



Institutions, Location, and Network of Multinational Enterprises in
China:
A Case Study of Hangzhou

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ABSTRACT

Based on extensive interviews with local government officials and a survey of forty-four foreign-invested enterprises, this paper examines the role of local formal institutions and their constituent components in intra-urban location decisions of multinational enterprises (MNEs) and in network properties of their investments in Hangzhou municipality, Zhejiang province, China. This paper finds that, unlike previous studies based on developed economies, local formal institutions in terms of sub-municipal governments are an important factor influencing the intra-urban distribution of MNE investments in Hangzhou. The local formal institutional components that are of primary importance include financial incentives, industrial infrastructures, and government attitudes toward foreign investments. They are of greater significance than their municipal-level counterparts given the immediate administrative relationships between the sub-municipal authorities and the foreign investors. The start-up fiscal capability of sub-municipal governments can therefore partly determine the intra-urban pattern of foreign

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Introduction

The increasing power of institutions in articulating the processes of uneven spatial development has been a major subject of academic inquiry in recent years (Cox 1997, Scott 2001, Sheppard 2002). This development reflects in part the increasing openness and activism of emerging economies toward global capital in the past two decades. It also reflects the increasing power of places in the era of administrative decentralization, deregulation, and global competition. This body of work generally postulates that, given increased local decision autonomy, places can better exploit their location and structural advantages for interacting with global capital. Localities, for example, can establish their own range of institutions for attracting foreign investment (Bevan, Estrin, and Meyer 2004; Marton and Wei 2006). They can promote the uniqueness of their places or territories for influencing the decisions of multinational enterprises (MNEs). This line of inquiry complements that of conventional thought, which concerns mainly MNE investment decisions at a national level (Caves 1996, Dicken 2003, Kumar 1998). As such, in contrast to the thesis of hollowing out of the nation state, an increasing number of local institutions have engaged in vigorous competition for foreign direct investment (FDI) in the past two decades (Phelps and Raines 2003). The proliferation of local institutions and place identities significantly broadens the facility location and network choices of MNEs. The foreign location and network decisions of MNEs are not only those at a national and a sub-national regional (hereafter regional) level, but also those at a municipal and an intra-urban level (Yeung 2001).

This recognition of the increasing power of places notwithstanding, the relative importance and the specific roles of local institutions in articulating global capital spatially and structurally,

especially at an intra-urban level, remain to be adequately explored. Existing studies based on developed economies generally indicate the greater significance of economic factors in MNE location and network decisions at a regional level, while research based on emerging economies has highlighted the importance of especially institutional factors in influencing such decisions. The difference in political and economic contexts aside, there remains a lack of understanding of the role of local institutions in MNE decisions in emerging economies at an intra-urban level. What are the specific dimensions of local institutions in emerging economies that are of importance to MNE intra-urban location decisions? How significant are local institutions in influencing especially the spatial properties of foreign-invested-enterprise (FIE) networks? What are the fundamental sources of power that enable local institutions to mediate with MNEs in producing the specific spatial outcome at an intra-urban level?

As one of the largest recipients of FDI in the world, China provides a good opportunity for a detailed understanding of the importance of local institutions in MNE location decisions and in FIE network properties. Nevertheless, existing research on FDI in China is confined mainly to a provincial level (Gong 1995, He 2002, Wei, Liu, Parker, and Vaidva 1999) and to Guangdong and Shanghai (Depner and Bathelt 2005, Lu and Wei 2007, Sit and Yang 1997, Wei and Leung 2005, Yeung 2003). Research at an intra-urban level is lacking. Based on extensive interviews with local authorities and a survey of 44 FIEs in Hangzhou, we aim to examine the dimensions of local formal institutions that are of importance to MNE intra-urban location decisions and to FIE network properties there. We further examine the bases on which local formal institutions amass their powers to articulate the location and network properties of FDI. Formal institutions are herein defined as legal organizational entities with established authorities, responsibilities, and governance rules (Scott 2001). They include such entities as state agencies, economic

associations, and unions. Given the political-economic context of China, the state component of local formal institutions including government and quasi-government entities is the focus of research in this study. The following sections first provide the conceptual background and research context of the study, followed by an outline of local state efforts for and the development of FDI in Hangzhou. We then analyze the dimensions of local formal institutions, especially those of sub-municipal and municipal governments, which are of significance to the intra-urban location decisions of MNEs and to the network properties of their investments. The paper concludes with a discussion of the fundamental source of local formal institutional powers in China and of the implications of this study for future research.

Conceptual Background

Despite the prominence of FDI research in an era of globalization, inquiries into the factors influencing the intra-urban location decisions of MNEs is lacking. Existing studies of sub-national location decisions of MNEs, which are based mainly on developed economies, are largely confined to a regional or inter-urban level. They generally emphasize the significance of economic factors such as agglomeration and technology capability the primary determinants of the spatial distribution of FDI at those levels (Hill and Munday 1995, Kogut and Chang 1991, Zeller 2004). Agglomeration is considered important because of its certainty- or revenue-enhancing property for especially market-seeking investments, while technology capability that of its value creation opportunities for particularly asset-seeking investments (Bagchi-Sen 1991, Cantwell and Piscitello 2002). These economic factors aside, a number of related studies reveal the influence of especially formal institutions in the sub-national distribution of FDI in developed economies. The range of formal institutional factors includes financial incentives, market access, tax rate, and

unionization level; with the first two attracting and the latter two deterring foreign investment (Coughlin, Terza, and Arromdee 1991; Hill and Munday 1992; Hines 1996). Although the extent to which these formal institutional factors are influential location determinants remains to be adequately explored, evidences generally suggest that their effects on the sub-national distribution of FDI in developed economies are mixed (Amin and Thrift 1994, Bobonis and Shatz 2007).

By comparison, the effects of formal institutions especially those of governments on the sub-national distribution of FDI in emerging economies appear more pronounced (Appelbaum and Henderson 1992, Wei 2000). Given significant income effect and technology transfer potential, governments in emerging economies are active in attracting especially efficiency-seeking foreign investment in manufacturing activities (Bishop 1997, Wade 1990). A primary means of governments in emerging economies to attract foreign manufacturing investments is the provision of financial incentives, industrial infrastructure, and open environment for foreign firms (Pereira 2003). Such provision is usually considered necessary as they reduce not only investment costs but also investment risks for foreign firms. Since such provision is usually confined to selected locales such as industrial and export processing zones (hereafter development zones or zones) primarily because of domestic resource constraints, the location of the zones largely define the spatial locus of foreign manufacturing investment in emerging economies (Chen and Kwan 1997, Warr 1990). The significance of the location of development zones on regional distribution of foreign manufacturing investment in emerging economies is highlighted in several studies (Graham 2004, MacLachlan and Aguilar 1998).

The fact that formal institutions is a significant determinant of the regional patterns of foreign manufacturing investment in emerging economies implies that sub-municipal governments can be highly influential in intra-urban industrial location decisions of MNEs there

when they are given relevant administrative authorities and responsibilities. Sub-municipal governments in emerging economies can vary significantly in their implementation of the economic reform mandates from above; they can compete with their intra-urban peers for foreign investment through the provision of additional financial incentives and other benefits for all or selected industries (Meyer and Nguyen 2005, Oman 2000). Although detailed studies pertaining to intra-urban location determinants of FDI are essentially non-existent, certain findings suggest that the administration level and the size of development zones positively relate to foreign investment inflows (Wei and Leung 2005, Woodward and Rolfe 1993). Zones that are especially at a national level of administration generally have better quality of formal institutions and of industrial infrastructure. They provide foreign firms a more certain and cost-effective environment for their investments (Amaro and Miles 2007; Bevan, Estrin, and Meyer 2004). On the other hand, zones that are large tend to have better availability of real estates (Meyer and Nguyen 2005). They provide foreign firms better access to scarce resources that would otherwise not be available in other parts of a municipality. The ways sub-municipal governments structure the zones within their boundaries in relation to the existing spatial-industrial configurations of theirs and to those of their neighboring intra-urban peers, and to the planning and coordination frameworks of their municipal and higher-level authorities, can therefore be highly influential in MNE location decisions within a municipality.

The structure of development zones, along with the associated foreign investment strategies of sub-municipal and higher-level governments, can further influence the network properties of MNE investments at specific intra-urban locations in emerging economies. Sub-municipal governments with a dominant pre-existing state or public enterprise base are more likely to afford brownfield zones; they or their higher-level authorities are more likely to negotiate

with foreign investors for joint venture investments given compatible indigenous partners (Pearson 1991, Sit and Liu 2000). These developments utilize foreign investments that seek host network access through local firms upon entry or to minimize investment risks (Pan 1996). Brownfield ventures can therefore be structurally more embedded in emerging host economies. They can have more extensive host sales and purchases networks via the contacts of their local partners (Belderbos, Capannelli, and Fukao 2001; Chen, Chen, and Ku 2004). These network patterns can be translated to other greenfield locations within the same sub-municipal area when such locations for venture expansion exist. Greater environmental certainty due to familiar local government relations facilitates the translation of such network patterns among zones within a sub-municipal area. By comparison, sub-municipal governments without a dominant pre-existing state/public enterprise or a strong industrial base are more likely to establish greenfield zones; they or their higher-level authorities are likely to have fewer ownership requirements for foreign investors. These investment conditions generally favor the development of wholly foreign-owned enterprises, with the sales and purchases networks of these enterprises more defined by the corporate configurations and the business organization strategies of their parents (Bartlett and Ghoshal 1998, Birkinshaw and Hagstrom 2000).

In addition to embedding of joint venture investments to pre-existing state or public enterprise networks, sub-municipal governments or their higher-level authorities in emerging economies can enhance host integration of MNEs through local channel decontrol and cluster development strategies. Decontrol of local channels allows foreign firms to establish new host contacts of their own accord. It facilitates foreign firms to better explore host markets or supply sources. Cluster development strategies can enhance host integration of foreign investments through existing MNE networks or particular industry organization practices. A lead venture

approach, for example, can foster subsequent linked supplier foreign ventures, while a key sector emphasis can lead to co-location of time- or distance-sensitive investments (Cho 1997, Rugman and d'Cruz 2000). The extent of local integration of foreign investments at a sub-municipal or municipal level can further be enhanced by the presence of certain measures that restrict sales or purchases transactions across regional or municipal boundaries, or that promote collaborations with other indigenous enterprises (Huang 2002). The ability to exploit strong venture inter-dependence of specific investor sources can similarly enhance local network density within a sub-municipal area or a municipality (Gao 2003).

Research Context

To explore the significance of local formal institutions in MNE intra-urban location decisions and in FIE network properties, we selected Hangzhou municipality in Zhejiang province in China as the site of study. The selection of Hangzhou is attributed to its shadow location in Yangtze delta relative to Shanghai and Suzhou, which warrants stronger local government actions to attract FDI. The selection of Hangzhou is also attributed to its more conservative administrative or local development traditions relative to other municipalities in Yangtze delta, which provide a better basis to examine the effects of local formal institutions on MNE intra-urban location choice and on FIE network properties (Ye and Wei 2005). In addition, research on FDI in Hangzhou is almost non-existent. An investigation of FDI in Hangzhou would offer more insights to the location decisions and network properties of MNE investments in China.

Our years of research experiences in Hangzhou and our extensive networks with local scholars and government officials there have made this study possible. We conducted extensive interviews with government officials in the municipality at all three administrative

levels—provincial (Zhejiang Provincial Planning and Development Commission, and Zhejiang Territorial and Land Development Department), municipal (Hangzhou Municipal Planning and Development Commission and Hangzhou Municipal Planning Bureau), and sub-municipal (Hangzhou High-Tech Zone (HTZ), Hangzhou Economic and Technological Development Zone (ETDZ), and Xiaoshan ETDZ). Hangzhou HTZ is of two portions, with one in the urban proper and the other in Binjiang district (Figure 1). We visited both portions of Hangzhou HTZ.

(Figure 1 about here)

To inquire the significance of local formal institutions and its constituent components in MNE intra-urban location decisions and in FIE network properties, we conducted a postal survey using a sample of 270 major FIEs in Hangzhou provided by Hangzhou municipal authorities. We delivered a cover letter and a survey questionnaire to the senior managers of the sample firms. We then followed up the first dispatch with a combination of phone calls, emails, and faxes when necessary. The survey was conducted in 2003 and early 2004; it generated a total of 39 usable returns. The effective response rate of the survey is approximately 14.1 percent, which is comparable to most other similar surveys (Romsa and Blenman 1998, Scott 2000). We could have secured higher response rates if we sought the support of local governments, but we decided not to do so as we would like the responding managers to freely express their opinions without unnecessary government-related concerns. To enhance understanding we further interviewed the senior managers of five additional FIEs. The five FIEs included one American (daily chemical), one German (food processing), and three Japanese (household appliances and electronics) firms. We used a semi-structured questionnaire for the interviews, and each interview lasted approximately one and a half hours. We obtained collaborative and reliable responses from the senior managers of the five FIEs.

Local States and FDI Development in Hangzhou

With the institutional emphasis of Beijing in the early stages of the open door policy emphasizing southern China, the inflow of FDI into Hangzhou had been slow in the 1980s (Figure 2). The first manufacturing FIE in Hangzhou did not emerge until December 1983. Since that time, during the rest of the 1980s the inflow remained insignificant, and so was the presence of wholly foreign-owned enterprises (WFOEs) in the municipality (Table 1). It was only until Beijing's action to further open Yangtze delta for foreign investment in 1991 through the policy milestone of Pudong New Area in Shanghai did the inflow of FDI to Hangzhou begin to increase (Marton and Wei 2006, Wu 2003). The support of Beijing for the further opening of the Yangtze delta was not confined to Shanghai. Most municipal governments in the region including Hangzhou were given power to structure themselves for attracting foreign investment (Ma 2005). As such numerous development zones were established in the region and in Hangzhou. By the end of 1990s, nearly all sub-municipal areas in Hangzhou possessed at least a designated place for FDI or industrial development purposes (interview with officials of Foreign Economic Commission of Hangzhou municipality 2001).

(Figure 2 about here)

(Table 1 about here)

Of all the development zones in the municipality, Hangzhou HTZ, Hangzhou ETDZ, and Xiaoshan ETDZ are among the first to be established. They are also among the largest development zones in the municipality (Table 2). Hangzhou HTZ is a brownfield site in the urban proper near Zhejiang University. It is intended to harbor knowledge- and technology-intensive investments. The zone later extended its jurisdiction by incorporating Binjiang Science and Technology Park, a small municipal-level site in the southern portion of the urban proper across

Qiantang River. Hangzhou EDTZ is a greenfield site in Xiasha, a previously farming area in the eastern outskirts of the urban proper. The zone contains four parks with pharmaceutical, chemical, machinery and electronics, and textiles industries as development focuses (The Management Commission of HETZ 2001). The zone further has a park for export processing investments. By comparison, Xiaoshan ETDZ is another greenfield site situated in a former county area outside of the southern urban proper. The zone has a focus on automotive parts, construction materials, and other light industries. It has an emphasis on export processing investments (interview with officials of Xiaoshan EDTZ 2001).

(Table 2 about here)

The differing development emphases, which demand the provision of additional preferential treatment for foreign investors in the target industries, lead to a variation of investment incentives among the three zones. The three zones further vary in formal institutional setting, entry mode orientation, and infrastructure quality and space provision for foreign investors. As a municipal-level zone, Hangzhou HTZ has an operational environment more influenced by local socio-economic concerns and political conditions. The zone has a strong intent to request foreign investors to partner with the state enterprises in the urban proper, which form the core of the municipality's industrial complex. This intent is to minimize the possible structural displacement effects on especially urban state workers. This intent further minimizes the impact on urban space consumption as the existing premises of state enterprises usually form the equity basis of the Chinese partners. The brownfield conditions; however, render the provision of quality infrastructure and space for expansion a remote possibility. Foreign firms seeking to invest at other urban proper locations outside of Hangzhou HTZ face similar investment and operation conditions. They further had to afford a higher enterprise income tax rate (24 percent versus 15

percent in development zones) prior to China's accession to WTO in 2001. By comparison, Hangzhou ETDZ is a national-level zone. The zone adheres closely to the national regulatory framework for foreign investment; it generally has a higher level of policy transparency for foreign investors than lower-level zones. Being the largest greenfield site in the urban proper, the zone seeks to attract foreign investments joint venturing with state enterprises that could not be otherwise accommodated in Hangzhou HTZ or other parts of the sub-municipal area for revenue reasons. The zone also seeks to attract foreign investments preferring wholly-owned entry mode or those that have quality infrastructure or large space requirements. Xiaoshan ETDZ is also a national-level zone. But unlike Hangzhou ETDZ it has a predominant private-enterprise industrial base and in general has no particular ownership requirements for foreign investors. Xiaoshan ETDZ also generally has lower land use and other fees than Hangzhou ETDZ. It further competes with Hangzhou ETDZ with an extended tax holiday for most investments as elaborated in the next section.

The efforts of the sub-municipal and municipal governments led to a consistent increase in realized FDI in Hangzhou reaching US\$ 1410 million in 2004, with Hong Kong, Japan, and the United States the three largest source economies (Table 1). Approximately half of the investments employed joint venture entry modes, and a significant portion of all (joint ventures and wholly owned) investments were medium-sized establishments. These properties are mirrored in the response sample, with the three largest source economies accounting for approximately 64 percent of the surveyed FIEs (Table 3). The proportions of equity joint venture investments and medium-sized investments (US\$ 1 to 10 millions) in the response sample are approximately 41 and 51 percent, respectively. With regard to sector composition, the surveyed establishments are primarily in electronics, electrical appliances, textiles and garments, chemicals (including

pharmaceuticals), and food processing industries. It is important to note that the higher proportion of medium-sized investments, a result of the aforementioned shadow-location property of Hangzhou, accompanies with it a FIE structure in the municipality consisting mainly of sole-China operation of foreign firms. The majority (84 percent) of the surveyed FIEs are the only investment of their foreign parents in China, with most functioning mainly as the continental (Asia-Pacific) or global manufacturing node for their foreign parents. The effects of such FDI properties on MNE intra-urban location decisions and FIE local network properties in Hangzhou will be assessed wherever appropriate in the following sections.

(Table 3 about here)

Institutions and MNE Intra-Urban Location Decisions

To investigate how significant local formal institutions and its constituent components influence MNE intra-urban location decisions, we asked the senior managers of the sample FIEs in the survey to rank the three most important factors (out of a total of ten for sub-municipal choice and of eleven for municipal choice given to them) underlying the location decisions of their overseas parents within and in Hangzhou municipality. We identified the range of factors through a survey of relevant literature including those reviewed in the Conceptual Background section of this paper. A simple discrete method (with 1 for the most important, 2 the second most important, and 3 for the third most important factor) served as the basis of the ranking mechanism, and more than one (usually two) factor with the same rank order was allowed to accommodate actual response conditions. We then derived the mean rank (total number of times ranked as one of the three most important factors divided by the total number of responding firms) for each factor and formed four major factor groups that influence the location decisions of MNEs in and within

Hangzhou. This mean rank method was deemed appropriate given the relatively random distribution of the rank order of the three most important factors given by the respondents. A parallel investigation of the location decisions of MNEs within and in Hangzhou is necessary in this paper because a comparison of the mean ranks based on similar factor sets, as the following discussion in this section shows, highlights the subtle significance of local formal institutions at a sub-municipal or development zone level to the intra-urban location decisions of MNEs for their investments.

Table 4 shows that, institutions in terms of provision of better financial incentives by local government or quasi-government entities at the development zone level is the most important factor influencing the intra-urban location decisions of MNEs within Hangzhou. This factor has a significantly higher mean rank than most of all other intra-urban location factors in Table 4. It also has a significantly higher mean rank than its municipality location factor counterpart in Table 5. The primary importance of this factor at a zone level indicates the more detailed benefits-seeking behavior of MNEs in intra-urban location decisions given a prospective municipality choice. Foreign investors are likely to maximize their detailed benefit gains through parallel negotiations with the authorities of a few selected development zones at their preferred city location. Such benefits-seeking behavior is significantly more clearly defined than that at a regional or inter-urban level. The benefits sought are relatively concrete and calculable as they pertain to specific monetary items with set measurable limits. As such the ability of a development zone to successfully compete against its intra-urban rivals hinges in large part on its fiscal strength. Development zones that have greater fiscal strength are likely to be more successful in attracting foreign investments.

(Table 4 about here)

(Table 5 about here)

Here the case of Xiaoshan ETDZ is indicative. As an original county area with a strong economic development tradition, Xiaoshan is active in soliciting foreign investments to its zone with an enterprise income tax holiday incentive that can be twice as much as the national standard. FIEs with a registered capital of at least US\$ 1.5 million can have their enterprise income tax completely waived for the first five years when the venture becomes profitable, and an additional 50 percent reduction of the tax for the following five years (interview with officials of Xiaoshan ETDZ 2001). Xiaoshan is able to finance this additional incentive through its internal revenues because of its pre-existing large clusters of indigenous private enterprises within its jurisdiction, which provides the needed fiscal resources for subsidizing the foreign investment development process. This development effort is reinforced by the success of Xiaoshan government to upgrade the status of its zone from an initial county- to a national-level one in 1993. The successful attainment of the status was entirely a local effort. Xiaoshan government organized an internal task force for the application process toward a national-level zone. They dispatched the task force directly to Beijing to garner necessary national-level supports despite the intention of the province to establish such a zone elsewhere (interview with officials of Xiaoshan ETDZ 2001). This effort of Xiaoshan makes Hangzhou the few municipalities that have more than one national-level ETDZ in China (www.china.org.cn).

The provision of additional financial incentives is deemed a necessary vehicle by Xiaoshan to overcome the apparent superiority of Hangzhou EDTZ in industrial infrastructures, the other institutional component that is considered second most important in influencing the intra-urban location decisions of MNEs (Table 4). As with better financial incentives, the significantly higher mean rank than its municipal location factor counterpart reflects the more detailed

certainty-seeking behavior of MNEs in intra-urban location decisions given a prospective municipality choice. Unlike infrastructures in general terms, those sought at an inter-urban level including land quality and utility provision standards are specific to the relevant construction and operational requirements of an investment. Development zones that possess such infrastructural qualities are especially attractive to major investments even if they are fiscally disadvantaged relative to their intra-urban rivals in additional incentives provision. The development of Hangzhou ETDZ follows this trajectory. With its national-level status and a relatively top-down development effort, Hangzhou ETDZ is more suitable than Xiaoshan ETDZ for investments that have more stringent construction and operational requirements. However, as a zone within the jurisdiction of a sub-municipal area dominated by financially-stricken state enterprises at the beginning of the foreign development investment process, Hangzhou ETDZ is limited in supplementing the standard set of national financial incentives to foreign investors. But it is this location in Hangzhou proper that has facilitated the development of foreign investments in the zone especially those that have certain associations with state enterprises.

The choice of Hangzhou ETDZ by the interviewed Sino-Japanese joint venture is a good example. The venture is the third investment of its Japanese parent in Hangzhou proper. Unlike the first two ventures that utilize the existing premises of the Chinese partners in the urban proper, the Japanese MNE decided to locate its third venture in Hangzhou ETDZ because of the availability of needed space and support infrastructures there. The Japanese MNE confined its site selection process within Hangzhou proper so as to maintain the established strong local area relations. The location of the venture (or the re-location of the Chinese partner firm) outside of the jurisdiction of Hangzhou proper would imply revenue loss to the area. It would also imply a weakened relationship between the Japanese MNE and the urban proper where the municipal and

higher-level regulatory powers situate.

The intention of the above-mentioned Japanese MNE to maintain good local area relations in turn highlights the significance of better attitude of development zone authorities, the third most important factor, in influencing the intra-urban location decisions of foreign investments. The attitude of zone authorities considered by foreign investors is more subtle than that of their municipal counterparts. It pertains not only to the extent of openness in terms of fewer investment restrictions, but also to the degrees of perceived willingness and flexibility in servicing foreign investors before and after the establishment of their ventures. The areas of services the surveyed FIEs considered important include liaison with higher-level authorities, streamline of administrative work, and assistance for venture operations. The attitude of zone authorities toward foreign investors is generally selective and is dependent in part on the respective development emphases. It differs from sophisticated and efficient administration of local authorities which is not specific to the source, sector, and size of investments. As regards the other intra-urban location factors, they are generally considered significantly less important than the three described above. The effects of these factors vary among the surveyed FIEs, with the location of Chinese partners bearing more weight to investments in joint venture forms or to those in Hangzhou HTZ, and better land availability to investments that have large space requirements.

The presence of significant differences in mean rank among the comparable factors in Tables 4 and 5 indicates the varying effects of those factors on FDI location between scales. The variations in effects are largely attributed to the degrees of decision relevance of MNEs at given levels of host governance. Financial incentives, industrial infrastructures, and attitudes are factors most relevant at an intra-urban level as it is the zone authorities from which such benefits are provided or with which MNEs directly interact. Such factors are less relevant at a municipal level

as the authorities at that level do not directly assume such responsibilities or functions. The nature of those factors at a municipal level is therefore more general and perceived rather than specific and actual. Although the study did not specifically investigate the direction of factor association (or response causality) between the two levels, it is apparent that the financial incentives the MNEs received at an intra-urban level influence their assessment of the importance of that factor at a municipal level. On the other hand, the association of industrial infrastructures between the two levels is bi-directional, as the operations of FIEs are affected not only by the specific infrastructural qualities at a zone or sub-municipal level, but also by the general infrastructural qualities at a municipal level on which the functioning of its constituent areas depend. Nevertheless, there is no necessary association between the attitude factors at the two levels. As most municipalities open their doors to compete for foreign investment, it is the attitude at a zone level that ultimately affects MNE location decisions. The impression felt at a zone level is direct and most relevant. It is independent of that felt at a municipal level with distinctively different governance entities at longer administrative distances.

Given the differences in financial incentives, industrial infrastructures, and attitudes among the local areas, the intra-urban distribution of FDI in Hangzhou is spatially and structurally differentiated. The emphasis of Hangzhou ETDZ on machinery and electronics industries and its more superior infrastructures have led to very large investments by major MNEs including Motorola, Siemens, and Matsushita (interview with officials in Hangzhou EDTZ 2001). The zone had a total of US\$ 4.4 billion investment by FIEs and an average FIE investment size of US\$ 11.7 million in 2004 (Table 2). By comparison, Xiaoshan ETDZ has attracted mainly large- to medium-scale investments (average FIE investment size of US\$ 6.4 million) with approximately one-third of the investments from Taiwan (interview with officials of Xiaoshan ETDZ 2001),

while Hangzhou HTZ medium- to small-scale investments (average FIE investment size of US\$ 3.3 million) primarily in information technology and other advanced technology industries. Although the effect of the aforementioned FDI properties on MNE intra-urban location decisions cannot be adequately gauged because of data constraint, the foreign investment structure in Xiaoshan highlights that medium-sized MNEs with the ability of affording a single operation in China give more weight to the financial incentives factor in their intra-urban location decisions. Large-sized MNEs are less influenced by the financial incentives factor because of their capital potency. They attach more weight to the industrial infrastructures and the attitudes factors in their intra-urban location decisions. In aggregate, the pattern of FDI at an intra-urban level is more differentiated than that at an inter-urban or at a more developed regional (Yangtze delta or Zhujiang delta) level because of the relatively skewed distribution of zones especially by administrative level within a municipal limit. The larger number of national- or provincial-level zones or areas renders the spatial and structural patterns of FDI at an inter-urban or a more developed regional level in China less contrastive.

Institutions and FIE Network Properties

With respect to network properties, we focus on the significance of local formal institutions on the host sales and host purchases linkage patterns, and whenever appropriate the host R&D relations, of FIEs. We asked the senior managers of the sample FIEs in the survey the regional distribution of their annual amount of China sales and of China purchases. We further asked the senior managers how the regional linkage patterns of their establishments are related to local government measures and to the strategies of their foreign parents.

In host sales most of the surveyed FIEs generally have the Yangtze delta their focal market.

This pattern reflects the regional nature of the sales networks of most state enterprises in Hangzhou, as the state enterprises with which most surveyed FIEs embedded are similarly moderate in size. This pattern also reflects the sole-operation property of most surveyed FIEs. The surveyed FIEs generally lack other intra-corporate means for a wider national reach in China. A number of surveyed FIEs are therefore active in developing their host sales channels. This practice is permissible given the gradual decontrol of most marketing and distribution channels at various administrative levels throughout China since the 1990s. It is viable given the relatively high levels of decision autonomy in host sales among the surveyed FIEs due to their strategic outpost nature. As such the interviewed American daily chemical investment has an extensive network of commission-based agents, and the other interviewed German food processing venture its sales outlets, in Yangtze delta and in other major Chinese regions. The customers that the surveyed FIEs transact with are of many types including state enterprises, public shareholding companies, and private firms. In most cases the structure of the host sales networks of the surveyed FIEs is defined in part by the nature of their operations. Final products manufacturers generally have a more diverse spatial and counterpart reach than intermediate goods producers.

Most of the surveyed FIEs similarly have the Yangtze delta their focal region for host purchases. Approximately 40 percent of the surveyed FIEs make the majority of their material and component purchases in the delta region. This pattern can be attributed in part to the embedding of the surveyed joint ventures in the pre-existing purchases networks of their partnering state enterprises, but more so to the ability of indigenous suppliers in catering for the general (non-core) needs of all FIEs. The competency of indigenous enterprises reflects the local development traditions of municipal and sub-municipal authorities. Indigenous enterprises are given more autonomy in their business decisions in the post-reform period (interviews with Zhejiang

provincial and municipal authorities 2001). They are provided with a skilled workforce through the higher education clusters in the municipality. The competency of indigenous enterprises is at a very high level in textiles and garments industries the municipality and its neighboring northern Zhejiang areas traditionally specialize. Several surveyed FIEs in the two industries therefore have nearly all of their materials purchased in the municipality and its immediate northern Zhejiang vicinities. The spatial concentration of purchases linkages of the surveyed FIEs is attributed further to the clustering of subsequent linked supplier foreign investments in the municipality and in the delta region. This clustering of subsequent linked investments; however, is not associated with specific clustering development strategies of the sub-municipal or municipal authorities or of the investing MNEs in Hangzhou. It is due mainly to the presence of core supplies market for the surveyed FIEs not yet captured by the indigenous enterprises in the municipality or in the delta region. Quality and delivery reliability, as indicated by the surveyed FIEs, are the two major obstacles preventing them from developing significant core purchases relations with indigenous suppliers. As such, the interviewed American daily chemical investment has approximately seventy percent, and the other interviewed Japanese electronics investment nearly a hundred percent, of their inputs purchased from other FIEs in the region. Despite these constraints, foreign investments are likely to increase their localization levels in Yangtze delta in the future. This tendency is highlighted by the interviewed Japanese household appliances venture, which intends to purchase approximately 95 percent of its materials and components in the delta region when such supplies become available there.

The development of host markets normally necessitates relevant FIEs to undertake certain product adaptation or customization activities. Approximately fifty percent of the surveyed FIEs with China sales do conduct such activities. The surveyed FIEs; however, do not have any

significant applied product development research (Table 3). They also do not have any process R&D activities. The general lack of significant R&D activities not only reflects the absence of technologically sophisticated indigenous industrial bases as mentioned previously. It also reflects the absence of specific sub-municipal or municipal measures to facilitate product and process innovations in FIEs and indigenous enterprises, and that to foster collaborations between the two groups of enterprises, in especially traditional industries (interviews with Hangzhou municipal authorities 2001). The existing relevant measures are largely confined to financial incentives for promoting investments, both foreign and domestic, in high technology industries. The general lack of significant R&D activities further reflects the control of MNEs over such activities for asset specificity and for operational management considerations. Most surveyed FIEs therefore had their facility and process layouts transplanted from their foreign parents. Although it is likely that FIEs may increase their R&D activities in the municipality as the indigenous industrial bases become technologically more sophisticated (as illustrated by the intent of the interviewed Japanese household appliances joint venture to collaborate with several local state-affiliated research facilities for certain advanced applied product development activities), specific institutional measures will be necessary if a certain level of quality R&D activities is to emerge in the municipality.

The intent to increase especially FIE purchases and R&D network density within the municipality or the sub-municipal areas notwithstanding, the policy implications of the regional linkage reaches of firms need to be adequately recognized. Although an assessment of relevant policy implications is beyond the scope of this paper, it can be seen that measures to promote an overall increase in international quality and management practices among indigenous enterprises, while necessary, may not effect significant FIE linkage returns within the municipality or the

sub-municipal areas in the short to medium run given the presence of more sophisticated and established supplier bases elsewhere in the Yangtze delta. Measures to promote a lead-firm clustering approach similarly tend to have limited effects given the dominance of medium-sized establishments in the foreign investment structure. The location decision of subsequent foreign supplier investments may be more affected by the wider business opportunities in the region than by the specific relations with the established FIEs in the municipality. The location decision may also be more affected by the varied financial incentive structures in the region than by the co-location benefits in a municipality or in a sub-municipal area. The regional orientation of firm linkages, along with the underlying corporate and business processes, generally renders the actions of sub-regional institutions for promoting FIE network density within their jurisdictions a less effective exercise. The ability of sub-regional institutions to promote FIE network density within their areas usually declines with decreasing scale. Institutions at a municipal level may increase FIE network density within their jurisdictions through a range of measures including entry mode restrictions and indigenous enterprises development. Local protectionist measures that are industry-specific, such as those associated with the automotive industry in Shanghai, may also be viable when favorable conditions are present (Depner and Bathelt 2005). By comparison, the measures sub-municipal institutions can employ are confined mainly to special incentive provisions for co-location linked foreign supplier investments.

Conclusion

Through extensive interviews with government officials and a survey of FIEs, this study has shown that local formal institutions in terms of sub-municipal governments are an important factor influencing the intra-urban location decisions of MNEs in Hangzhou municipality. The

importance of local formal institutions lies first in modulation of investment costs through financial incentives, second in support of operational needs through industrial infrastructures, and third in enhancement of business environments through quality administrative practices. These institutional components at a sub-municipal level are of greater significance than their comparable counterparts at a municipal level due to the immediate administrative relationships between the sub-municipal authorities and the foreign investors. As the provision of financial incentives and of industrial infrastructures entail substantial monetary resources, the start-up fiscal capability of sub-municipal authorities is central to their initial success in effecting FDI inflows in an era of administrative decentralization (Fu 2000). The effect of start-up fiscal capability on FDI inflows can be highly cumulative causative. Sub-municipal governments can re-invest the revenue gains from first rounds of foreign investments for subsequent expansion. They can be highly active in competing for and in articulating the structure of foreign investments. Although the start-up fiscal capability of local governments is partly geographically and historically endowed, it is the specific local formal institutional efforts, as highlighted by those in Xiaoshan, which exploit such advantages and define the realms of competition between places at an intra-urban level. The specific formal institutional efforts to exploit such advantages similarly define the realms of competition between places at and above a municipal level.

Local formal institutions; however, are a less important factor influencing the network properties of FIEs in Hangzhou. The effect of joint venture ownership restrictions on FIE local network density, while viable in the early stages of the open door policy, gradually erodes with increasing liberalization of the economy. The regional orientation of firm linkages, a pattern similarly discerned in other studies (Winder 1999), further renders the actions of sub-regional institutions for promoting FIE network density within their jurisdictions a less effective exercise.

The network properties of FIEs, as this study has exemplified, are defined more by the external business opportunities and by the internal corporate constraints the establishments have. The availability of suitable suppliers at reasonable distances, and the absence of significant nodal functions of medium-sized outposts, can significantly reduce the local networking propensity of foreign investments. A careful examination of regional supply and business conditions, and of establishment functions in relation to the continental or global configurations of investing foreign corporations, are therefore important if proper measures to promote FIE local network density are to be formulated. The examination of establishment functions needs to be comprehensive, embracing not only purchases but also sales and R&D among other strategic linkages. Studies focusing on one aspect of establishment operations may not yield appropriate policy recommendations.

The findings that local formal institutions are important in influencing intra-urban location decisions of MNEs generally hold for other sub-municipal areas in China. Regulatory and fiscal empowerment in an era of administrative decentralization is the impetus for articulating global flows by local authorities. Aside from the aforementioned start-up fiscal capability, a fundamental source of power local governments in China has for promoting foreign investment is their ability to acquire large amount of land for developing greenfield zones (Xie, Yu, Tian, and Xing 2005, Wei 2007). This ability rests upon the constitutional right of the state to the land. Local governments can annex especially agricultural land within their jurisdictions at or below market price for various development purposes. This practice was common in the early stages of the wider open door policy during the 1990s, and was in most cases accomplished with reference to the master or comprehensive plan of a municipality or a sub-municipal area. However, as social resistance to unjust land acquisition practices increases and as Beijing implements a land transfer

quota system for preserving agricultural land in provinces and municipalities, the ability of local governments to acquire land for urban and industrial development has been reduced (Lin 2007, Wei 2005). Re-use of industrial land in existing zones through gradual displacement of technologically less sophisticated enterprises has become a major means for most municipal and sub-municipal governments in China to further their economic development processes.

In addition to the intended objectives, this study has further contributed to an initial understanding of the complex directional relationships of trans-scalar factor associations in the local-global dialogue (Sheppard 2002). As the findings in the previous sections have shown, in the case of Hangzhou and most likely that of China, institutionally-effected financial incentives as an important location determinant of FDI exert most of its influences at a sub-municipal level. The financial incentives MNEs receive from a sub-municipal area define the perceived importance of this factor on municipal location choice by the MNEs. On the other hand, functional co-evolution renders the trans-scalar association of the industrial infrastructures factor a bi-directional, and administrative division of labor that of the attitude factor an independent, construct. By comparison, the effects of local formal institutions on network properties of FIEs are most significant at a regional level. Sub-municipal areas generally have limited ability in promoting FIE network density within their jurisdictions. A detailed understanding of trans-scalar factor associations would facilitate formal institutions at various administrative levels in emerging economies to better articulate global flows. Studies of the relative importance of location and network determinants of MNE activities across scales therefore offer a promising direction in local-global research in the future.

Bibliography

- Appelbaum, R.P. and J. Henderson (eds.) 1992. *States and Development in the Asian Pacific Rim*. Newbury Park, CA.: Sage.
- Amaro, A. and W. Miles 2007. Racing to the bottom for FDI? The changing role of labor costs and infrastructure. *Journal of Developing Areas* 40(1): 1-13.
- Amin, A. and N. Thrift (eds.) 1993. *Globalization, Institutions, and Regional Development in Europe*. Oxford: Oxford University Press.
- Bagchi-Sen, S. 1991. The location of foreign direct investment in finance, insurance and real estate in the United States. *Geografiska Annaler* 73B(3): 187-197.
- Bartlett, C. and S. Ghoshal 1998. *Managing Across Borders: The Transnational Solution*. Second Edition. Boston: Harvard Business School Press.
- Belderbos, R., G. Capannelli and K. Fukao 2001. Backward vertical linkages of foreign manufacturing affiliates: evidence from Japanese multinationals. *World Development* 29(1): 189-208.
- Bevan, A., S. Estrin, and K. Meyer 2004. Foreign investment location and institutional development in transition economies. *International Business Review* 13(1): 43-64.
- Birkinshaw, J. and P., Hagstrom (eds.) 2000. *The Flexible Firm: Capability Management in Network Organizations*. Oxford: Oxford University Press.
- Bishop, B. 1997. *Foreign Direct Investment in Korea: The Role of the State*. Brookfield, VT: Ashgate.
- Bobonis, G. and H. Shatz 2007. Agglomeration, adjustment, and state policies in the location of foreign direct investment in the United States. *Review of Economics and Statistics* 89(1): 30-43.
- Cantwell, J. and L. Piscitello 2002. The location of technological activities of MNCs in European

- regions: the role of spillover and local competencies. *Journal of International Management* 8(1): 69-96.
- Caves, R.E. 1996. *Multinational Enterprises and Economic Analysis*. Second Edition. Cambridge: Cambridge University Press.
- Chan, E. and C. Kwan (eds.) 1997. *Asia's Borderless Economy: The Emergence of Sub-regional Zones*. St Leonards, NSW: Allen and Unwin
- Chen, T., H. Chen, and Y. Ku 2004. Foreign direct investment and local linkages. *Journal of International Business Studies* 35(4):320-333.
- Cho, M. 1997. Large-small firm networks: a foundation of the new globalizing economy in South Korea. *Environment and Planning A* 29: 1091-1108.
- Coughlin, C., J. Terza, and V. Arromdee 1991. State characteristics and the location of foreign direct investment within the United States. *Review of Economics and Statistics* 73(4): 675-683.
- Cox, K. R. (ed.) 1997. *Spaces of Globalisation*. New York: Guilford.
- Depner, H. and H. Bathelt 2005. Exporting the German model: the establishment of a new automobile industry cluster in Shanghai. *Economic Geography* 81(1): 53-81.
- Dicken, P. 2003. *Global Shifts*. New York: Guilford.
- Fu, J. 2000. *Institutions and Investments: Foreign Direct Investment in China during an Era of Reform*. Ann Arbor, MI: University of Michigan Press.
- Gao, T. 2003. Ethnic Chinese networks and international investment: evidence from inward FDI in China. *Journal of Asian Economics* 14(4): 611-629.
- Gong, H. 1995. Spatial patterns of foreign investment in China's cities, 1980-1989. *Urban Geography* 16(3): 198-209.

- Graham, E. 2004. Do export processing zones attract FDI and its benefits. *International Economics and Economic Policy* 1(1): 87-103.
- HSB (Hangzhou Statistical Bureau), various years. *Hangzhou Statistical Yearbook*. Beijing: China Statistics Press (in Chinese).
- He, C.F. 2002. Information costs, agglomeration economies and the location of foreign direct investment in China. *Regional Studies* 36(9): 1029-1036.
- Hill, S. and M. Munday 1992. The UK regional distribution of foreign direct investment: analysis and determinants. *Regional Studies* 26(6): 535-544.
- Hill, S. and M. Munday 1995. Foreign manufacturing investment in France and the UK: a regional analysis of locational determinants. *Tijdschrift voor Economische en Sociale Geografie* 86(4): 311-327.
- Hines, J. 1996. Altered states: taxes and the location of foreign direct investment in America. *American Economic Review* 86(5): 1076-1094.
- Huang, Y.S. 2002. *Selling China*. Cambridge: Cambridge University Press.
- Kogut, B. and S. Chang 1991. Technological capabilities and Japanese foreign direct investment in the United States. *Review of Economics and Statistics* 73(3): 401-413.
- Kumar, N. (ed.) 1998. *Globalization, Foreign Direct Investment and Technology Transfers*. London: Routledge.
- Lin, G.C.S. 2007. Chinese urbanism in question: state, society, and the reproduction of urban spaces. *Urban Geography* 28(1): 7-29.
- Lu, L.C. and Y.H.D. Wei. 2007. Domesticating globalization, new economic spaces, and regional polarization in Guangdong Province, China. *Tijdschrift voor Economische en Sociale Geografie (Journal of Economic and Social Geography)* 98(2): 225-244.

- Ma, L.J.C. 2005. Urban administrative restructuring, changing scale relations and local economic development in China. *Political Geography* 24: 477-497.
- MacLachlan, I. and A. Aguilar 1998. Maquiladora myths: locational and structural change in Mexico's export manufacturing industry. *Professional Geographer* 50(3): 315-331.
- Marton, A.M., and W. Wei 2006. Spaces of globalization: institutional reforms and spatial economic development in the Pudong new area, Shanghai. *Habitat International* 30(2): 213-229.
- Meyer, K. and H. Nguyen 2005. Foreign investment strategies and sub-national institutions in emerging markets: evidence from Vietnam. *Journal of Management Studies* 42(1): 379-400.
- Oman, C. 2000. *Policy Competition for Foreign Direct Investment: A Study of Competition among Governments Attracting FDI*. Paris: OECD.
- Pan, Y. 1996. Influences on foreign equity ownership level in joint ventures in China. *Journal of International Business Studies* 27(1`):1-26.
- Pearson, M. 1991. *Joint Ventures in the People's Republic of China--The Control of Foreign Direct Investment Under Socialism*. Princeton: NJ: Princeton University Press.
- Pereira, A.A. 2003. *State Collaboration and Development Strategies in China*. London: Routledge.
- Phelps, N. and P. Raines (eds.) 2003. *The New Competition for Inward Investment*. Cheltenham, UK: Edward Elgar.
- Romsa, G. and M. Blenman 1998. Foreign investment along the Lower Yangzi: Nanjing 1988-1993. *Environment and Planning A* 30: 1625-1642.

- Rugman, A. and J. d'Cruz 2000. *Multinationals as Flagship Firms: Regional Business Networks*.
Oxford: Oxford University Press.
- Scott, A. 2000. *The Cultural Economy of Cities*. Thousand Oaks: Sage.
- Scott, A. (ed.) 2001. *Global City-Regions*. New York: Oxford University Press.
- Scott, W. 2001. *Institutions and Organizations*. Second Edition. Thousand Oaks, CA: Sage.
- Sheppard, E. 2002. The spaces and times of globalization: place, scale, network, and positionality.
Economic Geography 78(3): 307-330.
- Sit, V.F.S. and C. Yang 1997. Foreign-investment-induced exo-urbanisation in the Pearl River
Delta, China. *Urban Studies* 34(4): 647-677.
- Sit, V.F.S. and W.D. Liu 2000. Restructuring and spatial change of China's auto industry under
reform and globalization. *Annals of the Association of American Geographers* 90(4):
653-673.
- The Management Commission of HETZ 2001. *Hangzhou Economic and Technological
Development Zone: Investment Guide*. Hangzhou: The Commission (in Chinese).
- Wade, R. 1990. *Governing the Market*. Princeton: Princeton University Press.
- Warr, P. 1990. Export processing zones. In C. Milner ed. *Export Promotion Strategies: Theory
and Evidence from Developing Countries*, 130-61. New York: New York University
Press.
- Wei, Y., X. Liu, D. Parker and K. Vaidya 1999. The regional distribution of foreign direct
investment in China. *Regional Studies* 33: 857-967.
- Wei, Y.H.D. 2000. *Regional Development in China: States, Globalization, and Inequality*.
London: Routledge.
- Wei, Y.H.D. 2005. Planning Chinese cities: the limits of transitional institutions. *Urban*

- Geography* 26(3): 200-221.
- Wei, Y.H.D. 2007. Regional development in China: transitional institutions, embedded globalization, and hybrid economies. *Eurasian Geography and Economics* 48(1): 16-36.
- Wei, Y.H.D. and C.K. Leung 2005. Development zones, foreign investment, and global-city formation in Shanghai. *Growth and Change* 36(1): 16-40.
- Winder, G. 1999. The North American manufacturing belt in 1880: a cluster of regional industrial systems or one large industrial district? *Economic Geography* 75(1): 71-92.
- Woodward, D. and R. Rolfe 1993. The location of export-oriented foreign direct investment in the Caribbean basin. *Journal of International Business Studies* 24(1): 121-144.
- Xie, Y.C., M. Yu, G. Tian, and X. Xing 2005. Socio-economic driving forces of arable land conversion: a case study of Wuxian City, China. *Global Environmental Change* 15: 238-252.
- Ye, X.Y. and Y.H.D. Wei 2005. Geospatial analysis of regional development in China: The case of Zhejiang Province and the Wenzhou model. *Eurasian Geography and Economics* 46(6): 445-464.
- Yeung, G. 2001. *Foreign Investment and Socio-Economic Development in China: The Case of Dongguan*. Hampshire: Palgrave.
- Yeung, G. 2003. Scramble for FDI: The experience of Guangdong Province in southern China. In N. Phelps and P. Raines (eds.), *The New Competition for Inward Investment*, pp. 193-212. Cheltenham, UK: Edward Elgar.
- Zeller, C. 2004. North Atlantic innovative relations of Swiss pharmaceuticals and the proximities with regional biotech arenas. *Economic Geography* 80(1): 83-111.

Table 1: Development of FDI in Hangzhou (US\$ Million).

	1989		1995		2004	
	Amount	Percent	Amount	Percent	Amount	Percent
Total (realized FDI)	18.6	100	427	100	1410	100
(contractual FDI)	15.7	100	902	100	3077	100
Form						
Joint Ventures	18.1	97.4	274	64.3	n.a.	n.a.
Wholly Foreign Owned	0.5	2.6	118	27.6	n.a.	n.a.
Others	--	--	35	8.1	n.a.	n.a.
Major Source Economy						
Hong Kong	8.8	47.0	156	36.5	1225	39.8
United States	1.7	8.9	30	7.1	296	9.6
Japan	2.9	15.3	79	18.4	286	9.3
Taiwan	0.7	3.5	92	21.5	120	3.9
Singapore	1.1	6.0	6	1.4	103	3.4
Others	3.6	19.2	64	15.0	1047	34.1

Note: Amount of FDI by form is based on the amount of realized investment. Amount of FDI by major source economy is based on the amount of contractual investment. Percent is the percentage of the respective column total. FDI amounts are based on current values. n.a.: not available.

Source: HSB 1990, 1996, 2005.

Table 2: Major Development Zones in Hangzhou, 2004

	Hangzhou ETDZ	Xiaoshan ETDZ	Hangzhou HTZ
Year Opened	1993	1993	1990
Planned Area (square km)	34	19	23
Of which developed	34	12	13
Infrastructure Investment (million <i>yuan</i>)	3118	927	2789
Foreign-Invested Enterprises (FIEs)			
Number of enterprises	371	338	415
Amount of foreign investment (US\$ million)	1606	798	639
Amount of total investment (US\$ million)	4350	2151	1390
Average investment size (US \$ million)	11.7	6.4	3.3

Source: HSB 2005.

Table 3: Profile of Postal Surveyed Firms

Attribute	Category	Number of Cases	Percent
Year Established	Before 1992	3	7
	1992-1999	34	81
	After 1999	5	12
	No response	2	n.a.
Form of Investment	Joint ventures	18	41
	Wholly foreign-owned	17	39
	Others	9	20
	No response	0	n.a.
Source Economy	Japan	11	25
	United States	7	16
	Hong Kong	7	16
	Taiwan	6	14
	Others	13	29
	No response	0	n.a.
Amount of Investment	Less than 1 million	13	30
	1 to 10 million	22	51
	Over 10 million	8	19
	No response	1	n.a.
Number of Employees	Less than 100 persons	13	34
	100 to 199 persons	11	29
	200 to 500 persons	11	29
	More than 500 persons	3	8
	No response	6	n.a.
Primary Functions	China headquarters	3	4
	Asia-Pacific headquarters	1	1
	Production for China market	20	25
	Production for world market	26	33
	Distribution for China market	9	11
	Product development for China market	9	11
	Product development for world market	9	11
	Applied R&D for world market	2	3

Table 3 (Continued)

Note: Percent is percent of total number of responding cases (sum of the number of cases of the constituent categories, not shown for simplicity reason) in the respective attribute area.
n.a.: not applicable. The total number of responses for primary functions exceeds that of responding establishments (N=44) as more than one primary function can present at a surveyed FIE.

Source: The survey.

Table 4: Sub-Municipal Location Decision Factors of the Surveyed FIEs

Factor Group / Factor	Mean Rank	Rank Order
Institutions (Sub-Municipal / Development Zones)		
Better financial incentives	0.80	1
Better industrial infrastructures	0.77	2
Better attitude toward FDI	0.57	3
More sophisticated and efficient administration	0.23	8
Institutions (Municipal / Others)		
Location of Chinese partner(s)	0.30	5
Advised or requested by municipal government	0.13	9
Land		
Lower land cost or land use fees	0.27	6
Better land availability	0.23	8
Location		
Closer to downtown Hangzhou	0.23	8
Closer to seaports or airports	0.18	10

Note: Mean rank is the total number of times a factor ranked as one of the three most important ones divided by the total number of responding firms. The sum of mean ranks equals 3.0 if each responding firm only ranks three factors. The sum of mean ranks in the table exceeds 3.0 (3.71) as the responding firms can give the same rank to more than one factor.

Source: The survey.

Table 5: Municipal Location Decision Factors of the Surveyed FIEs

Factor Group / Factor	Mean Rank	Rank Order
Institutions (Municipal)		
Better financial incentives	0.57	1
Location of Chinese partner(s)	0.36	4.5
Better attitude toward FDI	0.34	6
Better industrial infrastructures	0.32	7.5
Labor and Supplies		
Lower labor cost	0.50	2
Better availability of skilled labor	0.36	4.5
Better access to material supplies	0.27	10
Market and Market Access		
Better local/regional market potential	0.43	3
Closer to major seaports/airports	0.32	7.5
Location of major customers	0.30	9
Other		
Better urban amenities	0.20	11

Note: Mean rank is the total number of times a factor ranked as one of the three most important ones divided by the total number of responding firms. The sum of mean ranks equals 3.0 if each responding firm only ranks three factors. The sum of mean ranks in the table exceeds 3.0 (3.97) as the responding firms can give the same rank to more than one factor.

Source: The survey.

Figure 1: Location of Hangzhou

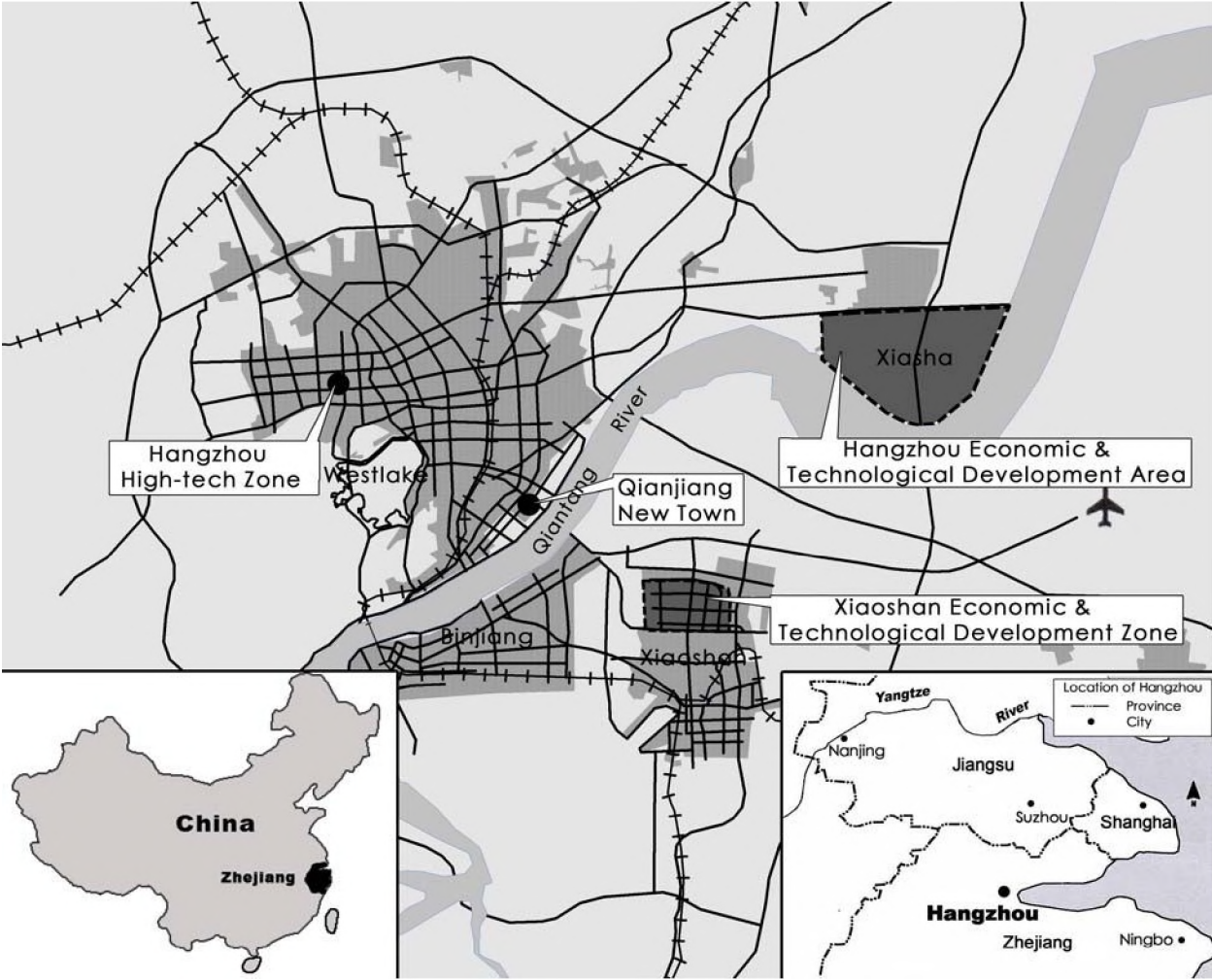


Figure 2: Inflow of Realized FDI in Hangzhou, 1985-2004

