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Enclaves for Enterprise: An Empirical Study of Singapore's Industrial Parks in Indonesia, Vietnam and China

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An Empirical Study of Singapore's Industrial Parks
in Indonesia, Vietnam and China**



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ABSTRACT

The dynamics of globalization have prompted governments to re-examine accustomed policies, and search for alternative strategies, in order to re-position their economies for the future. This paper explores the spatial context of state involvement in the new economics of competition, with the focus on Singapore's much publicized, and controversial, orchestration of its state enterprise network to encapsulate economic space for Singapore-based firms to expand into the Asian region. This strategic initiative is promulgated on the exportability of Singapore's 'state credibility', systemic and operational efficiencies, and technological competencies, to locations where these attributes are less certain. A logit model is applied to questionnaire surveys culled from Singapore's industrial-township projects in Indonesia, Vietnam and China and the findings are presented. We conclude that the strategic advantage created for the firms within these privileged investment enclaves, though remarkable, is oft at risk from the administrative complexities, and socio-political milieu, of the host environments.

Key words: Industrial Parks – Investment Enclaves - Singapore

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1. INTRODUCTION

Over the last four decades, Singapore has risen to be Southeast Asia's premier world-city, as well as an important base for multinational manufacturing. Singapore's reputation for corruption-free² administration and infrastructural efficiency, coupled with the overall integrity of its legal and financial systems, have played a central role in attracting foreign direct investments to fuel the city-state's economic development (Mirza 1986, Rodan 1989, Huff 1995). However, rising business costs – in the late 1970s and early 1980s – rendered it an imperative for Singapore's economic planners to expand the island's investment horizons through an overseas direct investment program (Wong and Ng 1991, Regnier 1993). The main ideas were set out in the policy paper, *Gearing Up for an Enhanced Role in the Global Economy* (Singapore Economic Development Board (SEDB) 1988). The 1990 Global Strategies Conference and the 1993 Regionalization Forum added new dimensions to these deliberations (SEDB 1990, 1993a), while the policy documents, *Singapore Unlimited* and *Regionalization 2000*, encapsulated the stratagem for Singapore's participation in the dynamic growth of China, India, Indonesia and Vietnam (SEDB 1995a, 1995b). Outward direct investments expanded strongly in the late 1990s (Okposin 1999); presently, about 70 percent of Singapore's outward FDI goes to Asia, but the relative share of ASEAN has declined with the increased importance of China and more recently, India. As with inward FDI, outward FDI has been influenced by government policy initiatives and incentives.

Often perceived as an archetypal interventionist state (Rodan 1989, Huff 1995, Low 1998, Blomqvist 2001), Singapore's strategy to remain economically competitive in the global economy can be interpreted as the building of platforms for national growth through the management of strategic alliances and 'collaborations' with private or semi-private enterprises on national economic projects. The Singapore government's role as a facilitator and partner is evident from the creation of familiar Singapore-havens via industrial parks in neighboring countries and the restructuring of taxation policies (Singapore Ministry of Finance 1993, SEDB 1993b). The state also embarked on fostering trusted regional networks³ identical to those within its domestic market, whereby interlocking interests and perceived commonality of values, crystallized a system of cooperative competition. Implicit in this stratagem was the government's intent to draw on its state enterprise network (or, in local parlance, Singapore Inc.), and extend this network to facilitate business ventures in the region (SEDB 1995b, Yeung 1998, Zutshi and Gibbons 1998). Theoretically, the 'vested interests' within the interlinked collaborative system serve to expedite processes, garner exclusive incentives, and negate inept bureaucracy.

The strategy, itself, featured a plethora of state interventions. Involvement in the township development is threefold: firstly, senior politicians are enlisted to negotiate the projects' institutional framework (which typically involved garnering special investment conditions in the host locations), and to secure endorsement from host-country governments, to give the projects political patronage and protection⁴. Secondly, 'government-selected' consortia, typically comprising Singapore government agencies and government-linked companies, take on the role of primary investors in infrastructure development. This is premised on the reluctance of private-sector firms to take on investments of such scale and long payback period. As well, the high risks involved in venturing into a relatively undeveloped and unfamiliar locale, where political, social and environmental conditions are suspect, compounded with uncertainty of investor interest, renders it inherently unattractive to private enterprises. Thirdly, the state actively markets and promotes the flagship projects to Singapore-based multinational enterprises (MNEs), on top of the internationalization of Singapore companies; as well, the presence of government agencies and government-linked companies, as 'business architect' and 'knowledge arbitrageur', adds significant weight to the promotional efforts.

² Singapore was ranked 5th, behind Finland, New Zealand, Denmark and Iceland, in Transparency International's Corruption Perception Index 2004.

³ The stress on exploiting personal ties accords with business practices preferred by the linked communities of 'overseas Chinese' (East Asia Analytical Unit 1995, Brown 1998), which Singapore made use of in its industrial parks in Indonesia and China.

⁴ Mechanisms include familiarization tours, formal and informal contacts amongst government officials, the constitution of ad-hoc problem-solving committees, and visits by ministerial delegations that emphasize the establishment of interpersonal relationships.

In the next section, we outline the theoretical considerations that underscore Singapore's regionalization strategy, followed by an introduction to, and explanation of the political and historical backgrounds of, the industrial parks referred to in our study. Thereafter, we detail the methodology of our field research, following which we present our findings and the preliminary conclusions we draw from them; and then, with reference to the empirical findings, we discuss the issues and challenges the parks face, and finally conclude that, while the parks have achieved some limited success, they have been, and remain, vulnerable to the combinations of socio-political and simple economic factors that radiate from their host environments.

2. THEORETICAL CONSIDERATIONS

Dunning's (1980, 1988, 2001) eclectic paradigm sought to provide the analytical basis for explaining the activities of firms situated beyond their national boundaries. The OLI paradigm was used to explain the ability and willingness of firms to serve markets, and to look into the reasons for their choice of exploiting this advantage through foreign production rather than domestic production, exports or portfolio resource flows through the interaction of Ownership-specific (O) advantages, Location-specific (L) advantages, and Internalization-incentive (I) advantages. This paradigm was reconfigured to constitute the 'asset-augmenting' aspects of FDI and MNC activity. For example, O-advantages have been divided into static and dynamic; the former describing the advantages possessed by a firm which generate income at a given point of time and the latter illustrating the proprietary factors which allow a firm to enhance its incoming-generating assets over time.

Dunning (1998a), Porter (1998), and others (e.g. Jovanovic 2003), have reiterated the importance of the spatial dimension, i.e. location-advantages as affecting the competitiveness of investing firms. Firms' strategic choice of location reflects twin aims; to not only transfer their resources to the host countries, but gain access to the available strategic assets as well (Chen and Chen 1998, Makino and Delios 1996). Like O-advantages, L-advantages can also be classified as static and dynamic. While an industrial township facilitates companies' resource-dependent operations with its static L-advantages, the geographical concentration of such activity also engenders dynamic L-advantages such as asset-augmenting activities (e.g. R&D) and agglomeration benefits. Given their deeply entrenched sources, these dynamic L-advantages cannot be easily replicated elsewhere. Although firms may relocate knowledge and similar assets, assets with a public good or collective characteristic, cannot be easily moved (Markusen 1996). Transactional benefits of spatial proximity of firms are significant, especially for cases where transaction costs of traversing distances are high (Storper and Scott 1995, Dunning 1998b). 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.

In similar vein, Porter emphasizes the prominence of location in competitive advantage in an increasingly complex, knowledge-based, and dynamic economy, as evidenced by the prevalence of clusters (Porter 2000a). Although changes in technology have diminished many traditional roles of location (i.e. natural factor endowments and access to inputs), location remains crucial because of agglomeration and cluster benefits. These include important linkages and complementarities, knowledge spillovers, efficient infrastructure and specialized labor (Krugman 1991, Peck 1996).

As created assets supersede natural factor endowments as a key determinant of location, the roles of governments in advancing the competitiveness of a country or region within a country need to be altered accordingly (Dunning 1995, 1997a). Inter alia, governments need to ensure that availability, quality and cost effectiveness of general purpose inputs match up to the standards of their global competitors, create and sustain an institutional framework and ethos that facilitates a continuous upgrading of the resources and capabilities within its jurisdiction and facilitate, rather than impede micro-regional clusters development and upgrading (Dunning 1997b, Stopford 1999, Porter 2000b).

Singapore's industrial township projects in Indonesia, China and Vietnam, represent collaborative efforts by the Singapore and respective local governments to create location-bound advantages within more uncertain environments, through a propitious combination of cost-effective factors of production, efficient infrastructure and management expertise; i.e., supplementing natural location-specific advantages with engineered ones crafted to attract foreign direct investments to the parks. Our field research, therefore, tests whether this mix of advantages has been successful in attracting investment to the parks; and, perhaps more importantly, the tangibility of, and the success of said advantages in retaining said investment; in the face of an ever-changing economic landscape and the mixed enthusiasm of potential investors.

3. SINGAPORE'S REGIONALIZATION GAMBIT

The following case studies of the industrial parks in Indonesia, Vietnam and China serve to illustrate the prevalence of the Singapore government's role in developing, managing and marketing these gargantuan overseas investments. As well, this strategic initiative can also take on an uncharted perspective of being an end in itself, that of exporting Singapore's expertise in industrial infrastructural development across the region (Perry and Yeoh 2000). Locations of the three industrial parks are shown in Figure 1, and their operational statistics are set out in Table 1.

3.1 Batamindo Industrial Park (BIP), Indonesia

The late 1960s witnessed Indonesia's ambition to develop the Riau islands when Batam was identified as a potential logistics and operational base to support offshore oil and gas fields. The 1979 master plan recognized the Riau islands with its location-specific advantages such as abundant land and cheap labor were well-positioned⁵ to address Singapore's land and labor constraints and, more importantly, to take advantage of Singapore's established business and financial services network and the city-state's efficient facilities for communication, transportation and other services (Kumar and Siddique 1994, Grundy-Warr et al 1999).

BIP was launched in 1992. The Park started as a joint venture between Singapore's government-linked companies⁶ and the Salim Group of Indonesia. Salim was Indonesia's largest business conglomerate, at the time, and had close links to senior politicians and privileged access to the major investment projects in the Riau Islands. Roles and responsibilities were distinctively segregated, with Salim providing a guarantee of priority with respect to regulatory controls, and the Singapore contributors taking control of the design, physical development and management of the estate, where it could leverage on its reputation for service efficiency and reliability to foreign investors

BIP's first tenants were mainly subsidiaries of American, European, and Japanese multinationals already operating in Singapore. Cumulative investments and export value in BIP topped US\$1 billion and US\$2 billion in 2004 respectively, and the number of tenants has increased from 17 in 1991 to 82 in June 2004. Of these, 39 were Japanese companies with Singapore-owned companies the next largest concentration at 25. American and European investors have a limited presence. 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. There are over 65,000 workers in BIP.

3.2 Vietnam-Singapore Industrial Park (VSIP)

VSIP is Singapore's flagship investment in Vietnam. The plan was first mooted in March 1994 by the then Vietnamese Prime Minister, Vo Van Kiet, and Singapore's then Prime Minister, Goh Chok Tong. Launched in 1996, the 500-hectare park is strategically located in Binh Duong Province, 17 km north of Ho Chi Minh City, and is within a 40-minute drive from the international airport and seaports. A self-contained, self-sufficient industrial park with prepared land plots, and ready-built factories, bolstered by Singapore-style management expertise and infrastructure support, VSIP offers investors a 'hassle-free', one-stop service, ready-built factories and Singapore-styled management expertise and infrastructure support. A 250,000-strong working population within a 15 km radius from VSIP provides a ready pool of low-cost, skilled labor.

In VSIP, Singapore applied lessons learned from its China experience, and made deliberate efforts to foster strong collaboration with local authorities. A Management Board was set up, chaired by the Vice Chairman of the Binh Duong Province People's Committee, which pre-empted the perception that VSIP was a partnership forced upon by the central government. The Board, with representatives from the Ministries of Trade, Finance and Interior, as well as the General Customs Department, oversees the issue of investment licenses, import/export permits, and construction

⁵ The cataclysmic collapse of oil prices in the early 1980s impressed upon Indonesia's economic planners the need for a more broad-based development strategy. The Riau islands were an obvious choice to encourage investments not least because Singapore has shown interest in leasing these nearby islands to transcend the city-state's need for inexpensive land and labor. By the late 1980s, the perception from Jakarta was that Singapore was "bursting at the seams", and that the time was right to position Batam and the other Riau islands to take advantage of the spill-over from Singapore.

⁶ The Singapore consortium was led by Singapore Technologies Industrial Corporation (now SembCorp Industries) and Jurong Town Corporation, Singapore's main industrial estate infrastructure developer.

permits. VSIP is jointly developed by a Singapore consortium⁷ led by SembCorp Industries and Becamex, a Vietnamese state-owned enterprise in Binh Duong Province.

VSIP's first tenants included 3M, Sandoz, Sakata Inx, Godrej (India), Liwayway Food Industries, and a mix of Singaporean firms like ST Automotive and Star Chemicals. Unlike BIP, where the focus on electronics and other light industries complements the restructuring of Singapore's manufacturing sector, VSIP is less selective in its tenant profile; the tenant-mix reflects the overwhelming importance of Asian MNEs, while the sector mix ranges from textiles, to electronics and pharmaceuticals. Singaporean and non-Asian companies are represented in a mix of industries, while the Japanese companies are largely concentrated in electronics. VSIP's major tenants include Konica, Nitto Denko, Kimberly-Clark, Diethelm and Roche. Investment commitments are currently valued in excess of US\$700 million, in a broad swathe of industries – food, electrical and electronics, pharmaceuticals and healthcare, specialty materials, consumer goods and light industries. VSIP has 138 committed tenants from 21 countries, of which 80 are already operational. 26000 jobs have been created, with the number expected to rise to 40 000 when the rest of the tenants start their operations⁸. VSIP posted its first profits in 2002.

3.3 China-Singapore Suzhou Industrial Park (CS-SIP)

CS-SIP was officially launched on May 12, 1994, and touted as a locale offering abundant labor, and other local resources, at competitive costs, and in proximity to target markets. These primary factors were purportedly enhanced and strengthened by world-class infrastructure within the park, strong commitment and support from the local authorities, and growing bilateral economic cooperation between Singapore and China. The project was jointly developed by a consortium of Chinese and Singapore-based investors known as the China-Singapore Suzhou Industrial Park Development Company (CSSD). The Chinese partners held a 35 per cent stake, while the Singapore consortia took a 65 per cent stake⁹. The two consortia retained separate identities and responsibilities, taking up projects according to their agreed roles (SIPAC 1999).

However, barely five years into the project, Singapore acknowledged that the original vision of transferring its industrial-development model to Suzhou was a much more complex and challenging process than previously envisaged. Singapore's disappointment was pointedly highlighted by then Senior Minister Lee Kuan Yew's public questioning of the commitment of the Chinese partners to the project¹⁰. By early 1999, the township had attracted a resident population of only 5,000 against a target of 600,000; the park was employing 14,000 workers, while the original target was 360,000. The slow progress resulted in financial losses for the Singapore-led consortium, which funded the land development and infrastructure, and also for Singaporean investors involved in peripheral projects. Official estimates placed Singapore's investment in CS-SIP at only US\$147 million.

These, and other, protracted difficulties¹¹ led to the announcement in 1999 that Singapore would stop pouring in additional investments and, *pari passu*, would transfer majority ownership of the park to the Chinese partners, with the latter taking a 65 per cent stake in the new alignment of interests¹². Interestingly, SIP performance turned around within a year following the transfer of majority ownership and management control. Since then, there has been a strong influx of investment. Investment in CS-SIP currently stands at US\$16 billion¹³, and 75 000 jobs have been created. The

⁷ Other members include Temasek Holdings, Ascendas International, United Overseas Land, Salim's KMP Group and Mitsubishi Corporation.

⁸ Source: VSIP Fact Sheet, May 2004.

⁹ The Chinese consortia's 35 percent stake was shared amongst 12 organizations, mainly national state-owned enterprises and investment companies of the Suzhou city, Jiangsu province. The Singapore consortium's 65 percent stake was distributed amongst 24 organizations, mainly Singapore GLCs, and the Salim Group (through a subsidiary, KMP China Investments).

¹⁰ The Straits Times, 1997, December 5 (*SM Lee unhappy over Suzhou park progress*).

¹¹ This is now an extensive literature on the problems encountered in the China-Singapore Suzhou Industrial Park project including scholarly works (e.g. Pereira, 2003); feature articles in popular magazines such as Asia Week, Far Eastern Economic Review, Fortune, Forbes and The Economist, and an unpublished (confidential) report commissioned by the Singapore government.

¹² The Straits Times, 1999, June 30 (*The Suzhou experiment*); South China Morning Post, 1999, June 29 (*Singapore drops control of Suzhou park*).

¹³ Source: The Business Times, June 9, 2004 (*Suzhou Park: 10 Years On*).

Park, named as one of nine “next frontier tech cities” of the world by Newsweek, has established its status as an investment hub for high-tech industries and 51 Fortune 500 companies. A significant proportion of the tenants originate from the US and Europe, and over 70% of their investments are in electronics, information technology and other high-tech segments. The completion of the second and third phase of the transportation network and other infrastructure developments, at an estimated cost of US\$10 billion, is in progress. The infrastructure development for the entire 70 sq km site is due for completion over the next two years. CSSD has plans to be listed by 2005 in China, and possibly in Singapore.

4. FIELD RESEARCH

Each of the three industrial parks discussed in this paper has been in operation for at least seven years, and are now established parks which catalyzed the development of similar industrial parks (e.g. Panbil Industrial Park and Citra Buana in Indonesia, Tan Thuan Export Processing Zone in Vietnam, and the Suzhou New District in China) in close proximity to the Singapore parks. Analysis of the Singapore-styled parks, relying primarily on secondary data from official publications and press reports, is not enough to ascertain the situation on the ground. To obtain primary data from the tenants of parks, we applied the questionnaire developed in Yeoh et al (2000), and surveyed the tenants in three of Singapore’s overseas industrial parks on the differential impact of various pull factors on firms’ investment decisions, along with the differential impact of different types of constraints on their operations.

4.1 Methodology

4.1.1 Questionnaire Survey

The questionnaire was designed as a comparative study to investigate the various factors influencing firms’ investment decisions along with the problems faced by their operations. The question sets for the tenants in the three industrial parks are similar. The surveys sought to highlight the different push/pull factors facing the park tenants when they chose to relocate their operations in the respective parks, and the operating constraints faced by the respective park tenants. The survey focused on three main areas. Firstly, the basic profile of the respondent: type of ownership, nature of operations, number of employees, sales turnover and its market orientation. Secondly, the factors that attracted the respondents to invest in the park. Data on various constraints was gathered in the third section.

Questionnaire surveys were conducted in Indonesia, Vietnam and China, from December 2002 to August 2004. A total of 125 responses were collected from industrial-park tenants. Of these, 25 (29% of BIP tenants) were located in Batamindo Industrial Park (BIP) in Indonesia, 47 (34% of VSIP tenants) were located in the Vietnam-Singapore Industrial Park (VSIP) in Vietnam, and the remaining 53 (9% of CS-SIP tenants) were located in the China-Singapore Suzhou Industrial Park Limited (CS-SIP) in China. In all cases, the surveyed tenants were carefully selected so as to obtain a representative distribution of all tenants in the park across both industry and nature of operations; to illustrate this distribution, the respondents were further reclassified in terms of type of ownership, nature of their operations, number of employees, and target markets. This profile is presented in Table 2. The surveys were conducted through face-to-face interviews in the case-study parks lasting an average of 45-60 minutes, with staff in senior managerial positions or above present in all cases, to ensure the holistic and accurate nature of the obtained responses.

4.1.2 Logit Model

Apart from analyzing the descriptive statistics and popular rankings on the responses relating to factors and constraints, the logit model was applied to compare the perceived advantages influencing the tenants’ decision to locate in the case-study parks. The logit model, estimated by maximum likelihood, takes the following form:

$$P_i = \frac{e^{Z_i}}{1 + e^{Z_i}}$$

Where: P_i is the probability of firm being located in the particular park
 Z_i is a linear function of the pull factors defined as

$$Z_i = \alpha_0 + \alpha_j \sum_{j=1}^n F_j$$

Where: $F_j = 1$ if the factor j is selected, 0 otherwise
 α_0 = constant term
 α_j = coefficient of independent (explanatory) variable

A similar model was also applied to the push factors (constraints) faced by the tenants in these parks.

Estimated coefficients in the logit model, if statistically significant, would suggest that the firm choosing that particular advantage/constraint is more likely to be a factor among tenants in that particular park than in those from the other industrial parks included in the survey. For example, where VSIP is the dependent variable, if the coefficient of F_1 is *positive* and *significant*, this would suggest that, after taking into account the effects of other advantages, a firm choosing 'Political commitment from the Singapore government' has a higher probability of being a firm located in VSIP i.e. political commitment from the Singapore government was a significant pull factor for VSIP tenants, *as opposed* to tenants in BIP or CS-SIP.

4.2 Findings

4.2.1 Factors Influencing the Respondents' Decision to Locate in the Case-Study Parks (Table 3)

The main leverage of the Singapore-styled industrial parks rests firmly on the export of the city-state's infrastructural development expertise, and on the low-cost labor available in the host environments. Not unexpectedly, then, the reliable and efficient Singapore-styled infrastructure was the Parks' main draw, with 84%, 77% and 72% of the BIP, VSIP and CS-SIP tenants surveyed citing it as a advantage that influenced them to locate in their respective parks. Singapore, then, appears to have succeeded in exporting its 'expertise' in infrastructure development and creating a location-advantage which is clearly in demand by companies in the South East Asian region. Additionally, our logit results re-affirm the importance of infrastructural facilities to CS-SIP, in particular, with a positive and statistically significant α_3 ($=1.046$); this being due to the park's need to support more technologically-sophisticated industries, as compared to the low-cost, labor-intensive manufacturing activities in BIP and VSIP.

Similarly, another perceived advantage of BIP was 'competitive labour costs', with 80% of the tenants indicating so, making this factor the second-ranked factor in popular ranking; not unexpected, considering that BIP serves as a low-cost investment enclave, and a large proportion of the tenants in BIP engage in labour-intensive manufacturing activities. The other low-cost enclave in VSIP, however, seemed to place cheap labour in rather lower regard, with only 43% of tenants stating it to be an advantage that drew them to the park. Our logit results, however, suggest that this factor was comparatively a deciding factor between the three parks for tenants in both VSIP and BIP, with a positive and highly significant α_6 ($=2.625$) and α_6 ($=2.186$) respectively; a result that is, however, explained by the simple fact that not a single one of the CS-SIP respondents mentioned this factor, clearly outlining the comparative importance of cheap labour to VSIP and BIP, as compared to CS-SIP, where it seems to be not an issue at all. China's much-touted and much-maligned 'cheap labour' proved to be quite not in evidence here; indeed, anecdotal evidence from our on-site interviews pointed to a tight labor market in Suzhou, and one oft-heard refrain suggests that CS-SIP companies have had to pay a premium for workers with the requisite skills. On a related note, tying with cheap labour in BIP's popular rankings was 'competitive overhead costs', and a positive and statistically significant α_7 ($=2.880$) differentiated the BIP respondents from those in the other two parks. Significantly, in terms of popular rankings, this factor ranked ninth in both VSIP and CS-SIP; suggesting that costs, overall, seem to be very much more of a concern for BIP tenants than VSIP and CS-SIP tenants.

Access to overseas markets was rather more of a consideration for VSIP tenants than for tenants in the other two parks, as indicated by the positive and statistically significant α_8 ($=2.904$), and in sharp contrast to the negative and statistically significant α_8 ($=-4.704$) for CS-SIP, which would suggest a disinclination for tenants interested in access to overseas markets to locate in CS-SIP. This can be explained, in part, by VSIP's tenant profile (comprising mostly Asian firms) and the Park's positioning as an export platform for these firms into the region; the fact that the majority of these tenants are involved in the production of consumer products would seem to support this explanation. We note, however, that from our respondent profiles, the major market for VSIP still appears to be the domestic market. On the other hand, Western and Japanese MNEs dominate the 'landscape' in CS-SIP, and given their established global marketing and distribution networks, this 'advantage' is, in all likelihood, a non-issue; or even less than that, given that the majority of CS-SIP tenants (almost 50%) are involved in the provision of industrial services, with product manufacturing very much in the minority. Access to overseas markets is of little real benefit to service providers, and in fact might create more competition for them; we note, after all, that the vast majority (46 of 53 respondents) indicated the growing domestic market to be one of their target markets, possibly explaining the

negative logit results for CS-SIP. We note, however, that looking at the popular rankings, we find that access to overseas markets is lowly-ranked for BIP and CS-SIP, and only ranked 6th for VSIP; despite the comparative importance of this advantage, it is obviously not a generally major consideration for tenants in the three parks as a whole. Interestingly enough, while BIP tenants are, unlike VSIP and CS-SIP tenants, largely export-based, this factor appears to be one they are largely indifferent to; likely due to the large percentage of firms which produce intermediate products, which often are already part of fixed value-chains, with set destinations other than the target markets for the final products.

Another interesting observation, not inconsistent with the tenant profile in CS-SIP, is the positive and statistically significant α_{11} (=3.488), indicating the comparative importance of major suppliers in the production network of CS-SIP respondents as opposed to respondents in the other two parks, and a negative and significant α_{10} (= -6.452), suggesting that the presence of major buyers within the park was, in the same way, comparatively less critical to their operations; perhaps due to higher-level services and industries that require a range of raw materials and quick and efficient supply networks, and for which distance to customers is not an issue. As well, the negative and highly significant α_{11} (= -3.001) for VSIP is consistent with a tenant profile that does not require the presence of major suppliers for operational efficiency. BIP tenants, on the other hand, tread the middle ground; tenants in this park, it seems, do not care particularly where their buyers and suppliers are or how accessible they might be, placing only an average emphasis on either – an observation not inconsistent with the intermediate product-focused tenant profile.

On a broader front, political commitment from the Singapore government was a distinctly more important consideration for BIP tenants than VSIP or CS-SIP tenants, as indicated by the positive and statistically significant α_1 (=2.997). This can be explained by the instability of Indonesia's political system. The post-Soeharto era was significant for BIP, as many firms pulled out of BIP during the political unrest. The situation was further exacerbated by the frequent changes in political leadership, with five presidents in the past six years. Key economic positions were reshuffled and economic advisors changed frequently, as power jockeying among the parties, ministries, legislature, central bank, and other institutions continued. All these serve to complicate investors' assessment of Indonesia's political outlook, making it imperative for the Singapore authorities to signal its political commitment to the progress of the Park. As well, political commitment from the Indonesian government became particularly important in keeping the tenants' confidence in BIP. Despite this, however, the popular rankings suggest that this political capital is still comparatively not a very major concern for tenants in the studied parks; only 6 and 7 respondents respectively from VSIP and CS-SIP cited this factor as an affirmative pull factor, and even for BIP it is only ranked 6th in the popular rankings; suggesting that tenants were, in general, much more concerned with operational considerations, such as the reliable Singapore-styled infrastructure facilities, than with the Singapore government's other supposedly major contribution, its much-vaunted political commitment to the success of the parks. In contrast, though not unexpectedly, political commitment from the host government was pivotal to the respondents' investment decision in all three case-study parks, occupying one of top four spots in the popular rankings in each park, as well as, surprisingly, the host of investment incentives meant to entice multinationals to locate their lower value-added activities in these self-contained enclaves; incentives that, contrary to popular literature on the effectiveness of such lures, seem to have served their purpose quite admirably. Unsurprisingly, our logit results found no statistical significance in the figures for either of these factors; quite obviously, both factors are equally critical to tenants in all three parks.

4.2.2 Major Constraints on the Respondents' Operations (Table 4)

BIP, VSIP and CS-SIP are now established industrial-estate developments, but our study alludes to some emerging constraints which have undermined the attractiveness of the Parks. These constraints are categorized into three broad groups, namely, those relating to labour, those relating to organization and technology, and those relating to the economic 'environment', such as government policies and regulations.

4.2.2.1 Labour-related constraints

The 'cheap' labour resources which drew companies to Indonesia proved to be mere perception rather than reality in BIP, as 'rising labour costs' was one of the main constraints faced by 78% of the BIP tenants. Industrial relations problems exacerbated the difficulties faced by BIP tenants, which perform predominantly labour-intensive activities, and which are substantiated statistically by 63% of the BIP respondents; although surprisingly, low labour productivity was only the 8th most quoted constraint faced by BIP respondents. CS-SIP respondents, on the other hand, face both rising labour costs, which was ranked 4th as well as low labour productivity, which was ranked 3rd, with both

constraints comparatively more serious in CS-SIP than in BIP or VSIP, as indicated by the positive and significant β_3 (=1.340) and β_4 (=2.422) respectively; the park, however, seems to face no industrial relations problems, with only 1 respondent even citing it. Shortages of managers and other professionals were comparatively less critical to respondents in BIP (β_2 =-2.327) as, given Singapore's proximity, the requisite manpower can be sourced at short notice; therefore BIP respondents ranked it only as their 8th most faced constraint, as opposed to VSIP and CS-SIP tenants, which placed it as the most and 2nd most serious constraint they respectively face; in CS-SIP, likely due to the higher level of operations among tenants in CS-SIP, and to the emphasis on service industries as opposed to manufacturing industries, but for VSIP perhaps pointing to a lack of sufficient educational and training facilities to produce the requisite professional labor. On the other hand, many VSIP tenants did not appear to face, either generally or comparatively, problems of rising labour costs, as indicated by the tied 11th ranked, and negative and significant β_3 (= -2.587), or difficulties over low labour productivity, as suggested by the 8th ranked, and negative and statistically significant β_4 (= -1.771), and also seemed to generally face few industrial relation problems, as indicated by the tied 11th rank. Instead, (and again, unlike BIP and, to a lesser extent, CS-SIP) VSIP tenants face a shortage of semi-skilled labour, citing it as their 2nd ranked constraint; a fact which, taken together with the above point on shortages of professionals and managers, would suggest that VSIP tenants in general are facing an acute labour shortage of requisite manpower.

4.2.2.2 Organizational and technological-related constraints

The 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. This resulted in high overhead costs, especially in BIP where 74% of respondents cited it as a constraint they faced, and to some extent, in VSIP and CS-SIP, where the corresponding percentages are 38% and 34%, although a lack of statistically significant logit results suggests this to be an equally major constraint to all three parks; taken together with rising labour costs in BIP and CS-SIP, it would seem that BIP tenants, in particular, are finding the promise of low costs that lured them there less than entirely fulfilled. Other organizational/technological constraints faced by BIP and VSIP tenants included difficulties in sourcing raw materials (ranked 5th in both) which, significantly, was not the case in CS-SIP, as indicated by the 13th rank and confirmed by the negative and highly significant β_8 (= -1.959). Unlike the promise of low costs in BIP, then, the presence of major suppliers in CS-SIP seems to have been one advantage that has actually materialized.

4.2.2.3 'Environmental' constraints

Government regulation is a significant constraint for tenants in BIP and VSIP, evident from their positive α_{13} of 4.389 and 1.131 and 1st and 3rd rankings respectively; however, whereas 89% of BIP tenants cited this constraint, less than half of the VSIP respondents indicated likewise, accounting for the positive and highly significant β_{13} (=4.389) for BIP, and, perhaps more significantly, the negative and highly significant β_{13} (= -3.153) for CS-SIP. The significance of this for CS-SIP is clear, considering the countless number of incidents which relate back to the oft-cited 'inefficient and corrupt' bureaucracy in China; a bureaucracy which seems rather more friendly than its reputation would suggest, or at least, more friendly than governmental bodies overseeing BIP and VSIP. Competition from overseas competitors, on the other hand, was consistently a top-ranked constraint among respondents from all three parks, but was clearly the over-riding concern of the respondents in CS-SIP where, in terms of popular ranking, it was the most frequently cited constraint; nonetheless, logit results were not significant, indicating roughly equal attention paid to dealing with this constraint in all three parks. Clearly, while government control over the operating environment has proven more stifling to the operations of the tenants in BIP and VSIP, the economic landscape shaped by overseas competitors is very much 'on the radar' of all three parks' tenants.

52% of surveyed BIP tenants intend to expand within the Park over the next 5 years, compared to 61% in VSIP. However, 41% of surveyed BIP tenants plan to retain the current size of operations within the next 5 years, compared to 22% in VSIP. Only a few respondents signalled plans to scale down operations, or relocate from these two parks, suggesting a high degree of economic inertia amongst current tenants. This observation lends support to the Markusen-hypothesis on 'sticky places in slippery space', and is best summed up by the comments proffered by an MNE in BIP: 'moving to other locations would be cost-prohibitive, given the huge amount of costs the company has sunk into our BIP operations.' Sentiments among CS-SIP tenants were exceptionally upbeat, with almost all the respondents intending to scale up their operations; reflecting, in our assessment, the strategic advantages engendered within the CS-SIP environment, set against the broader context of the dynamism of the host economy.

5. ISSUES AND CHALLENGES

Foreign investment is attracted to investment enclaves or 'shady places' (Lundan, 2003), and agglomerate in and around centers of international infrastructure (Peck, 1996). The Singapore-developed parks sought to capitalize on this dynamic by combining superior infrastructure with a plethora of often exclusive investment concessions acquired through negotiations with local stakeholders. The special privileges secured by Singapore's flagship projects were, as noted above, unprecedented and unique (at least initially) to the parks, providing an edge over competing locations. For instance, the parks were allowed to construct and operate on-site power and water treatment plants, and telecommunications facilities; as a result, the parks enjoy the reputation of reliable infrastructural facilities in areas where these facilities are an anomaly. Furthermore, the management boards of the parks usually include local government officials, an arrangement which was to facilitate the parks' privileged access to investment approvals, endorsements for construction activities, import/export permits and immigration-related permissions. The synergistic combination of these factors would render the parks self-sufficient and capable of offering investors the formulaic one-stop service Singapore-styled infrastructure is known for; service otherwise uncommon in emerging economies beset with administrative uncertainties. In addition, the parks would (supposedly) attain credibility through their inherent association with Singapore, which enjoys a positive reputation with multinational corporations for its stable, corrupt-free business ethos. As well, the strategic alliances between Singapore's own state enterprise networks, and its counterparts in the regional sites, were instrumental in mobilizing the financial resources to complete these multi-million projects and, in most cases, within a comparatively short time frame of 18 to 24 months.

Our empirical findings ascertain the following: the investment-friendly institutional framework laid by the Singapore and host governments, factor availability, the provision of superior infrastructure and, in the case of BIP, proximity to Singapore (both physical and political) were instrumental in engendering a competitive environment within the case-study parks. Tenants within the parks reaped significant advantages by tapping on the low-cost competitive environments and relying on Singapore's infrastructure, management and expertise. Furthermore, Singapore's positive reputation with MNEs for its stable, corruption-free investment environment lent credibility, to the extent that locating within the parks, in cases, had the side effect of lending a measure of prestige to the firm.

Nonetheless, as most openly admitted, even the strategically engineered inter-government endorsement of the flagship projects, and the enormous resources mobilized through the strategic partnerships, have failed to shield the Parks from a gamut of all too practical problems. The following observations update, and offer new insights, on recent developments in the industrial-township projects.

5.1 Heightened competition

Singapore's overseas industrial parks are facing mounting competition from competing parks within their vicinity. Competitor parks, some of which are backed by prominent Indonesian politicians, have burgeoned around BIP. Panbil Industrial Park, for example, one of the competitor parks and one offering facilities comparable to those in BIP, is located just opposite BIP; and many of its competitors are able to offer more attractive rates than BIP, a matter of distinct concern at a time when costs (both material and labour) in BIP are rising and when cost-conscious tenants, such as those in BIP, might be experiencing a change of heart. VSIP's attractiveness has been similarly eroded by competition from newer industrial estates such as the Linh Trung Export Processing Zone, on top of incumbents like the Tan Thuan Export Processing Zone. Established by experienced and street-savvy developers from Taiwan, China and Thailand, these competitor parks market themselves aggressively on price, charging lower transportation fees accruing from more strategic locations. And from the onset, CS-SIP faced tremendous competition from the adjacent Suzhou New District as local officials chose to promote the latter over the former. This competition has somewhat subsided after control over CS-SIP was handed over to the Chinese partners, and the interests of the Singapore and local stakeholders came into somewhat better alignment; nonetheless, CS-SIP continues to face competition from the nearby Pudong New Area and China's five special economic zones in Shenzhen, Zhuhai, Shantou, Xiamen and Hainan. These industrial centers are part of China's larger strategy to attract foreign investments, and share similar privileges and status as CS-SIP. In recent years, these locations have upgraded their industrial structure and innovated on their management systems, rendering themselves increasingly competitive vis-à-vis CS-SIP. The simple economics of competition have called into question the premium attached to the 'superior infrastructure' in Singapore's industrial-investment enclaves; and all of the parks' supposedly exclusive investment incentives will, in all likelihood, prove no more than a temporary advantage over the rapidly improving competition.

5.2 Changes in Political ‘Allegiances’

In Indonesia, China and Vietnam, the personal ties that were critical for the success of the projects at the onset, have declined in certainty and influence. In the Indonesian projects, the reliance on the Salim Group was necessary in the context of the Indonesian system of ‘crony capitalism’ fostered by then-President Soeharto. However, Salim’s political and commercial influence has diminished in the post-Soeharto era. As well, inter-governmental endorsements no longer suffice to secure commitments at the lower tiers of government. Anecdotal evidence from our field interviews points to a more complex regulatory environment for foreign companies, as they have to deal more intensively with the provincial and sub-provincial (district) governments. BIP’s reputation as an investment enclave has also not been left unscathed by political developments in the wake of the Asian financial crisis, the September 11 attacks in the United States, the Bali-Jakarta bomb blasts and negative press reports on active terrorist cells within the region (Yeoh et al, 2004).

In Vietnam, investments in VSIP were expected, *in situ*, to benefit from Singapore’s ability to secure special concessions. These initial expectations now seem roseate, as inter-government endorsement (in the spirit of ASEAN economic co-operation) has proved insufficient to secure similar commitment in the lower tiers of government. In VSIP, the influence of local administrators, and their interests in competing developments, has compromised the significance of inter-governmental endorsement of the project. The ‘special’ support from the local authorities has proved to be less significant than envisioned. Improvements on infrastructural projects have translated into a plethora of miscellaneous fees, and added to operating costs¹⁴, doubtless a far cry from the aid envisioned by the majority of tenants who were attracted by the Vietnamese government’s perceived political commitment to the project, who now find government regulation one of their greatest constraints. Our on-site interviews further reveal negative undercurrents over Singapore’s control and management of VSIP. Anecdotal evidence suggests that tensions have begun to arise over Singapore-styled management practices, and these have materialized in perception differences, protracted conflicts and project delays; though not yet a major issue yet, it is without a doubt a growing one. Local sentiments towards the Singapore seem to mirror those expressed in the Suzhou-Wuxi experience in China, albeit to a lesser degree. Significantly, SembCorp Industries has announced plans to divest itself of part of its stake in VSIP¹⁵ to reflect a better ‘alignment of interests’, even as the project is finally registering positive returns on its investment.

In China, CS-SIP’s progress was initially hampered by an approach that was unsuited to the local administrative context. Although top-level leaders in China and Singapore endorsed the project, this did not automatically translate into cooperation at the lower tiers of government. Instead, local authorities chose to promote the existing Suzhou New District, arguably on the basis that they had greater ownership in this development, as opposed to CS-SIP, which Singapore controlled. Since 2001, this misalignment of interests has been rectified by the handover of control to the Chinese, and the appointment of key officials, previously steering Suzhou New District, to leadership positions in CS-SIP. The realignment of interests has, at face value, resolved the ‘paradox of context’ (Thomas, 2001; Pereira, 2003) which encumbered the CS-SIP initiative. However, CS-SIP yet shares the political patronage of the Chinese officials with many of its competitors.

6. CONCLUSION

The progress of Singapore’s overseas parks over a comparatively short period of time indicates the ability of the Singapore’s state enterprise network to mobilize economic and political resources to create economic space for the city-state. The projects have obtained special investment conditions within their overseas localities, and government endorsements which further underline the significance of the projects. Nonetheless, we find that certain complexities of the individual environments, as well as the rude intrusion of the economics of competition, have hindered the progress and hobbled the commercial effectiveness of the parks.

In Indonesia, BIP has attracted a significant level of foreign investments, fulfilling the intended niche of accommodating industrial investments from investors that are most at risk from administrative uncertainties, and lending credence to Singapore’s positive reputation with the multinationals. BIP is now a well-established project, but it has not necessarily achieved all its development goals. It has been a springboard for Singapore-Indonesian co-operation in Indonesia’s Riau Province, but it is not yet clear that Singapore has obtained the resource benefits looked for. BIP has been struggling to gain

¹⁴ Corruption remains endemic. The Vietnamese government itself recently estimated that light-fingered bureaucrats creamed off at least 20% of the infrastructure spending (*The Economist*, September 14, 2002).

¹⁵ The Straits Times, December 1, 2003 (*SembCorp Park Viet Venture Turns Profitable*).

investment momentum, arising both from the increased competition for foreign investments and the restricted appeal of its operating conditions. The promised cost advantages of BIP have been less than evident, and over the longer term, the political uncertainties and policy nuances that radiate from Jakarta are unlikely to add to investor confidence. As gleaned from our on-site interviews, BIP would currently seem to have economic inertia on its side, as tenants find the cost of moving prohibitive; but this is, unquestionably, not truly an 'advantage'. Inertia, after all, is hardly an attractive force; 41 per cent of our BIP-based respondents can attest to that.

In Vietnam, Singapore's investment in VSIP takes on an added dimension of rendering development assistance to an 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. The focus on specific industries that complement Singapore's economic restructuring is absent, unlike in BIP. All the same, underlying vested interests to secure the city-state's economic interests can be associated with this seeming act of camaraderie. Notwithstanding these explicit and implicit objectives, we submit that heightened competition and endemic corruption in the host environment work in tandem to test this strategic initiative; a combination of rising overhead costs and a tight labour market, together with rather more anaemic support from local authorities than anticipated by investors are placing growing pressure on the park and its tenants. Nonetheless, the park's competitiveness, while dented, is yet intact, and remains a draw to potential tenants.

In China, CS-SIP can be perceived as a strategic thrust by the Singapore government to capitalize upon first-mover advantages in a regional economy with immense market potential. As the first entrant to develop and manage a state-of-the-art industrial park, CS-SIP could arguably enhance Singapore's reputation for infrastructure efficiency and corrupt-free administration. More subtly, its apparent success would leverage various Singapore companies' foray into leverage Singaporean companies' foray into China's aggressive infrastructure plans and commercial-residential township projects. Following the handover to the Chinese partners, CS-SIP has indeed been doing very well for itself, as can be seen both from its 'paper results', and from the upbeat tone of the respondents from the park. However, several labor issues remain to be resolved, as well as the endemic 'Singapore-symptomatic' problem of rising overhead costs; minor issues that might as yet balloon into major ones as more and more global entrants seek to tap on China's enormous domestic potential, much as CS-SIP is doing.

To summarize, then, our study suggests the theorizations that underscored Singapore's regionalization stratagem and, *pari passu*, the strategic advantage created for the firms within these privileged investment enclaves, though remarkable and unquestionably tangible, are oft at risk from the administrative complexities and socio-political milieu, that radiate from the host environments. Our paper contends that Singapore's calculated, schematized efforts at transborder industrialization, in concert with regional governments and business elites, have been overly optimistic, more often than not frustrated by the intricacies of socio-political and economic realities in the host economies; and that the Singapore formula, applied to the variables of economic competition in these host economies, have proven to add up to rather different results. That said, official commitment to Singapore's regionalization initiatives remains, as does the willingness of Singapore's planners to search for alternative strategies to re-position regionalization efforts. Perhaps, in the process of re-thinking these initiatives, the 'real politik' of transferring 'Singapore Unlimited' to emerging economies will elicit a more incisive scrutiny; one, perhaps, along slightly more economic and case-specific lines.

REFERENCES

- Blomqvist, H. 2001 State and Development Policy: The Case of Singapore, *Asian Profile*, **29(3)**: 239-253.
- Brown, C. 1998 Overseas Chinese Business in South-east Asia, in K. Sheridan (ed.), *Emerging Economic Systems in Asia* (Allen & Unwin: Sydney) Sydney: Allen & Unwin, 208-227.
- Cartier, C. 1995 Singaporean Investment in China: Installing the Singapore model in Suzhou, *Chinese Environment and Development*, **6(1&2)**: 117-144.
- Chen, H. and Chen, T.J. 1998 Network linkages and location choice in foreign direct investment, *Journal of International Business Studies*, **29(3)**: 445-468.
- Dunning, J.H. 1980 Toward an eclectic theory of international production: some empirical tests, *Journal of International Business Studies*, **11(1)**: 9-31.
- Dunning, J.H. 1988 *Explaining International Production* (London and Boston: Unwin Hyman).

- Dunning, J.H. 1995 Re-appraising the eclectic paradigm in an age of alliance capitalism, *Journal of International Business Studies*, **26(3)**: 461-491.
- Dunning, J.H. 1997a *Alliance Capitalism and Global Business* (London and New York: Routledge).
- Dunning, J.H. 1997b A business analytic approach to governments and globalization, in J.H. Dunning (ed.), *Governments, Globalization, and International Business*, (Oxford University Press Inc: New York), 114-131.
- Dunning, J.H. 1998a Globalization and the new geography of foreign direct investment, *Oxford Development Studies*, **26(1)**: 47-70.
- Dunning, J.H. 1998b Location and the multinational enterprise: a neglected factor?, *Journal of International Business Studies*, **29(1)**: 45-66.
- Dunning, J.H. 2001 The eclectic paradigm of international production: past, present, and future, *International Journal of the Economics of Business*, **8(2)**: 173-190.
- Grundy-Warr, C., Peachy, K. and Perry, M. 1999 Fragmented integration in the Singapore-Indonesian border zone: Southeast Asia's 'growth triangle' against the global economy, *International Journal of Urban and Regional Research*, **23(2)**: 304-328.
- Huff, W. 1995 The development state, Singapore, and Singapore's economic development since 1960, *World Development*, **23(8)**: 1421-1438.
- Jovanovic, M.N. 2003 Spatial location of firms and industries: an overview of theory, *Economia Internazionale*, **56(1)**: 23-82
- Krugman, P. 1991 Increasing returns and economic geography, *Journal of Political Economy*, **99(3)**: 483-489.
- Kumar, S. and Siddique, S. 1994 Beyond economic reality: new thoughts on the growth triangle, in *Southeast Asian Affairs 1994*, (Institute Of Southeast Asian Studies: Singapore), 47-56.
- Low, L. 1998 *The Political Economy of a City-State: Government Made Singapore* (Singapore: Times Academic Press).
- Lundan, S. M. 2003 Institutions, exclusivity and foreign investment, in H. Peter Gray (ed.) *Extending the Eclectic Paradigm in International Business: Essays in Honor of John Dunning*, (Edward Elgar: Cheltenham), 93-105.
- Makino, S. and Delios, A. 1996 Local knowledge transfer and performance: implications for alliance formation in Asia, *Journal of International Business Studies*, **27(5)**: 905-927.
- Markusen, A. 1996 Sticky places in slippery space: a typology of industrial districts', *Economic Geography*, **72(3)**: 293-313.
- Mirza, H. 1986 *Multinationals and the Growth of the Singapore Economy* (London: Croom Helm).
- Okposin, S.M. 1999 *The Extent of Singapore's Investment Abroad* (Aldershot: Ashgate)
- Peck, F.W. 1996 Regional development and the production of space: the role of infrastructure in the attraction of new inward investment, *Environment And Planning*, **28**: 327-329.
- Pereira, A. 2003 *State Collaboration and Development Strategies in China: The Case of the China-Singapore Suzhou Industrial Park*, (London: Routledge).
- Perry, M. and Yeoh, C. 2000 Asia's transborder industrialization and Singapore's overseas industrial parks, *Regional Studies*, **4(2)**: 199-206.
- Porter, M. 1998 Clusters and the new economies of competition, *Harvard Business Review*, **76(6)**: 77-90.
- Porter M. 2000a Locations, clusters, and company strategy, in G. Clark Et Al. (eds.), *The Oxford Handbook of Economic Geography*, (Oxford University Press: Oxford), 253-274.
- Porter, M. 2000b Location, competition and economic development: local clusters in a global economy, *Economic Development Quarterly*, **2000(14)**: 15-34.
- Regnier, P. 1993 Spreading Singapore's wings worldwide: a review of traditional investment strategies, *The Pacific Review*, **6**: 305-312.
- Rodan, G. 1989 *The Political Economy of Singapore's Industrialization* (London: Macmillan).

- Singapore Economic Development Board. 1988, *Conference Proceedings of Global Strategies - The Singapore Partnership*, October 24-26.
- Singapore Economic Development Board. 1990, *Conference Proceedings of Global Strategies - World Class Partnership*, June 4-6.
- Singapore Economic Development Board. 1993a, *Conference Proceedings of Regionalization Forum*, May 21-23.
- Singapore Economic Development Board. 1993b, *Your Partners in Regionalization: Singapore Government Agencies*.
- Singapore Economic Development Board. 1995a, *Singapore Unlimited*.
- Singapore Economic Development Board. 1995b, *Regionalization 2000*.
- Singapore Ministry of Finance. 1993, *Final Report of the Committee to Promote Enterprise Overseas*.
- Suzhou Industrial Park Administrative Committee. 1999, *SIP – Five Years Achievements in Adapting Singapore's Experience*.
- Stopford, J.M. 1999 Implications for national governments, in J.H. Dunning (ed.), *Governments, Globalization, and International Business*, (Oxford University Press Inc: New York), 457-480.
- Storper, M. and Scott, A.J. (eds.) 1995 *Pathways to Industrialization and Regional Development* (London: Routledge).
- Thomas, J. 2001 Institutional innovation and prospects for transference. part I: transferring Singaporean institutions to Suzhou, China, *John F. Kennedy School of Government Harvard University Faculty Research Working Papers Series*, RWP02-001, September 2001.
- Wong, P.K. and Ng, C.Y. 1991 Singapore's Internationalization Strategy in the 1990s, in *Southeast Asian Affairs 1991*, Singapore: Institute of Southeast Asian Studies, 267-276.
- Yeoh, C., Perry, M. and Lim, M.L. 2000 Profile of a low cost manufacturing enclave: the case of Batamindo Industrial Park, Indonesia, in R. Edwards, Nyland, C. and Coulthard, M. (eds.), *Readings in International Business*, (Pearson Education Australia: New South Wales), 193-212.
- Yeoh, C., Lim, D. and 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. 1998 The political economy of transnational corporations: a study of the regionalization of Singaporean firms, *Political Geography*, **17(4)**: 389-416.
- Zutshi, R.K. and Gibbons, P.T. 1998 The internationalization process of Singapore government-linked companies: a contextual view, *Asia-Pacific Journal of Management*, **15(2)**: 219-240.

FIGURE 1

Singapore's Overseas Industrial Parks
in Indonesia, Vietnam and China

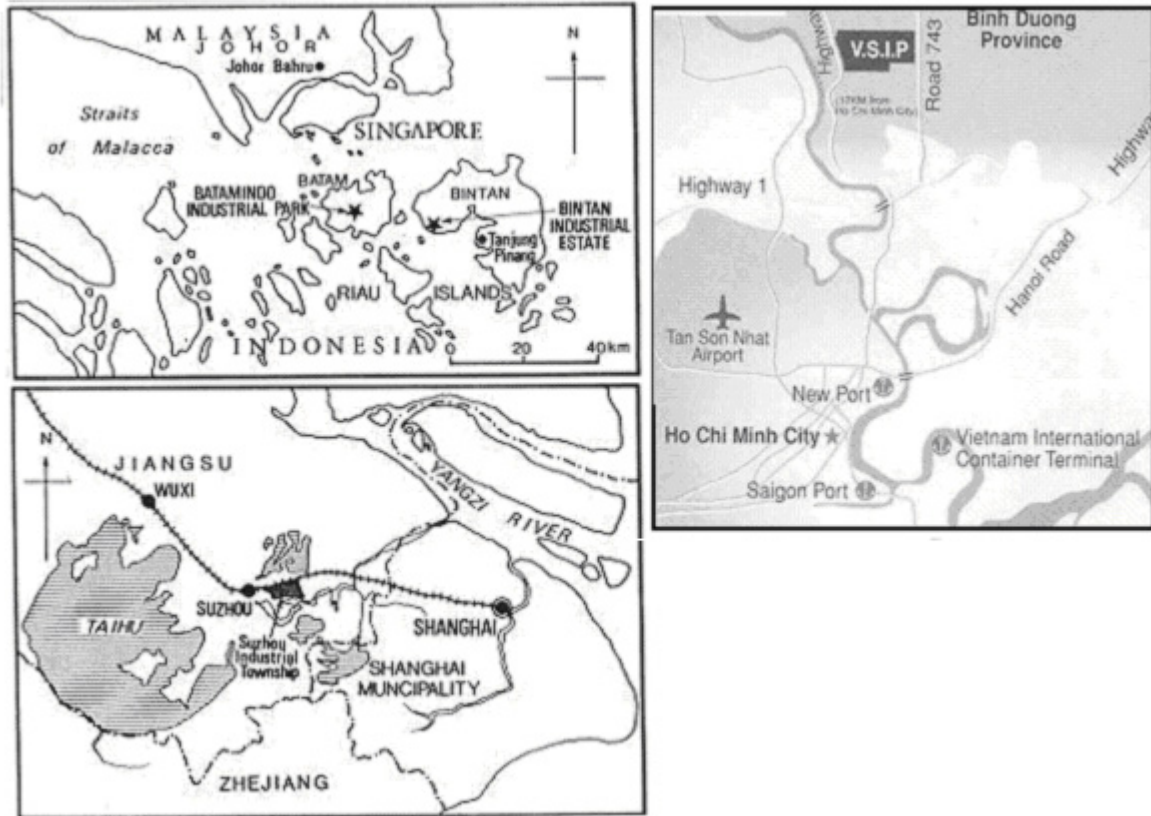


TABLE 1
Operational Statistics of Singapore's Overseas Industrial Parks
in Indonesia, Vietnam and China

	BIP (Jun 2004)	VSIP (May 2004)	SIP (Feb 2004)
Year of Operation	1990	1997	1994
Scale of Development (hectares)	500	500	7000
Investment by Developer (US\$ million)	470	400	12,400
Committed Tenants	85	138	573
Area Taken Up (hectares)	320	320	980
Investment by Tenants (US\$ million)	> 1,000	700	15,200
Export Value (US\$ million) (2003)	> 2,000	207.6	5,960
No. of Employees	65,000	26,000	137,029

Source: SembCorp Industries, Ascendas International,
and China-Singapore Suzhou Industrial Park Development Company (CSSD)

TABLE 2
Profile of Respondents

Parks	BIP	VSIP	SIP
Surveyed tenants	25	47	53
Ownership	Singapore	6	10
	Joint venture	5	2
	Foreign owned	14	35
Nature of Operation	Consumer products	6	20
	Intermediate products	14	12
	Capital goods	0	1
	Industrial services	5	3
	Others	0	13
Number of employees	Less than 100 people	1	29
	100-500 people	11	9
	More than 500 people	13	9
Target market	ASEAN	15	18
	East Asia	15	13
	OECD	16	9
	Domestic Market	3	29

Source: Questionnaire survey

TABLE 3
Factors Affecting Respondents' Decision to Locate in BIP/VSIP/CS-SIP
 (by frequency, popular ranking, and maximum likelihood estimate)

Factors	BIP				VSIP				CS-SIP			
	Freq	Rank	α coeff.	p-value	Freq	Rank	α coeff.	p-value	Freq	Rank	α coeff.	p-value
Political commitment from S'pore government	15	6	2.997	0.007*	6	9	-1.462	0.043**	7	8	-0.534	0.592
Political commitment from host government	19	4	-0.346	0.695	37	1	1.062	0.123	38	2	-1.166	0.216
Infrastructure facilities	21	1	0.722	0.515	36	2	-1.005	0.175	38	2	1.046	0.099***
Investment incentives	19	4	-0.571	0.524	30	3	-0.639	0.308	40	1	0.550	0.495
Presence of skilled labor	14	8	0.500	0.602	12	7	0.133	0.850	13	5	-1.241	0.163
Competitive labor cost	20	2	2.186	0.013**	20	5	2.625	0.003*	0	12	-22.370	0.996
Competitive overhead cost	20	2	2.880	0.001*	6	9	-3.193	0.002*	4	9	0.160	0.891
Access to overseas market	13	9	0.994	0.246	15	6	2.904	0.001*	1	10	-4.704	0.002*
Access to domestic market	5	12	-2.365	0.040**	22	4	2.002	0.001*	12	6	-1.132	0.119
Presence of major buyer	15	6	1.168	0.388	11	8	1.132	0.290	1	10	-6.452	0.061***
Presence of major supplier	13	9	0.549	0.691	4	11	-3.001	0.001*	22	4	3.488	0.012**
Presence of major competitors	8	11	0.557	0.674	1	12	-3.139	0.027**	12	6	3.299	0.122
Constant	N/A	N/A	-4.954	0.002*	N/A	N/A	-0.593	0.468	N/A	N/A	0.809	0.353

Source: Questionnaire survey

Note: p-values are for two-tailed tests.

* Significant at 1% level

** Significant at 5% level

*** Significant at 10% level

TABLE 4
Constraints on Respondents' Operations in BIP/VSIP/CS-SIP
 (by frequency, popular ranking, and maximum likelihood estimate)

Factors	BIP				VSIP				CS-SIP			
	Freq	Rank	α coeff.	p-value	Freq	Rank	α coeff.	p-value	Freq	Rank	α coeff.	p-value
Shortage of skilled/semi-skilled labors	1	14	-3.870	0.033**	25	2	1.311	0.015**	18	5	-0.570	0.355
Shortage of professionals or managers	10	8	-2.327	0.084***	34	1	-0.012	0.983	32	2	0.532	0.447
Rising labor costs	19	3	1.909	0.154	6	11	-2.587	0.000*	19	4	1.340	0.043**
Low labor productivity	10	8	0.300	0.808	11	8	-1.771	0.003*	25	3	2.422	0.001*
High absenteeism	2	13	-1.861	0.179	6	11	0.100	0.884	10	9	0.650	0.420
Industrial relation problems	15	6	3.987	0.015**	6	11	-0.222	0.765	1	14	-0.006	0.009*
Difficulty in obtaining capital equipment	5	11	0.529	0.671	9	9	-0.298	0.650	11	8	0.638	0.366
Difficulty sourcing raw material	16	5	1.139	0.347	18	5	0.925	0.096***	5	13	-1.959	0.005*
Difficulty introducing new technology/techniques	10	8	1.838	0.172	8	10	-0.426	0.494	10	9	-0.396	0.611
Difficulty sourcing fund for expansion	4	12	1.161	0.432	5	14	-0.122	0.874	8	11	0.032	0.971
Lack of good supporting services	11	7	-0.646	0.606	16	7	0.108	0.844	12	7	-0.263	0.687
High/rising overhead costs	18	4	1.187	0.310	18	5	0.243	0.622	18	5	-1.015	0.070
Government regulation	22	1	4.389	0.002*	22	3	1.131	0.046**	6	12	-3.153	0.000*
Competition from overseas competitors	20	2	0.061	0.963	22	3	-0.432	0.408	33	1	0.458	0.449
Constant	N/A	N/A	-5.891	0.001*	N/A	N/A	-0.093	0.882	N/A	N/A	0.156	0.831

Source: Questionnaire survey

Note: p-values are for two-tailed tests.

- * Significant at 1% level
- ** Significant at 5% level
- *** Significant at 10% level