

China's MegaTrends:

(1) Massive Urbanization – A Billion Urbanites by 2030

Foreign visitors to China's booming cities never fail to be impressed by their rapidly developing modernity and breathtaking skylines. A more detailed study will reveal that they fall into integrated regional urban networks in linked clusters and nexuses. These are spreading from the eastern seaboard to the far-flung inner provinces across the land, which is sixteen times the size of France. This massive urbanization process is the most extensive and speediest in human history. Looking at these regional nexuses more critically should add insight into China's astonishing urban transformation.

Shenzhen-Hong Kong Metropolis

The Global Financial Centres Index (GFCI 6) (1) is compiled by the Z/Yen Group for the City of London. In September 2009 it came up with a surprising and potentially contentious listing of Shenzhen in fifth place, ahead of Zurich and Tokyo. The Index was admittedly distorted by the trauma of the global financial crisis and a surge of Asian respondents, but Shenzhen has come a long way in a short time. I could still recall vividly my impressions of its sleepy paddy fields, rudimentary huts and neighbourhood shops before it was established as China's first Special Economic Zone in 1979. Now it is China's fastest growing city, with a population of 14 million. It has some of the world's tallest buildings. 23 buildings are over 200 meters high, including the 384-metre Shun Hing Square, the 8th tallest in the world. Home to the Shenzhen Stock Exchange, the city can now boast of being listed as one of the world's leading financial centres.

Shenzhen has six land crossings with Hong Kong, including a mass transit link between Shenzhen Metro Line 4 and Hong Kong's MTR East Rail - Lok Ma Chau Spur Line. Under a blueprint endorsed by both the Hong Kong and Shenzhen governments, the Shenzhen-Hong Kong Metropolis is intended to become by 2020 the third largest in the world in GDP terms, behind only New York and Tokyo.

Pearl River Delta - Nine-City Nexus

Shenzhen is at the heart of the regional nine-city nexus of the Pearl River Delta, along with Guangzhou, Foshan, Dongguan, Jiangmen, Zhongshan, Huizhou, Zhaoqing and Zhuhai. A \$5.47 billion 29-km bridge will link Zhuhai with Hong Kong and Macao, scheduled to be completed in 2016. The Guangdong provincial government is considering the establishment of a 'special co-operation zone' (like a free trade zone) encompassing Hong Kong and Macau with lowered customs barriers to promote free flow of goods, people and capital.

Yangtze River Delta - Shanghai Ning-Hu-Hang Region

The Pearl River Delta nexus is being mirrored by the Ning-Hu-Hang Region in the Yangtze River Delta, centred on Shanghai as the dominant growth pole linking Nanjing, Hangzhou, Wuxi, Suzhou, Ningbo, Changzhou and Nantong. The arteries of this dynamic Region include the Ning-Hu-Hang Expressway, the Nanjing-Shanghai-Hangzhou-Ningbo Railway, the Grand Canal and the waterways of the Yangtze River. The Region covers only 1.4% of China's total area but is estimated to represent 27.05% of her industrial output.

Map of China's Provinces and capital cities

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Bohai Rim - Beijing-Tianjing-Heibei (Jing-Jin-Ji) Nexus

The regional urbanization in the two Delta Regions is being replicated in the Beijing-Tianjing-Heibei (Jing-Jin-Ji) nexus, a dynamic Metropolis in the centre of the Bohai Rim. A report released on 21 October 2008 by Professor Wu Liangyong of Tsinghua University (2)

proposes a "one axis, three belts" balanced development pattern. The Beijing-Tianjin corridor is the economic heart of the 'three belts': a Binhai New Area Development Zone (a 'development belt' in the Bohai Rim), a traditional industry belt linking cities in the region, and an ecological belt in the Yanshan and Taihangshan Mountain ranges circling Beijing and Tianjin.

The Central China Region

Another vital part of China's urbanization jigsaw is the so-called 'Rise of Central China' strategy, developing the six provinces of Shanxi, Henan, Anhui, Hubei, Hunan, and Jiangxi into an integrated economic region. Their economic priorities are grain, energy, raw materials, manufacturing, logistics and tourism supported by science and technology and an ecological infrastructure. The development of this vast region is driven by four major city clusters: the Wuhan Circle of Cities centering on Wuhan (capital of Hubei); the Zhongyuan City Cluster centering on Zhengzhou (capital of Henan); the Chang-Zhu-Tan 'golden triangle' of three cities centering on Changsha (capital of Hunan); and the Wanjiang City Belt centering on Hefei (capital of Anhui).

The Northeast Region

The Northeast Region of Liaoning, Jilin and Heilongjiang, formerly dubbed China's 'rust belt' of outdated heavy industries, is being thoroughly revitalized. A large number of key infrastructural projects have been completed or under construction in the railway, expressway, airport, harbor, water conservancy, electric power, and urban rail transit sectors. Notable examples include the Harbin – Dalian Express and the Hong Yanhe River Nuclear Power Station. By the end of 2008, the Region boasted over 4000 km of expressways and over 14000 km railway lines open to traffic. Installed power-generating capacity has reached 63 million kilowatts. The harbor capacity has exceeded 0.3 billion tons. This modern infrastructure is supporting the rapid urbanization of cities like Dalian and Shenyang (Liaoning Province), Changchun (Jilin Province), and Harbin and Daqing (Heilongjiang Province). It is also driving the development of the Harbin-Daqing-Qiqihar Industrial Corridor as an industrial base for petrochemicals, energy, autos, electronics, medicine and food by 2020.

The Southwest Region

In Sichuan, in China's Southwest, rises Chongqing, China's (and the world's) largest provincial-level municipality with a population of over 30 million, rapidly expanding at the rate of 1,300 urbanites a day. It is home to some of China's largest automobile and motorcycle manufacturers. It also houses some of China's giant iron, steel and other heavy industries. Amongst those standing there is Asia's largest aluminum plant. A planned 10-million-ton refinery will process crude oil sourced worldwide transported through a new pipeline from Myanmar via Kuming in Yunnan province. The nearby Three Gorges Dam, the world's largest,

will deliver not only hydroelectric power to the Municipality but ocean-going ships to its Yangtze River Port.

The Northwest Region

At the lower end of the urbanization spectrum, in China's Northwest, a thousand miles away from the south and eastern seaboard, a new city is springing up amidst the desert, grasslands and barren hills in Ordos, Inner Mongolia. The city is in fact rich with history with relics dating back to the Qin (221 – 205 BCE) and Western Xia (1038 – 1227 CE) Dynasties and the times of Genghis Khan (1206-1227 CE). It is endowed with natural treasures of coal (proven reserve of 149.6 billion tonnes low-sulphur 'clean coal', one sixth of China's total), kaolin (top-grade proven reserve of 6.5 billion tonnes), natural gas (proven reserve of 878.8 billion cubic metres) and an abundance of sheep producing top-quality cashmere. Covering an area of 87,000 sq.km, Ordos reached an urbanization rate of 57.4% by the end of 2006. With a population of over 1.5 million, the city's per capita GDP now exceeds US\$10,000. Its financial wherewithal provides basic living, health and education subsidies to its many farmers and herdsmen. With high rises surrounded by pines and cypresses and streets lined with poplars and willows, Ordos is striving to balance its industries and husbandry to become a Green City, embracing such policies as banned grazing, vigorous water treatment and a recycling economy (3)

Second-tier Regional Cities

Many foreign visitors to China's eastern seaboard remain unaware of the dynamism of China's burgeoning second-tier regional cities. Their business opportunities are the subject of a research report published in August 2008 by the China Britain Business Council. It covers 35 cities in 17 provinces in China's Northeast, Bohai, Southeast, Central, Southwest and Northwest Regions. Collectively these cities account for 16 % of China's population but represent 36% of her total GDP.

Many of these cities form urban clusters each with a radius up to about 175 miles (4):

Thus, Tianjin (an important seaport and the traditional gateway to China's capital), Shijiazhuang and Tangshan each fall within a 170-mile radius of Beijing; Zhuhai, Dongguan and Foshan are less than 65 miles from the provincial capital of Guangzhou; and Suzhou (49 miles), Wuxi (73 miles) and Hangzhou (102 miles) are developing in close proximity to Shanghai. The city of Ningbo (93 miles) will also benefit from the building of the new Hangzhou Bay Bridge, which has reduced the travel time by car to Shanghai to less than two hours.

A further significant cluster of regional cities (without a core established city) can be seen in the Shandong Peninsular of the Bohai Rim. Here, the greatest distance between the four cities of Qingdao, Yantai, Weifang and Weihai is 175 miles, while two other short-listed cities, Zibo and Dongying, are less than 65 miles from Weifang

China's Urban Billion

Mckinsey Global Institute (MGI) published a Report *Preparing for China's Urban Billion* in March 2008 based on detailed macro and micro-economic research and extensive field studies (5). The Report comes up with the following startling statistics of what China's urbanization would look like by 2025:

- 350 million more will be added to China's urban population, more than the current population of the United States
- 1 billion will live in China's cities by 2030
- 221 China's cities will have a population of 1 million or more, compared with 35 such cities in Europe today
- 5 billion square metres of roads will be paved
- 170 mass transit systems will be built
- 40 billion square metres of floor space will be built in 5 million buildings
- 50,000 of these buildings will be skyscrapers, equivalent to building ten New York Cities
- China's GDP will have multiplied 5 times

Over the past ten years, nearly 50% of China's GDP growth has come from urban fixed investment. China's urbanization rate already doubled since 1980 to 44% in 2005. As China is determined to realize the aim of quadrupling by 2020 her per capita GDP in 2000, MGI reckons that the proportion of GDP generated by China's cities is expected to rise from 75% to 95% by 2025. By that time, two thirds of China's population will live in cities. An urban billion will be attained by 2030.

Between 2005 to 2025, China is expected to see 6 more mega-cities (population over 10 million each) adding up to a total of 8 such super-cities; 9 more big cities (population 5 – 10 million each) adding up to a total of 15 big cities; 55 more medium-sized cities (population over 1.5 - 5 million each), to reach a total of 115 medium-sized cities; 163 more small cities (population 0.5 – 1.5 million each), adding up to a total of 280 small cities; and 72 more big towns (population up to 0.5 million), resulting in a total of 521 big towns. Across the land, China's skyline will change spectacularly.

According to MGI, this urbanization process is expected to increase China's GDP by a factor larger than the current GDP of Japan, amounting to 20% of global GDP growth over this period.

However, MGI thinks that China's on-going urbanization will remain relatively dispersed, with a large proportion of the expansion in the inner provinces. Today, while 45% of China's urban GDP is represented by China's top 40 cities, the remaining 55% is accounted for by dispersed smaller cities. A similar percentage – 54%, is expected to be generated by smaller cities by 2025. These small cities will add up to 900, where 70% of China's population is expected to live.

Eco-response to ecological pressures

Naturally, such massive urbanization is expected to pose huge challenges of urban sprawl, over-development, urban congestion, social alienation, loss of arable land, pressure on resources, pollution, shortage of skills and jobs, and unmet funding demands. MGI estimates that additional public services alone would require RMB 1.5 trillion per annum by 2025, equivalent to 2.5 % of urban GDP. Deteriorating air quality, inadequacy of potable water, acid rain, desertification, toxic industrial discharges, CO₂ and SO₂ emissions and a host of other ecological risks will continue to threaten China's urban transformation. In response, more and more cities, both old and new, are adopting an eco-city model. Shanghai's Dongtan is a leading example. I will delve into how well China will be able to meet her huge environmental challenges in a late chapter on '*China's Quiet Green Revolution*'.

The economics of integrated urban clusters

MGI finds that though not necessarily applicable elsewhere, China's large integrated urban networks, including the hub-and-spoke model of a cluster of dynamic cities, tend to be more economically efficient than a more dispersed mode of urban development. With economy of scale and critical mass, these urban clusters have shown higher economic productivity. They tend to attract more talent and investment, multiply economic benefits more widely, create more jobs, sustain more efficient public transport systems, achieve better pollution control and greater savings in energy and arable land, leading to higher GDP per capita.

The study estimates that regardless of the shape of urbanization, increasing 'urban productivity' alone would decrease public spending by 2.5% of GDP, reduce CO₂ and SO₂ emissions by 35%, and half the water pollution. China's huge financial surpluses should be well placed to fund the many infrastructural projects required. She is seeking to enhance local productivity by encouraging higher value-added services, promoting the efficiency and conservation of energy, water and other resources, and investing in local skills and talents. Needless to say, in this quest, China is on a very long march and has many daunting mountains to climb.

The Problem of Rural Migrants

Of the 350 new urbanites, 243 million are expected to be migrants from the countryside, where lives China's huge pool of surplus labour. The urbanization process is expected to create 160 – 210 million more jobs. Many of the new cities will be spreading from China's eastern seaboard towards the inner provinces. This will create jobs where most of the rural migrants originate and should help alleviate China's acute regional imbalance, one of the Five Imbalances highlighted in the 11th Five Year Plan (2006-2010).

No other phenomenon illustrates the problems of China's regional imbalance more vividly than millions of rural migrant job-seekers flocking to the cities. Their story is heart-rending. At railway stations and 'long-distance' bus terminals in China's coastal cities, they can be seen carrying over-sized belongings in nylon bags and trunks. In search of a better future for themselves and their families, most have to leave their wives, young children and elderly parents behind in their home villages thousands of miles away. A survey in 2007 estimated that 23

million children, 47 million women and 18 million elderly were left behind. Because of their sheer numbers, the migrant workers are denied access to urban social services such as healthcare and education available only to permanent residents. Many live in make-shift shelters and drift from job to job. They are sometimes seen squatting by the roadside with their working tools of hammers and saws. Many have to work for sub-standard wages for more than 10 hours a day with few days off a month. Their hardship is only made bearable by the dream of improving the lot of their families they sorely miss. By dint of sheer hard toil, many have succeeded in bettering their lot to various degrees and a few have even made their fortunes in the cities.

The sweat and tears of migrant workers and their families left behind are captured in such works as *Dancing Solo: Women Left Behind in Rural China* (6), *Differentiated Childhoods* and *Lonely Sunset* (7). Their plight is a major source of social discontent and instability. The seriousness of the situation has long caught the attention of the State Council. In January 2003, a decree was issued on *Successfully Managing the Employment of Rural Workers in the Cities and their Access to Public Services*. In August 2003, a circular was issued by the All China Federation of Trade Unions (ACFTU) to urge migrant workers to join the trade unions. In October 2003, a campaign was launched to equip them with vocational skills and knowledge of their legal rights. The Labour Contract Law, which took effect in January 2008, offers protection of their entitlements. More and more grass-root NGOs are formed to help with their needs and problems. Some leading migrant workers have even been elected as deputies to the National People's Congress.

The massive urbanization moving to the inner provinces is turning many villages into small towns and cities. This should provide more in situ job opportunities so that at least a proportion of rural workers would not have to migrate thousands of miles to the coast to eke out a better livelihood. But China's urbanization is a work in progress of epic proportions. While this is on-going, the hardship and heroism of China's migrant workers will continue to sadden and inspire.

Urban architecture and heritage

The scale, speed and pressures of China's break-neck urbanization have spawned a great number of lack-luster look-alike city buildings and skylines. In the process of such rapid urban transformation, many old buildings, some with cultural or historical merits, have fallen prey to the bulldozers. The *hutongs* in Beijing are a case in point (8). Nevertheless, there is now a growing awareness of the prestige and economic benefits associated with UNESCO World Heritage Sites. China has now 38 such listings and many towns, counties, prefectures and cities are seeking to have more buildings and sites listed. International NGOs interesting in heritage preservation, such as the Global Heritage Fund, are also working with the relevant Chinese authorities to restore and preserve some buildings of cultural or historical significance. However, in the final analysis, urban China is now more a landscape of the future than of the past, with China's heritage remaining more in people's values and customs than in the ethos of her modern architecture.

As each emerging city wishes to outdo its rivals in iconic ultra-modern buildings, China's massive urbanization has given rein to award-winning futuristic designs by a new generation of Chinese state-of-the-art architects. Many have trained in the best universities in China and overseas as well as architectural practices around the world. Examples are Ma Qingyun, founder of MADA s.p.a.m. (strategy, planning, architecture and media) in Shanghai; Liu Xiadu, Meng Yan and Wang Hui, founding partners of URBANUS Architecture; Zhang Lei, founder of Atelier Zhanglei; Zhang Ke, founder of standardarchitecture; and Ma Yansong, founder of MAD, to name but a few (9).

Urban Neighborhood Residents' Committees

Urban Neighborhood Residents' Committees have existed in China since the founding of the People's Republic of China. They were formalized under the Organic Law of Urban Residents' Committee in 1989. Now numbering in millions, they are grass-root organizations with elected representatives and salaried employees, discharging certain community responsibilities such as neighborhood welfare, cultural entertainment, environmental management, sanitation, social order, and re-employment. These are generally functions which the state is reluctant or unable to provide. The Committees act as a channel of feedback on government policies and measures between the state and local residents (10). They also serve as centers for local civic action. Open elections to the Committees are held regularly. In the wake of China's breakneck urbanization, these grass-root community organizations are set to encompass a huge proportion of the entire population. With continuing advancement in the level of education attained by the masses, these Neighborhood Residents' Committees are likely to play a role in advancing China's continuing process of democratization in the coming decades.

Conclusion

China's current massive urbanization is the largest and fastest in human history. The sheer scale, speed, and the attendant economic, social, political, cultural and ecological repercussions have yet to be fully quantified. In any event, this remarkable transformation will define China's progress for many decades to come.

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- (1) The Global Financial Centres Index (GFCI) was first produced by the Z/Yen Group for the City of London in March 2007. It rates and ranks each major financial centre in the world in terms of competitiveness.
 - (2) Professor Wu Liangyong of Tsinghua University finds that the Beijing-Tianjin-Hebei area has weaknesses in overall competitiveness, resource allocation, environmental protection and coordinated regional development. The "one axis, three belts" development pattern was proposed by Professor Wu and his colleagues in a report released on 21 October 2008 to achieve balanced development in the three areas.
 - (3) China Today, *Glorious Dreams of a Desert City*, July 2007, pp.45 – 57
 - (4) China – Britain Business Council and UK Trade & Investment, *Opportunities for UK Businesses in China's Regional Cities*, August 2008, page 9
 - (5) McKinsey Global Institute, *Preparing for China's Global Billion*, McKinsey & Company, March 2008

- (6) Wu Huifang & Ye Jingzhong, *Dancing Solo: Women Left Behind in Rural China*, China Agricultural University, 2008
- (7) Referred to in *Left Behind*, Beijing Review, 5 February 2009, p.20
- (8) Read the sad tale of destruction of a great deal of Beijing's architectural heritage in Jasper Becker's *City of Heavenly Tranquility: Beijing in the History of China*, Penguin, 2009
- (9) Architectural Design, New Urban China, guest-edited by Laurence Liauw, John Wiley & Sons, London, September/October 2008, pp. 84-93. Ma Qingyun graduated from Tsinghua University School of Architecture and the University of Pennsylvania with extensive experience at Kohn Pedersen Fox and Kling Kling Lindquist in the US. In 1996, he collaborated with Rem Koolhaas on the 'Great Leap Forward' Harvard Pearl River Delta research project in Shenzhen. Liu Xiaodu, Meng Yan and Wang Hui, all Tsinghua graduates, undertook postgraduate studies at the Universities of Miami, Oxford, and Ohio. Meng and Wang worked in Kohn Petersen Fox and Gensler in New Yoork respectively while Liu had experience in Atlanta. Zhang Lei studied at the Nanjiang Institute of Technology and completed his postgraduate studies at ETH in Zurich. Zhang Ke graduated from Tsinghua and then from the Harvard Graduate School of Design. Ma Yansong graduated from the Yale School of Architecture following his studies at the Central Academy of Fine Art (CAFA) in Beijing.
- (10) See Paper on *Residents' Committees versus Villagers' Committees: A Study on Neighborhood Self-Governance and Democratization in China* by Jianfeng Wang, Western Michigan University, 2004 and article on *Community Construction in Contemporary China* by Leslie Shieh and John Friedmann, in *City*, Volume 12, Issue 2, July 2008, pages 183 - 195