen Liew[3]

Universiti Malaysia Sarawak
94300 Kota Samarahan, Sarawak, Malaysia
E-mail. kshjerome@feb.unimas.my, chpuah@feb.unimas.my, ksliew@feb.unimas.my

The objective of this study is to discover the determinants of Direct Investment Abroad (DIA) of Singapore. It also measures the impacts of various determinants on DIA of Singapore. Based on theoretical justification, several potential determinants including aggregate income, interest rate, trade openness and exchange rate are considered in this study. Results obtained reveal that higher aggregate income will contribute to the expansion of abroad investment of Singaporean firms. Meanwhile, the increase (decrease) of DIA of Singapore is significantly related to the appreciation (depreciation) of the Singapore dollar per US dollar exchange rate in the long run. This finding is in tandem with the literature that suggests that appreciation of home currency tends to increase the volume of abroad investment activities. Meanwhile, the current study finds the existence of inverse relationship between interest rate and DIA of Singapore in the long run. This finding is consistent with the argument that lower interest rate reflects the abundance of capital in Singapore and subsequently lowers the opportunity cost in seeking capital for DIA. In other words, these firms have competitive advantage in financing foreign investment due to lower cost of borrowing in home country. Nevertheless, trade openness of Singapore exhibits inverse linkage towards DIA of Singapore in the long run. This may by due to the substitution effect of the trade activities against DIA of Singapore, as explained in the text. It is also discovered that exchange rate and aggregate income have larger influence on DIA of Singapore, compared to other determinants. It is argued that the association of the ownership, location and internationalization advantages gained by Singapore contributed to the economic development path of the country.

Keywords: *direct investment abroad; economic growth; trade openness; VECM; Singapore.*

Introduction

Direct investment abroad (DIA) or outward foreign direct investment (OFDI) has become an essential component of economic growth particularly for developing countries in the past few decades. DIA benefits the home country through gain of higher profits due to cost savings, comparative advantage, economies of scale and product differentiation in production. Furthermore, if foreign production is using inputs from home country, it will enhance the output level at home country. In addition, investing abroad may improve competitiveness of the home country as it enables technological knowledge transfer from foreign to home. All these benefits will in turn create positive spillover effects at home, by improving employment, infrastructure, and efficiency of resource allocation (Williams, 2009). Traditionally, developed countries played a major role in DIA. Nevertheless, the emergence of globalization leads to the removal of barriers among countries, thereby allowing some developing countries to gain a share as a source of global DIA. Recently, global DIA and outward stocks recorded significant growth as shown in Table 1. DIA achieved US$ 1,32 billion in 2006 and expanded with tremendous growth rate of 50,8 % to reach US$ 1,99 billion in 2007. In this respect, developed countries play a significant role as sources of DIA with the amount of US$ 1,69 billion or accounted approximately for 85 % of the total DIA in 2007. Nonetheless, developing countries particularly in Asia region have emerged as sources of DIA due to the globalization and trade liberalization. The contribution of Asia countries towards DIA reached US$ 194,662 million and this accounted for approximately 77 percent of DIA from developing countries. Among others in this region, Singapore is actively involved in DIA. This is due to its ability to achieve remarkable economic growth especially during the 1970s until 1990s and resilience towards economic turbulences during the 2000s.

Table 1

Global DIA(1990 to 2007)

Item	Value at Current Prices (billion US$)			Annual Growth Rate (%)					
	1990	2006	2007	1991–1995	1996–2000	2004	2005	2006	2007
FDI outflows	2,39	1,32	1,99	16,50	36,10	63,50	-4,30	50,20	50,90
FDI Outward Stocks	1,79	12,76	15,60	10,60	17,20	16,40	3,90	20,40	22,30

Source: United Nations Conference on Trade and Development (UNCTAD) (2008a).

In the past, numerous efforts have been devoted by researchers in studying DIA. However, a focus is given to industrialized economies like US and Japan as source countries. Recently, researchers have shifted their attention to emerging Asian economies like China and India. All these countries are large economies in nature. The case of Singapore's DIA may offer different insights from the perspective of small island developing economy

(United Nations, 2011). The classical economic theory postulates that outflow of direct investment should flow from developed to developing countries, and not the other way round. Contrasting to this theory which suggests that small island developing states should play no role in contributing to DIA, the multinational theory argues that DIA from small island developing states is possible when they are endowed with certain monopolistic advantages (see for instance, Dunning, 1993; Williams, 2009). Interestingly, Williams (2009) conducted a study on fifteen small, developing economies to determine the factors of DIA for these economies. Singapore was not considered in the study, however. In fact, study on DIA of Singapore has received little attention in the literature. To date, Lee (2009) and Ellingsen *et al.,* (2006) have examined the home country effects of DIA of Singapore. In particular, Lee (2009) examines the cause and effect relationship between outward FDI and GDP per capita for Singapore, whereas Ellingsen *et al.,* (2006) investigate whether the outward FDI has adverse labour market implications. However, a study on the factors determining DIA of Singapore to other countries remains un-attempted. In the light of the above background, the present study aims to close the literature gap in studying the determinants of DIA for Singapore. The objective of this is to find out if the set of determinants, which are found important for DIA of developed countries in the literature, are of relevance to DIA of Singapore, a small island developing state. On top of that, this study also measures the impact of each determinant on the DIA of Singapore.

DIA of Singapore

Since its independence in 1965, Singapore has shown a high economic growth. Table 2 presents the five-year average economic growth rates of Singapore, together with those of Japan and US as a comparison. It can be seen in Table 2 that during the first five years of independence, Singapore had documented an average growth rate of 7,14 %. Although it could not do better than Japan, which was at its peak performance in the same period, Singapore, as a small economy had nevertheless outperformed US, the world's economic leader. Starting from 1970s onwards, however, Singapore consistently showed significant higher economic growth than both US and Japan, the world's two leading economies. Due to its miracle growth, Singapore has been acknowledged by the World Bank (1992) as one of the eight Highly Performance Asian Economies (HPAEs). With the outstanding economic growth upon its independence, Singapore has enough wealth to invest abroad. Singapore commenced to participate in abroad investment since 1972 with a net worth of US$ 20,72 million. By the year 1990, DIA of Singapore had surged tremendously to US$ 2,034 million. Table 3 summarized DIA of Singapore from 1990 to 2007. It is obvious from Table 3 that there was an increasing trend in DIA of Singapore from 1991 to 1997. Singapore recorded its peak abroad investment in 1997 at a value of US$ 10,904 million, before it dropped drastically to US$ 2,165 million in 1998 due to the Asian financial crisis in 1997-1998. In the following year, it bounced back to US$ 8,002 million, however. By 2001, Singapore managed to register a record

of new high, at a value of US$ 19,965 million. Nonetheless, due to the contagious negative impact of the infamous September 11 terrorist attacks in US in 2001, the world's leading economy, DIA of Singapore once again fell considerably to US$ 2,329 million and US$ 2,695 million respectively in 2002 and 2003. The situation improved in 2004 and by 2007, the value stood at US$ 12,300 million.

Table 2

Economic Growth Rates (%) of Singapore, Japan and US

Period	Singapore	Japan	US
1966–1970	7,14	10,08	2,29
1971–1975	8,49	3,24	1,61
1976–1980	6,53	3,37	2,33
1981–1985	3,80	2,45	2,50
1986–1990	6,26	4,17	2,22
1991–1995	6,30	1,24	1,12
1996–2000	4,04	0,72	2,86
2001–2005	2,78	1,15	1,69
2006–2009	3,07	0,16	-0,03

Note: Statistics are five-year average growth rates of constant price (at 2005) GDP per capita.
Source: Center for International Comparisons (2011).

The outstanding achievement of DIA of Singapore in the early 1990s could mainly be attributed to Singapore's government policy. The government of Singapore has adopted a number of national development strategies with the objective to enhance the sustainability of the country in the wake of globalization. Specifically, in the early 1990s, the government of Singapore has implemented a regionalization program where domestic firms are encouraged to participate in the abroad investment. Retrospectively, it is obvious that these strategies were very successful but the two above-mentioned external shocks had held up Singapore for a considerable period from advancing at a faster pace.

Table 3

DIA of Singapore (1990–2007)

Year	Total (million US$)	Year	Total (million US$)
1990	2,034	1999	8,002
1991	526	2000	5,915
1992	1,317	2001	19,965
1993	2,152	2002	2,329
1994	4,577	2003	2,695
1995	6,787	2004	10,803
1996	7,951	2005	6,943
1997	10,904	2006	12,241
1998	2,165	2007	12,300

Source: UNCTAD (2008a).

Notably, most of the Singaporean firms involved in abroad investments are related to Greenfield and joint ventures instead of cross-border merger and acquisition (UNCTAD, 2005). Singaporean firms mainly invested in the Asia region which accounted for 53,2 % in 2008. This is followed by South and Central America and the Caribbean (17,3 %), Europe (13,2 %), 6,1 % in Oceania region, 5,0 % in North America while 5,2 % in others (Wong, 2010). Table 4 presents the distribution of the investment to the top 10 destinations of Singapore direct investment abroad from 1998 to 2009. As can be seen in Table 4, the major destinations of Singapore's investment in 2009 are located in the Asian region. In the top of the list there is China, which received S$ 58,125 million from Singapore in terms

of DIA in 2009. Abroad investment of Singaporean firms in China recorded an upsurge of 377 % from S$ 12,186 million in 1998 to S$ 58,125 million in 2009. Other Asian countries include Malaysia (S$ 28,697 million), Indonesia (S$ 26,264 million), Hong Kong (S$ 21,544 million), and

Thailand (S$ 19,451 million). Besides, India and Taiwan (not shown in Table 4), also received DIA from Singapore, amounting to S$ 8,737 million and S$ 5,750 million respectively (Wong 2010, 2011).

Table 4

Singapore's DIA by Country (Million Singapore Dollars, S$)

Country	1998	2003	2004	2005	2006	2007	2008	2009
China	12186	19816	22183	27254	33519	41786	53927	58125
United Kingdom	3276	7534	7222	7220	20197	31416	28246	41920
British Virgin Islands	n.a.	n.a.	n.a.	25941	33587	35488	30901	34320
Malaysia	8610	13592	14733	17878	18925	22831	25046	28697
Indonesia	4485	10298	12024	14631	16730	20170	22354	26264
Australia	1709	4648	11081	8935	10872	17069	18052	22952
Hong Kong	7668	11059	11768	15324	15579	19969	20054	21544
Thailand	1288	3688	3815	8541	13078	16951	19216	19451
Mauritius	n.a.	n.a.	n.a.	10513	15715	30672	11330	15799
United States	3064	8058	9669	9826	8548	13904	11736	12030

Notes: Only top 10 investment destinations as of 2009 are listed here. n.a. denotes not available. Source: Wong (2010, 2011).

In terms of activity, most of the abroad investment of Singaporean firms are towards services sector such as financial and insurance service which accounted approximately 49,5 %, followed by manufacturing, 23,4 % in 2009 while the rest of the shares are as shown in Table 5, which summarized Singapore's DIA by activity from 1998 to 2009. Table 6 shows the top 100 non-financial transnational corporation for Singapore in 2006. Among the exceptional performance of Singaporean firms are

Singtel Limited (ranked 6) followed by top 50 corporations such as Capitaland Limited (ranked 17), Flextronics International Limited (ranked 35), Keppel Corporation Limited (ranked 50). In addition, there are also six other corporations which had managed to secure a position in top 100 ranking. These industries are involved in businesses related to telecommunications, real estates, electrical and electronic, food and beverages, transport and storage and hotels (UNCTAD, 2008b).

Table 5

Singapore's DIA by Activity (Million S$)

Country	1998	2003	2004	2005	2006	2007	2008	2009
Manufacturing	17686	33010	37502	46352	54761	69157	77247	84053
Construction	898	749	978	881	850	671	1775	2628
Wholesale & Retail trade	5152	9222	10342	11215	13137	14913	17374	19616
Accommodation & Food and Beverage Service Activities	1425	2350	2241	2230	2323	2628	2538	2695
Transport & Storage	2520	5800	6766	9335	8307	10106	11034	9559
Information & Communication	485	7057	9252	10365	13021	15542	14716	17034
Financial & Insurance Services	37914	85140	99125	104756	134128	178650	156179	177913
Real Estate Activities	7846	7440	7540	8482	10026	12180	17405	20201
Administrative and Support Services Activities	596	913	2819	4539	5175	5824	7011	7386
Others	1101	1892	3178	3866	4905	8046	12085	18264

Source: Wong (2010, 2011).

Table 6

Top 100 Non-Financial Transnational Corporations for Singapore in 2006

Ranking	Corporation	Industry	Assets (million US$)	Sales (million US$)	Employment (Persons)	No. of Affiliates
6	Singtel Limited	Telecommunications	21288	8575	19000	108
17	Capitaland Limited	Real Estate	13463	2053	32876	233
35	Flextronics International Limited	Electrical & Electronic	12341	18854	116	149
50	Keppel Corporation Limited	Diversified	9009	4956	29185	233
56	Fraser & Neave Limited	Food & Beverages	6307	2475	14000	143
58	City Developments Limited	Hotels	7175	1660	12281	54
62	Asia Food & Properties	Food & Beverages	2370	458	45000	3
63	Neptune Orient Lines Limited	Transport & Storage	4271	7264	11000	107
73	Stats Chippac Limited	Diversified	2458	1617	13817	17
95	Want Want Holdings Limited	Food & Beverages	1206	868	31740	129

Source: UNCTAD (2008b).

Model Specification and Theoretical Justification

Several important macroeconomic determinants of DIA have been identified in the literature. One of which is the income of the country (Kyrkilis & Pantelidis, 2003; Wu *et al.,* 2003; Kueh *et al.,* 2008; Kueh *et al.,* 2009). In

terms of the income, the economic structure of the country will experience modification along with the growth of the income. Subsequently, country moves towards capital-intensive industry and has the capability to increase production via enhanced efficiency. This is due to the effect of economies of scale and adoption of new technologies (Chenery *et al.,* 1986). Eventually, this will

lead to the potential of establishing production abroad due to the gaining of ownership advantage (Lall, 1980; Grubaugh, 1987). Meanwhile, the well-known concept of Investment-Development Path (IDP) introduced by Dunning (1981) provides an essential point associating income and outward FDI. IDP consists of five degree of FDI expansions – Level 1: Almost non-existence of outward FDI; Level 2: Low pace of inward and outward FDI growth rate; Level 3: Gradual expansion of inward and outward FDI; Level 4: Expansion of outward FDI surpasses inward FDI; and Level 5: Expansion of outward and inward FDI resume. IDP indicates linkages between net outward FDI and the various stages of development of the country, measured by income of the country. This framework further postulated that higher income is a link to higher level of FDI outflows (see also Kalotay & Sulstarova, 2010). Besides, trade liberalization or trade openness also has great implication on the outward FDI (Kogut, 1983; Scaperlanda & Balough, 1983; Scaperlanda, 1992; Kueh *et al.,* 2008; Kueh *et al.,* 2009). The association of higher degree openness led to higher level of FDI outflow is mainly due to the acquisition of knowledge on the foreign market. This valuable knowledge includes skills related to operating or managing production abroad. Eventually, this will become the driving force for the firms to engage in the foreign investment rather than relying on exportation. Firms will be able to gain advantage in terms of internalization (Dunning, 1993). Another important factor that plays significant role on outward FDI is home interest rate. According to others (Hymer, 1976; Lall, 1980; Prugel, 1981; Grubaugh, 1987; Kyrkilis & Pantelidis, 2003; Williams, 2009), home interest rate has an inverse impact on DIA. For a firm which is looking for investment in foreign countries, lower interest rate will decrease its opportunity cost of funding capital abroad. Therefore, firms have better ability to finance their abroad investment via the lower home interest rate. Thus, lower home interest rates encourage more DIA. In addition, it also has been documented in the literature that exchange rate serves as prominent indicator towards outward FDI (Kohlhagen, 1977; Stevens, 1993; Gopinath *et al.,* 1998; Kyrkilis & Pantelidis, 2003; Kueh *et al.,* 2008; Kueh *et al.,* 2009). Previous empirical findings demonstrated a significant association between home country exchange rate and outward FDI. Appreciation of currencies enables domestic firms to conduct abroad investment due to the ability to mitigate the capital requirement. On the other hand, depreciation of the currencies indicates higher cost of abroad investment and therefore will hinder domestic firms to participate in oversea investment. In extension to the previous studies, this study attempts to find out if the above determinants, which are found important for DIA of developed countries, are of relevance to DIA of Singapore, a small island developing state. Based on the above theoretical justification and previous empirical studies, this study is set to examine if changes in income, trade openness, interest rate and exchange rate have significant impacts on outward FDI of Singapore. The model to be estimated can be specified as:

$$LDIA_t = \alpha_1 + \alpha_2 LRGDP_t + \alpha_3 LTO_t + \alpha_4 LINT_t + \alpha_5 LEXC_t + e_t \quad (1)$$

where *LDIA* signifies logarithm of DIA of Singapore, *LRGDP* denotes logarithm of real income of Singapore, *LTO* represents logarithm of trade openness, *LINT* refers logarithm of interest rate, *LEXC* denotes logarithm of nominal Singapore dollar per US dollar exchange rate, α_1 ,..., α_5 are coefficients to be estimated and *e* represents error term.

Methodology

The vector error-correction model (VECM) is adopted with the purpose to examine the long run deviation from the equilibrium association between endogenous variables, DIA of Singapore and the determinants. The model is as shown in Equation (2):

$$\begin{bmatrix} \Delta LDIA_t \\ \Delta LRGDP_t \\ \Delta LTO_t \\ \Delta LINT_t \\ \Delta LEXC_t \end{bmatrix} = \Gamma(L) \begin{bmatrix} \Delta LDIA_{t-i} \\ \Delta LRGDP_{t-i} \\ \Delta LTO_{t-i} \\ \Delta LINT_{t-i} \\ \Delta LEXC_{t-i} \end{bmatrix} + \Pi \begin{bmatrix} LDIA_{t-1} \\ LRGDP_{t-1} \\ LTO_{t-1} \\ LINT_{t-1} \\ LEXC_{t-1} \end{bmatrix} + \begin{bmatrix} \varepsilon_{DIA_t} \\ \varepsilon_{RGDP_t} \\ \varepsilon_{TO_t} \\ \varepsilon_{INT_t} \\ \varepsilon_{EXC_t} \end{bmatrix} \quad (2)$$

where $\Gamma(L)$ represents a 5x5 polynomial matrix of coefficient to be estimated. Γ denotes the short run adaptation among the variables across the five equations in the system while *L* stands for the lag operator. Furthermore, Π signifies the error-correction component at levels, Δ represents the first difference operator, and ε's denotes white noise error terms. Initially, the test for stochastic trends in the autoregressive representation of each individual time series has to be conducted before co-integration test. This study adopts the commonly used Augmented Dickey-Fuller (ADF) unit root test proposed by Dickey and Fuller (1981) as shown in Equation (3):

$$\Delta Y_t = \beta_0 + \beta_1 Y_{t-1} + \sum_{i=1}^{p} \alpha_i Y_{t-i} + \varepsilon_t , \quad (3)$$

where ΔY_t represents the first difference of the Y_t, β_1 and β_0 refer to the slope and intercept coefficients respectively, *t* denotes time, *p* is the optimal number of lagged terms to be included in the estimation while ε_t refers to white noise. The selection of optimal lag length of *p* is based on Schwartz Information Criteria (SIC). The null hypothesis of non-stationary series can be rejected when the *t*-statistic value is negative and statistically significant.

Data

The data set included into this study consists of DIA of Singapore as dependent variable, and real income of Singapore, trade openness, interest rate of Singapore as well as nominal exchange rate as independent variables. The real income variable is measured in real Gross Domestic Product (GDP), trade openness is authorized by the summation of aggregate export and import of Singapore, meanwhile interest rate refers to Euro-Dollar rates. Euro-Dollar rates are used as a proxy of interest rate in Singapore since Singapore is playing a prominent role as an international financial hub. Moreover, foreign interest rate has great influence on the interest rate in Singapore. All the data are obtained from *World Investment Report*, published by UNCTAD (2005) and *International Financial Statistics* from the International Monetary Fund. Annual data for the period of 1975 to 2007 are employed in this study. All the variables in the data set are transformed into natural logarithms for statistical purpose.

Empirical Results and Discussion

Table 7 depicts the results of the ADF unit root test. The results indicate that the null hypothesis cannot be rejected at a level. Nevertheless, it can be rejected at conventional significance levels after first differencing. This implies that all the time series variables are integrated of order one, $I(1)$. Since the variables are integrated of the same order, that is, $I(1)$, then we can proceed with the co-integration test of Johansen and Juselius (1990). The main purpose of this test is to investigate the existence of a long run association among the variables which are integrated of the same order. Table 8 presents the results of the co-integration test. The null hypothesis of non-co-integration ($r=0$) can be rejected as both the trace (λ_{trace}) and the max-Eigen (λ_{max}) statistic values exceed the critical values and are significant at 1 % level. Meanwhile, the null hypothesis stating that there exists at the most one co-integration vector cannot be rejected. This indicates the existence of a single co-integration vector in the model and implies a stable long run linear equilibrium among the variables.

Table 7

Augmented dickey-fuller unit root tests results

Variable	Level	First Difference
LDIA	-1,682(3)	-4,788(2)***
LRGDP	-0,742(0)	-4,107(0)***
LTO	-2,392(2)	-2,739(1)*
LINT	-2,898(6)	-3,647(5)***
LEXC	-1,823(0)	-4,871(0)***

Notes: LDIA = natural log of FDI outflow, LRGDP = natural log of real GDP, LTO = natural log of openness of the economy and LINT = natural log of Euro-Dollar rates, LEXC = natural log of nominal exchange rate. Asterisks (***) and (*) indicate significant at 1 % and 10 % level, respectively.

Table 8

Johansen and Juselius cointegration test results

H_0	H_1	λ_{trace}	CV (trace, 5 %)
Variables: LDIA, LRGDP, LTO, LINT, LEXC			
$r = 0$	$r \geq 1$	88,708***	66,819
$r \leq 1$	$r \geq 2$	36,724	47,856
Variables: LDIA, LRGDP, LTO, LINT, LEXC			
$r \leq 2$	$r \geq 3$	14,619	29,797
$r \leq 3$	$r \geq 4$	2,485	15,495
$r \leq 4$	$r = 5$	0,009	3,841
Variables: LDIA, LRGDP, LTO, LINT, LEXC			
H_0	H_1	λ_{max}	CV (max, 5%)
$r = 0$	$r = 1$	51,983***	33,877
$r = 1$	$r = 2$	22,104	27,584
$r = 2$	$r = 3$	12,135	21,132
$r = 3$	$r = 4$	2,476	14,265
$r = 4$	$r = 5$	0,009	3,841

Notes: r is the number of co-integrating vector. Asterisks (***) indicate significant at the 1 % level.

Table 9

Johansen Co-integration equation parameter estimates

	Parameter Estimates Normalized	*t*-statistics
LDIA	-1,000	
LRGDP	5,730	3,468***
LTO	-3.036	-3,101***
LINT	-1,313	-5,389***
LEXC	-6,091	-5,040***
Constant	7,567	

Note: Asterisks (***) indicate significant at the 1 % level.

Granger causality test based on Vector Error Correction Model (VECM) is adopted since co-integration exists among the variables. The main purpose of this test is to examine the causality linkage among the variables within the VECM environment. The system consists of an error correction terms (ECT) to capture the long run adjustment towards its equilibrium trail. The inclusion of the ECT is crucial to overcome the misspecification and exclusion of vital constraints. Table 10 summarizes the outcome of the Granger causality test based on the VECM. From the *p*-value of the *t*-ratio reported in Table 10, one can conclude that all the determinants have significant causality association (*p*-value < 0.10, indicating rejection of the null hypothesis of no causal relationship at 10 % significant level) with DIA of Singapore in the short run, except for exchange rate variable (*p*-value > 0,10, implying non-rejection of the null hypothesis of no causal relationship from exchange rate to DIA).

Table 10

Granger causality test based on vector error correction Model

Variables	$\Delta LRGDP$	ΔLTO	$\Delta LINT$	$\Delta LEXC$	ECT_t
$\Delta LDIA$	3,460 (0,063) *	13,837 (0,001) ***	5,062 (0,025) **	0,683 (0,409)	-0,758 (0,000) ***
Diagnostic Tests					
JB	AR (2)	ARCH (1)	RESET (1)	CUSUM	CUSUM²
1,309 (0,519)	1,414 (0,272)	0,005 (0,945)	1,166 (0,295)	Stable	Stable

Notes: JB is the Jarque-Bera statistic for residuals normality test. AR is a test of 2nd order serial correlation using Breusch-Godfrey serial correlation LM test. ARCH and RESET refer to White Heteroscedasticity test and Ramsey RESET specification test, respectively. Parenthesized values are the probability (p-value) of the respective tests. Asterisks (***), (**) and (*) indicate significant at the 1,5 and 10 % levels, respectively.

Moreover, the estimated coefficient of ECT as reported in Table 10 is significantly negative in magnitude. This authenticates the existence of long run relationship among DIA and its determinants found on the basis of co-integration test as reported in Table 8. In addition, the significance of the ECT also indicates the rejection of the weak exogeneity of DIA of Singapore variable (see for instance Ibrahim, 2011 for empirical aspects of exogeneity issue). In other words, DIA of Singapore is endogenous. It implies that whenever there are deviations between DIA and its equilibrium values based on its determinants, DIA of Singapore will bear the blunt to restore the equilibrium. It is revealed from the estimated coefficient of ECT in Table 10 that whenever disequilibrium happens, 7,58 % of the disequilibrium will be correctly in the following year.

Putting together the empirical outcomes from Table 8 through Table 10, this study has established the significance of the income, openness, interest rate and exchange rate as the determinants of DIA of Singapore in the long run. The income of Singapore exhibits positive linkage with DIA in the long run and is consistent with the findings of (Kyrkilis & Pantelidis, 2003; Wu *et al.,* 2003). It is argued that the association of the ownership, location and internationalization advantages gained by Singapore, a small island developing economy which has distinctive

features as compared to large nations like US and Japan, has contributed to the economic development path of the country. Singapore had experienced tremendous economic growth since 1960s and it was known as the Newly-Industrialized Economies (NIEs) as well as was recognized as one of the 10 economies of the East Asian Miracle by World Bank in 1992. This recognition is due to the exceptional economic growth of above average 6 % and the ability to maintain this performance for a long period of time. The significant changes of the economic structure of Singapore towards export-led regime of capital accumulation have contributed to the sustainability of its economic performance. Subsequently, Singapore has transformed from an entrepot to an economy that highlights high value-added sectors particularly the manufacturing sector. Besides, Singapore has also developed into important international financial and business centre (Huff, 1994; Perry *et al.,* 1997). These accumulations of resources have been the solid pillar for Singapore to expand its foreign investment globally. Furthermore, sturdy fundamental economic policy enables the country to become resilient to the external economic turbulences such as Asian financial crisis in 1997-1998, economic recession in 2001 and global recession in 2008. In addition, realization of the government of Singapore on the saturation of the domestic growth expansion constraint, the adoption of regionalization policy (Kanai, 1993; Reigner, 1993) in the 1990s had contributed to the expansion of the international trade and investment activities. Consequently, this further generates sustainable income to the country and thus auxiliary encourages investment at broader aspect such as Asia region and Western region.

Meanwhile, the empirical results obtained in this study indicate that rise (fall) of DIA of Singapore is significantly related to the appreciation (depreciation) of Singapore dollar per US dollar exchange rate in the long run. Moreover, the empirical results show that exchange rate variable exerts the greatest influence on DIA as it has the highest elasticity (carries the highest coefficient estimate) relative to other determinants. This finding is in tandem with the literature that suggests that appreciation of the home (in this case Singapore) currency tends to increase the volume of abroad investment activities (Kohlhagen, 1977; Stevens, 1993; Gopinath *et al.,* 1998; Kyrkilis & Pantelidis, 2003; Kueh *et al.,* 2008; Kueh *et al.,* 2009). Singapore has shown a great achievement of economic performance during the past three decades (Table 2) owing to its successful economic strategies. Despite economic turbulences in several periods such as oil crisis in 1985, Asian financial crisis in 1997–1998, United States recession in 2001, effect of severe acute respiratory syndrome (SARS) and recently global financial crisis, the economy of Singapore is resilient towards those phenomena and it has demonstrated swift recovery processes. These have induced sturdy currency in the market and therefore contributed to the expansion of the abroad investment of Singaporean domestic firms. Ultimately, appreciation of Singapore's currency indirectly minimizes the capital requirements of the foreign investment activities. This also means that it is easier for the Singaporean firms to raise capital in order to finance their abroad investment.

In terms of the interest rate effect, empirical results obtained in the current study reveal the existence of inverse relationship between interest rate and DIA of Singapore in the long run. This finding is consistent with the argument that lower interest rate reflects the abundance of capital in Singapore and subsequently lowers the opportunity cost in seeking capital for DIA. In other words, these firms have competitive advantage in financing foreign investment due to lower cost of borrowing in home country (Kyrkilis and Pantelidis, 2003). Ultimately, this serves as the motivation for the Singaporean firms to expand rigorously their abroad investment activities. On the other perspective, higher interest rate may reduce the intention of the domestic firms to invest abroad. This is because higher interest rate may attract more accumulation of investment via saving. Therefore, domestic firms will have the tendency to invest locally to gain favorable return instead of taking risk investing abroad (Hymer, 1976; Lall, 1980; Pugel, 1981; Grubaugh, 1987).

Nevertheless, the trade openness of Singapore exhibits inverse linkage towards the DIA of Singapore in the long run. This finding contradicts the findings of Kogut (1983), Scaperlanda and Balough (1983) and Scaperlanda (1992). This may be due to the substitution effect of the trade activities against the DIA of Singapore. According to a formal report, Singapore ranked first for the most open economy for international trade and investment ahead of Hong Kong and Switzerland (Lawrence *et al.,* 2009). This favorable atmosphere has attracted many foreign firms to invest in Singapore apart from attractive tax incentive and conducive business environment. Most of the foreign companies and entrepreneurs that operate in Singapore are from Asia and Europe. Subsequently, domestic firms have tendency to establish cooperation with the foreign companies particularly via the form of joint venture. As a result, this may alleviate the opportunity cost for the domestic firms to invest abroad as they will enjoy substantial benefits from the cooperation with the foreign companies in Singapore.

Meanwhile, the determinants such as income, trade openness and interest rate have causality relationship with DIA of Singapore in the short run. It reveals that the income level of Singapore, the degree of trade openness in Singapore which represents the volume of the international trade activities and attractive interest rate exert significant influence on the volume of DIA of Singapore in the short run. On the other hand, exchange rate has no causality implication on the DIA of Singapore in the short run. This may be due to the monetary policy adopted by the government of Singapore. Exchange rate targeting policy has been adopted by Singapore since late 1970s. This means that the fluctuation of the exchange rate in the market is closely monitored by the government in order to ensure the exchange rate is competitive. As such, exchange rate has no implication towards DIA of Singapore in the short run.

Conclusions

The objective of this study is to investigate the association between Direct investment abroad (DIA) of Singapore and selected macroeconomic determinants namely income, trade openness, exchange rate and interest rate. This study also measures the impact of each of the determinants on DIA of Singapore. Results obtained reveal that the variables under investigation are establishing long run relationship with DIA of Singapore. Moreover, it is found that they are significant independent variables in determining DIA of Singapore. Further analysis show that income has significant influence on DIA of Singapore where the generation of higher income will contribute to the expansion of abroad investment of Singaporean firms. Therefore, sustainable economic growth is crucial with the ability of the economy to be resilient during economic uncertainties. The saturation of the domestic expansion and accumulation of valuable resources further encourage the Singaporean firms to invest oversea. Meanwhile, favorable interest rate indicates abundance of capital in home country. This will enable Singaporean firms to expand their cross border investment due to lower cost of financing in the home country. In terms of exchange rate, currency also plays significant role in the abroad investment of Singapore where stable and flexible towards external economics turbulences economy strengthens the currency of Singapore and thus encourages foreign investment by domestic firms in the long run. However, in the short run, exchange rate has no significance implication towards DIA. This is due to the close monitoring on the fluctuation of the Singapore currency under the exchange rate targeting policy. Moreover, the results also indicate that trade openness exhibited inverse association with DIA of Singapore. This is due to the substitution effect as higher degree of trade openness contributed to the influx of establishment of foreign companies and entrepreneurs in Singapore. Subsequently, Singaporean firms will have the propensity to cooperate with those foreign companies via joint venture. As a result, the motivation for domestic firms to invest abroad will decline as they will still enjoy enormous benefits if they are able to cooperate with foreign companies.

It is argued that the association of the ownership, location and internationalization advantages gained by Singapore, a small island developing economy which has distinctive features as compared to large nations, has contributed to the economic development path of the country. To conclude, the continuous pledge towards integrating with the countries globally, via the establishing of Free Trade Area such as China-ASEAN Free Trade Area (CAFTA) or maintaining current trading agreement such as ASEAN Free Trade Area (AFTA), provides solid foundation for the Singaporean firms to participate in the international trading and investment activities. The expansion of the abroad investment provides the solution for Singapore to acquire necessary resources particularly technologies adoption as well as valuable knowledge to support the further economic development of Singapore in the future.

Acknowledgement

References

Center for International Comparisons. (2011). *Penn World Table 7.0 (1950–2009).* Available online at:http://pwt.econ.upenn.edu/. Accessed on 5 July, 2011

Chenery, H. B., Robinson, S., & Syrquim, M. (1986). *Industrialization and Growth: Comparative Study.* New York: Oxford University Press.

Dickey, D. A., & Fuller, W. A. (1981). Likelihood Ratio Statistics for Autoregressive Time Series with a Unit Root. *Econometrica*, 49, 1057–1072. http://dx.doi.org/10.2307/1912517

Dunning, J. H. (1981). Explaining Outward Direct Investment of Developing Countries: In Support of the electric Theory of International Production., in K. Kumar & M. G. Mcleod (eds.) *Multinationals from Developing Countries.* Toronto: Lexington Books.

Dunning, J. H. (1993). *Multinational Enterprises and the Global Economy.* Workingham: Addison-Wesley.

Ellingsen, G., Likumahuwa, W., & Nunnenkamp, P. (2006). Outward FDI by Singapore: A different animal? *Transnational Corporations,* 15(2), 1–40.

Gopinath, M., Pick, D., & Vasavada, U. (1998). Exchange Rate Effects on the Relationship between FDI and Trade in the U.S. Food Processing Industry. *American Journal of Agricultural Economics,* 80(5), 1073–1079. http://dx.doi.org/10.2307/1244207

Grubaugh, S. J. (1987). Determinants of Foreign Direct Investment. *Review of Economics and Statistics*, 69(1), 149–152. http://dx.doi.org/10.2307/1937913

Huff, W. G. (1994). *The Economic Growth of Singapore: Trade and Development in the Twentieth Century.* Cambridge: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511470714

Hymer, S. H. (1976). *The International Operations of National Firms: A Study of Direct Foreign Investment.* Cambridge, Mass: MIT Press.

Ibrahim, M.H. 2011. Stock Market Development and Macroeconomic Performance in Thailand. *Engineering Economics*, 22(3), 230–240.

International Monetary Fund. *International Financial Statistics,* various issues. Washington, D.C.: International Monetary Fund.

Johansen, S., & Juselius, K. (1990). Maximum Likelihood Estimation and Inference on Cointegration – With Application to the Demand for Money. *Oxford Bulletin of Economics and Statistics*, 52, 169–210. http://dx.doi.org/10.1111/j.1468-0084.1990.mp52002003.x

Kalotay, K and Sulstarova, A. (2010). Modelling Russian Outward FDI. *Journal of International Management*, 16, 131–142. http://dx.doi.org/10.1016/j.intman.2010.03.004

Kanai, T. (1993). Singapore's New Focus on Regional Business Expansion. *NRI Quarterly*, 2(3), 18–41.

Kogut, B. (1983). Foreign Direct Investment as a Sequential Process. In C.P. Kindleberger & D.P Audretsh (Eds.). *The Multinational Corporations in the 1980s*. Cambridge, MA: MIT Press.

Kohlhagen, S. W. (1977). The Effect of Exchange-Rate Adjustments on International Investment: Comment. In P.B. Clark, D.E. Logue and R. Sweeney (eds.). *The Effect of Exchange Rate Adjustments.* Washington, DC: US Government Printing Office, 194–197.

Kueh, J. S. H, Puah, C. H., & Abu Mansor, S. (2009). Empirical Analysis on Emerging Issues of Malaysia Outward FDI from Macroeconomic Perspective. *International Review of Business Research Paper*, 5(1), 124-134.

Kueh, J. S. H, Puah, C. H., & Albert, R. (2008). Outward FDI of Malaysia: An Empirical Examination from Macroeconomics Perspective. *Economics Bulletin*, 6(28), 1–11.

Kyrkilis, D., & Pantelidis, P. (2003). Macroeconomic Determinants of Outward Foreign Direct Investment. *International Journal of Social Economics,* 30(7), 827–837. http://dx.doi.org/10.1108/03068290310478766

Lall, S. (1980). Monopolistic Advantages and Foreign Involvement by U.S. Manufacturing Industry. *Oxford Economic Papers*, 32, 102–122.

Lee, C. G. (2009). Outward Foreign Direct Investment and Economic Growth: Evidence from Japan and Singapore. *Research Paper* No. 2009-02, Nottingham University Business School Malaysia Campus.

Perry, M., Kong, L., & Yeoh, B. (1997). *Singapore: A Development City State.* London: John Wiley. http://dx.doi.org/10.1002/mde.4090020403

Prugel, T. A. (1981). The Determinants of Foreign Direct Investment: An Analysis of US Manufacturing Industries. *Managerial and Decisions Economics*, 2, 220–228.

Reigner, P. (1993). Spreading Singapore's Wings Worldwide: A Review of Traditional and New Investment Strategies. *The Pacific Review*, 6, 305–312. http://dx.doi.org/10.1080/09512749308719054

Scaperlanda, A. (1992). Direct Investments Controls and International Equilibrium: The U.S. Experience. *Eastern Economic Journal*, 18(2), 157–170.

Scaperlanda, A., & Balough, R. (1983). Determinants of U.S. Direct Investment in the EEC: Revisited. *European Economic Review*, 21, 381–390. http://dx.doi.org/10.1016/0014-2921(83)90098-3

Stevens, G. V. G. (1993). Exchange Rate and Foreign Direct Investment: A Note. *International Finance Discussion Papers* No.444. Washington, DC: Board of Governors of the Federal Reserve System.

United Nations Conference on Trade and Development (UNCTAD). (2005). Transnational Corporations and the Infrastructure Challenge, *World Investment Report.* Switzerland: United Nations.

United Nations Conference on Trade and Development (UNCTAD). 2008a. Major FDI Indicator, *World Investment Report.* United Nations: New York and Geneva.

United Nations Conference on Trade and Development (UNCTAD). 2008b. Transnational Corporations and the Infrastructure Challenge, *World Investment Report.* United Nations: New York and Geneva.

United Nations. (2011). Composition of macro geographical (continental) regions, geographical sub-regions, and selected economic and other groupings (revised 26 April 2011). Available from internet: http://unstats.un.org/unsd/methods/m49/m49regin.htm#ftnc

United Nations Conference on Trade and Development (UNCTAD). (2013). Inward and outward foreign direct investment flows, annual, 1970 – 2011, *UNCTADSTAT*. United Nations: New York and Geneva. Available from internet: http://unctadstat.unctad.org/TableViewer/tableView.aspx

Williams, D. A. (2009). Determinants of Outward Foreign Direct Investments from Small Island Developing States. *American Journal of Economics and Business Administration*, 1(2), 45–54. http://dx.doi.org/10.3844/ajebasp.2009.47.56

Wong, W. K. (2010). *Yearbook of Statistics Singapore* 2010. Republic of Singapore: Department of Statistics, Ministry of Trade & Industry. Available from internet: http://www.singstat.gov.sg/pubn/reference/yos10/yos2010.pdf

Wong, W. K. (2011). *Singapore's Investment Abroad 2009*. Republic of Singapore: Department of Statistics, Ministry of Trade & Industry. Available from internet: http://www.singstat.gov.sg/pubn/business/sia2009.pdf.

World Bank. (1992). *World Developmenrt Report*. N ew York: Oxford University Press.

Lawrence, R. Z., Hanouz, M. D., & Moavenzadeh, J. (2009). *The Global Enabling Trade Report 2009.* Geneva: World Economic Forum. Available from internet: https://members.weforum.org/pdf/getr09_dev/index_rankings.pdf. Accessed on: 21 June, 2011

Wu, F., Toh, M. H., & Ho, T. (2003). Outward Foreign Direct Investment and Its Impact on the Home Economy: The Case of Singapore. *Journal of Asian Business,* 19(3), 27–48.

Jerome Swee-Hui Kueh, Chin-Hong Puah, Venus Khim-Sen Liew

Makroekonominiai veiksniai, lemiantys tiesiogines Singapūro investicijas užsienyje

Santrauka

Tiesioginių investicijų užsienyje (DIA) vaidmuo tapo svarbiu ir esminiu tvariam ekonomikos augimui Pietryčių Azijos regione, o ypač Singapūre. Dėl vietinių resursų sukoncentravimo ir propagavimo, kaip režimo, nukreipto į eksportą, dešimtajame dešimtmetyje Singapūro vyriausybė pristatė *regionalizacijos* politiką, skatinančią investavimą užsienyje. Tai buvo labai svarbus žingsnis, nes įgyvendinus šią politiką, Singapūro metinis DIA gerokai išaugo (nuo 2,034 milijonų JAV dolerių 1990 metais, iki 25,227 milijonų JAV dolerių 2011 metais (JTPPK, 2013).

Anksčiau tyrinėtojai skyrė daug pastangų nagrinėdami DIA. Daugiausia dėmesio jie sutelkė į stambias pramonės šalis, turinčias stiprią ekonomiką, pvz.: JAV ir Japonija. Šis tyrimas skiriasi nuo ankstesnių, tiriančių dideles šalis, tyrimų. Šio tyrimo dėmesio centre yra Singapūras, besivystanti valstybė esanti mažoje saloje. Singapūro DIA atvejis gali pateikti kitokias įžvalgas žvelgiant iš mažos, saloje plečiamos ekonomikos perspektyvos. Klasikinė ekonomikos teorija tvirtina, kad tiesioginių investicijų srautas turi tekėti iš išsivysčiusių šalių į besivystančias, nepaliekant jokio vaidmens mažoms, salose besivystančioms valstybėms, prisidedančioms prie DIA. Tačiau kitose teorijose teigiama, kad DIA besivystančių valstybių, esančių mažose salose galimas, kai jos turi tam tikrų monopolinių privalumų. Singapūras parodė aukštą ekonominį augimą nuo savo nepriklausomybės (1965 m.) paskelbimo. Nuo aštuntojo dešimtmečio Singapūro ekonomika augo sparčiau, nei JAV ir Japonijos, t. y. dviejų pirmaujančių pasaulio ekonomikų. Dėl šalies „stebuklingo" augimo *Pasaulio bankas* pripažino Singapūrą kaip vieną iš aštuonių *Aukštos veiklos Azijos šalių* (Highly Performance Asian Economies - HPAEs). Stabilus ekonominis augimas, vykstant svarbiems pokyčiams, Singapūro ekonomikos struktūroje leido jam tapti svarbiu tarptautiniu finansiniu ir verslo centru regione. Turėdamas tokius išskirtinius pasiekimus, Singapūras taip pat turi užtektinai turto ir galių investuoti užsienyje.

Šio *tyrimo tikslas* yra nustatyti DIA lemiančius veiksnius, tam naudojant metinius Singapūro duomenis. Remiantis teoriniais pagrindimais ir empiriniais duomenimis, šiame darbe nagrinėjami keli galimi veiksniai, įskaitant bendras pajamas, palūkanų normą, prekybos atvirumą ir valiutos kursą. Šiame darbe panaudoti duomenys apima Singapūro DIA, kaip priklausomą kintamąjį ir realiąsias Singapūro pajamas, prekybos atvirumą, Singapūro palūkanų normą ir nominalų valiutos kursą kaip nepriklausomus kintamuosius. Realiųjų pajamų kintamasis vertinamas realiu *Bendruoju vidaus produktu* (BVP). Prekybos atvirumą paaiškinа Singapūro bendrojo eksporto ir importo suma, o palūkanų norma nurodo euro-dolerio santykį. Euro-dolerio santykis paaiškina palūkanų normą Singapūre, nes Singapūras atlieka svarbų vaidmenį kaip tarptautinis finansinis centras. Dar daugiau, užsienio investicijų norma daro didelę įtaką palūkanų normai Singapūre. Visi duomenys yra gauti iš *Pasaulio investavimo ataskaitos*, kurią paskelbė JTPPK (2005) ir *Tarptautinės finansinės statistikos*, gautos iš *Tarptautinio Valiutos fondo*. Šiame darbe panaudoti metiniai duomenys nuo 1975 iki 2007 metų laikotarpio. Visi kintamieji, statistiniais tikslais duomenyse yra pakeisti į paprastus logaritmus. Pastovumo testo rezultatai rodo, kad nagrinėtų kintamųjų ir Singapūro DIA pirmi skirtumai nekinta. Tai reiškia, kad jie visi yra integruoti ta pačia tvarka, kuri yra 1. Todėl tinkama naudoti Johansen kointegracijos testą, norint ištirti ar kintamieji ir DIA yra kointegruoti. Testo rezultatai rodo, kad tarp Singapūro DIA, bendrųjų pajamų, palūkanų normos, prekybos atvirumo ir valiutos kurso kintamųjų, egzistuoja ilgalaikiai ryšiai. Be to, išsiaiškinta, kad šie kintamieji yra svarbūs visi, nustatant Singapūro DIA. Iš rezultatų matyti, kad visi tirti kintamieji yra lemiantys Singapūro DIA veiksniai.

Taip pat iš gautų empirinių rezultatų matyti, kad didesnės bendrosios pajamos prisideda prie Singapūro įmonių investicijų užsienyje plėtros. Šiuo atžvilgiu, realiojo vidinio produkto padidėjimas 1 % padidins DIA 5.73 %. Tuo metu, Singapūro DIA didėjimas (sumažėjimas) yra labai susijęs su Singapūro dolerio vertės padidėjimu (nuvertėjimu) JAV dolerio atžvilgiu per ilgesnį laikotarpį. Tiksliau sakant, Singapūras gali remti 6.09 % DIA, jei Singapūro dolerio vertė pakyla 1 %. Šis rezultatas sutampa su tais, kurie pateikiami teorinėje literatūroje, kurioje teigiama, kad vietinės (šiuo atveju Singapūro) valiutos vertės padidėjimas, turi tendenciją didinti investicijų užsienyje veiklos apimtį.

Analizuojant palūkanų normos poveikį šiame darbe, galima matyti, kad gauti empiriniai rezultatai atskleidžia atvirkštinio ryšio tarp palūkanų normos ir Singapūro DIA egzistavimą per ilgą laikotarpį, kuriuo palūkanų normos pokytis 1 % sukelia 1.31 % DIA pokytį priešinga kryptimi. Šis rezultatas atitinka teiginį, kad mažesnė palūkanų norma atskleidžia kapitalo Singapūre gausą ir vėliau sumažina galimybės kaštus ieškant kapitalo DIA. Kitaip tariant, šios įmonės, dėl mažesnių skolinimosi kaštų savo šalyje, gauna konkurencinį pranašumą iš užsienio investicijų finansavimo. Vis dėlto, priešingai, nei teigiama literatūroje, Singapūro prekybos atvirumas rodo atvirkščią ryšį su Singapūro DIA per ilgą laikotarpį. Taip gali būti dėl įtakos, kurią daro prekybos veiklos pakeitimas Singapūro DIA. Tolesnės analizės rezultatai atskleidžia, kad valiutos kursas ir bendrosios pajamos daro didesnę įtaką Singapūro DIA, lyginant su kitais, ją lemiančiais veiksniais. Tuo metu pajamos, prekybos atvirumas ir palūkanų norma rodo priežastingumo ryšius su Singapūro DIA per ilgą laikotarpį.

Be to, prekybos atvirumas taip pat yra svarbus veiksnys nustatant Singapūro DIA. Remiantis JTPPK ataskaita, Singapūras yra pirmoje vietoje tarp šalių, atviriausių tarptautinei prekybai ir investicijoms, pralenkdamas Honkongą ir Šveicariją. Dėl patrauklių mokesčių ir verslui palankios aplinkos, daug užsienio įmonių pritraukta, kad jos investuotų Singapūre. Dauguma užsienio kompanijų ir verslininkų, dirbančių Singapūre yra iš Azijos ir Europos. Vietinės įmonės yra linkusios kooperuotis su užsienio kompanijomis.

Išanalizavus dabartinius empirinius tyrimo rezultatus, nustatyta pajamų, atvirumo, palūkanų normos ir valiutos kurso, kaip Singapūro DIA lemiančių veiksnių per ilgą laikotarpį, reikšmė. Singapūro pajamos rodo teigiamą ryšį su DIA per ilgą laikotarpį ir atitinka ankstesnius rezultatus. Singapūras patyrė didžiulį ekonominį augimą nuo septintojo dešimtmečio ir buvo pripažintas nauja pramonės šalimi, taip pat *Pasaulio Banko* 1992 metais buvo pripažintas kaip viena iš 10 Rytų Azijos *stebuklo* šalių. Šis pripažinimas atsirado dėl išskirtinio ekonominio augimo vidutiniškai daugiau nei 6 % ir gebėjimo išlaikyti šią veiklą ilgą laiką. Žymūs Singapūro ekonominės struktūros pokyčiai į eksportą nukreipto kapitalo kaupimo režimo link, lėmė šalies ekonomikės veiklos stabilumą. Singapūras, iš tranzitinių krovinių sandėlio, tapo šalimi, kuri turi labai vertinamus sektorius, ypač gamybos sektorių. Be to, Singapūras taip pat ir į svarbų tarptautinį finansinį ir verslo centrą. Resursų sankaupos tapo tvirta atrama Singapūrui globaliai plečiant savo užsienio investicijas. Dar daugiau, stipri fundamentali ekonominė politika leido šaliai tapti lankščia, susidūrus su tokiais išoriniais ekonominiais neramumais kaip 1997-1998 metų Azijos finansinė krizė, ekonominė recesija 2001 metais ir pasaulinė recesija 2008 metais. Be to, Singapūro vyriausybės suprato apie svarbą vietinio augimo plėtros ir suvaržymų koncentraciją, taip pat regionalizacijos politikos pritaikymą. Tai taip pat prisidėjo prie tarptautinės prekybos plėtimosi ir investicinės veiklos. Galiausiai, tai ir toliau yra svarbu kaupiant pastovias pajamas šaliai. Tokia šalies politika skatina kitas šalis papildomai investuoti į Azijos ir Vakarų regionus.

Palanki palūkanų norma rodo kapitalo gausą gimtojoje šalyje. Tai leidžia Singapūro įmonėms išplėsti savo investavimo ribas dėl mažesnių finansavimo kaštų gimtojoje šalyje. Valiuta Singapūre taip pat atlieka svarbų vaidmenį užsienio investicijose. Stabili ir lanksti ekonomika stiprina Singapūro valiutą ir tokiu būdu skatina ilgalaikes vietinių įmonių investicijas užsienyje. Tačiau paminėtina tai, kad trumpam laikotarpiui, valiutos kursas nedaro svarbesnės įtakos DIA. Taip yra dėl atidaus Singapūro valiutos svyravimo, esant valiutos kurso reguliavimo politikai, stebėjimo. Be to, rezultatai taip pat rodo, kad prekybos atvirumas atskleidė priešingą ryšį su Singapūro DIA. Taip yra todėl, kad pakeitimo įtaka, kaip aukštesnio lygio prekybos atvirumas, prisidėjo prie užsienio kompanijų steigimosi ir verslininkų antplūdžio Singapūre. Toliau, Singapūro įmonės turi polinkį bendradarbiauti su tomis užsienio kompanijomis per bendras įmones. Dėl šios priežasties, motyvacija vietinėms įmonėms investuoti užsienyje sumažėja, kai jos dar džiaugiasi didžiuliais pelnais, nors jos sugeba bendradarbiauti su užsienio kompanijomis.

Darant išvadą galima teigti, kad sujungimas nuosavybės, vietos, prekybos atvirumo ir internacionalizacijos privalumų, kuriuos įgijo Singapūro, mažos salos besivystanti ekonomika, turinti skiriamuosius bruožus lyginant su tokiomis didelėmis šalimis kaip JAV ir Japonija, prisidėjo prie šalies ekonominės plėtros. Nuolatinis įsipareigojimas globaliai integruotis su šalimis, įkuriant *Laisvos prekybos zoną*, tokią kaip *Kinijos-ASEAN laisvos prekybos zona* (CAFTA) arba palaikant dabartinį prekybos susitarimą, tokį kaip ASEAN *Laisvos prekybos zona* (AFTA), sudaro tvirtą pagrindą Singapūro įmonėms dalyvauti tarptautinėje prekyboje ir investicinėje veikloje. Investicijų į užsienį plėtimasis pateikia Singapūrui sprendimą įgyti būtinų resursų, tai pat pritaikyti technologijas ir vertingas žinias, kad paremtų tolesnę ekonominę Singapūro plėtrą ateityje.