6-2005

Singapore's Pursuit of Location Advantages in Indonesia and Vietnam

Caroline YEOH
Singapore Management University, carolineyeoh@smu.edu.sg

. David

Siang Yeung Wong

Singapore's Pursuit of Location Advantages in Indonesia and Vietnam*

CAROLINE YEOH, DAVID AND WONG SIANG YEUNG

Foreign investments are drawn to privileged investment enclaves. This paper examines Singapore's low-cost manufacturing enclaves in Indonesia and Vietnam and presents evidence on the perceived advantages associated with these flagship projects. The study concludes that the location advantages of these Singapore-styled industrial parks in regional sites have been overestimated and that the potential gains from these projects have been overshadowed by socio-political uncertainties in the host environments.

YEOH IS ASSOCIATE PROFESSOR, LEE KONG CHIAN SCHOOL OF BUSINESS, SINGAPORE MANAGEMENT UNIVERSITY, SINGAPORE

DAVID AND WONG ARE STUDENTS AT THE SINGAPORE MANAGEMENT UNIVERSITY

INTRODUCTION

Singapore, amidst the limitations of its resource-constrained domestic environment, has long been driven to leverage on global resources for economic growth. The liberalization of foreign investment controls in several Asia-Pacific economies in the early 1990s, as well the high growth rates that these economies were achieving, opened up investment opportunities and markets few governments could ignore. The opportunities presented, in turn, allowed Singapore to develop its external economy, or in local parlance, the 'second wing'.

The main thrust of the regionalization program was the establishment, in emerging economies in the region, of industrial townships that simulate a 'Singapore-styled' business environment. The regionalization drive was intended to create economic space for local and Singapore-based multinationals to redistribute their resource-dependent operations, and to upgrade their operations in Singapore to higher-end activities, utilizing the unique set of benefits and competencies offered by each location.

TABLE 1
Singapore's total direct investment abroad by destination
(S$million, stock as at year-end)

Destination	1990	1995	1997	1998	1999	2000	2001
China	140	2,968	10,477	12,186	14,296	15,710	16,542
Malaysia	1,663	9,716	8,908	8,610	8,517	9,754	10,413
Hong Kong	909	6,268	8,113	7,668	10,405	8,508	9,261
Indonesia	99	4,031	6,519	4,485	5,507	5,462	6,912
United States	331	2,635	2,905	3,064	4,197	6,187	6,580
United Kingdom	187	3,297	7,678	3,276	3,387	4,903	5,768
Singapore's total FDI	7,492	46,240	158,566	177,949	209,650	230,060	257,314

(Source: Singapore Department of Statistics)

Singapore's long-established stratagem of economic development through inward foreign direct investments (FDI) is well documented (Chia 1986; Pang 1987; Rodan 1989; Regnier 1991; Huff 1995; Murray & Pereira 1995; Blomqvist 2001). By the early 1980s, rising business costs rendered it an imperative for Singapore to shift from labor-intensive activities towards higher value-added ones. Singapore's economic planners sought to expand the island's investment horizons and potential economic growth through an overseas direct investment program launched in 1988.[1] Singapore-based firms increased their investments into the region, to take advantage of the growing market opportunities there. This is amplified in Table 1. This growth in outward direct investments demonstrates Singapore's determination in strengthening its economic prospects and reaching more advanced stages of development. This initiative would fuel Singapore's regionalization drive *vis-à-vis* the industrial townships or parks that are the subject of this paper.

These regional sites, when developed, would further enhance the competitiveness of Singapore-based companies that redistribute their resource-dependent operations to these sites, as well as Singapore's competitiveness as a high-value investment site with strategic linkages to the region. Singapore aimed to maximize the advantages proffered by each location and its competitiveness, by lending its own competitive strengths (e.g. core competencies in industrial infrastructural development and management) to the regional sites.

Increasing evidence points to limitations on firms' ability to take part in local agglomeration of activity, which has implications for their performance. The importance of such localized economies is changing the way in which firms decide on the location of their investments; and this, in turn, has implications for public policy with regards to investment attraction. In the next section, this paper explores the theoretical considerations underpinning Singapore's efforts in establishing these 'shady' places for foreign investments (Lundan 2003). This is followed by an account of the origins and progress of the industrial-township projects in Indonesia and Vietnam, as well as reflections

of how location advantages have contributed to the development of the individual parks. In its empirical analysis, the paper presents firm-level data that exposes the limitations for firms of so-called location advantages, and the consequent implications for Singapore's regionalization program.

THEORETICAL CONSIDERATIONS

Dunning's OLI paradigm (1977, 1993, 1995) sought to provide the analytical basis for explaining the activities of firms situated beyond their national boundaries. This eclectic paradigm was used to explain the ability and willingness of firms to serve markets, and to look into the reasons for their decision to locate production overseas. The model suggests that, by doing so, firms can stay closer to the foreign markets they are currently serving while exploiting the concomitant benefits arising from the interaction of Ownership-specific (O) advantages, Location-specific (L) advantages, and Internalization-incentive (I) advantages. This creates an advantage over utilizing domestic production, exports or portfolio resource flows. The paradigm was reconfigured (Dunning 2000a) to constitute the 'asset-augmenting' aspects of FDI and multinational enterprise (MNE) activity. For example, O-specific advantages have been divided into static and dynamic; the former describing the advantages possessed by a firm that generate income at a given point of time and the latter illustrating the proprietary factors that allow a firm to enhance its income-generating asset over time.

Dunning, amongst others, has reiterated the importance of the spatial dimension, i.e. location advantages, in affecting the competitiveness of investing firms. Firms' strategic choice of location reflects not only the aim of transferring their resources to the host countries, but also of gaining access to the available strategic assets (Chen & Chen 1998; Dunning 1995; Makino & Delios 1996; Dunning, van Hoesel & Narula 1999; Frost 2001).

By creating an economic space for companies' resource-dependent operations, the pronounced geographical concentration of such activity within that particular region will further increase the location incentives for firms to locate at the industrial townships (Scott 1996; Davis & Weinstein 1997; Dunning 1998). The underlying attraction of these geographic locations was that they offered one or more of the following attributes: supply of primary products/good climate/ proximity to markets, which were identified as static L-advantages; whereas regions in which agglomeration yielded scope for asset-augmenting activities (e.g. R&D) offered dynamic L-advantages. Given the latter's deeply entrenched sources, however, the said L-advantages (dynamic) cannot be easily replicated elsewhere. Although firms may relocate knowledge and similar assets, those assets with a public goods or collective characteristic cannot be easily moved (Markusen 1996; Porter 1998).

Location advantages espoused by academics also include agglomeration benefits such as knowledge spillovers, specialized labor, and intermediate inputs (Krugman 1991; Kinoshita & Campos 2003). Transactional benefits of spatial proximity of firms are significant, especially for cases where transaction costs of traversing distances are high (Storper 1995; Storper & Scott 1995; Scott 1996; Dunning 1998). As firms' core competencies become increasingly knowledge-intensive, the location in which firms locate their production, organization and use of assets emerges as a critical competitive advantage (Dunning 2000b). Multinational enterprises (MNEs) continue to seek locations (economic and institutional facilities) that are best utilizing their core competencies (Dunning 1998). In determining the propitious extent in which

a firm strategically locates, this paper will examine the location of MNEs *vis-à-vis* Singapore's regional flagships, contending that moderate success was achieved. It will also examine, *inter alia*, Singapore's transborder industrialization efforts, with particular focus on the regionalization of Singapore-based MNEs (SEDB 1993a, 1993b, 1995a,1995b), and whether the locations of the townships are, indeed, that strategically advantageous.

SINGAPORE'S OVERSEAS INDUSTRIAL PARKS

Batamindo Industrial Park (BIP)

It had long been recognized that the Singapore–Indonesia border zone, notably the nearby Batam, was capable of attracting labor-intensive industries, and activities with extensive space requirements that had close links with Singapore-based activity. However, it was only in the late 1980s that mutual agreement[2] could be reached by which time Singapore's priority was additional production space and Indonesia was prepared to extend foreign investment concessions to jump-start Batam's development. Foreign companies in Batam were exempted from the need to devolve a share of ownership to Indonesian partners, and the island's duty-free status was amended to facilitate a proportion of output to be exported to other parts of Indonesia. As well, foreign companies were allowed to develop and manage industrial estates. This presented an opportunity for Singapore to develop its first transborder industrial-township project, Batamindo Industrial Park (BIP). BIP started as a joint venture between Singapore's government-linked companies (GLCs)[3] and Indonesia's Salim Group.[4] Salim was Indonesia's largest business conglomerate, with close links to senior politicians and with privileged access to the major investment projects in the Riau Islands (Sato 1993; Hill 1996). The roles as allocated between the Singaporean GLCs and Salim were distinctly separated. Singaporean GLCs were given control over the development and management of the Park, while Salim's role was to facilitate operations and to provide a guarantee of priority in relation to regulatory controls and administrative approvals. Singapore's reputation for transparent and efficient management of projects lent further credibility to the projects and maximized marketing leverage over Singapore-based multinationals.

The strategic thrust of the flagship project was to get investors to look at Singapore and the Riau Islands, each at different stages of development, as a single investment region, and not as separate states competing for investments. Singapore, for instance, can support business operations dependent on advanced technology and sophisticated services, while low-value, labor-intensive industries can be located in Riau. Specialization in this way is designed to attract investment by enabling investors to retain activities in close proximity while making use of contrasting environments i.e. complementary specialization in national border territories (Yeoh, Goh & Chong 1993). In the process, these firms, with their various activities located in close proximity, also reap the economies of agglomeration suggested by location theories.

BIP's first tenants arrived in 1991, mainly subsidiaries of American, European and Japanese multinationals already operating in Singapore. By July 2003, there were 82 companies and 65,000 workers in the Park (Table 2a, opposite). Out of total employment of 65,000, over 85% were female, most aged from 18 to 22 years. Investment commitment is in excess of US$1 billion, with a strong presence of 39 Japanese firms in the Park as compared to the 25 Singaporean firms. American and European investors have a limited presence (Table 2b, opposite). There is a concentration

of electronics operations, mainly various component assembly processes, and supporting activities to the electronics sector such as plastic molding and packaging (Table 2c).

Vietnam-Singapore Industrial Park (VSIP)

VSIP is Singapore's flagship investment in Vietnam, replicating a Singapore-styled, industrial park environment. The 1,000-hectare Park is located in Binh Duong Province, 17 km north of Ho Chi Minh City and a 40-minute drive from the international airport and seaports. A self-sufficient industrial park with prepared land plots and ready-built factories, bolstered by Singapore-style management expertise, VSIP provides a one-stop service to its tenants. Other VSIP location advantages include an on-site customs unit, which allows the convenience of customs procedures and documentation to be done within the Park, and customs inspections within tenant's factories. Skilled labor is provided by the S$9.5 million Vietnam–Singapore Technical Training Centre (VSTTC) established in 1998, which is a project between the Singapore and Vietnam governments, and VSIP. A 200,000 working population within a 15-km radius from VSIP provides another ready pool of low-cost, skilled labor.

The VSIP project was based on the perception that Singapore agencies have a competitive edge in infrastructure development and, like the Suzhou–Wuxi 'experiments' in China, had a pseudo-economic objective to demonstrate the transferability of the BIP-prototype to other regional sites. Here, Singapore applied lessons learned from its China experience, and made deliberate efforts to foster strong collaboration with local authorities. A Management Board[5] was set up, chaired by the Vice Chairman of the Binh Duong

TABLE 2a
BIP—operational statistics
(June 2003)

General Information	
Investment by developer	US$470 million
Committed tenants	82
Area taken up	320 hectares
Investment by tenants	> US$1 billion
Annual export value (2002)	> US$2 billion
No. of employees	65,000

(Source: SembCorp Parks Management)

TABLE 2b
BIP—tenant profile by country of origin
(June 2003)

Country	%
US	9
Japan	48
Europe	11
Singapore	30

(Source: Batamindo Industrial Park, Tenants' List, June 2003)

TABLE 2c
BIP—tenant profile by sector
(June 2003)

Sector	%	Sector	%
Electronics	44	Packaging	6
Precision Parts	15	Medical	4
Plastic molding	10	Pharmaceuticals	1
Electrical	11	Others	9

(Source: Batamindo Industrial Park, Tenants' List, June 2003)

TABLE 3a
VSIP—operational statistics
(Sept. 2003)

General Information	
Investment by developer	US$600 million
Committed tenants	124
Area taken up	300 hectares
Investment by tenants	> US$1 billion
Annual export value (2002)	> US$2 billion
No. of employees	24,000

(Source: SembCorp Parks Management)

TABLE 3b
VSIP—tenant profile by country of origin
(Sept. 2003)

Country	%
Singapore	24
Japan	21
Taiwan	17
Other Asian Countries	22
US and Europe	16

(Source: SembCorp Parks Management)

TABLE 3c
VSIP—tenant profile by sector
(Sept. 2003)

Sector	%	Sector	%
Electronics	11	Consumer goods	14
Food	9	Logistics	14
Light industries	20	Parts and components	10
Pharmaceuticals	9	Others	13

(Source: SembCorp Parks Management)

Province People's Committee, which pre-empted the perception that VSIP was a partnership forced upon the province by the central government. VSIP is jointly developed by a Singapore consortium led by SembCorp Industries[6] and Becamex, a state-owned enterprise.

VSIP's early tenants included 3M, Sandoz, Sakata Inx, Godrej (India), Liwayway Food Industries (Philippines) and a mix of Singapore manufacturers like ST Automotive, Star Chemicals and Hwa Hup. Cumulative investment commitments topped US$400 million from 33 companies in 1999. Most of the tenants are from Singapore, Japan and Taiwan, reflecting the importance of Asian MNEs, while the sector mix reflects a broad swathe of industries, including food, electrical and electronics, pharmaceuticals and healthcare, speciality materials, consumer goods and light industries.[7] Compared to BIP, VSIP is less selective of target industries. Investment commitments in VSIP are currently valued at over US$600 million from 124 tenants, 80 of which are in operation. Twenty-four thousand jobs have been created, with the number expected to rise to 40,000. VSIP posted its first profits of US$4 million in 2002. Tables 3a, 3b and 3c provide more information on the operational statistics of VSIP.

EMPIRICAL ANALYSIS

Prior analyses of the Parks have relied primarily on secondary data from official publications, press reports and other such sources. To add empirical rigor to this paper, the survey questionnaire developed in Yeoh, Perry and Lim (2000) was applied to the tenants in BIP and VSIP to gauge the differential impact of various push/pull factors on firms' decision to locate in the case-study Parks, along with the differential impact of different types of constraints on their operations. The first set of questions sought to determine the profile of the respondents: type of ownership, nature of

operations and size of establishment; and the second set was structured to gather information on the push/pull factors affecting the tenants. Other data pertaining to the respondents' views on the facilities and services in the Parks were culled from the open-ended questions. On-site interviews were undertaken in August 2002 (VSIP), and in December 2002 and July 2003 (BIP). The following section presents the survey results.

Profile of Respondents

Of the 50 respondent firms, 27 (54%) were from BIP, and 23 (46%) were from VSIP. Of the 27 BIP respondent firms, 7 were wholly Singapore-owned, 5 were Singapore joint ventures with foreign countries, and 15 were wholly foreign-owned (of which 11 were wholly Japan-owned). In terms of the BIP respondents' operations, 14 manufactured intermediate products and 7 were engaged in consumer products. The remaining 6 firms were involved in industrial services. In terms of employment size, 13 firms hired less than 500 employees (small) and 14 hired more than 500 employees (large).

For VSIP, 6 respondent firms were wholly Singapore-owned, 1 was a joint-venture and 16 were wholly foreign-owned companies. There were 15 small firms and 8 large firms. As for the nature of operations, 8 manufactured consumer products, 3 manufactured intermediate products, and 2 were involved in industrial services. None of the companies surveyed were manufacturers of capital goods.

Statistical Treatment of Survey Results

The (cumulative) logistic distribution function, estimated by the maximum likelihood, takes the following form:

$$P_i = \exp(Z_i)/[1+\exp(Z_i)]$$

where: P_i is the probability of firm i choosing the factor in question,

exp refers to the exponentiation operator, and

Z_i is a linear function of the firm attributes defined as

$$Z_i = \alpha_0 + \alpha_1 F + \alpha_2 L$$

where: $F = 1$ if wholly foreign-owned, 0 otherwise

$L = 1$ if large, 0 otherwise

α_0 = constant term

α_i = coefficient of independent (explanatory) variable

Hence, if the estimated coefficients in the logit model is positive and statistically significant (as indicated by the *z*-statistics and *p*-values), this would imply that the probability of a firm (e.g. foreign-owned) choosing a particular factor is greater than the probability of another firm (of different ownership type) making the choice, after taking into consideration the size of the firms.

Factors Influencing Respondents' Decision to Invest in BIP/VSIP

Singapore leverages on its infrastructure development expertise and the low-cost labor available in the host environments to market its industrial parks. It supplements these purported advantages with its political commitment to the Parks, as demonstrated by the many bilateral agreements between the GLCs and host governments, or politically linked business conglomerates. Furthermore, there is a host of investment incentives that entice multinationals to locate their lower value-added activities in these self-

TABLE 4a
Factors influencing respondents' decisions to invest in BIP and VSIP
(popular ranking)

Variables	BIP		VSIP	
	Frequency	Rank	Frequency	Rank
Political commitment from the Singapore government	17	4	3	6
Political commitment from the host country government	21	3	7	4
Investment incentives	16	5	12	2
Competitive labor costs	22	2	11	3
Reliable infrastructure facilities	23	1	16	1
Availability of skilled/educated labor	16	5	6	5

(Source: Questionnaire surveys)

contained investment enclaves (see Table 4a and Table 4b, opposite).

Not unexpectedly, the reliable and efficient Singapore-styled infrastructure was the Parks' main draw, with 85% and 70% of the BIP and VSIP tenants surveyed, respectively, citing it as a pull factor for them to locate in the Park. Singapore appears to have succeeded in exporting its 'expertise' in infrastructure development and creating a location advantage that is clearly in demand by companies in the South East Asian region.

Political commitment from the Singapore government was a major consideration for BIP's wholly Singapore-owned or joint-venture companies, when compared to the foreign-owned companies. This is suggested by the negative and statistically significant α_1 (=-2.8). This is not unexpected, as the Singapore government played a crucial role in goading Singapore-controlled companies to further enhance their competitiveness by redistributing their resource-dependent operations to regional sites like BIP. Large companies in BIP were also more likely to choose political commitment from the Singapore government as one of the factors, indicated by positive and statistically significant α_2 (=2.548). This result affirms the role played by the Singapore Economic Development Board (SEDB) in the marketing and promotion of the Park, and specifically, as a 'business architect' and 'knowledge arbitrageur', in encouraging foreign multinationals to redistribute lower-end operations to the industrial park (SEDB 1993a, 1993b, 1995a, 1995b).

Wholly Singapore-owned or joint-venture companies, compared to foreign-owned companies, also indicated a strong need for political commitment from the Indonesian government, as suggested by a negative and statistically significant α_1 (=-2.089). These results, taken together, can be explained by the instability of Indonesia's political system. Since Suharto was made to step down in 1998, the presidential position has changed hands several times, from Habibie, to the first

TABLE 4b
Factors influencing respondents' decisions to invest in BIP and VSIP
(maximum likelihood estimates—binary logits)

Variables	BIP		VSIP	
	Foreign	Large	Foreign	Large
Political commitment from the Singapore government	-2.8	2.548	0.37	-0.218
	(0.029)*	(0.039)*	(0.792)	(0.877)
Political commitmentfrom the host country government	-2.089	1.458	-0.084	-0.371
	(0.097)**	(0.175)	(0.933)	(0.728)
Investment incentives	0.283	0.017	-0.203	-0.051
	(0.804)	(0.988)	(0.828)	(0.958)
Competitive labor costs	-1.583	0.894	-1.661	0.870
	(0.201)	(0.403)	(0.113)	(0.41)
Reliable infrastructural facilities	0.035	1.355	0.529	-0.730
	(0.975)	(0.277)	(0.613)	(0.489)
Availability of skilled/educated labor	-0.899	0.209	0.529	-0.259
	(0.307)	(0.806)	(0.613)	(0.812)

* Significant at the 5% level.
** Significant at the 10% level.
n.c. non-convergence
Notes: Estimated values were taken from 'forced entry' regression; values in parentheses are *p*-values for 2-tailed tests.

Source: Questionnaire surveys.

elected president, Abdurrahman Wahid; and then to Megawati Sukarnoputri, on the impeachment of her predecessor. Key economic positions were reshuffled and economic advisors changed frequently, as power jockeying continued among the parties, ministries, legislature, central bank and other institutions. Foreign firms were more likely to have diversified their risks by locating their operations across several countries, and could afford to attach less importance to the Indonesian government's commitment to the project.

For VSIP, this study's statistical tests did not pick up any discernible difference in the reactions of the companies, differentiated by type of ownership or employment size, to the push/pull variables.

Constraints Faced by Respondents' Operations

BIP and VSIP are now established industrial estate developments, but this study alludes to some emerging constraints that have undermined the attractiveness of the Parks (see Tables 5a, p. 52 and 5b, p. 53). The constraints are categorized into three broad groups, namely, those relating to labor, organization and technology; and the 'environment', such as government policies and regulations.

A case in point, the 'cheap' labor resources that drew companies to BIP proved to be mere perception,

TABLE 5a
Major constraints on respondents' operations in BIP and VSIP
(by popular ranking)

Variables	BIP		VSIP	
	Frequency	Rank	Frequency	Rank
Labor constraints				
Shortage of semi-skilled and skilled labor	11	7	12	2
Shortage of professionals and managers	10	9	17	1
Rising labor costs	21	2	1	13
Industrial relations problems	17	5	0	14
Others	4	11	4	11
Organizational and technological constraints				
Difficulty in obtaining capital equipment	5	10	6	6
Difficulty in introducing new technology and techniques	11	7	5	7
Lack of good supporting services	13	6	5	7
Difficulty in securing funds for expansion	4	11	2	12
High and/or rising overhead costs	20	4	5	7
Others	0	14	5	7
Environmental constraints				
Impact of host government regulations	24	1	11	3
Competition from overseas competitors	21	2	11	3
Others	1	13	7	5

(Source: Questionnaire surveys)

as 'rising labor costs' was the main constraint faced by the majority (78%) of the BIP tenants surveyed. To add to the tenant's high overheads, BIP's Singapore-styled infrastructure, though reliable and efficient, also proved to be costly, as facilities such as the power plant, waste-treatment system and water supply are independently managed, with 74% of respondents citing it as a constraint they faced. In marked contrast, shortages of professionals and managers, and other skilled labor, were the main concerns of the VSIP respondents.

'Impact of host government regulations' and 'competition from overseas competitors' are constraints

TABLE 5B
Major constraints on respondents' operations in BIP and VSIP
(maximum likelihood estimates—binary logits)

Variables	BIP		VSIP	
	Foreign	Large	Foreign	Large
Labor constraints				
Shortage of semi-skilled and skilled labor	-0.758	0.33	1.661	-0.87
	(0.353)	(0.686)	(0.113)	(0.410)
Shortage of professionals and managers	0.201	0.488	1.332	0.712
	(0.807)	(0.552)	(0.220)	(0.586)
Rising labor costs	0.457	-0.879	n.c.	n.c.
	(0.635)	(0.377)		
Industrial relations problems	0.232	0.722	n.c.	n.c.
	(0.778)	(0.381)		
Others	-0.255	-0.041	-2.034	0.382
	(0.817)	(0.971)	(0.157)	(0.800)
Organizational and technological constraints				
Difficulty in obtaining capital equipment	n.c.	n.c.	n.c.	n.c.
Difficulty in introducing new technology and techniques	-1.398	1.398	-0.904	1.797
	(0.145)	(0.145)	(0.493)	(0.166)
Lack of good supporting services	-1.001	-0.184	0.316	-1.061
	(0.243)	(0.830)	(0.777)	(0.413)
Difficulty in securing funds for expansion	-1.161	-1.161	n.c.	n.c.
	(0.358)	(0.358)		
High and/or rising overhead costs	n.c.	n.c.	0.316	-1.061
			(0.777)	(0.413)
Others	n.c.	n.c.	-0.196	-0.370
			(0.864)	(0.748)
Environmental constraints				
Impact of host government regulations	n.c.	n.c.	-2.409	-2.188
			(0.058)**	(0.088)**
Competition from overseas competitors	0.889	-0.582	2.363	2.775
	(0.393)	(0.587)	(0.065)**	(0.038)*
Others	18.029	18.153	-0.678	1.272
	(0.999)	(0.999)	(0.500)	(0.312)

* Significant at the 5% level.
** Significant at the 10% level.
n.c. non-convergence

Notes: Estimated values were taken from 'forced entry' regression; values in parentheses are p-values for 2-tailed tests.

(Source: Questionnaire surveys)

highlighted by the tenants in both case-study parks. However, whereas 89% and 78% of BIP tenants respectively cited the above two constraints, only about half of the VSIP tenants indicated likewise. From the logit analysis, VSIP tenants that are wholly Singapore-owned or joint-venture (compared to the foreign-owned) companies, and small companies were more likely to select 'impact of host government regulation' as the major constraint they encountered, as shown by the negative and statistically significant α_1 and α_2 (-2.409 and -2.188, respectively). However, foreign-owned (as compared to Singapore-owned and joint-venture) companies and large companies in VSIP were more likely to consider 'competition from overseas competitors' as their major constraint, as indicated by positive and statistically significant α_1 (=2.363) and α_2 (=2.775). Taken together, these results indicate that Singapore-controlled companies in VSIP, with their smaller scale of operations, are more vulnerable to vagaries associated with changes in host government regulations, while competition from overseas competitors would be less pronounced as they are mainly supporting industries to the large firms and/or supplying to the domestic markets. The larger, wholly foreign-owned companies, with more resources, would arguably be less perturbed by host government regulations, but competition from industry competitors overseas would certainly be a preoccupation.

CHALLENGES IN A CHANGING ENVIRONMENT

On a broader front, BIP's competitiveness has been eroded with the mushrooming of other industrial parks, some within close proximity. A few of the competitor parks, backed by prominent Indonesian politicians, are rapidly developing to match its standards. Panbil Industrial Park, for instance, is located directly opposite BIP, and offers similar factories at competitive rentals. The premium placed on the Parks' formulaic one-stop support service, and self-sufficient operating environment, is increasingly being called into question (Yeoh, Lim & Kwan 2004).

BIP has increasingly become a Japanese investment enclave (Perry & Yeoh 2000), and faces the problem of squatter settlements scattered throughout the island, which have introduced tensions and social problems to BIP (Peachey, Perry & Grundy-Warr 1998). Regional autonomy laws, introduced by the Habibie government, have added longer-term uncertainties to BIP's operating environment. Preliminary evidence points to a more complex regulatory environment, as foreign companies (including Singapore GLCs) now have to deal with provincial and sub-provincial governments much more intensively than during the Soeharto era. These problems have been further exacerbated by rising labor costs and frequent labor disputes; and complicated by Indonesia's uncertain legal system, all of which has resulted in more than 100 foreign companies (of which 40% are Japanese) reportedly pulling out of Indonesia and relocating to China, Vietnam and Malaysia (*The Singapore Business Times*, 28 Aug. 2003). This investor exodus has impacted on the positioning of BIP as an investment enclave, and could act as a deterrent for potential investors.

BIP's reputation has also not been left unscathed by political developments in the aftermath of the Asian financial crisis, the 11 September attacks in the United States, the Bali bomb blasts and, more recently, the Iraq War. In addition, the negative press reports on active terrorist cells within the region do little to abate potential investors' lack of confidence or innate risk-aversion attitudes. BIP could do without these added uncertainties.

VSIP, not unlike BIP, has to contend with intense competition from neighboring industrial parks. Viet Huong Industrial Park, Song Than 1 and 2, for instance, offer 'no frills' services, and bring into scrutiny the premium attached to the Singapore-styled industrial parks. These competing industrial parks may not match the infrastructure and facilities provided by VSIP, but they are a threat on price, charging only a fraction of VSIP's 'packaged' fees. As well, experienced and street-savvy industrial-park developers from Taiwan and Korea have similarly eroded VSIP's competitiveness, while tight market conditions have forced some VSIP tenants to seek cheaper alternatives.

The 'special' support from the local authorities has also proved to be less significant than initially thought. Improvements on infrastructural projects have translated into higher toll charges and miscellaneous fees, all of which have added to the tenants' operating costs. In addition, despite the keen interest from the Vietnamese in welcoming Singapore investments, and transfers of technology and skills, some tensions have arisen owing to Singapore's 'control' and management of VSIP. Anecdotal evidence suggests that bureaucratic red-tape and corruption remain endemic. These nuances, and a dearth of local administrative support, have acted in tandem to erode the location-specific advantages that VSIP touts, limiting the benefits that firms investing in VSIP would otherwise have received.

CONCLUSION

The progress of Singapore's overseas parks over a comparatively short period of time testifies to the ability of Singapore's state enterprise network to mobilize economic and political resources to create economic space for the city-state. The projects, in addition to the natural location advantages imbued in each Park, have obtained special investment conditions within their overseas localities, and government endorsements that further underline the significance of the projects. On the other hand, Singapore's overseas parks exist as investment enclaves within a disjointed economic and policy environment.

In Indonesia, BIP is now a well-established project, but it has not necessarily achieved all its development goals. It has been a springboard for Singapore–Indonesia co-operation in Riau, but it is not yet clear that Singapore has obtained the resource benefits looked for. In both Parks, location advantages such as low labor costs and tax incentives have aided in attracting and retaining investors. However, BIP may be at risk from the breakdown of the industrial township as a separate enclave, and from the larger social tensions existing on Batam. Singapore's 'experiment' in Indonesia has been successful in exploiting some of the location advantages available, but faces ongoing challenges in becoming an economically viable project. The political uncertainties, post-9/11 and in the wake of the Bali-Jakarta bombings, as well as policy nuances that radiate from Jakarta, have had detrimental effects on investor confidence.

In Vietnam, Singapore's investment in VSIP takes on an added dimension of rendering development assistance to an Association of South East Asian Nations (ASEAN) partner, overtly to foster greater bilateral ties. It is apparent from the mix of 'targeted' industries, and the style of park management and operations, that the intention is for the local partners to have a stronger sense of 'ownership' of the project. Also, the focus on specific industries that complement Singapore's economic restructuring, characteristic of the BIP initiative, is absent here. Notwithstanding the explicit or implicit objectives, intense market competition, and the inherent problems of corruption act as constraints to the location advantages that firms would otherwise receive, and work in tandem to test this strategic initiative.

In summary, the Singapore government's role in developing, managing and operating the overseas industrial parks has been crucial from the start. However, initial assumptions of the location advantages engendered by the differing locations of the industrial parks were overly optimistic. Differing agendas, sometimes within the same host government, intertwined with the cultural and political complexities of large economies, and the uncontrolled external environment, serve to diminish the competitiveness of the case-study Parks. The limits of inducing location advantages, beyond demarcated geographical boundaries, have been exposed in this paper.

*We are grateful for the funding of this research by the Wharton-SMU Research Center.

ENDNOTES

1. The main ideas were set out in the policy document, 'Gearing up for an enhanced role in the global economy' (SEDB 1988). The 1990 Global Strategies Conference added new dimensions to these deliberations (SEDB 1990).

2. Singapore's vision of the role of Batam differed from the Indonesian ambition, which was to create a diversified modern metropolis comparable to Singapore. Singapore's economic planners envisaged Batam as a relocation point for low-value assembly activity (Liew 1990). However, after Indonesia's own efforts to promote Batam had brought few results, there was a willingness to compromise development objectives, especially as BIP promised to leverage other investments under the larger growth triangle initiative for which it became the key flagship project (Perry 1991; Yeoh, Lau, Goh & Richardson 1992; Peachy, Perry & Grundy-Warr 1998).

3. The Singapore consortium was led by Singapore Technologies Industrial Corporation (now SembCorp Industries) and Jurong Town Corporation, Singapore's main industrial estate infrastructure developer.

4. The stress on exploiting personal ties accords with business practice preferred by the linked communities of 'overseas Chinese' (Redding 1990; Yeung 1997; Brown 1998; Lehman 1998), which Singapore capitalized on in its industrial park in Indonesia.

5. The Board, with representatives from the ministries of Trade, Finance and Interior, as well as from the General Customs Department, oversees the issue of investment licences, import/export permits, and construction permits.

6. Other members of the consortium include Temasek Holdings, JTC International, UOL Overseas Investments, Salim's KMP Group, LKN Construction, and MC Development Asia.

7. VSIP has a list of 'priority' industries, which adheres closely to the official list of preferred industries. Details are given in Circular No. 8, List of Encouraged, Limited and Prohibited Industries in Export Processing Zones and High-Technology Industrial Zones, issued on 29 July, 1997.

8. This is equivalent to $Z_i = {}_0 - {}_1F' - {}_2 L'$ where F'=1 if not wholly foreign-owned, 0 otherwise, and L'=1 if not large, 0 otherwise and ${}_0$ is another constant term.

REFERENCES

Blomqvist, H. 2001, 'State and development policy: the case of Singapore', *Asian Profile*, 29(3): 239–53.

Brown, C. 1998, Overseas Chinese business in South-East Asia, in *Emerging economic systems in Asia,* ed. K. Sheridan, Allen & Unwin, Sydney.

Chen H. & Chen T.J. 1998, 'Network linkages and location choice in foreign direct investment', *Journal of International Business Studies*, 29(3): 445–68.

Chia, S.Y. 1986, 'Direct foreign investment and the industrialization process in Singapore', in *Resources and Growth in Singapore*, eds C.Y. Lim. & P. Lloyds, Oxford University Press, Singapore.

Davis, D.R. & Weinstein, D.E. 1997, Economic geography and regional production structure: An empirical investigation, Working paper series no. 6093, National Bureau of Economic Research, Cambridge, MA.

Dunning, J.H. 1977, 'Trade, location of economic activity and multinational enterprise: a search for an eclectic

approach', in *The International Allocation of Economic Activity*, eds B. Ohlin, P.O. Hellelborn & P.J. Wijkman, Macmillan, London.

Dunning, J.H. 1993, *Multinational Enterprises and the Global Economy,* Addison-Wesley Publishing, Wokingham.

Dunning, J.H. 1995, 'Reappraising the eclectic paradigm in an age of alliance capitalism', *Journal of International Business Studies*, 26(3): 461–91.

Dunning, J.H. 1998, 'Location and the multinational enterprise: a neglected factor?', *Journal of International Business Studies*, 29(1): 45–66.

Dunning, J.H. 2000a, 'The new geography of foreign direct investment', in *The Political Economy of Globalization*, ed. Ngaire Woods, Macmillan, London.

Dunning, J.H. 2000b, 'Globalization and the theory of MNE activity', in *The Globalization of Multinational Enterprise Activity and Economic Development*, eds N. Hood & S. Young, Macmillan, Basingstoke.

Dunning, J.H., van Hoesel, R. & Narula, R. (eds) 1999, *Multinationals from the Netherlands.* Routledge, London.

Frost, T.S. 2001, 'The geographic sources of foreign subsidiaries' innovations', *Strategic Management Journal*, 22 (2): 101–23.

Hill, H. 1996, *The Indonesian Economy Since 1966*. Cambridge University Press, Cambridge.

Huff, W. 1995, 'The development state, Singapore, and Singapore's economic development since 1960', *World Development*, 23(8): 1421–38.

Kinoshita, Y. & Campos, N.F. 2003, Why does FDI go where it goes? New evidence from the transition economies, Working paper no. 573, William Davidson Institute at University of Michigan Business School.

Krugman, P. 1991, 'Increasing returns and economic geography', *Journal of Political Economy*, 99(3): 483–99.

Lehman, J.P. 1998, 'Asian tigers make way for the bamboo network', in *Financial Times*, Mastering Global Business series part 10, 3 Apr. pp. 2–4.

Liew, S.L. 1990, 'Charting a global strategy: Creating competitive advantage through the growth triangle', *Economic Bulletin Special Report*, Nov: 14–18.

Lundan, S.M. 2003, 'Institutions, exclusivity, and foreign investment', in *Extending the Eclectic Paradigm in International Business: Essays in Honor of John Dunning,* ed. H. Gray, Edward Elgar, Cheltenham, pp. 93–105.

Makino, S. & Delios, A. 1996, 'Local knowledge transfer and performance: Implications for alliance formation in Asia', *Journal of International Business Studies*, 27(5): 905–27.

Markusen, A. 1996, 'Sticky places in slippery space: a typology of industrial districts', *Economic Geography,* 72(3): 293–313.

Murray, G. & Pereira, A. 1995, *Singapore: The Global City-State*, Heinemann, London.

Pang, E.F. 1987, 'Foreign investment and the state in Singapore', in *Developing with Foreign* Investment, eds V. Cable & B. Persaud, Croom Helm, London, pp. 84–100.

Peachey, K., Perry, M. & Grundy-Warr, C. 1998, 'The Riau islands and economic cooperation in the Singapore–Indonesian border zone', *Boundary and Territory Briefing,* 2(3).

Perry, M. 1991, 'The Singapore growth triangle: state, capital and labor at a new frontier in the world economy', *Singapore Journal of Tropical Geography*, 12(2): 138–51.

Perry, M. & Yeoh, C. 2000, 'Asia's transborder industrialization and Singapore's overseas industrial parks', *Regional Studies*, 4(2): 199–206.

Porter, M.E. 1998, 'Clusters and the new economies of competition', *Harvard Business Review*, Nov.–Dec: 77–90.

Redding, G. 1990, *The Spirit of Chinese Capitalism.* de Gruyter, Berlin.

Regnier, P. 1991, *Singapore: City state in Southeast Asia*, Hurst & Company, London.

Rodan, G. 1989, *The Political Economy of Singapore's Industrialization*, Macmillan, London.

Sato, T. 1993, 'The Salim group in Indonesia: the development and behaviour of the largest conglomerate in Southeast Asia', *The Developing Economies*, 31(4): 408–41.

Scott, A.J. 1996, 'Regional motors of the global economy', *Futures*, 28 (5): 391–411.

SEDB, see Singapore Economic Development Board.

Singapore Economic Development Board 1988, *Proceedings of the Conference on Global Strategies—The Singapore Partnership*, Singapore, 24–26 Oct.

Singapore Economic Development Board 1990, *Proceedings of the Conference on Global Strategies—World Class Partnership*, Singapore, 4–6 June.

Singapore Economic Development Board 1993a, *Proceedings of the Regionalisation Forum*, Singapore, 21–23 May.

Singapore Economic Development Board 1993b, *Singapore Investment News*, Regionalisation Supplement, SEDB, Singapore.

Singapore Economic Development Board 1995a, Singapore unlimited, report published by SEDB, Singapore.

Singapore Economic Development Board 1995b, Regionalization 2000, report published by SEDB, Singapore.

Storper, M. 1995, 'The resurgence of regional economies, ten years later: the region as a nexus of untraded interdependencies', European Urban and Regional Studies, 2: 191–221.

Storper, M. & Scott, A.J., (eds) 1995, *Pathways to Industrialization and Regional Development*, Routledge, London.

Yeoh, C., Lau, G.T., Goh, M. & Richardson, J. 1992, *Strategic Business Opportunities in the Growth Triangle.* Longman, Singapore.

Yeoh, C., Goh, M. & Chong, LC. 1993, 'Strategic management in economic development: the Singapore experience', *International Journal of Management*, 10(2):165–73.

Yeoh, C., Perry, M. & Lim, M.L. 2000, 'Profile of a low cost manufacturing enclave: the case of Batamindo industrial park, Indonesia', in *Readings in International Business, eds R. Edwards, C. Nyland & M. Coulthard, Pearson Education Australia, New South Wales, pp. 193–212.*

Yeoh, C., Lim, D. & Kwan, A. 2004, 'Regional co-operation and low-cost investment enclaves: an empirical study of Singapore's industrial parks in Riau, Indonesia', Journal of Asia-Pacific Business, 5(4): 43–65.

Yeung, H. 1997, 'Cooperative strategies and Chinese business network', in *Cooperative Strategies: Asian Perspectives*, eds P. Beamish & J. Killing, The New Lexington Press, San Francisco.