Growth in China and the Evolution of Asia's Megalopolises

China is moving from a country that was dependent on export-led growth to a more consumption-focused economy driven by the expansion of the middle class, higher incomes and increased wealth.

EXECUTIVE SUMMARY

China's economy is in transition. It is moving from a country that was dependent on export-led growth to a more consumption-focused economy driven by the expansion of the middle class, higher incomes and increased wealth. Already first-tier cities have advanced to a point where consumption is self-sustaining. In the course of this transition megalopolises have been developed through major transportation infrastructure improvements. A megalopolis is typically defined as an adjacent metropolitan area and can be thought as a polycentric urban agglomeration. In China, the Pearl River Delta (PRD) and Yangtze River Delta (YRD) are two of these megalopolis regions. In South East Asia, the Association of Southeast Asian Nations (ASEAN) is a political association, which is similar in nature. All have invested heavily in their physical and service infrastructure. In this context real estate investors should look to invest directly at the economic centers of these regions specifically through the mature gateway markets of Hong Kong, Shanghai and Singapore. Opportunities exist principally in the commercial sector (office and retail), providing quality space for businesses that are benefiting from the increase in consumption and the development of these megalopolises.

SLOWER IS BETTER FOR CHINA

"…China was for centuries the world's most productive economy and most populous trading area."
Excerpt From: Henry Kissenger "On China"

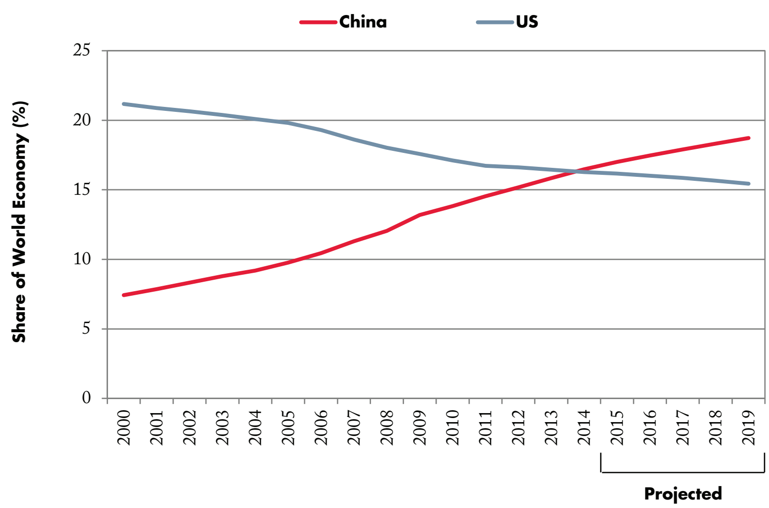
In 2007 the Organisation for Economic Co-operation and Development (OECD) published a revision of their report "Chinese Economic Performance in the Long Run" (updated from 1998), which details the long-term expectations for the Chinese economy. Leading the effort on this was the highly respected economic historian Angus Maddison, a leader in the field of quantifying the size of past economies. The work reiterated that China had dominated the global economy for much of history and that by 1820 China represented about 30% of the world economy[1]. After 1820 the West progressed as China regressed and by 1973 China's share had fallen to only 5%. Thanks to "greater efficiency and faster productivity" Maddison projected that by

[1]The research used purchasing power parity to convert Yuan to U.S. dollars

AEW ASIA

2015 China would once again be the world's largest economy. Estimates by the International Monetary Fund (IMF), as shown in Figure 1 demonstrate that he was right; China did overtake the U.S. as the world's largest economy in 2014. This is the first time since the 1880s that the United States is not the world's largest economy[2]. The latest forecasts by the IMF anticipate that in five years' time the U.S. economy will be 21% smaller than China's[3].

FIGURE 1: China and US Share of Global Economy



Source: IMF

China is sustaining high growth, but slightly lower growth in the future is seen to be a healthy development.
International Monetary Fund, World Economic Outlook, October 2014

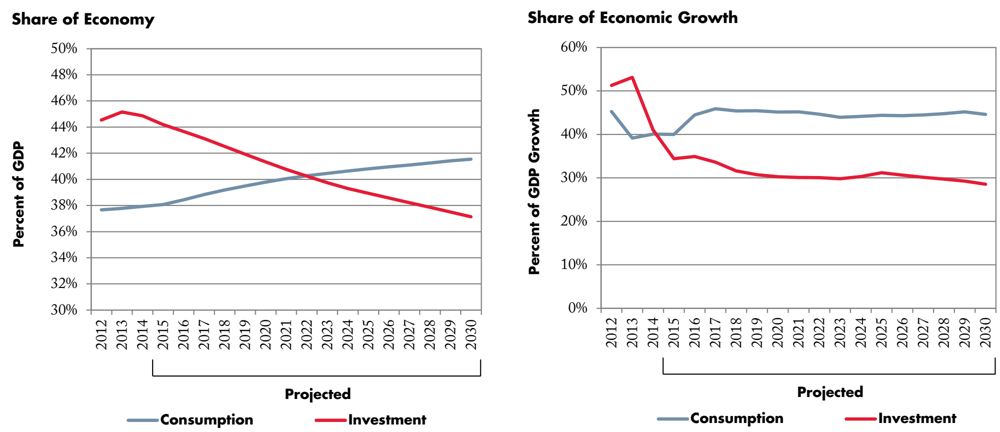
China's re-emergence was accomplished by growing real GDP at an astonishing rate of more than 9% per annum over the past 30 years[4]. This was achieved with the successful implementation of an investment and export strategy. However, China's focus on investment created "capacity beyond its domestic ability to consume"[5] which was absorbed by strong global growth. This pace and composition of growth was not expected to be sustainable for much longer.

Since coming to power in 2012, the current administration, led by President Xi Jingping, recognized the endless quest for growth needed to be re-examined. As a result the government focused on structural reforms that were designed to shift where growth was coming from. Over the medium-term China is focused on transitioning from investment and export-driven growth to more consumption-based growth. The transition to a consumer-driven economy will take time and it implies a slower rate of economic growth. Research by McKinsey[6] concluded it was possible for China to boost private household consumption to 45-50% of GDP by 2025[7]. This would be a marked improvement from its current 35%

[2]Is the U.S. Losing Competitiveness? Niall Ferguson, Laurence A. Tisch Professor of History, Harvard University Testimony for the Commerce, Justice, Science Appropriations Subcommittee. March 2012
[3]In purchasing power parity
[4]Gross domestic product, constant prices, local currency. 30-year average 9.8% per annum, 20-year average 9.5% per annum, 10-year average 9.9% per annum
[5]China's Path to Consumer-Based Growth: Reorienting Investment and Enhancing Efficiency, Il Houng Lee, Murtaza Syed, and Liu Xueyan, IMF Working Paper, March 2013
[6]*If you've got it, spend it. Unleashing the Chinese Consumer.* August 2009
[7]McKinsey's research proposed a shift towards consumption can be done by improving the quality and availability of products and increasing access to and use of consumer credit.

and leaves room for future growth when compared to the U.S., where consumption is about 68% of GDP[8]. Figure 2 shows that consumption as a share of annual economic growth is surpassing investment and also forecasts the point where consumption will comprise a larger part of GDP, which is likely within the next decade.

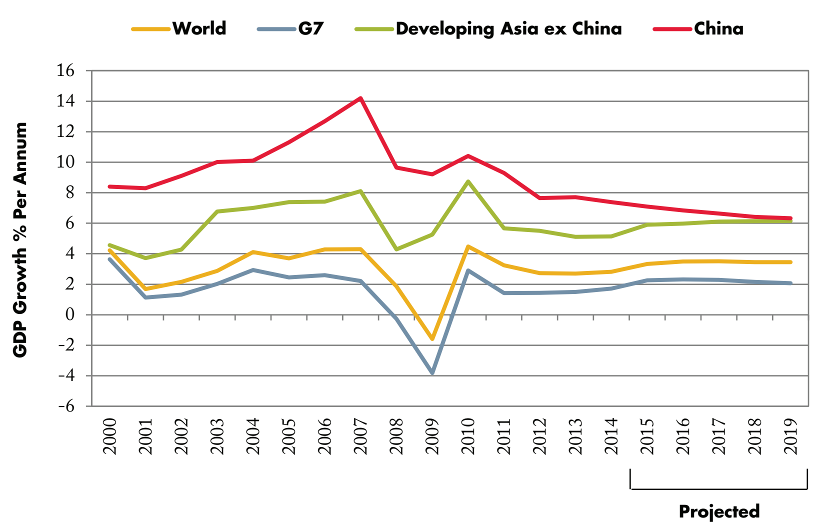
FIGURE 2: China's Transition Toward A More Balanced Growth



Source: Oxford Economics, January 2015

Figure 3 highlights this slowdown in growth and suggests it could be 6% to 7% per annum over the near-term[9]. Even this reduced rate of economic growth is enviable and will likely be more than three times the rate of growth seen in the G7 economies. While growth expectations are lower for China, it is still expected to be a large part of global growth. From 2015 to 2019, China is projected to contribute about 22% of global economic growth.

FIGURE 3: GDP Growth for China and Major Economic Groupings



Source: IMF World Economic Outlook, October 2014
Emerging and Developing Asia: India, Indonesia, Malaysia, Philippines, Thailand
G7: Canada, France, Germany, Italy, Japan, United Kingdom and United States

All of this is occurring in the context of the unwinding of the massive credit expansion that occurred in the wake of the Global Financial Crisis (GFC). China implemented a massive, credit-led stimulus program to boost growth. The strategy was successful with growth

[8]World Bank
[9]IMF, Oxford Economics, World Bank

averaging 9.4% per annum from 2006 to 2014. Today the country's leadership is left to manage future growth in the context of a large credit base. We believe this means that the reforms required for the transition to a more consumer-driven economy will be implemented slowly and methodologically.

Slower growth that is coming from different sources may require a more refined real estate investment strategy. In this context, we believe real estate investors should focus on the largest, most transparent cities that have already invested heavily in their development and infrastructure. Coastal cities in China, such as Shanghai are mature enough so that consumption is self-sustaining[10]. The service sector is expected to become more of a focus for China's leadership as they try to transition from being the world's factory to higher value-added uses. Cities such as Shanghai have often been considered gateway markets for China, with foreign firms using the market as an initial entry point and a launching pad from which to expand throughout the country.

The service sector is expected to become more of a focus for China's leadership as they try to transition from being the world's factory to higher value-added uses.

As such we believe there will continue to be opportunities in the commercial (office and retail) sectors of these cities, like Shanghai. AEW believes in the simple but fundamental principle that real estate is a factor of production in the local economy and excess economic profits are ultimately capitalized into the value of property through higher rents. We believe the local economies of these cities are comparatively better positioned (against second- and third-tier cities) as the national economy transitions to its next phase of development.

Cities such as Shanghai have higher consumption levels, incomes, wealth and are more self-sustaining. There are real estate investment opportunities in these maturing markets to provide quality commercial space for businesses that are growing along with the local economy. Currently, Tier I markets, such as Shanghai, exhibit a better demand/supply balance in the office sector than Tier II markets, such as Xiamen, Chongqing, Changsha, and Tier 1 markets also have shorter lease-up periods for new office developments[11] thanks in part to the more established nature of these markets.

MEGALOPOLIS PROVIDING MEGA-OPPORTUNITIES

While growth in China may be slowing, we are also seeing the emergence of the megalopolises. As mentioned previously, a megalopolis, or mega-region, is typically defined as an adjacent metropolitan area and can be thought as a polycentric urban agglomeration. The Boston, New York City, Philadelphia, Baltimore, and Washington D.C., or BosNYWash is considered a megalopolis[12].

Asia has its own megalopolises and at their centers are some of the most important gateway markets in the region. Hong Kong is part of the highly integrated Pearl River Delta megalopolis and Shanghai is the center of the Yangtze River Delta megalopolis. Singapore is a leading financial center and gateway for ASEAN, a political association in South East Asia. Figure 4 quantifies the amount of economic activity taking place in these megalopolis areas and reveals they represent three to four times the activity than just the gateway market itself. Additionally, these regions are investing in an effort to improve their inter-connectedness, both physically through transportation infrastructure improvements and also by reducing trade (goods and services) barriers and improving efficiencies.

[10] China's Path to Consumer-Based Growth: Reorienting Investment and Enhancing Efficiency. March 2013
[11] China Office Pipeline and Dynamics, Coming wave of supply…not as bad as it looks. DTZ China Insight. May 2014
[12] Swatridge L.A. (1971), The Bosnywash Megalopolis (McGraw-Hill)

FIGURE 4: Size of Key Gateway Markets and Their Megalopolis (USD Billions)

Purchasing Power Parity GDP	City	Megalopolis
Hong Kong	416	1,650[13]
Shanghai	594	1,985[14]
Singapore	366	1,348[15]

Source: Brookings Institute, 2014

Large urban agglomerations are an important consideration when deciding where to invest in real estate as they attract highly skilled workers; are the beneficiaries of more investment, both Foreign Direct Investment (FDI) and government investment; and sit at the center of these economic network's that stimulate economic growth, efficiency and productivity. One example of this can be seen in their transportation infrastructure development, which is greatly increasing their interconnectedness and reducing barriers to trade.

HONG KONG & PEARL RIVER DELTA

Perhaps the clearest example of a gateway market that is benefitting economically from the development of a megalopolis is Hong Kong. In 2008 China revealed a plan[16] to comprehensively develop the Pearl River Delta (PRD) region. The desired result is a massive megalopolis with approximately 50 million people in a geographic area the size of Switzerland. The goal is to grow per capita GDP in the PRD from RMB 80,000 in 2012 to RMB 135,000 by 2020. They expect to achieve this by improving the region's economic integration, including Hong Kong, in order to create an internationally competitive cluster of cities that are highly interconnected with the ability to travel between them within an hour.

These improvements have included several cross-border transportation infrastructure projects, which significantly improved the flow of people and trade between Hong Kong and the PRD. This development has created a one-hour commuting zone, Figure 5 reducing existing travel times and significantly improving the interconnectedness of the region.

FIGURE 5: The Pearl River Delta One-hour Commuting Zone

Source: AEW Research

[13]Hong Kong, Shenzhen, Guangzhou, Dongguan, Macau, Zhongshan, Zhuhai, Foshan
[14]Shanghai, Suzhou, Wuxi, Nantong, Changzhou, Ningbo, Nanjing, Hangzhou
[15]Singapore, Kuala Lumpur, Jakarta, Bangkok, Manila
[16]Framework for Development and Reform Planning for the Pearl River Delta Region (2008-2020), National Development and Reform Commission (NDRC)

These projects include the Hong Kong to Zhuhai and Macau Bridge and Tunnel (HK-ZH-Macau Bridge), the Shenzhen and Zhongshan Bridge, and the Guangzhou to Shenzhen to Hong Kong Express Rail Link (HK-SZ-GZ Express Rail Link). The latter, which is expected to be completed in 2017, is a 140km (87 miles) high-speed rail link with a Hong Kong terminus in West Kowloon, minutes from the CBD. It would reduce the travel time from Hong Kong to Guangzhou to just 48 minutes (from the current 100 minutes). It is also part of the countrywide high-speed rail network that ultimately connects Hong Kong to Beijing via some 2,300 km (1,430 miles) of rail with an estimated travel time of only eight hours.

There have also been soft infrastructure developments. These include the Octopus Lingnam Pass which is a smart-card service that allows people to pay for public transport and buy goods at certain retail outlets in both Guangdong province (in RMB) and Hong Kong (in HKD) using a single card. Shenzhen residents have been able to enter Hong Kong via a multi-entry travel permit for several years, dramatically increasing cross border activity.

As the city becomes more integrated in the PRD, Hong Kong-based companies will be able to expand their operations creating demand for real estate.

As the megalopolis becomes more integrated and several of the key transportation infrastructure projects are completed over the next few years, we expect to see Hong Kong continue to play an important role in the improved PRD region. As the city becomes more integrated in the PRD, Hong Kong-based companies will be able to expand their operations creating demand for real estate. For instance the MTR Corporation, Hong Kong's subway owner and manager, is now operating in China and the Link REIT, one the Asia's largest real estate investment trusts, plans to invest into the PRD[17]. It is likely Hong Kong's undersupplied real estate market, particularly in the office sector, will be supported by this integration and expansion into the PRD megalopolis. We believe, being the PRD gateway market, global and domestic Chinese firms alike will likely look to enter or extend their operations in Hong Kong. Over the next 10 to 15 years, Hong Kong and the PRD region will look substantially different than they do today, which should provide lots of opportunity for real estate investors.

SHANGHAI AND YANGTZE RIVER DELTA

The Yangtze River Delta is home to more than 70 million people[18], and at 210,000 square kilometers (81,300 square miles), is only slightly smaller than the United Kingdom in land mass[19]. The region is composed of the Municipality of Shanghai, Zhejiang Province and Jiangsu Province. Shanghai City is the financial center of the YRD region, which, in part, helps to explain the continued rise of its real estate market. The local government has invested heavily in improving the city's transportation infrastructure. For example, even though it has the longest subway system globally, it plans to double the number of metro lines from 11 to 22 by 2020. Further, Shanghai is a key node in China's high-speed rail network and the Department of Urban Planning and Design at Nanjing University, China concluded, "the high-speed railway will certainly enhance accessibility within Yangtze River Delta area, greatly shorten temporal and spatial distance between cities and promote the integrated development of the Yangtze River Delta."[20] Similar to the vision for PRD, the Shanghai-Hangzhou and Shanghai-Ningbo rail connections create a one-hour economic circle.

[17] As reported by the Urban Land Institute
[18] Brookings Institute, 2014
[19] International Trade Administration, Department of the Commerce, U.S.
[20] The High-Speed Railway Network in Yangtze River Delta: An Analysis of the Accessibility Impact. Dan ZHAO, Department of Urban Planning and Design, Nanjing University, China

Our analysis suggests the YRD, which extends Shanghai's economic catchment, is the largest megalopolis in China. In 2011 the YRD economy was estimated at RMB 8,214 billion, or 17% of China's economy. Its per capita GDP was more than twice the national average and because it is a tourist destination it captured 15% of the country's retail sales. Shanghai is often considered the launching platform for foreign firms entering China due to its large sophisticated business and consumer base. There are ten airports in the region connecting it to most of China and the world. Additionally two of the world's ten busiest container ports are in the region, Shanghai and Ningbo-Zhoushan[21]. We believe high quality real estate will continue to be in demand in Shanghai due to its position as China's financial center, the YRD gateway and because it is a maturing market.

Shanghai is often considered the launching platform for foreign firms entering China due to its large sophisticated business and consumer base.

SINGAPORE & ASEAN

While not strictly part of a megalopolis, Singapore sits in the center of the ASEAN region and the five key capital cities that are home to more than 70 million people[22]. In 2007, member states signed an ASEAN Economic Community (AEC) Blueprint, which serves as "a master plan guiding the establishment of the ASEAN Economic Community 2015". It envisages a single market and production base, a highly competitive economic region and an economic bloc that is fully integrated into the global economy[23]. There are parallels between the AEC and the Treaty of Rome, which in 1957 led to the formation of the European Economic Community (EEC). Today, ASEAN leaders have the luxury of learning from the EEC and European Union experiment. The AEC is a positive step toward integrating the region and should help reduce costs associated with doing business; improve efficiency and transparency through economies of scale; and eventually lead to higher economic growth. The region should also benefit from the ongoing shift of labor intensive production out of China.

One project seeking to connect Singapore with its neighbors is the Singapore-Kuala Lumpur High Speed Rail line. Announced in 2013 and targeting a completion by 2020, the rail line aims to reduce the door-to-door travel time between the two cities from three hours by air (five by car) to just 90 minutes by rail.

Singapore will no doubt remain the key gateway market and financial center for the region as it continues to develop and grow. Regional growth, driven in part by a young urban population, will also benefit Singapore as it looks to boost domestic productivity. Singapore is setting itself up to become the location of choice for businesses operating in the region and for FDI to flow through Singapore into ASEAN. Similar to how London is the major economic hub for the EU, Singapore attracts the region's most talented and skilled workers as they gravitate to the financial, banking and service sectors.

CONCLUSION

We believe the economic restructuring and the slowdown in growth occurring in China is favorable for the region as it aims to create more sustainable long-term growth for the world's largest economy. If growth were to average 6% to 7% per annum over the near-term, while investment was reduced and consumption rose, China would still contribute more than 20% of global growth. Opportunities for investors exist in the larger cities, such as Shanghai, which are less dependent on investment and have developed to a point where consumption is self-sustaining.

[21] As measure by twenty-foot equivalent unit (TEU), 2013
[22] Brookings Institute, 2014
[23] http://www.asean.org/communities/asean-economic-community

As China reorients where its growth is coming from, we believe there are compelling real estate investment opportunities in the region's gateway markets, such as Hong Kong, Shanghai and Singapore. These markets provide access to three distinct megalopolises that encompass more than 20 cities with a population of almost 200 million[24]. Transportation infrastructure investment and closer economic and trade ties are contributing to improved interconnectedness and efficiency gains in these regions. Moreover the collaborations formed between these polycentric urban agglomerations are leading to higher consumption growth and wealth creation. We believe these mature gateway markets provide opportunities to invest directly in the middle of this development. In particular, opportunities exist in the commercial sector (office and retail) by focusing on providing quality space, through upgrading existing poorly maintained or undermanaged buildings.

For more information, please contact:

Glyn Nelson
glyn.nelson@aew.com
or +65 6303 9016

Prepared by AEW Research, February 2015

This material is intended for information purposes only and does not constitute investment advice or a recommendation. The information and opinions contained in the material have been compiled or arrived at based upon information obtained from sources believed to be reliable, but we do not guarantee its accuracy, completeness or fairness. Opinions expressed reflect prevailing market conditions and are subject to change. Neither this material, nor any of its contents, may be used for any purpose without the consent and knowledge of AEW.

AEW ASIA
6 Battery Road
#21-01
Singapore 049909
+65 6303 9000

AEW
Two Seaport Lane
Boston, MA 02210
+1 617 261 9000
www.aew.com

[24]Brookings Institute, 2014