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Creating Competitive Advantages out of Market Imperfections: Taiwanese Firms in China

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In this paper, we highlight foreign direct investment (FDI) as a strategic move by foreign investors to exploit host country resources that are not equally available to all firms in order to create a competitive advantage. Using Taiwanese firms in China as an example, we find this resource-based FDI strategy to be most effective among large firms in mature industries. Large Taiwanese firms take advantage of market imperfections and institutional deficiencies in China to create barriers for small firms to access valuable local resources, to orchestrate a relocation of production networks that favor themselves, and to pursue vertical integration that forecloses the competition from small firms. As a result, large firms gain shares in world markets, which in turn, enable them to diversify product lines or to engage in risky R&D.
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Introduction

With enterprises constantly in search of economic rents, the traditional theory of foreign direct investment (FDI) views such investment as an attempt to exploit economic rents in a foreign country, where that country is regarded as a new market frontier (Hymer, 1960; Caves, 1971). In this paper, we contend that a foreign country can also be a source of competitive advantage, arguing that economic rents actually derive from the investor's superior capabilities in the use of host-country-based resources, apart from any firm-specific advantage, as envisaged by traditional theory.

Traditional theory places significant emphasis on the disadvantages of foreign firms in their use of local resources, with such disadvantages arising mainly from information barriers. It also views a firm's ability to cross these information barriers, or 'foreignness', as a precondition to FDI. Therefore, only firms possessing certain intangible assets capable of offsetting these information disadvantages are able to engage in FDI. The theory presumes, therefore, that firms based in the host country are the foreign investors' main competitors in terms of utilizing resources or servicing markets.

In this paper, we argue that firms engaging in FDI may not necessarily view local firms as their rivals, instead they may see their peers in the home country, and other firms based in third-party countries, as their chief opponents. FDI is indeed a strategic move by investors to create a competitive advantage for themselves against their chief opponents by means of exploiting location-specific resources in the host country, but this strategic move often occurs at the mature stage of the product cycle. This is not because the market position of the investor is threatened as Vernon (1966, 1979) hypothesized, but because investors often attempt to create a resource-based competitive edge to drive their competitors out of a market in which products have essentially become standardized. Therefore, FDI would seem to be more of a Schumpeterian innovation, whereby production is reorganized across national borders in order to give investors a competitive advantage in the market (Mucchielli and Saucier, 1997). However, such an attempt can only be successful if the location-specific resources are not commonly available to all investors on equal terms. If, and only if this is the case, will the FDI-based innovation allow certain investors to erect resource access barriers against their competitors in order to create economic rents.

The traditional theory of FDI tends to emphasize the ownership-specific advantages that allow some investors to access location-specific resources more easily, or to use them more efficiently. We argue instead, that market imperfection and institutional deficiency are more important than firm characteristics in creating FDI-originated competitive advantage.

Resource-access barriers can be created because input markets are imperfect or because market institutions are non-functional in host countries, with investors using size and vertical integration to overcome market imperfections, and personal connections to substitute for market institutions. Some specific characteristics of resource-based FDI are that the subsidiary is larger in size than the parent, the subsidiary is more vertically integrated than the parent, and there is little differentiation between the products manufactured at home and those produced overseas. The major benefits from FDI do not spring from the common governance of production across borders as envisaged by traditional theory (Buckley and Casson, 1976; Rugman, 1980; Dunning, 1981), but from the gains in world market share through foreign production. In this paper, we use Taiwanese firms investing in China to illustrate the case.

Resource-based Competition in Imperfect Markets

The resource-based theory of competition contends that a firm derives its competitive advantage from its ability to use certain resources that are

inimitable and immobile between firms (Wernerfelt, 1984; Barney, 1991; Grant, 1991; Hunt and Morgan, 1995). In most cases, these inimitable and immobile resources are accumulated in the home countries, and hence they are also country-specific (Porter, 1990). Intensifying global competition is increasingly forcing firms to create competitive advantage out of foreign resources (Chen and Chen, 2000). International business research has tended to focus on strategic resources as the primary target for foreign investors in creating competitive advantage (Porter and Fuller, 1986; Dunning and Narula, 1996). Strategic resources refer to assets that are created and accumulated rather than those that are naturally endowed upon a country. Strategic assets that are notable targets for FDI include technology, marketing know-how, managerial expertise, network resources, and so on. Basic resources, which are naturally endowed, are rarely considered an ingredient for competitive advantage because they are available to all firms on equal terms. This assertion, however, is based on the assumption that the markets for basic resources are perfectly competitive, a condition apparently lacking in the case of strategic resources. In fact, very often the markets for basic resources are also plagued by imperfection, such that these resources may be available to different firms on different terms. Moreover, the awareness of these resources is not public knowledge, and no institutions are in place to enforce contracts governing the employment relationships.

Imperfections characterize input markets in most developing countries, and may arise from a number of factors, such as the immobility of inputs, distortions caused by government regulations, the fixity of union wages, or information barriers, as highlighted by traditional FDI theory. In the following, when considering foreign investors *vis-à-vis* other foreign investors, although both are at a relative disadvantage to domestic investors, we argue that they may exploit this imperfection to create barriers against their competitors in terms of access to resources. This strategy is most effective when applied by large firms, and particularly in the manufacture of mature products.

Information barriers usually arise as a result of differences in language, culture and institutions. Foreign investors tend to choose investment locations which minimize the information disadvantages, such as locations near the metropolis, close to borders, or adjacent to industrial clusters where major multinationals are present (Mariotti and Piscitello, 1995). Where government regulations lack transparency, and the functions of institutions are subject to manipulation, these barriers are further strengthened. A non-market economy with decentralized government controls, such as China, fits this description perfectly. Taiwanese investors with language and cultural affinities to China, and familiarity with Chinese institutions, use these advantages to beat out their competitors in China.

What is more, compared with their Western counterparts, Taiwanese firms are more capable of relocating their production networks — consisting of a large number of small firms — into China. Invariably, small firms are very wary of geographical and psychological distance in overseas investment decision-making. But small firms are the predominant players in Taiwan's production networks; without them, Taiwanese firms would have long since lost their major competitive edge in terms of flexibility. Relocating production networks to a primitive market, such as China, is difficult because of the lack of adequate institutions to facilitate such relocation. Johanson and Mattson (1988) argue that a firm with no previous experience in foreign operations has little chance of establishing a position in a local network in primitive markets. This difficulty has, however, been transformed into an advantage by Taiwanese firms that have established themselves in China through their language and cultural affinities, and their ability to mobilize the necessary resources through personal connections. Their ability to relocate their whole spectrum of production networks to China allows Taiwanese firms to exploit the availability of cheap labor in China, thus improving their position in world markets. However, the relocation and reconfiguration of networks into China favors larger firms over smaller ones, which inevitably leads to the preponderance of large firms in such networks, and by adopting tactics of vertical integration and monopolizing markets for skilled labor, these large firms gain considerable power within the networks. In the following section, we explore three specific company cases to elucidate as to how Taiwanese firms take advantage of China's entry barriers to enhance their global market power.

Case Studies

Case 1: Company A

Company A is the largest producer of athletic shoes in Taiwan, serving as a contract manufacturer for brand name merchandisers such as Nike, Adidas, Reebok, Asics Tiger, New Balance, and so on. Prior to 1980, Taiwan was the world's largest exporter of athletic shoes, and Company A, along with a significant number of small producers in Taiwan, competed head-to-head with their counterparts in Korea and Japan. Before investing abroad, Company A's share in the world market was no more than 5 per cent, and its production was narrowly specialized, focusing on shoe assembly, with no backward integration into material production or forward integration into sales. Rising labor costs in Taiwan forced the company to undertake investment overseas and consequently, the organization of production was completely changed. As a direct result, the company's global market share in athletic shoes had risen to 15 per cent by 1999.

Company A first invested in China in 1988, in the Kaopu Township of Dongguan County, Guandong Province. The investment was concomitant with similar actions by other smaller Taiwanese producers that had also located in the same area or in nearby towns. Kaopu was an agrarian town with a population of about 20,000 and was chosen for its proximity to the port of Hong Kong, from where container trailers could be shipped in or out, within a day. In cooperation with the local government, Company A successively established three industrial zones in the town, which would eventually host 18 of Company A's factories employing a total of around 50,000 workers. The local government had strong incentives to host foreign investment because such investment would generate tax revenues that would enrich local government coffers, thus they were keen to assist in the paving of roads and general land development.[1]

Most of the company's workers are out-of-province migrants from the inland areas of China, mostly female, and aged between 18 and 21. In addition to the provision of dormitories which the company built to house these workers, it also paid the 'temporary domicile fee' on behalf of the workers since they were not Guandong province residents.[2] When hiring migrant workers, small investors usually have to pay a higher temporary domicile fee because of a lack of bargaining power with local officials. Other small Taiwanese firms, those that were unable to afford the cost of providing dormitories, chose instead to locate themselves in the more populous townships, such as Houje, in order to take advantage of the locally available labor.

In addition to building dormitories, Company A also built its own water treatment plants to provide running water, both to its dormitories and factories, and since there were no running water services in place within the township prior to Company A's arrival, the surplus treated water was made available to local residents. Company A also invested in electricity generation to power its factories and dormitories.

Following its success in Dongguan, the company received invitations from county officials in nearby Zhongshan and Zhuhai to undertake additional investment in these areas. Various fiscal incentives were offered to entice the company, including concessions on land leasing and provision of public utilities. As a result, Company A is now running numerous plants in Zhongshan and Zhuhai, and its expanded investment and production have brought the company's total employment in the Guandong province to 150,000.

Company A's success can be attributed largely to the relocation of component suppliers to Houje township in Dongguan County. The company now purchases 40 per cent of its components and materials from its local suppliers, which are predominantly Taiwanese manufacturers. Half of the remaining 60 per cent of materials and components are supplied from Taiwan

and the remainder from the rest of the world. Purchases of materials and components outside of China are handled by the headquarters in Taiwan, which now derives 80 per cent of its revenue from trading in these materials whilst the contribution to sales revenue from shoe manufacturing has declined to just 20 per cent.

In the early stage of its Chinese operations, Company A served mainly as a contract manufacturer for Reebok. However, its success in China soon attracted the attention of others, and since 1990, the company has also operated as a contract manufacturer for Nike. At the same time, Company A's product lines were extended from athletic shoes to include casual footwear. Business relations went so well that Nike later encouraged Company A to invest in other areas throughout the region in order to diversify its sources of supply, with moves into Indonesia in 1992, and Vietnam in 1994. Company A now operates 132 shoe assembly lines in China, 27 in Indonesia and 20 in Vietnam, with an annual production capacity of 85 million pairs of shoes, accounting for around a 15 per cent share of the global market. Nike has become Company A's largest client, accounting for one-third of its total capacity.

Athletic shoes generally comprise of three parts, the upper, midsole and outsole. Company A recently established assembly lines for these component parts in Los Angeles, in the US, in an effort to provide better services to its clients; this strategy aims to reduce its clients' inventory costs. The uppers and outsoles are made in China and then shipped to the US factory to be combined with locally procured midsoles into the final products. The uppers of both athletic and casual shoes are generally made of natural or synthetic leather. Component parts for the shoe uppers, including fabric, foam, and all kinds of decorations and accessories, are cut and stitched in the Chinese factory since this work is the most labor-intensive part of shoe manufacturing. The outsoles of both athletic and casual shoes are generally made of rubber, the production of which is largely automated and can be performed either in China or elsewhere. The midsole is the cushion layer of the shoe and principally comprises of polyethylene vinyl acetate (EVA) or polyurethane (PU), the supply of which is abundant in the US. Midsoles are designed to absorb shock, to enhance recoilability and to provide comfort, which are essential functions of athletic shoes. The production of these midsoles is more sophisticated but also automated.

The company's US investment has not only reduced inventory costs for its clients, but has also saved on tariff burdens for Company A. The US currently imposes a 15 per cent tariff on imported athletic and casual shoes whereas the tariffs on shoe components are much lower.

As the volume of output increased, Company A started to pursue vertical integration, becoming involved in the production of raw materials. The

company formed a 50–50 joint venture with its major supplier of natural leather, Prime Tanning of the US, and established factories in both Taiwan and China to supply treated natural leather for the production of shoe uppers. It also formed a joint venture with Taiwan's largest adhesive producer, Nanpao, to produce adhesives for its products, and a joint venture with Japan's Kuraray to produce ultra-thin fabrics in China. The company also plans to diversify into the production of synthetic leather through a wholly owned subsidiary in China. These joint ventures ensure that the company has a reliable supply of essential raw materials for shoe making, since the supply in China is limited, and imports are often interrupted by policy shifts, such as foreign exchange controls and import quota allocations.

In addition to the production of raw materials, Company A has also formed several joint ventures to produce other shoe components in China such as inserted cushions. Typical of joint venture partners, the component suppliers from Taiwan have assumed majority ownership in the new entities which have located their factories in an industrial park, developed by Company A, in Dongguan. The clustering of component suppliers near the company's assembly operations provides the company with greater flexibility.

The large production volume also allows the company to invest in research and development (R&D), which it undertakes on two major fronts; shoe design, and material processing technologies. The major R&D activities are performed in the Taiwan headquarters, where the company organizes several independent R&D teams to serve the clients. These R&D teams are separated from each other, working exclusively for single clients, under the control of different executives within the company. Sometimes they are housed under the same roof but are physically separated with segregated, distinctive entrances. Company A is now capable of offering prototype designs to their clients and of co-developing the final products. Major clients, such as Nike, have also set up R&D centers in Taiwan to collaborate with the team from Company A.

The company also engages in the development of process technologies. The key technology in material processing is moulding, whereby raw materials like rubber, PU, or EVA are mixed, heated, stirred, pressed and cooled in moulds to form the desirable shape of shoe soles. Company A has successfully developed an injection moulding process for the production of high-quality midsoles using the new EVA material. The company claims that the new process is globally unique, since unlike traditional moulding processes, the injection mould propels pellets of EVA through ducts leading to the moulds, with pellets expanding and filling up the mould cavities. The injection process invented by Company A compares very favorably with traditional moulding processes both because it does not generate scraps from cutting and trimming, and because it is capable of producing soles with a more complex composition. Company A has since established a wholly owned subsidiary to engage in the

design and manufacturing of injection moulds, to serve the shoe industry in Guandong.

Case 2: Company B

Company B is Taiwan's largest maker of transformers and switching power supply units for use in personal computers and other information products. Established in 1971, the company began with the production of transformers used in black and white television receivers. The founder of the company is a former employee of a TRW subsidiary in Taiwan, and during the early days of the company's history, its engineers were mainly recruited from TRW and General Instruments, both of which produced transformers and transformer-related products in Taiwan. The company started out with meager capitalization of NT$100,000 (US$2500) and just 15 employees. It began by supplying transformers to Tatung, Taiwan's largest indigenous producer of TV receivers. As Taiwan's TV receiver industry thrived with the boom in exports in the 1970s, business expanded, and the company successfully upgraded itself to undertake the production of transformers for color television receivers. The customer base was also broadened to include multinationals operating in Taiwan such as Philips, RCA and Zenith.

As the personal computer industry was just beginning to emerge in Taiwan, Company B embarked on a course of producing PC-related components such as EMI filters and switching power supplies (SPS), both extrapolated from transformer-related technologies. The company also successfully acquired the technology to produce computer fans, which at that time, was largely monopolized by Japanese producers. The boom in Taiwan's PC industry in the 1980s underscored Company B's rapid growth into a world-class manufacturer of electronics components. In addition to local PC manufacture, the company began supplying SPS to globally renowned brands such as IBM, HP and Compaq, with about 85 per cent of its products destined for the US market.

Company B subsequently undertook FDI in 1987, as Taiwan's wage rates were starting to rise and trade friction between Taiwan and the US was rattling the nerves of business managers. Urged and encouraged by IBM, its major client, Company B decided to invest in Nogales in Mexico, near the US border. The transformers and SPS produced in Nogales were to be incorporated into IBM's assembly operation in maquilladora (border plants), where it would satisfy the local content requirement for duty-free entry into the US market. The company's investment was primarily a strategic move to strengthen its alliance with IBM, rather than to reduce costs, since production costs in Mexico were comparable to Taiwan's.

A genuine cost-oriented investment followed in 1988, when Company B undertook investment in Thailand. With Thai wage rates standing at around one-third of the level in Taiwan, the Thailand operations significantly reduced the cost of production and preserved Company B's price competitiveness. But the most telling investment, which made Company B a world-class player in the electronics components industry, was its move into China. The company entered China in 1993, first of all by renting an existing factory in Dongguan, Guandong Province, where it undertook experimental production, hiring around one hundred workers for the endeavor. The experiments were satisfactory and the company quickly started acquiring land to build its own plants. By 1999, Company B had built five successive plants in Dongguan and was employing 26,000 workers. These, together with the 9000 workers in Thailand and the 800 workers in Mexico, made Company B the world's largest producer of PC-related transformers and SPS. The total revenue reached US$1.6 billion in 1999, with the world market share in SPS reaching 25 per cent.

In 1993, Dongguan was still largely farmland. Company B bought the land along with some 20 components suppliers from Taiwan whose initial production capacity was to be fully absorbed and guaranteed by Company B. This group of suppliers provides components where proximity to the assembly line is essential to production efficiency and flexibility, for example, printed circuit boards (PCB). The presence of this initial group of suppliers attracted Taiwan's second largest SPS producer to locate and invest within the same region. The investment by the latter producer was in fact encouraged and assisted by Company B, since the presence of additional assemblers was likely to attract more component suppliers to follow in their footsteps. The agglomeration process rolled on, and by 1999, there were more than 70 SPS-related components producers in Dongguan, including a few local and Hong Kong-based companies. The clustering of components producers allowed Company B to procure most components locally. At the time of interview (May 2000), local procurement was accounting for 70 per cent of all component procurement in terms of value, and for 90 per cent in terms of number of items. Some more valuable components such as cores and diodes, came from Japan, the US and Europe, whilst a few were provided from Taiwan. According to the company manager, today's supply chain in Dongguan is almost as good as that in Taiwan. Prior to Company B moving into Dongguan, there had been a few small SPS assemblers relocating to Shenzhen, a special economic zone neighboring Dongguan with superior infrastructure and fiscal incentives, but they were too small to prompt the supply chain to follow in their footsteps.

In addition to the superior power gained from moving the supply chain, large firms can also enjoy tremendous advantages in China's labor market.

Company B, for example, employs mostly out-of-province female workers who are housed in company dormitories with their room and board covered by company expenses. The turnover rate for out-of-province workers is much lower than that of local residents, which normally exceeds 40 per cent a year. There are, however, extra costs incurred for employers of out-of-province workers, in terms of the 'temporary domicile fee' charged on non-local workers by the local government. The fee is, nevertheless, subject to negotiation and large companies with a large number of non-local workers are in a good position to bargain for a lower levy. From our interviews, we found that in Guandong province, the per-capita 'temporary domicile fee' ranged between 10 and 100 renminbi, with local officials holding discretionary power.

Greater advantages, in the area of skilled workers, are accrued by the larger firms. Although China's existing supply of skilled labor is limited, the country's higher education system does offer a substantial pool of talent, which can be cultivated and transformed into admirable engineering capabilities. Large firms such as Company B can recruit promising graduates from China's prominent universities, whereas small firms can only pick up their skilled labor from the 'secondary' market in which they must either pay a higher price, or be landed with 'rejects'.[3] Starting as early as August of each year, when the Fall semester is just beginning, large firms visit the university campuses to begin the recruitment process. On-campus interviews are quickly followed by job offers, and by March of the following year, acceptances of these offers by the potential recruits start to come in. The successful new graduates subsequently report for work in June.

However, with the limited supply of engineering graduates, and the increasing demand from multinationals, talented students have become very choosy. Employers must often pay off the student's tuition fees for their college education; these are waived by most universities, but must be repaid if students choose to work outside of their resident provinces. Companies are, of course, also expected to pay the recruit's 'temporary domicile fee' to the local government and to process their domicile-relocation applications. Talented graduates prefer large and renowned companies over small and anonymous ones, and prefer a modern metropolis such as Shanghai and Shenzhen over small towns like Dongguan, because of the more generous and comprehensive social welfare systems in the former. Large companies can use their reputation and luxurious fringe benefit systems to overcome the disadvantage of being located in small towns which nevertheless offer lower land costs.[4] As a result of this combination of factors, small firms are virtually excluded from the university recruitment competition.

Locating itself in Dongguan, a town that is little-known amongst China's elite university students, Company B has indeed experienced major difficulties in recruiting students from China's premiere institutions such as Peking and

Tsinghua Universities. It had to turn to the regional universities of Hubei, Hunan, Sichuan, and so on, to recruit the less privileged, but nevertheless, promising graduates. In order to gain a better position in China's skilled labor market, Company B established a research center in Tianjin's free trade zone, along with a battery plant investment in the same location by way of a consortium with the renowned Japanese battery-maker, Yuasa. The company has succeeded in staffing the research center, which is not far from Beijing, with recruits from premier universities such as Peking, Tsinghua and Nankai. The advantage from this is that some of the engineers can then be deployed to the factory sites in Dongguan to undertake process-related research work. Company B also takes advantage of its overseas manufacturing facilities and sales offices outside of China to attract young engineers. Engineers with exceptional potential are dispatched to overseas locations to increase their exposure to international markets. Of course, overseas assignments also carry with them very lucrative bonuses. More than one thousand Chinese engineers, along with 110 Taiwanese expatriates living and working in China, have become the mainstay of Company B's research force in China.

Company B has not delved into vertical integration, but it did take advantage of its good relations with foreign clients to develop new computer parts, notably color monitors, as a means of diversification. Company B had no previous experience of producing monitors in Taiwan, but the related technology was readily available there, since Taiwan supplies over 50 per cent of the world demand for computer monitors. Company B began its monitor production in Thailand, targeting the subcontracting market, and successfully secured orders from computer makers Dell and Gateway which were operating assembly lines in nearby Malaysia. Monitor production was later extended from Thailand to China where larger facilities were built and more advanced products made. In 2000, the Chinese plant was producing around 400,000 color monitors per month to support, amongst others, Japanese PC-makers such as Sony, Fujitsu and Mitsubishi. This strategy avoids head-on competition with other Taiwanese monitor manufacturers whose main customers are the American brands.

Case 3: Company C

Company C was founded in 1977 by a Taiwanese engineer who was a former employee of a Philips' subsidiary in Taiwan. The company started out with an apartment-turned factory in the suburbs of Taipei with a single production line producing resistors, standard components that were used widely in electronics appliances. At that time, there were about 250 manufacturers of resistors in Taiwan, mostly small sized, but by 1999, this number had declined to around 20. By then, Company C was clearly dominating the local market with about

55 per cent of the market share. By 2000, even multinational firms, such as Philips, had bowed out of the resistor market altogether due to shrinking profit margins. Company C has aspired to become the world's largest maker of passive electronics components, including resistors, by the end of 2001. FDI, particularly in China, had succeeded in promoting Company C to its current position, and this was to underscore its future ambitions.

Company C first embarked on FDI in 1994 by acquiring ASJ, a Singapore-based resistor maker. The acquisition was aimed at exploring the Southeast Asian market. Unlike other Taiwanese firms, which typically undertake greenfield investment when entering the Southeast Asian market, Company C chose acquisition as its *modus operandi*. This was because it recognized that marketing channels are essential to the sale of passive components, such as resistors, which are largely standardized. In contrast, makers of specialized electronics components — as in the example of SPS in Case 2 (above) — usually market their products through subcontracting arrangements where a small number of buyer relationships are crucial to success. In the case of subcontracting manufacturers, greenfield investment is the best way to establish production lines that mimic their home operations.

ASJ had been losing money for several years before the takeover by Company C, but turned in positive profits in the first year following the acquisition. Starting in 1995, the global resistor market hit a downturn in the business cycle due to a glut, particularly in the chip resistor segment, which produces components extensively used in PC-related products. Company C decided to engage in a price war in Taiwan, cutting prices for three consecutive years. The company also launched a '24-hour delivery' service with a promise that delivery was to be made within 24 hours of order placement. This service effectively cuts customer inventory costs to zero, providing them with their necessary components on a just-in-time production basis. In order to be able to offer this service, the company maintains an inventory level of about 6 billion pieces of resistors at all times, covering a full range of product specifications, for an average shipment of about 6 billion pieces a month. No other firms in Taiwan were able to match this offer and in the end, most of Company C's competitors were driven out of the market. Even the Japanese producers, who were global leaders in chip resistor production at the time, held back on their investment plans in view of the bleak market outlook.

In the meantime, Company C expanded its overseas operations by investing in China in 1995, in the Dongguan region, and through the acquisition of the German resistor maker Vitrohm in 1996. The investment in Dongguan was basically a matter of 'following the customers' to provide proximate services to the Taiwanese electronics manufacturers who had relocated to China. Company C's acquisition of Vitrohm, whose expertise lies in power resistors, was aimed at obtaining marketing channels in Europe, and although its

investment in Dongguan was essentially a green-field project, it did begin by purchasing an existing plant of modest size, since uncertainty still lingered over the efficiency of production in China. The Dongguan experiment turned out to be satisfactory and Company C decided to build a large production base in China, on a scale rivaling that of its operations in Taiwan. In consideration of the long-term growth potential, for the expansion plan, the company chose Suzhou in Jiangsu Province over Dongguan. There were two reasons accounting for this choice: one was the shift by major Taiwanese PC assemblers to Suzhou, and other areas in the vicinity over recent years; the other reason was the labor supply condition. As a small agricultural town, Dongguan depended on migrant workers for industrialization. It had been over-populated with inadequate infrastructure and hence became unattractive to skilled workers. In contrast, Suzhou is traditionally considered to be a 'haven' in China, offering a good quality of living capable of attracting high-caliber engineers and technicians. The large population of its own, together with the available workers from the populated towns nearby, meant that there were also no worries over the supply of unskilled labor.

Company C built its first plant in Suzhou in 1997 and commenced operations there in 1998 producing chip resistors suitable for surface mount insertion as its main product. Since the commencement of operations in 1997, capacity has been expanding rapidly in the absence of immediate demand. The Suzhou plants manufactured 12 billion pieces of chip resistors in 1999, whilst the output for 2000 is expected to have reached 50 billion, riding on the booming demand for cellular handsets during that period. With the additional production capacity in Suzhou, Company C's position was boosted in the world market for resistors. It became the world's third largest producer in 1998, trailing behind the Japanese producers Rohm and Matsushita. In 1999, it surpassed Matsushita to become the world's second largest producer with 14 per cent of the world market share, and in 2000 with further capacity expansion, it became the world's largest resistor producer with roughly 20 per cent of the world market share.[5]

Enhanced market position brought Company C the fame that it had never enjoyed before, making it easier to approach prominent buyers. Using the production base in China as a back-up, Company C landed major clients such as Motorola (of the US), LG (of Korea), Solectron (of the US) and Philips (of the Netherlands), along with Taiwan's major PC producers operating in China. Motorola, for example, was located in Tianjin and had previously procured only from Japanese suppliers. According to the manager of the Suzhou plants: "before we became number three and made our name known, Motorola even refused to see our sales representatives …. they thought it was a waste of time talking to us because our resistors accounted for only a small percentage of the product value". With its newfound prominent market position, representatives

from LG came to visit Company C's Suzhou plants on their own initiative and liked what they saw. LG had just established new plants in Shanghai and Shenyang in China and were searching for local suppliers.

As a mass production base, the Suzhou plants serve only major customers such as Motorola and LG, leaving other marketing responsibilities to the headquarters in Taiwan. In 1999, local customers accounted for around 30 per cent of the output from Suzhou, with the remainder being shipped to the rest of the world through distribution networks controlled by the headquarters. Given the dispersion of customers, the Suzhou plants do not provide 'just-in-time' services, but promise to deliver standard products promptly upon receiving orders, and specialized products within four days, whilst in the case of an emergency, rush orders can be filled within two days. According to the plant manager, this provides sufficient flexibility to meet all customer needs in China.

Resistors are a mature product, and the only major technological change in recent history has been the shift from traditional leaded transistors, which are welded onto a circuit board, to ceramic-based chip resistors that can be surface-mounted by an automatic surface-mounting machine. The production of chip resistors, which requires a high degree of precision, is capital-intensive. For example, for a new plant such as Company C's operations in Suzhou, capital costs (depreciation and interest) account for around 40 per cent of production costs, whilst labor costs account for only 6–7 per cent. However, because of the standardized technology, this small proportion of labor costs actually makes a significant difference in terms of cost competitiveness between countries. Within the same country, nevertheless, it is the production scale that matters because fixed investment in capital equipment is split amongst outputs. With its large-scale output and expertise in organizing and managing production, Company C claims that its gross profit margin can be as high as 30 per cent, far exceeding its smaller competitors.

According to one of the company managers, there are two reasons why smaller competitors from Taiwan cannot gain the same sort of competitive edge from similar investments in China. First of all, their production scales are not large enough to support the sunk cost of a new investment in China, such that it would guarantee a competitive price during a time of market downturn. Secondly, even if they did strive to undertake such investment, the new capacity alone would not be sufficient to attract new customers because of their lack of marketing channels in the new market territories. It would only serve to intensify a price war on the existing market turf.

Taking advantage of its market position in resistors, Company C entered the capacitor field in 1999 by undertaking the production of multi-layer ceramic capacitors (MLCC), products based on new technologies which differ from traditional solvent-based capacitors. Company C acquired these technologies

through its own R&D efforts as well as from former engineers of the Philips subsidiary in Taiwan, which had previously been the market leader in MLCC. Company C began its production of MLCC in 1999 with rapidly increasing output volume. This, together with other emerging Taiwanese producers, forced the Japanese importers to retreat from the Taiwan market. In May, 2000, Company C acquired Philips' worldwide ceramic and magnetic divisions. As the company General Manager stated: "we are interested in Philips' production capacity, technology, patents and marketing channels, amongst which, technology is the most valuable to us". With the acquisition, Company C not only expanded its production capacity in MLCC, but also guaranteed an outlet for its products through an alliance with Philips. More importantly, through the acquisition, the company obtained the base metal electrode (BME) process, copper and aluminum-based technology that provides significantly lower MLCC production costs than the traditional palladium-based technology which the company had been employing. Along with the new technology, Company C also took over Philips' production facilities in the rest of the world, including Germany, Spain, Netherlands, Poland, Hungary, Mexico, Malaysia and the US. This greatly expanded Company C's global production network outside of Asia, making it a truly global company.

Discussions

The relocation of supplier networks

Taiwan's first-wave investment into China was led by a group of small, export-oriented firms. They engaged in consignment operations in China, with materials and components being furnished from Taiwan, and products exported to Western countries. Chinese officials call this type of investment a 'two-ends out' operation, meaning that both the material inputs and product outlets are outside of China, only the mid-portion of processing is undertaken in China. Small assemblers, when clustering in a particular region, may attract follow-up investment by material and component suppliers, forming the cluster gradually. But this will only happen if there are significant locational advantages to attract suppliers to establish themselves in the same region. In fact, the most powerful locational advantage is the local network itself. We have observed this phenomenon in Southeast Asia where local networks had been in existence before Taiwanese firms came in, for example, electronics suppliers networks in Penang, Malaysia, and the textile suppliers network in Bandung, Indonesia (Chen, 1998). However, this is not a regular occurrence in China because of China's short history in industrialization, and its centralized economic system prior to 1979. Instead, it was the appearance of large, predominant assemblers that set off a process of industry agglomeration.

In our case studies presented above, Companies A and B led the wave of migration of Taiwanese supplier networks into China, one with a deliberate plan, and one without. Company B, an SPS assembler, brought with it some 20 component suppliers on its move to China. In the case of Company A, a footwear manufacturer, the suppliers followed the company into China without any clear-cut incentives and commitment from the latter. The two cases have one thing in common, however, in that the supplier network in China was sporadic and incomplete before they moved in, but these elements started binding together as a functional supply chain once the major assemblers had established themselves within the region. The scale of demand created by large firms is critical to the formation of local networks in which they are the center of gravity.

In contrast, Company C did not prompt the formation of a local network; rather it took advantage of the existing supplier network, which in turn, was induced and driven by major PC producers from Taiwan. The supplier network was less important for Company C, whose production (of resistors) is mainly fabrication of materials rather than component assembly.

Once a local network is in place, it not only benefits the trailblazers that initiated the network formation process, but it also benefits the network followers. Follow-up investments enlarge the size of the network by attracting new actors, resulting in a virtuous cycle. However, the exchange relations in local production networks are never exclusive; even small assemblers can benefit from the newly formed local networks, but large assemblers use other tactics to put smaller competitors at a disadvantage. This is discussed further below.

Creating entry barriers through vertical integration

Participants in the Taiwanese networks are narrowly specialized, and there are few network barriers either to entry or exit. Vertical integration is neither necessary nor efficient and firms of varying scale are able to find a place in the network. But regardless of the size of the network, its relocation to China comprises of only a partial transplantation of Taiwan's network. Large assemblers, which play a critical role in relocating and rekindling production networks, may choose to internalize some production activities in China rather than to encourage a supplier or subcontractor to relocate to perform such activities. For example, Company B internalizes the surface-mount insertion process, whilst Company A internalizes the moulding of shoe midsoles and outsoles, whereas in Taiwan, the related production activities are contracted out to network members. The companies have found that the internalization of these activities is more economical than attempting to persuade a subcontractor to invest in China for two reasons. First of all, because of various

regulations, the uncertainties surrounding production in China are so great that coordination of highly customized products with a subcontractor becomes extremely difficult. Secondly, the sunk cost for such an investment is so high that it requires significant commitment from an assembler to prompt an investment decision by the subcontractor, and the assembler may be reluctant to provide such commitment on the grounds that it reduces its strategic flexibility, effectively making it a hostage to the subcontractor. Moreover, the output scale in China is larger than that in Taiwan, making hierarchical control of such activities advisable (Williamson, 1985).

The absence of independent subcontractors forecloses the scope for small Taiwanese assemblers to operate in China. Even if there are some capital-intensive subcontractors investing in China, they are likely to pursue vertical integration of their own by integrating forward to the assembly stage because it is unlikely that these subcontractors can orchestrate a concerted investment action by a group of small assemblers in the same area. In other words, it is easier for downstream users to generate backward linkages to prompt upstream investment than the reverse situation. Small downstream assemblers, which are dependent on the proximity of upstream suppliers, always find it difficult to invest abroad. Only if upstream supplies can be effectively furnished from a short distance, without undermining the competitive edge, will small firms engage in FDI.

Creating competitive advantage by accessing scarce resources

Firms are constantly in search of new resources to create or sustain their competitive advantage. FDI is an important way of accessing foreign resources, and where such investment is undertaken for this purpose, it is referred to as asset-seeking FDI (Dunning and Narula, 1996). Those host-country resources that are in short supply but essential to the maintenance of competitive advantages are clearly most valuable. In China, these valuable resources are the highly educated engineers and scientists who can be trained to become usable assets to serve the long-term strategic purposes of the company. They are particularly valuable because they are in short supply and imperfectly mobile between regions. Taiwanese firms are particularly keen on capturing Chinese talent, whereas in contrast, Western multinationals depend on western-trained MBA graduates and managers originating from Hong Kong (Tsang, 1994). Taiwanese firms use their cultural and linguistic advantages to offset their in-company talent shortages and large Taiwanese firms are in a better position to do so than their small counterparts. Large firms promise job security, and they are also able to negotiate more effectively with local government departments regarding the administrative charges involved in employing out-of-province workers. Although Taiwanese firms are less

reputable than Western multinationals, they do tend to use Chinese labor more effectively. Taiwanese companies with operations in overseas regions, other than China, are also in a better position than those focusing solely on the Chinese market. In recruiting the necessary high-skilled workers, these companies can offer overseas job opportunities and training which are greatly valued by the Chinese elites.

Compared to the larger firms, small Taiwanese firms lack the apparent capability to attract high-caliber Chinese engineers because of their inability to participate in university recruiting which has become a primary mode of labor market entry for skilled workers (Sergeant and Frenkel, 1998). Thus they can hardly expect to create or renew their competitive advantage in China. With the exception of low-cost labor which effectively reduces production costs, small firms can hardly expect to emerge from China with new-found competitive edges.

The Chinese market as a new frontier

Taiwanese firms also take advantage of China as a new market frontier in order to promote their position in the global market. There is a general recognition of China as a newly emerged, lucrative market, but it is difficult to establish a foothold due to the innumerable barriers existing there. Taiwanese firms lack the necessary brand names to penetrate the domestic market in China, which, until now, has been subject to segmentation and government controls. They have little trouble, however, in organizing efficient production in China, which Western firms often find difficult. Efficient local production allows Taiwanese firms to supply components and parts to brand-name manufacturers of final products that are present in China, even if no previous business relationship exists. Again, large firms use their sheer size in order to gain the upper-hand when exploring these new opportunities, and although they may lack household brand names, firms that are large enough to be known within the industry, can approach major multinationals in China to propose business deals. Small firms, whose capacity cannot hope to compete with the demand of multinationals, are completely shut out of this market.

More importantly, Taiwanese firms take advantage of new market demand in China, and its super-low production costs, to expand their share in the world market through aggressive marketing efforts (Company C illustrates a successful example of combining new marketing channels with enlarged capacity). Successful operations in China allow Taiwanese firms to beat out their heavyweight competitors in the industry, and this is typical of mature products, in which the room for product innovation has been exhausted and production efficiency largely determines competitiveness. Taiwanese firms are clearly superior to their Japanese or Korean counterparts in organizing

Chinese production workers in ways that achieve operational efficiency, and they use this advantage to improve their market position. This advantage can also be extended to related product areas, resulting in the diversification of products. All three cases presented in this study exemplify moves towards diversification. Company A diversified from athletic to casual shoes; Company B from switching power supplies and transformers to monitors; and Company C from resistors to capacitors. Increased product portfolios allow their major clients to engage in 'one-stop' shopping, hence saving them transaction costs. Enhanced market position underpins such diversification, since this is needed to spread the risks of the business cycles associated with particular products of large-scale fixed investment and employment levels. But all three companies remain within the parameters of their core competences, only organizing production of products that are technologically related. They do not venture into unfamiliar business areas — as do some overseas Chinese merchants (Ampalavanar-Brown, 1998) — in order to explore further personal or government connections.

Conclusion

In this paper, we highlight FDI as a strategic move by investors aiming to create a competitive advantage through the exploitation of host-country resources that are not equally available to all investors. Unlike the exploitation of natural resources by oligopolistic firms seeking to create a monopoly position, the resource-based FDI which we refer to in this paper, is pursued by competitive firms continuing to operate in mature industries. These firms take advantage of market imperfections, and the insufficiency of institutions in the host countries, in order to create access barriers to those local resources that are essential to international competition. We argue that large firms are in a better position to adopt this strategy than small firms, because large firms are more able to orchestrate the relocation of production networks to the host country to pursue vertical integration — which can effectively foreclose the competition from small firms — employing local resources that are imperfectly mobile to crack open local markets that are subject to administrative protection, and to approach large customers that traditionally deal with only major suppliers.

We present three cases of Taiwanese firms investing in China to elucidate the resource-based FDI strategy in an imperfect market. In all three cases, Taiwanese investors gained significant world market shares after investing in China. Their main FDI objectives were not to explore the local markets, since they were not concerned with the competition with local producers. Instead, their eyes were firmly fixed on the home country and third country rivals who were embracing global strategies. They each beat out the home country

competitors through their larger size, and the third country counterparts through their stronger cultural and linguistic societal linkages. Built on superior access to host country resources, Taiwanese investors have improved their position in the industry through increased market share, control over upstream raw materials, enhanced production technologies and broadened product portfolios.

China is probably one of the few countries in the world that provide the ground for FDI-based competition because of its access to a large proportion of world resources. Moreover, these resources are unexploited, and yet to be governed by market institutions. Similar opportunities may exist in other resource-rich countries such as India, but these opportunities may not last because market imperfections may be eliminated once such countries are fully integrated with the rest of the world, and market institutions become fully operational. China's entry into the World Trade Organization may be the beginning of the end of these opportunities, and it explains why there has been a rush to invest in China recently.

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Notes

1 The Chinese tax system allows local governments various degrees of fiscal autonomy. The local governments of Guandong province, for example, are entitled to any additional tax revenues that they have collected after submitting a fixed amount of tax to the central government (Lin and Liu, 2000).
2 The domicile fee makes the workers 'temporary' residents of the town, allowing them access to certain welfare programs that are managed locally, such as medical insurance. Otherwise, they become illegal residents and are disqualified from such benefits.
3 Beginning in 1993, Chinese university graduates were allowed to choose their own jobs, whereas, previously these jobs had been allocated by the government (He, 1993).
4 Land is also a scarce resource in China. The availability of rural land for industrial usage explains why village enterprises outgrew urban enterprises (Perkins, 1994).
5 *Digitimes*, February 24, 2000 (a Taiwan newspaper).

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