



True Smart and Green City?
8th Conference of the
International Forum on Urbanism



Conference Proceedings Paper

"Green Challenges" for Beijing Heading Towards a World City—From the Perspective of Fortune Global 500 Companies

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Abstract: Previous studies suggested that, the Fortune Global 500 companies can be an important criterion to Identify world cities. It is also generally considered that, as the number of Fortune Global 500 companies headquartered in Beijing has increased, it has been getting closer to the goal to become a world city. Based on this point, this paper discusses the green challenges Beijing is facing heading towards a world city, using the methods of comparative research and qualitative research. Challenge 1: green business, the proportion of resource-based enterprises is too high. Challenge 2: green regional, the unreasonable regional division failed to form the industrial chain. Challenge 3: green space, the urban space is not of high quality. Among the Fortune 500 companies located in Beijing, 51 of 52 are state-owned monopolistic businesses and almost half of the revenue are contributed by resource-based enterprises. From the regional perspective, the industrial division of labour is not clear. Most of the Fortune Global 500 companies located on the outskirts of Beijing are dependent on local mineral resources. The pollutants released by these resource-based enterprises are commonly considered as the main source of Beijing's air pollution. In order to grow into a world city, three suggestions are proposed in this paper for Beijing. Firstly, shifting from city scale expansion to urban quality improvement. Secondly, promoting green industry and fostering advanced producer services to enhance its impact and influence in global economies. Thirdly, increasing financial input on infrastructure construction and regeneration oriented sustainable development.

Keywords: world city; global economy; Fortune Global 500 companies' headquarters; sustainable development

1. Introduction

In the year of 2010, Beijing Municipal Government proposed the target of building Beijing into a world city. As described in the government work report, world city is the top end of international metropolises, which has an important influence on global economic, political, and cultural affairs and lead the world trend of economic development. The main characteristics of a world city include that it plays as the center of international financial center, decision-making and management center, the focus of international activities, information center and the gathering center of high-end talent (Definitions of Government Work Report, Planning Report, Financial Report). These characteristics indicate the important role it plays in influencing the global economic activity and are in direct relation to its status in world city. There are many different academic viewpoints about the criteria for identification a world city (as shown in Table 1), including headquarters of international institutions, the existence of major stock exchanges, headquarters of several multinational banks, centers of media and culture, transportation and communications infrastructure, etc. Other indicators include a cosmopolitan life, work and cultural environment, international destination for travelers, cultural exchanges and information. Many researchers regard the headquarters of multinational companies as a key indicator of measuring the world city. It is a common view that, the influence of a city in the global economy can be valued by the number and economic scale of Fortune Global 500 companies it has.

According to the data released by FORTUNE magazine^① in 2014, the number of Fortune 500 companies headquartered in Beijing increases from 12 in 2005 to 52 in 2013, and with which, Beijing has been getting closer to the goal of a world city. But meanwhile, there are several challenges it has to face. Based on this point of view, this paper discusses the “green challenges” that Beijing is facing heading towards a world city, with analysis of characters of Fortune Global 500 including industry structure, geographical location and the level of agglomeration.

2. Method

2.1. Data sources

The Fortune Global 500, also known as Fortune 500, is published annually by Fortune magazine. It is an annual ranking of the top 500 corporations as measured by total revenues for their respective fiscal years. Relevant information about the corporations such as industries, countries and revenues are also offered on the list. In this paper, a detailed comparative analysis was performed based on the information from the ranking list in 2005, 2009 and 2013, by using qualitative and quantitative methods.

^①"FORTUNE" belonging to the America Time Warner publishing agency's Time Inc.

Table 1. Main characteristics of world cities.

Source	Main Characteristics
Beijing municipal government ¹ 2010	1. certain economy of scale; 2. gather multinational headquarters; 3. regional economic cooperation closely; 4. facilitate the international transport facilities; 5.the advanced level of science and technology education; 6. favorable living conditions.
Knox ² 1995	1.The number of foreign banks in the city; 2.the number of foreign airlines flying to the city; 3.the number of regional operations center in the city; 4. the number of international organization headquarters or secretariat located in the city; 5. the number of foreign tourists each year to the city.
Sassen ³ 1994	1.The global city is global economic organizations command points; 2. The global city is a key regional leader of the industry; 3. The global city is innovative base of leading industries; 4. The global city is a market where product innovation production.
Friedmann ⁴ 1986	1.international Financial Center; 2. multinational headquarters; 3. International Organizations Representative Offices; 4. the rapid growth of the business services sector; 5. manufacturing center; 6. major transportation hub; 7. population of over one million.
Cohen ⁵ 1981	1.multinational headquarters; 2.International Organization office; 3. multinational bank location;4. The stock major trading place; 5. Producer gathering services; 6. Culture and the Media Business Centre; 7. services center

Table 2. The number of Fortune 500 headquarters in world cities (2005-2013).

Ranking	2013	Number	2009	Number	2005	Number
1	Beijing	52	Tokyo	51	Tokyo	56
2	Tokyo	47	Paris	27	Paris	27
3	Paris	18	Beijing	26	New York	24
4	New York	18	New York	18	London	23
5	London	17	London	15	Beijing	12

2.2. Statistical classification method

Firstly, the data was classified by location of headquarter. And then, based on available online information, the locations were specified and classified down to the city level. In 2009, the Global 500 are mainly concentrated in three economic regions, including North America (163 headquarters), EU (140) and East Asia (125). While in 2013, East Asia moved up to the first place (174 headquarters), followed by EU (151) and North America (138). The top 10 metropolitan areas with the highest concentrations of headquarters are, 1. Tokyo-Yokohama metropolitan area, 2. the U.S. East Coast urban belt (represented by New York and Washington DC), 3. South East England, 4. Paris Region(Île-de-France), 5. Chicago metropolitan area, 6. the U.S. West Coast urban belt (represented by San Francisco and Los Angeles). 7. Rhein-Ruhr region, 8. Houston-Dallas metropolitan area, 9. Osaka-Kyoto

metropolitan area, 10. Benelux region. Secondly, the 500 multinational companies were classified by industry, which can be divided into eight main categories, including finance and insurance industry, communications and media industry, wholesale and retail industry, transportation industry, building industry, chemical and pharmaceutical industry, equipment manufacturing industry, extractive Industry and other service industry such as public utilities. Finally, total revenues was calculated and industry structures were analyzed by cities to see its influence on global economy.

Figure 1. Total revenues of Fortune 500 in world cites (2005-2013).

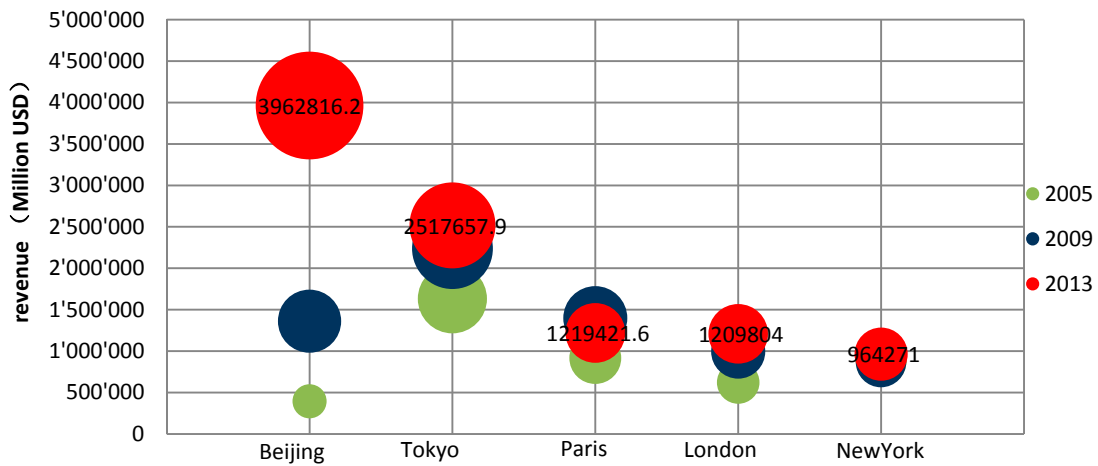
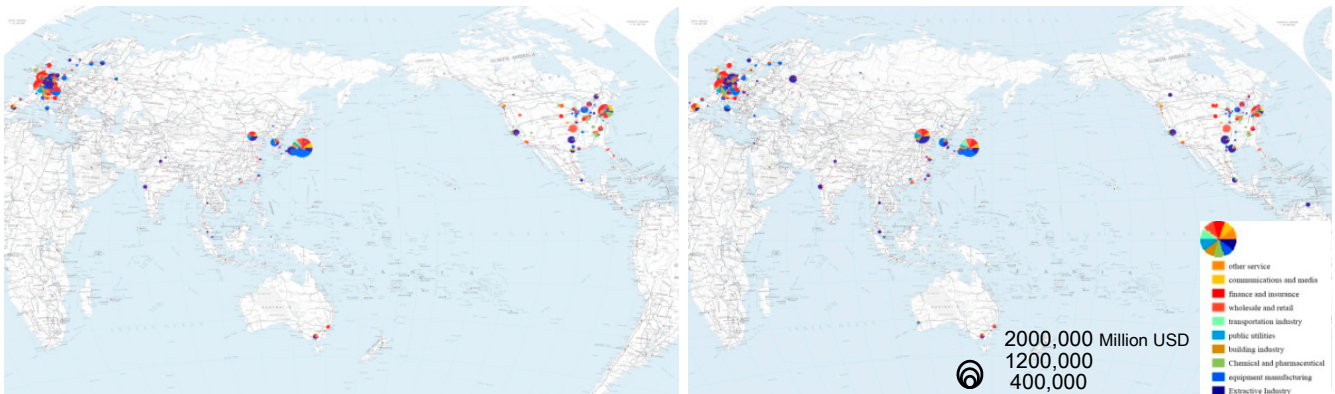


Figure 2. Fortune 500 headquarters distribution map and revenues (2005-2009).



2.3. Comparative research method

Four other cities which are generally considered to be world cities, including London, Paris, New York and Tokyo, are selected for comparison. Previous researches have shown that these cities produce major effect to the development of global economy. Whether Paris can be considered as a first-ranked world city is still doubtful (Table3). But as a capital of culture and the concentration of enterprise headquarters, the city of Paris still has a direct effect on global affairs. In this paper, these four world cities as long as Beijing are set as study subjects, taking those cities as the reference frame.

Table 3. Overview of studies about first-ranked world cities.

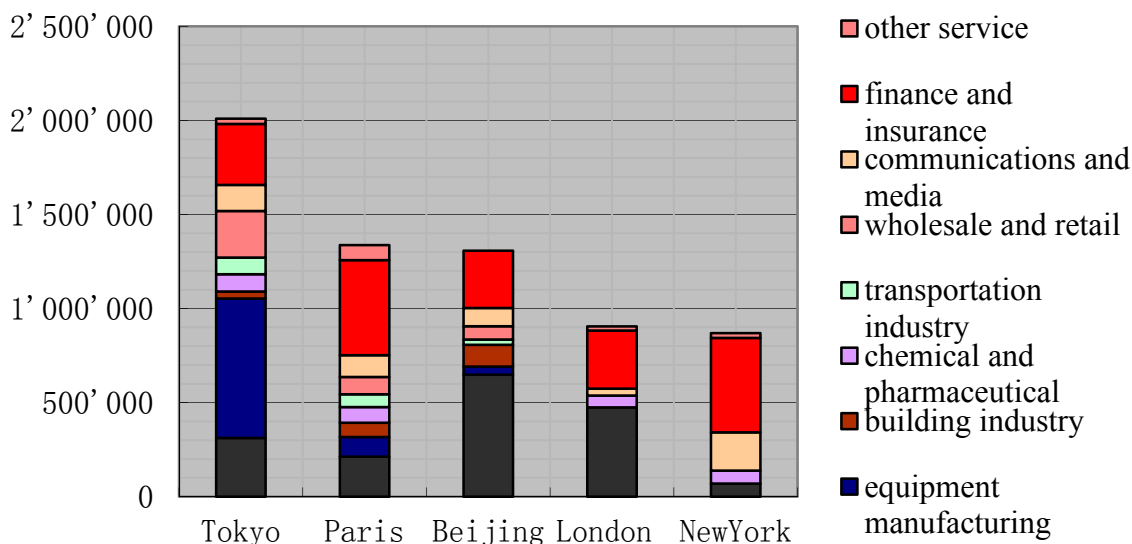
Source	First-ranked world cities
Friedmann J 1995 ⁶	NewYork, Tokyo, London
Thrift 1989 ⁷	NewYork, London, Tokyo
Beaverstock 1999 ⁸	London, Tokyo, NewYork, Paris
LPAC 1991 ⁹	London, Paris, NewYork, Tokyo

3. Green challenges Beijing is facing

3.1. Challenge 1: green business

The result shows that, the number of Fortune 500 corporations headquartered in Beijing increasing from 12 in 2005 to 52 in 2013, moving up four places in the ranking to become the city with the most Fortune 500 headquarters. It is obvious that Beijing has become the “Primate City” for the concentration of headquarters and plays a key role in the Asia-Pacific Urban Chains. However, 51 of the 52 enterprises are state-owned monopolistic businesses and almost half of the revenue was contributed by resource-based enterprises. Compared with world cities like London, Paris, New York and Tokyo, the proportion of resources-based enterprises of Beijing is too high. These enterprises are characterized by natural monopoly and strong path-dependence. The existing industrial structure has become a prime obstacle to green development for Beijing.

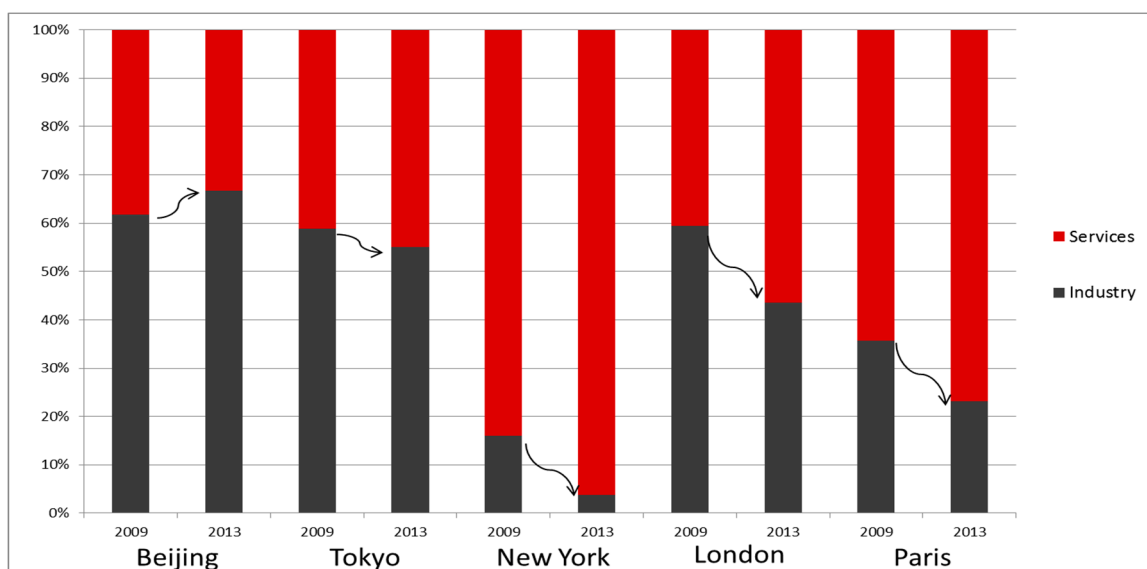
Figure 3. Total revenues and structur of Fortune 500 in world cites (2009).



From the perspective of industry constitution, producer service industry is dominant in most world cities and the regional division of labor is clear. In North America, New York is financial services center and Chicago is the manufacturing center. While Houston and the surrounding cities are centers for mining and smelting. The trend from 2005 to 2009 shows that the media and financial industries are centralized into New York. The financial and insurance sectors contributed over 50% of the revenue. In Europe, Paris and London serve as the financial and media centers. The economy of Rhein-Ruhr region and northern Europe is dominated by manufacturing and energy industry. In Asia, Tokyo is a significant

and dominant manufacturing center as well as a financial center. Over 30% of the revenue was contributed by manufacturing. It has the highest proportion among the five cities we've studied. And it is about 4 times more than the other four cities combined in scale of manufacturing industry (Figure 3). On the contrary, extractive industry is dominant in Beijing, and the development tendency is less optimistic. The proportion of revenue from industrial enterprises increased while that from service industry fell (Figure 4). In 2009, industrial enterprises in Beijing, Tokyo and London made up about 60% of total revenue, respectively. By 2013, all the cities studied except for Beijing have achieved the growth in proportion of service sector, among which London took the biggest leap, with a 10% increase over the year 2009. Despite the service revenue for Beijing has increased, the industrial sector obtained a higher growth rate than it. Secondary industry remains the dominant sector of the economy.

Figure 4. Industry structure of Fortune 500 in world cities (2009-2013).



3.2. Challenge 2: green region

From the regional perspective, most of the Fortune Global 500 companies located on the outskirts of Beijing are dependent on local mineral resources and failed to form regional industrial chain, even though the number of Fortune 500 headquarters rises from 2 in 2009 to 7 in 2013 (Table 4). Despite the academic point that “as world cities strengthen ties with each other, their linkages with their countries’ hinterlands and national urban systems will weaken.”¹⁰, the example of New York shows the opposite situation. The agglomeration of producer services at the regional level has effectively promoted the integration of industry chain, as well as the joint participation in the global competitions as a global city-region¹¹. The book “The Endless City” emphasizes the connectivity of cities in “the urban age”¹². This connectivity is enhanced by the flows of transnational capitals, ideas and people, building up an interconnected industry chain. And the sharing of similar consumption concept deepens this close relationship between cities.

The reason why Beijing is not well connected with hinterlands is complicated. The unbalanced distribution of regional infrastructure has been regarded as one of the most important reasons. Within a global city-region, cities are connected by modern transportation and communication. While for Beijing, the inadequate regional infrastructure has become an obstacle for regional cooperation. Take regional rail system, for instance. There is an obvious gap between Beijing and other world cities. In London,

Paris and Tokyo, the well developed regional rail services serve as part of the commuter rail system. It operate beyond the limits of a certain city, connecting satellite cities or other cities and towns. The integration of city-centre commuter rail and regional rail lines support the flow of labour force in the regional level¹⁴. Beijing had been trying to achieve this objective only by the construction of urban rail system in the past, which is always limited by the administrative boundaries. Not until recently has the municipal government started trying to extends the undergrounds beyond the city limits, accompanying with the implementation of cooperative development plan for Beijing-Tianjin-Hebei region. This region is in transition to a global city-region. But the regional linkages are not close enough compared with other global city-regions. The regional cooperation between Beijing and the neighboring cities is beneficial to both sides. It can strengthen technological innovation as well as promote industrial upgrading.

Figure 5. Fortune 500 headquarters distribution map in Regions.

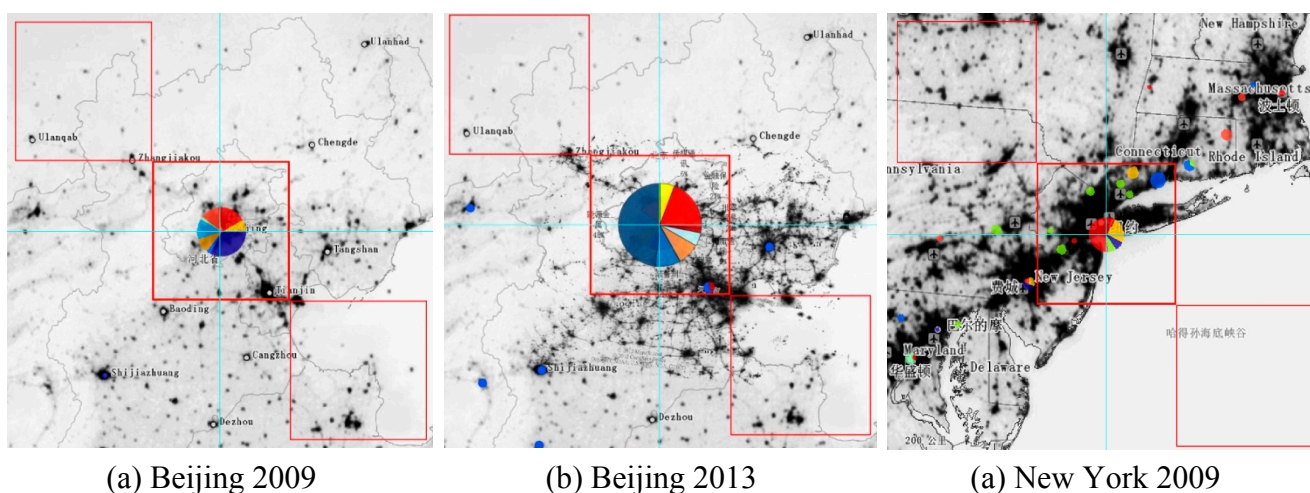


Table 4. Fortune 500 headquarters in Beijing Regions (2013).

City	Company Name	Industry
Tianjin	TEWOO GROUP	Transportation
Tianjin	Bohai Steel Group	Steel
Shijiazhuang	HEBEI IRON & STEEL GROUP	Steel
Tangshan	KAILUAN GROUP	Energy
Xingtai	JIZHONG ENERGY GROUP	Energy
Datong	Datong Coal Mine Group	Energy
Yangquan	Yangquan Coal Industry Group	Energy

3.3. Challenge 3: green space

The green business challenge and green region challenge mentioned above are considered to have relevance to the quality of place — that is the green space challenge. Here, we use “green space” in the broad sense of healthy urban environment as well as high-quality public facilities and services. Specifically including, high-quality open space, waterfront space, convenient public transportation, good air quality and etc. As the gathering places for headquarters, the Beijing Financing Street and the CBD

(central business district) have high-class urban environment and completed infrastructures, attracting a large number of multinational enterprise headquarters and high-level talents. However, the distribution of the high-quality space is unbalanced and the imbalance is more pronounced. In the regional scale, especially on infrastructures. And even worse, the emissions from the resource-based enterprises of Beijing and its surroundings are commonly considered as the main source of Beijing's air pollution.

A regional green environment is the fundamental condition for improving the urban environmental quality. And the high quality urban space is one of the key factors for attracting talent and advanced producer services¹⁵. Global interconnectedness, cosmopolitanism, and abundance of advanced producer services, the three distinctive characteristics of global cities can help multinational enterprises overcome the costs of doing business abroad¹⁶. These issues are interrelated with each other. The key is to change the traditional development pattern, promote the quality of urban space and infrastructure. The Chinese government is currently attempting to push the PPP (Public-Private Partnership) develop model for the construction of infrastructure facilities. Even though this is not a new thing in the West, it is a good indication for the reformation of infrastructure construction in China.

3.4. Proposals for future development

In order to grow into a world city, some proposals are made in this paper for Beijing. Firstly, shifting from city scale expansion to urban quality improvement. The problem with Beijing is not the lack of high-quality urban space, but the unbalanced distribution of that. The improvement of urban quality enhances the city's competitiveness. Secondly, promoting green industry and fostering advanced producer services to enhance its impact and influence in global economies. From the developing trend of world cities, advanced producer service will be at the top of the industrial chain, which will promote the flows of transnational capitals, ideas and people. Thirdly, increasing financial input on infrastructure construction and regeneration oriented sustainable development. Beijing is inseparable from the supports of its hinterlands. Further development relies more heavily on the joint participation in the global competition.

4. Conclusions

Based on the comparative and qualitative analyses of Fortune Global 500 rankings, this paper discussed the green challenges Beijing is facing heading towards a world city. Challenge 1: green business, the proportion of resources-based enterprises is too high. Challenge 2: green regional economy, the unreasonable regional division failed to form the industrial chain. Challenge 3: green space, the urban space is not of high quality. The main findings of this paper include: among the Fortune 500 companies located in Beijing, 51 are state-owned monopolistic businesses. Almost half of the revenue are contributed by resource-based enterprises. From the regional perspective, the industrial division system is not clear. Most of the Fortune Global 500 companies located on the outskirts of Beijing are dependent on local mineral resources. And the pollutants released by these resource-based enterprises are commonly considered as the main source of Beijing's air pollution.

In order to grow into a world city, three suggestions are proposed in this paper for Beijing. Firstly, shifting from city scale expansion to urban quality improvement. Secondly, promoting green industry and fostering advanced producer services to enhance its impact and influence in global economies.

Thirdly, increasing financial input on infrastructure construction and regeneration oriented sustainable development.

Acknowledgments

This work is supported by “the Fundamental Research Funds for the Central Universities (NO. BLX2014-47).

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