

JLL Global Research

China12: China's Cities Go Global



China 12



Shanghai

Foreword

Since the launch of our China Cities series in 2007, JLL has charted a remarkable journey of unprecedented city-building and infrastructure development. China is now entering a 'new era' of innovation, internationalisation and global influence, which will further reshape the urban landscape both at home and abroad.

This latest research focuses on China's leading cities – the **China12** – which are at the forefront of the transition to the innovation economy. The China12 are emerging at the core of new systems of cities of truly global scale, where success is now being measured by their ability to innovate and generate new ideas, their capacity to nurture the next generation of businesses and their quality of life.

Home to a growing breed of energetic tech-savvy businesses that will spearhead the next wave of China's globalisation, the China12 are poised to step up their engagement overseas, becoming global players for information and technology.

No longer passive respondents to government edicts or international capital flows, the China12 are set to become drivers of change in their own right. Over the next decade, their influence on the world's urban landscape and real estate markets will expand in new directions as they move to the leading edge of new technologies that may change the way we live and work in cities.



KK Fung

Managing Director - Greater China,
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Executive Summary

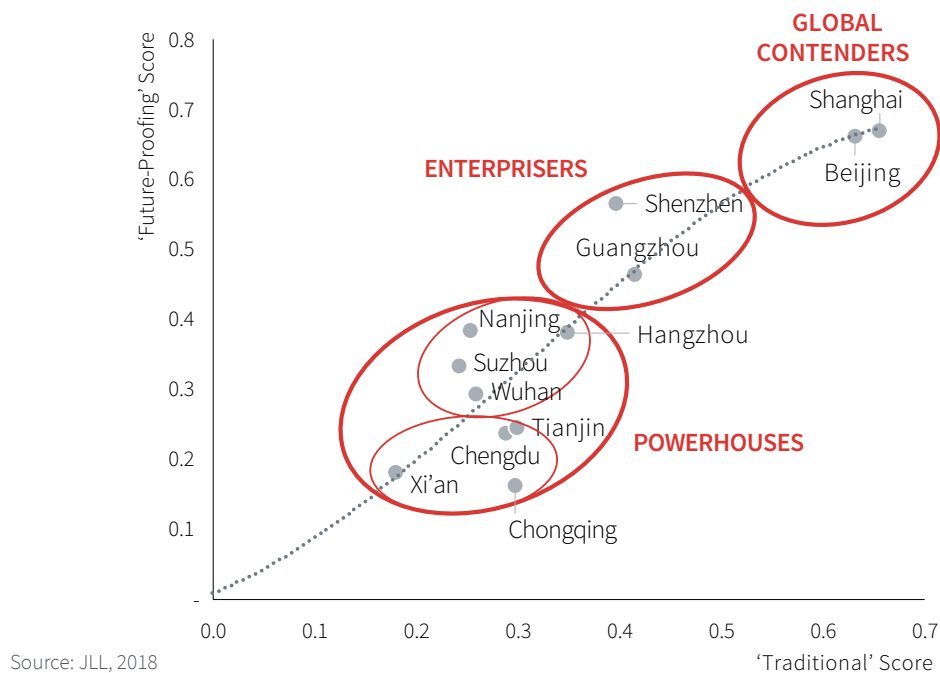
Innovation, Internationalisation and Influence

As China's economy and society enter a 'new era', its leading cities are becoming hubs of innovation, global interaction and influence. JLL has identified 12 Mainland cities – the **China12** – that are at the forefront of this movement. Home to a new generation of energetic tech-savvy firms, the China12 are extending their global influence and forging ever-deeper linkages abroad.

China12: Future-Proofing with Chinese Characteristics

The innovation economy has firmly taken hold. The focus of the China12 cities now extends beyond 'traditional' drivers to include their 'future-proofing' credentials – their readiness to embrace change through their innovation platforms, their business operating environments and their overall liveability.

China 12: A New Evolution Curve



- China's 'Global Contenders' – **Shanghai** and **Beijing** – unsurprisingly stand out among the China12 on key future-proofing metrics. This duo is on track to join the elite group of the world's most globally connected and powerful cities within the next five years. A further boost to their innovation capabilities, a deepening of their talent pools and improvements in environmental quality will help them make the next step up.
- Shenzhen** is one of the key China12 cities to watch. While Shanghai and Beijing remain ahead of the pack, Shenzhen is catching up and scores well on its 'future-proofing' credentials. Its 'Enterpriser' economy is attracting talented domestic migrants and Shenzhen's track record of developing innovative corporates is driving the city forward.

- Fellow ‘Enterpriser’ city – **Guangzhou** – does well in both ‘traditional’ and ‘future-proofing’ measures and is prioritising R&D, biotech and IT, as well as financial services and advanced manufacturing, which will provide momentum going forward.
- Among the next set of ‘Powerhouse’ China12 cities, **Hangzhou, Nanjing, Suzhou** and **Wuhan** are most prominent. Benefitting from enhanced connectivity and rapidly-developing business ecosystems, they are forming (with Shanghai) a truly global mega-cluster of innovation along the Yangtze River corridor.
- The remaining China12 cities – **Tianjin, Chengdu, Chongqing** and **Xi’an** – are highly dynamic ‘Powerhouse’ economies and impressive engines of growth. They score well on ‘traditional’ measures of performance, but they will need to reposition themselves as China moves up the value chain, by cultivating and retaining talent, attracting entrepreneurs, battling pollution and supporting ‘next generation’ companies.

Hong Kong holds a unique position in the network of Chinese cities and in its relationships with the China12 cities. As one of the Global ‘Big Seven’ cities, its strengths as a super-connector, its critical mass of business functions and its attractive business operating environment will secure Hong Kong’s position among the top city group. It is also well-positioned to play a key role in the ‘Belt and Road Initiative’ (BRI).

The Real Estate Outlook for the China12

The China12 commercial real estate markets are changing fast as they embrace the innovation economy:

- In **office markets**, take-up by technology companies is quickly catching up with that of traditional occupiers. They are driving the move into co-working space and, as the China12 move up the value chain, there is potential for rental uplift in several China12 office markets over the medium term.
- The **retail markets** are moving into the next phase of their development as e-commerce becomes ubiquitous. The China12 are likely to be global pioneers in ‘new retail’ concepts that push the integration of online and offline shopping.
- The China12’s **logistics markets** will continue to be defined by a fundamental imbalance between supply and demand. Warehousing will continue to be pushed out of the largest China12 markets by higher-value uses, resulting in further growth in satellite cities where industrial land is easier to access.
- The **hotels markets** in the China12 are set to gain from continued expansion of business and leisure travel, and growing MICE activities. The primary challenge for the sector will be absorbing volumes of new supply, but this will lessen over time.
- As the China12 cities move up the value chain into more innovative activities, the need for higher levels of real estate transparency to match their roles as global innovation hubs will become even more pressing. Greater transparency would also stimulate investment markets. A US\$40 billion per year direct commercial real estate **investment market** today could potentially blossom into a US\$150 billion+ market within the next decade, challenging the U.S. for top spot.

China12's Influence – Redrawing Global City Networks

The China12 are more integrated into the global economy than ever before. They are poised to step up their investment and engagement overseas, becoming global players in information, innovation and technology. With their expanding ecosystems of dynamic 'next generation' businesses, they will lead the next wave of China's globalisation, adding a new dimension to the relationship between the China12 and the global network of cities.

The World's Most Connected Cities with China

Most Connected	Real Estate Investment	Corporate Footprint	Office Leasing Activity
1 Singapore	1 New York	1 Singapore	1 Delhi
2 New York	2 London	2 London	2 Madrid
3 Sydney	3 Sydney	3 Tokyo	3 Bangkok
4 Tokyo	4 Tokyo	4 New York	4 Munich
5 Seoul	5 Los Angeles	5 Seoul	5 Kuala Lumpur
6 London	6 Melbourne	6 Jakarta	6 Moscow
7 Bangkok	7 San Francisco	7 Moscow	7 Sydney
8 Los Angeles	8 Chicago	8 Los Angeles	8 Istanbul
9 Melbourne	9 Singapore	9 Silicon Valley	9 Manila
10 San Francisco	10 Silicon Valley	10 Bangkok	10 Jakarta

'Most Connected' based on 40 variables across 5 themes: capital, corporates, people, infrastructure and trade; 'Real Estate Investment': Direct commercial real estate investment, 2014-2017; 'Corporate Footprint': based on basket of 81 Chinese corporates; 'Office Leasing Activity': based on leasing volumes across 70 major markets, 2015-2017.

Source: JLL, 2018

Singapore, New York, Sydney, Tokyo, Seoul and London currently possess the greatest linkages with China's leading cities, as measured by a blend of capital flows, corporate presence, infrastructure investment, trade movements and flows of people (students, tourists and residents). These six gateway cities will continue to be the first port of call for China's overseas activity.

With China's 'next generation' firms leading the next phase of globalisation, we expect to see a shift in geographical focus towards growth markets in South and Southeast Asia, with linkages deepening with the megahubs of **Delhi, Bangkok, Jakarta and Manila**, as well as **Kuala Lumpur**. This trend is already evident from recent office leasing activity by Chinese firms.

Corporate China will also increase its presence in tech-rich cities and high-value manufacturing hubs, as they seek access to advanced technologies and tap into local talent pools. Linkages between the China12 and innovation hubs such as **San Francisco, Seattle, Toronto, Munich and Dusseldorf** will strengthen.

Capital flows into commercial and residential property, development and land have been the most visible manifestation of China's globalisation on the world's real estate markets so far. Despite tough government measures implemented to restrict capital flows, Chinese investors will continue to be an important force in global real estate over the medium term. That said, future capital outflows will be more aligned with the government's strategic aims, its industrial policy and the international activities of Chinese corporations.

While international attention is focused on the 'Belt and Road Initiative' (BRI), its impacts on global city networks and real estate markets are likely to be modest over the short-to-medium term. Many BRI countries are high-risk destinations in emerging markets that will remain off the radar for international investors for some time.

The effects of BRI activities on real estate are likely to be felt most in semi-transparent markets such as **Nairobi** and **Jakarta**. Global financial centres – **Hong Kong, London, New York** and **Singapore** – will also benefit from growing demand for their broad-ranging expertise in financial and professional services to support the BRI roll-out.

China is transforming city skylines and infrastructure across the globe through bold investment and development. Yet over the next decade, China's influence on world cities will also be felt in more diverse and subtle ways. The China12 are set to become test beds for new models of urban living, particularly in the 'on-demand economy' and in new forms of mobility. While much of this innovation will have uniquely Chinese characteristics, elements will be transferable to other cities globally, particularly in high-growth cities that are looking urgently for new solutions to how they absorb rapid expansion.



Tianjin

China's 'New Era'

Embracing Innovation and Internationalisation

Since the release of JLL's 'China 60' research in 2015, China has entered a 'new era' of innovation and internationalisation. 2017 culminated in the 19th National Congress of the Communist Party of China, which cemented the position of President Xi Jinping and enshrined the 'Belt and Road Initiative' in the Party's constitution. In addition, a concerted shift of the Chinese economy up the value chain - through plans such as the 'Made in China 2025' programme, the global expansion of Corporate China and record levels of capital outflows - is having major repercussions not only in China's leading cities, but for the global economy and global real estate markets.

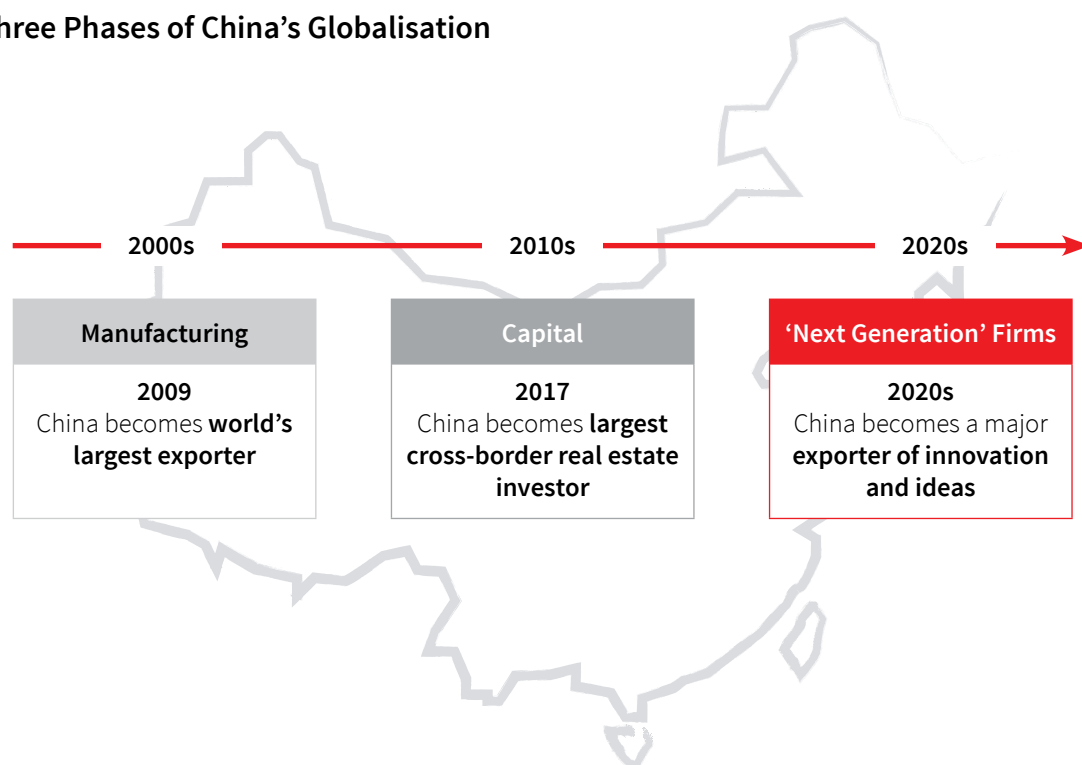
China as an Innovator

China has transitioned from imitator to innovator. It has long been considered the 'world's factory', and while the manufacture and trade of lower-value goods remain key pillars of its economy, the country is also becoming a source of innovation and a driver of technological change. Huge domestic corporations rank among the largest in the world, while China's numerous successful start-ups are carving out new niches in diverse fields. China's leading cities are poised to become key players in the marketplace for information, innovation and technology.

China on the World Stage

Xi Jinping's Belt and Road Initiative is emerging as a key tenet of China's future development and is helping the country look outwards. Capital outflows have now overtaken inflows, corporations are engaging seriously with new markets, and Chinese residents are travelling more for business, leisure and education. This is impacting cities and markets across the globe, causing new patterns and linkages to emerge between Mainland Chinese and global cities.

Three Phases of China's Globalisation



The Changing Focus of JLL's Research

In this latest research in our 'China Cities' series, JLL has adjusted its focus to Mainland China's 12 leading cities, which are the focal points as its economy matures, innovates and internationalises. China's cities are developing new global roles, strengths, connections and opportunities. The competitive landscape is changing fast and we explore how its major cities are preparing for this 'new era' of change.

China's most successful cities are helping forge ever-deeper links abroad. In a second section of the report, we have extended our research to assess the impacts and implications of China's growing influence on the network of world cities, drawing on our comprehensive understanding of urban dynamics built up as part of JLL's award-winning Cities Research programme.

China is already impacting many city skylines and urban footprints through Belt and Road infrastructure development and significant capital flows. While capital movement will ebb and flow with government policy, the next wave of Chinese corporate expansion, innovation and influence will add a new, and perhaps subtle, dimension to China's relationship with the rest of world and its impact on global real estate markets.

JLL: Reporting on China's Cities for over a Decade

2007



China30
Discovery

2009



China40
Lift-Off

2012



China50
Fast Growth

2015



China60
Smart Growth

2018



China 12

China's Cities Go Global

Identifying the China12

In this report we have focused on Mainland China's 12 leading cities. From an initial list of 287 prefecture-level cities, 12 cities were short-listed based on a mix of size, momentum, wealth and global connectivity.



	Urban Population (millions)	Office Stock (sqm, millions)	Retail Stock (sqm, millions)	Logistics Stock (sqm, millions)	4*/5* Hotels (number)
Beijing	18.8	8.2	7.7	2.0	618
Chengdu	11.2	3.1	6.5	3.4	150
Chongqing	19.7	1.9	5.4	2.0	86
Guangzhou	12.5	5.3	3.2	2.2	188
Hangzhou	7.3	1.4	4.1	0.7	175
Nanjing	6.9	1.5	3.7	1.4	88
Shanghai	21.2	11.9	12.7	6.4	557
Shenzhen	11.9	6.1	4.6	3.1	187
Suzhou	8.0	1.2	4.6	2.1	103
Tianjin	12.9	1.0	4.1	3.5	87
Wuhan	8.6	1.5	6.5	1.4	71
Xi'an	6.5	1.4	5.1	0.9	106

Urban Population: based on the latest available data

Office Stock: Grade A

Retail: Department stores and shopping malls; excludes suburban stock

Logistics: Bonded and non-bonded warehouses

Hotels: 'Upper Mid-Scale' and 'Upscale & Above' only

Real estate data correct as of Q4 2017

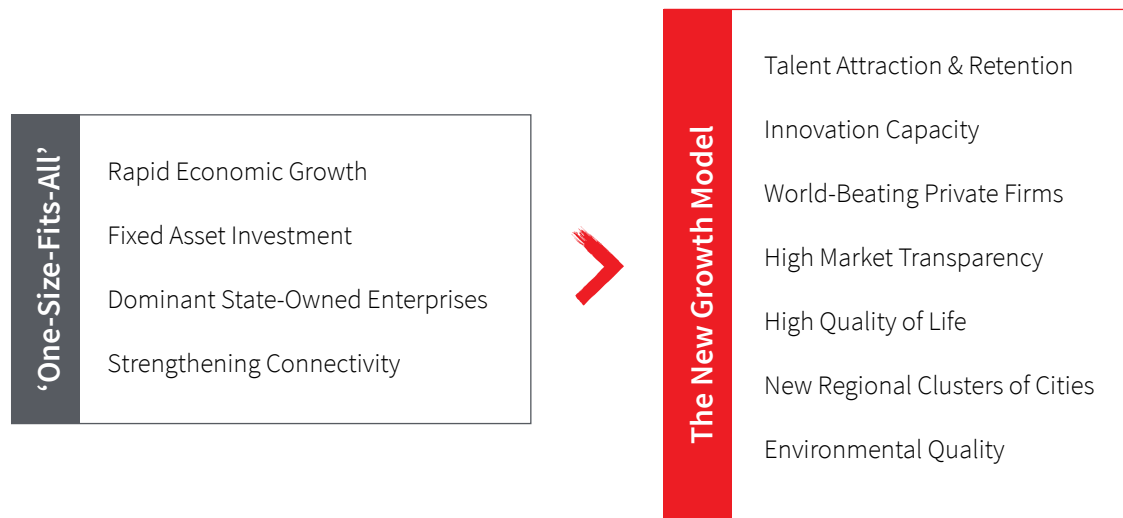
Source: JLL, EIU, STR Global, 2018

A New Model of Urban Competitiveness Emerges

What Makes China's Cities Competitive?

China's cities have, until recently, developed rapidly on the back of a 'one-size-fits-all' model that emphasises high levels of investment and fast growth. Now, the central government has called on cities to limit their dependence on investment and to focus on new growth drivers that are more sustainable and better-suited to building competitive cities in a globalised economy. JLL has grouped these drivers into a set of 'future-proofing' metrics that are creating a new set of complex city dynamics.

The Changing Nature of Chinese City Competitiveness



Source: JLL, 2018



Suzhou

Our Approach to Assessing China's Cities

As China's cities shift towards a new development model, JLL has created a new methodology for assessing potential that combines 'traditional' city metrics with measures of 'future-proofing':



'Traditional' Metrics

'Traditional' metrics offer a snapshot of the current position and short- to mid-term outlook for China's cities. City governments and external analysts alike have tended to emphasise these metrics and, while they continue to be useful measures, cities will need to build on these to remain competitive.

45 variables are included across 6 categories:

- **Size** – measuring population, economic scale and commercial property stock;
- **Wealth** – assessing incomes and consumer spending;
- **Growth** – including population, economic and real estate supply growth;
- **Connectivity** – measuring movements of goods and people by air, rail and road;
- **Traditional Corporate Activity** – including multinationals and established domestic firms;
- **Investment and Openness** – assessing fixed asset investment, land sales, foreign direct investment and real estate investment.



'Future-Proofing' Metrics

These metrics represent the factors that will be important for Chinese cities in the next phase of their development, covering elements of innovation, the business environment and quality of life.

51 variables are included across 9 categories:

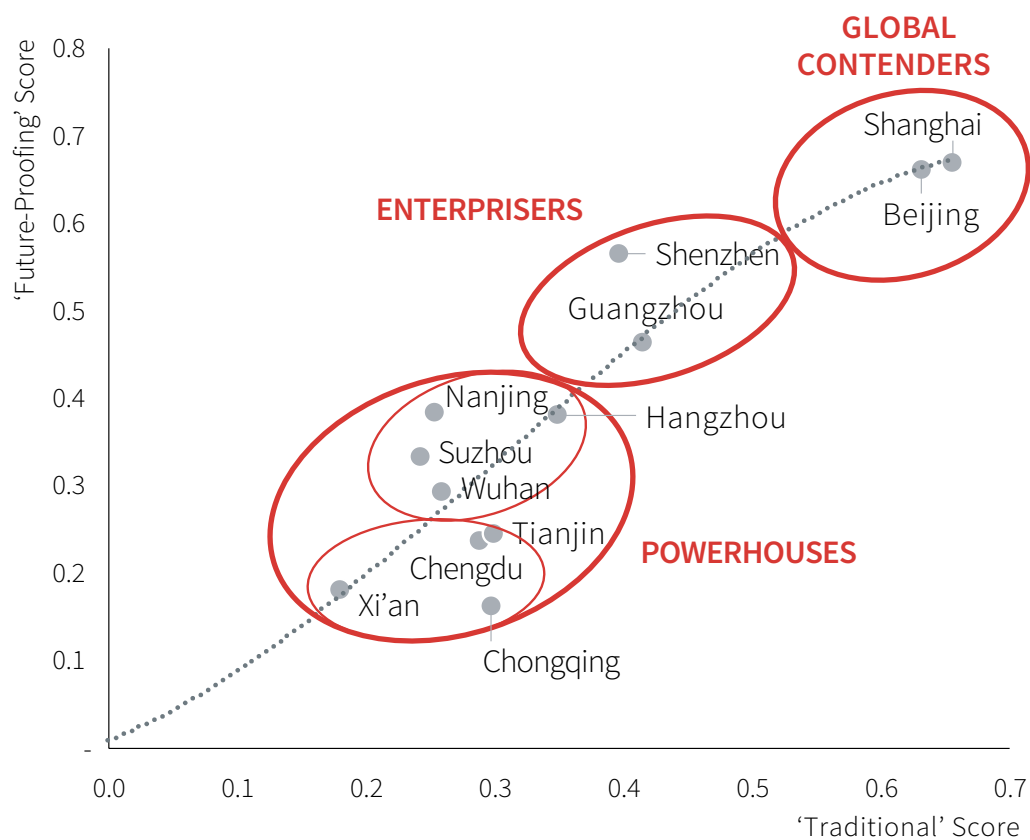
- **Education** – measuring the quantity and quality of (mostly tertiary) education;
- **Talent** – assessing the depth of the talent pool;
- **Innovation** – assessing the level of innovation in terms of patents, R&D spending and start-ups;
- **'Next Generation' Corporate Activity** – measuring the presence of China's 'next generation' of private and innovative technology firms;
- **Liveability** – evaluating a city's retail scene, F&B, and cultural offerings;
- **Environment** – measuring air quality, climate and green buildings;
- **Infrastructure** – assessing both physical and digital infrastructure quality;
- **Regional Clustering** – evaluation of a city's proximity to nearby centres of economic activity;
- **Real Estate Transparency** – assessing market transparency as measured by JLL's Global Real Estate Transparency Index.

China12

From Factory to Innovator

Introducing the China12

China12: A New Evolution Curve



Source: JLL, 2018

JLL's New Evolution Curve combines cities' scores in both 'traditional' and 'future-proofing' metrics for China's 12 leading cities. It enables identification of city clusters that possess similar attributes, 'future-proofing' credentials, aspirations and challenges.

Global Contenders

As mainland China's most globally connected cities, **Shanghai** and **Beijing** unsurprisingly dominate in both 'traditional' and 'future-proofing' metrics, although each has distinct characteristics and strengths. Beijing outperforms in education, innovation and 'next generation' corporations, while Shanghai benefits from its superior liveability, environment and well-integrated surrounding region, along with a highly dynamic business services sector.

Enterprisers

Shenzhen and Guangzhou represent the next tier of cities. These 'Enterprisers' have solid talent bases, high quality of life and good connectivity. **Shenzhen** is carving out its own position as a magnet for China's top talent, with dynamic entrepreneurial workplaces and concentrations of innovative domestic corporates. On many 'future-proofing' metrics, it is catching up with Shanghai and Beijing.

Guangzhou also does well in both 'traditional' and 'future-proofing' measures, and is prioritising advanced manufacturing, R&D, biotech and IT, as well as financial services industries, all of which will provide momentum going forward.

Powerhouses

Eight cities are classified as 'Powerhouses': engines of the Chinese economy with heavy involvement in global networks of trade through industrial production and manufacturing. They are key hubs for some of the world's largest industries, from the automotive sector to electronics.

Hangzhou stands out from the chasing pack of 'Powerhouses', with vigorous corporate activity boosting its position. Its high growth rate and level of wealth support the city in 'traditional' metrics, while future prospects are boosted by its innovation capacity and relative market transparency. Its 'future-proofing' performance is matched by **Nanjing**, based on its strong education and infrastructure offers, with **Suzhou** also showing relatively robust scores.

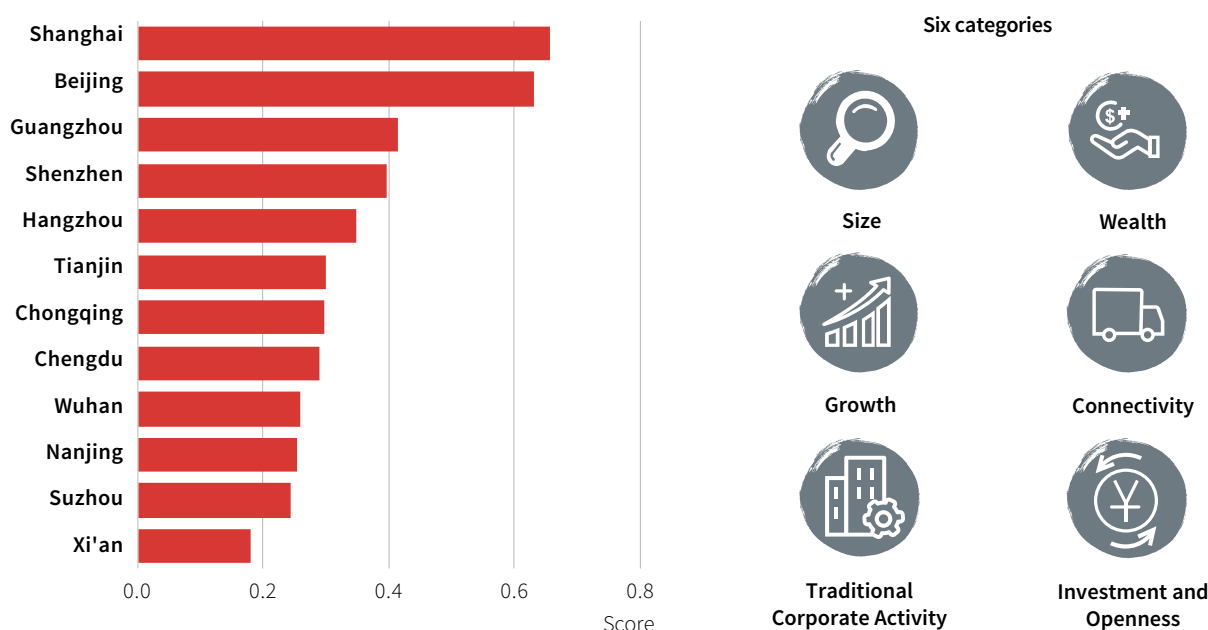
Wuhan is revealed to have more in common with the Yangtze River Delta cities of Hangzhou, Nanjing and Suzhou as leading 'Powerhouses'. It is helped by a solid infrastructure offer, its position at the heart of China's high-speed rail network, and its education system.

Chengdu, **Chongqing** and **Tianjin** score better on 'traditional' metrics than 'future-proofing'. This is a result of their relative levels of development compared to other cities, but also suggests a need to gear their offers towards the future. These cities are already exploring policies to improve their ability to cultivate and retain talent, battle pollution and support the development of dynamic new companies.

The smallest of the China12 economies, **Xi'an** scores well on innovation and education, but has fewer 'next generation' firms than its peers and has room to improve on environment, connectivity and transparency.

Traditional Metrics of Success: A Familiar Story

JLL 'Traditional' Metrics Index



Source: JLL, 2018

Our 'Traditional' metrics cover measures such as size, wealth and growth, and reveal a familiar hierarchy of Chinese cities:

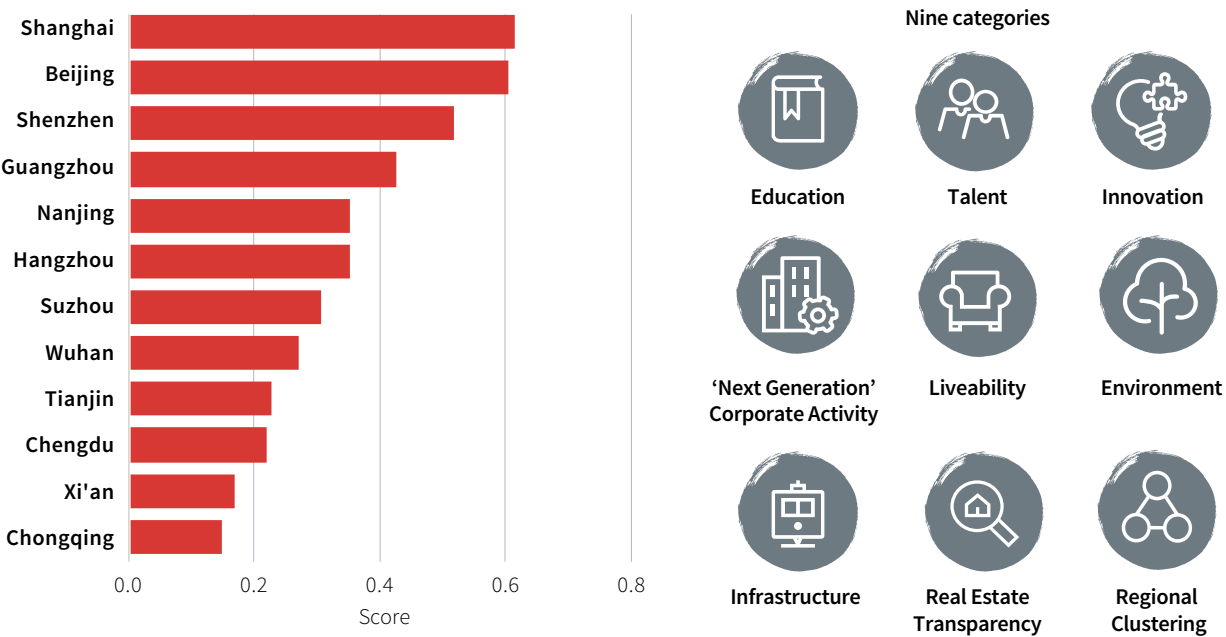
- In a league of their own, **Beijing** and **Shanghai** sit well ahead of their domestic rivals. They top many rankings by virtue of sheer size, but their wealth proves they have much more than scale to offer. As by far the most mature city economies, they fall behind on only the 'Growth' metrics.
- Guangzhou** and **Shenzhen** rank below, in a separate tier. Smaller in size than Beijing and Shanghai, their citizens are exceptionally wealthy in a national context. Their corporate activity scores are less strong, with office demand mainly focused on regional or local rather than national functions. However, their vital positions in networks of trade and manufacturing boost their standing.
- The other eight cities score similarly. Yangtze River Delta cities (**Hangzhou**, **Nanjing** and **Suzhou**) perform better in the wealth and corporate activity categories, while the other five cities (**Chengdu**, **Chongqing**, **Tianjin**, **Wuhan** and **Xi'an**) are prominent for size, growth rates and levels of investment.

Future-Proofing with Chinese Characteristics

As China's leading cities move into a 'new era' of development, it is now crucial to look beyond traditional measures of success, such as GDP growth, wealth and infrastructure investment. Cities across the globe are increasingly judged by their 'future-proofing' capacity – how prepared they are to absorb change and to create longer-term sustainable economic momentum.

China's cities will develop their own 'future-proofing' model, based around the innovation economy, a focus on liveability and environmental resilience, and a growing recognition of the complex relationships within China's evolving systems of cities.

JLL 'Future-Proofing' Metrics Index



Source: JLL, 2018

How do the China12 cities shape up in the nine different categories that make up JLL's Future-Proofing Index?

Future-Proofing:

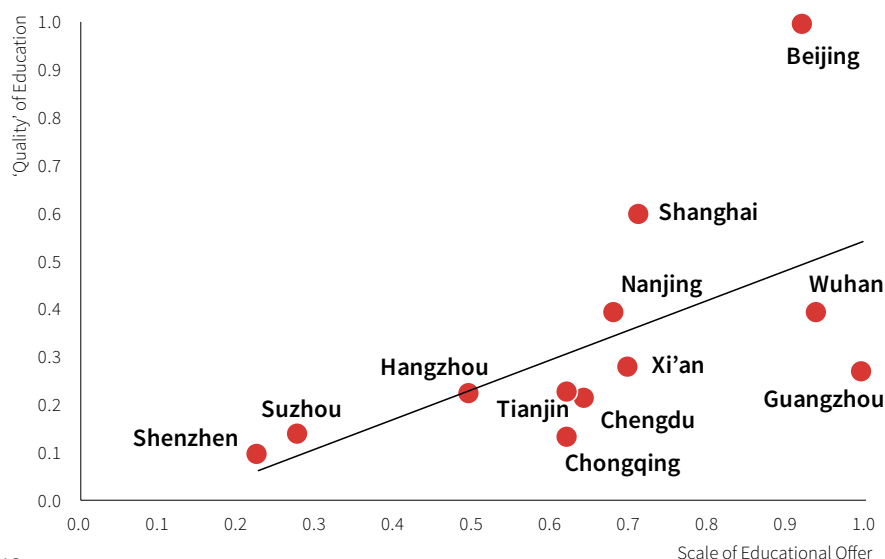
Education



Behind some of the world's most competitive cities lie world-class university systems that cultivate talent and produce innovations to support industry-leading companies – consider Stanford's relationship with Silicon Valley or the ties between Boston's top universities and its Route 128 technology corridor.

Many Chinese cities hope to achieve similar levels of symbiosis, meaning that strong universities will be a crucial source of support to a city's overall competitiveness.

Education 'Quality' versus 'Quantity'



Source: JLL, 2018

JLL's China12 Education Index considers both the quality and quantity of higher education available in each city:

- China's educational capital, **Beijing**, performs exceptionally. Over half a million students are currently enrolled in the city, which hosts the largest concentration of higher education institutions in the country. Several of these rank among the world's best.
- **Shanghai** scores well on the back of its high-quality offer, while **Guangzhou** is boosted by volume – home to a million students. **Wuhan** provides a middle ground of quality and quantity. **Nanjing**'s scale is relatively limited, but its quality is worth highlighting.
- Significantly, **Shenzhen** ranks last in this measure, with the smallest number of institutions and students. Yet, this is not holding the city back.

As the strength of China's universities grows, more business ecosystems will develop around them, acting as a key catalyst for a city's innovation economy. **Beijing**, **Shanghai**, **Wuhan**, **Guangzhou** and **Nanjing** are best positioned to leverage their impressive education infrastructure.

Future-Proofing:

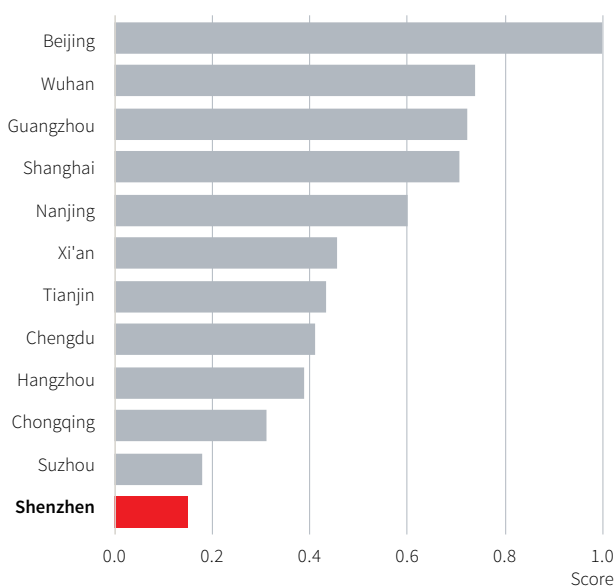
Talent



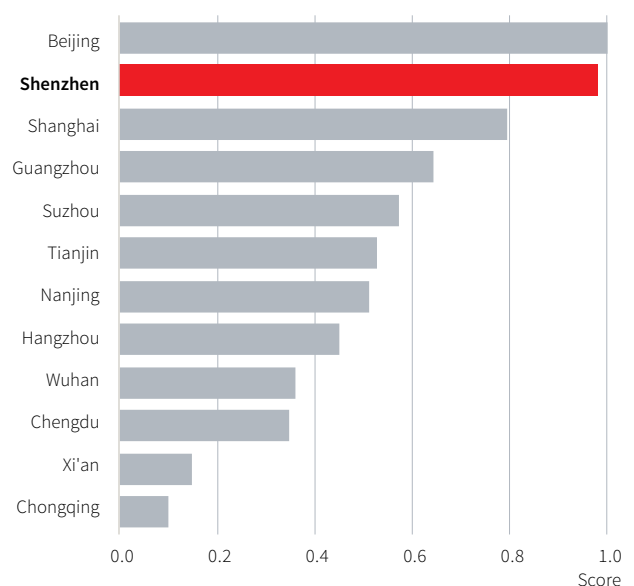
The China12 Talent Index, which measures the talent base and labour force, sees **Shenzhen** rank just behind **Beijing**. It achieves this despite coming last in the Education Index.

- **Shenzhen** has developed as a uniquely young city whose population consists mainly of domestic migrants. A lack of native retirees means it has the largest working-age share of population in China, and the city's open, vibrant and diverse culture is a magnet for young, ambitious Chinese. Leading tech firms like Huawei and Tencent attract many top talents, while others participate in the city's robust start-up scene. But Shenzhen isn't resting on its laurels, offering housing subsidies and other incentives to draw talent, while also maintaining one of the loosest residency regimes of any of the China12 cities.
- **Beijing, Guangzhou** and **Shanghai** also score well in the Talent Index. Each city is a lure for talent, for both domestic graduates and those returning from abroad. **Suzhou** also scores surprisingly well, joining Shenzhen with one of the youngest demographics.
- The cities ranked in the lower half of the Talent Index are working hard to catch the leaders. Most cities have rolled out policies to attract experienced professionals, entrepreneurs, academics and graduates. Those cities with strong education systems, such as **Wuhan** and **Nanjing**, are attempting to retain graduates and halt the 'brain drain'. Easier pathways to local residency, subsidised housing and help in starting businesses are among the policies being utilised.

Education Index



Talent Index



Source: JLL, 2018

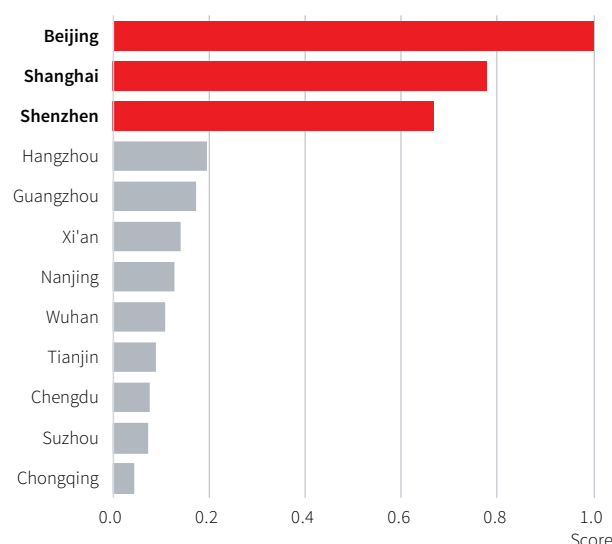
Future-Proofing:

Innovation



Our China12 Innovation Index (based on start-ups, patents, R&D spending and workplace innovation) reveals that the innovation ecosystem in China is dominated by just three cities – **Beijing, Shanghai and Shenzhen**. These cities are the hotbeds of start-up activity and home to major research institutions and innovative firms that drive R&D spending.

Innovation Index



Source: JLL, 2018

The gap between **Hangzhou** and the top three is surprising, given its reputation as the birthplace of China's e-commerce revolution. While it is 'the best of the rest' in the 'Innovation' category, its scores are well behind Beijing, Shanghai and Shenzhen. The efforts of Hangzhou-based firms - such as Alibaba - to boost efficiencies in distribution and to pioneer new retail formats are, perhaps, less able to be quantified and standardised.

Beijing

Home to China's leading scientific research institutions

¥159.5 billion
R&D spending

5.7%
of annual GDP

Shanghai

A centre for work-place innovation – and a hub for co-working

200,000
square metres
of Grade A co-working
office space

Shenzhen

Home to the world's largest international patent applicants – Huawei & ZTE

8,000
patent applications

...more than the
next 5 China12 cities
combined

R&D - FY 2017; co-working as at year end 2017; patents - PCT patents for FY 2015
Source: JLL, 2018; Beijing Municipal Bureau of Statistics, 2018; OECD PATSTAT, 2017



Guangzhou

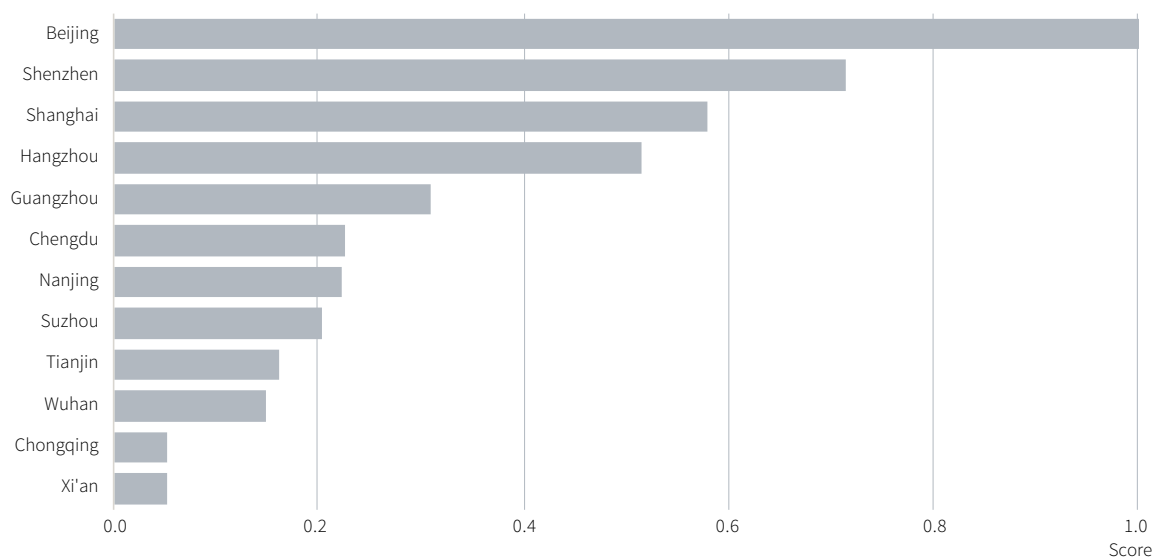
Future-Proofing:

'Next Generation' Corporate Activity



China's corporate landscape is changing fast. The 'old guard' of state-owned giants, private sector firms (often concentrated in the manufacturing, retail and real estate sectors) and multinational corporations have been joined by a new wave of homegrown companies, many of which are at the cutting edge of China's progression up the value chain.

'Next Generation' Corporate Activity Index



Source: JLL, 2018

Perhaps best known are the internet giants Baidu, Alibaba and Tencent, a cluster of firms whose influence is rivalled only by the American club of Google, Apple, Facebook and Amazon. Firms such as travel website Ctrip, electric vehicle manufacturer BYD and commercial drone maker DJI are growing quickly and poised to become global giants in their own right.

The economic future of Chinese cities will be determined by the ability to retain, cultivate and attract China's leading firms. The 'next generation' of Chinese firms will prove to be the most dynamic, capable of altering the trajectories of cities.

Mapping the footprints of a basket of major and 'rising' private firms shows:

- **Beijing** leads for 'next generation' corporate activity. As the capital, it has a concentration of state-owned enterprises and multinational firms, but it has also provided long-running support for tech zones. Zhongguancun, in the northwest of the city, has developed into one of China's top technology hubs, while the city's leading universities have set up incubators and other programmes to encourage start-ups. The emergence of the likes of e-commerce giant JD.com and smartphone maker Xiaomi suggests these efforts have been successful.
- **Shenzhen** ranks second, ahead of Shanghai for 'next generation' firms. Its efficient supply chains, entrepreneurial and risk-taking culture, comprehensive finance sector and high quality of life have made it the natural choice for ambitious businesses and individuals seeking to turn ideas into products and new world-beating firms.
- Reflecting its diversified base, **Shanghai** is third for 'next generation' businesses with an expanding pipeline of domestic financial and professional services companies to complement its strong attraction for multinational businesses.
- **Hangzhou** is also an impressive performer. The city has long been known for its entrepreneurial culture, which has supported the growth of a number of competitive private firms. Hangzhou-based Alibaba's success has fostered a thriving ecosystem, as businesses locate nearby to build robust relationships with the e-commerce giant and as Alibaba alumni establish their own companies.
- Further down the ranking, **Chengdu** outshines other central cities with its recognised concentration of traditional private sector and multinational firms, but interestingly it is also ahead of its regional peers in terms of 'next generation' firms.



Hangzhou

Future-Proofing:

Liveability & Environment

What makes a city enjoyable to live in?



Liveability Factors

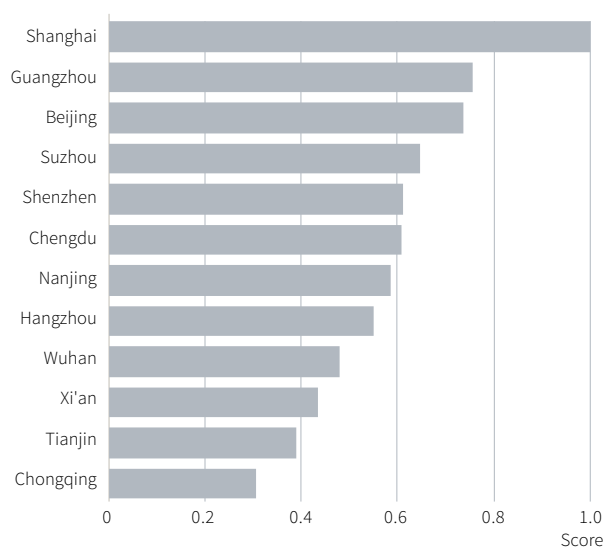
Nightlife and Dining Scenes
Cultural Attractions and Institutions
Affordability
Absence of Congestion
Cultural Perception and 'Buzz'



Environment Factors

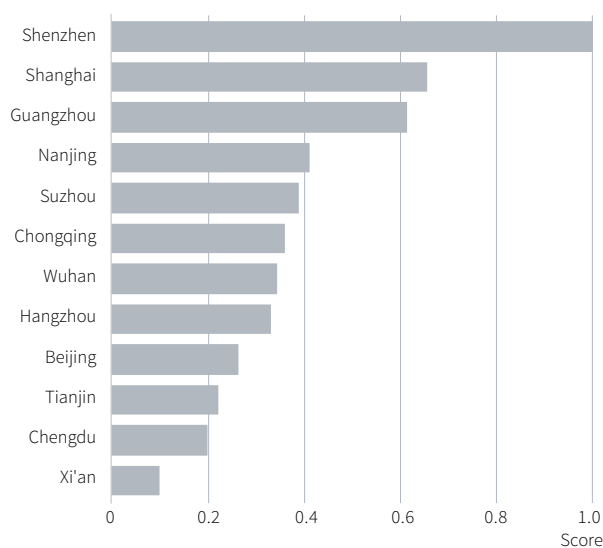
Air Quality
Comfortable Climate
Green Space and Parks
Sustainable Buildings

Liveability Index



Source: JLL, 2018

Environment Index

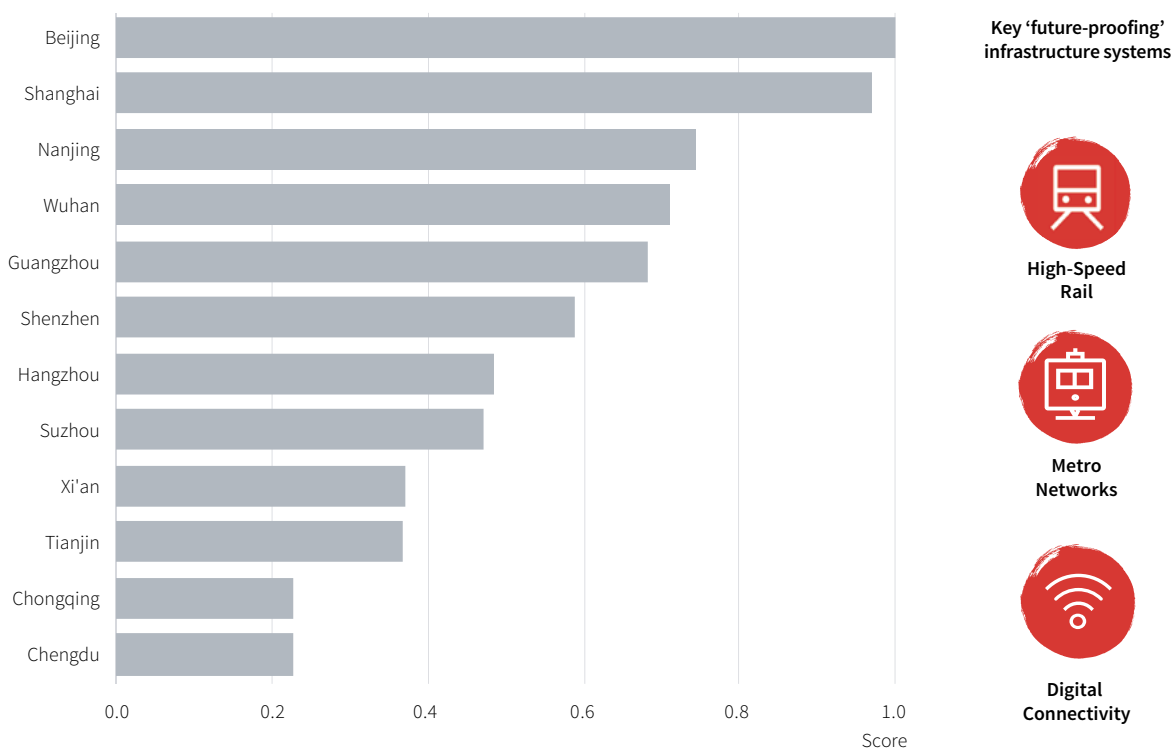


- **Shanghai** tops our China12 Liveability Index, thanks to its nightlife, dining and retail scenes. It is second only to Shenzhen in the Environment Index, standing out with the country's highest concentration of green buildings.
- Southern cities perform best in the Environment Index, while also scoring highly in the Liveability Index. **Shenzhen** and **Guangzhou** have among the best air quality of China's major cities and score relatively well in terms of climate and green spaces.
- Northern cities like **Beijing**, **Xi'an** and **Tianjin** – as well as **Chengdu** – are dragged down by poor air quality. Measures are being deployed in these cities to combat this problem, with Beijing showing concrete signs of improvement in winter 2017-2018. Beijing, however, ranks third for liveability, rivalling Shanghai in many categories – with the notable exception of traffic congestion, where it fares poorly.

Future-Proofing: *Infrastructure*



Infrastructure Index



Both physical and digital connectivity will be crucial to a city's ongoing development:

- **Beijing** and **Shanghai** lead the way, with exceptional high-speed rail and international air connections, as well as China's most extensive metro networks.
- **Nanjing** and **Wuhan** leapfrog **Shenzhen** and **Guangzhou**, due to their positions as key nodes in China's sprawling high-speed rail network, putting many cities within easy reach. Nanjing's metro network is also among the most extensive among China's Powerhouses. Guangzhou performs well for international air connectivity and metro ridership, while Shenzhen has high broadband internet penetration.
- The relatively isolated locations of **Chengdu** and **Chongqing** detach them from the rest of China's high-speed rail network, and international air connectivity is more limited. While their metro networks are currently less developed, both cities have major extensions planned.

Future-Proofing:

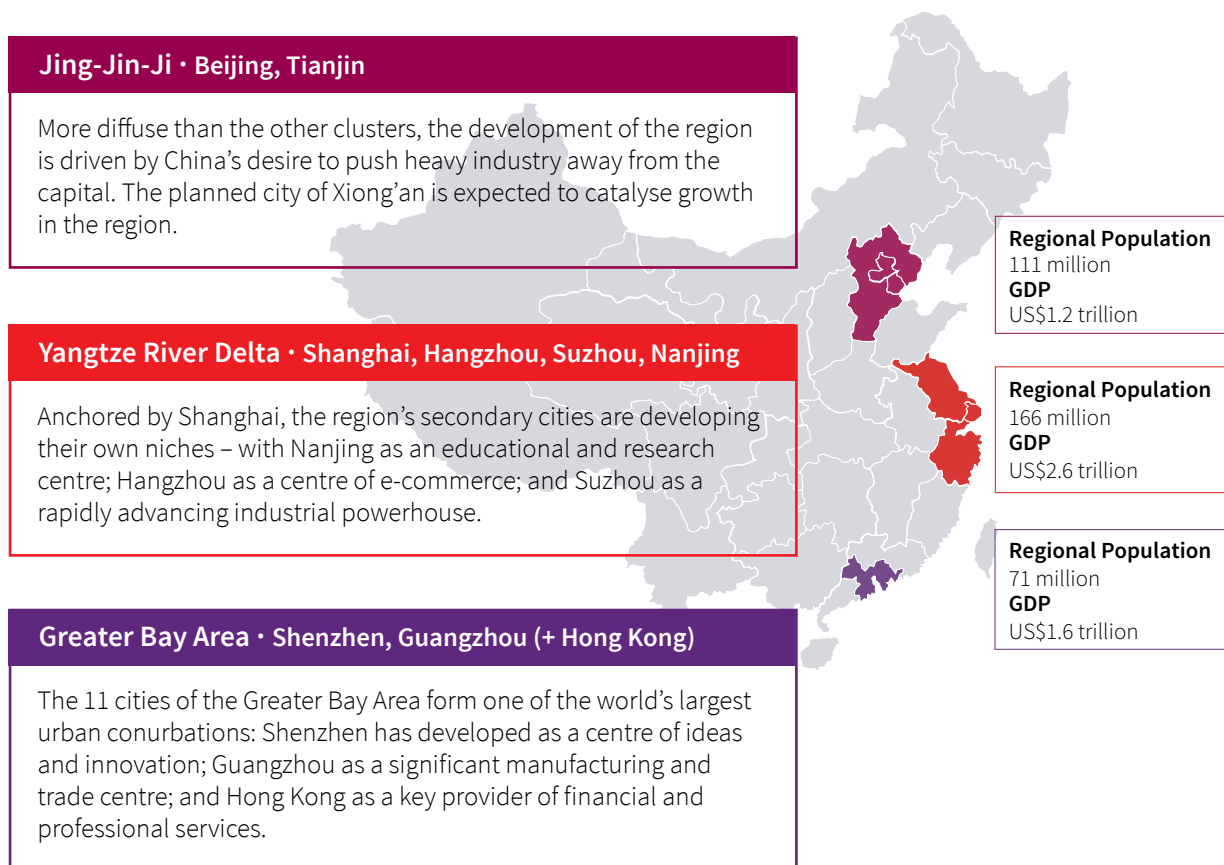
Regional Clustering



China's city-regions continue to evolve. New nodes are emerging within clusters of cities, and individual cities are carving out specific niches within their regions rather than competing with neighbours directly.

China's planners are encouraging cities with existing clear regional roles to develop their natural advantages further, while providing guidance for cities still defining their competitive advantages.

Three Dominant Mega-Regions



Only China's 12 cities listed above.

Jing-Jin-Ji includes Beijing, Tianjin and Hebei Province;

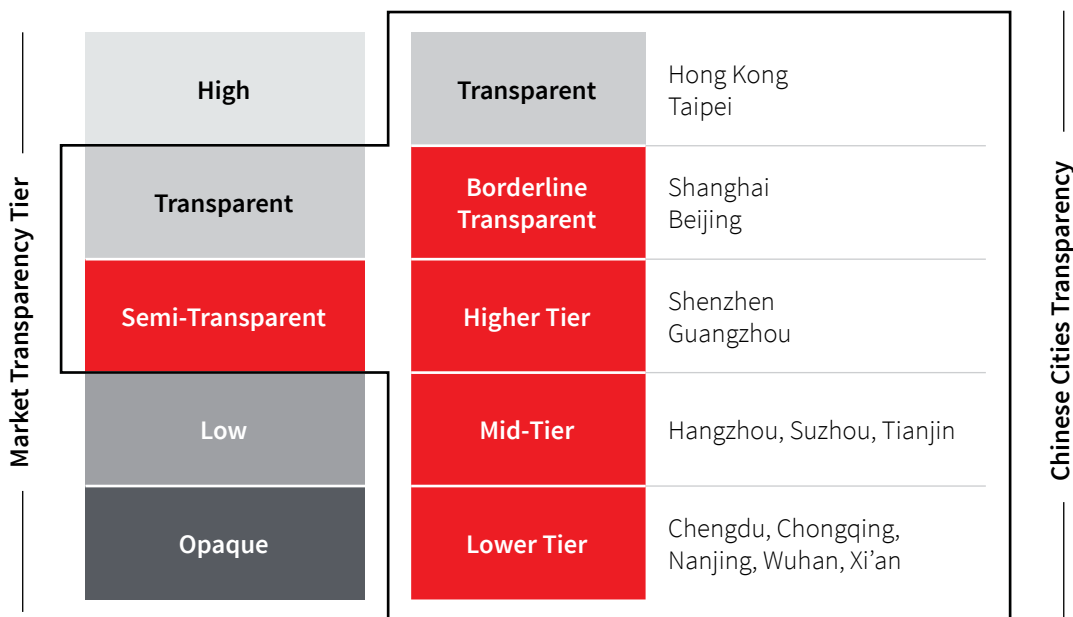
Yangtze River Delta includes Shanghai, Jiangsu Province and Zhejiang Province;

Greater Bay Area includes Guangzhou, Shenzhen, Dongguan, Foshan, Huizhou, Shaoquan, Zhaoqing, Zhongshan, Zhuhai, Hong Kong and Macau.

Source: JLL, EIU, 2018

Future-Proofing:

Real Estate Transparency



Based on JLL 2016 Global Real Estate Transparency Index methodology
Source: JLL, 2018

JLL's Global Real Estate Transparency Index has explored the role of governance and market transparency worldwide for nearly two decades. This framework has been applied to the China12.

All mainland cities fall into the 'Semi-Transparent' category, behind the most developed Asia Pacific markets, including Australia, Singapore, Hong Kong and Japan, but ahead of the likes of Vietnam.

Shanghai and **Beijing** sit on the cusp of transparency, bolstered by the availability of comprehensive commercial property databases, as well as relatively transparent and strongly enforced processes around planning and building codes. These cities' real estate markets are ahead of their peers in terms of professionalism, standardisation and internationalisation.

Shenzhen and **Guangzhou** are close behind, while **Hangzhou**, **Suzhou** and **Tianjin** are ahead of inland peers, where real estate practices appear to be positively influenced by transparency in neighbouring Shanghai and Beijing.

A Real Estate Market Overlay

China's commercial property market has tended to track closely with traditional performance metrics, such as size, wealth, infrastructure investment and corporate demand from multinationals and private sector enterprises. While the influence of these factors will not go away, we anticipate that a city's cocktail of 'future-proofing' measures will provide increasingly important lead indicators of commercial real estate market activity and performance.

Office Market Evolution



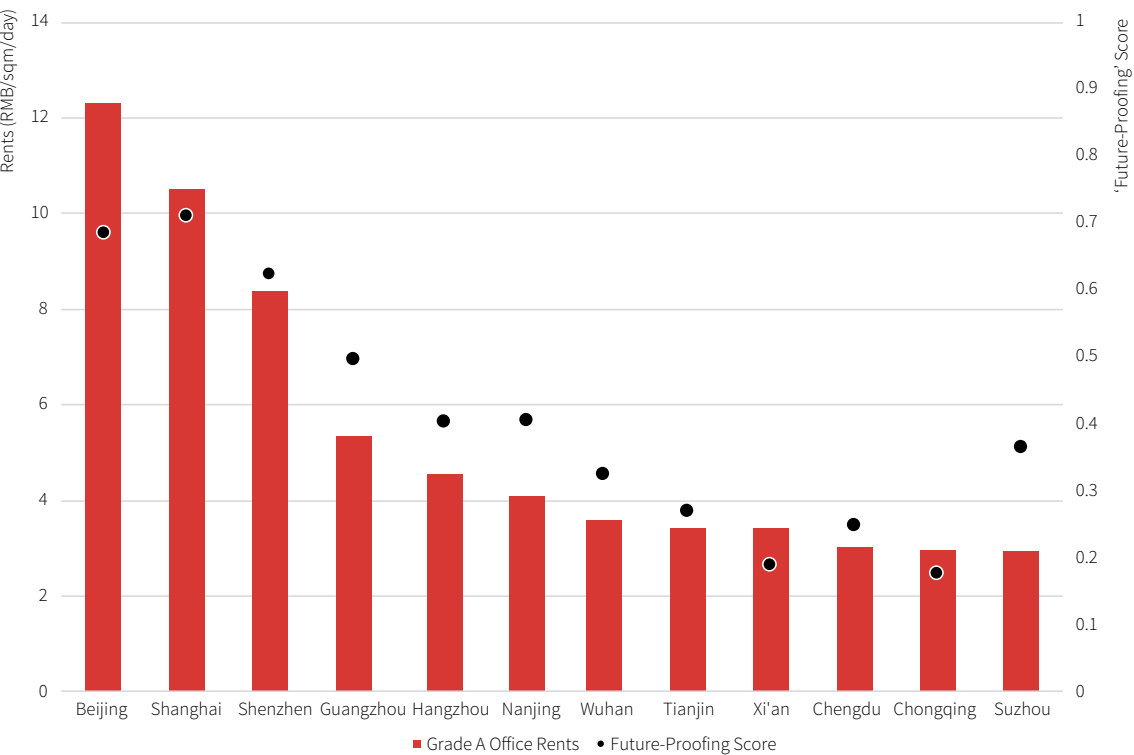
Office Markets: Trends to Watch

The office markets of several China12 cities have already entered a 'new era', defined by new and more diverse drivers of demand. These not only include the booming technology and new media sectors, but also start-ups that are utilising recently developed co-working spaces.

These new drivers are heavily correlated with 'future-proofing' metrics and are accounting for a growing share of net take-up. In some cities, they have caught up with the traditionally dominant financial and professional services sectors.

A comparison of office rents across the China12 with their 'future-proofing' scores reveals a strong relationship, and while not necessarily causal, it does indicate room for potential rental uplift in some China12 cities as their 'future-proofing' credentials come to the fore.

Office Rents and Future-Proofing



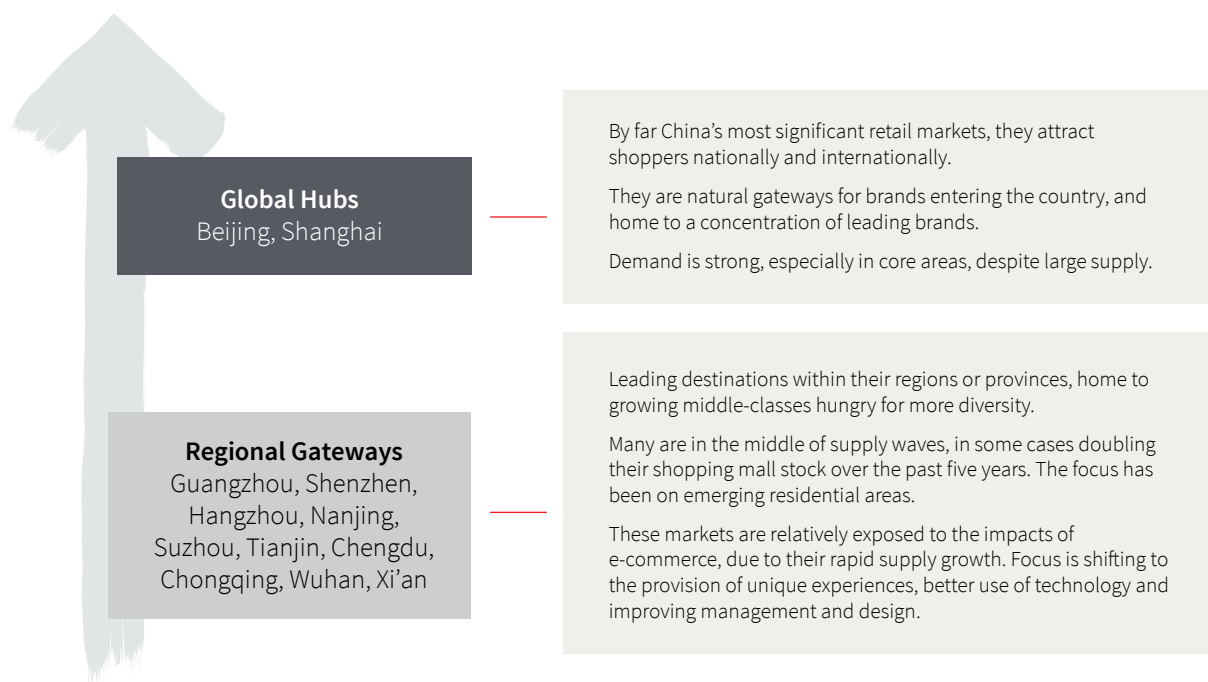
Data as at Q4 2017
Source: JLL, 2018

Some fast-growing China12 cities will face short-term supply pressures due to recent construction booms. Local governments, however, are becoming increasingly aware of oversupply risks and taking steps to control the supply of land for commercial uses.

In ‘international centres’ and ‘maturing markets’, traditional CBDs can no longer contain growing and diversifying demand, which is leading to decentralisation. Extensive infrastructure expansion and occupiers’ desire for cost savings are helping to facilitate the outward spread of population, amenities and offices.

As the China12 look ahead to the next development cycle, there will be a greater emphasis on commercial space as an attractor and retainer of talent, with a focus on amenities, technology, wellness and sustainability.

Retail Market Evolution



Source: JLL, 2018

Retail Markets: Trends to Watch

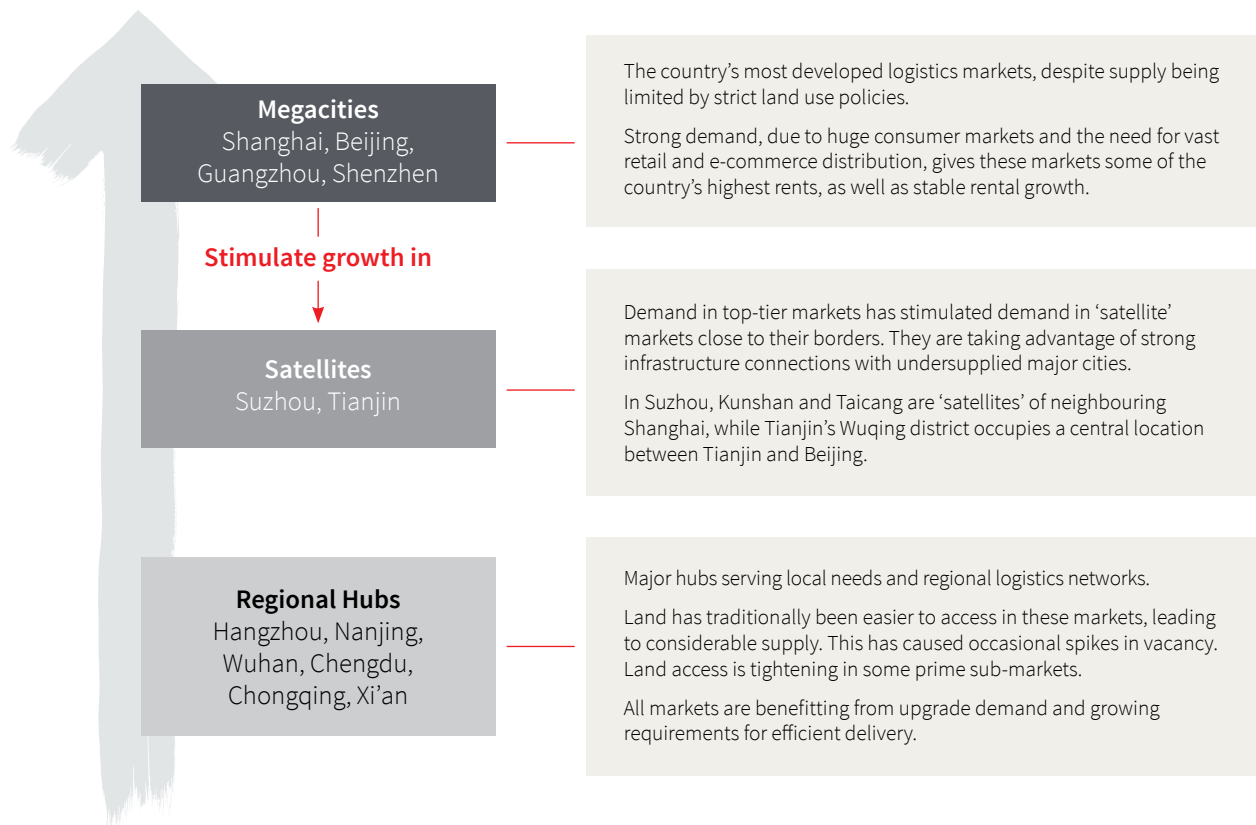
Retail markets are moving into the next phase of their development, as e-commerce becomes a 'fact of life' and shopping malls redefine themselves around their competitive advantages.

Mall operators and retailers are placing greater emphasis on technologies, which let them track customers' movements and purchases. This growing volume of customer data will allow them to compete with the same comprehensive understanding of their customers as leading online retailers.

At the same time, malls are reorienting towards 'experiential' offerings which can't be provided online and stand out from the field as unique. The savviest malls will take advantage of the rising value of their 'display' functions, as highly visible spaces where brands can engage customers and build loyalty. Flagship stores will gain greater prominence, particularly in central locations and in top-quality malls.

We are also seeing a resurgence in shops' fulfilment functions in the form of 'new retail' concepts. Pioneered by Alibaba, 'new retail' refers to the integration of online and offline retail through the use of technology. In the supermarket sphere, the likes of Alibaba's Hema Xiansheng are revolutionising the traditional experience with prepared foods and delivery functions. Such concepts are bringing new confidence and clarity to the bricks-and-mortar retail world. Following a series of major investments by China's tech giants, opportunities abound for the development of new concepts in the China12 that push the integration of online and offline shopping further.

Logistics Market Evolution



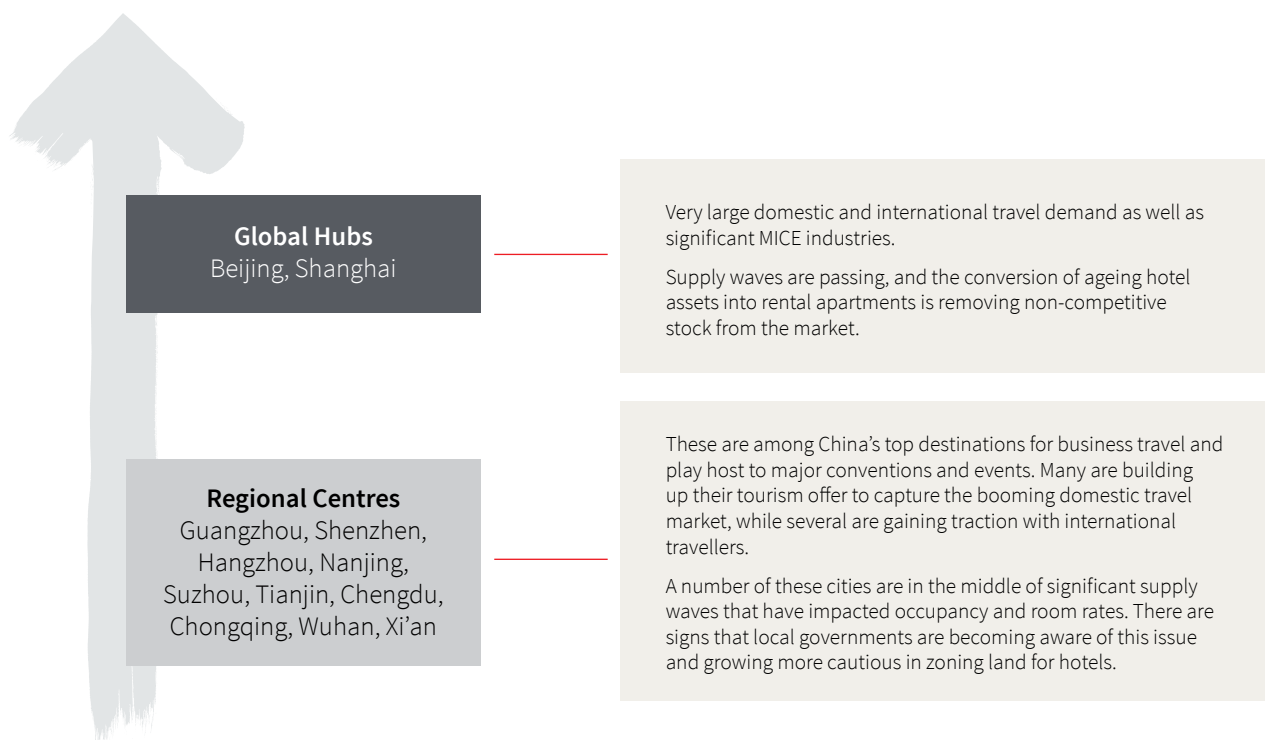
Source: JLL, 2018

Logistics Markets: Trends to Watch

The China12 logistics markets will continue to be defined by a fundamental imbalance between supply and demand, due in part to the inherent tension between warehousing uses and other higher-value uses. This tension will constrain supply in some of the China12 – but demand in these cities is strong enough to stimulate other opportunities. Among these is anticipated further growth of satellite cities – markets just over the border from major cities where infrastructure is still excellent and industrial land easier to access. 'Satellite' markets are even visible in some suburban districts of the China12, such as Tianjin's Wuqing district (almost equidistant between downtown Tianjin and Beijing) and Suzhou's county-level sub-cities of Kunshan and Taicang, just over the border from Shanghai.

Supply pipelines will be increasingly supported by vigorous domestic players such as Vanke, while foreign developers such as Goodman and Prologis will remain active. Though strict land policy will restrain supply on an overall basis, localised supply waves may still lead to isolated cases of elevated vacancy in certain submarkets – precedent indicates that such spikes will fade as demand catches up. We also expect to see a further uptick in upgrade demand in many markets as local urban renewal projects lead to the closure or demolition of lower-end stock, pushing users to consider other options.

Hotels Market Evolution



Source: JLL, 2018

Hotel Markets: Trends to Watch

The hotels sector is set to gain from continued expansion in demand and as supply waves in most China12 cities pass their peaks. The country's booming middle-class population will continue to spend more on domestic travel, and major cities will continue to attract business travellers and MICE activities. The China12 will be largely insulated from disruption by home-sharing services, as hotel room rates remain relatively affordable.

The primary challenge for the sector will be absorbing the sizeable volume of new supply. Yet, the number of rooms per capita is still low by international standards, suggesting that oversupply will lessen as demand grows. Fierce competition in mature markets is leading some older hotel stock to be converted into other uses, such as rental apartments. This is helping to reduce supply pressures on existing hotels.

Future supply will be largely targeted at the growing share of domestic middle-class travellers, rather than the high-end market. Hotel operators are also coming up with creative ways of better utilising traditional hotel spaces - such as incorporating co-working space in lieu of large ballrooms - to maximise hotels' profitability. Overall supply pressures should ease as local governments rationalise zoning to avoid adding hotel rooms to submarkets where stock is already abundant.

Investment Market Evolution

A Boost to Transparency?

As the China12 cities move up the value chain into more innovative activities, the need for higher levels of real estate transparency to match their roles as global innovation hubs will become even more pressing. Transparent real estate markets encourage efficient, business-friendly and innovative real estate space solutions, help companies to manage costs, and create safer built environments for workers and residents.

A Significantly Larger Investment Market?

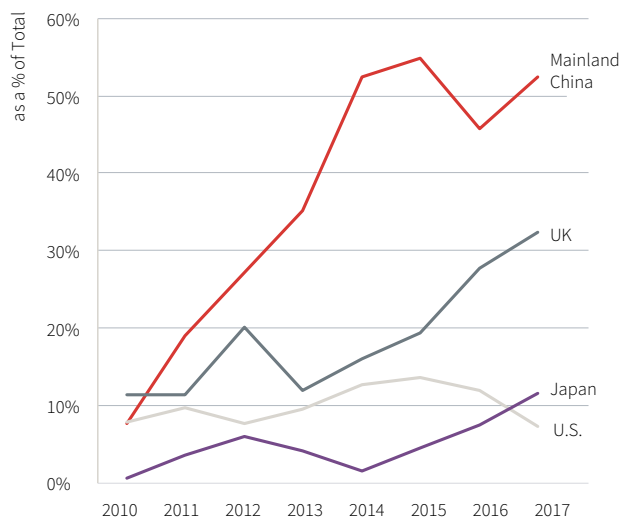
Greater transparency would also stimulate investment activity. Combined with an improving quality of commercial stock, a US\$40 billion per year direct commercial real estate investment market today could potentially blossom into a **US\$150 billion+ a year market** within the next decade, challenging the U.S. for top spot.

More Capital Staying at Home

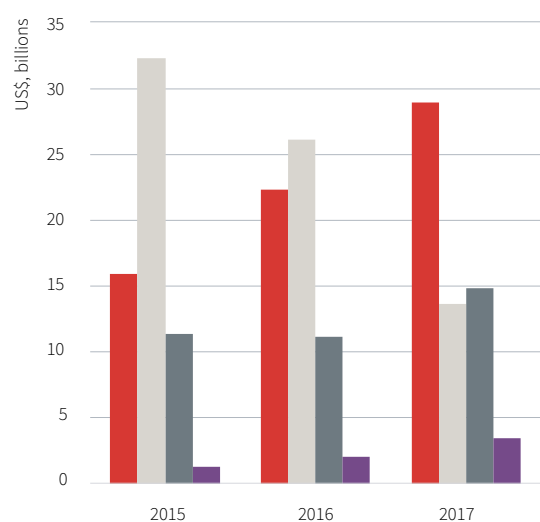
In 2017, US\$56.5 billion of Mainland Chinese capital was invested in direct commercial real estate globally, more than half of which (54%) was destined for overseas markets like **London** and **New York**. This is a significantly larger proportion than in either the U.S. or Japan, where about 10% of real estate capital is typically exported. However, ongoing capital controls will restrict investment overseas going forward. Alongside these controls, the growing maturity of the domestic market will mean that an increasing proportion of capital will be invested within China.

Outbound Direct Commercial Real Estate Investment

Outbound Real Estate Investment
As a % of Total Investment



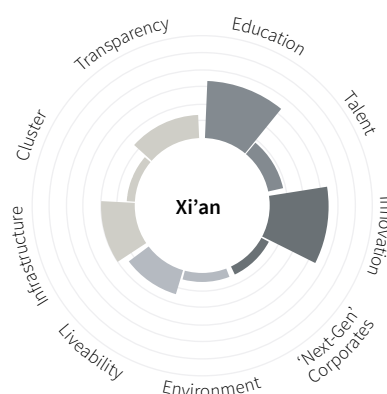
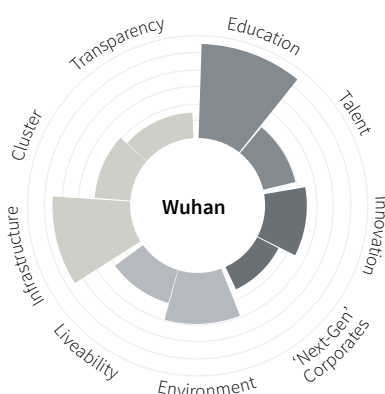
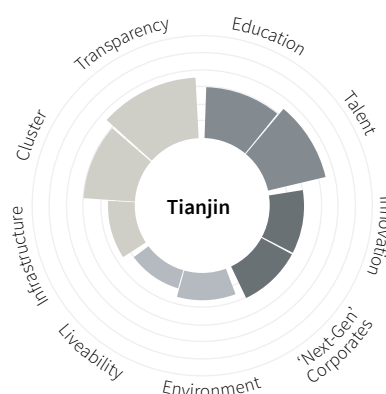
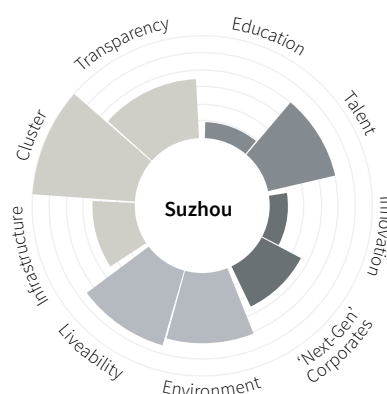
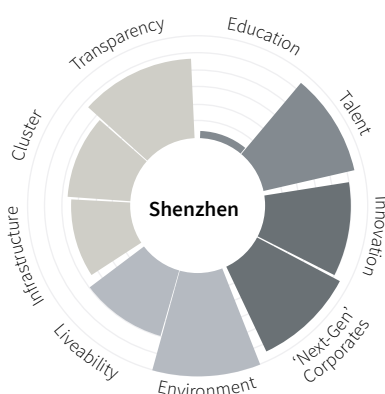
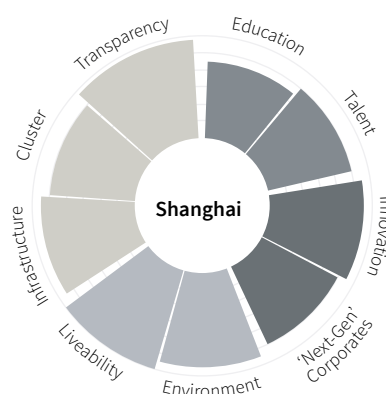
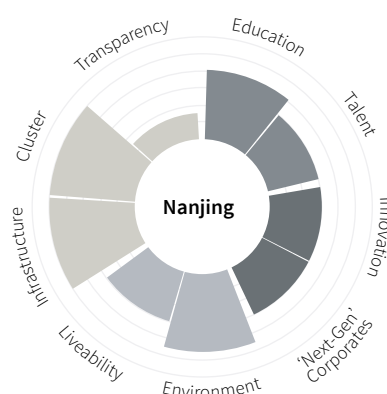
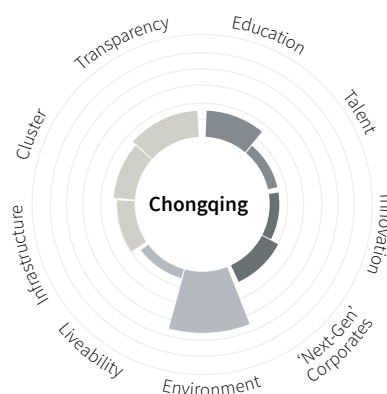
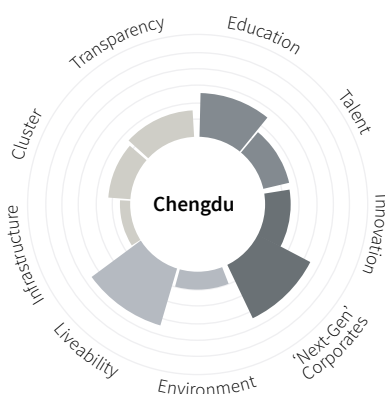
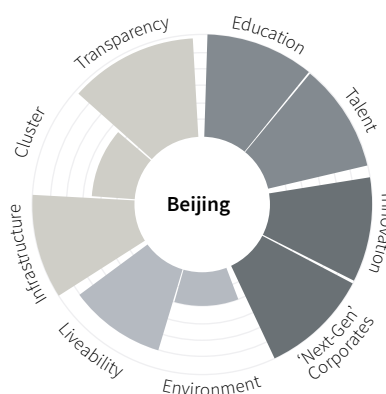
Outbound Real Estate Investment
By Volumes



Mainland Chinese cross-border investment includes investment into Hong Kong
Source: JLL, 2018

Looking ahead, **Shanghai** and **Beijing** will cement their positions among the Global Top 10 real estate investment destinations, while **Shenzhen** and **Guangzhou** will break into the Global Top 30 on a regular basis within five years. The Powerhouses will become regular features of the Global Top 50.

Mainland China's 12 Leading Cities



Interpreting the Charts

Mainland China's 12 leading cities are visualised across 9 categories based on their 'future-proofing' rankings among the China12

Categories (clockwise from top):

Education

Measuring the quantity and quality of (mostly tertiary) education

Talent

Assessing the depth of the talent pool

Innovation

Assessing the level of innovation in terms of patents, R&D spending and start-ups

'Next Gen' Corporates ('Next-Gen' Corporates Activity)

Measuring the presence of China's 'next generation' of private and innovative technology firms

Environment

Measuring air quality, climate and green buildings

Liveability

Evaluating a city's retail scene, F&B, and cultural offerings

Infrastructure

Assessing both physical and digital infrastructure quality

Cluster (Regional Clustering)

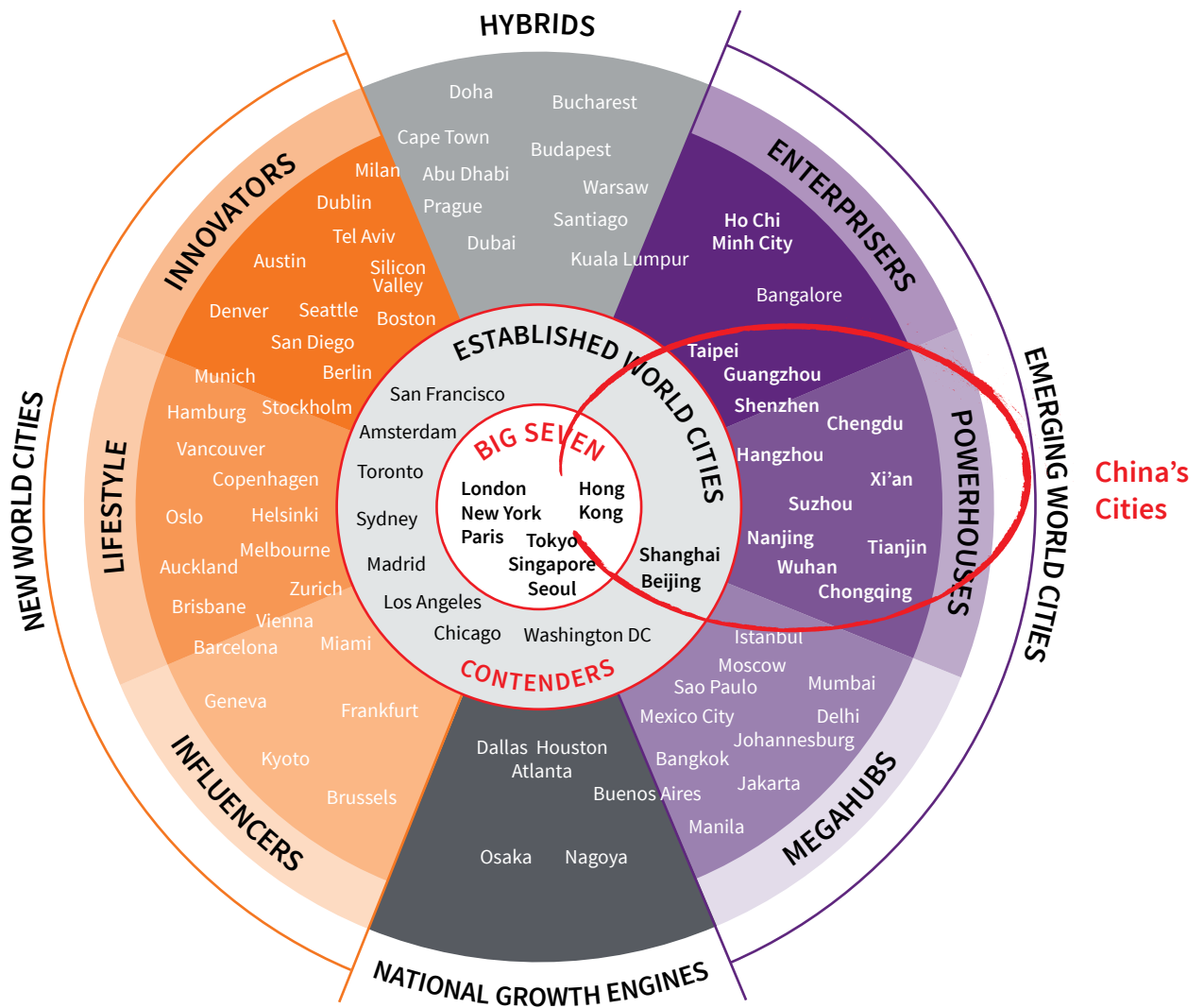
Assessing a city's proximity to nearby centres of economic activity

Transparency (Real Estate Market Transparency)

Assessing market transparency as measured by JLL's Global Real Estate Transparency Index

China's Cities on the World Stage

Where do China's Leading Cities sit in the New World Order of Cities?



Note: The cities highlighted are for illustrative purposes. This stylised chart is not intended to be an exhaustive list of all cities and candidate cities within each group.

The China12 are not just competing with each other, but are more integrated into the global economy than ever before. Together with **Hong Kong** and **Taipei**, they are building ever more complex relationships in a global system of cities that extends well beyond China's borders.

Big Seven

Hong Kong remains uniquely globally-oriented within China's system of cities. The Special Autonomous Region continues to act as a linking point between mainland China and the rest of the world. The 'One Country, Two Systems' framework has allowed Hong Kong to act as a transparent and business-friendly gateway, not just for China but across Asia Pacific and globally. Due to these strengths, Hong Kong is firmly positioned among the 'Big Seven' most globalised cities (see page 38), alongside **London**, **New York**, **Paris**, **Tokyo**, **Singapore** and **Seoul**.

Global Contenders

As 'Global Contenders', **Beijing** and – in particular – **Shanghai** are close to breaking into the top group of world cities. Among the other 'Global Contenders', only Los Angeles is as close to joining the elite group. Both Shanghai and Beijing host a critical mass of corporations and institutions and have spent heavily to rapidly develop extensive and high-quality infrastructure systems.

What will lift them into the top tier? A further boost to their innovation capabilities, a deepening of the talent base, enhanced environmental quality and improvements in transparency will help them make the next step.

By 2022 we could be referring to the 'Big 10' most globalised cities that include Shanghai and Beijing (together with Los Angeles).

Enterprisers

As Mainland China's 'Enterpriser' cities, **Shenzhen** and **Guangzhou** sit alongside **Kuala Lumpur** and **Bangalore**, as well as **Taipei**. As hubs of trade underpinned by an entrepreneurial work ethic, these cities are successfully shifting towards the innovation economy, creating their own internationally competitive firms.

Shenzhen, the 'Silicon Valley of China' and an outperformer in our 'future-proofing' metrics, is set to lead this group forward, with its concentration of China's principal technology companies, and has the potential to migrate to the 'Global Contenders' category as it establishes a broader offer.

Powerhouses

The other China12 cities form a unique group of dynamic 'Powerhouses' which benefit from strong national government support, but where there is an imperative to become more globally competitive through innovation and agglomeration. They are yet to achieve true global visibility, although this is changing with, for example, **Hangzhou** playing host to the 2016 G20 summit and **Chengdu** establishing itself as an international tourism destination.

Hong Kong

A Unique Competitive Position

A Global Super-Connector

Hong Kong plays a key connecting role between mainland China and the rest of the world. In recent years, Mainland firms have become a driving force in lifting occupational demand, with a huge appetite for real estate in the city. It is also a major location for firms looking to raise capital overseas.

This has helped Hong Kong maintain its status as a leading global financial centre, and it firmly sits among the 'Big Seven' most globally connected cities with the deepest concentrations of international capital, business and people.

The Belt and Road Initiative offers the city another opportunity to build on its gateway function, by leveraging its financial services strengths in terms of financing, RMB internationalisation and risk management.

However, three key factors may compromise Hong Kong's position in the world order of cities:

- **Affordability Challenges**

High costs for both residential and commercial space are a concern. While these problems are common to all global cities, JLL's Premium Office Rent Tracker shows that occupancy costs for premium space in Hong Kong Central are two-thirds higher than its nearest rivals – New York (Midtown) and London (West End). Despite the release of land in the new business district of Kowloon East, affordability issues are unlikely to be resolved in the short term. Geographical constraints mean that this is a longer-term problem that cannot be easily solved.

- **Enhancing Regional Linkages**

Increasing integration and connectivity within the Greater Bay Area may ease supply pressures, but there will remain frictions in terms of flows of people and capital due to Hong Kong's unique status. As a consequence, Hong Kong is unable to fully leverage its position as the natural hub for a mega-region of over 70 million people with a US\$1.6 trillion economy.

- **Lagging in the Innovation Economy**

In various 'future-proofing' metrics, Hong Kong's scores are mixed, particularly in comparison to Mainland China's leading cities. While its business operating conditions, market transparency, environmental quality and cultural offer mark it out as possibly China's most attractive city, it is at risk of falling behind for innovation. As the global economy evolves, even the most traditional sectors, in which Hong Kong's main strengths lie, will be under pressure to innovate and digitise.

Already, **Shenzhen** appears to have rapidly moved ahead of Hong Kong in the innovation economy. Despite its strong higher education infrastructure, Hong Kong's R&D spending is almost five times lower than the average of the China12. Likewise, it produced its first and only 'unicorn' just last year (GoGoVan). There is a sense that its focus on traditional industries (e.g. real estate, finance and logistics) may be at the expense of innovation.

The Order of World Cities

The 'Big Seven'	
1	London
2	New York
3	Paris
4	Singapore
5	Tokyo
6	Hong Kong
7	Seoul

The 'Global Contenders'	
8	Los Angeles
9	Shanghai
10	Beijing
11	Amsterdam
12	Chicago
13	San Francisco
14	Toronto
15	Madrid
16	Sydney
17	Washington DC

Source: JLL and The Business of Cities, 2018

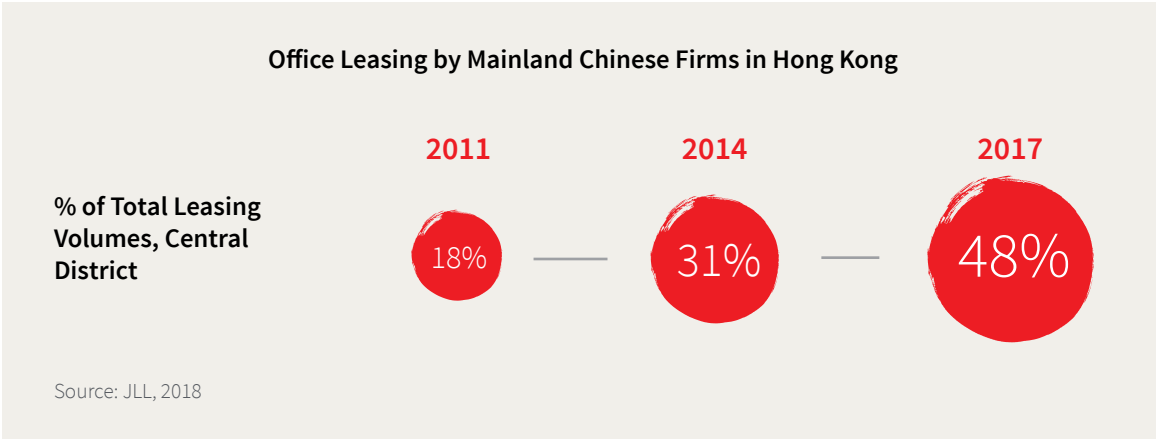
‘Traditional’ Metrics

Wealth		Size		Growth	
1	Hong Kong	1	Shanghai	1	Shenzhen
2	Shanghai	2	Beijing	2	Shanghai
3	Beijing	3	Hong Kong	3	Guangzhou
4	Shenzhen	4	Shenzhen	4	Beijing
5	Guangzhou	5	Guangzhou	5	Hong Kong

‘Future-Proofing’ Metrics

Transparency	Environment	Innovation	Working Age Population (%)
1 Hong Kong	1 Hong Kong	1 Beijing	1 Shenzhen
2 Shanghai	2 Shenzhen	2 Shanghai	2 Guangzhou
3 Beijing	3 Shanghai	3 Shenzhen	3 Beijing
4 Shenzhen	4 Guangzhou	4 Hong Kong	4 Shanghai
5 Guangzhou	5 Beijing	5 Guangzhou	5 Hong Kong

Source: JLL, 2018



China/2's Influence

Redrawing Global City Networks



Beijing

The Key Pillars of China's Internationalisation

China's Internationalisation Journey

As the China12 internationalise, three closely interlinked pillars dominate the narrative around their impact and influence on the global urban network:

1.

The 'Belt and Road Initiative' (BRI)

- International attention is predominantly focused on the BRI, an ambitious global infrastructure, financing and construction programme covering 65 countries across Europe, Africa and Asia. More loosely the Belt and Road is an umbrella term for all of China's overseas infrastructure involvement.
- While the BRI will boost infrastructure, connectivity and Chinese influence in cities across the globe, many projects are in higher-risk destinations in emerging markets that will be off the radar of most international real estate players over the medium term.

2.

Chinese Capital Outflows

- The real estate industry is focused on China's capital outflows which have so far had the most tangible impact on global real estate markets. Chinese outbound capital flows reached US\$158 billion in 2017¹, with real estate investment (including land sales) accounting for US\$32 billion, roughly 20% of the total.
- Capital controls, following a record year for outflows in 2016, have dampened overseas acquisitions and thrown into question the volume and direction of future international investments. Nonetheless, there remains room for growth, but investment will be more targeted as Chinese firms seek to tap into new markets and acquire new technologies in line with national strategic priorities.

3.

China's Corporates: The Next Wave

- As uncertainty over capital flows commands headlines, China's increasingly dynamic corporate sector is expected to dominate the next wave of globalisation.
- This process is still in its infancy, but Chinese corporates are now expanding their footprints internationally through targeting emerging markets, acquisitions of overseas firms to gain a foothold in new markets, and strategic investments to acquire new technologies.
- Today, China's technology giants are already among the world's largest and most valuable corporations. A small number of Chinese firms, such as Huawei and ZTE, have established themselves as truly global firms, while its internet giants, particularly Baidu, Alibaba and Tencent, are now beginning their global expansion strategies in earnest.

¹ Bloomberg China Deal Watch

Which World Cities are Most Connected with the China12?

The linkages of the China12 with the network of world cities are being shaped by complex interrelationships that extend well beyond the government-backed 'Belt and Road Initiative' (BRI) to include various trade and capital flows, the expanding footprints of Corporate China, and the increasing mobility of Chinese people as they explore the world for business, retail, leisure and education purposes.

In order to quantify which cities are most connected and are being most impacted by China's internationalisation, JLL has developed a China Outbound Cities Connectivity Index which captures the different relationships between cities.

China Outbound Cities Connectivity: Top 10 Cities

Rank	City	JLL's Global 300 Rank*	Rank Difference from Global300
1	Singapore	11	+ 10
2	New York	1	- 1
3	Sydney	29	+ 26
4	Tokyo	2	-2
5	Seoul	5	-
6	London	3	-3
7	Bangkok	25	+ 18
8	Los Angeles	8	-
9	Melbourne	45	+ 36
10	San Francisco	19	+ 9

See Page 43 for explanation of JLL's China Outbound Cities Connectivity Index

*JLL's Global300 is an index which ranks cities by the size of their economy and real estate market

Source: JLL, 2018

Strongest Linkages with International Gateway Cities

The Top 10 most connected cities with China are the well-recognised international gateways, which make them the first ports of call for Chinese activity. But there are telling differences to the normal roll-call of international business hubs:

- Asia's top-tier most globally connected cities – **Singapore** (1st), **Tokyo** (4th) and **Seoul** (5th) – are, perhaps unsurprisingly, among the premier group, reflecting not only physical proximity but deep trading relationships.
- Australia's **Sydney** (3rd) and **Melbourne** (9th) punch well above their weight as destinations for Chinese interests, due to a mixture of proximity, safe-haven status and openness to overseas investment.
- Only four non-Asia Pacific cities make the Top 10 – **New York** (2nd), **London** (6th), **Los Angeles** (8th) and **San Francisco** (10th). **Moscow** and **Paris** sit just outside the leading group.

World Cities have Distinct Linkages with the China12

While the international gateways have strongest overall linkages with China, many other cities have distinct and often unique relationships with China, depending on their political affiliations, economic strengths and historic ties. Based on our model, we are able to identify broad clusters of cities with similar linkages.

World City Linkages: Drivers of Connectivity

Connection	Description	Example Cities	
Technology & Talent	Tech-rich cities targeted for their innovative firms and talent bases	Silicon Valley Seattle Toronto	Madrid Munich Dusseldorf
Growing Consumer Markets	Fast-growing megahubs which offer opportunities for Chinese corporates	Jakarta Manila Delhi	Istanbul Hanoi Ho Chi Minh City
Infrastructure	Cities where Chinese contractors are heavily involved in city and infrastructure building; often related to the Belt and Road	Addis Ababa Nairobi Lagos	Colombo Dhaka Karachi
'Magnets'	Attractive locations for Chinese nationals for retail, leisure and education purposes, and/or real estate buyers	Osaka Auckland Brisbane	Manchester Vancouver
Regional Gateways	Gateways to commodity-rich regions in South America, Sub-Saharan Africa and the Middle East	Dubai Johannesburg Sao Paulo	

Source: JLL, 2018

China Outbound Cities Connectivity Index

The connectivity model captures **five elements of China's outbound activity** – corporate footprints and expansion, overseas investments and capital flows, infrastructure and real estate developments, flows of people (students, tourists and residents) and trade of goods.

Corporates (30%) – Corporate presence; office leasing volumes

Capital (20%) – Overseas real estate, venture capital and M&A investments; outbound FDI

Built Environment (20%) – Land sales; real estate development projects; Chinese-led infrastructure projects

Movement of People (20%) – Destinations of students, tourists and residential real estate purchasers; air connectivity

Trade Connectivity (10%) – Imports and exports with China; air cargo; shipping routes

Source: JLL, 2018

Case Study

Manchester

Punching Above its Weight

It is not just global cities and national capitals that are attracting Chinese interest and investment. Mid-sized cities across the world are also successfully pivoting their offers towards China. **Manchester** in the UK is one example, with links driven by its universities and airport. In 2015, Xi Jinping conducted a visit to the city, visiting the National Graphene Institute and Manchester City FC. In 2017, it was the first city outside of Asia to welcome the Chinese bike-sharing giant Mobike to its streets. Key to this was the bringing together of public and private sector actors to transform the city's engagement with China, via the Manchester China Forum.



University of Manchester

With the largest number of Chinese students of any UK university, the University of Manchester has long-standing links to China. In recent years, the university's breakthroughs in new materials research have led to partnerships with Huawei, China General Nuclear Power Group and the Beijing Institute of Aeronautical Materials.



Manchester Airport

Since 2016, Manchester Airport has offered the first direct flight between the UK and mainland China outside of London. Beijing Construction and Engineering Group International (BCEGI) has become an active player in Manchester's 'Airport City' development, which will include a targeted 'China Cluster'.



The Next Wave:

The Globalisation of China's Corporates

China's corporate titans – and particularly 'next generation' corporates – are increasingly making their presence felt abroad.

Why? The reasons are diverse:

1.

To Access Growth Markets

- Entering new markets globally – with the key battlegrounds in South and Southeast Asia. These markets, including India and Indonesia, offer large, young and rapidly growing consumer populations;
- They face competition from non-Chinese multinational and local firms, but may benefit from proximity and similar economic trajectories;
- Belt and Road countries, including in Africa and South and Central Asia, will offer new, largely untapped opportunities.

2.

To Learn from Others

- Chinese firms are acquiring and investing in high-tech firms overseas, from multinational businesses to new start-ups, to gain access to new technologies. These often align with strategic policy directions mapped out by the Chinese government;
- Chinese companies are also establishing R&D facilities abroad to access highly-skilled, international talent pools;
- However, national governments are becoming increasingly resistant to Chinese investments in high-tech industries.

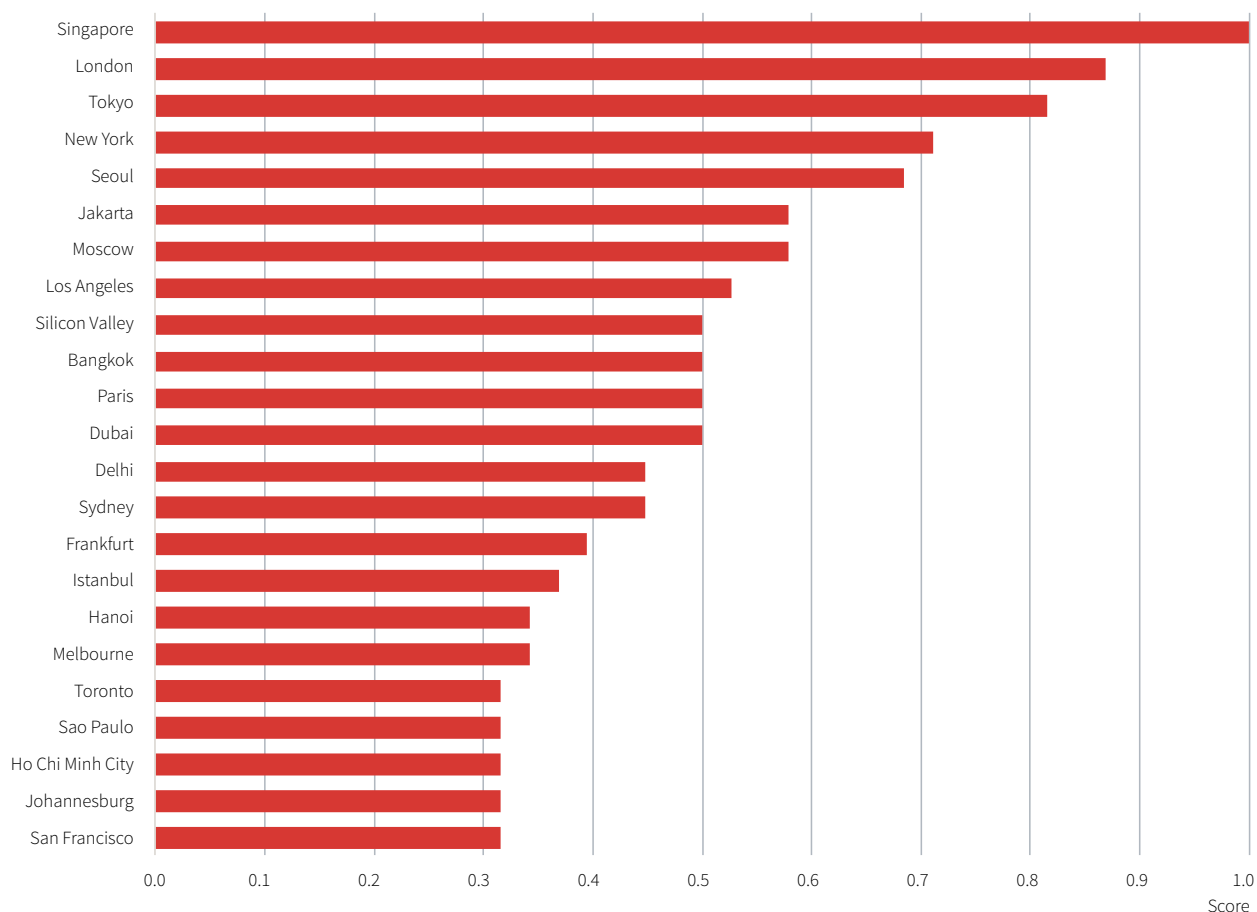
3.

To Link to the Chinese Consumer

- Firms are seeking to tap into growing networks of Chinese tourists and students overseas (e.g. roll-out of Alipay and WeChat Pay; and activity in the hospitality sector);
- Some expansions and acquisitions are geared towards boosting competitiveness in the domestic market – by linking foreign brands to the domestic market or by acquiring brands with a strong cachet.

China's Corporate Footprint

Presence of Leading Mainland Chinese Companies



Based on a basket of 81 Chinese companies

Source: JLL, 2018

The China12 are home to an increasing number of dynamic globalising companies. Mapping out their global locations reveals where the strongest corporate linkages are developing:

- **Singapore** (1st) leads the way, as Asia's most stable and transparent market, with robust links to China and offering a gateway into Southeast Asian markets.
- **London** (2nd), **Tokyo** (3rd), **New York** (4th) and **Seoul** (5th) – the world's most globalised cities – all appear in the Top 10, demonstrating that China's firms will continue to seek out the world's leading gateways and financial centres.
- **Jakarta** (6th) and **Bangkok** (9th) are the major beneficiaries of Chinese companies' expansions into Southeast Asia. **Delhi** (13th) is a key target as Chinese corporates seek to gain access to India's 1.3 billion population.
- West Coast U.S. markets – **Los Angeles** (8th) and the key San Francisco Bay markets of **Silicon Valley** (9th) and **San Francisco** (19th) – continue to be favoured over the rest of the U.S. by Chinese firms.

Technology Firms are Driving Expansion Overseas

Among the 'next generation' firms identified in our 'future-proofing' measures are several leading technology firms. In the online sphere, Baidu, Alibaba and Tencent rival Google, Amazon and Facebook in scale; while hardware giants, such as Huawei, ZTE and Lenovo, are China's most internationalised firms. The likes of drone manufacturer DJI and smartphone manufacturer Xiaomi are following in their footsteps.

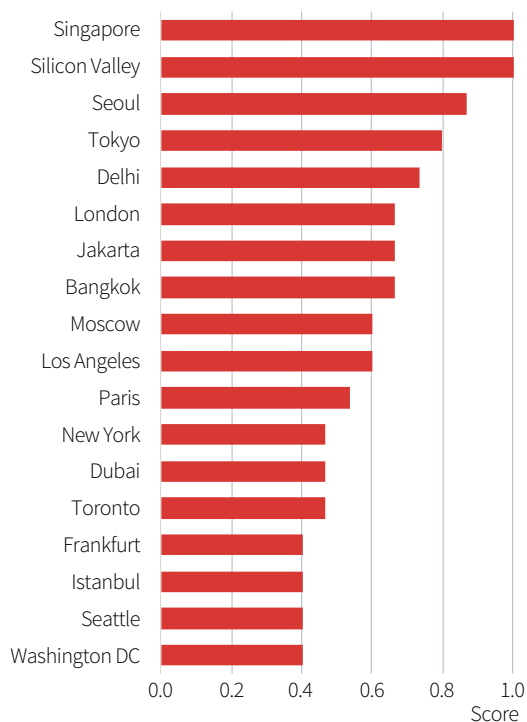
A healthy pipeline of new start-ups is following behind. According to China Money Network, there were 22 new Chinese 'unicorns' (start-ups valued at US\$1 billion or more) in 2017 alone – a number which is matched only by the U.S. These firms' focus spans from electric vehicles and bike-sharing, to entertainment and education.

With maturity, overseas acquisitions and newfound scale, China's technology firms are poised to emerge as truly international players.

So far, **Singapore** and **Silicon Valley** are the top destinations for China's technology companies:

- **Singapore** is seen as a stable foothold for entry into Southeast Asia and beyond. E-commerce firms and consumer electronics firms, in particular, are targeting the high-potential markets of **Jakarta** and **Bangkok**.
- **Silicon Valley** has emerged as a key R&D location for Chinese firms, despite the relative lack of penetration by Chinese businesses in the U.S. market. Firms are seeking to access the area's unrivalled concentration of talent, knowledge and technology, with AI and autonomous and electric vehicles being key research areas.

Presence of Mainland Chinese Technology Firms



Based on a basket of 37 Chinese technology companies
Source: JLL, 2018

Key Areas of Investment for China's Tech Giants

Company	Core Business Areas	Areas of Diversification	Emerging Technologies
Alibaba Tencent Baidu Didi Chuxing JD.com	E-Commerce Ride-Hailing Social Media Online Services	Entertainment Tourism Healthcare Fintech	AI Virtual Reality Autonomous Vehicles Electric Vehicles

Source: JLL, 2018

The Globalisation of China's Financial Services Continues

Mainland China's financial sector continues to internationalise, through expansion and acquisitions. The country's ongoing regulatory changes, national policy programmes and maturing digital ecosystem are all playing a role in the globalisation of these firms.

A Focus on Global Financial Hubs

London, New York and Singapore (in addition to **Hong Kong**) are the leading locations for Chinese financial and professional services companies. The Belt and Road Initiative should offer new opportunities for these four financial giants, leveraging their liquidity and deep financial and professional expertise for the funding of BRI infrastructure projects.

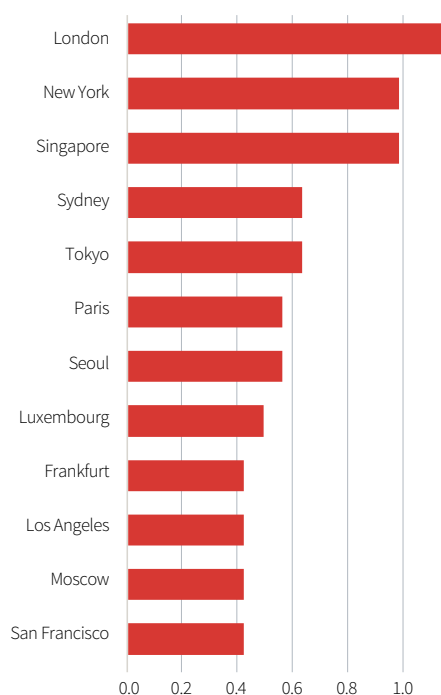
The Rise of Fintech

China is a leader across the board in fintech, leapfrogging many Western economies. Alibaba's Alipay and Tencent's WeChat Pay provide unmatched digital financial ecosystems which integrate payments, investment, credit ratings and personal credit. Online-only insurance firm ZhongAn and wealth management platform Lu.com are among the Chinese firms breaking new ground. There are huge opportunities for Chinese fintech in emerging markets where the banking and digital infrastructures are less mature.

RMB Internationalisation

The pathway to the internationalisation of the RMB should offer additional potential for financial centres. There are now at least 20 official RMB clearing centres across the world. While this includes many of the key financial centres, it also includes the likes of **Doha, Lusaka, Santiago and Buenos Aires**.

Presence of Mainland Chinese Financial and Professional Services Firms



Based on a basket of 24 Chinese financial & professional services-related firms; includes both branches and offices.

Source: JLL, 2018

The Future Expansion of Chinese Corporates Globally

South and Southeast Asia

Corporate presence, leasing activity and investment measures clearly indicate a growing interest from Chinese firms in South and Southeast Asia. India and Indonesia, in particular, appear to be attracting attention.

'Innovator' Cities

We expect increasing interest in leading innovation locations, as well as global talent hotspots. The Chinese government is doubling down on advanced industries, including biotechnology, cleantech and semiconductors. While China is catching up globally in entrepreneurship and in consumer spheres, there is still a gap to make up in terms of science and advanced engineering.

Alignment with Key National Policies

There will be a continued shift towards investment into 'key technologies', as China places priority on its 'Made in China 2025' policy towards greater manufacturing innovation.

Belt and Road

Further corporate expansion is expected along the various routes of the BRI. In particular, Central Asia, Eastern Europe and East Africa, alongside South and Southeast Asia, will be target locations for Chinese corporations, especially state-owned enterprises.

Case Study

Indonesia

The 'Next China'?

Southeast Asia is attracting attention from companies globally due to its young population, growing middle-class consumer base and rapid economic growth. U.S. and Chinese technology giants, in particular, are engaged in a 'battle for Southeast Asia'.

Indonesia is a prime site for this competition. The world's fourth most-populous country, home to 260 million people, offers a compelling option for Chinese corporate expansion.

As a result, there has been Chinese investment into **Jakarta**-based start-ups, such as Traveloka, GoJek and Tokopedia – the country's three tech 'unicorns' – as Chinese firms recognise the scale of opportunities. Meanwhile, e-commerce firms are seeking to take advantage of commercial opportunities through natural growth (e.g. JD.com's Indonesian operation, JD.ID) or investment into regional players (e.g. Lazada).

Infrastructure development through the Belt and Road Initiative is ongoing, as Indonesia is drawn in as a key co-operation partner. The **Jakarta-Bandung** high-speed rail line is a key component, while energy and tourism are other areas of potential investment. Chinese developers and state contractors are playing an increasing role in real estate development.



Transforming Cities and Real Estate Markets

Infrastructure



Capital Flows



Construction



Corporate Demand



Innovation and Ideas



1. Infrastructure Financing and Development

China has a long history of assisting development and developing economies through loans and infrastructure construction, but the the Belt and Road Initiative (BRI) is providing a much stronger framework for infrastructure development, creating new sources of financing and directing the activity of state-owned construction firms. Chinese financing, assistance and expertise will significantly address growing infrastructure deficits while also integrating markets more fully into global supply chains. This will provide a boost to local real estate markets through the construction of new infrastructure, as they become more viable business locations, and as private firms follow in the footsteps of China's SOEs.

Light Rail and Metro

Involved in establishing the first light rail or metro lines in **Astana**, **Addis Ababa** and **Lahore**, as well as involvement in building new lines in **Hanoi**, **Cairo** and **Lagos**.

Inter-City / High-Speed Rail

Driving the modernisation of international rail networks in both Southeast Asia and East Africa, as well as in individual inter-city projects such as **Moscow-Kazan**, **Belgrade-Budapest**, **Abuja-Kaduna** and **Dhaka-Chittagong**.

Port Investment and Construction

China's leading shipping firms have been undertaking widespread investment into existing ports. New deep-sea ports are also being developed in **Gwadar** (Pakistan), **Colombo** (Sri Lanka) and **Kyaukpyu** (Myanmar).

Roads, Highways and Bridges

China is improving road and highway networks across the globe, notably contributing to **Pakistan's Karakoram Highway**, as well as roads in East Africa and Eastern Europe.

Airports and Terminals

Construction of new airports and terminals, as well as the modernisation of existing airports.

Telecoms and Digital Infrastructure

China is at the forefront of improving telecoms and digital infrastructure, including in Africa, Asia and Latin America. Chinese firms are involved in providing communications satellites and installing subsea cables.

Non-Commercial Real Estate

From hospitals and schools, to sports stadiums and government buildings, Chinese construction firms are involved in providing facilities in many cities.

Energy and Utilities

Involved in providing energy infrastructure – from fossil fuels to renewables – and water to communities across the globe. Gas pipelines connecting China with Central and Southeast Asia are also being constructed.

Many Belt and Road Locations will be Off the Radar for International Real Estate Players

While activity associated with the BRI will transform city skylines, boost connectivity and improve infrastructure in many locations, its direct impacts on global commercial real estate market dynamics are likely to be modest over the short-to-medium term.

Many BRI countries represent high-risk destinations in emerging markets, where there are concerns over political and macroeconomic stability, market transparency, the viability of projects and limited local market linkages. Its real estate impacts will be most felt in semi-transparent markets where other non-Chinese players are also active, such as **Nairobi** and **Jakarta**.

Opportunities for Global Financial Centres

Global financial centres – notably **Hong Kong**, but also **London**, **New York** and **Singapore** – will benefit from growing demand for broad-ranging expertise in financial and professional services, acting as connection points and facilitators between China, Western firms and 'Belt and Road' countries.

The Belt and Road Initiative at a Glance

What?

Announced in October 2013, the Belt and Road Initiative (BRI) has come to represent the full scope of China's global ambitions as a world power in the current era. In its most common definition, the BRI covers infrastructure construction and financing across at least 65 countries. Its aims are:

- To encourage the internationalisation of China's state-owned enterprises (SOEs);
- To promote the internationalisation of the renminbi (RMB);
- To increase Chinese political and socio-economic influence globally;
- To provide new export markets in light of oversupply, particular in construction materials;
- To promote the development of cities in China's West and South as gateways to new BRI markets.

Where?

Major beneficiaries of Chinese Belt and Road-related investment are spread across a number of regions, notably South Asia, Southeast Asia and East Africa. Pakistan, Bangladesh, Indonesia and Malaysia are among the major countries for Belt and Road-related investment.

Who?

China's major state-owned construction firms (e.g. CSCEC, CRCC, CCCC) are heavily involved in physically building the Belt and Road. However, the greater influence may be the new and established financing institutions which are driving the initiative, including the Asian Infrastructure Investment Bank (a Beijing-based multilateral development bank), the New Development Bank (a multilateral bank, formerly known as the BRICS Development Bank), the Silk Road Fund, the Export-Import Bank of China and the China Development Bank.

Case Study

Building the Belt and Road in East Africa

East Africa is developing as a key region in China's Belt and Road ambitions. **Addis Ababa** and **Nairobi** are the key nodes in the region, but interests extend across Ethiopia, Kenya, Djibouti and Tanzania. A cross-border rail network is being modernised and developed, with key links between Addis Ababa and Djibouti, and Nairobi and Mombasa.

Addis Ababa has long seen construction activity from Chinese firms, as a key seat of political power in Sub-Saharan Africa. The African Union's headquarters was built and funded by Chinese state contractors in 2012. The region's first light rail system is also being financed, constructed and operated by Chinese firms.

In **Nairobi**, Chinese developers have been major builders. Some of the city's tallest completed and under-construction towers are the results of Chinese involvement, including 'The Pinnacle', which is set to become Africa's tallest building.

2. Flows of Chinese Capital into Global Real Estate

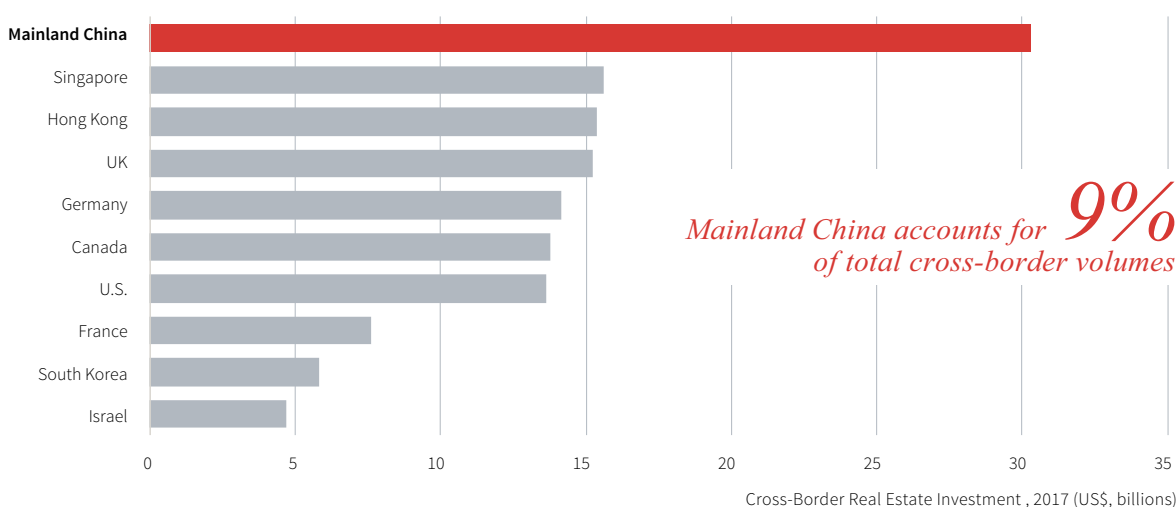
Major Players in Global Real Estate Investment

Capital flows into commercial and residential property, development and land have, so far, been the most visible manifestation of China's internationalisation in the global real estate market.

Over the 2014-2017 period, total outbound Mainland Chinese real estate investment exceeded US\$94 billion (excluding Hong Kong), with approximately 80% going into standing commercial real estate and the rest into land sales.

By 2017, Mainland Chinese investors had become the world's most important cross-border players, outpacing U.S. investors and accounting for 9% of global cross-border transactions in direct commercial real estate.

Top 10 Cross-Border Purchasers by Source of Capital, 2017



Mainland Chinese cross-border investment includes investment into Hong Kong

Source: JLL, 2018

An Overwhelming Focus on Highly Liquid, Highly Transparent Markets

The impact of Chinese money on investment volume growth, yield compression and capital appreciation has been well-documented, and particularly in those cities where it has had an outsized influence:

- **New York** (1st) and **London** (2nd) have been primary destinations for Chinese investors by a significant margin. For Chinese investors, this duo accounts for around 40% of total direct commercial real estate investment (2013-2017, excluding portfolios), although this proportion has gradually declined (from 80% in 2012) as Chinese money widens its target geographies.

- Australian cities have punched well above their weight as destinations for Chinese capital, with **Sydney** (3rd) and **Melbourne** (6th) both making the global Top 10.
- U.S. West Coast markets – **Los Angeles** (5th), **San Francisco** (7th) and **Silicon Valley** (10th) – have also been favoured destinations, as well as **Chicago** (8th), which has received higher levels of Chinese investment than its market size would indicate.
- **Singapore** (9th), as Asia's most transparent real estate market, is a key target, with **Tokyo** (4th) also attracting Chinese activity, although arguably lower than expected given its proximity and market depth.
- Several cities have seen relatively low levels of Chinese real estate investment – including **Paris**, **Berlin**, **Frankfurt** and **Amsterdam** in Europe, the U.S. cities of **Seattle** and **Washington DC**, and **Seoul**. Expect activity in these cities to grow as investment becomes more aligned with corporate footprints and expansion plans.

Top 10 Destinations for Mainland Chinese Capital, 2014-2017

		Chinese Real Estate Investment US\$, billion	% of Cross-Border Investment
1	New York	10.2	18%
2	London	8.2	9%
3	Sydney	5.0	34%
4	Tokyo	1.8	11%
5	Los Angeles	1.3	8%
6	Melbourne	1.2	16%
7	San Francisco	1.1	7%
8	Chicago	1.0	8%
9	Singapore	0.9	15%
10	Silicon Valley	0.6	8%

Excludes Hong Kong
Source: JLL, 2018

Missing Out on Chinese Investment?

Atlanta	Amsterdam
Dallas	Berlin
Miami	Dublin
Seattle	Frankfurt
Washington DC	Paris
	Stockholm
Seoul	Vienna

Major real estate investment destinations where Mainland Chinese investment represents less than 1.5% of total cross-border investment

Future Capital Flows will be More Aligned with National Policy Goals

Tough governmental measures implemented to restrict capital flows since 2016 - combined with concerns in some quarters about the outsized influence of Chinese investment on local economies and real estate markets - have raised questions about the quantum and direction of future outbound capital.

Nonetheless, recent activity, in spite of capital restrictions, does indicate that Chinese investors will continue to be important players in the global real estate market over the medium term.

Future activity will be more measured, more targeted and will take on a different structure:

- A change in the investor mix towards more established and experienced investors, especially those with robust due diligence processes and strategic focus.
- Greater alignment with the government's strategic aims, industrial policy and the international activities of Chinese corporations. This could mean:
 - » More focus on R&D facilities and logistics/industrial property, with the purchase of Logisor by CIC in 2017 being evidence of this shift;
 - » Alignment with the global footprints of China's expanding corporate sector;
 - » Greater interest in tech-rich cities – like **Boston, Seattle, Berlin** and **Munich**.
- Increased interest in Belt and Road countries; but a lack of transparency will restrict deals in most BRI countries. In this respect, Southeast Asian and Central European markets may offer the greatest potential as transparency improves.
- Chinese investors will still gravitate towards the world's most transparent markets, yet they will continue to widen their net within the 'Highly Transparent' countries.
- Cyclical factors will encourage Chinese investors to deleverage or recycle capital.



Chongqing

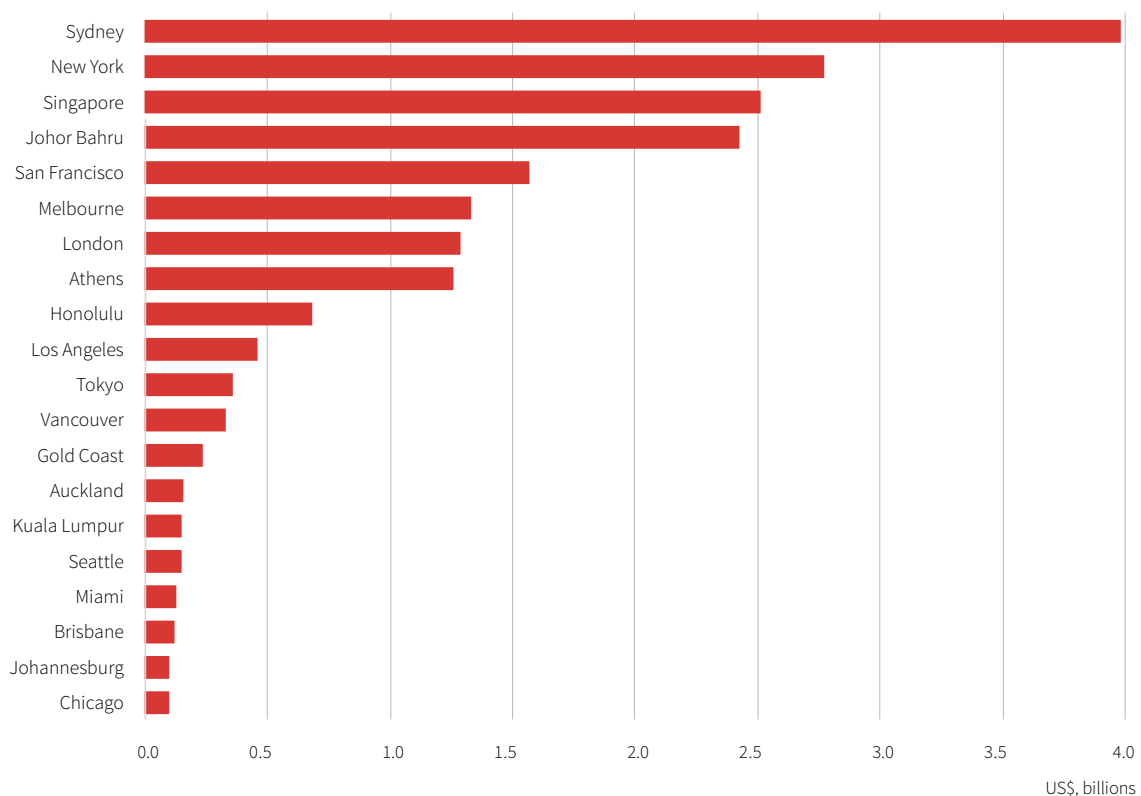
3. Changing Skylines and Urban Footprints

China's real estate developers have continued to move overseas in search of new opportunities beyond their domestic market. There has been a strong focus on safe-haven locations where there has been substantial interest from Chinese investors, including in Australia, the U.S. and the UK. Developments have been largely in the residential sector, although there has also been activity in the hotels and offices sectors.

Between 2013 and 2017, Mainland Chinese buyers had purchased more than US\$23 billion of land overseas.

- Excluding Hong Kong, **Sydney** is by far the most sought-after location, attracting almost US\$4 billion in land sales since the beginning of 2013. **Melbourne** has also seen more than US\$1 billion in land sales.
- **Johor Bahru**, a Malaysian city located across the Straits of Johor from Singapore, is one of the most surprising entrants in the Top 10. Home to the Iskandar Malaysia special economic development zone, Country Garden's massive 'Forest City' is a key project. **Singapore** has also seen significant activity.
- The global cities of **New York** and **London** appear in the Top 10, while **San Francisco** has also seen high levels of Chinese development interest.
- Hotspots for Chinese residential purchases include **Vancouver**, Australia's **Gold Coast**, **Auckland**, **Brisbane** and **Seattle**, which all appear in the Top 20.

Top 20 Cities for Land Purchases by Mainland Chinese Buyers, 2013-2017



Excludes Hong Kong
Source: JLL, RCA, 2018

4. The Rise of Corporate China

Demand is Still Small, but Rising Rapidly

As China's corporates expand internationally, they are becoming more important players in office leasing markets, particularly in financial capitals and tech-rich cities.

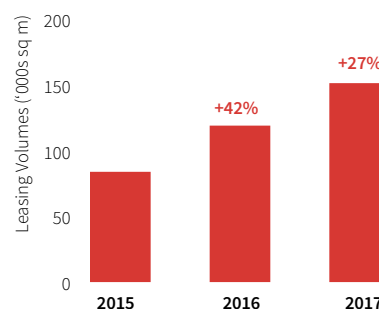
Numbers are currently small – shy of 200,000 square metres leased across 70 major markets – but they are climbing rapidly and have doubled over the past two years.

What do current patterns of leasing activity tell us about where Chinese firms are targeting?

The pattern of office leasing deals over the three-year period (2015-2017) across 70 major markets shows that:

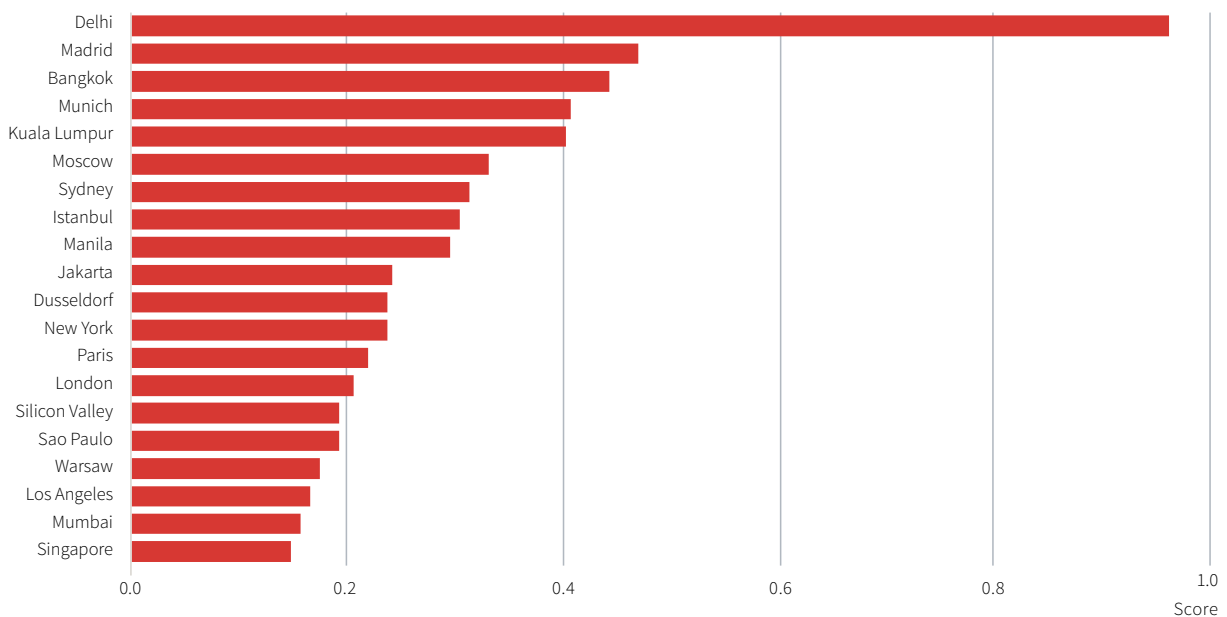
- **Delhi** is at the top of the global ranking in part due to BBK Electronics – parent company of lower-cost smartphone manufacturers Oppo and Vivo – which has made large moves into the metro area.
- Relatively high levels of activity have been recorded in the Southeast Asian quartet of **Bangkok, Kuala Lumpur, Manila** and **Jakarta**, highlighting once more the vigour with which Corporate China is focusing on these four markets.
- **Munich, Madrid** and **Dusseldorf** are more surprising entrants in the Top 20 and reflect a trend for Chinese business to target talent hotspots, particularly in areas of advanced engineering (see Case Study on Germany, Page 60).
- The presence in the Top 10 of **Moscow** (6th) and **Istanbul** (8th), along with **Sao Paulo** (16th), shows Chinese interest in other large emerging markets.
- The main global financial centres – like **London, New York, Singapore** and **Tokyo** – do not feature strongly, in part due to their longer history as hubs for Chinese business. Many Chinese companies are present in these markets, but leased their space prior to 2015. Owner-occupation also plays a role in this, with Bank of China having purchased buildings in London, New York and Sydney for its own use, for example.
- Leasing activity by Chinese firms in the U.S. is dominated by three metro areas – **New York**, the **San Francisco Bay** area and **Los Angeles** – with smaller clusters in **Chicago, Seattle** and **Washington DC**.

Global Office Leasing Volumes by Mainland Chinese Firms



Covering 70 major office markets globally.
Excludes Hong Kong.
Source: JLL, 2018

Mainland Chinese Corporate Office Leasing Index, 2015-2017



Based on known office space deals, 2015-2017, Excludes Hong Kong
Source: JLL, 2018

The Focus of Future Demand by Corporate China

Corporate presence, leasing activity and investment measures clearly indicate a growing interest from Chinese firms in South and Southeast Asia. **Delhi, Mumbai, Bangalore, Jakarta, Kuala Lumpur, Bangkok, Manila** and **Ho Chi Minh City** are likely to be key targets for Corporate China. As a result, we may see a realignment in the corporate geography, as attention tilts towards India and Southeast Asia.

With the continued shift towards investment in 'key technologies', Corporate China will focus on 'innovator' cities, those with dynamic technology sectors and large talent pools. This has positive implications for locations such as **Silicon Valley, Munich** and **Seattle**, and activity will spread to other tech-rich cities like Berlin and Stockholm.

Further corporate expansion is anticipated along the various routes of the BRI. Central Europe (e.g. **Warsaw, Prague, Budapest**) and East Africa (e.g. **Nairobi, Addis Ababa**), alongside South and Southeast Asia, will be target locations for Chinese corporations, especially state-owned enterprises.

Case Study

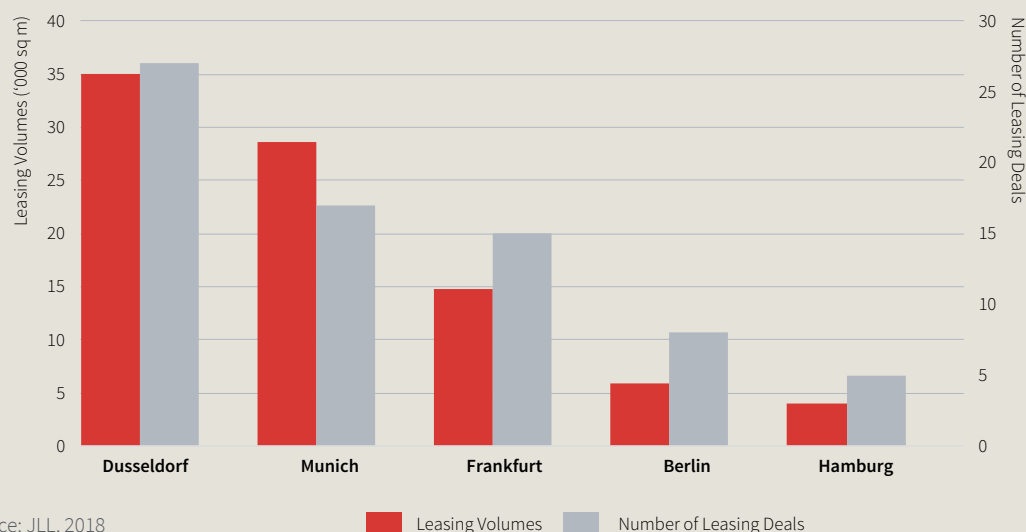
Germany – China's Corporate Gateway to Europe

China's interest in Germany is on the rise. Investment has boomed as China seeks to gain access to Germany's long tradition of high-value manufacturing and engineering innovation.

Corporate activity by Chinese firms shows interesting patterns, showing **Dusseldorf**, **Munich** and **Frankfurt** as key destinations for Chinese businesses:

1. **Dusseldorf** – Emerging as a leading city for Chinese leasing activity, driven by Huawei's European headquarters and ZTE's German headquarters. It is located close to **Duisburg**, a major inland port and logistics hub, which has gained prominence as the final destination of a direct rail link between China and Germany.
2. **Munich** – Developing strong links with China through the automotive and advanced manufacturing firms for which it is famous. A hub for high-tech and advanced engineering, Chinese firms are looking to tap into the city's talent pool and expertise.
3. **Frankfurt** – Its financial strengths have attracted China's major banks to the city – becoming the first official RMB clearing centre outside of Asia. Frankfurt is also home to a number of leading Chinese tech companies, buoyed by its status as by far the best-connected German city with China.
4. **Berlin** – Despite its reputation as Europe's tech star, Berlin does not appear to hold the same appeal for Chinese businesses. The opening of Berlin-Brandenburg Airport could be a turning point with a boost to connectivity.
5. **Hamburg** – Traditionally has held solid links with China through the shipping industry; however, Hamburg is no longer pre-eminent among German cities. A Chinese conglomerate's involvement in development at the city's port indicates that maritime linkages endure.

Leasing Activity by Leading Chinese Corporates, 2010 – 2017



Source: JLL, 2018

5. Transforming World Cities through Innovation and Ideas

Chinese influence on city skylines and infrastructure has grown through significant investment and development. Yet over the next decade, China's influence will be felt in more subtle ways. The China12 cities are on the leading edge of a number of new technologies that will change the way in which cities work, and as their corporates internationalise, innovate and gain influence, they will be at the cutting-edge of these changes.

On-Demand Economy

The China12 are at the forefront of the 'on-demand economy', including bike-sharing, ride-hailing, co-working and delivery services, all of which build on the country's mature digital ecosystem. The spread of dock-less bike-sharing schemes across the globe is the most visible element. The 'on-demand economy' is already influencing the flows of people, vehicles and goods across cities, changing everything from office demand to logistics networks.

The Platform Economy

China's leading apps have become ubiquitous for Chinese consumers, integrating everything from messaging to e-payments. In some locations, users can book doctors' appointments, pay bills and pay for parking using a single platform. Bike-sharing, ride-hailing, e-commerce and ticket buying are also integrated. China is already well ahead in terms of e-payments and, in the future, these platforms may transform the relationships between cities, corporates and citizens.

Mobility

China is investing heavily in the electric and autonomous vehicle sectors. Home to some of the world's leading electric vehicle makers, it is also central to battery production. China's automotive firms and technology giants are emerging as major players in the autonomous vehicle industry. These technologies will transform the ways in which cities and infrastructure are designed.

New Retail Concepts

Leading e-commerce firms are now pivoting towards 'bricks-and-mortar' retail, as they seek to break down the barriers between online and offline shopping experiences. This has included investments into existing retailers, utilising 'big data', 'experiential retail' and new offers to improve the shopping experience. Unmanned convenience stores have also emerged.



The China12's Growing Global Influence

China's leading cities – **the China12** – are now becoming influential actors internationally. No longer are they passive respondents to central government policies and international flows; they are becoming drivers of change in their own right.

The China12 are home to a growing group of highly dynamic and ambitious 'next generation' firms that will drive the next wave of globalisation. Combined with their huge consumer markets and manufacturing capacity, these cities will develop as hubs for global corporate networks.

City linkages will be reinforced by increasing global corporate connectivity. **Shenzhen's** strengths in several leading technologies, for example, are resulting in greater links with the **San Francisco** Bay Area, **Seattle**, **Los Angeles** and **Bangalore** through networks of start-ups, venture capital funding and R&D facilities. Other cities possess long-standing historic links (e.g. **Wuhan's** French heritage), industry-related networks (the automotive hubs of **Chongqing** and **Detroit**) and growing infrastructure connections with other regions (e.g. **Chengdu** and cities in Central and Eastern Europe).

The China12 are likely to pioneer new models of city living as test beds for the 'on-demand economy', the 'platform economy', and new forms of mobility and retailing. While much of this will have uniquely Chinese characteristics, elements will be transferable to other cities globally, particularly in high-growth markets that are looking urgently for new solutions to coming to grips with rapid expansion.

The China12 will be at the cutting edge of new technologies that will change the way we live and work in cities.

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