World cities or great cities?
A comparative study of five Asian metropolises

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Few researchers have studied world cities from the perspective of sustainable development. This paper argues that in this era of globalization cities should aspire to be great cities, rather than just world cities. Great cities are places with an enlightened mode of governance; where technological and economic advancement sustain global and local development, thereby enriching socio-economic, human, cultural and environmental capital. Informed by this conceptual framework, and with the help of experts and participants in two public fora, a set of indicators was developed for benchmarking cities of the world. This study compares and contrasts five globalizing metropolises in Asia: Tokyo, Hong Kong, Singapore, Taipei and Shanghai. It is found that through progressive globalization, these cities have accumulated considerable economic wealth to build world class infrastructure. However, their ability to address sustainability concerns such as developing an enlightened mode of governance to nourish social and environmental capital remains diverse and less certain.

Keywords: world cities, Asian metropolis, sustainability indicators, governance

Introduction

As globalization has gathered momentum, world city research itself has continued to develop (Douglass, 2000; Friedmann and Wolff, 1986; Friedmann, 1988; Clark, 1996; Godfrey and Zhou, 1999; Hill and Kim, 2000; Knox and Taylor, 1995; Lo and Yeung, 1996; Sassen, 1991; Sharpe, 1995; Short et al, 1996; Taylor, 1997). Most of the published literature focuses on characterizing and ranking world cities in the global economy and rarely touches on sustainability and quality of life issues (exceptions are Douglass, 2000; Lo and Marcotullio, 2000, 2001; and Marcotullio, 2001). Douglass (2000, p 2326) challenges policy makers in Asian world cities to address sustainability issues while Lo and Marcotullio (2000, 2001) discuss Asian urban sustainability in the era of globalization. However, as Marcotullio (2001, p 577) argues, “the process of achieving urban sustainable development is uncharted”.

This paper attempts to take a small step in charting sustainable urban development in some of Asia’s globalizing metropolises. It draws upon a study undertaken by the Centre of Urban Planning and Environmental Management (CUPEM) between 1999 and 2001 which investigated the challenges surrounding the positioning of Hong Kong as Asia’s world city1. We argue that in this global age, it is more important to be a great city than a world city. The meaning of a great city is discussed through the construction of an analytical framework which provides guidance for the formulation of benchmarking indicators. A comparative study of five Asian world cities benchmarked against the selected indicators is then presented. We conclude by arguing that while the cities under study are being progressively integrated into the global economy, they remain diverse with regard to their ability to address issues of urban sustainability.

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1In the wake of the 1997 Asian financial crisis, Hong Kong faced an economic downturn and had to seek out for development initiatives to manage the effects of economic restructuring and to establish a new identity for itself both within the national context of China and in the regional and global contexts.
The Janus face of world cities

The term “world city” was first coined by Patrick Geddes in 1915 to refer to those cities expanding into “new and vaster groupings or conurbations” (Geddes, 1915, p 393). He then warned of “the intersocial struggle for existence” in these emerging cities that can only be resolved by our “civic efficiency,” that is, a vision “of opening possibilities, of social betterment and uplift of folk, work, and place together” (pp 393, 402).

In 1966, Sir Peter Hall published The World Cities and examined how cities such as New York, London, Paris, Tokyo and Moscow outgrew their regions to become prime “world cities”. Hall identified these cities as major centres of political power, seats of national and international government; loci of trade, finance and communication; and concentrations of talents in education, research, arts and culture (Clark, 1996, p 137).

In 1986, John Friedmann and Goetz Wolff (pp 69–84) postulated the “World City Hypotheses” arguing that:

- contemporary employment restructuring within cities is related to the form and extent of their integration with the world economy;
- key cities are used by international capital as basing points in the spatial organization and articulation of production and markets. The resulting linkages make it possible to arrange world cities into a complex spatial hierarchy;
- global control functions can best be measured by the number of representative offices of transnational corporations;
- world cities are theatres of concentration and accumulation of international capital;
- world cities are points of destination for both domestic and international migrants;
- world city formation brings spatial and class polarization; and
- world city growth generates social costs at rates that tend to exceed the fiscal capacity of the state.

Friedmann (1988, pp 70–77) further argues that world city formation involves economic, social and physical restructuring and hence political conflicts. He advocates partisan planning that asserts territorial interests over those of transnational capital. Many scholars have worked on the first four hypotheses regarding world city formation (Godfrey and Zhou, 1999; Lo and Yeung, 1996; Taylor, 1997) and have confirmed that world cities are places where global business, finance, trade and government are orchestrated and arranged (Clark, 1996, p 138). However, Sassen (1991) argues that “if the growth of the global economy goes unchecked, there will be devastating consequences for the poor, and also for large sectors of the middle class”2. She further contends that “at least half the business and activities conducted in global cities have nothing to do with globalization: you can’t allow the urban economy to become a plantation economy where your top cash crops—the high value-added financial and other corporate services—are the only ones you’re going to care about”3. Keil (1995, p 282) further points out that “the world city is a place where the global ecological crisis manifests itself concretely,” characterized by the pervasiveness of uncertainties, insecurities and hazards (Jacobs, 1997) as postulated by Beck in the “risk society” (1995).

While the term “world city” is appealing, the empirical findings suggest that such cities are just as vulnerable to the developmental, ecological and social problems that have long dominated the urban policy agenda. Indeed, we contend that globalization processes have intensified rather than diminished these problems. The world city concept, at best, represents only a partial theory concerning accumulation processes in the core locations of the global system (Friedmann, 1995, p 43). It is about the locus of economic control and the identity of the world’s most important economic command posts (Abbot, 1997, p 47). Yet, while “world cities are places of exceptional wealth and affluence, they are also places of severe disadvantage and deprivation” (Clark, 1996, p 139).

Perhaps, instead of aspiring to be a “world city” in the new millennium, we should strive to be “a great city of the world”. Instead of focusing on the role of the city in the global economy, we should pay more attention to the local impacts of globalization and the prospect of promoting development initiatives with local characteristics. The emphasis is no longer just on how well a city functions in the global economy but with the delivery of a good quality of life for all. This calls for technological advancement, not just for capital accumulation but also for sustainable development. The international dimension is still important, but its inclusion is for the enrichment and growth of its citizens. Furthermore, good governance, which is an issue that has attracted relatively little explicit attention within the framework of the world city debate, appears to us to be quite fundamental to the achievement of the goals of urban sustainability (Ng, 2002).

What makes a great city of the world?

Globalization, technological advancement and sustainable local development

Since the 1960s, industrial capitalism, aided by the transaction revolution and transnational financial

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3See footnote 2.
institutions, has accelerated the growth of a global economy. Castells (1996, pp 1–2) argues that:

A technological revolution, centred around information technologies, is reshaping the material base of society, fostering globally interdependent economies and introducing a new form of relationship between economy, state, and society, in a system of variable geometry. Capitalism has undergone a process of profound restructuring, characterized by greater flexibility in management; decentralization and networking of firms both internally and in their relationships with other firms. Considerable empowering of capital vis-à-vis labour, the intervention of the state to deregulate markets selectively, and to undo the welfare state... This is also related to stepped-up global economic competition, in a context of increasing geographic and cultural differentiation of settings for capital accumulation of the capitalist system.

Edwards (1999, p 68) summarizes six major elements for cities to transform themselves into knowledge-based “high-tech, high-income growth centres of tomorrow”:

- A close association with nearby colleges and universities to supply a highly educated and technically skilled work force.
- A modern information infrastructure that includes strong telecommunications capabilities.
- A cost-effective transportation infrastructure that connects with national and international markets; access to venture capital to support a healthy R&D base.
- An attractive living environment and a well-defined lifestyle.
- An aggressive economic development force that understands how technology creates growth.

Eaton (1999) offers another checklist for fostering global capitalism:

- Establish a set of institutions and incentives designed to encourage innovation.
- Enact and enforce a clear rule of law that protects investment.
- Support an education system that creates not only a steady stream of innovative scientists but also technologically literate workers.
- Realistically limit regulations on labour, products and risk capital.
- Foster a transparent, market-based, lightly but intelligently regulated financial system that encourages the formation of risk capital.
- Encourage substantial financial incentives to those most directly responsible for the creation of new wealth.
- Keep taxes at a reasonable level.
- Break down on protective trade barriers.
- Restrict government actors to only those necessary for the efficient functioning of open markets.

These elements may help enhance the prospects for attaining world city status. However, to be a great city of the world, the vision should go beyond utilizing technology to integrate with the global economy. The vision of using “innovation dynamics for sustainable development” (Kuntze et al., 1998, pp 28–30) is called for. There should be a re-orientation of innovation towards efficiency in natural resource use, new industrial concepts, services and product use and towards the solution of problems such as energy, food, climate change, health and the provision of jobs. Such a new innovation policy requires government to manage processes of bargaining, negotiating and social contracting between different stakeholders who behave according to their own aims, power and available action parameters.

Linkages with the global economy are bound to be partial and incomplete. As Ekins and Newby (1998) argue, local economies become more important with globalization because the global market will never involve everyone, but local economic development can provide opportunities for people who have been excluded from the global market either to re-enter it or to be productive outside it. Globalization creates social and environmental distancing but local economic development can maintain local economic networks and social coherence. Globalization fosters cultural homogenization yet local economic development can celebrate and promote local distinctiveness. Globalization creates economic vulnerability. A vigorous local economic base, however, can give stability in times of restructuring and provide opportunities for new areas of specialization and comparative advantage to emerge.

Ekins and Newby (1998) also argue that sustainable local economic development should emphasize capacity building, community enterprise and economic solutions, responsible and responsive business development, access to sustainable and fulfilling work, and meeting local needs through local resources. For “great cities of the world”, we do not just aspire to global connections. It is better for economic growth to be generated from within. Summing up New York’s experience, Markusen and Gwiasda (1994, p 185) argue that it may be more crucial for a megacity to be “the centre of a robustly growing national economy... than the accumulation and multi-layering of producer services functions”.

The global-local nexus points to a pertinent challenge facing all globalizing cities. Whether it is to attract the “well-educated, socially mobile, footloose and highly paid elite who work in organizations and institutions which sustain world city functions” (Clark, 1996, p 139), or to provide for the majority, whose lives will probably be territorially bounded, all need an environment conducive to the accumulation...
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Figure 1 Interactions between economic, social and environmental capital. Source: modified from Department of the Environment, Transport and the Region (1999), Quality of Life Counts: Indicators for a Strategy for Sustainable Development for the UK: A Baseline Assessment, http://www.environment.detr.gov.uk/sustainable/quality99/chap2/02.htm.

of economic, human, social, cultural and environmental capital.

Quality of life for all: enriching social, economic and environmental capital

Quality of life issues can be captured in the following figure (Figure 1). A good quality of life for all is closely related to the concept of sustainable development which emphasizes the integration (not just balance) of social, environmental and economic concerns. Great cities of the world cannot afford a skewed development pattern. Reinforcing growth and enrichment in economic, social and environmental capital is fundamental to building great cities.

A good quality of life can be defined with reference to economic, social and environmental capital (Kirdar, 1997, pp 9–23; World Commission Urban 21, 2000, p 8). Economic capital can be enhanced through sustainable patterns of production and consumption. This is usually found in cities having a global outlook, with expertise in international development, finance and trade; and also focusing on local potentials such as unexploited resources and opportunities within their boundaries. There should be work that yields sufficient income and freedom from poverty. Adequate public facilities are necessary to satisfy basic needs and allow citizens the mobility to reach work, shops, schools, friends and recreational opportunities. Such cities will naturally attract private finance.

Rich social capital can usually be found in well-integrated societies with stable social networks, which respect their traditions and preserve their links with the past, and yet are poised to adjust to new challenges. This can often be found in a political system that offers balanced representation of interests and values so that the social and political governance structure can be strengthened. Social capital can be nurtured through the promotion of “learning” cities (knowledge society); the forging of a social contract to generate “win–win” options; and the creation and strengthening of partnership fora. Cities with rich social capital are better able to tackle the issues of poverty and are more likely to be willing to listen to the visions of the future generations for greener and more humane cities.

Reducing the damaging ecological footprint (Chambers et al., 2000; Wackernagel and Rees, 1996) of cities can enhance environmental capital. A state of ecological harmony and balance with the wider natural environment is important. Moreover, built heritage should be preserved while serving the needs of modern economic life and modern lifestyles.

To achieve these principles and policy options, an enlightened mode of governance is required.

Governance beyond government

Governing great cities of the world is an art that even “world class” cities are learning to master (Keil, 1998; Sharpe, 1995; The Sustainable London Trust, 1997; World Commission Urban 21, 2000; Yap and Mohit, 1998; Yaro and Hiss, 1996). For cities to be innovative and sustainable in this global age, there are three inter-related challenges: reengineering city government from within; a renewed reflection on the government’s relationships with the private sector; and the forging of new partnerships among the government, the private sector and an enlightened and widely networked community and the “third sector”4. In other words, the government cannot shoulder all the responsibilities in reinventing a city. A dynamic and competitive market is essential for innovation. And cities will not be sustainable and convivial if civil society comprises just a group of unrelated consumers.

4The third sector as defined by Osborne and Gaebler (1993) refers to privately owned or controlled organizations that exist to meet public or social needs, not to accumulate private wealth.
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who have no sense of ownership of the city. Dryzek argues (1997, p 134), an active and committed civil society is “… the only conceivable glue” to hold sustainability efforts together.

Great city of the world: a comparative framework

We suggest that a great city of the world should have the following attributes:

• An enlightened mode of governance with a re-invented government working in partnership with the private sector, civil society and the third sector.
• An active and creative member in developing innovative technology and economic activities to further sustainable global and local development.
• A place not just rich in economic capital but also great in nourishing human, social, cultural and environmental capital.

Figure 2 presents a framework which links these attributes together. Benchmarking indicators were listed under each of the identified aspects. These indicators originated from an earlier research project undertaken by the CUPEM to position Hong Kong with reference to other world cities (New York, London, Paris and Tokyo) and Asia’s aspiring world cities (Singapore, Taipei and Shanghai). The benchmarking indicators were first developed by the research team according to individual member’s area of expertise. Then participants in two public fora were invited to prioritize the criteria. The current indicator sets reflect the outcomes of various discussions and review sessions, and the availability of data for the selected indicators.

A comparative study of selected Pacific Asian countries

Five Asian cities were selected for this comparative study: Tokyo, Hong Kong, Singapore, Taipei and Shanghai. Tokyo is a recognized international financial centre and a world class city. Japan is always perceived as the head of a “flying geese” pattern of development in Pacific Asia (Lo, 1994). Hong Kong, Singapore and Taipei are chosen as they are among the little dragons in Asia. Shanghai is included as a rising star in the reforming socialist market economy of China.

Table 1 and Figures 3 and 4 show the background information of the selected cities. Then various tables and figures compare and contrast the cities in terms of governance, globalization, economic, social and environmental developments. Most of the figures use 1998 or 1999 data. The definitions and original sources (including the exchange rates adopted) of the figures and tables all originate from Ng and Hills (2000).
Table 1 Background information of the five chosen metropolises

<table>
<thead>
<tr>
<th>Variable</th>
<th>Tokyoa</th>
<th>Hong Kongb</th>
<th>Singaporec</th>
<th>Taipeid</th>
<th>Shanghaie</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population living in urbanized areas (million)</td>
<td>12.2</td>
<td>5.9</td>
<td>3.9</td>
<td>2.6</td>
<td>13.1</td>
</tr>
<tr>
<td>Urbanized areas (sq. km)</td>
<td>2187.0</td>
<td>275.0</td>
<td>232.0</td>
<td>272.0</td>
<td>6340.0</td>
</tr>
<tr>
<td>Density (persons/sq. km)</td>
<td>5544</td>
<td>21,436</td>
<td>11,968</td>
<td>9566</td>
<td>2061</td>
</tr>
</tbody>
</table>

Sources: TY=Tokyo; HK=Hong Kong; SG=Singapore; TP=Taipei; SH=Shanghai.

aTY: Tokyo Metropolitan Government (2000a, pp 1, 21).

Figure 3 Population structure. Sources: Tokyo: Tokyo Metropolitan Government (2000a, pp 22–23); Hong Kong: Census and Statistics Department (1999, p 5); Singapore: Singapore Department of Statistics (1998, p 24); Taipei: Department of Budget, Accounting and Statistics, Taipei City Government, ROC (1999, pp 72–73); Shanghai: “Kua Shiji de Zhongguo Renkou” (Shanghai Juan) Bianweihui (1994, p 25), Tables 2 and 3

Figure 4 Urbanized area and population density. Sources: Tokyo: Tokyo Metropolitan Government (2000a, pp 1, 21); Hong Kong: Census and Statistics Department (1996, p 137); Singapore: Singapore Department of Statistics (1998, p 17); Taipei: Department of Budget, Accounting and Statistics, Taipei City Government, ROC (1999, pp 428–429); Shanghai: Liu (1999)

These five cities have very different histories, cultures, political and economic systems and it is difficult for a short paper like this to do justice to their differences. Our aim is more modest and we use the various indicators listed in the framework to inform us as to the extent that these cities can be regarded as great cities of the world.

Background: land area and population

Tokyo and Shanghai have the largest populations and land areas among the five cities. However, in terms of population density, they are the lowest. Urbanized areas in Hong Kong, Singapore and Taipei all extend to approximately 250 km². However, population density is much higher in Hong Kong than in Singapore and Taipei. The population density of the most densely developed areas in Hong Kong reaches 54,374 persons/km² (Planning Department, 1997).
Enlightened governance?

City heads in Tokyo, Singapore and Taipei are democratically elected. The Tokyo Metropolitan Assembly is made up of 127 members directly elected by the people to serve a term of 4 years. The Governor is directly elected by the citizens and represents the Metropolis of Tokyo. With a 4-year term of office, he has overall control of Metropolitan affairs and the authority and responsibility for maintaining the collective integrity of the Metropolitan administration. In certain areas of the 23-ku, the Governor may take on the role of a mayor.

The mayor of Taipei is chosen through free popular elections. Elected city councillors are the lawmakers, having the power to pass and introduce bills, and administering the city government for public good. Politics in Taiwan exhibits contradictory trends. On one hand, “gold-power” (some call it “black-gold-power”) politics is commonplace within the political system. On the other hand, civil society is very active in fighting for various environmental, social and labour issues.

Singapore has a directly elected president who serves as chief of state and primary administrative officer, along with a prime minister and a deputy prime minister who are appointed by the president. The parliament is made up of 83 elected representatives. The People’s Action Party dominated city state has deployed “the state machinery in a highly interventionist manner throughout the polity, economy and society” (Chua, 1996, p 99). In the administrative state, the bureaucracy is responsible for the complex development activities in the export-led economy.

In the Hong Kong Special Administrative Region, the Chief Executive is not directly elected. The current Chief Executive was elected by an Election Committee composed of 800 electors. The second Legislative Council of the HKSAR has 60 members, with 24 members returned by geographical constituencies through direct elections, 30 members returned by functional constituencies, and six members returned by an Election Committee comprising 800 elected representatives of the community.

Shanghai is one of the four municipalities in China with an administrative status similar to that of a province. Unlike other global cities, Shanghai, under the leadership of the Chinese Communist Party, practices parallel national party and government administrative apparatuses. There is a party secretary and a mayor for the city. The standing committee of the CCP appoints the party secretary and the mayor. Economic planning is often influenced by political (party) considerations. Since the early days of liberation (post-1949), the leadership in Shanghai has forged close ties with Beijing. The Shanghai Municipal People’s Congress with its standing committee is the policy-making authority, and the Municipal Government is its executive arm.

As a result of the differences in the political system, the registered voting population and the percentage of the population voting in local elections are higher in the more democratic cities such as Tokyo, Singapore and Taipei (Table 2). It can be seen from Table 2 that except in Hong Kong and Shanghai, taxes make up a very important source of income in the other three Asian cities. In Hong Kong, the premium obtained from the selling of land use rights and related revenue used to make up a considerable portion of the Government’s revenue.

Friedmann and Wolff (1986) hypothesized that world city formation brings spatial and class polarization. Table 2 shows that social polarization is the most serious in Hong Kong, followed rather surprisingly by Shanghai. Singapore has managed to keep social polarization at bay as a result of the Singaporean Government’s “dual industrial strategy of becoming both an important hub for business as well as a site for up-market manufacturing” (Baum, 1999, p 1114). The Gini coefficients for Tokyo and Taipei are the lowest among the five cities.

From the above information, it is rather difficult to assess if these cities have an enlightened mode of governance promoting three-way partnerships among the public, private sector and the civil society. However, the political systems in Tokyo, Taipei and to a lesser extent Singapore are more democratic than those in Hong Kong and Shanghai.

Innovative technological and economic activities promoting global and local development?

Tokyo is a class of its own in terms of GDP and per capita GDP. Although Hong Kong’s GDP is almost double that of Singapore, its per capita GDP is not. There are no GDP and per capita GDP figures for Taipei. GDP per capita for Taiwan as a whole is USD12,268, about half the figure for Hong Kong. Shanghai has the lowest GDP and per capita GDP figures. However, as the price structures in the socialist market economy are different, it is difficult to compare Shanghai with other capitalist economies (Figure 5).

Economic structures vary in the five cities. As an international financial centre, financial and business services contribute 40 per cent of Tokyo’s GDP. Retailing, hotels, catering and manufacturing are also important sectors in the economy. This is similar to Singapore and Taipei where the manufacturing, financial and retailing, and hotels businesses are the three most important economic sectors. Hong Kong is the weakest in terms of manufacturing industries. Instead, the financial and business services, retailing, hotels and catering, and social services are the three

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most important sectors in the economy. Shanghai is still basically a “producer city” with half of its GDP coming from the manufacturing sector. The financial sector is catching up but it is still not as significant as other cities (Figure 6).

Table 3 summarizes global and local developments in the five Asian cities. In terms of international importance, Tokyo and Hong Kong have the largest numbers of foreign governments represented and international organizations present in the cities. Since Tokyo is the capital of Japan, it can be expected that international organizations are well represented there. The situation in Hong Kong is probably due to its cosmopolitan and receptive culture. Trading is an important economic activity in all the five cities. Hong Kong leads in terms of traditional import and export businesses. Hong Kong is also number one in terms of volume of containers handled. However, in terms of commercial services trade, Japan leads among other Asian economies. Hong Kong and Singapore are also playing an important role in the world market. China is catching up and has huge potential given the size of its market.

With reference to the development of the financial sector, Tokyo and Taipei have the largest equity markets in the region. However, Shanghai, with its big hinterland leads in bond trading. The amount of bonds traded per annum in Shanghai is almost four times that of Tokyo. Although Hong Kong and Singapore are always recognized as regional financial centres in Asia, the volume of equities and bonds traded are not particularly impressive. However, Singapore performs very well in national foreign exchange and derivative markets, almost on a par with Tokyo. This is probably due to the fact that Singapore established the Asian-dollar market in 1968. Hong Kong has the largest number of offices of international banks, followed by Singapore and Tokyo. Again, Tokyo leads in the number of Fortune 500 headquarters.

While Hong Kong has the largest number of inter-
national tourists among the five cities, the number is dwarfed by the number of domestic visitors in Tokyo and Shanghai. Expenditure per tourist is also the highest in Hong Kong. The high costs incurred will probably affect its popularity as a tourist destination. Tokyo is the air transport hub in the region although the airport landing charge is also the highest. It is surprising to find that Shanghai has the next highest landing charge.

While the five cities have progressively been globalized, their performance in technological development varies. Tokyo is again the leader in technological advancement. Not only has it the greatest number of internet service providers, it also invests a lot in research and development. While Hong Kong houses quite a few internet service providers, the amount that the city puts into research and development lags behind other Asian cities. This is probably due to the high costs of doing business in Hong Kong and the fact that the city has experienced rapid de-industrialization in the past decade.

It is difficult to prove if technological development and globalization have improved local development. However, we can see from Table 3 that the costs of living are highest in Tokyo and Hong Kong, followed by Shanghai and Singapore. The net hourly wage is highest in Tokyo, followed by Hong Kong and Taipei. Labour costs are still relatively cheap in Shanghai. However, in terms of working hours per annum, people work the largest number of hours in Hong Kong and Taipei, followed by Singapore, Shanghai and surprisingly, Tokyo.

The above discussion seems to confirm the “flying geese pattern of development”. Tokyo is a class of its own in terms of economic capital and international importance. However, as a state-centred world city, Tokyo is first and foremost a national champion (Fujita, 2000; Hill and Kim, 2000). All the five cities play a role in the global economy which has implications on local economic development. Hong Kong remains strong in its traditional economic activities especially in the trading and banking sectors. Yet, Hong Kong lags behind others in terms of putting resources in research and development. In many aspects, Hong Kong is more expensive than Singapore. In any case, Hong Kong and Singapore probably belong to the same “class”, followed by Taipei and Shanghai.

Although it is difficult to establish if economic resources are used to pursue sustainable global and local development, there is little doubt that immense economic capital exists in these five Asian world metropolises. However, as argued in the theoretical framework, a great city of the world should also have rich human, social, cultural and environmental capital. Data again are limited but the following can illustrate to some extent these aspects in the five cities.

Rich human, social, cultural and environmental capital?

Table 4 summarizes the various aspects of human, social, cultural and environmental development. Adult literacy rates are generally high in all five cities. However, in terms of post-secondary qualifications, Singapore is about 20 percentage points higher than Taipei. Hong Kong performs less satisfactorily and the worst case is Shanghai, with only 7 per cent of its population holding post-secondary qualifications.

Although Tokyo outperforms other Asian economies, economic capital does not automatically bring about healthiness. Suicides and cancer rates are the highest in Tokyo. The cancer death rate is also high in Shanghai, probably due to a polluted environment as a result of industrial wastes. Suicide and cancer death rates are higher in Hong Kong than Singapore and Taipei, indicating a much more pressurized environment. The number of doctors per 100,000 population is highest in Shanghai, followed by Tokyo, Taipei and then Hong Kong and Singapore. However, death rates as a result of respiratory diseases are also highest in Shanghai. The death rates are also high in Hong Kong when compared to Tokyo and Singapore.
## Table 3 Global and local developments in the five Asian metropolises

<table>
<thead>
<tr>
<th>Variable</th>
<th>Tokyo</th>
<th>Hong Kong</th>
<th>Singapore</th>
<th>Taipei</th>
<th>Shanghai</th>
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<tbody>
<tr>
<td><strong>Global development</strong></td>
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<tr>
<td><strong>International importance</strong></td>
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<td></td>
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</tr>
<tr>
<td>Number of foreign government represented&lt;sup&gt;a&lt;/sup&gt;</td>
<td>67</td>
<td>68</td>
<td>40</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Number of international organization participated&lt;sup&gt;b&lt;/sup&gt;</td>
<td>63</td>
<td>13</td>
<td>39</td>
<td>7</td>
<td>52</td>
</tr>
<tr>
<td><strong>Trade and commerce</strong></td>
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<tr>
<td>Trade&lt;sup&gt;11&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>exports in million USD</td>
<td>109</td>
<td>174</td>
<td>111</td>
<td>111</td>
<td>163</td>
</tr>
<tr>
<td>imports in million USD</td>
<td>108</td>
<td>184</td>
<td>102</td>
<td>105</td>
<td>97</td>
</tr>
<tr>
<td>Container terminal: volume of containers handled in millions of TEU&lt;sup&gt;13&lt;/sup&gt;</td>
<td>2.7</td>
<td>16.1</td>
<td>15.9</td>
<td>n.a.</td>
<td>4.2</td>
</tr>
<tr>
<td>Commercial service trade (national)&lt;sup&gt;12&lt;/sup&gt;:</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>exports: % share in world market</td>
<td>4.5</td>
<td>2.6</td>
<td>1.7</td>
<td>1.1</td>
<td>2.0</td>
</tr>
<tr>
<td>imports: % share in world market</td>
<td>8.5</td>
<td>1.7</td>
<td>1.4</td>
<td>1.7</td>
<td>2.4</td>
</tr>
<tr>
<td><strong>Financial sector</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average amount traded per day of the equity market in million USD&lt;sup&gt;16&lt;/sup&gt;</td>
<td>6839</td>
<td>931</td>
<td>426</td>
<td>3435</td>
<td>942</td>
</tr>
<tr>
<td>Value of bond trading in million USD&lt;sup&gt;18&lt;/sup&gt;</td>
<td>49.55</td>
<td>18</td>
<td>3909</td>
<td>1683</td>
<td>210,169</td>
</tr>
<tr>
<td>Average daily turnover of national foreign exchange market in billion USD&lt;sup&gt;17&lt;/sup&gt;</td>
<td>149</td>
<td>79</td>
<td>139</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Average daily turnover of national derivatives market in billion USD&lt;sup&gt;19&lt;/sup&gt;</td>
<td>123</td>
<td>51</td>
<td>91</td>
<td>2</td>
<td>n.a.</td>
</tr>
<tr>
<td>Number of offices of international banks&lt;sup&gt;3&lt;/sup&gt;</td>
<td>143</td>
<td>365</td>
<td>193</td>
<td>39</td>
<td>54</td>
</tr>
<tr>
<td>Number of headquarters of 50 largest banks (Fortune 500)&lt;sup&gt;4&lt;/sup&gt;</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Hub functions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourism (million visitors per annum)&lt;sup&gt;7&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>international</td>
<td>2.5</td>
<td>7.0</td>
<td>6.2</td>
<td>2.0</td>
<td>1.5</td>
</tr>
<tr>
<td>domestic</td>
<td>150.0</td>
<td>2.6</td>
<td>n.a.</td>
<td>n.a.</td>
<td>71.0</td>
</tr>
<tr>
<td>Expenditure per tourist in USD&lt;sup&gt;20&lt;/sup&gt;</td>
<td>n.a.</td>
<td>716</td>
<td>422</td>
<td>1,467</td>
<td>125</td>
</tr>
<tr>
<td>Annual airport passengers (in million)&lt;sup&gt;9&lt;/sup&gt;</td>
<td>80.0</td>
<td>29.7</td>
<td>26.1</td>
<td>16.4</td>
<td>14.8</td>
</tr>
<tr>
<td>Annual aircraft movement (in thousand)&lt;sup&gt;10&lt;/sup&gt;</td>
<td>375.8</td>
<td>179.9</td>
<td>174.7</td>
<td>109.7</td>
<td>135.1</td>
</tr>
<tr>
<td>Airport landing charge for a Jumbo 747 jet at peak hours in USD&lt;sup&gt;5&lt;/sup&gt;</td>
<td>5949</td>
<td>3213</td>
<td>2297</td>
<td>2921</td>
<td>4267</td>
</tr>
<tr>
<td><strong>Local development</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National internet services provider (ISPs)&lt;sup&gt;14&lt;/sup&gt;</td>
<td>357</td>
<td>49</td>
<td>8</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>Expenditure on R&amp;D as % of GDP&lt;sup&gt;21&lt;/sup&gt;</td>
<td>2.91</td>
<td>0.25</td>
<td>1.80</td>
<td>1.98</td>
<td>1.51</td>
</tr>
<tr>
<td>Corporate Resource Group, Geneva&lt;sup&gt;22&lt;/sup&gt;</td>
<td>166</td>
<td>153</td>
<td>106</td>
<td>100</td>
<td>140</td>
</tr>
<tr>
<td>Expenditure per tourist in USD&lt;sup&gt;23&lt;/sup&gt;</td>
<td>n.a.</td>
<td>716</td>
<td>422</td>
<td>1,467</td>
<td>125</td>
</tr>
<tr>
<td>Net hourly wages in USD&lt;sup&gt;15&lt;/sup&gt;</td>
<td>17.8</td>
<td>8.5</td>
<td>5.2</td>
<td>6.9</td>
<td>1.3</td>
</tr>
<tr>
<td>Average number of hours worked per annum&lt;sup&gt;17&lt;/sup&gt;</td>
<td>1864</td>
<td>2181</td>
<td>1988</td>
<td>2176</td>
<td>1983</td>
</tr>
</tbody>
</table>

Notes: n.a.: not available; n.s.: not specified.

<sup>a</sup> All cities: search CEE@mail: Global business directory, World embassies and consulates. http://www.cee-mail.com/embassies.html.

<sup>b</sup> All cities: counted from Gale Research (2000).

<sup>1</sup> TY: Tokyo Metropolitan Government (2000a, p 298); HK: Informaton Services Department (1998); SG: Singapore Department of Statistics (1998, p 5); TP: Figure for Taiwan as a whole. Ministry of Economic Affairs, Statistics Department (2000); SH: Shanghai Shehuikexueyuan, Shanghai Jingji Nianjian Bianjibu (1999, p 450).

<sup>2</sup> All cities except Taipei: Boyes (2000, p 85).

<sup>3</sup> All cities: World Trade Organization (2000), Appendix Table 3.

<sup>4</sup> All cities: International Federation of Stock Exchanges (2000a).

<sup>5</sup> All cities: Bank for International Settlements, Monetary and Economic Department (2000), Table C-3.


<sup>7</sup> All cities: Time Inc. (2000).


<sup>9</sup> All cities: Airport Council International (2000).

<sup>10</sup> All cities: Airport Council International (2000).
Singapore has 100 per cent of its wastewater undergoing secondary treatment. However, this is not the case for Hong Kong and Taipei. In fact, for Shanghai and Taipei, not all its wastewater undergoes even primary treatment. It is interesting to find out that the number of noise complaints is not the highest in the most densely populated city (density in Hong Kong is the highest among the five cities, 21,436 per km²). Rather, it is in Taipei (9566 per km²) where people are increasingly more vocal in exerting their own rights, probably a result of accelerated democratization in recent years.

Tokyo sets a very good example of attracting the largest ridership per capita per annum on rail development. In terms of the proportion of journeys using public transport, Hong Kong (80%) and Tokyo (79%) are the champions. However, the ratio has dropped dramatically for Singapore, Taipei and Shanghai. Not surprisingly, the number of vehicles/km of road space is highest in Taipei where private car is the most popular mode of transportation. As the Singaporean government has adopted various policies to control the growth of car ownership, automobile prices and maintenance costs are the highest. Nevertheless, less than 50 per cent of the journeys in the city use public transport.

While most of the cities spend less than 1 per cent of their budget on arts or cultural activities, Taipei spends 1.7 per cent. As Taipei and Shanghai have emphasized heritage conservation as part of their city development strategies, this is reflected in the number of listed buildings. With the cultural turn of the capitalist economies, heritage conservation is becoming a popular policy for rejuvenating economic development and attracting tourists. Tokyo, Hong Kong and Singapore have also declared a considerable number of buildings for conservation.

However, in terms of the number of cultural and sports facilities, Taipei is at best on a par with Singapore, Hong Kong and Shanghai. Tokyo again outperforms the other cities. However, the number of TV channels and book publishers in Taipei is higher than those found in the other cities, except again Tokyo where the number of TV channels (including cable TV) is 348.

The above discussions show that with its economic strength, Tokyo is able to provide infrastructure to satisfy residents’ educational, transportation, sports and cultural needs. Other Asian world cities, in varying degrees, have done the same. However, in terms of social and physical health, all the cities still have room for improvement.

Conclusion

The objective of this paper is not to engage with the debates on the model of world city development (Friedmann, 2000; Fujita, 2000; Hill and Kim, 2000; Sassen, 2000). Rather, it represents a small step in trying to chart urban development in five Asian world cities and to determine if they are “great cities”: cities that not only actively engage in the global economy but are also rich in local economic, social and environmental capital. Our analysis indicates that the selected cities are all active participants in the global economy and the economic resources generated through this process of engagement have assisted in the construction of infrastructure and “hardware” facilities. However, our analysis also suggests that the performance of these cities in terms of social and physical health, environmental management and enlightened governance is more diverse and rather less certain.

We have not been able to explore in detail the political economy of our selected cities. This limits our ability to conduct a comprehensive benchmarking analysis. Nonetheless, the research that we have conducted provides a potentially valuable bridge between the world city literature and the sustainability debate (Marcotullio, 2001). The study also demonstrates that while significant problems still remain with regard to data collection and comparability in world cities research (Short et al, 1996), these can be overcome sufficiently to provide a basis for comparative analysis and the dissemination of research findings.

We commenced this paper by arguing that in the age of globalization cities should aspire to be great cities, and not just world cities. We defined great cities as urban centres possessing an enlightened mode of governance. These are cities in which technological and economic advancement combine to sustain global and local development, and serve to enrich socio-economic, human, cultural and environmental capital. As we also observe, the world city literature has been dominated by a concern with the economic characteristics and positioning of individual cities. Although

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Table 3 (Continued)

<table>
<thead>
<tr>
<th>Category</th>
<th>Taipei</th>
<th>Hong Kong</th>
<th>Shanghai</th>
<th>Singapore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airports</td>
<td>348</td>
<td>435</td>
<td>512</td>
<td>1021</td>
</tr>
<tr>
<td>Railway</td>
<td>1021</td>
<td>512</td>
<td>435</td>
<td>348</td>
</tr>
<tr>
<td>Roads</td>
<td>348</td>
<td>435</td>
<td>512</td>
<td>1021</td>
</tr>
</tbody>
</table>

---

All cities: Gutmann and Frey (2000, p. 8).
All cities: Gutmann and Frey (2000, p. 8).
All cities: US Government, Central Intelligence Agency’s Directorate of Intelligence (2000).

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Gutmann and Frey (2000, p. 81).
Table 4 Human, social, cultural and environmental developments in five Asian metropolises

<table>
<thead>
<tr>
<th>Variable</th>
<th>Tokyo</th>
<th>Hong Kong</th>
<th>Singapore</th>
<th>Taipei</th>
<th>Shanghai</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Human resources</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult literacy rate (%)</td>
<td>99</td>
<td>92</td>
<td>93</td>
<td>90</td>
<td>91</td>
</tr>
<tr>
<td>% population holding post-secondary qualification</td>
<td>29</td>
<td>18</td>
<td>51</td>
<td>32</td>
<td>7</td>
</tr>
<tr>
<td><strong>Health</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Death rate per 100,000 population:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suicides</td>
<td>24</td>
<td>10</td>
<td>8</td>
<td>8</td>
<td>n.a.</td>
</tr>
<tr>
<td>Cancer</td>
<td>214</td>
<td>159</td>
<td>105</td>
<td>133</td>
<td>191</td>
</tr>
<tr>
<td>Respiratory disease</td>
<td>71</td>
<td>99</td>
<td>66</td>
<td>n.a.</td>
<td>124</td>
</tr>
<tr>
<td>Number of doctors per 100,000 population</td>
<td>263</td>
<td>143</td>
<td>130</td>
<td>244</td>
<td>390</td>
</tr>
<tr>
<td><strong>Environment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of wastewater treated in some way</td>
<td>96</td>
<td>98</td>
<td>100</td>
<td>48</td>
<td>68</td>
</tr>
<tr>
<td>% of wastewater with secondary treatment</td>
<td>n.a.</td>
<td>18</td>
<td>100</td>
<td>5</td>
<td>n.a.</td>
</tr>
<tr>
<td>No. of noise complaints received per 100,000 population</td>
<td>22</td>
<td>145</td>
<td>n.a.</td>
<td>257</td>
<td>n.a.</td>
</tr>
<tr>
<td><strong>Transport</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ridership (no. of trips) per capita per annum on subway and rail transport</td>
<td>696</td>
<td>191</td>
<td>97</td>
<td>23</td>
<td>10</td>
</tr>
<tr>
<td>Proportion of journeys using public transport</td>
<td>79</td>
<td>80</td>
<td>46</td>
<td>32</td>
<td>n.a.</td>
</tr>
<tr>
<td>Number of vehicles per kilometre of road</td>
<td>161</td>
<td>269</td>
<td>218</td>
<td>1057</td>
<td>152</td>
</tr>
<tr>
<td>Automobile prices (including taxes and road taxes)</td>
<td>20,709</td>
<td>30,696</td>
<td>67,014</td>
<td>20,175</td>
<td>24,556</td>
</tr>
<tr>
<td>Maintenance costs in USD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance costs in USD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Arts and culture</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public expenditure on arts or culture (% of total budget)</td>
<td>0.3</td>
<td>0.4</td>
<td>0.1</td>
<td>1.7</td>
<td>n.s.</td>
</tr>
<tr>
<td>Number of museums (public and private)</td>
<td>243</td>
<td>18</td>
<td>18</td>
<td>17</td>
<td>16</td>
</tr>
<tr>
<td>Number of libraries open to the public</td>
<td>384</td>
<td>66</td>
<td>61</td>
<td>39</td>
<td>351</td>
</tr>
<tr>
<td>Number of films listed buildings</td>
<td>54</td>
<td>49</td>
<td>44</td>
<td>75</td>
<td>63</td>
</tr>
<tr>
<td><strong>Sports and recreation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of public swimming pools (indoor and outdoor) per 100,000 population</td>
<td>25</td>
<td>0.5</td>
<td>0.7</td>
<td>0.1</td>
<td>n.a.</td>
</tr>
<tr>
<td>Seating capacity of the largest stadium</td>
<td>60,000</td>
<td>40,000</td>
<td>55,000</td>
<td>25,000</td>
<td>80,000</td>
</tr>
<tr>
<td><strong>Entertainment and media</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of TV channels (local and cable/satellite)</td>
<td>348</td>
<td>68</td>
<td>43</td>
<td>85</td>
<td>14</td>
</tr>
<tr>
<td>Number of films screened annually</td>
<td>568</td>
<td>460</td>
<td>n.a.</td>
<td>n.a.</td>
<td>106</td>
</tr>
<tr>
<td>Number of book publishers</td>
<td>154</td>
<td>109</td>
<td>121</td>
<td>4194</td>
<td>38</td>
</tr>
</tbody>
</table>

Notes: n.a.: not available; n.s.: not specified.


5TY: Tokyo Metropolitan Government (2000b); HK: Drainage Services Department, HKSAR (2000); SG: Email contact to Ministry of the Environment, Sewage Department (LIM—Tiew—Siong@env.gov.sg) on 16 August 2000; TP: Email contact to Environmental Protection Bureau, Taipei City (web15000@serv1.tcg.gov.tw) on 16 August 2000; SH: Shanghai Shehuikexueyuan, Shanghai Jingji Nianjian Bianjibu (1999, p 320).

6HK: Drainage Services Department, HKSAR (2000, p 12); SG: Email contact to Ministry of the Environment, Sewage Department (LIM—Tiew—Siong@env.gov.sg) on 12 September 2000; TP: Email contact to Environmental Protection Bureau, Taipei City (web15000@serv1.tcg.gov.tw) on September 12, 2000.


Notes: n.a.: not available; n.s.: not specified.
the sustainable development paradigm has become embedded in both national policy frameworks and in contemporary urban and regional planning practice, little attention has yet been given to forging closer conceptual and empirical linkages between the world city debate per se and sustainability issues. The discussion here has attempted to address this concern but it is only a modest contribution to a complex and challenging research area.

References


Table 4 (Continued)


**TY: Tokyo Metropolitan Government (2000a, p 448), Table 232; HK: Leisure and Cultural Service Department, HKSAR (2000); SG: Email contact to Urban Redevelopment Authority (ura—siu@ura.gov.sg) on 27 July 2000; TP: Department of Budget, Accounting and Statistics, Taipei City Government, ROC (1999, p 328); SH: Liu (1999, p 106).**

**TY: data extracted from Statistics Bureau, Management and Coordination Agency of Japan (2000); HK: Leisure and Cultural Service Department, HKSAR (2000); SG: Email contact to Urban Redevelopment Authority (ura—siu@ura.gov.sg) on 27 July 2000; TP: Taipei City Government (1999); SH: Shanghai Urban Planning Administrative Bureau (1999).**

**TY: data extracted from Statistics Bureau, Management and Coordination Agency of Japan (2000); HK: Information Services Department (1998, p 487); SG: Singapore Sport Council (1997); TP: Department of Budget, Accounting and Statistics, Taipei City Government, ROC (1999, p 328).**

**TY: Tokyo National Stadium <http://www.geocities.co.jp/Athlete-Athene/6366/html national.html>; HK: Leisure and Cultural Service Department, HKSAR (2000); SG: Singapore Sport Council (1997); TP: Email contact to Department of Budget, Accounting and Statistics, Taipei City Government, Republic of China (web200000@serv1.tcg.gov.tw) on 16 August 2000; SH: Shanghai Municipality (1999).**


**All cities except Taipei: Search On-line Yellow page; TP: Department of Budget, Accounting and Statistics, Taipei City Government, ROC (1999, p 337).**
A comparative study of five Asian metropolises: Mee Kam Ng and Peter Hills

of Shanghai 1998, China Statistical Publishing House, Shanghai.


