URBANIZATION AND ITS IMPACTS ON THE URBAN SPATIAL PATTERN IN THE ECONOMIC REFORM ERA (1978-PRESENT): A CASE STUDY OF SHANGHAI, CHINA

by

Xuejiao Lin

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Dr. Jian-yi Liu

Approved for the Department of Earth Sciences

Dr. David Mogk

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ABSTRACT

Since 1978 the Chinese government has relaxed its control on economic development. Differential economic reform policies within the country divided China into three regions based on level of economic development: the coast, central China, and the west. Of these regions, the coastal region became a development priority during the early economic reform era. Cities in coastal areas benefit from the central government's reform policies. Among the coastal cities, Shanghai is a unique example of China's urbanization process. Throughout its history, Shanghai has played different roles: a fishing village, a sea port, a treaty port, a socialist city, a post-reform city, and a global city. Before focusing on Shanghai's development in the economic reform era (1978-present), a brief introduction to Shanghai's economic and population development is presented, dividing its history into periods of: before 1840, the foreign settlement era (1840-1943), the Nationalist Government era (1927-1949) and the Maoist period (1949-1976). This thesis investigates the urbanization process of Shanghai through examining economic restructuring and migration as the primary driving forces in changing Shanghai's industrial and population patterns in the economic reform era. A description of Shanghai's commercial, industrial and residential land uses in the economic reform era is provided as well as an examination of the impacts of economic restructuring and migration. Globalization as a trend is also shaping Shanghai's landscape.

CHAPTER ONE: INTRODUCTION

This thesis seeks a general understanding of the reshaping power of economic reform policies on Shanghai's urban development through the economic structure and population distribution in the economic reform era (1978-present). To support the study, economic restructuring and migration are the main driving forces of Shanghai's urban growth that are examined in detail. An extensive study of economic restructuring and migration's impacts on changing Shanghai's commercial, industrial and residential land uses during the economic reform era is provided.

China's urbanization is unique because of its historic, political, and cultural background. Between 1949 and 1976, China's urban development was guided by Maoist planning ideology: a city is considered as a center of production rather than consumption; industrialization should be greatly promoted in the city. As a result, a mixed pattern of residential and industrial land use in the city was common. The urban development in China was slow during this period.

Since 1978, with the arrival of the economic reform era, the Chinese government has opened the country to world trade. China's urban development has been fostered by economic reform policies. The urbanization level of China in 1990 was 26.93%, compared to 13.26 % in 1953, only increasing 12.97 % in nearly 40 years (Zhou and Ma, 2003). With a much faster pace of urban development, by 2009 "China's urban population reached 622 million, among which 167 million were migrants; the urbanization rate increased to over 46 %, a tremendous figure compared to that of less than 20 % in 1978" (People's Daily Online, 2010). It is estimated that "China's

urbanization level will increase to 75 %, and the urban sector will contribute over 95 % of the national economy by 2050" (Wu, et al., 2007, p.1). This suggests the study of China's urbanization during the economic reform era would be important to China and the whole world because of China's large urban population.

China's urbanization has been researched (Ma and Hanten, 1982; Pannell, 1990; Wu, et al., 2007; Chan, 1988; Chan, 1994; McGee, et al., 2007; Friedmann, 2005). However, the amount of research on China's urban development is not sufficient based on China's large urban population size, as George Lin (2002) argued. More attention should be paid to the study of China's urbanization process and its impacts on land use change, as there are serious economic, political, social, cultural, and environmental consequences following such a rapid pace of urbanization. The disparity of regional development between coastal and inland areas is growing; large numbers of rural peasants are pouring into cities in search of jobs, better wages and living standards. This process has produced many problems such as migrant enclaves, poor child education, and increased crime rate. Housing shortages have put a huge burden on the generations mainly after 1980. Also, land use conversion from agricultural to non-agricultural, transportation congestion, environmental degradation and water shortages are problems related to rapid urbanization. An in-depth examination of impacts of economic reforms on China's urban development is significant to understand the problems caused by rapid urbanization as well as provide valuable information for urban planners and policy makers. Meanwhile, within a global context, China's urban development is increasingly integrated into the world economy, owing to the large amount of Foreign Direct

Investment (FDI) flowing into China. By the mid-1990s, China had become the largest recipient of FDI in the developing world (Wu, 2000).

Cities in the coastal region, such as Shenzhen, Zhuhai, Xiamen, and Shantou, were the first designated as Special Economic Zones (SEZs) in 1980. They are located in southeast China, closed to Hong Kong (Figure 1). This policy allowed "special economic policies, new systems of management and experiments with land markets that encouraged foreign investment" (McGee, et al., 2007, p.1). Thus cities in the coastal region developed faster than cities in other regions. The advanced economic development of these cities was also promoted by their traditional economic strengths and better-established infrastructure. Within the Pacific Rim, the coastal cities had the advantages of accessibility and overseas trade connections to other countries.

In 1984, Shanghai was established as one of the fourteen "open coastal cities", which was an extension of the "Special Economic Zones" policy, giving Shanghai considerable autonomy in fiscal and management matters (McGee, et al., 2007, p.1). Some of the Special Economic Zones and "open coastal cities" were treaty ports back to the colonial period in the 1800s (Figure 2). Shanghai was one of the treaty ports. Shanghai, as one of the most important cities in China, provides a good case for the study of China's urban development. Although Shanghai can't represent all the cities in China, the research of Shanghai is useful to other coastal cities which are under the influence of economic reforms as well. However, Shanghai is different, since it was designed by the state government as an icon of China's economic development. The study of Shanghai

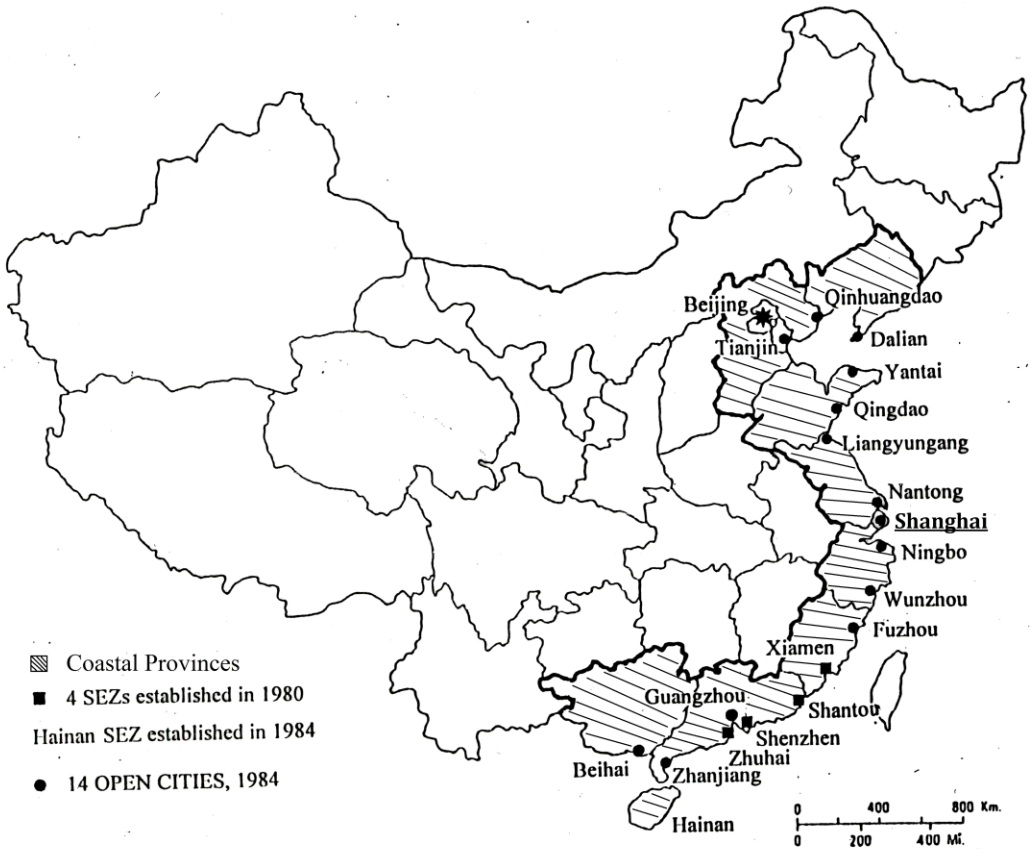


Figure 1: China's open coastal cities and SEZs in the early 1980s.
Source: State Statistical Bureau (SSB) (1987).

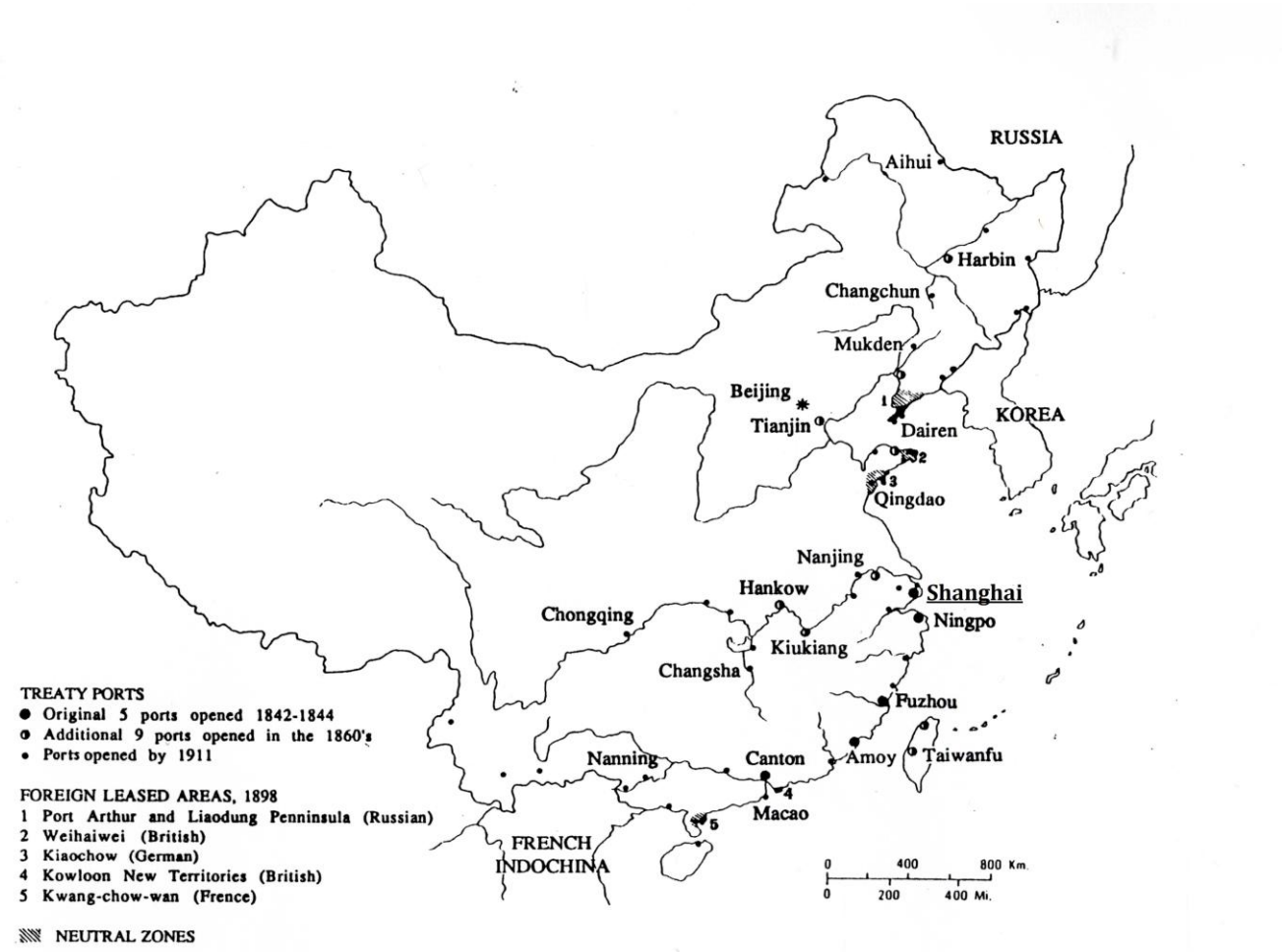


Figure 2: Treaty ports and foreign leased areas of China in the Nineteenth and early Twentieth centuries.
Source: Fairbank (1973), p.577.

provides a good example of a socialist city under transformation guided by the state government and influenced by the forces of globalization.

Shanghai has been a popular research topic for many western and Chinese scholars, since Shanghai's role continues to change from a small fishing village during ancient times, to a prosperous sea port from the 13th to18th centuries, to a treaty port in the foreign settlement period, to a socialist city in the Maoist period, and to a globalizing city in the economic reform era. With these changing roles, research topics concerning Shanghai are diverse.

The research questions that provide a framework for this thesis are as follows:

(1) What was the land use pattern of Shanghai before the economic reforms (1976) regarding industrial, commercial and residential land uses?

(2) In the economic reform era (1978-present), how do economic restructuring and migration influence Shanghai's urbanization process?

(3) As a consequence of the rapid urbanization process, what is the new land use pattern of Shanghai in the economic reform era?

The first question is helpful for the understanding of Shanghai's historical development that is the base of Shanghai's modern development and landscape change. The second and third questions form the core of this thesis. The driving forces of China's urbanization have been discussed by scholars (Chen, et al., 2009; Pannell, 2002; McGee, et al., 2007). The urbanization process of Shanghai during the economic reform era was measured through the study of changes in the economic structure and population pattern since 1978. During the economic restructuring, the shares of enterprises and workforce

in the public and non-public ownership sectors, the shares of the secondary and tertiary sectors, and the shares of heavy industries and light industries in Shanghai's economy were examined. Since 1978, the population pattern has been impacted by the suburbanization trend of residents and the increasing share of migrants in the total residents. From the 1980s to early 1990s, Shanghai's industrial land use pattern was still similar to that from the Maoist period. In the late 1990s, a new industrial land use pattern began to appear. The population pattern has changed since the late 1980s.

The schema in Figure 3 depicts the analysis approach in the thesis. Globalization and urbanization are the external and internal forces that impact Shanghai's urban development during the economic reform era. Reform policies have been implemented from the central to district level. Under the influence of economic restructuring and migration, the economic structure and population pattern during the economic reform era is different from the previous periods. The land use pattern is also changing after 1978.

Shanghai's development can be generally divided into five periods: the pre-colonial Era (4th B.C.-1840), the foreign settlement era (1840-1943), the Nationalist Government era (1927-1949), the Maoist period (1949-1976), and the economic reform era. The study of Shanghai is focused on the economic reform era (1978-present). Due to the coexistence of foreign settlements and the Nationalist Government in Shanghai as independent political powers between 1927 and 1943, the foreign settlement era overlaps with the Nationalist Government era. The year 1977 is considered as a transitional period from the Maoist period to the economic reform era, so it is left out.

Being integrated in the world economy, Shanghai's development is influenced by

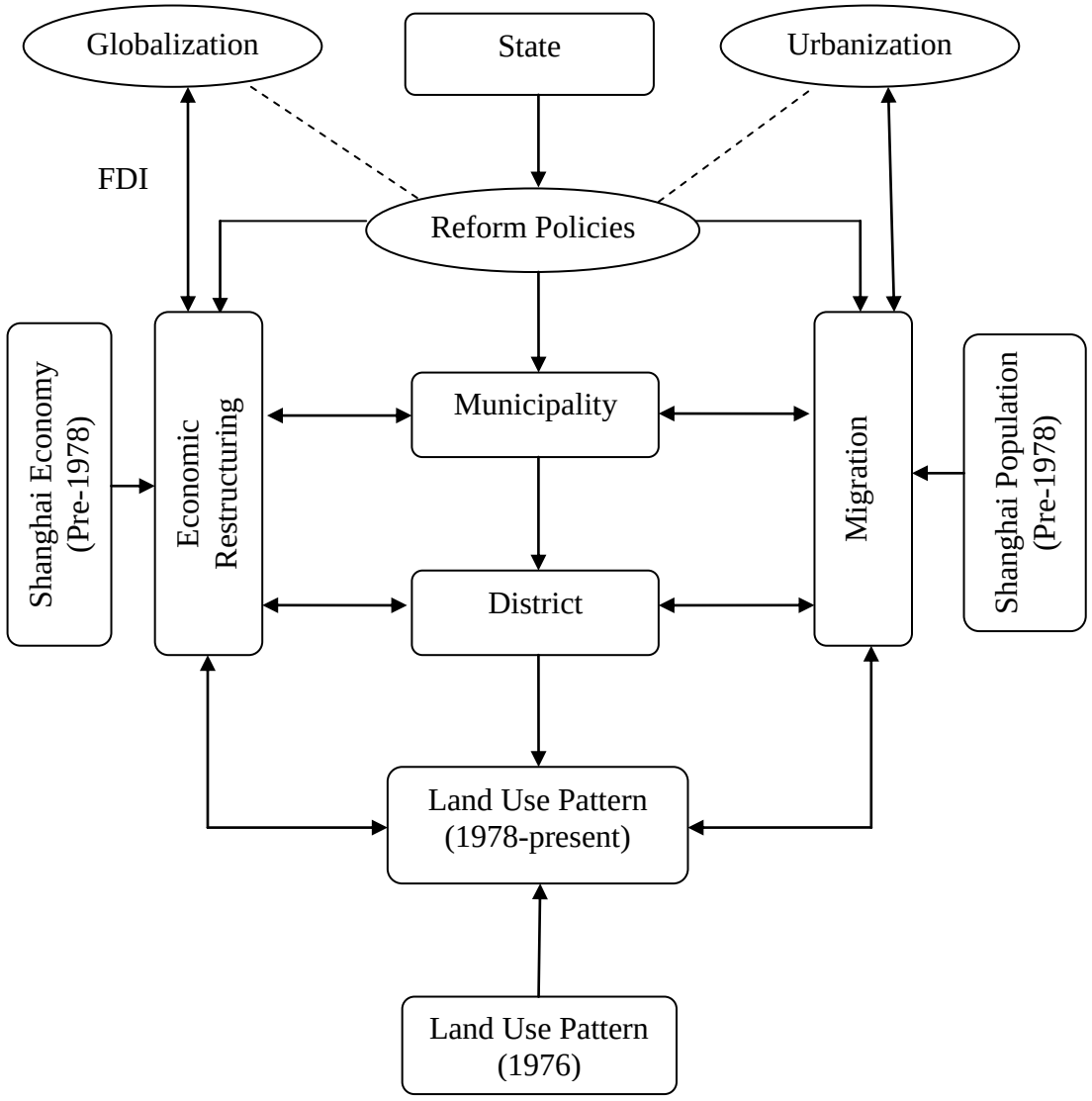


Figure 3: Analysis method of the thesis.
Source: Author.

global forces mainly in the form of FDI. In order to attract FDI for the national economic development, the Chinese government has enforced a series of reform policies during the economic reform era. The decentralization of the political power to a certain extent from the central to district level, allows districts to plan for their own economic development goals. Plans from districts should follow the guideline of the municipality, which is in the state government's framework for Shanghai's development.

Essentially, economic reform policies from the state government promoted economic restructuring and migration to Shanghai. Through the policy of state-owned enterprises transformation, the economic structure has changed. The pattern of state-owned enterprises predominant before 1978 was replaced by the coexistence of several types of enterprises. The FDI-related and private enterprises are gaining in importance. After Shanghai was opened as an "open coastal city" in 1984, Shanghai was able to enjoy the preferential policies from the state government to attract FDI. Industrial parks and development zones were established by the central government in Shanghai as well. The set up of Pudong Xin Qu District by the central government as a development zone is particularly important to Shanghai's economic development. The promotion of industrial parks and development zones by the central government and later by the municipal government had profound impacts on Shanghai's industrial pattern during the economic reform era. The land reform in 1986 separated land use rights from the land. The state government still owns the land, but the land use right became a commodity that could be sold or transferred. The commodification of land use rights became an effective way of attracting domestic and foreign capital investment in the city. Through the

function of the market, land in the central city became so expensive that it forced the land use transformation from manufacturing-related industries to businesses in the tertiary sector. By selling land use rights, the municipal and district governments were able to raise funds for investment in infrastructure, facilities and urban redevelopment projects. The reform of the Housing Provision System in 1991 replaced physical housing provisions with a housing accumulation fund. Housing provisions as welfare of state-owned enterprise workers from the Maoist period was abandoned gradually. Residents of Shanghai were no longer bonded through housing with the location of work units. With the approval of commercial housing in Shanghai, migration of residents occurred. Meanwhile, the relocation of residents by district governments through urban renewal in old neighborhoods in the central city was massive. By relocating residents in the central city, the high-value land was converted for commercial housing or economic activities in the tertiary sector. Suburbanization of residents was encouraged both by the commercial housing and by urban renewal projects. Relatively, due to economic restructuring, Chinese cities experienced labor shortages while rural areas had labor surpluses. In addition, the state government realized "the value of cheap labor in China's bid to share the world market through its export-oriented industrialization strategy" at the beginning of the economic reform era (Chan, 1995). The state government relaxed the controls of rural-urban migration in the early 1980s. The in-flow of migrants has also affected the population patterns in Shanghai.

A general introduction of Shanghai's developmental history before the economic reforms is provided. Figure 4 can be applied to describe Shanghai's spatial pattern before

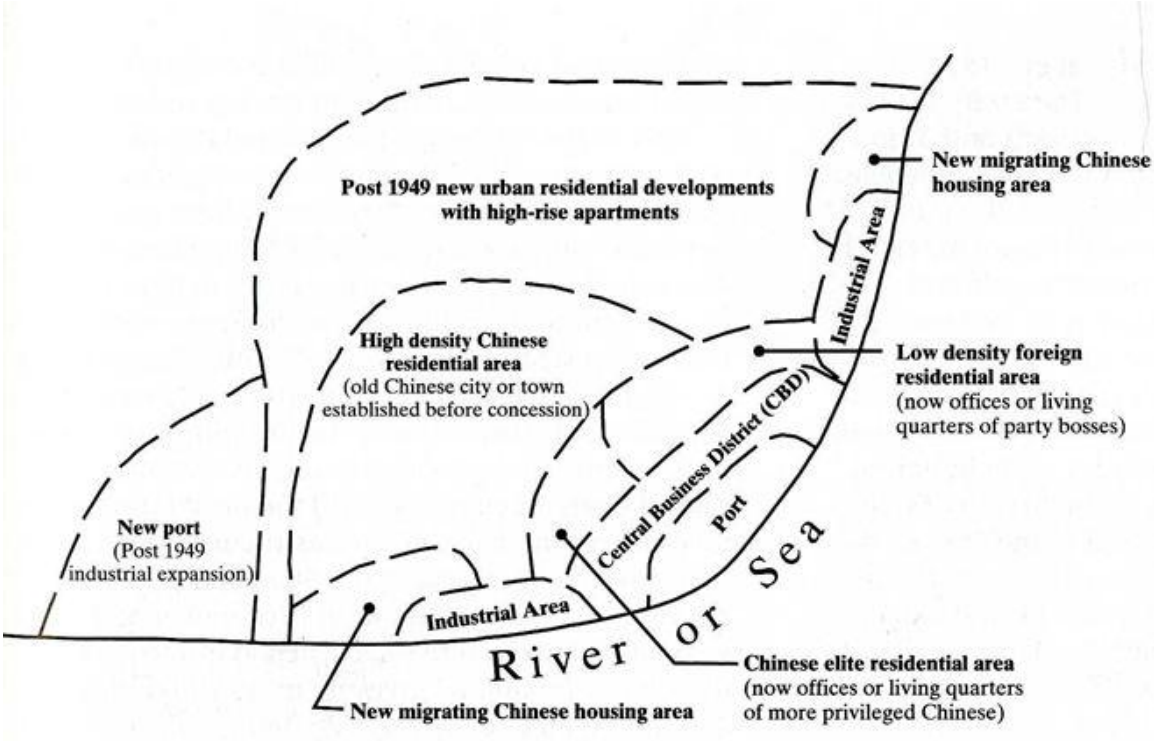


Figure 4: Spatial pattern of Shanghai as a treaty port.
Source: Knox and McCarthy (2005), p. 217.

the economic reforms. As a small fishing village, the origin of Shanghai can be traced back to the 4th Century B.C. The flat terrain surrounding Shanghai allowed it to expand continuously along the plain, while its urban core evolved on the west side of the Huangpu River. Before 1840, Old Shanghai County was established on the west side of the Huangpu River, serving as an economic and cultural center, which was depicted as the "high density Chinese residential area" in Figure 4. Old Shanghai County was prosperous due to the waterway network, which was connected by the major waters of the Changjiang, Huangpu and Wusong Rivers (Figure 5); it was also an important transit center for ships and goods from all over ancient China.

When Shanghai was opened in 1842 as a treaty port along China's east coast,



Figure 5: Shanghai's administration map.
Sources: Shanghai Surveying Institute (2001); Wu (2008). Created by: Author (2011).

foreign settlements were established along the west bank of the Huangpu River. A Central Business District (CBD) area along one section of the Huangpu River bank gradually formed. The industrial area was located along the Huangpu River bank due to the ease of water transportation and the reduction of transportation costs. Foreigners and the Chinese elites lived in the area referred to as the "low density foreign residential area" (Figure 4) in the foreign settlements. From 1840 to 1943, China was in a transitional period; with the corruption of the Qing Dynasty, the last Chinese empire, new political powers rivaled for supremacy through wars. Migrants of this period fled into Shanghai because of its relatively stable political environment which was due to the occupation of foreign settlements. Migrants settled along the margin of the foreign settlement areas, called the "new migrating Chinese housing area" in Figure 4. The Nationalist Government in the period between 1927 and1949 introduced western-influenced urban planning to Shanghai. When the Communist Party took over Shanghai in 1949, most of the buildings in the foreign settlements were transformed to offices or living spaces for government officials. The area of Old Shanghai County and foreign settlements became the urban core, due to the high population density and a new population settled along the margins of this area. Residential housing built between 1949 and 1976 are homogenous, representing the "uniformity" ideology of socialism. The old industrial area was used and new industries in the Maoist period clustered in the central city with residential buildings.

Methods and Data Sources

The patterns of industrialization and population of Shanghai before 1978 were examined, as well as the land use patterns before the economic reforms. To find data for industrial structures and population growth, an extensive search was performed on the website of Shanghai Local Gazetteer. The website of Shanghai Local Gazetteer is maintained by the office of Shanghai Local Gazetteer, a municipal institution, which edits and publishes comprehensive documentaries of Shanghai's historic, economic, cultural, political, urban planning, demographic and industrial development. Sources of documentaries are from archives, scholar's research and newspapers of Shanghai. The information of Shanghai's development before the economic reforms from Shanghai Local Gazetteer is especially valuable for the research. Data from books on the industrial development and population of the pre-1949 and Maoist period were utilized as well.

After 1978, the spatial development of Shanghai was driven by the economic restructuring and migration. Industrial patterns and population patterns were studied to determine the effects of economic reform policies on Shanghai's urbanization process. In the economic reform era, Shanghai's urban development has been guided by the state and municipal government's policies on the industrial transformation, land regulation, housing development and urban redevelopment, and also influenced by global forces through FDI. The effects of the municipal and state government are manifested through the changing industrial and population patterns. In order to examine patterns of industrialization and population during the economic reform era, the districts of present-day Shanghai are used to analyze changes. Before focusing on the district level of

industrial and population patterns, an overall picture of Shanghai's economic structure and population is offered. Then the economic structure and population at the municipal level is detailed by examining development of industries and population at the district level.

China's recent urban development can be divided into two stages in the economic reform era: Reform Era I (1978-1994) and Reform Era II (1995-now) (McGee, et al., 2007, p.27). Reform Era I was the initial stage of economic reforms; the urbanization process was still relatively slow since the applied economic reform policies were still experimental. In Reform Era II, the pace of changing policies and urban growth in Shanghai was much faster. There is no clear definition of the reform stages of Shanghai presented here. Due to data availability issues on industrial structures and population during the economic reform era, it is difficult to define stages of development. With different criteria of data collection by the official institutes, the data of industries and population through different stages are not comparable. For example, the definition of the floating population (migrants) in Shanghai in the 1980s was different from that in the 1990s. In addition, the administrative boundary of districts in Shanghai changed several times; the data of industrial structures and residents by district after and before 1992 are not consistent. Given these limitations, the data concerning industrial structures and residents by district were generally examined based on the initial stage (1980s-1990s) and second stage (2000s). An abundance of data on industrial structures and residents is available on the website of the Shanghai Statistical Bureau. For studying the economic structure, data of the percentages of the public and non-public ownership sectors in

Shanghai's Gross Domestic Product (GDP), the percentages of the primary, secondary and tertiary sectors in Shanghai's GDP, and the percentages of heavy and light industries in Shanghai's Gross Output Value of Industry (GOVI) at the municipal level were gathered. Data of establishments and employees per 10,000 in Shanghai were also collected. For population patterns, residents and the floating population per 10,000 at the municipal and district levels were used. In order to study the land use pattern in the economic reform era, data of commercial, residential and industrial land uses at the municipal level with floor space per 10,000 square meters were applied in the analysis. The data of 2010 industrial and residential land uses by district with floor space per 10,000 square meters was used as well. The unit of the floor space was converted to acres or square miles during the analysis.

ArcGIS software was utilized to create maps depicting industrial and population patterns to provide visual support for analysis. With the difficulties of finding GIS data, the administrative district boundaries, roads and rivers were digitized from the Shanghai Community Atlas in the ArcGIS software. The boundaries of the foreign settlements were digitized to overlay the foreign settlements from the 1880s with districts of present-day Shanghai. Since the boundaries followed the roads on the 1932 map, these boundaries were digitized over the 2008 map (Shanghai Surveying Institute, 2008); this process required matching the roads on the 1932 map and 2008 map, whose names were different. The 1990s industrial pattern was acquired by digitizing the information from a 1995 land use map constructed by the Shanghai Urban Planning and Design Research Institute. Due to the relatively small scale of mapping area (the whole Shanghai) and the

lack of boundary information of development zones and industrial parks, points of development zones and industrial parks were created in the ArcGIS software. With regard to the missing of geographic coordinates of development zones and industrial parks, street addresses were applied to Google Earth to locate their relative positions. With the location information from Google Earth, a point layer was created on a base map with road information. By creating points in the ArcGIS software, industrial parks and development zones in districts could be identified. Population data at the district level from the 2000 and 2010 census were input into Microsoft Excel spreadsheets. By joining the population data with the district data layers in the ArcGIS software, maps of population growth from Census 2000 to Census 2010 and population distribution in 2010 were created. Maps of historical and cultural areas in Shanghai were mapped by digitizing the 2008 map of Historical and Cultural Areas and Preserved Architectures (Shanghai Surveying Institute, 2008b).

To gather photos of landscape features of Shanghai, a field investigation to Shanghai was performed in December 2010. Due to the limitation of time and funding, the areas of focus in the field investigation were the Huangpu, Minhang, Xuhui and Pudong Xin Qu Districts. Shanghai's different landscape components (commercial, residential and industrial land uses) were observed by walking in the old neighborhoods in the central city and the Nanjing Road CBD area and driving through Minhang Economic and Technology Development Zones and the tunnels underneath the Huangpu River to Pudong Xin Qu.

CHAPTER TWO: SHANGHAI-GEOGRAPHICAL BACKGROUND AND URBAN EVOLUTION

Shanghai Geography

Shanghai has a subtropical climate, a mild temperature range for human settlement. It is usually rainy in the summer due to the monsoon season; the average minimum temperature in January is 3 ℃ and the average maximum temperature in July is 27 ℃. Shanghai is located within the Pacific Rim, surrounded by the East China Sea to the east and Hangzhou Bay to the south. The city is located at the southern portion of the Changjiang River[1] estuary, where the river merges with the Pacific Ocean, and is part of the Changjiang River Delta, a plain formed by centuries of alluvial sedimentation. The average elevation is around 3 to 4 meters. "The deltaic plain centered around Shanghai is crisscrossed with a dense network of canals and waterways, most of them man-made, that connect the city to Tai Lake in the west, in Jiangsu Province, northwest of Shanghai" (Yeung and Sung, 1996, p.4). The geographical advantage enables Shanghai become an important regional port city.

Shanghai is the largest port in China with trade connections to more than 500 sea ports in China and around the world. Shanghai has two international airports; Hongqiao and Pudong International Airports. In 2010, the total number of passengers served in both airports was more than 70 million; the amount of freight transported through Pudong

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Note:

1. Changjiang River is also referred as Yangzi River in Western Literature.

International Airport was globally the third highest by volume. Shanghai has comprehensive road and railroad networks to cities and towns throughout China, making it an important transportation hub.

Shanghai's geographical location is critical to its developmental history. Located midway along the east coast of China (Figure 6), "it serves as an effective link not only between the port cities of North and South China, but for cities in Japan, Korea and the Asia-Pacific region as well" (Yeung and Sung, 1996, p.4). It also serves as an important economic development pole of the Changjiang River Delta Economic Zone.

Shanghai has two major rivers that have been important in the history of human



Figure 6: Shanghai's location in China.
Source: ESRI. Created by: Author (2011).

settlement: the Huangpu and Wusong Rivers (Figure 5). Shanghai is divided by the Huangpu River into two geographical areas. The area to the east of the Huangpu River is referred to as *Pu Dong*, which when translated literally means "the east of the Huangpu River". The area to the west of Huangpu River is referred to as *Pu Xi*, literal translation "the west of the Huangpu River" (Figure 7). The old city of Shanghai and foreign settlement concessions were located in the districts within the city proper of Pu Xi, also to the south of Wusong River, part of which is also named Suzhou Creek in the city proper.

Based on new census data, Shanghai had a residential population of around 23.02 million by 2010, including 14.04 million people in registered households[2] and 8.98 million migrants. The area of Shanghai is about 6340.5 square kilometers (2447.4 square miles), of which 289.24 square kilometers (111.7 square miles) are occupied by districts of the city proper. There are eighteen districts within Shanghai's administration; seventeen with urban designations (district) and one with a rural designation (county). The eighteen districts are divided into three geographical zones; the city proper (the central city), inner suburbs, and outer suburbs (Figure 5). The districts in the city proper are Huangpu, Yangpu, Hongkou, Zhabei, Putuo, Changning, Xuhui, Jing'an and Luwan (Figure 7). The inner suburbs have Baoshan, Jiading, Minhang, and Pudong Xi Qu (Pudong New Area) districts. The outer suburbs contain four districts including Qingpu, Songjiang, Jinshan and Fengxian, and one county district, Chongming.

Note:

2. Registered households are households with Shanghai-born residents.



Figure 7: Districts in the city proper.
Sources: Shanghai Surveying Institute (2001); Wu (2008). Created by: Author (2011).

Historical Evolution of Shanghai

The earliest settlement in the region around Shanghai recorded in Chinese history dates prior to the 4th century B.C. (between 770 B.C. and 476 B.C), in the era of 'Spring and Autumn' (Chun Qiu). This period together with the 'Warring States' period (between 475 B.C. and 221 B.C.) was a turbulent time in Chinese history, when there were many kingdoms coexisting and fighting for land and resources. The dominion of the Shanghai region changed many times with the waxing and waning of kingdoms. In the era of 'Warring States', the Shanghai region was a dominion of the Wu Kingdom, and subsequently of the Yue Kingdom. The dominion then shifted to the Chu Kingdom in 335 B.C. "Shanghai's nickname *shen* derives from the title, Chun Shen, given to Huang Xie, who was awarded this land during the reign of Chu Kingdom" (Denison and Ren, 2006, p.19). Shanghai is also referred to as *Hu*:

> Hu originates from a 4th-century settlement called Hu Du Lei, located approximately one mile north of the old city of Shanghai. Hu derives from a method of tidal fishing with nets strung on bamboo poles that was very common on the waterways around the region. Du refers to a single stream leading to the sea, while Lei refers to a mound, in this case a fortification. (Denison and Ren, 2006, p.18)

The name Hu demonstrates the origin of present-day Shanghai; it was first known as a small village which relied on fishing.

The creation of Huating County (Figure 8) in the present-day Songjiang District in 751 A.D., during the Tang Dynasty (618-907 A.D.), was important to the developmental history of Shanghai. Huating was originally a famous silk town, with 12,780 registered households when it was first founded. By the end of the Song Dynasty

(960-1279A.D.), the number of the registered households in Huating was around 200,000. "Shanghai evolved in the region of Huating, and became administratively independent by the end of the Song Dynasty between 1265 and 1267" (Denison and Ren, 2006, p.19). The town of Qinglong (Figure 8), founded in 746 A.D., was located on the southern bank of the Wusong River in the present-day Qingpu District. By then, Qinglong was a prosperous town in the region because the Wusong River was functioning as a major shipping waterway transporting goods into and out of the interior. Qinglong benefited from its geographic location near the Wusong River and its role as a seaport. The importance of the Wusong River declined after centuries of tidal sand deposition silted up the river. Meanwhile, the coastline was moving eastward. The Huangpu River became a major navigation route for ships in the era between 1162 and 1189 A.D. (The Encyclopedia of Shanghai Editorial Committee, 2011). Qinglong's role as an important seaport in the region was gradually replaced by the emergence of the original Shanghai (Figure 8).

The name "Shanghai" first appeared between 960 and 1127 A.D. (Denison and Ren, 2006, p. 19; The Encyclopedia of Shanghai Editorial Committee, 2011). Taking the name from a small tributary of Wusong River, Shanghai Wu was designated as an official agency to collect taxes and wine in the era between 1068 and 1077 A.D. Shanghai Wu was only a small township at first. During the period between 1265 and 1274 A.D., Shanghai was upgraded to a market town (an official government designation at that time) (The Encyclopedia of Shanghai Editorial Committee, 2011). When the Huangpu River became the major navigation route, a branch of the Maritime Trade Office was



Figure 8: Administrative map of the Shanghai region in the 1700s. Due to the change of the Chinese Spelling System, "Qinglong" appeared as "TsingLong", and "Wusong River" as "Wusung Kiang" on the map.
Source: Denison and Ren (2006), p.18.

established in Shanghai in 1277A.D. and Shanghai rapidly became a prosperous seaport. The population of Shanghai was 300,000 to 350,000 estimated from over 70,000 registered households when Shanghai became administratively independent from Huating and officially became a county in 1291 A.D. (The Encyclopedia of Shanghai Editorial Committee, 2011). After its administrative independence, Shanghai experienced a long period of rapid development.

Shanghai was not just an important seaport; its economy was also boosted by the introduction of salt and cotton industries in the Song Dynasty. The salt industry was so prosperous in the Song Dynasty, that the annual production of salt was 27.5 million pounds in the Shanghai region in 1260 A.D. The salt industry reached its climax in the Yuan Dynasty (1279- 1368 A.D.) and declined in the Ming Dynasty (1368-1644A.D.). Cotton-growing was introduced to the Shanghai area from Fujian and Guangdong Provinces by the end of the Song Dynasty and the early Yuan Dynasty (The Encyclopedia of Shanghai Editorial Committee, 2011; Shanghai Local Gazetteer Office, 2005). The development of cotton-growing and textile industries was important to Shanghai's economy, even to the southern areas near the Changjiang River (The Encyclopedia of Shanghai Editorial Committee, 2011). A cotton market gradually formed during the Ming Dynasty in the southeast of Shanghai. As cotton-producing areas, many cotton market towns emerged in Jiading, Fengxian, Baoshan and Nanhui (became part of Podong Xin Qu in 2009) Districts of present-day Shanghai. During the period between 1295 and 1297, the introduction of spinning and weaving technologies from Yazhou (today's Hainan Province) by Huang Daopo, a native of Songjiang, boosted

the growth of the local textile industry. The Shanghai region became the largest textile center in China.

The Shanghai region was connected together by many waterways (Figure 9), encouraging the development of the shipping industry which dramatically shaped the regional landscape. "In the middle of the Ming Dynasty, Shanghai gradually developed five mature shipping lines, including inland waterways shipping, Changjiang River shipping, coastal shipping, North China Sea shipping and South China Sea Shipping" (The Encyclopedia of Shanghai Editorial Committee, 2011). In addition, Shanghai became a trading and commercial center. Money House, an ancient form of bank in China, was established to facilitate trade. The population of Shanghai in 1368 A.D. was above 530,000 with 114,300 registered households (The Encyclopedia of Shanghai Editorial Committee, 2011). Shanghai's prosperity attracted attention from Japanese pirates. To protect property and residents, in 1553 A.D., a city wall was constructed by the Ming government, which affected the physical layout of Shanghai County (Figure 9).

An Era of Foreign Settlement (1840-1943)

With the industrial revolution in the 19th century and the ability to travel across oceans, European countries started to accumulate capital through expeditions to the rest of the world. China was left behind due to the 'Closed Door' policy enacted by the Qing Government (1636-1911 A.D) during that time. To promote foreign trade in China, the First Opium War between Great Britain and the Qing Government was started in 1840, which symbolized the beginning of foreign settlement in Shanghai. When the Qing

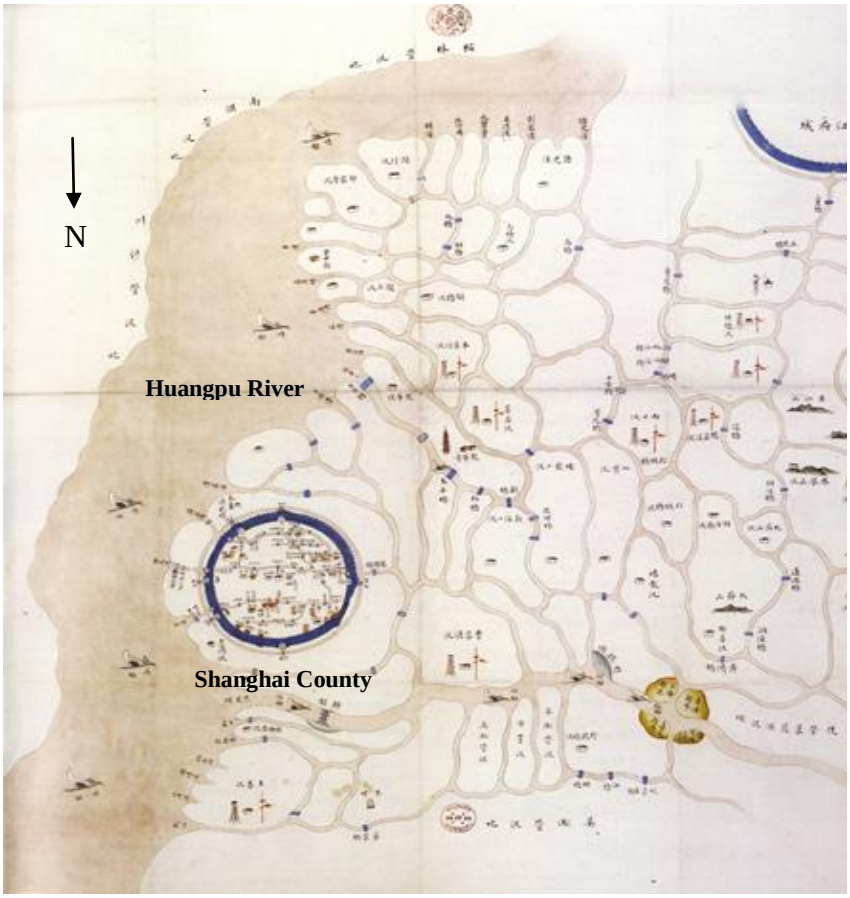


Figure 9: The landscape of the Shanghai region shaped by waterways in the early 19th century. Shanghai County was surrounding by a circular wall (in blue). North is at the bottom of this map, with the Huangpu River on the left.
Source: Denison and Ren (2006), p.21.

Government lost the First Opium War, the government signed the Nanjing Treaty on July 24th, 1842, which opened Shanghai as one of the five treaty ports for foreign trade. The Shanghai Land Regulations signed on November 29th, 1845 between China and Great Britain, allowed the British to rent land for settlement in Shanghai. Within the settlement area, the British were allowed to settle and trade. Originally Chinese were not allowed to live in the settlement area. The Land Regulations were revised many times due to the expansion of the English Settlement as well as the need of the British government to

establish an area that was politically independent from the Chinese government. France and America followed suit in 1848 and 1849, and requested land for their own settlements. By then, Shanghai was composed of the Old Shanghai city, English Settlement, French Concession, and American Settlement.

The boundaries of the foreign concessions kept changing due to their expansion through foreign settlers' efforts on building roads outside the boundary and later taking the external road areas into the jurisdiction of foreign concessions. The English Settlement and American Settlement were combined in 1866, and named the Foreign Settlement, and later the International Settlement of Shanghai. The boundary of the International Settlement of Shanghai was settled in 1899 and the boundary of the French Concession was settled in 1914. The International Settlement of Shanghai was located in parts of the Huangpu, Jiang'an, Putuo, Zhebei, Hongkou, and Yangpu Districts (Figure 10). The French Concession was located in part of the Huangpu, Luwan, and Xuhui Distircts (Figure 10).

In the 1850s, the Taiping Rebellion successfully took over the control of the Lower Chiangjiang River Delta from the Qing government. The Taiping Rebellion was an uprising of peasants aimed at overthrowing the Qing Government. Led by Hong Xiuquan, who was a heterodox Christian, the purpose of the Taiping Rebellion was to build a nation with shared "property in common". Due to hardships of peasants and their dissatisfaction with the Qing Government at that time, the Taiping Rebellion attracted about 30 million people at its peak. The Taiping Rebellion greatly impacted trade to south and central China. Shanghai benefited from the influx of immigrants from the

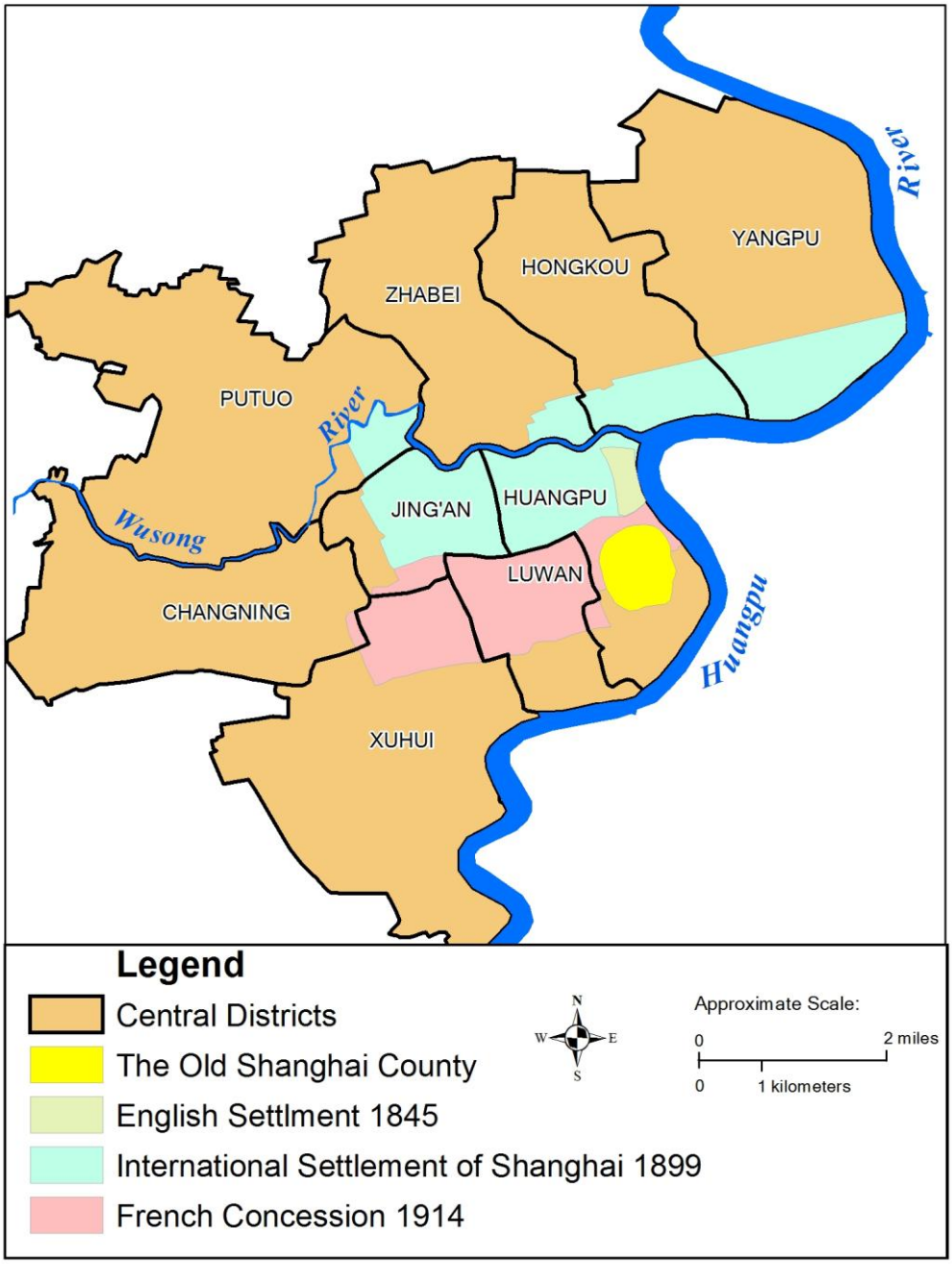


Figure 10: The foreign settlement zones. The boundary and geographical distribution of the foreign settlements show their relative location in the central districts in present-day Shanghai. The boundaries of the central districts are distorted due to the distortion on the original map.
Source: China Map Press (1932, reproduced in 2008); Shanghai Surveying Institute (2008). Created by: Author (2011).

development of the real estate industry in the foreign settlements was stimulated. The areas controlled by the newly founded Taiping Heavenly Kingdom, many of whom were merchants (Goodman, 1995, p.53). The rebellion of the Small Sword Society against the Qing government in 1853 also changed the population structure in the foreign settlements in Shanghai. The Small Sword Society took over Old Shanghai County and sub-areas around Old Shanghai County. Residents in Old Shanghai County and tens of thousands of Chinese elite immigrants fled into the concession areas with capital. The rule of separating the Chinese and foreigners in the concession zones in the Shanghai Land Regulations was removed when foreign merchants and leaders saw the prosperity brought by the refugees. The in-migrants bought houses and settled; as a result, the Chinese population in the Foreign Settlement (International Settlement of Shanghai) increased by about 70,000 from 1855 to 1865 (Table 1). Relatively, the foreign population in the Foreign Settlement only increased by around 2,000 in those ten years, with a total of 2,297 foreigners in 1865 (Denison and Ren, 2006, p.252). In the same period (1855-1865), the French Concession experienced an increase of more than 40,000 Chinese (Table 1). After the Small Sword Society was defeated by the Qing Government and political powers of foreign settlements in 1855, many Chinese left the foreign settlements, yet the majority stayed.

Shanghai has experienced fluctuations in its population many times due to social unrest in China, including the 1911 Revolution[3], the establishment of the Nationalist Government from 1927 to 1949, and the invasion of Japan from 1937 to 1945. Even with political unrest, the total population of Shanghai grew tremendously from 1911 to 1949

Table 1: Population Data of Shanghai, 1852-1949

Year	Chinese Districts[a]	Foreign Settlement	French Concession	Total
1852	544,413	–	–	544,413
1855	–	20,243	15,000[b]	–
1865	543,110[c]	92,884	55,925	691,919
1910	671,866[d]	501,541	115,946	1,289,353
1915	1,173,653	683,920	149,000	2,006,573
1927	1,503,922	840,226	297,072	2,641,220[e]
1930	1,702,130	1,007,868	434,807	3,144,805
1931	1,836,189	1,025,231	456,012	3,317,432
1932	1,580,436	1,074,794	478,552	3,133,782
1933	1,795,953	1,111,946	496,536	3,404,435
1934	1,925,778	1,148,821	498,193	3,572,792
1936	2,155,717	1,180,969	477,629	3,814,315
1942	1,479,726[f]	1,585,673	854,380	3,919,779
1946	–	–	–	3,830,039
1945	–	–	–	3,370,230
1949	–	–	–	5,455,007

Notes:

a) Before 1926, the population is Old Shanghai County's population; starting from 1927, the population includes the population of Old Shanghai County and other districts under the jurisdiction of the Nationalist Government. From 1930 on, the population of foreigners in Chinese districts was included;
b) The number was estimated by the author based on materials about Shanghai's population;
c) Due to missing data, Zhou applied the population of 1866;
d) The same reason as above, Zhou applied the population of 1909;
e) Zhou used the population of 1925 for the population of the Foreign Settlement and French Concession;
f) The population of 1940 was applied.

Source: Zhou (1980), p.90.

Note:

3. 1911 Revolution (Xinhai Revolution): a bourgeois-democratic revolution from October 1911 to February 1912 with the purpose of overthrowing the feudal system. It ended the Qing Dynasty. Sun Zhongshan (Sun Yat-sen) played an important role in the revolution, who was the president of Republic of China in 1912.

due to in-migrants. Compared to 1.8% after 1949, the natural growth rate of the region at that time was relatively low, estimated at 1% annually in some areas (Zhou, 1980, p. 61). The natural growth rate could be lower since the high death rates of adults due to social unrest, and the death of new-born babies. The expansion of Shanghai's administrative boundary by the Nationalist Government after 1927 also impacted its total population. The population of foreigners grew at a much faster pace after 1910, which reached 48,806 in 1930 (Denison and Ren, 2006, p.253). Based on statistical data from 1930 (Denison and Ren, 2006, p.253), the foreigners were from 50 different countries, led by the Japanese and British. In 1910, there were 1.29 million people in Shanghai, which increased to 3.14 million in 1930 (Table 1).

From 1936 to 1942, the population in Shanghai increased from 3.81 to 3.92 million; the population increase was mainly caused by the in-flow of refugees in the foreign settlements, since the population in the Chinese controlled districts[4] dropped from 2.16 to 1.48 million. The decrease of population in the Chinese controlled districts was because of the exiting of refugees and death of people in the war with Japan during this period. The growth of population in the foreign settlements was remarkable. In 1853, Old Shanghai County contained 99.91% of the total population, while the foreign settlements had less than 0.1% of the total population; by 1942, the population in the foreign settlements was more than half of the total population (Shanghai Local Gazetteer Office, 2005). The population density in the French Concession in 1942 was 216,521

Note:

4. Districts that were under control of the Nationalist Government.

per square mile, and 181,722 per square mile in the International Settlement of Shanghai. The population density in the Chinese controlled districts was much lower, about 7,747 per square mile, but Old Shanghai County had much higher population density.

During the period of foreign settlement, Shanghai's economy flourished, making it the industrial center of China. From the1840s to the 1860s, foreign-invested enterprises in ship -building and repairing, silk and textile, and printing industries appeared in Shanghai. With the arrival of foreign machines for industrial production, the industrial revolution began to appear in China. Due to the loss of the Sino-Japanese War in 1895, the Qing government was forced to sign the Maguan Treaty, which officially allowed the establishment of factories and machine import by foreigners in treaty ports. After 1895, the establishment of foreign-invested enterprises was greatly stimulated. In 1894, the industrial output of foreign-invested enterprises in electric, cigarette, machinery and ship-building, silk reeling, and match industries was about 14% of Shanghai's industrial output in these industries. By 1911, the industrial output of foreign-invested enterprises in textile, silk reeling, wool textile, flour, cigarette, paper-making, match, medicine, machinery and ship-building, and electric industries was 39% of Shanghai's industrial output in these ten industries and increased to 49% in 1936. The industrial development of foreign-invested enterprises was disturbed by the Japanese intrusion into the foreign concessions in 1941.

Led by Li Hongzhang, a Chinese bureaucrat, Chinese-invested enterprises burgeoned with the foundation of Jiangnan Ship-Building Bureau in 1865 as a starting

point. At the end of the 1860s, private industrial enterprises in machinery and iron and steel industries also appeared, such as Fachang Machinery, Jianchang Iron and Steel Machinery, and Dengtai Machinery. After 1895, the Qing government deregulated private enterprises. With the changing political environment after the 1911 Revolution, the development of national industry fluctuated. The First World War, from 1914 to 1918, affected the development of foreign-invested enterprises in Shanghai, providing a chance for the prosperity of national industry. After World War I, the survival of national industry was threatened by the capital investment of foreign countries, due to its less competitive role. With the May 30th Movement of 1925[5], due to the exacerbation of the conflict between Chinese workers and foreign enterprises, Chinese started a campaign of supporting Chinese products, which stimulated the development of domestic industry. In 1925, the industrial output of private enterprises in textile, silk reeling, wool textile, flour, cigarette, paper making, match, medicine, machinery and ship-building, and electric industries was 52% of Shanghai's industrial output in these ten industries. The industrial development of Shanghai reached its peak in the 1930s due to the development of foreign-invested and Chinese enterprises. The city accounted for approximately 43% of China's industrial workers and 50% of China's Gross Output Value of Industry (GOVI). But the rapid development of national industry was disturbed by the Japanese invasion in 1937.

Shanghai also became an important commercial center. Throughout the foreign settlement period, foreign trade played a central role in the economic development of

Shanghai. In the 1920s and 1930s, Shanghai had trade connections with more than 300 port cities in about 100 foreign countries, taking about 50% of China's foreign trade.

The imprint of foreign settlement was tremendous. The layout of land uses in the 1931 plan of Shanghai (Figure 11) indicated that the commercial and residential land uses were mixed, except for one strip of land along the Huangpu River which was dominated by commercial uses and later became the famous Shanghai Bund. The industrial land was situated along the Wusong and Huangpu Rivers, most of which was located in present-day Putuo, Zhabei, Hongkou, and Yangpu districts. The landscape in the foreign settlement areas was transformed with western architecture, living styles, and new technologies. Horse race-tracks were built in the English Settlement, one of which became the People's Square[6] later on. When foreigners arrived in China, they also brought with them new technologies that greatly altered daily life. Gas-powered road lights were built; electronic light bulbs became prevalent; a streetcar system was developed; telephone and telegraph were utilized. Many waterways were filled in and

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Notes:

5. The movement was triggered by a strike in February, 1925. The strike was initiated by Chinese workers in a Japanese textile factory, who were not satisfied with their salaries and working conditions. Although the Chinese workers won the strike, the organization of Japanese capitalists dismissed the Union of Workers and fired some progressive workers in May. The conflict between the Chinese workers and Japanese entrepreneurs became worse, resulted in one death and more than 20 injures. The underground of the Communist Party soon organized a movement with the workers in Shanghai to revolt against the foreign powers. The movement was started in May 30th, 1925. The strike of workers soon covered the whole Shanghai and triggered strikes in other places of China.

6. The People's Square is the political center and a landmark of Shanghai. It refers to Shanghai's past as a socialist city. It used to be a park for public gatherings and processions, with a capacity for more than 1.2 million people.

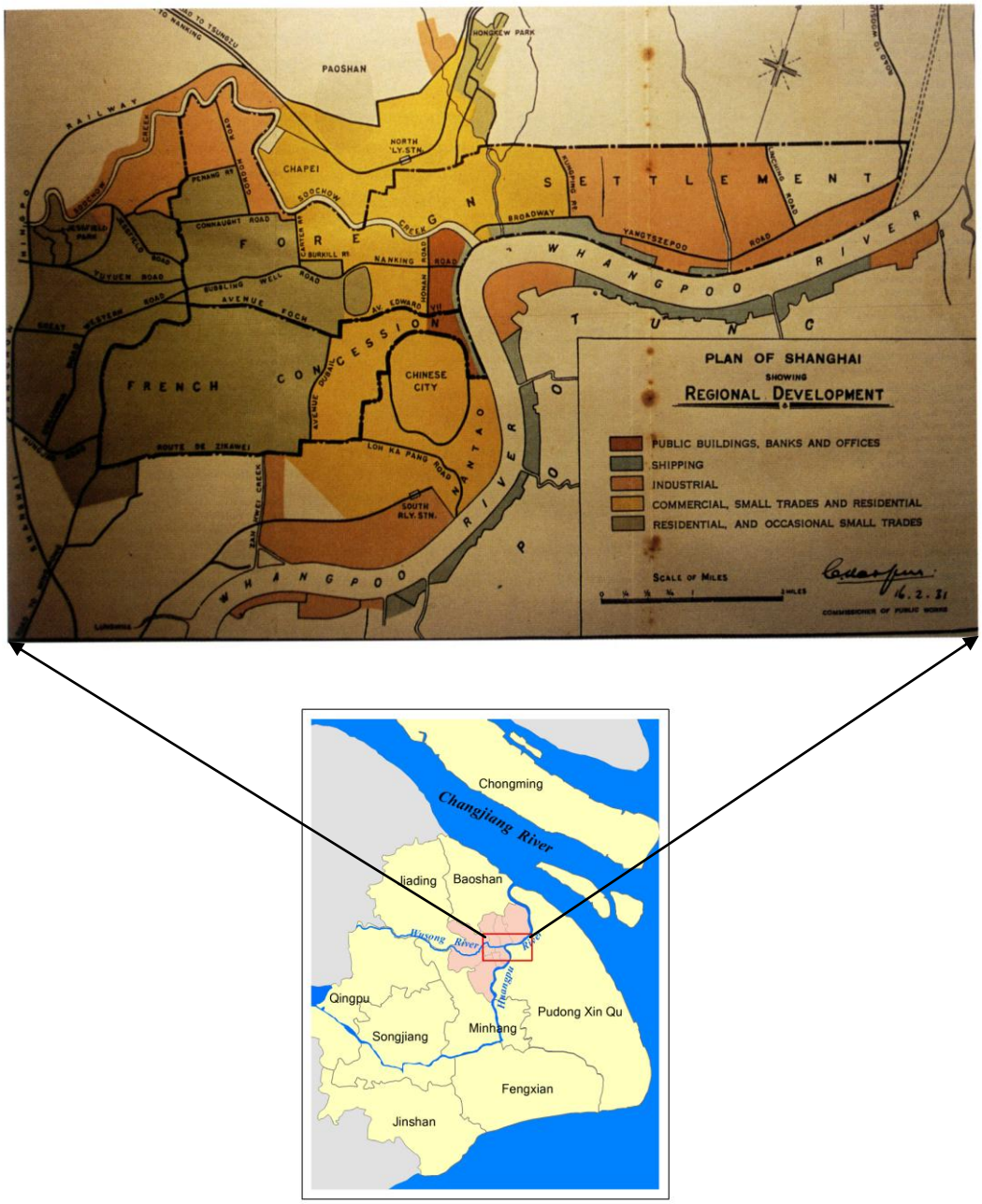


Figure 11: 1931 plan of Shanghai. In the plan, "Whangpoo River" is "Huangpu River" in present-day. Industrial land use was along the Huangpu and Wusong Rivers, for ease of transporting goods. On the west bank of the Huangpu River, where it meets with the Wusong River, offices and banks were constructed, as a commercial center. Land use for shipping was planned along each side of the Huangpu River. In the International Settlement of Shanghai, small shops and residential buildings were mixed. In the French Concession Zone, residential buildings were dominant, with few small shops.
Source: Denison and Ren (2006), p.149.

paved to build a road system to keep up with foreigners' transportation needs; the old Chinese waterway transportation was abandoned.

The Rise and Fall of the Nationalist Government (1927-1949)

The Republic of China was founded by the Nationalist Government in 1912. Within the same year, the city wall of Old Shanghai County was torn down for the convenience of trade. Subsequently two roads were built, the present-day Renmin (People) Road and Zhonghua (China) Road. In 1927, Shanghai Special City (Figure 12) was established by the Nationalist Government, whose name was changed to Shanghai City in 1930. Shanghai Special City was directly under the Nationalist Government's authority. The Nationalist Government decided to build its political center in the present-day Yangpu District, named as Wujiaochang. The administration of the Nationalist Government was only effective from 1927 to 1937. After 1937, due to the Japanese invasion and civil war, the Nationalist Government's plan for Shanghai's development was terminated. During the ten year period from 1927 to 1937, the main contribution of the Nationalist Government to Shanghai's spatial development was the Greater Shanghai Plan in 1930. This plan was based on Sun Yat-sen's idea of building Shanghai as an international commercial port. Shanghai in the 1920s was the largest port in China and an international trade port. Divisions of administration among foreign settlements and the Nationalist Government had caused the fragmented layout of facilities and infrastructure in Shanghai. Economic development was impaired by the inconsistent road and facility systems and insufficient port capacity. In order to improve these

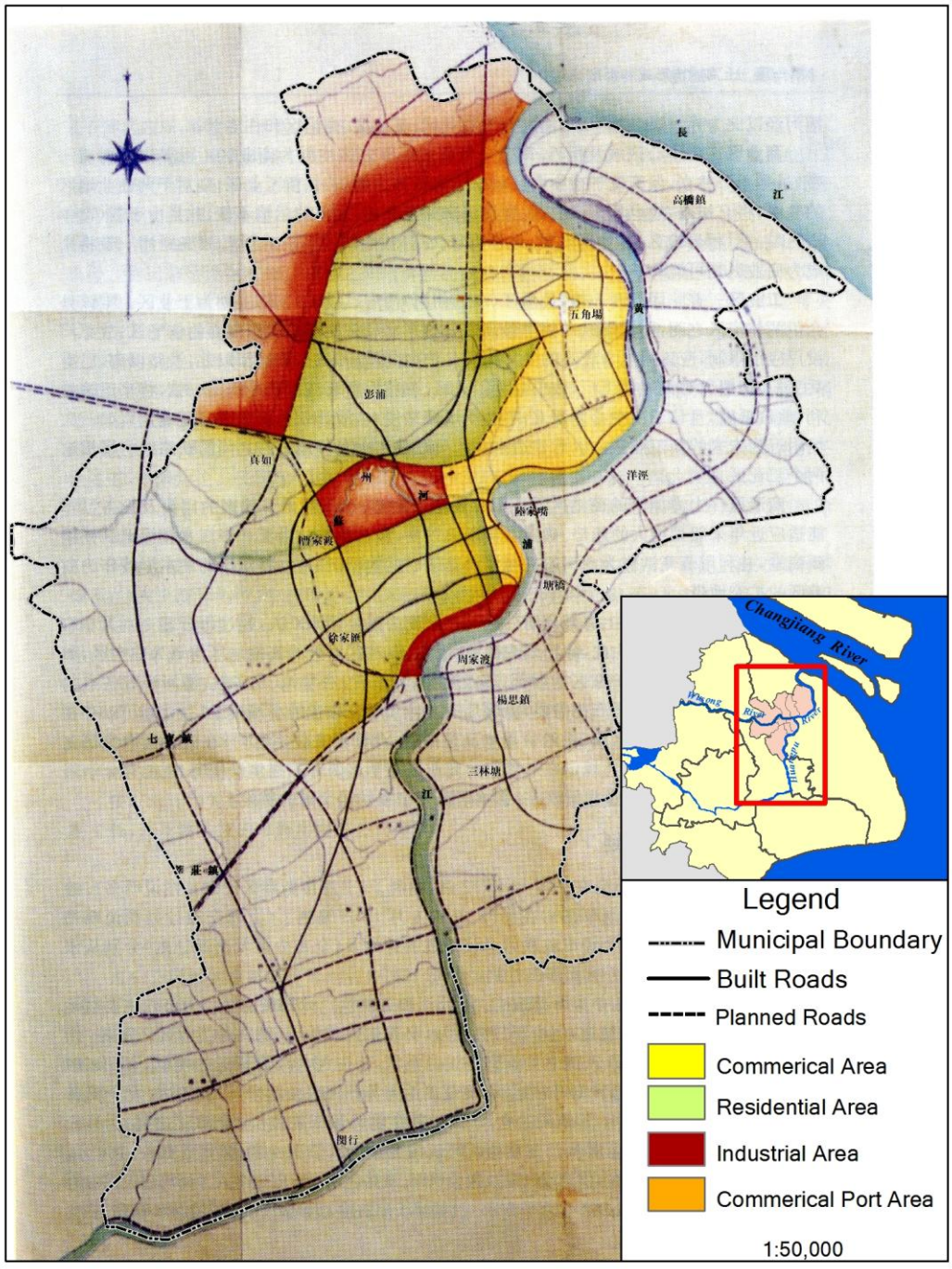


Figure 12: The 1930 plan of Shanghai: regions and transportation. The municipal boundary on the map is the boundary of Shanghai Special City.
Source: Sun (1999), p.71.

conditions, the City Planning Commission was responsible for drafting the plan for regional development. Due to residents' desire of regaining the political control over foreign settlements after the May 30th Movement of 1925, the Nationalist Government covered areas of foreign settlement zones in the plan to satisfy the public.

This plan regulated land use types in the newly established Shanghai City (Figure 12). The residential area included Old Shanghai County and part of the foreign settlement area. The commercial area extended along the west bank of the Huangpu River, including the Bund on the southern portion of the Wusong River and the new political center of Shanghai City. The industrial land use still contained the old industrial area that was established by foreign countries, which was the area around one section of the Wusong River.

The Greater Shanghai Plan was divided into several components due to high construction costs. The first stage (1930-1934) focused on the development of the political center of Wujiaochang. A road system, public facilities and different land uses were developed in the area. Due to the influence of American planning philosophy, the layout of Wujiaogchang resembled Washington D.C. and Chicago (Figure 13). However, the plan was suspended after the Japanese invasion in 1937.

Although the Greater Shanghai Plan was not finished, the industrial layout and the development of commercial port area in the north of Shanghai region where the Huangpu River and Changjiang River met in the plan influenced Shanghai's planning during the later periods.

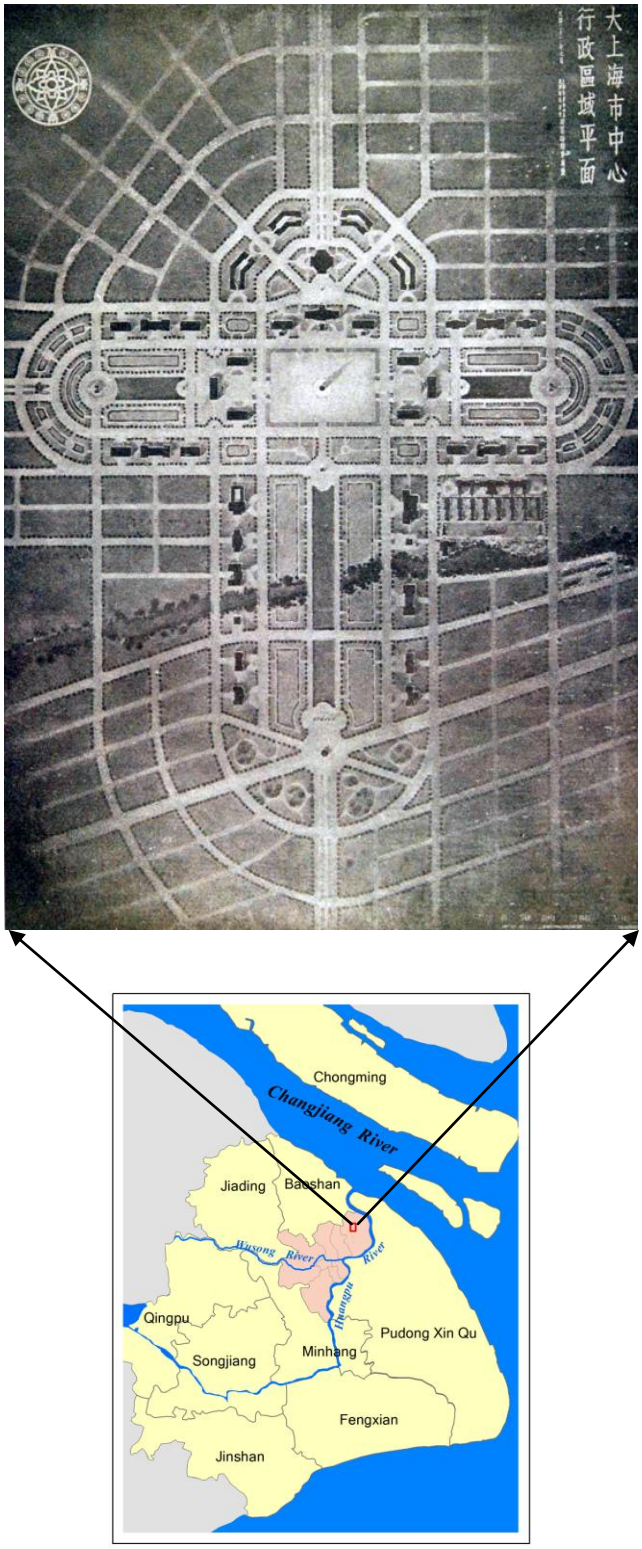


Figure 13: The layout of Wujiaochang when first developed.
Source: http://ypq.sh.gov.cn/zjyp/bnyp/bnsz/dshjh/201110/t20111019_10631.html.

Shanghai's Development in the Maoist Period (1949-1976)

Shanghai's spatial expansion in the Maoist period was based on the old urban core from the Republic of China (Figure 14). Shanghai's administrative boundaries were changed several times during this period, with the present boundary established in 1958. In 1949, the built-up area of Shanghai was 82.4 square kilometers (31.8 square miles) which was expanded to 116 square kilometers (44.8 square miles) by 1957. With tremendous changes on the administrative boundary, the area of Shanghai was increased to 6340.5 square kilometers (2448.1 square miles) including the city core and the surrounding counties. Shanghai's population had increased tremendously due to the expansion of its territory. In 1964, Shanghai had 10.81 million residents; there were 6.42 million residents in the urban core, with a population density of 111,274 per square mile, while the newly added suburban counties only had a population density of 1,901 per square mile.

A fresh start for Shanghai's development began when the Communist Party took over Shanghai in 1949. During the Maoist period, Shanghai was transformed into a production center:

> In order to convert the old Chinese cities from a consuming to a producing role, the First Five-Year Plan (1953-57) stipulated that new industrial areas should be built on the foundation of old cities. By this, it means that the existing labor force in old cities should be more profitably employed in industries and that the existing material base of old cities, such as, physical plants, housing units, and various public welfare amenities should be utilized. (Lo., 1980, p.132-133)

In an effort to keep existing physical structures, the textile industries were preserved and improved; and new industries such as machinery, iron-and-steel, precision instruments,

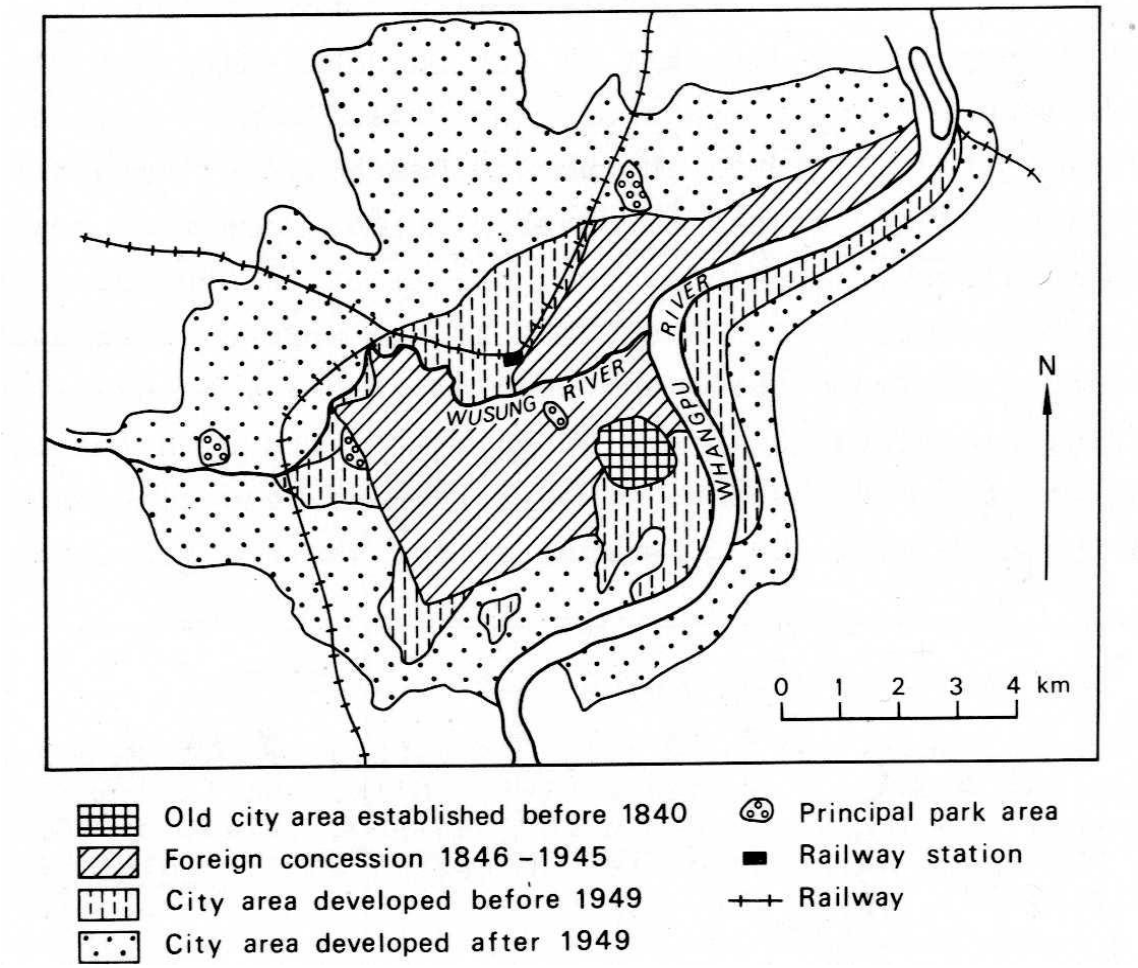


Figure 14: Shanghai's spatial expansion before the end of the Maoist period.
Source: Lo (1980), p.140.

chemicals and ship-building were distributed into the countryside surrounding Shanghai' urban area (Lo, 1980, p.139). Socialist planning ideology focused on the "uniformity" of socio-economic characteristics, which promoted the idea of "neighborhood units", in a word, "danwei". As an independent unit, each neighborhood unit was associated with working spaces, living spaces, education, shopping, and welfare. As a result, the distribution of the worker's housing estates was related to the distribution of industries.

The industrial development of Shanghai in the Maoist period achieved another peak due to the state government's economic emphasis on industrialization. In the Maoist period, Shanghai was the leading industrial center of China. With a series of economic restructurings, the state government aimed at replacing the economic dominance of foreign-created infrastructure and replacing it with state-owned and collective-owned enterprises. The development of heavy industries was emphasized. In 1950, the Decision on Uniting the Financial and Political Systems for Economic Development was issued by the state government, which structured the dominant role of state-owned enterprises thereafter (Yang, 2001, p.11). In the secondary sector, Industry was highly promoted, resulting in an increase in the share of Shanghai's GDP, from 46.7% in 1949 to 75.4% in 1976 (Table 2, Figure 15). The high level of industrial output within the secondary sector focused on manufacturing, not construction. The industrial output of the tertiary sector at the same time dropped from 45.7% of Shanghai's GDP in 1949 to 19.5% in 1976. In 1949, the industrial output of light industries took 88.26% of Shanghai's GOVI, with heavy industries at only 11.74%. Due to the state government's focus on industrialization, the growth of heavy industries was tremendous; by 1976, the industrial output of heavy industries was 50.92% of Shanghai's GOVI, exceeding light industries (Table 3, Figure 16). From 1958 to 1960, a period called "the Great Leap Forward" in China's history, the production of iron-steel was boosted to a large degree and the share of heavy industries' output increased from 37.46% in 1958 to 55.02% in 1960. In the "Great Leap Forward" period, things made of iron, even woks in the kitchen, were melted to support iron-steel production. The single-minded development of the iron

Table 2: The Share of the Gross Domestic Product (GDP) by Sector, 1949-1976

Year	Primary (%)	Secondary		Tertiary (%)
		Total (%)	Industry (%)	
1949	7.2	47.1	46.7	45.7
1950	7.4	44.9	43.6	47.7
1951	6.2	49.5	47.6	44.3
1952	5.9	52.4	49.7	41.7
1953	4.9	55.6	52.0	39.5
1954	4.2	54.2	51.9	41.6
1955	5.1	54.8	52.2	40.1
1956	3.7	55.4	54.1	40.9
1957	3.9	58.7	56.9	37.4
1958	3.8	67.6	65.8	28.6
1959	3.3	73.8	72.4	22.9
1960	2.7	77.9	76.7	19.4
1961	4.4	69.8	68.9	25.8
1962	5.3	69.4	68.5	25.3
1963	5.0	72.5	71.4	22.5
1964	6.2	71.7	70.5	22.1
1965	5.7	73.0	72.0	21.3
1966	5.5	73.9	73.1	20.6
1967	6.5	72.3	71.8	21.2
1968	6.7	72.4	72.0	20.9
1969	5.6	74.5	74.0	19.9
1970	4.7	77.1	76.5	18.2
1971	4.6	77.8	77.1	17.6
1972	5.0	77.7	77.0	17.3
1973	4.9	76.8	76.1	18.3
1974	4.9	76.4	75.4	18.7
1975	4.0	77.2	76.1	18.8
1976	4.2	76.3	75.4	19.5

Source: Shanghai Statistical Bureau (2001b)

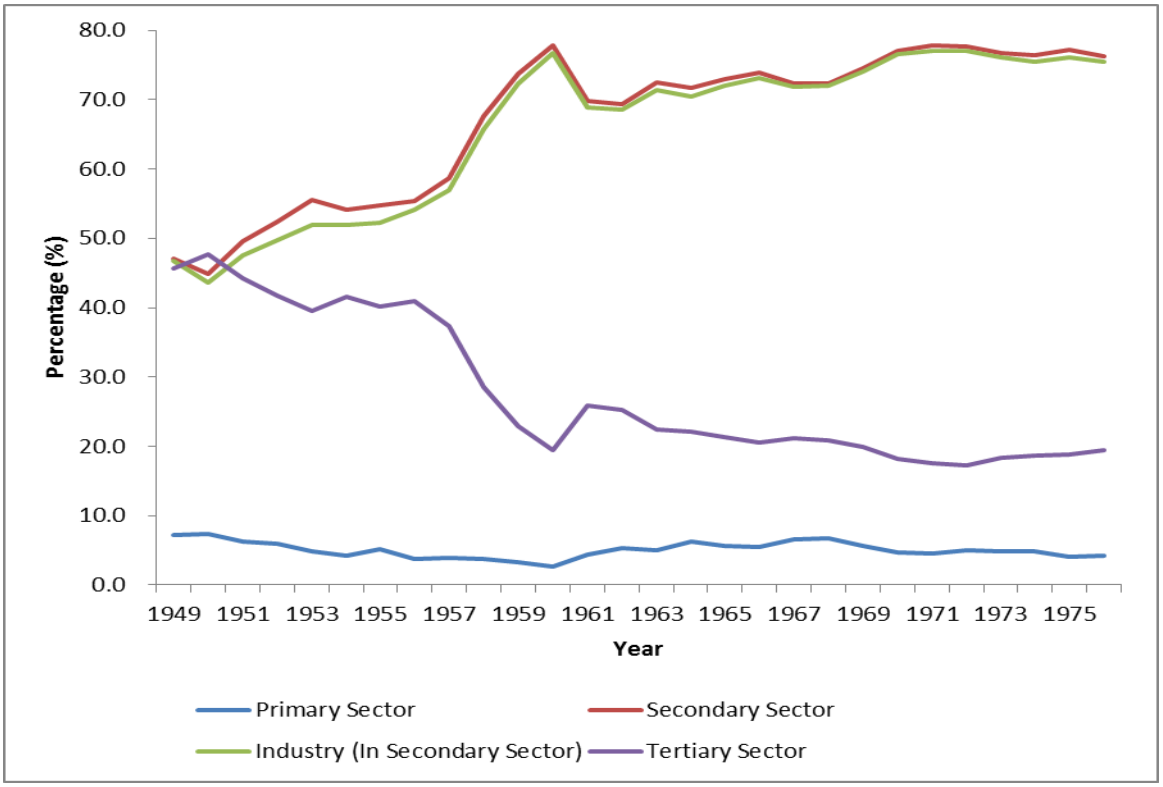


Figure 15: The share of the Gross Domestic Product (GDP) by sector, 1949-1976. Source: Shanghai Statistical Bureau (2001b).

Table 3: The Industrial Development of Shanghai, 1949-1976

Year	GOVI (RMB 100 million)	Light Industry		Heavy Industry	
		Industrial Output (RMB 100 million)	Percentage (%)	Industrial Output (RMB 100 million)	Percentage (%)
1949	34.34	30.31	88.26	4.03	11.74
1950	35.43	30.47	86.00	4.96	14.00
1951	54.53	43.73	80.19	10.80	19.81
1952	66.60	52.81	79.29	13.79	20.71
1953	91.50	70.73	77.30	20.77	22.70
1954	96.37	73.43	76.20	22.94	23.80
1955	91.42	69.02	75.50	22.40	24.50
1956	113.92	81.79	71.80	32.13	28.20
1957	118.82	84.36	71.00	34.46	29.00
1958	176.44	110.34	62.54	66.10	37.46
1959	254.68	141.70	55.64	112.98	44.36
1960	298.97	134.49	44.98	164.48	55.02
1961	187.43	96.97	51.74	90.46	48.26
1962	151.98	90.68	59.67	61.30	40.33
1963	168.91	96.95	57.40	71.96	42.60
1964	196.95	112.86	57.30	84.09	42.70
1965	230.77	129.56	56.14	101.21	43.86
1966	259.59	142.87	55.04	116.72	44.96
1967	226.88	131.69	58.04	95.19	41.96
1968	251.87	144.45	57.35	107.42	42.65
1969	284.42	158.56	55.75	125.86	44.25
1970	312.18	162.11	51.93	150.07	48.07
1971	336.52	157.89	46.92	178.63	53.08
1972	355.39	166.05	46.72	189.34	53.28
1973	383.33	181.68	47.40	201.65	52.60
1974	398.40	193.28	48.51	205.12	51.49
1975	420.37	203.97	48.52	216.40	51.48
1976	423.45	207.82	49.08	215.63	50.92

Source: Shanghai Statistical Bureau (2001b).

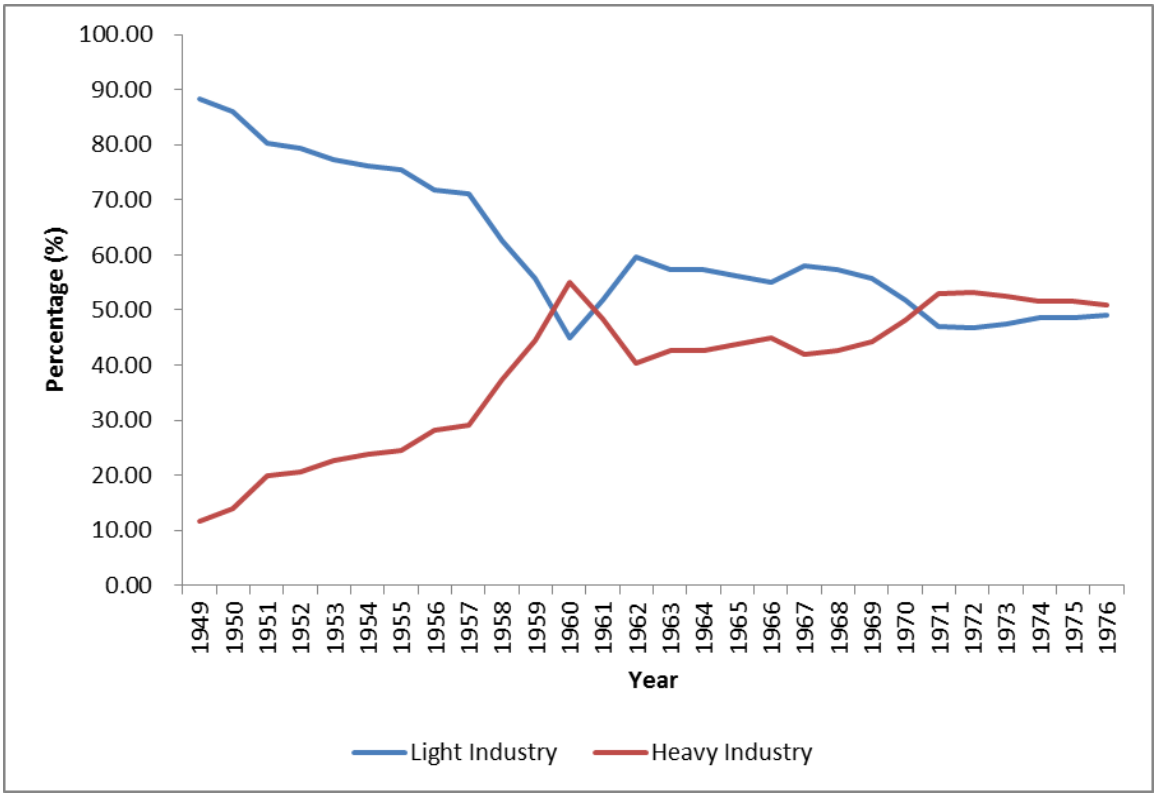


Figure 16: The percentage of the industrial output of light industry and heavy industry in Shanghai's GOVI, 1949-1976. Note: light industry is defined as industries providing consumer goods and manufacturing manual tools. Based on the difference of raw materials, light industries could be divided into two types: agricultural product based (e.g. food manufacturing, beverage manufacturing and textile) and industrial product based (e.g. chemical medicine manufacturing and educational and sports). Heavy industry is defined as industries which provide production goods for the development of national economy. Heavy industries could be divided into three types: 1) excavating industries, e.g. oil extraction and coal mining; 2) raw material industries, e.g. metallurgical industry and cement; 3) processing industries, e.g. mechanical equipment manufacturing and cement products.
Source: Shanghai Statistical Bureau (2001b).

industry caused a series of problems including shortage of consumer products, waste of raw materials and low industrial output. In order to improve these situations, the state government announced economic strategies of adjustment, consolidation, replenishment and improvement in 1961. Adjustment was the focus, which aimed at the overheated development of heavy industries and the ignorance of consumer products. With the readjustment of economic strategies, the share of heavy industries' output dropped to 48.26%, but the development of heavy industries was still the focus of economic development. Machinery, textile, petrochemical and metallurgical industries became the four pillar industries. In 1978, the industrial output of machinery industry was 33.3% of Shanghai's GOVI, textile industry 23.6%, petrochemical industry 15.7%, and metallurgical industry 11.6%, contributing 84.2% of Shanghai's industrial output (Yang, 1991, p.27). With the changing economic structure, Shanghai was transformed into a "production city".

With fast industrial development and the planning ideology of the "neighborhood units", the concentration of industries and residents in the urban area had caused the degradation of living quality. To improve the situation, industrial districts inside the urban core were transformed to reduce impact on quality of life and several satellite towns were planned to relocate industries and residents (Figure 17). The satellite towns were planned by the municipal government at a distance at least 20 km from the People's Square. Starting in 1958, Minghang and Wujing were the first satellite towns built, followed by Anting, Songjiang, and Jiading. Each satellite town was designed for a population size of 200,000. With their focus on special industries, each satellite town

was different from the other. Minghang specialized in the electromechanical industry, Wujing in the chemical industry, Jiading in science and research, Anting in the automobile industry, Songjiang in machine tool and light industries, and Jinshanwei in the petrochemical industry.



Figure 17: The distribution of satellite towns. Wusong-Baoshan was built in 1983. Sources: Sun (1999), p.181; Shanghai Surveying Institute (2001). Created by: Author (2011).

CHAPTER THREE: THE ECONOMIC DEVELOPMENT AND INDUSTRIAL RESTRUCTURING OF SHANGHAI IN THE ECONOMIC REFORM ERA (1978-PRESENT)

The Political Environment: Prerequisite for Shanghai's Development

At the end of the Maoist period, the urban development of Shanghai entered the economic reform era. The goals of the post-1978 economic reform policies were to promote individual and private ownership, relax control of production, and allow the existence of markets for the circulation of goods, services, and capital and wage labor (Olds, 2001, p.161). During the initial stage of economic reform, the central government was cautious about opening Shanghai to the world economy because "Shanghai was the largest contributor of gross tax revenue to the central government" (Olds, 2001, p. 176). If the openness policy failed, it would affect Shanghai as well as the central government. There were many state-owned enterprises in Shanghai, which also contributed to difficulties during the early era of economic reforms in Shanghai (Cheung, 1996, p. 76). Shanghai was still utilizing the socialist planned economy until 1984 when Shanghai was established as one of the "open coastal cities". In 1983, Deng Xiaoping, with his leadership in the state government, visited Shanghai and stated: "The liberation of Shanghai is still not enough. Shanghai should put more effort to attract Foreign Direct Investment. We should be more audacious on the opening of Shanghai". Since then, the state government's effort to further Shanghai's development was intensified and reinforced by annual visits from the central government. In 1985, the State Council

indicated the economic importance of Shanghai by saying "Shanghai is one of the most important industrial bases in China; it is the biggest harbor and a trade and technological center; it is also an important financial and information center" (Shanghai Local Gazetteer website).

Since 1978, economic reform policies were gradually implemented in Shanghai by the state government to transform the city's economy and attract FDI. The transformation of state-owned enterprises was the first step in stimulating the depressed economy. Initially, Shanghai's development stagnated because of the central government's urban development strategies. Before Shanghai was established as one of the "open coastal cities", Shanghai did not enjoy the beneficial policies of attracting FDI. Shanghai's investment environment was not competitive with already-established Special Economic Zones. The transformation of state-owned enterprises was particularly difficult in Shanghai due to its dominance in the industrial development during the Maoist period. As one of the contributors to the national income, "Shanghai had fallen from number one in 1978 to number six in 1985, and, worse still, number ten in 1990"(Cheung, 1996, p.52). When Shanghai opened in 1984, policies that allowed more autonomy on economic reforms were implemented, including the introduction of new technologies, the attraction of FDI, and transformation of state-owned enterprises. In 1985, the State Council approved the new development strategies of Shanghai that mandated: Shanghai should transform the traditional industries as well as develop ones such as high-tech and bio-tech; it should also focus on the development of tertiary sector, moving from 10% of the GDP to 60% by the year of 2000; and that city officials should

promote urban renewal and the construction of new urban areas (Chan, 1996, p. 303). Minghang and Hongqiao Economic and Technology Development Zone in 1986, and Caohejing High-Tech Park in 1988 were "designated as pilot zones in Shanghai's effort to resume its position as a major economic center of the nation" (Fung, 1996, p. 331). To attract investment, especially FDI in the development zones, enterprises enjoyed beneficial tax and loan policies. A major adjustment of Shanghai's administration boundary and the city proper area paved the road for Shanghai's spatial expansion in the economic reform era.

The change of leadership in the Chinese Communist Party (CCP) also contributed changes towards Shanghai's economic development. In the mid-1980s, a variety of politicians with strong Shanghai links began concentrating in the CCP hierarchy (Olds, 2001, p. 177). The success of promoting Shanghai's economic reforms was associated with its leaders' efforts in the early 1980s to early 1990s. Jiang Zemin, who took the presidency of China in 1989, was Shanghai's mayor from 1985 to1987. Jiang Zemin consistently supported Shanghai's economic reforms, since he saw the importance of cities to China's economic development (Olds, 2001, p.176). Zhu Rongji, the mayor of Shanghai from 1988 to 1991, with his promotion to vice-premier in Beijing in 1991, also backed the central government's support of Shanghai's opening to the world economy.

The Pudong New Area Project

The Pudong New Area Project was launched in 1990 by the central government, which was the first big economic reform project ; "the establishment of the Pudong area to the east of Shanghai's city proper serves as an excellent example to show how politics,

rather than simply economic planning, has been the key to the city's future" (Cheung, 1996, p.78). Deng Xiaoping was one of the major supporters of the Pudong project. After his famous "south tour" in February 1992, Deng stated:

> Shanghai now entirely has the conditions [to develop] a bit more quickly. In areas of talented personnel, technology and administration, Shanghai has obvious superiority, which radiates over a wide area. Looking backwards, my one major mistake was not to include Shanghai when we set up the four special economic zones [in 1980]. Otherwise, the situation of reform and opening to the outside in the Yangzi River Delta, the entire Yangzi River Valley and even the entire nation would be different (Olds, 2001, p.178; Jacobs and Hong, 1994, p.224).

Jiang Zemin in 1992 mentioned in the 14th National Congress of the Communist Party of China that the Pudong New Area was opened as one of the economic zones. "The Dragon's Head" was used as a metaphor of Pudong regarding its importance to the economic development of Shanghai, and even the whole Changjiang Delta Region. With the New Pudong New Area project, the state government aimed at building Shanghai as an international economic, commercial, and trading center. The state government "reduced the percentage of Shanghai's revenue submission to the center, allocated generous financial resources to Shanghai" (Wei, et al., 2006). To attract FDI, policies regarding reduction and exclusion of taxes, provisions for infrastructure, paid transformation of land use rights and set up of foreign banks were established. Several policies were also established by the municipal government with the purpose of promoting the development of businesses in tertiary sectors like finance:

(1) the allowance of the foreign-invested department stores and supermarkets in Pudong;
(2) the allowance of the foreign-invested banking, financial, and insurance institutions in Shanghai;

(3) the allowance of the foreign-invested stock exchange and its freedom on issuing the RMB(Chinese dollar) stock; and

(4) the development of the Waigaoqiao Free Trade Zone.

The enactment of these policies was based on national laws. In addition, the opening of foreign-invested enterprises in the tertiary sector, especially in the financial, banking and retail businesses, required the approval from the State Council.

The Pudong project proved very successful, demonstrated by Shanghai's favored role in foreign investment. After 1990, the amount of actualized FDI each year in Shanghai increased tremendously except for two periods (Table 4, Figure 18). The decrease of the FDI in the first period (1990-1991) was due to the Tiananmen incident in 1989. After the political crisis, Deng Xiaoping attempted to use the Pudong project to boost economic reforms, especially to reestablish a political environment that would attract more foreign investment. Deng "might also have contemplated using Shanghai to replace the increasingly recalcitrant Hong Kong when he advocated fast growth for the city in the early 1990s" (Cheung, 1996, p.79). In the second period (1998-2000), the Asian financial crisis reduced the inflow of FDI (Wei, et al., 2006).

The Industrial Structure of Shanghai (1978-1983)

The First Five-Year Plan in 1952 promoted the development of heavy industries because of the Maoist ideology that cities should be production centers. In 1952, the share of light industries in the GOVI was 79.3%; with the new development strategy, the share of light industries declined in the 1950s due to a large amount of investment in

Table 4: The Growth of the Actually Used FDI in Shanghai, 1984-2009

Year	Actually Used FDI (US$ billion)
1984	0.03
1985	0.06
1986	0.1
1987	0.21
1988	0.36
1989	0.42
1990	0.18
1991	0.18
1992	1.26
1993	2.32
1994	3.23
1995	3.25
1996	4.72
1997	4.81
1998	3.64
1999	3.05
2000	3.16
2001	4.39
2002	5.03
2003	5.85
2004	6.54
2005	6.85
2006	7.11
2007	7.92
2008	10.08
2009	10.54

Source: Wei, et al. (2006); Shanghai Statistical Bureau, (2000-2010).

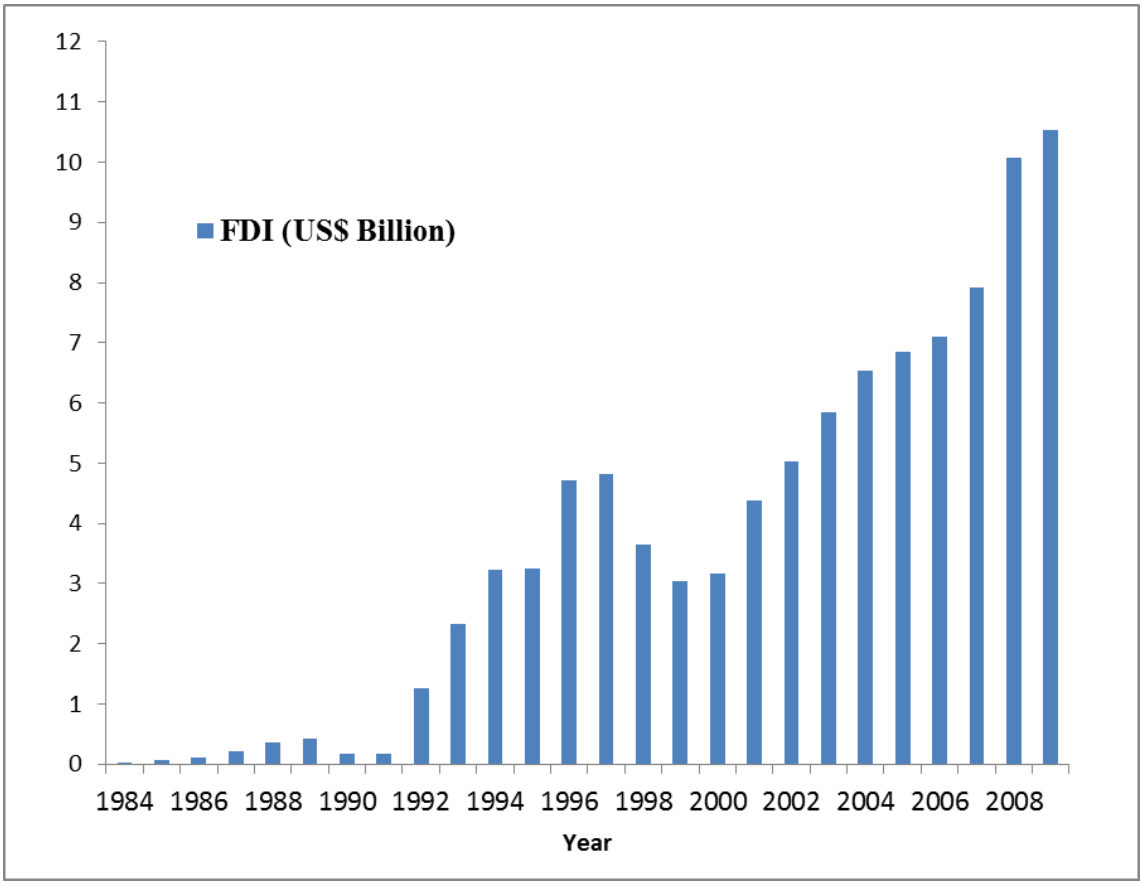


Figure 18: The growth of the actually used FDI in Shanghai, 1984-2009.
Source: Wei, et al. (2006); Shanghai Statistical Bureau, (2000-2010).

heavy industries. Major products in light industries by that time were "textiles, flour, cigarettes, leather and rubber goods, matches, and soap" (Mok, 1996, p.201). In 1960, the share of heavy industries in the GOVI was 55%, exceeding the share of light industries. In the late 1950s and 1960s, many industries in Shanghai were moved inland due to "China's effort to decentralize her industries for economic and strategic reasons" (Mok, 1996, p.201); the share of heavy industries in the GOVI declined. By 1980, the percentage of heavy industries in Shanghai's GOVI was 44.7%, and 55.3% for light industries. In 1952, the share of Shanghai's industrial output in China was 19.1%.

Shanghai's share of China's GOVI declined to 13.6% in 1980. Shanghai's industrial superiority was challenged by some provinces in this period, notably Guangdong and Jiangsu (Mok, 1996, p.201).

The share of primary, secondary and tertiary sectors in the GDP started to change. The development of the tertiary sector was promoted after 1978:

> As a commercial and financial center, old Shanghai had a large tertiary sector, (a share of 42.6% of the GDP in 1952), which since 1953 had been reorganized according to socialist principles: basic services were put under state control and community services were collectivized, which personal services were all but abolished. It was not until 1980s that the tertiary sector was allowed to revive, and Shanghai once again had been able to reveal its ability in providing commercial and financial services, in addition to manufacturing (Mok, 1996, p. 203).

By 1984, the share of the tertiary sector in the GDP was 25.1%, up from 18.6% in 1978. The share of the secondary sector in the GDP decreased in this period, from 77.4% in 1978 to 70.5% in 1984.

In 1978, all the enterprises in Shanghai were either state-owned or collective-owned enterprises, among which 42% was state-owned and 58% were collective-owned. By 1984, the proportion of state-owned enterprises was 37%, 60% for collective-owned, and 3% for others. The *others* category included "state-collective, state-private, collective-private, local-foreign joint enterprises, and enterprises operated by overseas Chinese and Hong Kong/ Macau industrialists" (Mok, 1996, p.206).

In this period (1978-1983), the statistical data shows that workers involved in public ownership enterprises (state-owned and collective-owned enterprises) were dominant in Shanghai (Wok, 1996, p.211). In 1980, the percentage of the number of

workers in state-owned and collective-owned enterprises was 96.6%; by 1985, the percentage decreased, but it was still 88.7%.

The Industrial Restructuring of Shanghai (1984-2011)

During this period (1984-2011), the economic restructuring in Shanghai accelerated at a faster pace. The share of publicly owned enterprises in the GDP decreased, from 95.4% in 1990 to 51.6% in 2009, while the proportion of on-public ownership enterprises is increasing, from 4.6% in 1990 to 48.4% in 2009 (Table 5, Figure 19). The change in proportions between public and non-public owned enterprises in the GDP started to level out in 2007. The share of the publicly owned enterprises is still dominant in Shanghai's GDP. State-owned enterprises are still a large proportion of Shanghai's GDP, 45.6% in 2009; the share of collective-owned enterprises decreased from 24.2% in 1990 to 6% in 2009 (Table 6). The shares of the private, Hong Kong, Macau, Taiwan, and other foreign invested enterprises are increasing, becoming a greater proportion of Shanghai's GDP (Table 6, Figure 20). The Hong Kong, Macau and Taiwan invested and foreign invested enterprises are associated with FDI. The increasing share of FDI related enterprises in Shanghai's GDP indicates the importance of FDI to Shanghai's economic development. The private enterprises are also gaining economic importance next to FDI related enterprises.

The development of the tertiary sector in this period is related to the designation of Shanghai as an international economic, commercial, and trading center by the state government. In the 1980s and 1990s, the tertiary sector was not competitive compared to

Table 5: The Share of the GDP by Ownership, 1990-2009

Year	Public (%)	Non-Public (%)
1990	95.4	4.6
1995	81.9	18.1
1996	77.8	22.2
1997	77	23
1998	75.2	24.8
1999	73.2	26.8
2000	71.4	28.6
2001	68.2	31.8
2002	64.5	35.5
2003	62.3	37.7
2004	59.6	40.4
2005	56.9	43.1
2006	55	45
2007	53.4	46.6
2008	52.2	47.8
2009	51.6	48.4

Source: Shanghai Statistical Bureau (2010).

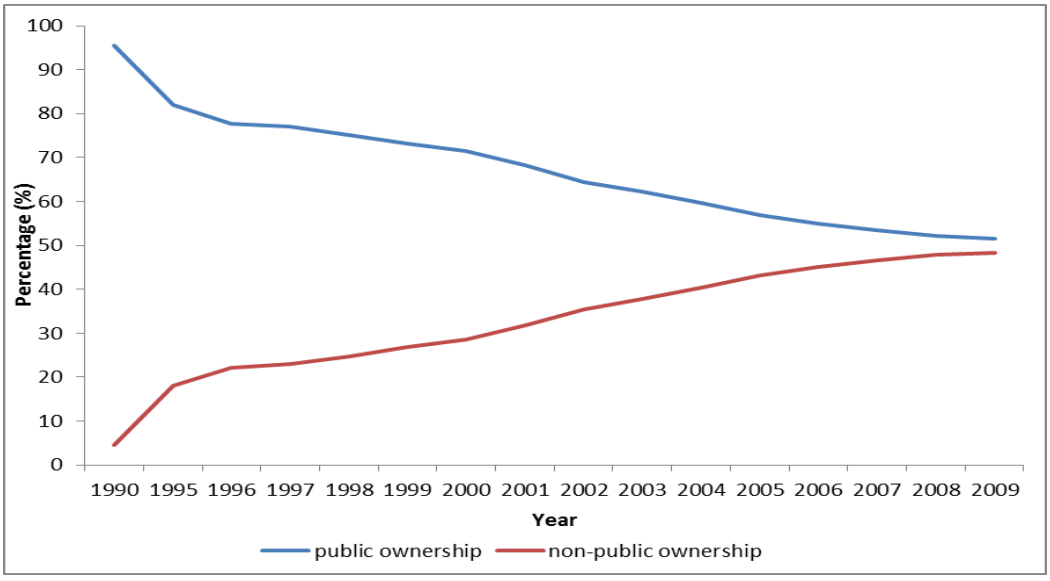


Figure 19: The share of the GDP by ownership, 1990-2009. Source: Shanghai Statistical Bureau (2010).

Table 6: The Share of the GDP by Ownership (Detailed), 1990-2009

Year	state-owned (%)	collective-owned (%)	private (%)	other (%)
1990	71.2	24.2	2	2.6
1995	59.6	22.3	5.4	12.7
1996	56.7	21.1	6.9	15.3
1997	56.8	20.2	7.7	15.3
1998	55.7	19.5	8.4	16.4
1999	54.9	18.3	9.8	17
2000	55	16.4	11.3	17.3
2001	53.2	15	14.3	17.5
2002	50.3	14.2	16.9	18.6
2003	50.2	12.1	17.4	20.3
2004	50.4	9.2	18.5	21.9
2005	48.4	8.5	21	22.1
2006	47.3	7.7	21.6	23.4
2007	46.8	6.6	22.4	24.2
2008	45.9	6.3	23.5	24.3
2009	45.6	6	23.7	24.7

Source: Shanghai Statistical Bureau (2010).

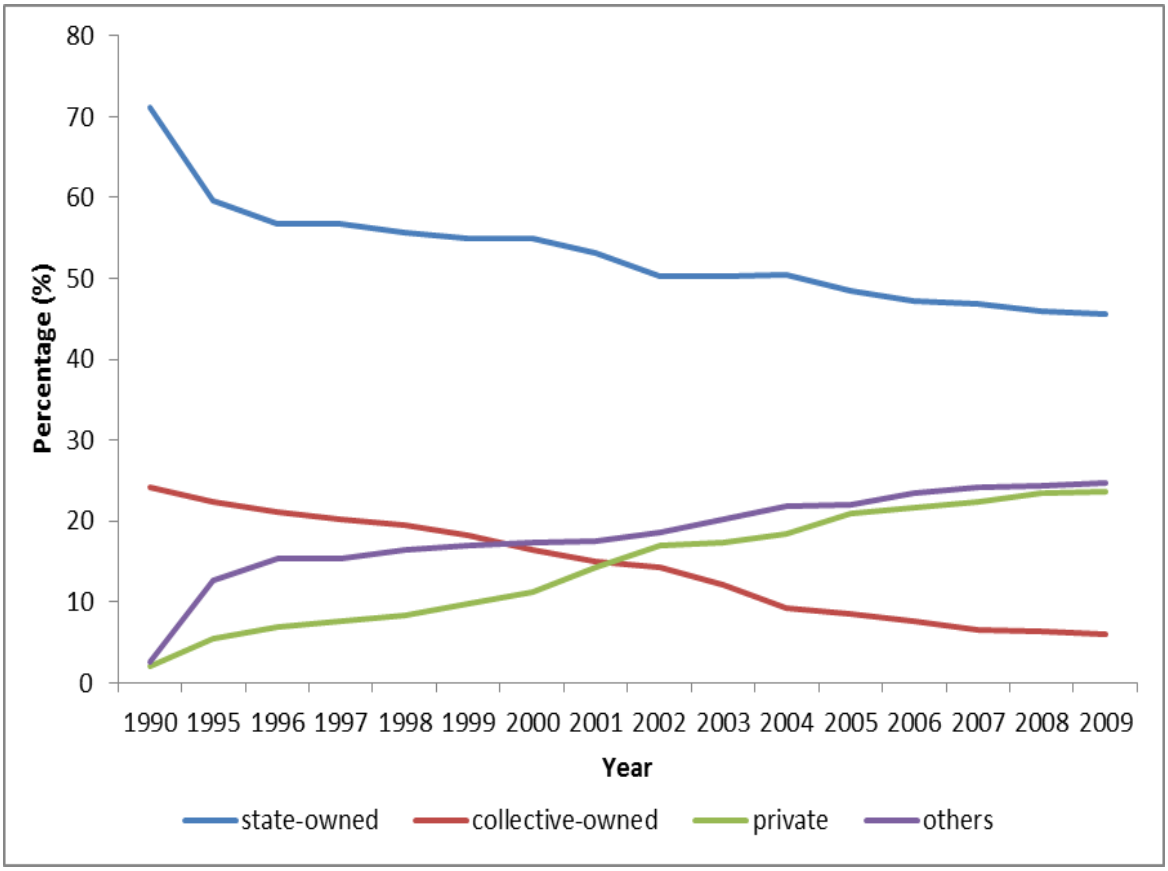


Figure 20: The share of the GDP by ownership (detailed), 1990-2009. In the *others* category, Hong Kong, Macau and Taiwan invested enterprises, and foreign invested enterprises are included. State-owned and collective-owned are in public ownership category. Private and others are in non-public category.
Source: Shanghai Statistical Bureau (2010).

the secondary sector, but the tertiary sector was growing rapidly; by 2000, the share of the tertiary sector in Shanghai's GDP reached more than 50% (Table 7, Figure 21). At the same time, the share of the secondary sector in Shanghai's GDP decreased from 70.5% in 1984 to 46.3% in 2000. Industry was more than 90% of the GDP of the secondary sector, which decreased over time. The economic restructuring from 1984 to 2000 was tremendous. Although the pace of the economic restructuring after 2000 slowed down, there is an increasing gap between the tertiary sector and secondary sector

Table 7: The Share of the GDP in Different Sectors, 1984-2009

Year	Primary (%)	Secondary		Tertiary (%)
		Total (%)	Industry (%)	
1984	4.4	70.5	67.4	25.1
1985	4.2	69.8	66.7	26.0
1986	4.0	68.5	65.0	27.5
1987	4.0	66.8	61.7	29.2
1988	4.2	66.8	61.6	29.0
1989	4.3	66.9	62.1	28.8
1990	4.4	64.7	60.1	30.9
1991	3.8	61.6	57.6	34.6
1992	3.1	60.8	57.1	36.1
1993	2.5	59.4	55.7	38.1
1994	2.4	57.7	54.0	39.9
1995	2.4	56.8	52.3	40.8
1996	2.3	54.0	49.1	43.7
1997	2.1	51.6	46.5	46.3
1998	1.9	49.3	44.0	48.8
1999	1.8	47.4	42.7	50.8
2000	1.6	46.3	41.9	52.1
2001	1.5	46.1	41.6	52.4
2002	1.4	45.7	41.3	52.9
2003	1.2	47.9	43.9	50.9
2004	1.0	48.2	44.5	50.8
2005	1.0	48.6	45.1	50.4
2006	0.9	48.5	45.0	50.6
2007	0.8	46.6	43.5	52.6
2008	0.8	43.3	39.6	56.0
2009	0.8	39.9	35.9	59.4

Sources: Shanghai Statistical Bureau (2008, 2010).

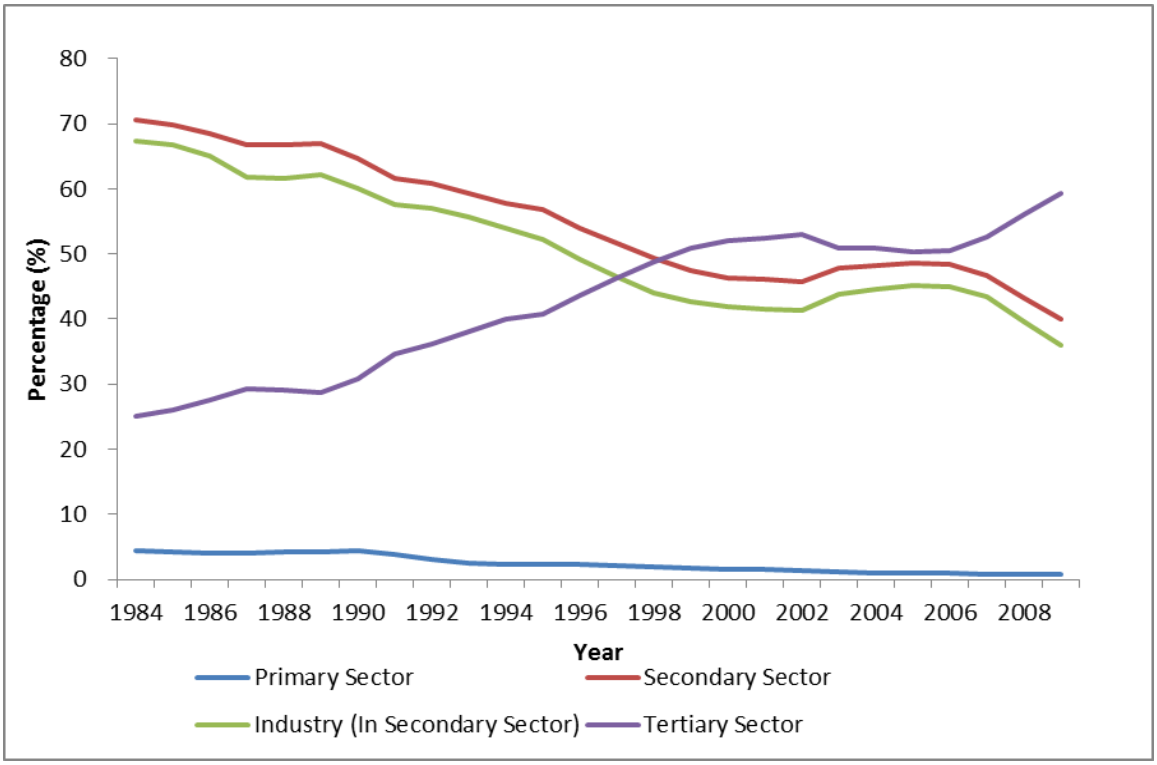


Figure 21: The share of the GDP in different sectors, 1984-2009.
Sources: Shanghai Statistical Bureau (2008, 2010).

after 2006 with the tertiary sector dominating Shanghai's economic development. In 1985, 57.8% of the labor force in Shanghai was involved in the secondary sector, while 25.5% was involved in the tertiary sector. By 2000, both the secondary sector and tertiary sector had 44% of the total number of employees in Shanghai. In 2008, the number of employees in the tertiary sector exceeded the number in the secondary sector. In the secondary sector, most of the employees are involved in manufacturing industries, while in the tertiary sector most employees work in wholesale and retail businesses (Table 8).

Table 8: The Distribution Pattern of Employees in the Secondary and Tertiary Sectors, 2008

	Employees (10,000)	Percentage (%)
Total	**1041.5**	**100.0**
Secondary Industry	**492**	**47.2**
Industry	388.9	37.3
Construction	103.1	9.9
Tertiary Industry	**549.5**	**52.8**
Transportation, Warehousing and Post	62.9	6.0
Information Transformation, Computer Service and Software Industries	25.1	2.4
Retail and Wholesale Industries	146.9	14.1
Hoteling and Catering	38.4	3.7
Financial Industry	23.1	2.2
Real Estate Industry	39.1	3.8
Leasehold and Business in Services	74	7.1
Scientific Research, Technology Service and Geological Processing	29.3	2.8
Water Conservancy, Environment and Public Facility Management Industries	8.2	0.8
Community Service and other Service Industries	18.2	1.7
Education	32.9	3.2
Health, Social Security and Welfare Industries	18.5	1.8
Culture, Sports and Entertainment	7.6	0.7
Public Administration and Social Organizations	25.4	2.4

Source: Shanghai Statistical Bureau (2010b).

The Industrial Land Use Pattern

The industrialization land use patterns of Shanghai changed due to the economic reform policies once Shanghai was opened as one of the "open coastal cities" in 1984. In the 1980s, the industries were concentrated in the city proper; in 1982, the central city had 4791 factories, with 65% of workers, and 73% of Shanghai's GOVI (Shanghai Urban Planning and Design Research Institute, 2007, p.119). The distribution of industries was fragmented.

This pattern resulted from Shanghai's long history of development. As a treaty port, Shanghai's industries developed along the Wusong and Huangpu Rivers mainly in the old foreign settlement zones. In the Maoist period, the older industrial sites were used to utilize the existing resources, with enterprises clustering in the city proper. The fragmented pattern resulted from the self-contained neighborhood unit concept and land appointments without the agency of rent or price (Hodder, 1996, p.236). During the Maoist period, land markets didn't exist. In a central-planned system, the state government was responsible for land allocation. Thus, in order to compete for land, enterprises followed the self-contained neighborhood planning ideology from the state government (Wu, et al., 2007, p.26). Although an effort was made to relocate industries through the satellite towns program in the 1950s, the tendency of industrial concentration in the city proper still continued. No distinctive development pattern was identified.

The dominant enterprises in the city proper were the state-owned enterprises in the 1980s. With the legacy of the self-contained neighborhood unit from the Maoist

period, workers' estates and work unit were mixed together. The industrial land use pattern was as Hodder described:

> Huangpu, for instance, contains over 500 industrial enterprises-mostly handicraft and light industrial neighborhood enterprises-packed in among office buildings, houses, factories, and shops. To the north, Huangpu merges with Hongkou and Yangpu where, to the east of the later district, factories and workers' estates and even farmers' houses are jumbled together. Just to the south of Wujiaochang in northern Yangpu, workers' estates predominate, interspersed with an occasional factory. Closer to Baoshan County (now Baoshan District), fields of vegetables begin to appear in between the factories and residential estates (Hodder, 1996, p.226).

Although the jurisdiction between where Huangpu merged with Hongkou and Yangpu is different now, Hodder (1996) provided a general impression of the industrial distribution in Shanghai at that time. The decision of local bureaucrats to focus on immediate economic goals in city planning caused difficulties during later periods of expansion which has since been criticized (Hodder, 1996, p.237). In the period of the Sixth Five-Year Plan (1981-1985), "1,300 new industrial projects and 250 technology-importing projects were implemented within the municipality, most of which were located in the central city" (Hodder, 1996, p.237). In 1985, there were 5,397 enterprises in the central city with approximately 50.6% of enterprises in Shanghai. Four industrial zones in Shanghai were identified by Hodder (1996) and Yang (1991) (Figure 22.1, 22.2): the Core Area, the Inner Ring Zone, the Outer Ring Zone, and the Industrial Satellites.

The Core Area, Inner Ring Zone, and Outer Ring Zone were within the 1984 administrative boundaries of the central city; the Industrial Satellites were the satellite towns established in the Maoist period and the early 1980s. The Core Area covered the northern part of Huangpu, Luwan, Jing'an, and Xuhui Districts and the southern Part of

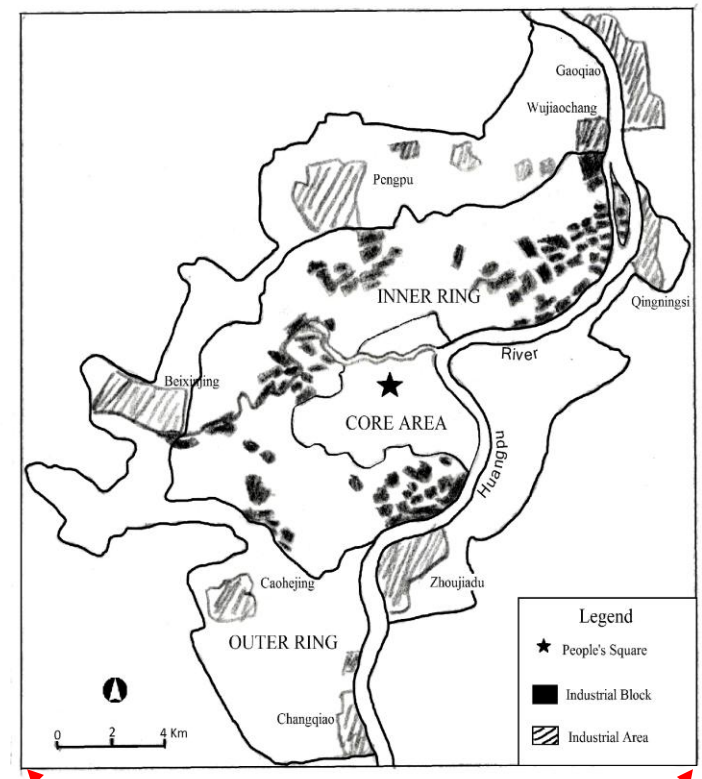


Figure 22.1: Three industrial zones in the central city in the 1980s. The central city was subdivided into core, inner ring, and outer ring areas. The core area does not contain any industry.
Sources: Hodder (1996), p.232-233; Yang (1991), p.11-13.

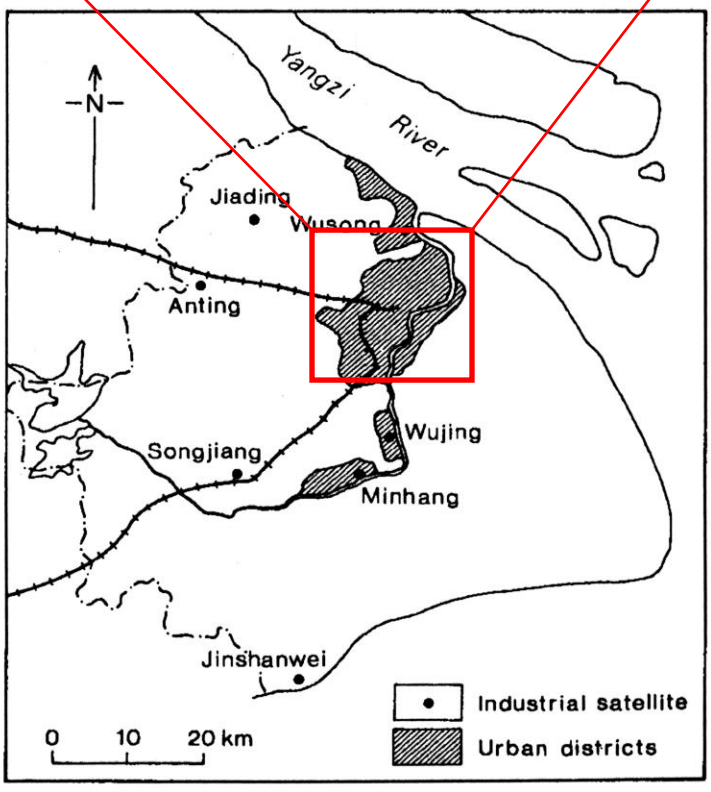


Figure 22.2: The fourth industrial zone: industrial satellite.
Sources: Hodder (1996), p.232-233; Yang (1991), p.11-13.

Hongkou and Zhabei Districts. The Inner Ring Zone surrounded the Core Area with a radius of 6-10 km. The Outer Ring Zone was located approximately 11-12 km from the city core, and the Industrial Satellites were located at distances as far as 70 km from the city core.

As indicated in Table 9, about 60% of the industrial establishments were concentrated in the Inner Ring Zone, 21% in the Outer Ring Zone and 19% in the Core Area. The Inner Ring Zone had the highest industrial output, followed by the Outer Ring Zone and Core Area. With the fewest establishments, employees, and smallest area of industrial land use (Table 9), the Core Area was considered the least important for industrial use, which is the CBD area of Shanghai now. Commercial activities concentrated within this area, and industrial enterprises were mostly small-scale "flatted factories" or "neighborhood workshops"; a mixture of industrial and commercial land uses in the same building was common. The large and middle-scale enterprises thus concentrated in the Inner and Outer Ring Zones. In the Inner Ring Zone, about 725 of 3,336 enterprises were distributed in 70 industrial blocks, most of which were in light industry and engineering, chemical, textile, and metallurgical industries. The majority of the industrial blocks were in Yangpu, Putuo and Luwan Districts. In the Outer Ring Zone, most of the enterprises were located in eight industrial zones: Gaoqiao, Qingningsi and Zhoujiadu in Pudong New Area District, Wujiaochang in Yangpu, Pengpu in Zhabei, Beixinjing in Changning, Caohejing in Xuhui, and Changqiao in Xuhui. The enterprises in the Outer Ring Zone were specified in petrochemical, electromechanical, chemical, metallurgical, shipbuilding and microelectronic industries. The industrial development in

Table 9: The Industrial Distribution in the Three Industrial Zones, 1987

Industrial Zones	Establishments	Employees (10,000)	Industrial Output (RMB billion)	Floor Space (10,000 m^2)	Floor Space (acres)
Core Area	1,059	21.7	4.68	364.78	901.39
Inner Ring Zone	3,366	142.37	41.87	2743.81	6780.10
Outer Ring Zone	1,178	52.17	14.48	2241.33	5538.45
Total	5,603	216.24	61.03	5349.92	13714.15

Source: Yang (1991), p.11.

the Industrial Satellites was relatively new and slow compared to the other three industrial zones in the urban core. The lack of infrastructure and public facilities had made both enterprises and workers unwilling to relocate to the satellite towns. In 1987, there were 555 enterprises in the Industrial Satellites, with 337,000 workers and about 12% of Shanghai's GOVI.

These zones characterized the industrial land use pattern in the 1990s (Figure 23). In Figure 23, industrial land use expanded from the central districts to the inner suburban districts: the northern part of Pudong Xin Qu[7], Minghang, Jiading, and Baoshan Districts. Clusters of industries in the satellite towns like Baoshan, Jiading, Anting, Minhang and Wusong could be identified. The industrial pattern in the outer suburban districts, like Qingpu, Songjiang, Jinshan, Fengxian, and Chongming County was not clear due to lack of data (Figure 23). Yet, Qingpu, Songjiang, Jinshan and Fengxian were counties until

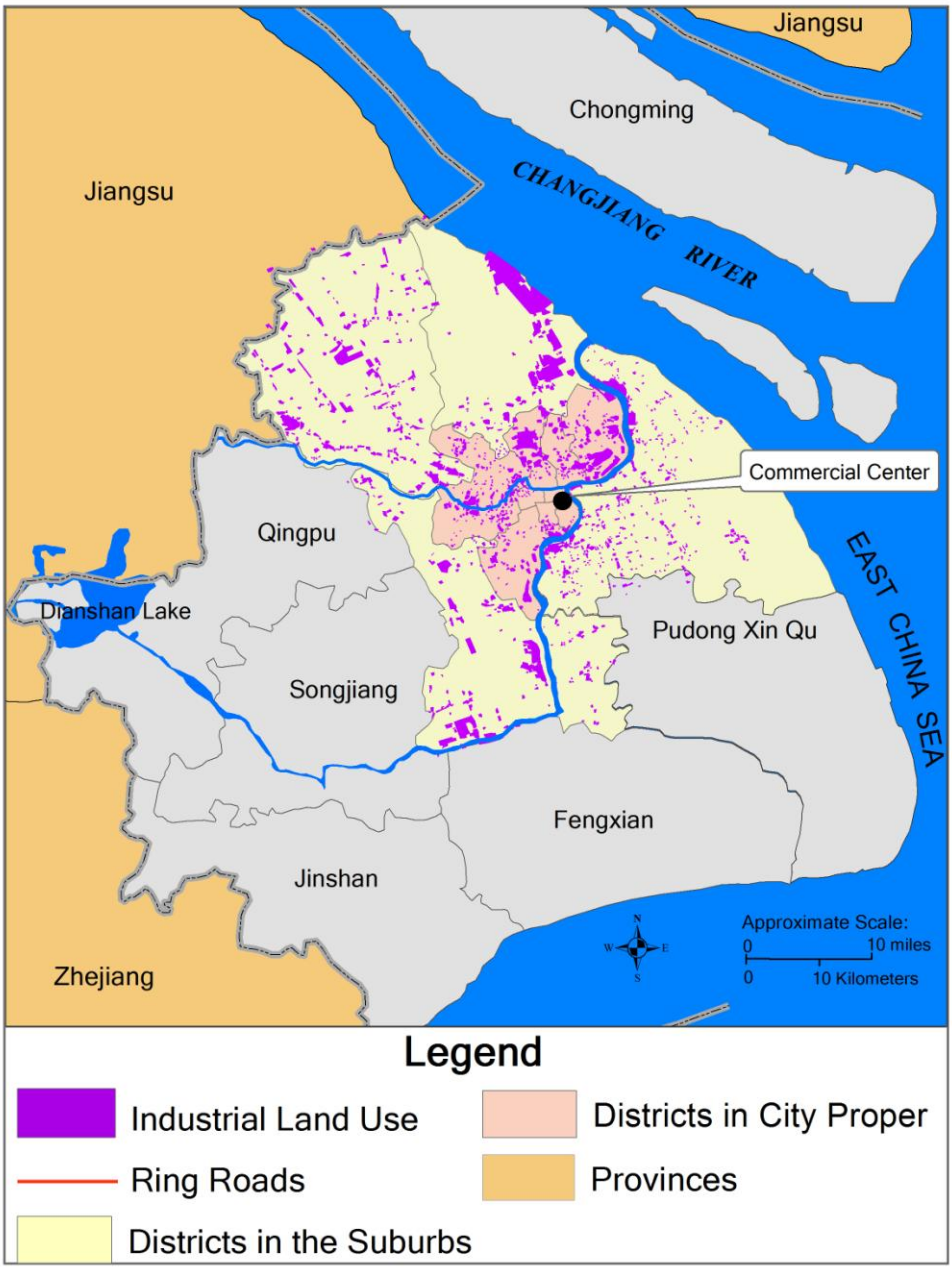


Figure 23: The pattern of industrial land use in the city and selected suburbs, 1992-1994. This map is focused on the central city and inner suburbs. The lack of industrial land use information in the area of the outer suburban districts on the map is due to the source map's focus on the central city. The southern part of Pudong Xi Qu was Nanhui County by then.
Sources: Virtual Shanghai (2010); Shanghai Surveying Institute (2001). Created by: Author (2011).

1997[8]; the relative importance of Qingpu, Songjiang, Jianshan, Fengxian, and Chongming County was small compared to Shanghai's total industrial development.

In the 1990s, the industrial development strategy in the central city was to promote the development of economic activities in the tertiary sector and relocate or transform the industrial enterprises in the secondary sector. Land reforms in 1986 facilitated industrial relocation and transformation. With the commodification of land use rights, many enterprises could not afford to occupy high value land in the central city. Most enterprises were forced to move to the suburban districts where cheap land was available. In 1990, the percentage of the GOVI of the central city in Shanghai was 58.1%. Since then, the central city started to lose its dominance in Shanghai's industrial development; by 1995, the percentage of the GOVI of the central city was 34.9%. The inner suburban districts, including Pudong Xin Qu, Minhang, Baoshan and Jiading, became the new industrial development centers in Shanghai; the total percentage of these districts' GOVI was 54.8% in 1999.

Since the 1990s, the municipal government had made an effort to change industrial land use patterns by dividing the land into three circles bounded by the Inner Ring Road and Outer Ring Road (Figure 24). In an industrial layout plan issued by the Shanghai Economic Committee in 2007, the three circle industrial pattern was defined.

Notes:

7. The Southern part of Pudong Xin Qu was Nanhui County in the 1990s. Nanhui County was established as a district in 2001; it was put under the jurisdiction of Pudong Xin Qu in 2009.
8. Jinshan, Songjiang, Qingpu and Fengxian in an order were established as districts in the period of 1997 and 2001.

In each circle, different industries and economic activities were promoted. In the area inside the Inner Ring Road (62 square miles), more than 1000 enterprises were relocated or transformed, leaving 2471 acres of space for the development of activities in the tertiary sector (Wang, 2007, p.39). As a CBD, this area is primarily filled with office buildings, shopping malls, hotels, restaurants, and banks. In the area between the Inner Ring Road and Outer Ring Road (212 square miles), real estate, commercial, logistics, and warehousing industries of the tertiary sector and other urban industries[9] are concentrated (Wang, 2007, p.39). In the area outside the Outer Ring Road (2200 square miles), important industrial bases and development zones and industrial parks at the national and municipal level are dispersed. The industrial concentration in the development zones was also encouraged by the industrial layout plan as well as the government's policies on taxes and environmental protection (Shanghai Economic Committee, 2007).

During the Tenth Five-year Plan (2000-2005), the municipal government invested about RMB 250 billion to develop an industrial layout of "1+3+9" (Huang, 2004). The "1" represents Pudong Xin Qu. The "3" includes Caohejing High-Tech Park, Minhang Economic and Technology Development Zone, and the Songjiang Export Processing Zone. The"9" includes nine municipal level industrial parks, which are Xinzhuang, Baoshan, Jiading, Kangqiao, Songjiang, Fengpu, Jinshanzui , Qingpu and Chongming

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Note:

9. Urban industries include garment and trappings, food processing, packaging and printing, indoor decoration material and equipment manufacturing, cosmetic and cleaning product manufacturing, art craft and tourism equipment manufacturing, and small electronic information product manufacturing.



Figure 24: The ring roads in Shanghai.
Source: Shanghai Surveying Institute (2001). Created by: Author (2011).

(Huang, 2004). Except for Caohejing High-Tech Park and part of Pudong Xin Qu, all the ther industrial parks are located outside the Outer Ring Road. By 2002, the total GOVI of the development zones in the "1+3+9" project was RMB 311.83 billion, about 36.7% of Shanghai's GOVI.

The distribution of Shanghai's development zones and industrial parks (Figure 25) depicts Shanghai's strategies of industrial development, mainly an effort to foster suburban industrial development. The national development zones and industrial parks are generally larger compared to the ones at municipal level in terms of industrial output and tax revenue. As far as area, the development zones and industrial parks at both levels are not distinctive. The national development zones and industrial parks also enjoy the preferential policies of tax reduction from the state. The planning of the national development zones and industrial parks is incorporated in the city planning. The coordination between the national level and municipal level development zones and industrial parks is important for the overall economic development of Shanghai. Except for several national development zones and older industrial bases derived from the Maoist period, most of the development zones and industrial parks are located outside the Outer Ring Road. The Lujiazui Free Trade Zone is the only development zone in the inner Ring Road (Figure 26). The Sheshan Tourism and Resort Zone was established in 1995 by the state government, which indicates Shanghai's development of tourism as a pillar industry. However, the manufacturing industries still dominate Shanghai's economic development. There are five export processing zones designated by the state government spread in the suburbs: Jinqqiao, Minhang, Caohejing, Qingpu and Songjiang



Figure 25: The pattern of development zones (DZs) and industrial parks (IPs) in Shanghai.
Sources: Shanghai Surveying Institute (2001); Shanghai Statistical Bureau (2011); Shanghai Urban Planning and Design Research Institute (2007), p.210; Wu (2008).
Created by: Author (2011).



Figure 26: National development zones and industrial parks
Sources: Shanghai Surveying Institute (2001); Wu (2008). Created by: Author (2011).

EPZs (Figure 26). As a type of development zones, EPZs also enjoy preferential policies of attracting investment. A special character of EPZs is that they are designated for facilitating the exporting process of goods in China. The industrial output of FDI related enterprises was dominant in Shanghai's GOVI in 2009, 59.6% (Figure 27). These enterprises are focused on exports in the manufacturing industry, with high-tech products as the main exporting goods. Shanghai's industrial development strategy has been adjusted to follow the global industrial trend. The municipal government made an effort to develop capital- and knowledge-intensive industries. By 2010, the six pillar industries, including electronic information products, automobiles, petrochemical and fine chemical products, fine steel, equipment complex, and bio-machine manufacturing industries, had a share of 66.1% in Shanghai's GOVI and 47.4% of its total employees. With the focus on these sectors, the heavy industries have regained their dominance in Shanghai's economic development since 1995 (Table 10, Figure 28).

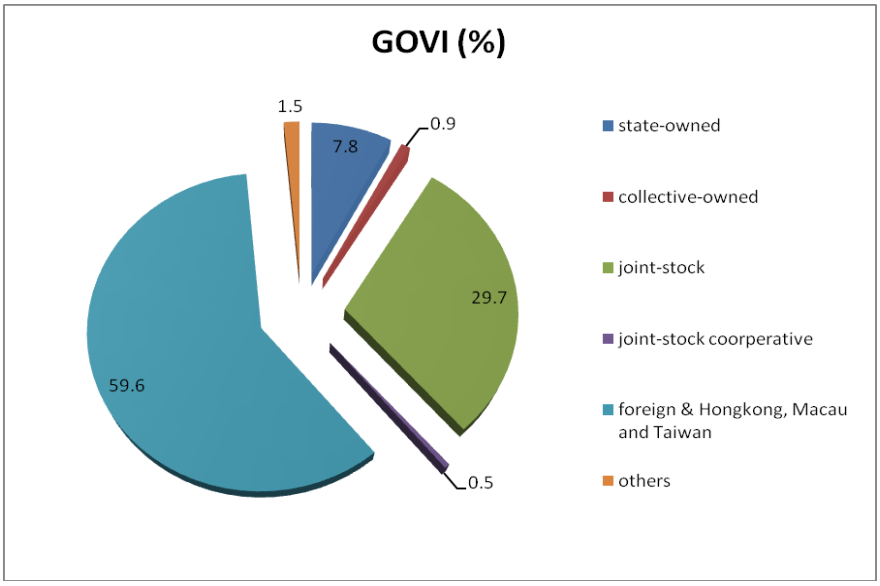


Figure 27: The distribution of Shanghai's GOVI in different enterprises, 2009.
Source: http://www.sheitc.gov.cn/p04010101/511225.htm.

Table 10: The Share of Light Industry and Heavy Industry in the GOVI, 1985-2009

Year	Light industry (%)	Heavy industry (%)
1985	55.6	44.4
1990	51.5	48.5
1995	45.5	54.5
2000	41.3	58.7
2005	25.5	74.5
2008	22.5	77.5
2009	22.8	77.2

Sources: Shanghai Statistical Bureau (2006, 2010).

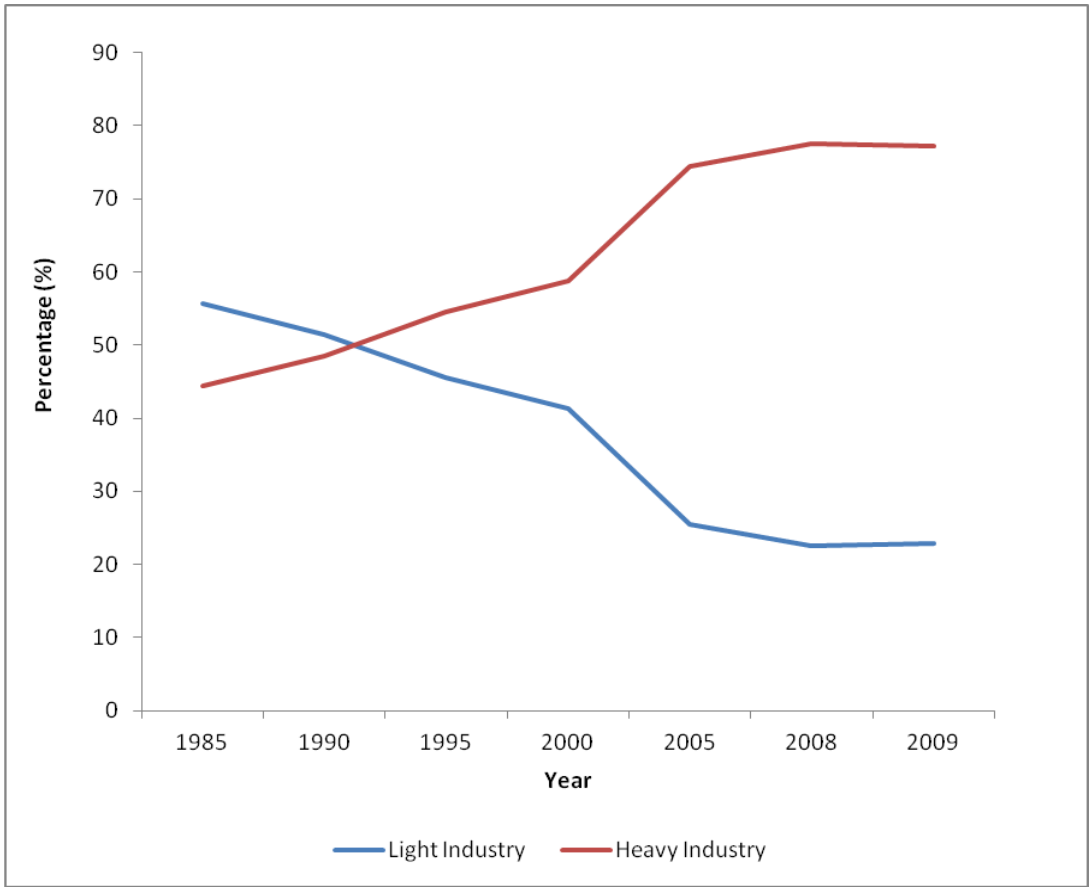


Figure 28: The share of light industry and heavy industry in the GOVI, 1985-2009.
Sources: Shanghai Statistical Bureau (2006, 2010).

CHAPTER FOUR: THE POPULATION OF SHANGHAI IN THE ECONOMIC REFORM ERA

Population Overview in the Maoist Period

Since the first national census in 1953, the total number of Shanghai residents increased from 8.97 to 23.02 million by 2010 (Table 11), approximately 271%. In the 1950s and 1960s, Shanghai experienced a reduction in population, resulting in fewer residents than the registered population[10]; this phenomenon was caused by population controls prior to 1958 by the Household Registration System and the campaign to reeducate youths in countryside and mountain areas (Xie, 2010, p.10-11). Urban residents with a non-agricultural household status were able to access the benefits of grain rations, housing provisions, education, health care and social welfare. At that time, it was very hard for un-authorized migrants to survive in Shanghai without access to all those benefits under the command economy (Xie, 2010, p.16). Thus, inter-province migration was under strict control. Before 1990, the increase in residents was largely due to an increase in the registered population. Shanghai's total registered population fluctuated due to the change of administrative boundaries and urban policies (Xie, 2010, p.15) (Table 12, Figure 29). In the 1950s, Shanghai incorporated several counties like

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Note:

10. The total number of residents is comprised of the registered population and the floating population. With the Household Registration System in China, the registered populations are people who are registered in Shanghai and have a legal household status in Shanghai. The floating populations are migrants that have settled in Shanghai for at least half a year after 1990. Between the period of 1982 and 1989, the floating populations were migrants who had settled in Shanghai for at least a year.

Table 11: Population Information from Census Data

Year	1953[c)]	1964	1982	1990	2000	2010
Residents[b)] (10,000)	897.10	1081.65	1185.97	1334.19	1640.77	2301.91
Registered Population (10,000)	900.90	1086.20	1180.50	1283.35	1313.89[d)]	1404.21
Floating Population[a)] (10,000)	–	–	5.47	50.84	387.11[e)]	897.70

Notes:

a) The Floating Population (liudong renkou) is calculated by: Residents-Registered Population (changzhu renkou- huji renkou). There are two different criteria for the floating population census. For 1982 and 1990, the floating population was counted only for those who lived in Shanghai for more than a year and registered their household somewhere else. After 1990, the length of time to count the floating population was reduced to more than half a year. The change of the criterion after 1990 caused a jump in the floating population. Thus, the census data on the floating population since 2000 are not comparable with the census data before 2000. The floating population is also referred to as migrants here.
b) The criterion change also affected the number of residents.
c) The population information for 1953 was adjusted to include counties which were under the jurisdiction of Jiangsu Province, but under Shanghai jurisdiction after 1958.
d) This number was based on the official book of 2000 census data (Shanghai Population Census Office, 2002). In the book of *The Historical Statistical Materials of the National Economic and Social Development of Shanghai (1949-2000),* the registered population during census 2000 was 1321.63 (unit: 10,000). The number from the *Historical Statistical* book tends to be the same as the year-end population from the Statistical Year Book of Shanghai (2000).
e) Data from Census 2000. The total of the floating population and registered population in 2000 doesn't match with 1640.77 (unit: 10,000); 1640.77 (unit: 10,000) was kept because it was the officially published figure.

Sources: Shanghai Statistical Bureau (2001b); Shanghai Census Office (2002); Xie (2010), p.14; Jiefang Ri Bao (2011).

Table 12: The Year-end Registered Population in Millions, 1949-2010

Year	Registered Population (million)	Year	Registered Population (million)
1949	5.029	1980	11.465
1950	4.927	1981	11.628
1951	5.522	1982	11.805
1952	5.726	1983	11.940
1953	6.152	1984	12.048
1954	6.627	1985	12.167
1955	6.231	1986	12.323
1956	6.349	1987	12.495
1957	6.897	1988	12.624
1958	7.508	1989	12.765
1959	10.284	1990	12.834
1960	10.563	1991	12.872
1961	10.590	1992	12.894
1962	10.579	1993	12.947
1963	10.736	1994	12.988
1964	10.862	1995	13.014
1965	10.938	1996	13.044
1966	10.958	1997	13.055
1967	11.057	1998	13.066
1968	11.090	1999	13.131
1969	10.940	2000	13.216
1970	10.726	2001	13.271
1971	10.668	2002	13.342
1972	10.641	2003	13.418
1973	10.700	2004	13.524
1974	10.738	2005	13.603
1975	10.767	2006	13.681
1976	10.813	2007	13.789
1977	10.865	2008	13.910
1978	10.983	2009	14.007
1979	11.321	2010	14.123

Sources: Shanghai Statistical Bureau (2001, 2005-2011).

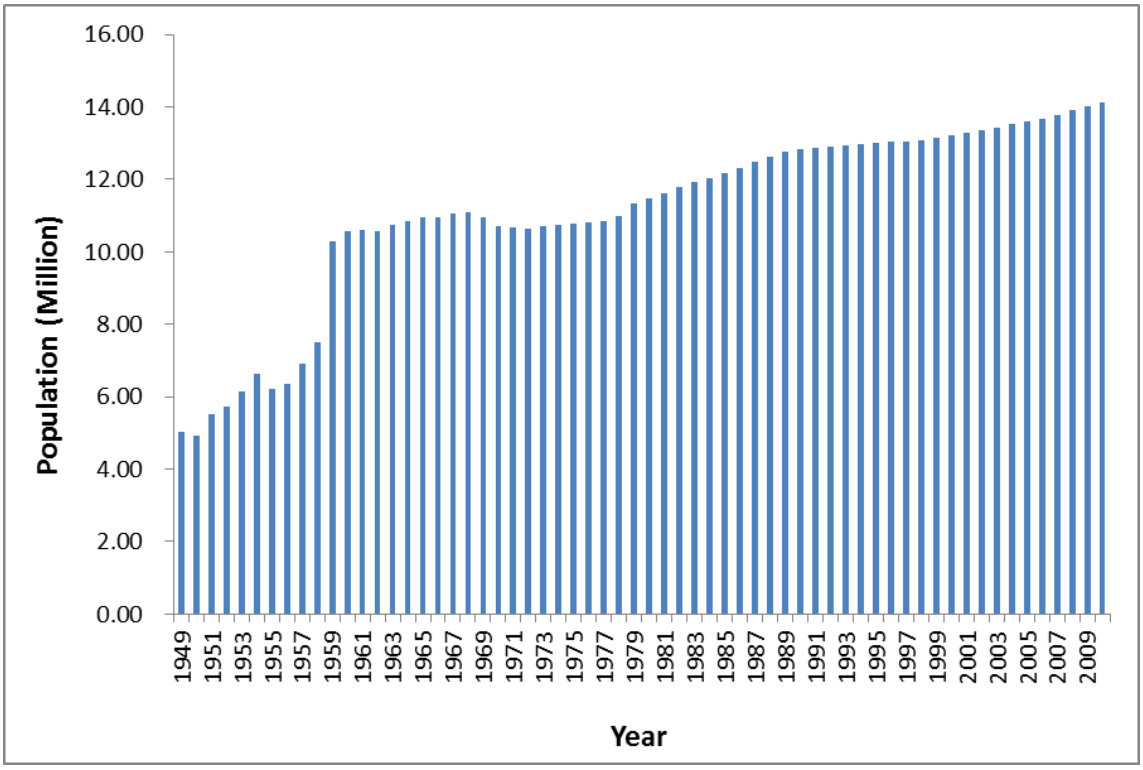


Figure 29: The year-end registered population in millions, 1949-2010.
Sources: Shanghai Statistical Bureau (2001, 2005-2011).

Chuansha, Jiading, Baoshan, Shanghai, Songjiang, Jinshan, Nanhui, Fengxian, and Chongming[11] from Jiangsu Province, which is northeast of present-day Shanghai. The impact of the boundary change on the increase of Shanghai's registered population was significant. From 1958 to 1959, the registered population increased by approximately 2.776 million, 37% of the registered population in 1958, which was the largest annual increase after 1950 (Table 13, Figure 30). During the Cultural Revolution period (1966-

Note:

11. Chuansha and Nanhhui are now part of Pudong Xin Qu. Shanghai County is now part of Minhang District. Jiading, Baoshan, Songjiang, Jinshan and Fengxian County are districts of present-day Shanghai.

Table 13: Yearly Change of the Registered Population in Shanghai, 1950-2010

Year	Percentage (%)	Year	Percentage (%)
1950	-2.0	1981	1.4
1951	12.1	1982	1.5
1952	3.7	1983	1.1
1953	7.4	1984	0.9
1954	7.7	1985	1.0
1955	-6.0	1986	1.3
1956	1.9	1987	1.4
1957	8.6	1988	1.0
1958	8.9	1989	1.1
1959	37.0	1990	0.5
1960	2.7	1991	0.3
1961	0.3	1992	0.2
1962	-0.1	1993	0.4
1963	1.5	1994	0.3
1964	1.2	1995	0.2
1965	0.7	1996	0.2
1966	0.2	1997	0.1
1967	0.9	1998	0.1
1968	0.3	1999	0.5
1969	-1.4	2000	0.6
1970	-2.0	2001	0.4
1971	-0.5	2002	0.5
1972	-0.3	2003	0.6
1973	0.6	2004	0.8
1974	0.4	2005	0.6
1975	0.3	2006	0.6
1976	0.4	2007	0.8
1977	0.5	2008	0.9
1978	1.1	2009	0.7
1979	3.1	2010	0.8
1980	1.3	–	–

Sources: Shanghai Statistical Bureau (2001, 2005-2011).

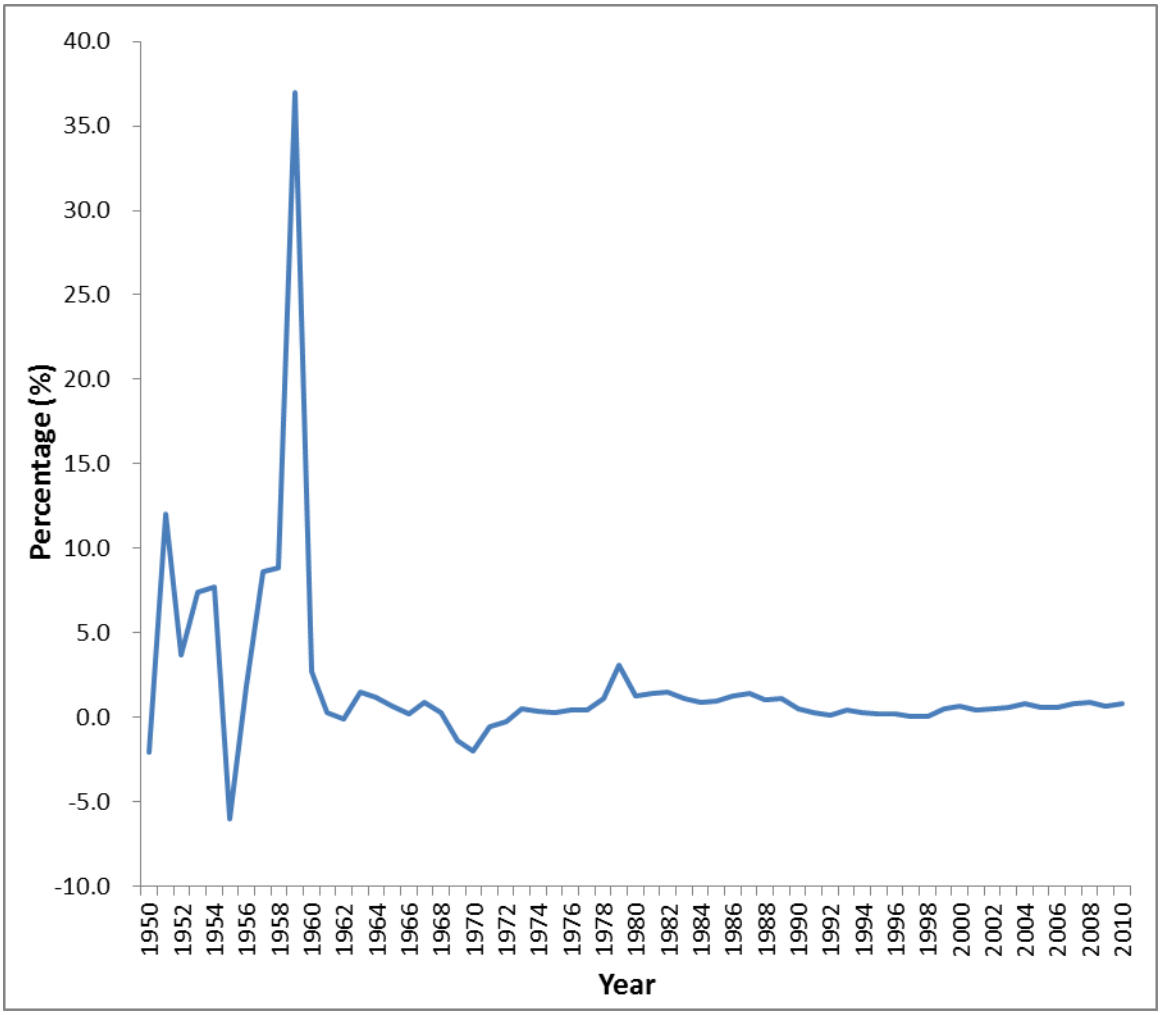


Figure 30: Yearly change of the registered population in Shanghai, 1950-2010.
Sources: Shanghai Statistical Bureau (2001, 2005-2011).

1976), from 1969 to 1972, Shanghai's registered population decreased (Figure 29 and Figure 30) due to the "rustication movement sending cadres, intellectuals, and young people to the countryside" (Liang, 2001). It was estimated that around 1.113 million people were sent to the countryside and remote areas in the period of the Cultural Revolution (Xie, 2011, p.11). The main reason people were sent to the countryside and remote areas was because the large number of people living in the city had caused a huge

burden on the grain and vegetable supply from surrounding rural areas. But following Mao's death, the annual growth rate of the registered population was stimulated from 1978 to the beginning of 1980s with the return of those people who were previously sent to the countryside and remote areas.

Population Overview in the Economic Reform Era (1978-2011)

The Pattern of Residents

Due to its historical development, there is a high concentration of residents in the central city of Shanghai. The historical foreign concession zones and Old Shanghai County had the highest population density before 1949. In the Maoist period, with the concentration of industries, the high central population density did not change. With the concept of a self-contained neighborhood unit, population mobility was reduced. Long distance commutes were discouraged since bicycles and buses were the main transportation options during the Maoist period. The purchase of private cars was not allowed until 1984. In the 1990 Census, some districts in the central city, such as Huangpu, Jing'an and Luwan, had a population density of more than 103,600 people per square mile. With the economic restructuring and land reform in the economic reform era as well as the relaxation on migration controls from the national government, the residential structure of Shanghai changed.

The transformation of state-owned and collective-owned enterprises in the economic reform era is impressive with a decline on their share of Shanghai's GDP from around 90% to 50%. Due to the economic restructuring process, there is a general

decline in the share of workers involved in state-owned and collective-owned enterprises. The dominance of state-owned enterprises is challenged by foreign invested enterprises, Hongkong, Macau and Taiwan invested enterprises, and emerging Chinese enterprises such as joint enterprises, joint-stock enterprises and private enterprises. In 1985, 99.3% of workers were either in state-owned enterprises or in collective-owned enterprises; state-owned enterprises played a dominant role with 78.4% of workers (Table 14). The percentage of workers in state-owned enterprises was close to 60% in 2000, but the percentage decreased to 21.1% in 2010. At the same time, the percentage of workers involved in collective-owned enterprises declined from 12.2% in 2000 to only 1.7% in 2010.

The process of transformation and relocation of state-owned and collective-owned

Table 14: Percentage of the Total Workforce by Ownership (Year-end), 1985-2010

Year	1985	1995	2000	2005	2010
State-owned (%)	78.4	68.9	58.8	37.0	21.1
Collective-owned (%)	20.9	17.2	12.2	5.0	1.7
Others[a)] (%):	0.7	13.9	29.1	58.0	77.2
Foreign enterprises / Hongkong, Macau and Taiwan Enterprises	-	-	14.1	17.5	18.5

Note:

a) In the 'Others' category, except for Hongkong, Macau and Taiwan enterprises and foreign enterprises (sanzi qiye) listed in the table, joint enterprises, joint-stock enterprises, companies with limited liabilities, share-holding companies with limited liabilities, private, and other are included. Sanzi qiye includes sino-foreign joint ventures, sino-foreign cooperative enterprises, and foreign-funded enterprises. Hongkong and Taiwan enterprises had a large proportion of workers in the FDI-related enterprises.

Sources: Shanghai Statistical Bureau (1986, 1996, 2001, 2006, 2011).

enterprises in the economic reform era has resulted in more than one million unemployed workers (xiagang gongren) in Shanghai (Zhang, 2008). The climax of this painful process arrived between1998 and 2001. The number of workers discharged from state-owned enterprises through early retirement, severance pay, contact termination or paying living expense is not available. Though difficult, the transition from a planned economy to a market-based economy was promoted by the state government.

Along with the transformation and relocation of state-enterprises, the relationship between workers and work units, through housing provisions, was also weakened. In 1991, the Project of Shanghai's Housing System Reforms was implemented. Since then, the allocation of physical housing was abandoned, which was replaced by a housing accumulation fund system. The housing accumulation fund system, like the social welfare system, allows workers to accumulate funding by taking a portion of their salary and paying it to the system by work units. The housing system reforms enabled individuals and families to relocate to suit their needs and wants. The location of residence is less associated with work units in the economic reform era than in the Maoist period.

The commodity housing market has been allowed since 1987. With the availability of commodity housing in the suburban districts and redevelopment of the city core, residents are moving out of the central city. Suburbanization is accelerating during the economic reform era (Zhou and Ma, 2000). In the 1990s, the districts in the core of the central city, Huangpu, Luwan and Jing'an, started to decline in population numbers. From 1990 to 2000, the three districts lost about 692,000 residents, while the population

of other districts in the central city (urban fringe districts) increased by about 926,000 in the same period, which resulted in an overall increase of 234,000 residents in the central city (Li and Ning, 2007). The districts in the inner suburbs had the greatest increase in population (around 2.68 million[12]) during the same time compared to the districts in the central city and the outer suburbs. The districts in the outer suburbs gained about 302,000 residents.

The pattern of population growth in the period between 2000 and 2010 is similar to that in the period between 1990 and 2000 (Figure 31). The core central city experienced a population loss of 283,000 from 2000 to 2010. With a population gain of 339,000 in the urban fringe districts, the central city still gained 56,000 residents in the period between 2000 and 2010. The districts in the inner suburbs gained 4.46 million residents in the same period, and the districts in the outer suburbs gained 2.09 million residents. Compared to the population growth in the period between 1990 and 2000, from 2000 to 2010, the population loss in the core of the central city slowed down. The extent of population gain in the inner suburbs and outer suburbs was much larger than the central city; also, the districts in the outer suburbs attracted residents seven fold more than they had attracted in the 1990s. The core of the central city, districts of Huangpu, Jing'an and Luwan, experienced significant population loss as demonstrated by the 2000

Note:

12. This value was adjusted by adding the population gain of Nanhui County (Nanhui District after 2000) to 2.6 million, which was stated in Li and Ning (2007) for the population gain of the inner suburban districts. The population gain of 302 thousand for the outer suburban districts was an adjusted value from Li and Ning (2007). Nanhui County was combined into Pudong Xin Qu in 2009.

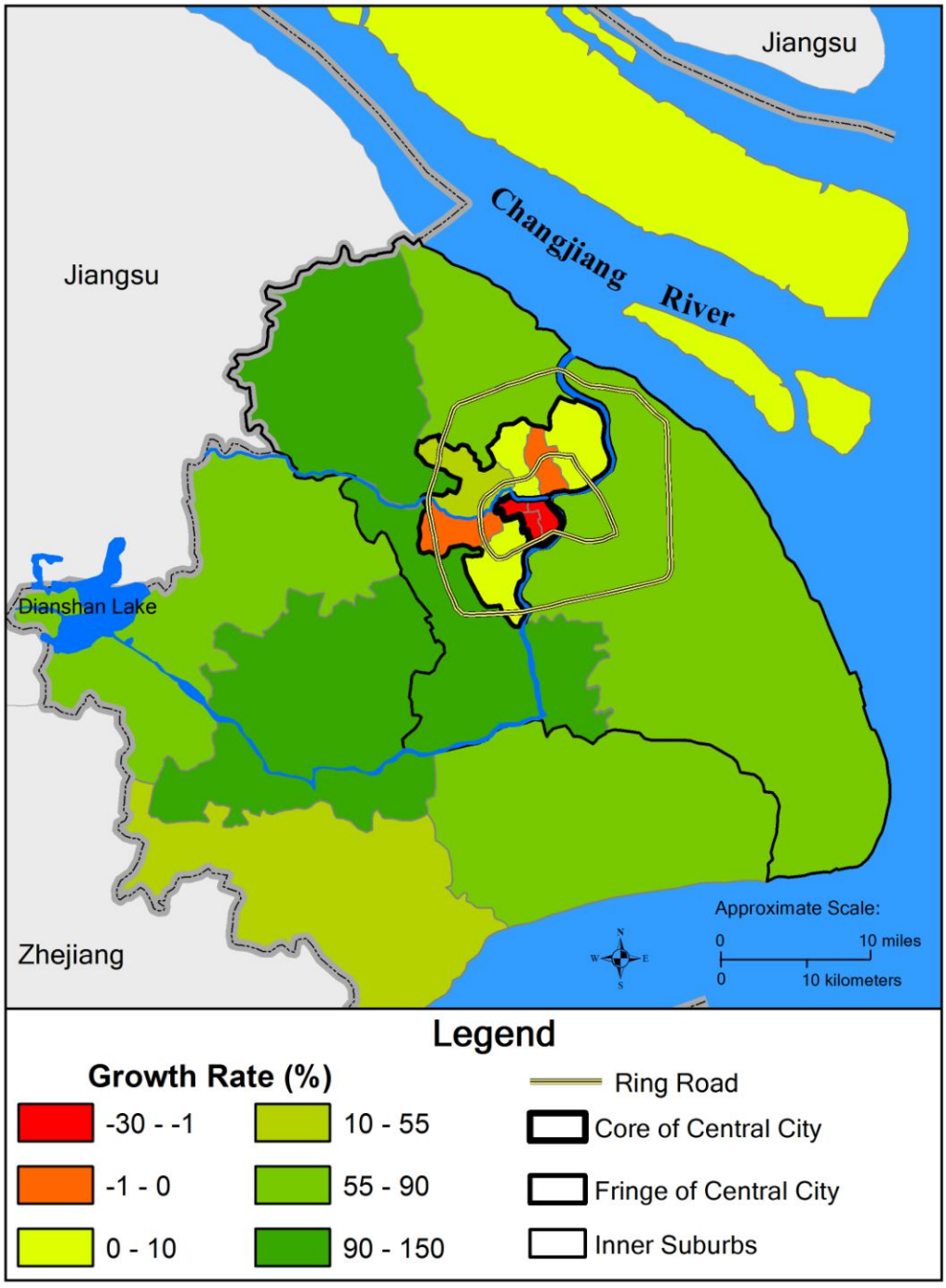


Figure 31: The growth rates of residents in percentage by districts in 2010 compared to 2000.
Sources: Shanghai Census Office (2002); Jiefang Ri Bao (2011). Created by: Author (2011).

and 2010 Census results. The percentage population loss in Huangpu from 2000 to 2010 was 25.2%, in Jing'an it was 19.2%, and in Luwan it was 24.4%. In the central city, Channing and Hongkou, also experienced population loss. In general, the growth rate of the central districts was smaller than that of the inner and outer suburban districts; the inner suburban districts experienced more population growth than the outer suburban districts. The inner suburban districts, such as Minghang and Jiading, had growth rates as high as 99.6% and 95.4%. Although Songjiang is located in the outer suburban area, it had the highest growth rate at 146.8%. The percentage of residents in the inner suburban districts was the highest in 2010, followed by the central districts and outer suburban districts (Table 15). In 2000, the percentage of residents in the central districts was the highest (Table 15).

Table 15: The Percentage of Residents by Three Geographic Zones in 2000 and 2010

Districts by Geographic Zones	Residents Census2000	Percentage of Total (%)	Residents Census2010	Percentage of Total (%)
Total	16,407,734	100	23,019,148	100
Central City	6,930,439	42.2	6,986,214	30.3
Inner Suburbs	6,385,802	38.9	10,849,919	47.1
Outer Suburbs	3,091,493	18.8	5,183,015	22.5

Note: The central city includes districts of Huangpu, Luwan, Jing'an, Changning, Hongkou, Xuhui, Putuo, Zhabei and Yangpu. The inner suburbs include districts of Pudong Xin Qu, Minhang, Jiading and Baoshan. Songjiang, Jinshan, Qingpu, Fengxian Districts and Chongming County are in the outer suburbs.
Sources: Shanghai Census Office (2002); Jiefang Ri Bao (2011).

The concentration of population in the inner suburban districts is related to the distribution of secondary and tertiary sector businesses (Table 16). In 2008, 36.7% of the establishments were located in the inner suburbs, 34.3% in the central districts, and 27.8% in the outer suburbs. The inner suburban districts employed 41.9% of the workforce in 2008, which was the highest among the districts in the three geographic zones. Residents are attracted to inner suburbs because of the availability of commercial housing and greater job opportunities. Employing 52.8% of the total work force, the tertiary sector employed more workers than did the secondary sector in 2008 (Table 8). Industry had the highest percentage of employees with approximately 37.3% of the total. The retail and wholesale, construction, leasehold and business in services, transportation, and warehousing and post industries, employed the second highest percentage of the total workforce (Table 8). In 2008, about 68% of all employees had an education level of high school or below, and 40% had an education level of middle school or below (Figure 32). The higher concentration of employees in lower-skilled industries, such as the manufacturing industry in the secondary sector, is explained by the higher percentage of employees with less education.

Although there is a trend of residents moving out of the central city, the population density of the central districts remains highest compared to those of districts in the inner suburbs and outer suburbs in 2010 (Table 17). Among the central districts, Hongkou had the highest population density of 94,033 people per square mile. The districts of Huangpu, Luwan, and Jing'an had a population density of more than 80,000 people per square mile and Changning had the lowest population density with 46,699

Table 16: The Second Economic Census of Shanghai, 2008

			Establishments [a] (10,000)	Percentage (%) of Total	Percentage (%) by Geographic Zones	Employees (10,000)	Percentage (%) of Total	Percentage (%) by Geographic Zones
Geographic Zones		Total	41.7[b]	98.8	98.8	1041.5	100.0	100.0
Central City	Core	Huangpu	1.6	3.8	34 .3	43.3	4.2	34.4
		Luwan	0.8	1.9		21.7	2.1	
		Jing'an	1.1	2.6		29.7	2.9	
	Fringe	Changning	1.8	4.3		42.9	4.1	
		Hongkou	1.6	3.8		39.5	3.8	
		Xuhui	2.7	6.5		67.9	6.5	
		Putuo	1.7	4.1		46.5	4.5	
		Zhabei	1.4	3.4		30.3	2.9	
		Yangpu	1.6	3.8		36.5	3.5	
Inner Suburbs		Pudong Xin Qu	5.9	14.1	36.7	207.5	19.9	41.9
		Minhang	2.9	7.0		88.9	8.5	
		Baoshan	2.4	5.8		60	5.8	
		Jiading	4.1	9.8		79.8	7.7	
Outer Suburbs		Songjiang	3.9	9.4	27.8	82	7.9	23.7
		Jinshan	2.1	5.0		44.7	4.3	
		Qingpu	2.5	6.0		54.9	5.3	
		Fengxian	2.5	6.0		49.3	4.7	
		Chongming	0.6	1.4		16	1.5	

Notes: a) The establishments in the secondary and tertiary sector are included; b) This number doesn't match with the sum of all the establishments in districts due to the way data was reported. Source: Shanghai Statistical Bureau (2010b).

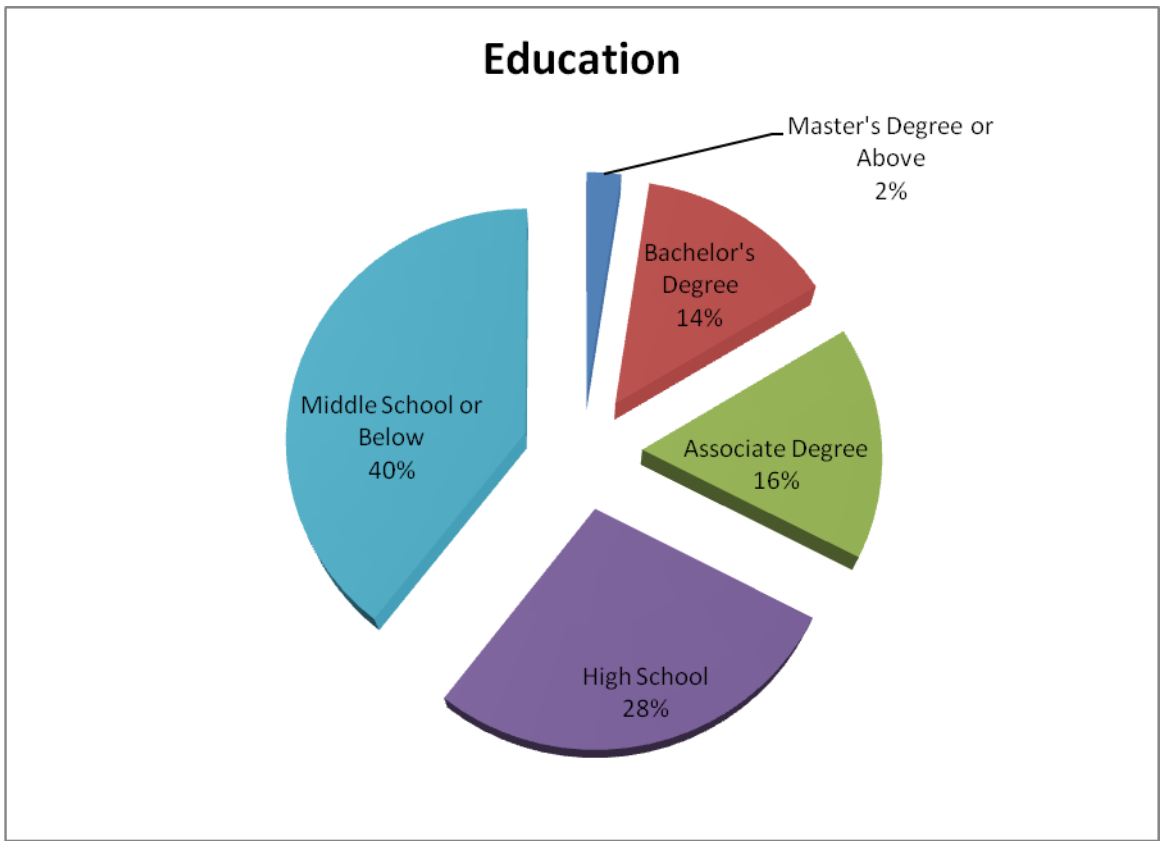


Figure 32: The education of employees, 2008.
Source: Shanghai Statistical Bureau (2010b).

people per square mile. With the highest population densities, Hongkou, Huangpu, Luwan and Jing'an experienced population loss from 2000 to 2010 (Figure 31). In the inner suburbs, Baoshan had the highest population density of 18,206 people per square mile, followed by Minhang and Pudong Xin Qu. The population density of the districts in the outer suburbs was lower than the average population density of Shanghai. In general, the gradient of population densities by district corresponds to the three geographic zones: the central city, the inner suburbs and the outer suburbs, from highest population density to lowest (Figure 33).

Table 17: Population Density of Districts in Shanghai, 2010

			Census2010	Area (mile^2)	Population Density (people/ mile^2)
Geographic Zones		Total	23,019,148	2448.08	9,403
Central City	Core	Huangpu	429,891	4.79	89,719
		Luwan	248,779	3.11	80,042
		Jing'an	246,788	2.94	83,882
	Fringe	Changning	690,571	14.79	46,699
		Hongkou	852,476	9.07	94,033
		Xuhui	1,085,130	21.14	51,323
		Putuo	1,288,881	21.17	60,882
		Zhabei	830,476	11.30	73,511
		Yangpu	1,313,222	23.45	56,006
Inner Suburbs		Pudong Xin Qu	5,044,430	467.34	10,794
		Minhang	2,429,372	143.15	16,971
		Baoshan	1,904,886	104.63	18,206
		Jiading	1,471,231	179.23	8,209
Outer Suburbs		Songjiang	1,582,398	233.84	6,767
		Jinshan	732,410	226.28	3,237
		Qingpu	1,081,022	258.74	4,178
		Fengxian	1,083,463	265.40	4,082
		Chongming	703,722	457.72	1,537

Sources: Jiefang Ri Bao (2011); Shanghai Statistical Bureau (2011).

The Pattern of the Floating Population

After the economic reforms in 1978, the relaxation on the control of rural to urban migration by the state government has allowed the influx of migrants to Shanghai. In addition, the food and oil ration system, associated with the registered household status in the city, was abandoned. From 1982 to 1990, the floating population increased from 55,000 to 508,000, an increase of 453,000 and an approximate 823.64% growth. The

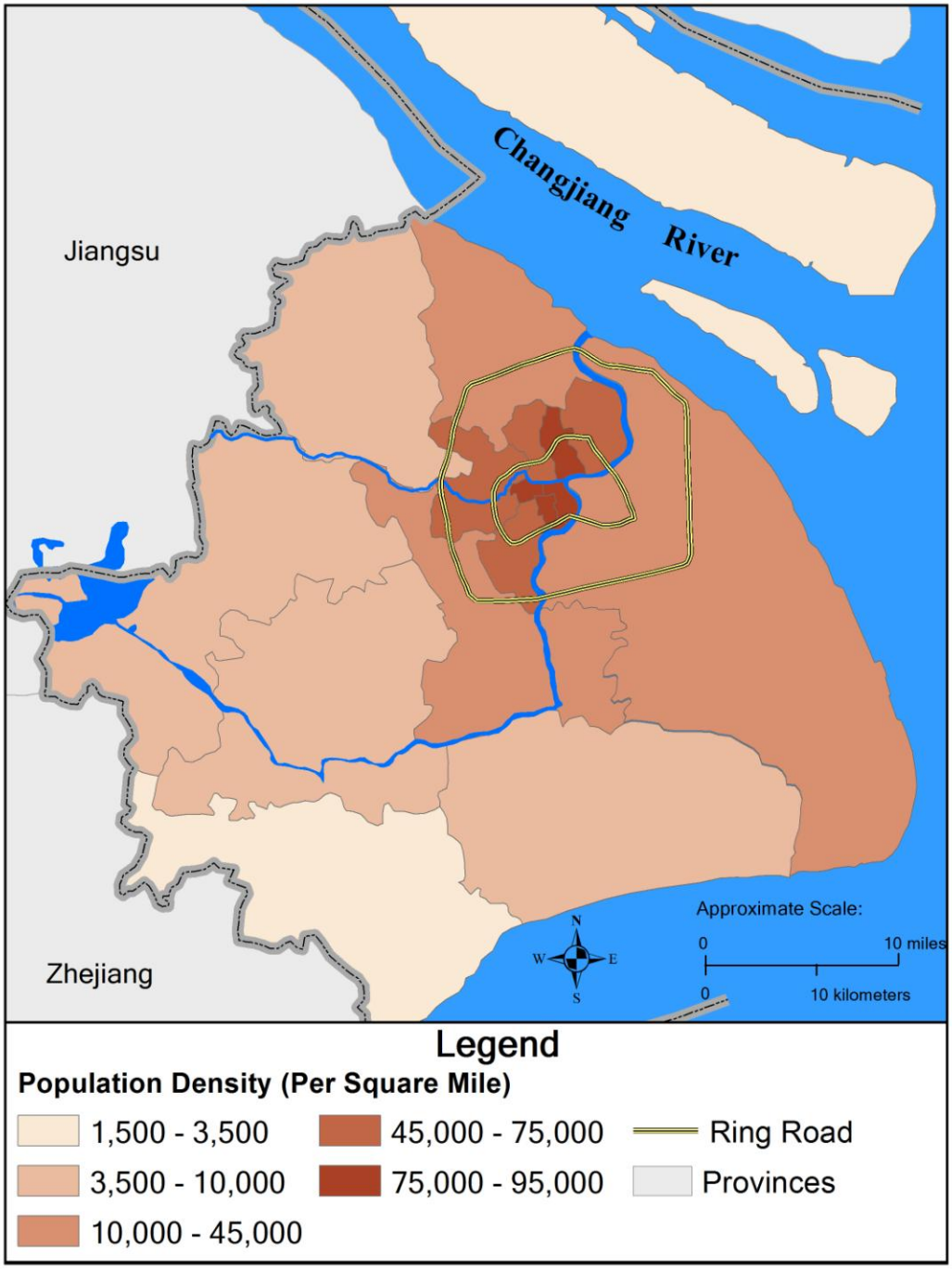


Figure 33: Population density of total residents by districts in 2010.
Sources: Jiefang Ri Bao (2011); Shanghai Statistical Bureau (2011). Created by: Author (2011).

floating population in Census 2010 was 8.977 million compared to 3.872 million in Census 2000, an increase of 5.105 million or a 132% growth in ten years. Since the census data before and after 1990 are not comparable due to the change of criterion on counting the floating population, it is impossible to calculate the percentage growth of population from 1980 to 2000. However, the trend of the floating population's increasing share to the total population is clearly identified: 0.5% in 1982, 3.8% in 1990, 23.6% in 2000, and 39.0% in 2010. In April 1994, the Blue Stamp Household policy was enacted, which intended to stimulating commercial housing purchases and foreign and domestic investment in Shanghai. For migrants with housing in Shanghai, if one invested a certain amount of money (200,000 U.S. dollars for Taiwan, Hong Kong, Macao, and foreign investors; 1million Chinese Yuan for Chinese investors) or was hired by a local enterprise for at least three years, one could apply for a blue stamp household, thus enjoy the benefits of child-education, health care and welfare. After five years, migrants with a blue stamp household could apply to be a Shanghai resident. The strict requirements of holding a blue stamp household didn't stop migrants' eager to be Shanghai residents. In fact, the Blue Stamp Household Policy was terminated in 2002 due to applications far exceeding the number of blue stamp households allowed each year.

In the 1980s, migration to Shanghai was mainly related to social incentives, such as visiting relatives, marriage, and school, but shifted to employment and business in the 1990s (Xie, 2010, p.156). Migration change since 1984 was a direct response to the state government's relaxation on migration controls and the economic reforms in Shanghai.

In the 1980s and 1990s, the percentage of the floating population in the central city and outer suburbs declined, with the highest population increase in the inner suburbs (Table 18, Figure 34). A suburbanization trend was identified during this period. From 2000 to 2010, the percentage of the floating population in the central city dropped from 33.6% to 19.3%, while the percentage in the inner suburbs grew from 50.79% to 53.72% and 15.6% to 26.9% in the outer suburbs (Table 19). The outer suburbs experienced the greatest population increase from 2000 to 2010. During this period, Songjiang and Fengxian in the outer suburbs had the highest population growth of 392.2% and 303.8% (Figure 35). Although the growth rates of districts in the inner suburbs were smaller than those of districts in the outer suburbs, all the districts in the suburban area experienced more than 100% growth from 2000 to 2010 (Figure 35). The districts in the central city had the lowest growth rates, yet they experienced population gains. Changning, Luwan, and Xuhui had the lowest growth rates (7.8%, 11.3% and 20%); very low compared to growth rates in the suburban districts. With the fast growth

Table 18: Distribution of the Floating Population, 1984-1997

Year	Central City (%)	Inner Suburbs (%)	Outer Suburbs (%)
1984	37.6	26.8	35.6
1986	39.6	41	19.4
1988	26.1	51.9	22
1993	15.4	65.4	19.2
1997	25.4	56.3	18.3

Note: the percentage values by the three geographic zones were estimated in order to present a general trend.
Adapted from Xie (2010) and Zhang (1999).

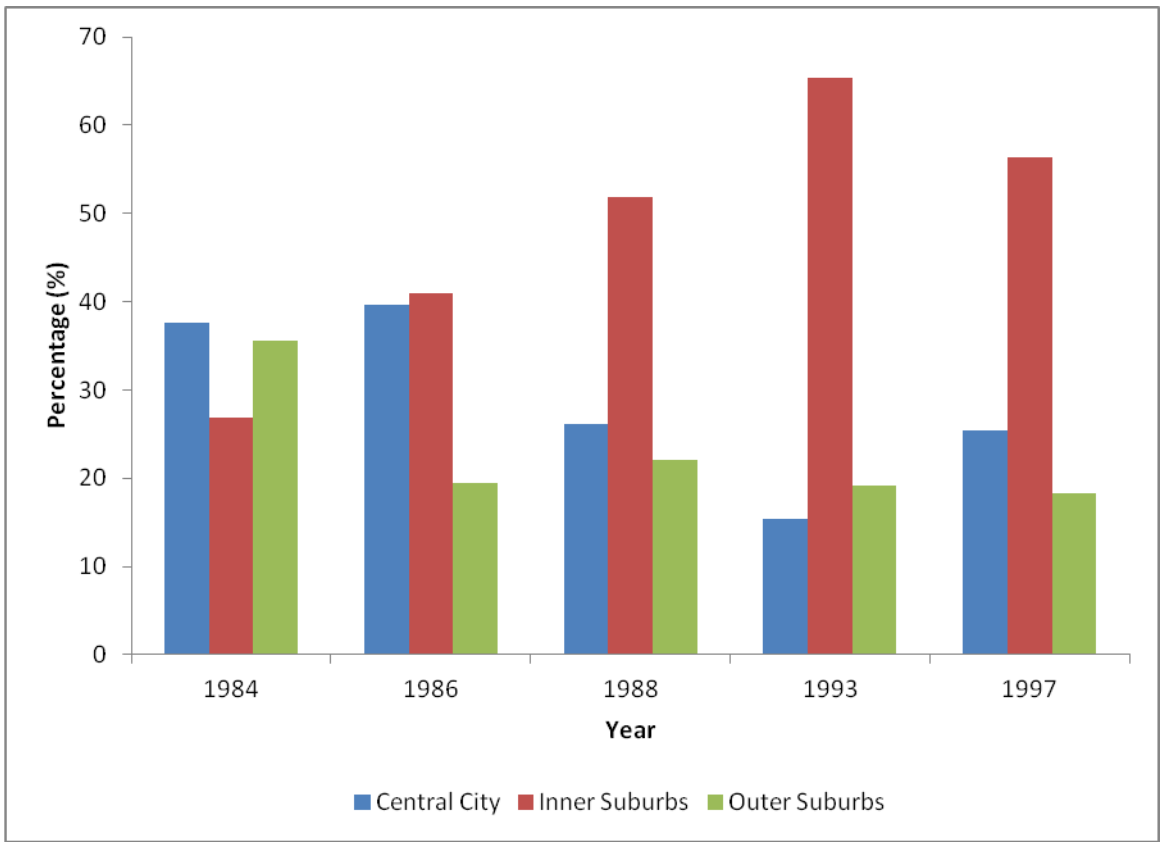


Figure 34: Distribution of the floating population, 1984-1997.
Adapted from Xie (2010) and Zhang (1999).

of the floating population in the suburban districts, Pudong Xin Qu, Minhang, and Songjiang had the largest migrant population in 2010 (Figure 36). The fast growth of the floating population in Shanghai resulted in a phenomenon where the floating population outnumbered the registered population in some districts, such as Songjiang, Jiading, and Qingpu (Table 20, Figure 37).

Based on Census 2010, about 80% of the floating population is from provinces of Anhui, Jiangsu, Zhejiang, Henan, Jiangxi and Sichuan (Figure 38). Migrants from Shanghai's surrounding provinces of Anhui and Jiangsu were the majority groups, contributing 46% of the total floating population in Shanghai.

Table 19: Population Change from 2000 to 2010

Geographic Zones	Name	Census2000			Census2010		
		Population (10,000)	Percentage to Total Migrants (%)	Percentage by Geographic Zones (%)	Population (10,000)	Percentage to Total Migrants (%)	Percentage by Geographic Zones (%)
Central City	Huangpu	9.43	2.44	33.60	13.25	1.48	19.30
	Luwan	4.85	1.25		5.40	0.60	
	Jing'an	4.64	1.20		5.72	0.64	
	Changning	16.27	4.20		17.54	1.95	
	Hongkou	14.38	3.72		19.61	2.18	
	Xuhui	23.31	6.02		27.95	3.11	
	Putuo	23.11	5.97		36.30	4.04	
	Zhabei	14.40	3.72		20.00	2.23	
	Yangpu	19.68	5.08		27.53	3.07	
Inner Suburbs	Pudong Xin Qu	85.70	22.14	50.79	202.43	22.55	53.72
	Minhang	48.10	12.42		120.37	13.41	
	Baoshan	37.44	9.67		76.61	8.53	
	Jiading	25.40	6.56		82.82	9.23	
Outer Suburbs	Songjiang	19.05	4.92	15.60	93.74	10.44	26.98
	Jinshan	6.08	1.57		20.11	2.24	
	Qingpu	16.82	4.35		60.50	6.74	
	Fengxian	13.06	3.37		52.72	5.87	
	Chongming	5.40	1.40		15.10	1.68	

Sources: Shanghai Census Office (2002); http://shzw.eastday.com/shzw/G/20110926/userobject1ai60714.html.

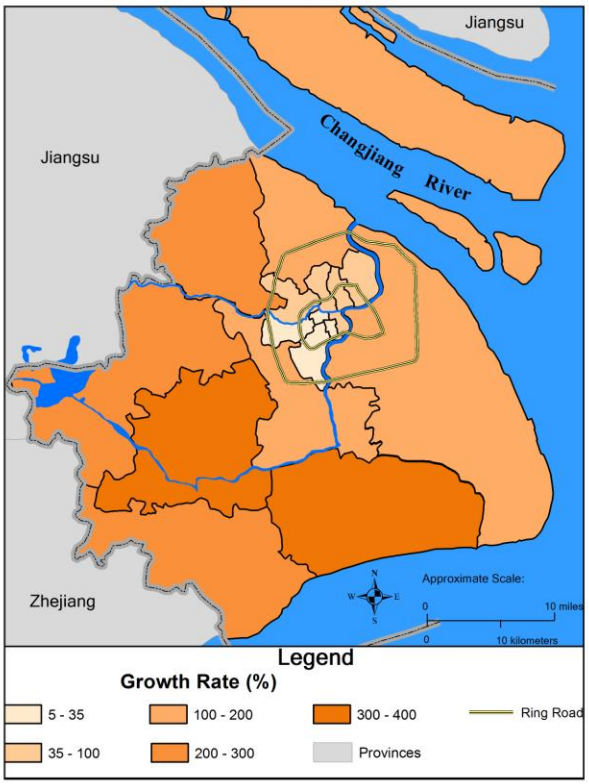


Figure 35: The growth of the floating population in percentage from 2000 to 2010. Sources: Shanghai Census Office (2002); http://shzw.eastday.com/shzw/G/22011092/userobject1ai60714.html. Created by: Author (2012)

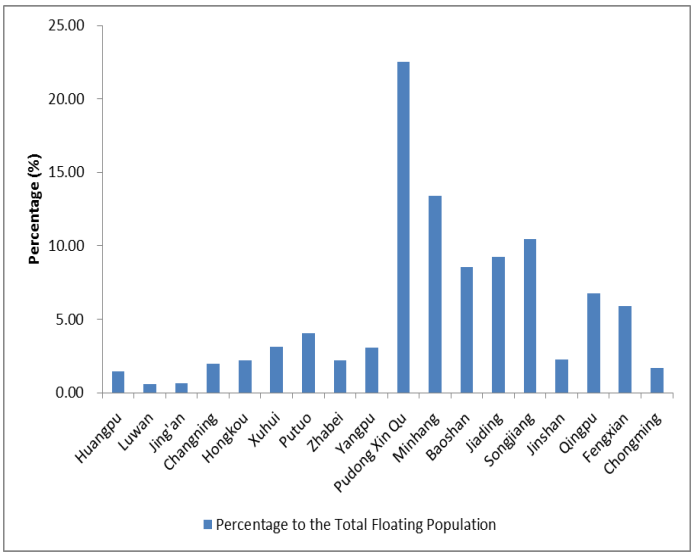


Figure 36: The percentage of the floating population in each district to the total floating population in Shanghai, 2010.
Source: http://shzw.eastday.com/shzw/G/20110926/userobject1ai60714.html.

Table 20: The Percentage of the Floating Population to the Registered Population in Each District, 2010

Name	Floating Population (10,000)	Registered Population (10,000)	Percentage (%)
Huangpu	13.25	29.72	44.58
Luwan	5.40	19.47	27.73
Jing'an	5.72	18.94	30.20
Changning	17.54	51.52	34.05
Hongkou	19.61	65.61	29.89
Xuhui	27.95	80.56	34.69
Putuo	36.30	92.57	39.21
Zhabei	20.00	63.04	31.73
Yangpu	27.53	103.76	26.53
Pudong Xin Qu	202.43	302.25	66.97
Minhang	120.37	122.72	98.09
Baoshan	76.61	113.93	67.24
Jiading	82.82	64.36	128.68
Songjiang	93.74	64.57	145.18
Jinshan	20.11	53.13	37.85
Qingpu	60.50	47.67	126.91
Fengxian	52.72	55.68	94.68
Chongming	15.10	55.24	27.34

Sources: Shanghai Statistical Bureau (2011); http://shzw.eastday.com/shzw/G/20110926/userobject1ai60714.html.

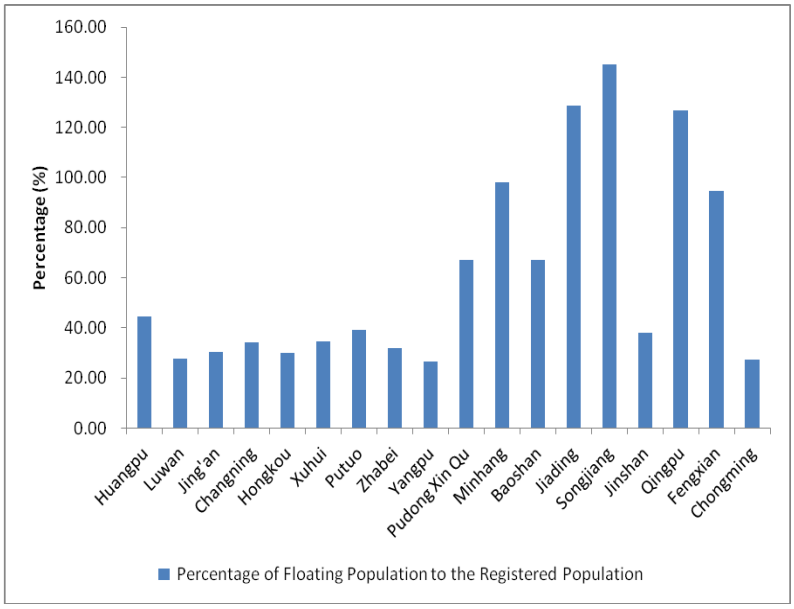


Figure 37: The percentage of the floating population to the registered population in each district, 2010.
Sources: Shanghai Statistical Bureau (2011); http://shzw.eastday.com/shzw/G/20110926/userobject1ai60714.html.



Figure 38: Map of origins of the floating population in Shanghai in percentage, 2010.
Sources: ESRI; http://www.stats-sh.gov.cn/sjfb/201203/239823.html. Created by: Author (2012).

Urban Renewal and the "One City, Nine Towns" Plan-Processes of Residential Relocation

Due to the historical development of Shanghai, the population densities in the city proper were the highest, especially in districts like Huangpu, Luwan and Jing'an. During Japanese Invasion War (1937-1945) and Civil War (1946-1949), many buildings were destroyed. Refugees in Shanghai built shacks above the ruins and slum areas gradually formed. The traditional lane houses (A dominant type of housing in Shanghai before 1949, which was derived from the 1800s) and shacks contributed to 70% of Shanghai's housing in the early 1950s. Over the years, the majority of lane houses became slum housing as well, due to the lack of maintenance. During the Maoist period, efforts were made to redevelop the slum areas, but the extent of redevelopment was small because of the lack of funding. At that time, the funding was from the state government. Since 1978, land and housing reforms have brought opportunities to Shanghai's urban development. Additionally, the establishment of the Pudong Xin Qu development zone has transformed Shanghai as an economic center, and it "heightens the demand for prime-site land in the Puxi Region" (Chan, 1996, p.311). Land leasing (a lease of land use rights for a long period of time, around 50 years) was a common way of raising funding in redevelopment projects. The creation of the real estate market attracted domestic and foreign developers and they contributed to urban renewal. There were three ways of redeveloping slum areas (Chan, 1996, p.314). For areas in the commercial center, residents were resettled to make room for the development of higher land-value businesses, such as commerce and finance. The second method was the on-site redevelopment, which built new residential

buildings based on planning standards and regulations. The third method relocated residents to vacant land to address for the city's need for infrastructure and facilities. The extent of residential relocation in the central city in the early 2000s was larger; compared to 2010, there were more households relocated in 2000. Huangpu and Luwan Districts, which experienced the largest population loss from 2000 to 2010, had the largest amount of households relocated in 2000 (Figure 39).

While urban renewal was occurring in the central city, the municipal government also incorporated the development of nine "new towns" in the suburbs to attract population. Each district or county had a planned town. The "new towns" as planned are distinctive to each other in style. Taking examples from domestic and foreign cities, towns with Chinese, English, Germany, Italian, American, Dutch and Spanish styles were built (Beech, 2005). Foreign developers were involved in some of the development projects. Some towns are too similar to western towns to tell the difference. For example, the Songjiang New Town resembles the Thames Town from the Great Britain (Figure 40). Although the "new towns" were planned to absorb population from the central city, the lack of public facilities, retail businesses, and public transportation as well as high purchase costs has resulted in low occupancy rate in these towns. Songjiang New Town has become a popular place for wedding photography.

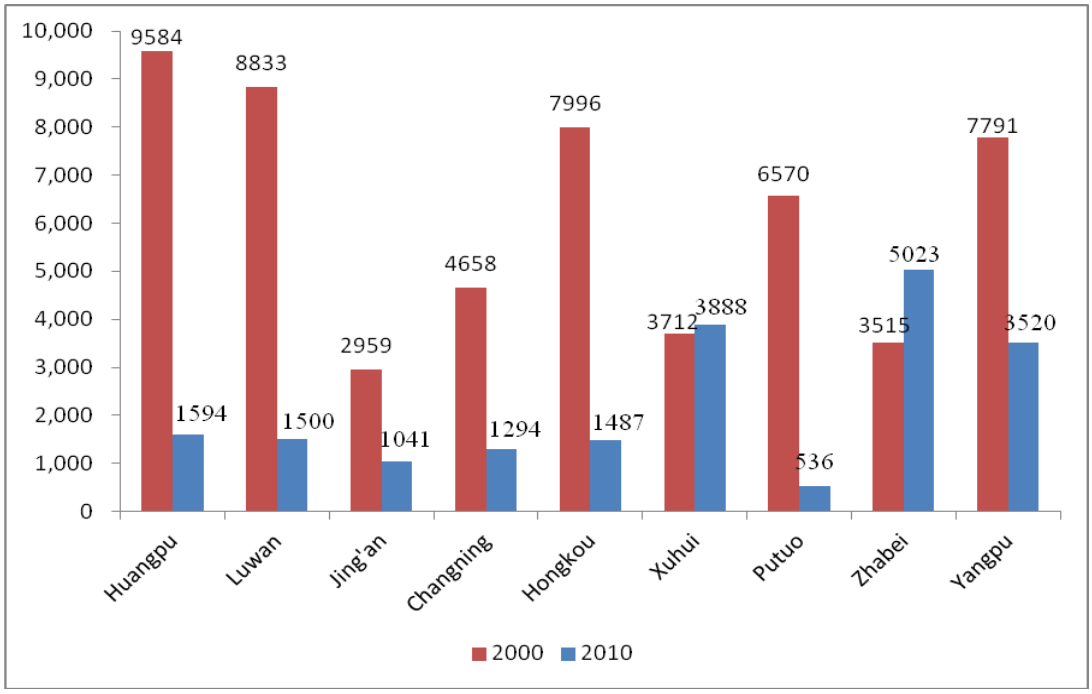


Figure 39: The number of households resettled in the central city, 2000 and 2010.
Sources: Shanghai Statistical Bureau (2001 and 2011).

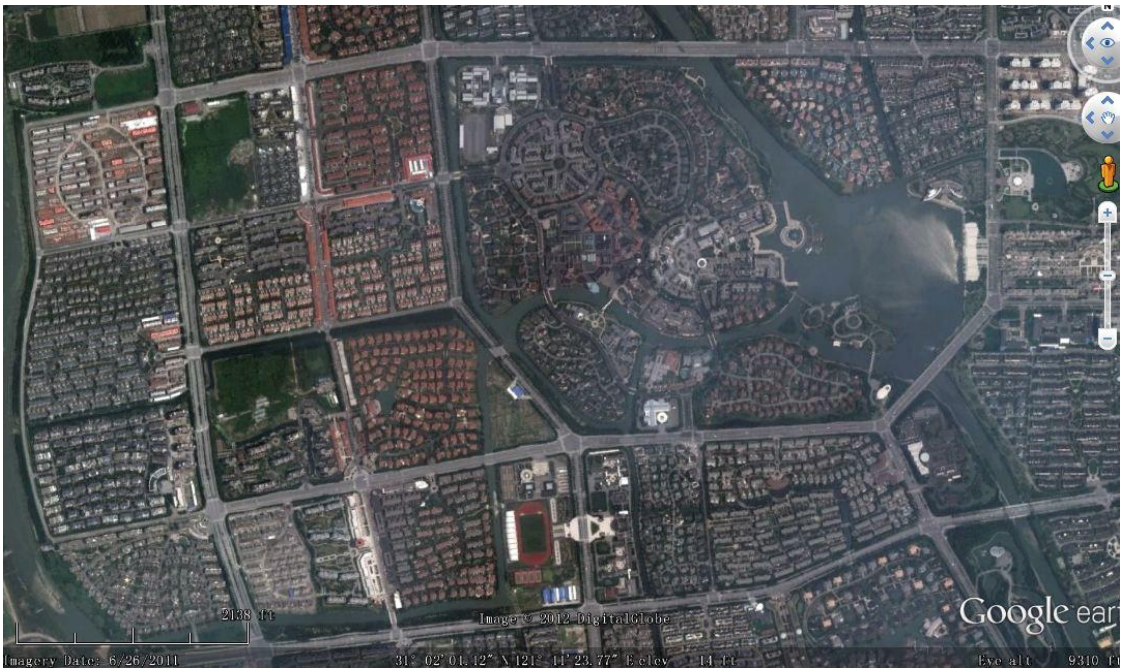


Figure 40: An English Thames Town in Shanghai.
Source: Google Earth (2011).

CHAPTER FIVE: THE URBAN LANDSCAPE OF SHANGHAI IN THE ECONOMIC REFORM ERA

Throughout Shanghai's history, it has spread out from Old Shanghai County. Until the early 1990s, the area of Shanghai's districts was relatively small compared to the area of counties; from 1991, a series of administrative adjustments were promoted to upgrade counties to districts in the vicinity of Shanghai (Figure 41). District areas increased from 31.81 square miles in 1949 to 1989.83 square miles in 2010 (Table 21). Conversely, the area of counties decreased significantly since the total area of Shanghai did not change much from 1958 to 2010. During development, residential land use played a dominant role, followed by industrial land use (Table 22, Figure 42). The decrease in residential land use during the Maoist period (1949-1976) was caused by a focus on industrialization; at the same time industrial land use increased. Since the economic reforms of 1978, residential land use has increased due to the municipal government's attention to improving the living quality of residents. Construction of commercial housing also increased. The decrease in residential land use after 2000 was caused by increasing industrial land uses, such as industrial parks. From 1950 to 2010, commercial land use (offices, retail shops, hotels, etc.) was around 10% of the total land area in Shanghai.

To encourage city sprawl since 1984, when Shanghai was designated as an "open coastal city", the municipal government annually invested a large amount of money in infrastructure (Figure 43). Compared to an investment of RMB 6 billion from 1950 to 1978, in 2010 the municipal government alone invested RMB 149.7 billion (Table 23).

Through the years, a subway system was developed, with over 400 kilometers (246 miles) of total length, serving the city proper, inner suburbs, and Songjiang District in the outer suburbs (Figure 44). The subway system plays an important role in people's daily commute; in 2010, the number of passengers per day reached over 6 million. In addition to the subway system, Shanghai also developed a transportation network consisting of roads, highways, light rail, railroads, and air travel. The development of a transportation network facilitates suburbanization and connects Shanghai to other places across China and the world.

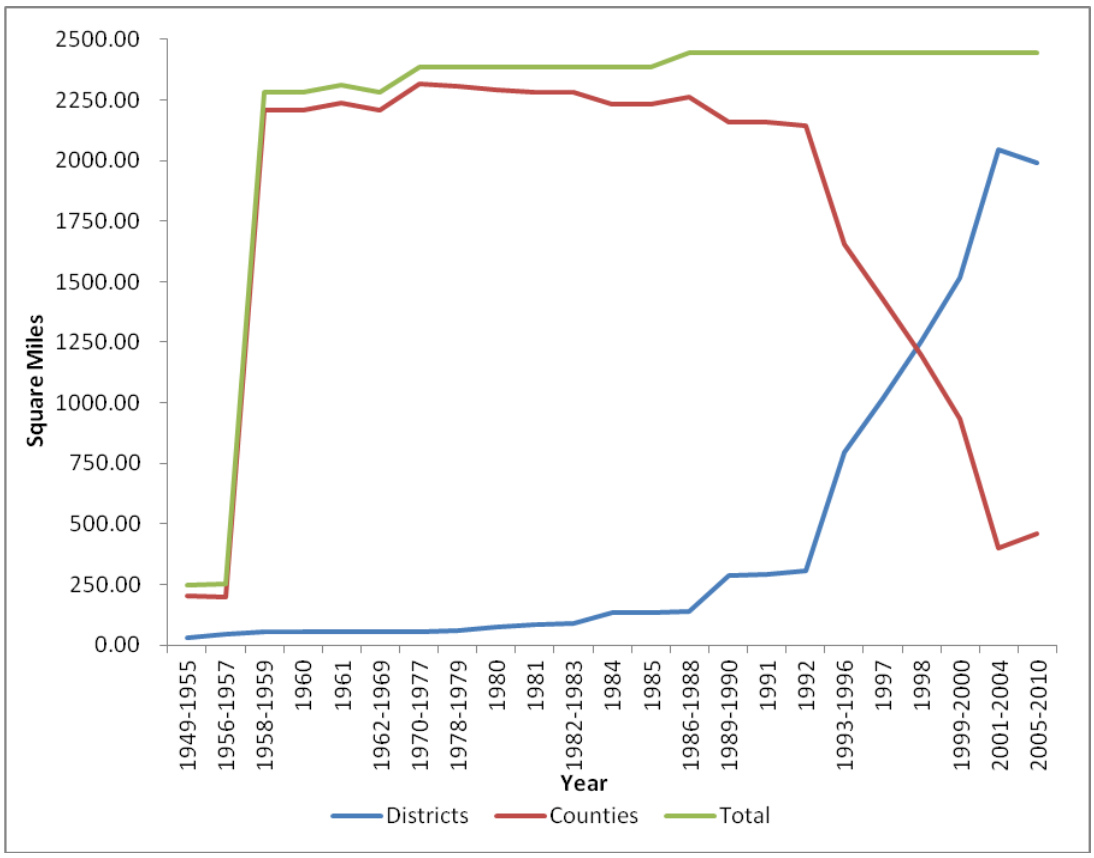


Figure 41: The area of districts and counties in Shanghai, 1949-2010.
Sources: Shanghai Statistical Bureau (2001b, 2002-2011).

Table 21: The Area of Districts and Counties in Shanghai, 1949-2010

Year	Districts	Counties	Total
	$mile^2$		
1949-1955	31.81	204.36	245.57
1956-1957	44.99	198.23	252.62
1958-1959	55.89	2207.18	2281.26
1960	54.37	2208.70	2281.26
1961	54.37	2237.65	2310.21
1962-1969	54.37	2208.70	2281.26
1970-1977	54.37	2315.03	2387.60
1978-1979	61.20	2308.20	2387.60
1980	75.95	2293.46	2387.60
1981	86.04	2283.86	2388.09
1982-1983	88.86	2280.65	2387.70
1984	134.72	2234.79	2387.70
1985	135.52	2233.98	2387.70
1986-1988	136.44	2263.96	2447.43
1989-1990	289.00	2158.43	2447.43
1991	289.49	2157.94	2447.43
1992	305.92	2141.52	2447.43
1993-1996	794.01	1653.43	2447.43
1997	1020.22	1427.21	2447.43
1998	1254.00	1193.43	2447.43
1999-2000	1514.76	932.68	2447.43
2001-2004	2045.53	401.91	2447.43
2005-2010	1989.83	457.60	2447.43

Note: from 1949 to 1988, the area of water bodies were not included in the total area of Shanghai.
Sources: Shanghai Statistical Bureau (2001b, 2002-2011).

Table 22: The Percentage of Different Land Uses in Districts of Shanghai, 1950-2010

Year	Total	Housing	Factories	Offices	Retail Shops	Hotels
	(%)					
1950	100	50.45	22.00	4.90	6.94	0.50
1955	100	51.98	21.49	4.79	6.78	0.48
1960	100	58.67	20.23	3.87	4.67	0.32
1965	100	55.98	21.63	3.82	4.97	0.35
1970	100	54.41	23.62	3.51	4.83	0.45
1975	100	47.38	29.41	2.69	2.69	0.65
1980	100	48.20	28.97	3.69	2.66	0.59
1985	100	50.55	27.33	3.34	2.34	0.57
1990	100	51.58	27.94	3.47	2.34	1.37
1995	100	53.89	25.22	4.32	2.54	1.27
2000	100	61.00	16.78	7.06	3.48	1.10
2005	100	59.20	17.96	6.76	5.06	0.97
2010	100	55.99	19.99	6.87	5.93	0.94

Sources: Shanghai Construction Editorial Office (1989, 1991); Chen, et al. (2001); Shanghai Statistical Bureau (2006, 2011).

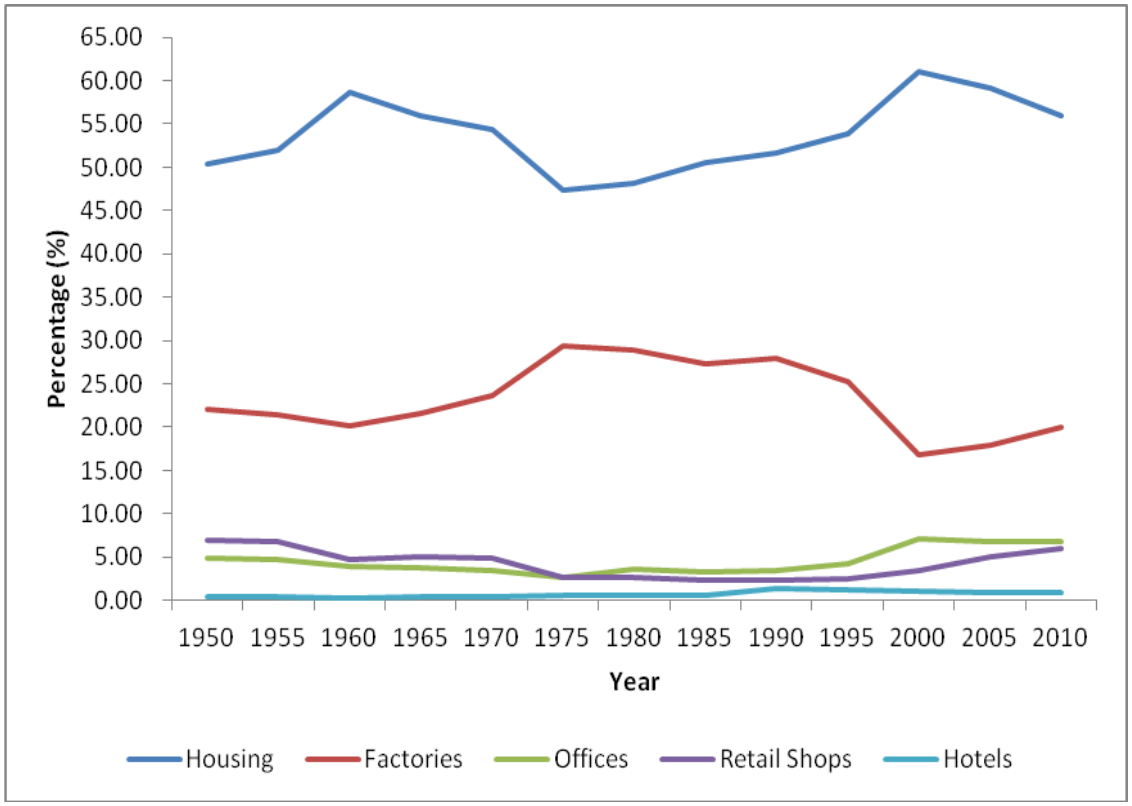


Figure 42: The percentage of different land uses in districts of Shanghai. 1950-2010.
Note: Housing, factories, offices, retail shops and hotels in the legend refer to different types of land uses: residential land use (housing), industrial land use (factories), and commercial land use (offices, retail shops and hotels). Factories are counted in manufacturing industries.
Sources: Shanghai Construction Editorial Office (1989, 1991); Chen, et al. (2001); Shanghai Statistical Bureau (2006, 2011).

Table 23: Infrastructure investment in Shanghai, 1950-2010

Year	Infrastructure Investment (RMB billion)
1950-78	6.0
1979	0.6
1980	1.0
1981	0.8
1982	0.7
1983	0.8
1984	1.0
1985	2.3
1986	2.5
1987	3.3
1988	3.7
1989	3.6
1990	4.7
1991	6.1
1992	8.4
1993	16.8
1994	23.8
1995	27.3
1996	37.9
1997	41.3
1998	53.1
1999	50.1
2000	45.0
2001	51.1
2002	58.3
2003	60.5
2004	67.3
2005	88.6
2006	112.6
2007	146.6
2008	173.3
2009	211.3
2010	149.7

Note: the numbers were not corrected based on the cost of living.
Source: Shanghai Statistical Buearu (2011).

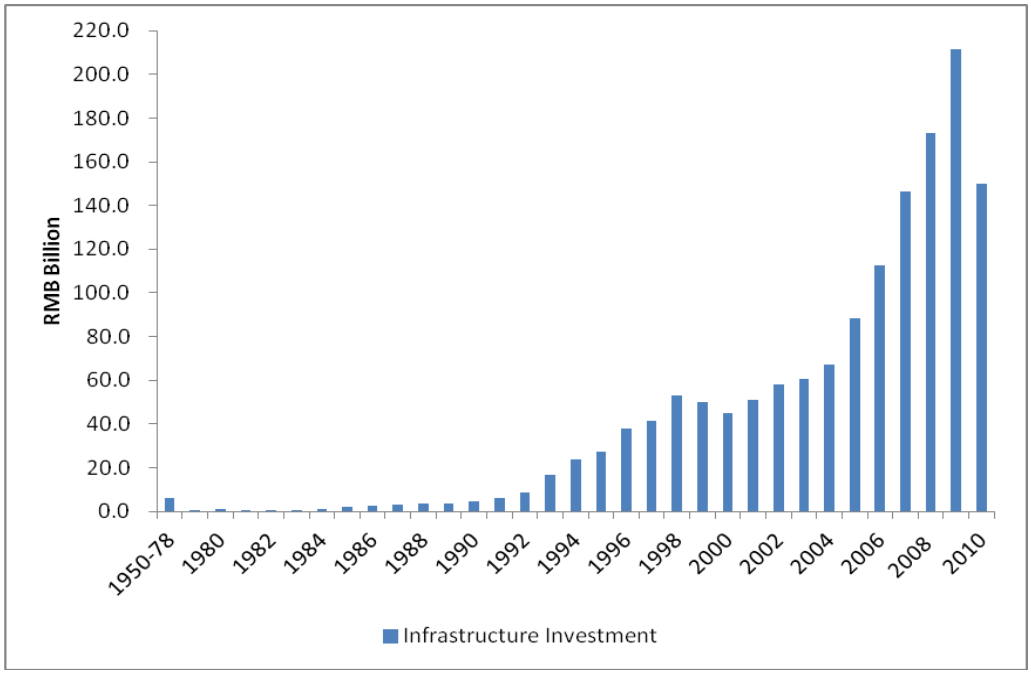


Figure 43: Infrastructure investment in Shanghai, 1950-2010.
Source: Shanghai Statistical Bureau (2011).

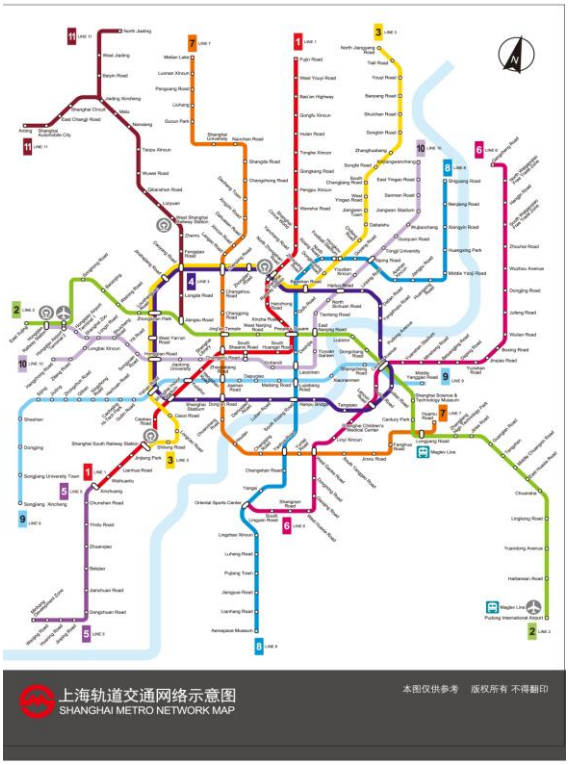


Figure 44: The subway system.
Source: http://www.shmetro.com/node155/node159/201004/con103744.htm#.

A Landscape with Legacies of Historical Development

Through hundreds of years of history, many buildings and streets have become land marks in Shanghai. Time has washed out the colors of buildings and streets, but the legacies have never faded. The urban landscape of present-day Shanghai is a mix of preserved historical and cultural areas and modern high-rise buildings. Twelve historical and cultural areas were designated in the central city in 2002 by the municipal government to protect historical buildings (Shanghai Municipal Government, 2002); the total area of the twelve designated areas is 27 square kilometers (6,672 acres). These areas represent distinctive characteristics in different historical periods of Shanghai's urban development. They witness the development trajectory and changes of Shanghai's economy, culture and lifestyle throughout the history. Buildings preserved are diverse, including traditional Chinese houses, villas, public buildings, school and factories (Chen and Ruan, 2008). Nine historical and cultural areas are located inside the Inner Ring Road (Figure 45) and they contain Old Shanghai County and areas within the International Settlement Zone and French Concession during a period when Shanghai was a treaty port in the late 19th and early 20th centuries. The Jiangwan Historical and Cultural Area is the representation of the Greater Shanghai Plan in 1930 by the Nationalist Government. There are thirty-two historical and cultural areas in suburban Shanghai, with a total area of 14 square kilometers (3,459 acres) (Figure 46). Areas with historical landscapes characterized by waterway connections and streets with historical landscape features of Shanghai are preserved. Baihe Harbor in Qingpu District is a

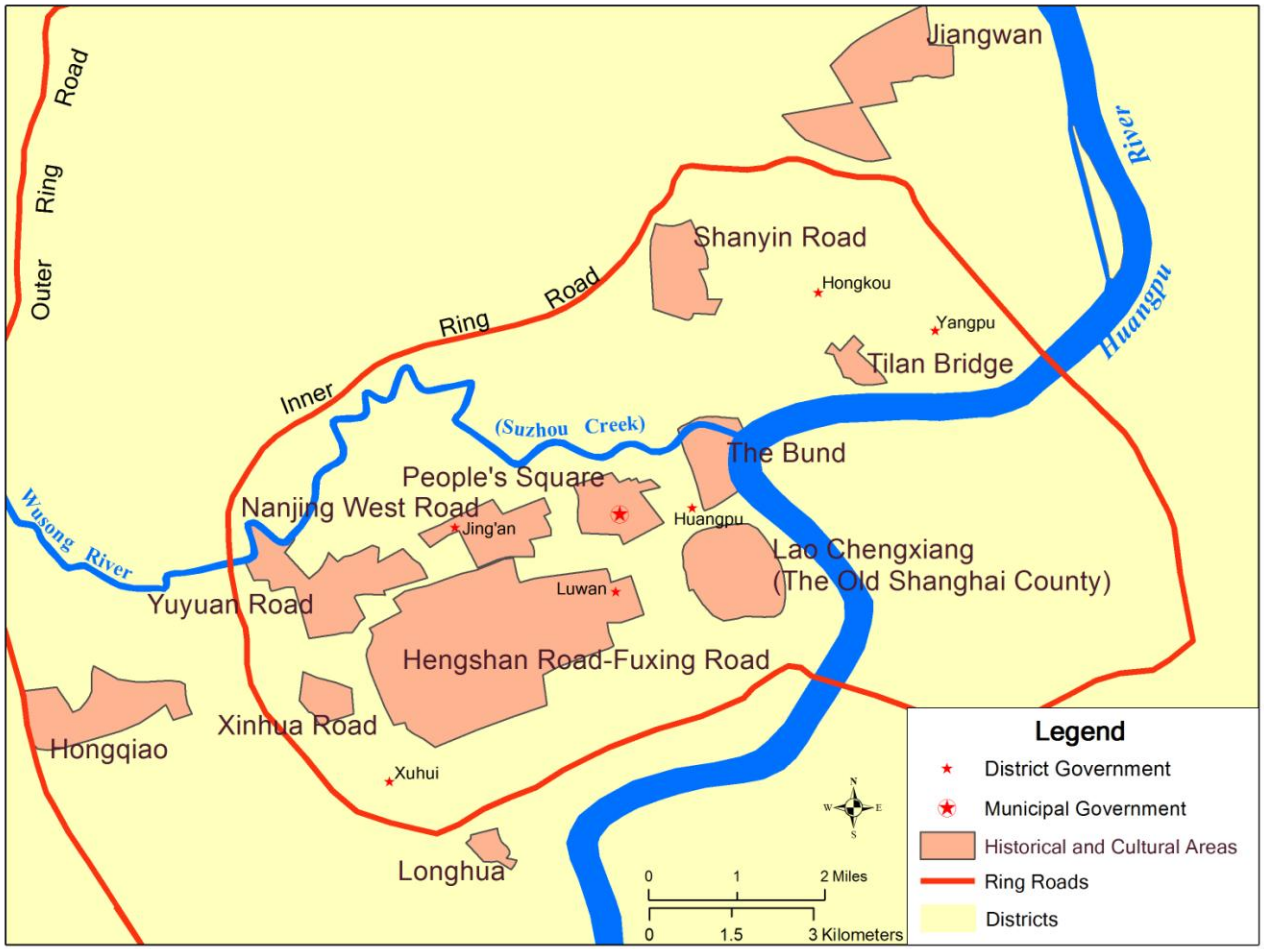


Figure 45: The historical and cultural areas in Shanghai.
Source: Shanghai Surveying Institute (2008b). Created by: Author (2012).



Figure 46: The historical and cultural areas in suburban Shanghai.
Source: Shanghai Surveying Institute (2008b).

remnant of Qinglong Town founded in 746 A.D. The development of cultural and historical areas is meant to preserve the history of Shanghai as well as promote tourism.

The shape of Old Shanghai County is still visible on the landscape on Google Earth images (Figure 47) although the city wall was torn down by the Nationalist Government in 1911. Old Shanghai County is located in the southern part of Huangpu District (the Nanshi District prior to 2000) and is one of the most famous tourist attractions in Shanghai. A portion of Old Shanghai County combines traditional Chinese culture and modern consumerism including Yu Garden, Chenghuang Temple, and Yu Garden Tourist Mart (Figure 48.1 and 48.2). Most of the residential buildings in Old Shanghai County are deteriorating from lack of maintenance and are under the pressure of renewal (Figure 49).



Figure 47: Old Shanghai County.
Source: Google Earth (2011).



Figure 48.1: Yu Garden in the Ming Dynasty, 1338-1644. The tallest building is called Huxin Ting (Mid Lake Pavilion, a famous tea house) and the bridge is called Jiuqu Qiao (Zigzag Bridge). Source: Shanghai Urban Planning Exhibition Center.



Figure 48.2: Yu Garden in the present. Huxing Ting with decorative lights. Huxin Ting attracts many tourists, including leaders from foreign counties. Jiuqu Qiao was rebuilt after a fire in 1933; the new bridge was made of concrete, while the orignial bridge was made of wood (Figure 48.1). The Oriental TV Tower behind Huxin Ting is located in Pudong, a landmark of modern Shanghai.
Source: http://static.panoramio.com/photos/original/2474623.jpg.



Figure 49: Traditional residential buildings (linong, translated as lane house) on the east of Xizang South Road, 2007. Houses near the road are being demolished.
Source: http://static.panoramio.com/photos/original/17710069.jpg

The Bund in Figure 50, a showcase of foreign countries' footprints in Shanghai in the late 19th and early 20th century, also attracts thousands of tourists and serves as the CBD of Shanghai. As a historical street in the Bund CBD area, East Nanjing Road (Figure 51) was a thriving commercial center beginning in the treaty port era and has become a designated walking and shopping street, surrounded by department stores, shopping malls, and retail stores.



Figure 50: The Bund is a famous tourist attraction in the present. The architecture symbolizes the history of Shanghai as a treaty port in the late 19th and early 20th century. Source: http://www.shtong.gov.cn/node2/node4429/node70350/node70519 /userobject1ai71966.html.



Figure 51: East Nanjing Road looking west. Along both sides of the street, there are retail stores, plazas, and restaurants. Source: Author (2010).

The Commercial Landscape

The Bund and Lujiazui Financial Trade Zone (Figure 26), which faces the Bund on the east side of the Huangpu River, comprise Shanghai's Central Business District. Lujiazui is the only financial trade zone in China designated by the state government "to establish a specific image of Shanghai as a prime site for foreign investment" (Wu, 2011). Under the influence of globalization, the skyline of Lujiazui is becoming similar to cities in western countries (Figure 52). The 88-floored Jinmao Plaza (construction began in 1992 and finished in 1999) was the tallest building in Shanghai before 2008; it has attracted multinational and major Chinese corporations and banks to its offices (Figure 53.1 and 53.2). However, Lujiazui's development is more of the state and municipal government's investment than the inflow of capital from foreign companies. In 2006, less than 15% of FDI in Pudong Xin Qu was focused in Lujiazui (PBS, 2007). "Land development in the Lujiazui area has been dominated by partnerships at the central and municipal levels, and from other provinces and cities. Lujiazui attracted 57.7% and 71.6% of the funding that the central and municipal governments invested in Pudong New Area (Pudong Xin Qu)" (Wu, 2011; PBS, 2007).

High-rise buildings above 30 floors cluster in the CBD area to symbolize the economic success of Shanghai. In the CBD area, activities of finance, trade, tourism, entertainment, and shopping are concentrated.

In addition to the main CBD area, several ancillary commercial centers were proposed as part of the 1999-2020 comprehensive plan: Xujiahui in Xuhui District,



Figure 52: The skyline of Lujiazui Financial Trade Zone. Source: Author (2010).



Figure 53.1: Jinmao Plaza in Lujiazui Financial Trade Zone.
Source: Author (2010).



Figure 53.2: The offices and financial services of corporations and banks in Jinmao Plaza. Foreign banks include: Fortis (Belgium), Societe Generale (France), UniCredit Group (Italy), East West Bank (U.S.A.), Santander (Spain), Westpac (Australia) and RBS (Scotland). Regus is a multinational corporation from Belgium that offers office provision services for businessman who travel and needs an office at their destinations. Cathay Life Insurance is a Taiwanese-owned corporation. There are several Chinese corporations and banks as well, such as the Industrial and Commercial Bank of China and Construction Bank of China.
Source: Author (2010).

Zhenru in Putuo District, Jiangwan-Wujiaochang in Yangpu District, and Huamu in Pudong Xin Qu (Figure 54). Utilizing the existing infrastructure and public facilities, the four proposed areas were to be developed into regional sub-commercial centers to attract population and economic activities in the tertiary sector from the urban core, as well as to



Figure 54: Map of ancillary centers in Shanghai.
Sources: Shanghai Surveying Institute (2001); Wu (2008). Created by: Author (2012).

enhance the overall performance of commercial services in Shanghai. Each ancillary center has its own designated service area in Shanghai: Xujiahui for southwest region, Zhenru for northwest, Jiangwan-wujiaochang for northeast, Huamu for Pudong. Before developing into ancillary centers, these areas were already known as transportation hubs or trade gathering centers in the history.

Xujiahui was the earliest ancillary center developed by the municipal government and has a cluster of Shopping malls and office buildings. A sign of globalization is visible in Xujiahui, which hosts commercial ads for many foreign products (Figure 55). Zhaojiabang Road (Figure 56.1), one of the main roads in Xujiahui, was once a highly polluted river and known as a famous slum area in Shanghai with shacks built on both banks (Figure 56.2 and 56.3). The redevelopment of Zhaojiabang Road into a commercial area is an example of successful land transformation by the municipal government.

Examples of retail stores in Shanghai are shopping malls, department stores, outlet stores, convenience stores, supermarkets and market places. Department stores and shopping malls are concentrated in the CBD and ancillary centers (e.g. Xujiahui). Outlet stores are spread out in major commercial streets in downtown and suburbs. Different from supermarkets located at places where could attract a certain amount of consumers, convenience stores scatter in communities. Convenience stores are usually located on the first floor of buildings with residents living above. This mixture of commercial and residential land use is common in Shanghai (Figure 57).



Figure 55: Commercial ads in Xujiahui. The building with the Canon billboard is the Pacific Digital Products shopping mall. Inside, digital products are abundant like laptop, computer and camera. Signs of globalization are seen: a KFC restaurant under the ball-shaped building and commercial ads of Canon (A Japanese brand of digital products), Epson and Adidas (a Germany brand of sporting goods). The shining Chinese characters under the ball-shaped building say: Romantic Christmas. Source: Author (2010).



Figure 56.1: Zhaojiabang Road in 2010, looking west. Shopping malls and office buildings are clustered in the background. Source: Author (2010).



Figure 56.2: Zhaojiabang in the 1920s.
Source: http://www.shtong.gov.cn/node2/node4/node2249/xuhui/node70301/node70303/userobject1ai38480.html.

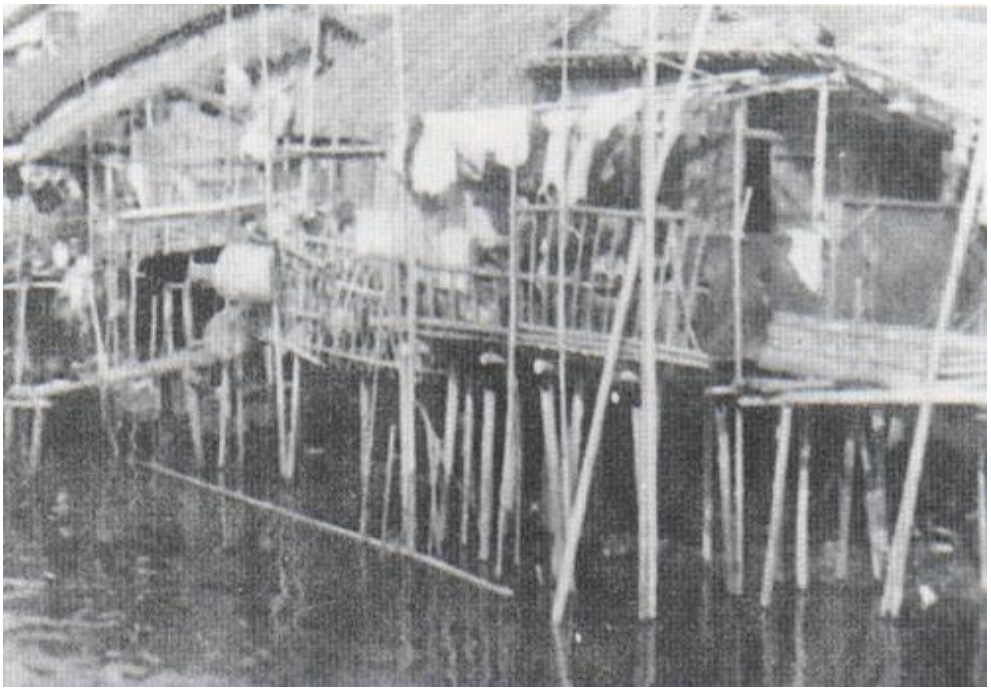


Figure 56.3: Shacks above Zhaojiabang in the 1940s.
Source: http://www.shtong.gov.cn/node2/node4/node2249/xuhui/node70301/node70303/userobject1ai38481.html.



Figure 57: Convenience stores in a community near Xujiahui. Source: Author (2010).

The Industrial Landscape

The industrial development of Shanghai from the treaty port era to the Maoist period resulted in a high percentage (30%) of industrial land use in the city core in 1978 (Table 22). Since the economic restructuring of 1978, Shanghai's industrial land use pattern is increasingly focused on industrial parks and development zones, which are spreading out into the suburban districts. By 2010, the percentage of industrial land use (48.1%) in the inner suburbs was the highest compared to the total industrial land use in

Shanghai. The percentage of industrial land use in the outer suburbs was the second highest with the central districts the lowest (Table 24).

Land use in the city core has been transformed from industrial to offices, shops, and hotels. One famous example of land use transformation is the 2010 World Expo (Exposition) site in Shanghai (Figure 54). The site is divided into two parts by the Huangpu River, spanning areas in Luwan, Huangpu, and Pudong Xin Qu. Before redevelopment, the area west of the Huangpu River was the location of the Jiangnan Ship-Building Plant (founded as Jiangnan Ship-Building Bureau in 1865) and Nanshi Power Plant (founded as Nanshi Light Bulb Factory in 1897). East of the Huangpu River was developed during the Maoist period into the Zhoujiadu industrial zone, which accommodated the original Hexing Iron-Steel Plant, the largest private iron-steel factory built during the Nationalist Government (Lin, 2011). The redevelopment project preserved the heritage of Jiangnan Ship-Building Bureau and Nanshi Power Plant. For example, the chimney of the Nanshi Power Plant became a giant thermometer (Figure 58).

Table 24: The Distribution of Factories by Geographic Zones, 2010

Geographic Zones	Floor Space (10,000 m^2)	Floor Space (acres)	Percentage (%)
Central Districts	3309.43	8,174	17.9
Inner Suburbs	8904.57	21,994	48.1
Outer Suburbs	6310.10	15,586	34.1
Total	18524.09	45,755	100

Source: Shanghai Statistical Bureau (2011).



Figure 58: The heritage of Nanshi Power Plant. Source: Wang, Y. (2010).

Industrial parks and development zones have become a part of Shanghai's landscape. Industrial parks are similar to those in North American in terms of land use specification. Aside from planned layouts (Figure 59) and beneficial policies, the industrial parks and development zones were accompanied with infrastructures and public facility development, such as post offices, schools and hospitals, to attract foreign and domestic enterprises. Industrial parks and development zones have proven success in attracting FDI. For example, Minhang Economic and Technology Development Zone established in the old Minhang industrial satellite attracted foreign companies such as P&G (Figure 60), Coco-Cola, Johnson & Johnson, Siemens, Mitsubishi Elevator and YKK Zipper. For the appearance of buildings, FDI-related manufacturing plants are



Figure 59: Wide streets and newly planted trees in Zhangjiang High-Tech Park in Pudong Xin Qu. In the background, ZTE is a Chinese corporation, which is a global provider of telecommunications equipment and network solutions. Source: Author (2010).



Figure 60: Procter & Gamble manufacturing plant in Minhang Economic and Technology Development Zone. Source: Author (2010).

usually not distinctive to domestic plants. However, with flags of country of origins hanging around the area and company names, it is easy to tell what areas are FDI-related. Foreign investors in Minhang Economic and Technology Development Zone are from the United States, Japan, France, Germany, Singapore, and so on. Hongkong and Taiwan investors are also contributing to a large proportion of the investment. Since the development has focused on manufacturing industries, the enterprises in Minhang Economic and Development Zone are specialized on electromechanical, food processing, chemical, textile, and clothing industries. The industrial specialization of industrial parks and development zones has resulted in concentrations of specific enterprises in each park or zone. Different from the Minhang Economic and Development Zone, Zhangjiang High-Tech Park attracts high-tech industries in integrated circuitry, bio-pharmaceuticals, software, photoelectric, new energy and environmental protection, and modern agriculture. The roads in Zhangjiang High-Tech Park are named after famous Chinese and foreign scientists from history, such as Zhang Heng, Hua Tuo, and Darwin (Figure 61).

Land use in industrial parks and development zones are planned and regulated. Yet, the sprawling of industrial parks and development zones into the suburban districts has sometimes resulted in a mixture of rural and urban landscape (Figure 62).

The Residential Landscape

The percentage of residential land use in the inner suburbs in the total residential land use of Shanghai was the highest in 2010, followed by the central districts and the



Figure 61: Names of roads in Zhangjiang High-Tech Park. Note: Zhang Heng (78-139 A.D.), was a Chinese scientist who studied astronomy, geography, cartography, and mathematics. Hua Tuo (around 145-208 A.D.), was a Chinese medical scientist. Cai Lun (around 61-121 A.D.) was the inventor of paper. Darwin (spelling in Chinese pin-yin system as Daerwen in the photo), was an English naturalist known in western literature. Source: Author (2010).



Figure 62: Rural Landscape near Minhang Economic and Technology Development Zone. The building behind the trees in the background is a factory. Source: Author (2010).

outer suburbs (Table 25). The housing types in Shanghai consist of villas, apartments, workers' housing, new and old lane houses (different in the living conditions, e.g. shared restroom or not), simple housing (e.g. shacks, temporary sheds for construction workers) and other based on the data from Shanghai Statistical Bureau (Table 26). Simple housing is the least favorable housing, which are experiencing the pressure of redevelopment.

Villas are low density housing for single families, which have higher living standards compared to all the other housing types. In the economic reform era, under the influence of the housing market, the development of villas is driven by the demand of people with higher income who desires luxury and privacy. Styles of villas are diverse, taking examples from foreign countries (Figure 63). The overall layout of communities resembles suburbia in the United States. Inside communities, roads are nicely laid out and car-friendly. Lawns and trees are part of the landscape. Except for nice layout, sporting facilities are usually accompanied. Gated communities are common.

Table 25: The Distribution of Housing by Geographic Zones, 2010

Geographic Zones	Floor Space ($10,000\ m^2$)	Floor Space (acres)	Percentage (%)
Central districts	18148.54	44,846	34.48
Inner Suburbs	25682.23	63,462	48.79
Outer Suburbs	8808.85	21,767	16.73
Total	52639.62	130,075	100

Source: Shanghai Statistical Bureau (2011).

Table 26: The Distribution of Housing Types in Districts in Shanghai, 2010

Districts	Floor Space (acres)							
	Total	Villas	Apartments	Workers' Housing	Lane Houses		Simple Housing	Other
					New	Old		
Huangpu	2,072	3	6	1,648	72	253	1	88
Luwan	1,876	39	735	744	175	177	1	6
Jing'an	2,066	52	89	1,612	215	87	—	12
Changning	5,156	139	43	4,879	53	34	1	5
Hongkou	4,786	24	39	4,223	157	318	8	17
Xuhui	9,070	211	192	8,324	179	114	6	44
Putuo	8,256	81	43	7,940	12	159	5	15
Zhabei	3,973	1	0.5	3,654	2	307	5	2
Yangpu	7,592	9	2	7,203	18	337	21	2
Pudong Xin Qu	28,933	1,112	—	26,689	410	351	21	350
Minhang	16,149	737	8	15,005	5	220	—	174
Baoshan	11,319	73	—	11,215	—	31	—	—
Jiading	7,061	204	—	6,783	2	71	0.2	0.2
Songjiang	8,928	1,584	—	7,039	—	304	—	—
Jinshan	3,281	16	5	3,049	—	90	0.1	121
Qingpu	4,048	688	53	3,191	4	110	2	1
Fengxian	2,677	127	—	2,538	1	11	—	—
Chongming	2,833	—	—	2,752	—	81	0.3	—
Total	130,075	5,101	1,216	118,490	1,304	3,057	71	837
Percentage (%)	100	3.92	0.93	91.09	1.00	2.35	0.05	0.64

Note: The missing of housing information (e.g. apartments) in some districts skewed the result, but a general pattern is still presented through the data. Source: Shanghai Statistical Bureau (2011).



Figure 63: Villas in Songjiang New Town.
Source: http://davewyatt.com/images/thamestown

Lane houses (Figure 64.1 and 64.2) originated in the 1800s in the English Settlement, which are a mixture of Chinese and western architecture styles. Lane houses resemble row houses in western countries. As a traditional multi-family housing, with people living close to each other, neighbors tended to share public spaces, food, and



Figure 64.1: A lane house in Xuhui District. Source: Author (2010).



Figure 64.2: Multiple families live in lane houses. Note: The old lane houses usually do not have individual kitchens and bathrooms; the new lane houses are improved with these conveniences. The address plate above the door suggests about twelve households in this array. Source: Author (2010).

responsibility of child care. A "Lane-house Culture" formed gradually during the historical development of Shanghai.

The idea of workers' housing started in the Maoist period, when housing was allocated to workers as welfare by the state-owned and collective-owned enterprises. The construction and allocation of workers' housing during the Maoist period were controlled by the state government. As a type of public housing, workers' housing is usually multi-stories, less than 7 floors. The first workers' housing planned and built in the Maoist period was Caoyang New Village (1951) in Putuo District (Figure 65). The appearance of workers' housing was identical and match-box looking. During the economic reform era, due to renewal projects by the municipal government, the appearance of workers' housing has been improved. The construction of workers' housing stopped gradually with the arrival of commercial housing and termination of the housing allocation system in the early 1990s.

Although apartments resemble workers housing with a multi-story appearance (Figure 66), unlike workers' housing, apartments are usually commercial housing. Apartments in the central city are generally taller than those in the suburbs. With the promotion of housing estates, the provision of newer apartments is usually accompanied with facilities, such as education, health care, public transportation and commercial services.

Before 1949, villas were concentrated in foreign concession zones, especially in the French Concession (Figure 67) which is the Hengshan-Fuxing Road Historical and Cultural Area in present-day Shanghai (Figure 45). Villas comprised about 10% of the



Figure 65: Caoyang New Village in Putuo District, 2011. Workers' housing in the photo is the lower-rise buildings with about seven stories. The red-roofed workers' housing was newly remodeled, while the gray-color workers' housing further away are in a worse condition. The high-rise buildings (more than ten floors) are apartments.
Source: http://v7.cache2.c.bigcache.googleapis.com/static.panoramio.com /photos/original/53679953.jpg?redirect_counter=2



Figure 66: Apartments in Huangpu District.
Source: Author (2009).



Figure 67: A French-style villa built in 1932 in Xuhui District. This area was in the French Concession during the foreign settlement era. Source: Author (2010).

residential land use in the urban core in 1947, while the majority of housing was lane houses, shacks and simple housings (Liao, et al., 2008). Lane houses were the dominant housing before 1949. Throughout development, workers' housing became the dominant housing type, taking 91.09% of housing in Shanghai (Table 26), followed by villas, lane houses, apartments, other and simple housing. The majority of apartments, lane houses and simple housing are concentrated in the central districts, while villas and workers' housing are concentrated in the suburban districts (Table 27, Figure 68). The

Table 27: The Distribution of Housing by Types and Geographic Zones, 2010

Geographic Zones	Villas	Apartments	Workers' Housing	Lane Houses		Simple Housing	Other
				New	Old		
	(%)						
Central districts	10.95	94.58	33.95	67.70	58.45	67.71	22.86
Inner Suburb	41.69	0.66	50.38	31.95	22.06	29.19	62.60
Outer Suburb	47.36	4.76	15.67	0.34	19.49	3.10	14.54
Total	100	100	100	100	100	100	100

Source: Shanghai Statistical Bureau (2011).

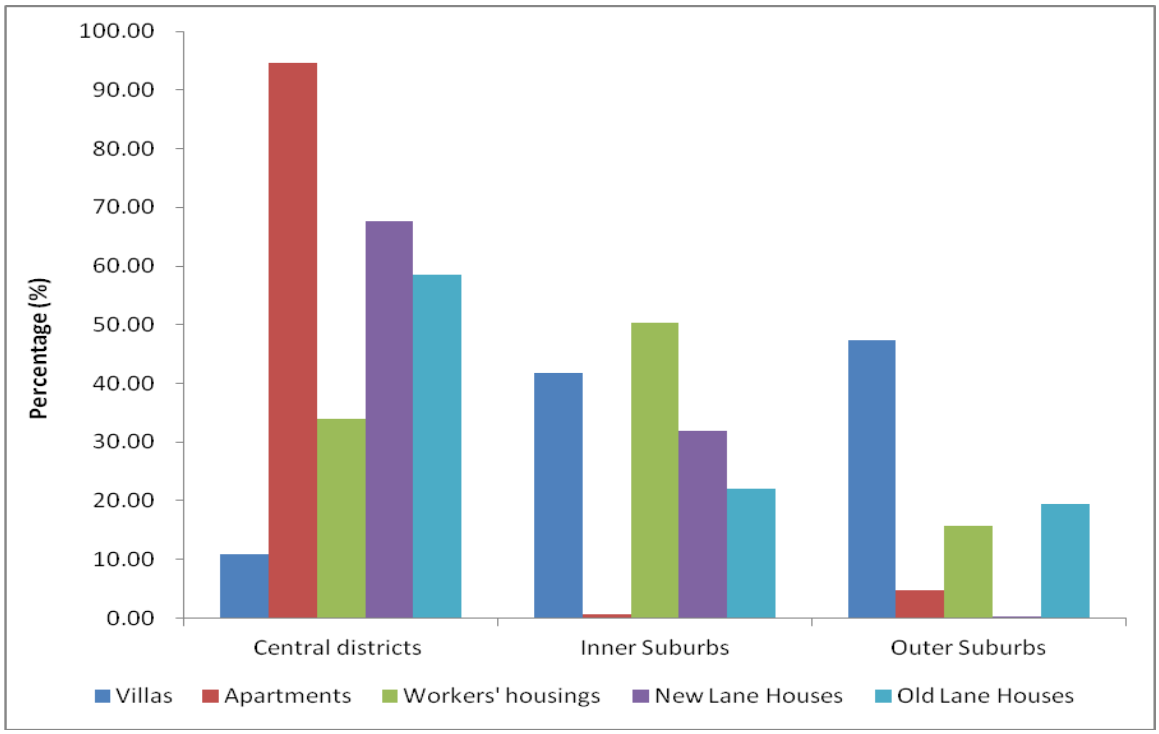


Figure 68: The distribution of housing by types and geographic zones, 2010.
Source: Shanghai Statistical Bureau (2011).

concentration of lane houses and simple housings in the central districts is the result of historical development. With the highest population density and low land availability in the central districts, the concentration of apartments was a necessity to accommodate people. The suburbanization of villas is similar to that of western country cities, representing a phenomenon of out-migration of residents with higher income into suburban areas. The concentration of workers' housing in the suburban districts is related to the municipal government's urban redevelopment effort and the relocation of residents in the central districts through housing provisions. A mixture of different housing types in Shanghai's landscape is common.

The Transitional Landscape

Before 1840, the Shanghai region was connected by waterways; sampans were the main transportation. With the entering of foreigners after 1840, a road system was gradually developed in the region. Cars from western countries began to appear in the landscape; at the same time, a streetcar system was also built (Figure 69). During the Maoist period, buses were the main public transportation (Figure70). Due to the close location of work units and living places at the time, short-distance travels were more common. Bicyclists and pedestrians were dominant in the landscape (Figure 70).

Since the economic reforms, Shanghai's landscape has been under transformation due to rapid urbanization process. A comprehensive transportation network has been established to adapt to the fast urban development. Except for two international airports, a rail transit system consists of metro, light rail and maglev (Figure 71) was developed. A freeway system connects the central city with the suburban districts as well as places outside the city. Inside the city, three ring roads (Inner Ring Road, Middle Ring Road[13] and Outer Ring Road) has become part of the freeway system. With the city sprawling out from the urban core, the ring roads have defined the spatial pattern of Shanghai. With four railway stations, Shanghai is an important hub of the railway system in China. A high-speed railway system links Shanghai to major cities in eastern China. Over the years of development as an international port from efforts of the state and municipal governments, Shanghai has become the largest port in the world in terms of cargo and container throughput since 2011. Shanghai Port is composed of eight districts: the upper reach, middle reach and lower reach of the Huangpu River, Baoshan-Luojing,

Waigaoqiao, Hangzhou Bay, Yangshan and Chongming (Shanghai Municipal Transport and Port Authority, 2010). Yangshan is the only deep-water port developed off-shore (Figure 72).



Figure 69: Transportation on the Bund in the 1930s. A large amount of cars were parking along the boulevard. For streetcars, tracks on the ground and cables were visible in the photo.
Source: photoed by Alfred T. Palmer in Boyden (1937).



Figure 70: Buses and bicyclists at the People's Square in the 1970s.
Source: Xu (2010).



Figure 71: A maglev train in Shanghai.
Source: http://www.uutuu.com/fotolog/photo/1206849/.



Figure 72: Yangshan Deep-water Port.
Source: http://en.wikipedia.org/wiki/File:Port_of_Shanghai,_Yangshan_Deep-water_Harbour_Zone,_02.jpg.

Note:

13. The project of Middle Ring Road started in 2000. The whole line was finished in 2011.

CHAPTER SIX: CONCLUSION

Being in a global environment, Shanghai resembles cities in western countries yet has its own character as a post-reform city. The development of Shanghai is unique because of the varying political environments over time. The urbanization process throughout the treaty port and economic reform eras provides a case study of China's unique urbanization. Started as a fishing village, Shanghai gradually became a prosperous sea port, a treaty port city, a socialist city, and finally a post-reform and globalizing city. The changing characters demonstrate the different urbanization process in different periods of Shanghai's urban development.

The thesis is focused on examining the impacts o f economic restructuring and migration on Shanghai's landscape in the economic reform era. Basically, chapter one introduces the research background, research questions, and methods and data sources. Chapter two describes the geography and history of Shanghai. The economic structure and population distribution before economic reforms was studied in this chapter. The evolution of Shanghai's landscape before 1978 was also discussed. Chapters three and four focused on the economic structure and population pattern in the economic reform era. Finished with chapter five examines the new urban landscape in the economic reform era.

The framework of the thesis is based on three research questions: (1 what was the land use pattern in 1976; 2) how do economic restructuring and migration impact Shanghai's urban development after economic reforms; 3) what is the land use pattern after 1978. For the first question, the land use pattern in 1976 was fragmented, a mixture of different land uses. Derived from the Maoist period, there was a high concentration of

industries and residents in the urban core in 1976. Commercial activities were concentrated in areas of Old Shanghai County and original foreign settlements from the history. With regard to the second question, a new economic structure and population pattern emerged during processes of economic restructuring and migration in the economic reform era. The economic structure changed from state-owned enterprises predominant in the Maoist period to the coexistence of multi-types of enterprises. With the suburbanization trend, residents began to concentrate in the suburbs. At the same time, the relaxed control of rural-urban migration has resulted in an increasing share of migrants in the total residents since 1978. Answering the third question, a new land use pattern appeared in the economic reform era. Industries have become concentrated in industrial parks and development zones, spreading in the suburbs. The suburbs, especially inner suburbs, had the most share of residential land use in Shanghai. An urban form with one CBD and several ancillary commercial centers emerged. A brief summary of Shanghai's representative land uses, economic characteristics and landscape features dividing into periods of pre-socialist, socialist and reform era is provided in Table 28.

Before Shanghai became a treaty port, the geography condition made Shanghai a prosperous sea port. Being on the Pacific Rim made the region a worldwide trade port, while the foundation of Old Shanghai County started regional urban development. After Shanghai opened as a treaty port in 1842, it became an important industrial and commercial center in China, until 1949. Under the influence of foreign countries, the Qing Dynasty, and the Nationalist Government, the trajectory of Shanghai's development was different from most cities or towns in China. Foreign concession zones were

Table 28: A Summary of Shanghai's Development in Different Periods

	Pre-Socialist	Socialist	Reform Era
Land Uses	Developed along the Huangpu and Wusong Rivers, especially industries; a mixture of commercial and residential land uses; early formation of a commercial center along the Huangpu River	Outward expansion from the older urban core; "neighborhood units"-a mixture of residential and industrial land uses; four industrial zones (Core Area, Inner Ring Zone, Outer Ring Zone, Industrial Satellite); no distinctive commercial centers	Urban renewal and industrial transformation in the urban core; an urban form with one CBD and several ancillary commercial centers; an industrial land use pattern of three circles bonded by ring roads; concentration of industrial parks and development zones in the suburbs; suburbanization of residents
Economic Characteristics	The commercial and industrial center of China; foreign enterprises dominated; emergence of bureaucratic and private enterprises; focused on economic activities in the tertiary sector; industrial development in consumer products	The industrial center of China; dominance of enterprises in the public ownership sector, especially state-owned enterprises; focused on industrialization-a production city	Globalization; the commercial and financial center of China; dominance of state-owned enterprises, challenged by the FDI-related and private enterprises; development of economic activities in the tertiary sector; development of knowledge- and capital-intensive industries
Landscape Features	Old Shanghai County, the Bund, Wujiaochang (the political center of the Nationalist Government), lane houses, villas in foreign settlements, waterways, a streetcar system	People's Square, flatted factories, neighborhood workshops, industrial blocks, industrial zones, satellite towns, workers' housing	Oriental TV tower, Shopping malls, office buildings, skyscrapers, industrial parks and development zones, high-rise apartments, western style villas, highways, metros, light rails, ring roads, high speed trains, maglev, airports

Source: Author.

established by foreign countries, with the Great Britain first, followed by America and France. Each concession zone behaved as an individual political zone. When the Nationalist Government came to power in Shanghai in the 1920s, and with the establishment of the Shanghai Special City in 1927, the region was ruled by multiple political powers. The region was divided into foreign concession zones and the Chinese districts were governed by the Nationalist Government. In this political environment, economic development flourished, with the production of consumer products leading the way. The competition between the foreign enterprises and domestic enterprises was high, yet was dominated by foreign enterprises with advanced technology and capital. The prosperity was disturbed by the Japanese invasion in 1937 and the outbreak of World War II.

The Communist Party took over Shanghai in 1949. From 1949 to 1976, Shanghai was actively transformed from a consumption city to a production city. In an effort to diminish the influence of foreign countries and the Nationalist Government on Shanghai's economy, a series of economic restructuring policies were applied. Industrialization was the focus during the Maoist period, which resulted in the dominance of heavy industries in the urban economy. The effect of the economic reshaping effort by the state government was profound. By sweeping away the influence of foreign countries and the Nationalist Government, Shanghai was transformed into a socialist city with state-owned and collective-owned enterprises dominating the economy. The "neighborhood units" concept characterized Shanghai as a socialist city. After the economic reforms in 1978, the state government integrated China into the world

economy, changing from a centrally-planned economic system in the Maoist period to a mixed economy market-based system. Since Shanghai was one of the "open coastal cities" in 1984, it was transformed into a post-reform city by the state government through decentralizing administrative and fiscal powers from central to local levels. Additionally, globalization altered development through FDI. Since Shanghai is an entity of economic development, it has been argued that Shanghai's development should take place in a political environment governed by the Communist Party. Although the economic structure of Shanghai progressively involves an increased share of private and foreign enterprises, state-owned enterprises still hold a dominant role.

The economic structure of Shanghai before 1949 was dominated by foreign, bureaucratic, and private enterprises. Before Shanghai was opened as a treaty port, the major industries consisted of salt, shipping, textile, and cotton-growing. Later during the treaty port and Nationalist Government eras, light industries such as flour, textile, silk reeling, wool textile, flour, cigarette, paper making, medicine, and match goods flourished. Heavy industries also experienced an evident growth including the machinery, ship-building, and electric industries. During the Maoist period, state-owned and collective-owned enterprises gained supremacy. As a result of industrialization, the secondary sector, especially Industry, was the highest share of Shanghai's GDP during the Maoist period. The textile industry remained an important industry; with the promotion of heavy industries, the machinery, petrochemical, and metallurgical industries became economic pillars.

During the treaty port era, foreign concession zones attracted Chinese refuges searching for asylum since they had political sovereignty. Thus the population in the foreign concession zones increased at a dramatic rate. Before 1949, Old Shanghai County and the foreign concession zones had the highest population densities. The subsequent population distribution pattern was derived from the treaty port era and the concentration of industries in the urban core. Therefore, during the Maoist period the population density remained the highest in the urban core. Rural-urban migration was strictly controlled through the Household Registration System during this period. The registered population fluctuated due to the policies applied by the state government, the expansion of Shanghai's administrative boundary in 1958, the rustication movement during the Cultural Revolution, and the allowed return of reeducated youth after the Cultural Revolution.

In the economic reform era, economic restructuring and migration caused the economic structure and population pattern to diverge from the pattern in the Maoist period. The economic restructuring process began after Shanghai was established as an "open coastal city". Boosting Shanghai's economic development required a favorable political environment, thus the creation of Pudong Xin Qu was particularly important for the attraction of FDI. The shares of state-owned, collective-owned, private, and foreign enterprises in Shanghai's GDP changed, as well as the shares of the GDP in different sectors. The tertiary sector surpassed the secondary sector in the share of GDP in 1999. The share of light industries in Shanghai's GOVI was more than the share of heavy industries in the early 1990s, but since then light industries have lost their supremacy to

heavy industries. Electronic information products, automobiles, petrochemical and fine chemical products, fine steel, equipment complexes, and bio-machine manufacturing industries became Shanghai's six pillar industries.

As a result of economic restructuring, the industrial pattern in the economic reform era is different from the industrial pattern during the Maoist period. Years of industrial development during the treaty port and the Nationalist Government eras had formed a river-based pattern; industries developed along the banks of Huangpu and Wusong rivers due to the cheap cost of water transportation. In the Maoist period, the industrial base from the previous era was kept; "neighborhood workshops" and industrial blocks emerged in the urban core, with a mixture of working and housing spaces. Four industrial zones were identified in the Maoist period: the Core Area, Industrial Blocks, Industrial Zone, and Industrial Satellites. The industrial blocks zone dominated industrial development by that time. The old industrial pattern from the Maoist period was in need of transformation, because of the outward expansion of the city proper during the economic reform era and the importance placed on land in the urban core with regards to industrial development in the tertiary sector. The industrial pattern in the economic reform era emphasized industrial parks and development zones based on industrial relocation and transformation in the urban core and promotion of industrial parks and development zones in the suburban districts by the state and municipal governments. Consequently the region is divided into three areas by the Inner Ring Road and Outer Ring Road. The area inside the Inner Ring Road encourages development of finance, banking and hotel businesses and is the location of the CBD. Urban industries occur in

the area between the Inner Ring Road and Outer Ring Road and industries in the secondary sector are distributed in the industrial parks and development zones in the area outside the Outer Ring Road.

In the economic reform era, the population pattern of Shanghai has changed through suburbanization. Studies on patterns of residence and the floating population all suggest the trend of suburbanization. Suburbanization is caused by a population increase in suburban districts and a population decrease in the central districts, especially Luwan, Huangpu, and Jing'an Districts which are in the core city. The migration pattern of residents is influenced by the transformation of state-owned enterprises, reform of the housing provision system, availability of commercial housing, and improved transportation mobility. The distribution of job opportunities in the three geographic zones (the central city, inner suburbs and outer suburbs) also affects the residential pattern. Larger proportions of residents with less education results in a workforce concentration in lower-skilled industries, such as manufacturing in the secondary sector, and retail and wholesale industries in the tertiary sector. Although the central districts are experiencing an out-migration of residents, the central districts continue to have the highest population density due to their historical development; the districts in the inner suburbs have a lower density than the central districts, but higher densities than the districts in the outer suburbs. The increase of the floating population was great during this period. Although the municipal government is making an effort to control the floating population growth, it represents 40% of Shanghai's residents. The suburbanization trend of the floating population functions differently compared to the

trend of residents and the registered population; all city districts and Chongming County are experiencing population growth, with the districts in the outer suburbs experiencing the greatest population increase. The rapid increase of the floating population has resulted in the floating population outnumbering the registered population in some districts. The planning of urban renewal in the central city and "One City, Nine Towns" in the suburbs revealed efforts on the part of the municipal government to relocate population from the central city and accommodate people in the suburbs.

During the economic reform era, the changing urban landscape of Shanghai corresponded to economic restructuring and migration. To allow the outward expansion of industries and population from the urban core, a series of upgrades were applied to counties and districts from the 1990s to the early 2000s. In addition, significant infrastructure investment furthers urban sprawl. The change in industrial, residential, and commercial land uses within Shanghai districts from the Maoist period to the present indicates that the state and municipal governments were focused on developing land-use intensive industrial parks, housing, offices, and retail shops during the economic reform era. The urban landscape is composed of elements derived from the development of Shanghai through various periods. Historical and cultural areas were established to preserve their legacies, such as Old Shanghai County and the former foreign concession zones. Old industrial areas in the urban core are under transformation and new industrial parks and development zones are spreading out. Different types of housing in Shanghai represent different periods in Shanghai's history. There are no identifiable boundaries between different housing types.

Problems and issues coincident with Shanghai's development are discussed to retrospectively analyze China's urbanization process. The economic restructuring was successful, yet the development of industrial parks and development zones is abused on many occasions when planning is controlled by the local government. Competition among districts without cooperation potentially causes waste of resources and land. With a focus on the development of heavy industries, Shanghai is losing its traditional competitive role in light industries in China. During the transformation of state-owned enterprises, millions of workers became unemployed. Although the municipal government declared success after smoothly firing workers, the percentage of workers who enjoyed the compensation is questionable.

Shanghai is designated as the economic pole of the Lower Chinajing River Delta. To avoid resource competition during economic development, the connections between Shanghai and its surrounding towns and cities should be strengthened.

The urbanization process of Shanghai during the economic reform era was extremely fast, from 11 million residents in 1982 to 23 million in 2010, an increase of 12 million people in only three decades. The designated population for the 1999-2020 comprehensive plan was 20 million; the ability of Shanghai to accommodate a population size greater than 20 million by 2020 with adequate public facilities and infrastructure is doubtful. The subway system, for example, is challenged by the ever increasing number of intra-city commuters, even though the total length of the subway lines has increased drastically since the 1990s. With this rapid population growth, Shanghai inevitably will face issues. Housing has been a hot topic through the years since the shortage of housing

has resulted in high costs far out of reach of the average resident. Although the municipal government is promoting affordable housing, the ability to satisfy the public need for housing is questionable. The "One City, New Town" planning project has failed to attract population from the central city to the suburbs by providing high-living standard villas. The lack of public facilities and transportation connection to the central city was an obstacle. High housing prices boosted by real estate investors was also a problem. There is a gap between city plans and public needs. In addition, regulation of the real estate market requires future efforts from the municipal government. The welfare of the floating population is continually ignored by the municipal government even though the floating population was 40% of the total residents in 2010. As a disadvantaged group in the city, migrants do not enjoy the benefits of health care, child education, social security, and housing. The disparity between migrants and residents will cause social instability and increased crime rates. Social stratification among populations of different income levels is becoming evident.

Along with social stratification, gated communities and migrant enclaves appear in the landscape. Similar to those in western cities, gated communities generally accommodate people with higher income. The emergence of villas in the economic reform era is a good example of gated communities. Places where migrants residing together gradually become migrant enclaves. The majority of house owners in Shanghai either have Shanghai residency or have the economic ability to own their own home. Migrants who can not afford a house or the expensive city rent find their niches in old houses, subdivided apartment rooms (Figure 73) or rural houses that are taken into the



Figure 73: Shanghai Kang City in Minhang District. It is known for white collar migrants. Apartment rooms are subdivided into smaller rooms to lease out. Source: Author (2010).

urban jurisdiction (Figure 74.1 and 74.2). The high occupancy in apartment units increases the burden on the provision of public facilities and utilities and exacerbates conflicts among neighbors. The living quality of migrants in urban villages is worse than average residents. Usually, migrants with the same place of origin tend to live together.

With the rapid urban development, the municipal government is facing the dilemmas posed by urban expansion against agricultural land conservation. Aside from agricultural land destruction, environmental pollution is prominent. Air pollution from automobile exhaust and industrial activities is causing smog and acid rain. The contamination of rivers is so great that municipal governments invest significant sums in waste water treatment, while water shortages and garbage disposal are continuous problems. With increasing private automobiles, the traffic congestion in the city is progressively worse, causing universal noise pollution.

From an economic development prospective, Shanghai's favorable foreign and domestic investment environment promises further growth. The integrated global environment has enabled Shanghai to keep pace with other mega-cities in the world. Shanghai is attracting fortune-500 foreign enterprises to set up regional headquarters. With the development of finance, banking, business and trade in the tertiary sector, Shanghai is the financial center of China. With the municipal government’s effort to promote high-tech industries and the abundance in highly-educated elite and experts, Shanghai’s economy is moving towards knowledge-intensive industries. The economy is well supported by pillar industries, such as textiles, iron-steel, and machinery, which have a long history during Shanghai’s development. The economic prosperity of Shanghai is



Figure 74.1: Longxi, an urban village in Minhang District. An urban village is a term used for a phenomenon where migrants live in rural houses taken under the urban juridiction (Zheng, et al., 2009). Source: Author (2010).



Figure 74.2: A look inside Longxi. Source: Author (2010).

attracting millions of migrants each year looking for employment opportunities. Future urban plans for Shanghai should consider migrants since they are growing much faster than the registered population. How to accommodate the ever-increasing population within the city will be a challenging question to resolve. The welfare system should also be revised to include benefits for migrants.

In a word, during its urban development, Shanghai is facing opportunities as well as challenges. In a global economy, the global financial crisis is affecting Shanghai's economic development. Shanghai needs to find a way to achieve the balance between globalization and local development. In a mixed economy, the dominance of state-owned enterprises in the fiscal system, provision of public utilities and oil industry has been challenged by a need of better efficiency and more freedom in the market system. Shanghai is in need to coordinate the fast economic development with the explosive growth of population. Although the municipal government is pursuing a sustainable way of growth, there are many problems to be overcome. Shanghai has also been challenged by difficulties in preserving its cultural and historical characteristics in a globalization environment.

Other cities in China are making efforts to copy Shanghai's success. In order to attract investment, industrial parks and development zones are overly developed, which has resulted in a waste of land and resources in many occasions. At the same time, issues and problems affecting Shanghai are also occurring in other cities. How to achieve sustainability during the rapid economic development is a challenge for Shanghai and other cities in China.

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