Chongqing’s large administrative territory and population, thriving economy, and increasing integration into the global economy are huge assets in its bid to become a global city. Chongqing can manage looming risks and shape its growth trajectory to mirror that of other successful global cities by (1) shaping its spatial structure in a compact form; (2) increasing its connectivity and integration in the ASEAN region; (3) becoming a center of innovation with a highly skilled workforce; (4) managing the demographic transition and urban-rural integration, and creating a free-flowing large labor market; and (5) following a low-carbon growth pathway. The five major transformations highlighted in this report define short-, medium-, and long-term goals and provide an overall strategic direction to achieve Chongqing’s Vision 2035. A successful outcome requires strong leadership and commitment, careful sequencing, smooth and determined implementation, and close coordination among all relevant agencies. With the right strategy and careful implementation, Chongqing, already considered a fast-growing emerging global gateway, can achieve its goal of becoming one of the world’s most competitive cities by 2035.
Chongqing presents two distinct scales:

- **Chongqing Municipality** is comparable to a country in terms of administrative area and population. The size of Chongqing Municipality is 80 percent that of Korea, and its population is 60 percent of Korea’s population. Chongqing’s urban population can also be compared to that of huge metropolitan regions. Chongqing Municipality’s urban population is half that of the Greater Tokyo Area (38 million), two-thirds that of Seoul Capital Area (25.5 million), and 90 percent that of the New York metropolitan area (20.32 million).

- **Central Chongqing** has a huge administrative area of 5,473 km² in its nine districts (equivalent to the entire Shanghai municipality, 3.7 times the size of Greater London, and seven times the size of New York City). However, only 10 percent of central Chongqing’s administrative land is built up (545 km²). In 2014, central Chongqing had a resident population of about 8.2 million, which is comparable to that of the Big Six global cities.

Depending on the dimensions, indicators used in this benchmark are at the scale of the municipality or central Chongqing, or both when relevant. For some indicators, such as social inclusiveness and some connectivity indicators, international data are available at country scale only and are used as a proxy for data at metropolitan region scale. This approach is justified by the fact that (for example) Seoul Capital Area comprises half the population of Korea, while the Tokyo metropolitan area has 30 percent of Japan’s population. Environmental indicators are mostly compared at municipality and metropolitan region scales.

The benchmark analysis in this report is based on 30 indicators, grouped under 15 headings and four dimensions.
## I. Spatial Structure and Urban Fabrics

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Chongqing</th>
<th>International benchmarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Land expansion</strong></td>
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</tbody>
</table>
| Additional land per new urban resident, 2000–2009 (m²) | 136\(^a\) (central Chongqing) | Hong Kong SAR: 40\(^b\)  
Singapore: 38\(^b\) |
| **Density (people/km²)** | | |
| Population density (built-up area) | 12,129\(^c\) (municipality) | Seoul Capital Area: 11,880\(^b\)  
Greater Tokyo Area: 8,062\(^b\) |
| | 13,248\(^c\) (central Chongqing) | Hong Kong SAR: 37,100\(^c\)  
Seoul Special City: 29,100\(^c\)  
Singapore: 18,248\(^c\)  
Tokyo 23 wards: 15,346\(^c\) |
| **Economic agglomeration** | | |
| Job density (number of jobs/km² of urban built-up area) | 6,800\(^c\) (municipality) | Hong Kong SAR: 14,340\(^d\)  
Singapore: 13,000\(^d\) |
| | 0.166\(^c\) (municipality) | Greater Tokyo Area: 0.31\(^g\)  
Seoul Capital Area: 0.34\(^g\)  
New York metropolitan area: 0.23\(^g\) |
| GDP density (GDP/km² of built-up area in billion US$/km² at current prices) | 0.180\(^c\) (central Chongqing) | Hong Kong SAR: 1.18\(^h\)  
Singapore: 1.07\(^h\)  
Seoul Special City: 0.78\(^i\)  
Greater London: 0.6\(^j\)  
New York City: 0.94\(^j\) |
| **Mixed-use and local jobs** | | |
| Job/resident ratio | 36 percent of central Chongqing’s population lives on residential superblocks with only 0.3 jobs per resident\(^k\) | UN-Habitat recommendation: 0.7 jobs per resident\(^l\) |
| **Accessibility of transit and alignment of densities with transit accessibility** | | |
| Percentage of people within walking distance to transit (less than 1 km in global cities) | 20 percent\(^i\) (central Chongqing) | London: 53 percent\(^m\)  
New York: 48 percent\(^m\)  
Hong Kong SAR: 75 percent\(^m\) |
| Percentage of jobs within walking distance to transit (less than 1 km in global cities) | 35 percent\(^i\) (central Chongqing) | London: 67 percent\(^m\)  
New York: 58 percent\(^m\)  
Hong Kong SAR: 84 percent\(^m\) |
| **Urban fabric (assessed on comparable samples 1 square mile in size)** | | |
| Average block size (ha) | 6 (superblocks in central Chongqing)\(^n\) | London (City): 0.7\(^n\)  
Lower Manhattan: 0.65\(^n\)  
Hong Kong SAR Central: 0.34\(^n\)  
Singapore: 0.9\(^n\)  
Seoul: 0.36\(^n\)  
Tokyo Nihonbashi: 0.26\(^n\) |
| Density of intersections (number/km²) | 6 to 10 (public streets only)\(^n\)  
50 (including inner superblock streets) | London (City): 188\(^n\)  
Lower Manhattan: 132\(^n\)  
Hong Kong SAR Central: 459\(^n\)  
Singapore: 109\(^n\)  
Seoul: 333\(^n\)  
Tokyo Nihonbashi: 386\(^n\) |
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Chongqing</th>
<th>International benchmarks</th>
</tr>
</thead>
</table>
| Average distance between intersections (m) | 400\textsuperscript{a} | London (City): 86\textsuperscript{a}  
  Lower Manhattan: 83\textsuperscript{a}  
  Hong Kong SAR Central: 53\textsuperscript{a}  
  Singapore: 115\textsuperscript{a}  
  Seoul: 33\textsuperscript{a}  
  Tokyo Nihonbashi: 43\textsuperscript{a} |
| Street linear density (total length of streets in km per km\(^2\)) | 12\textsuperscript{a} | Manhattan: 22.7\textsuperscript{b}  
  Hong Kong SAR Central: 36\textsuperscript{a}  
  Singapore: 17\textsuperscript{a}  
  Tokyo Nihonbashi: 30\textsuperscript{a} |

\(\text{a.} \) Chongqing Municipal Bureau of Statistics and NBS Survey Office in Chongqing 2016.
\(\text{b.} \) Angel et al. 2016.
\(\text{c.} \) Calculated from Chongqing Municipal Bureau of Statistics and NBS Survey Office in Chongqing 2016.
\(\text{d.} \) Based on data from Government of Hong Kong Planning Department 2018.
\(\text{e.} \) Calculated on the built-up area from Seoul Metropolitan Government data.
\(\text{f.} \) Calculated from Tokyo Metropolitan Government data.
\(\text{g.} \) GDP at current price and built-up area from Angel et al. 2016.
\(\text{h.} \) Based on GDP at current price and on data from Government of Hong Kong Planning Department 2018.
\(\text{i.} \) Calculated on GDP at current price and on the built-up area from Seoul Metropolitan Government data.
\(\text{j.} \) Calculated on GDP at current price and administrative land.
\(\text{k.} \) Based on an assessment made by Calthorpe Associates for this report.
\(\text{l.} \) UN-Habitat 2014.
\(\text{m.} \) Based on calculations by LSE Cities in Rode et al. 2013.
\(\text{n.} \) Calculations made by China Sustainable Transportation Center for this report.
\(\text{o.} \) Based on data in Jacobs 1995.
\(\text{p.} \) Jacobs 1995.
\(\text{q.} \) Calculations made by the Urban Morphology and Complex Systems Institute for this report.
\(\text{r.} \) Salat, Labbé, and Nowacki 2011.
## II. Economic Competitiveness

### Economic performance & structure

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Chongqing</th>
<th>International benchmarks</th>
</tr>
</thead>
</table>
| GDP per capita (at current prices)             | US$8,908\textsuperscript{a} (municipality 2016) | New York metropolitan area: US$69,915 (2015)\textsuperscript{b}  
Greater Tokyo Area: US$43,664 (2015)\textsuperscript{c}  
Seoul Capital Area: US$34,355 (2015)\textsuperscript{d}  
Singapore: US$54,940 (2015)\textsuperscript{e}  
Hong Kong SAR: US$42,431 (2015)\textsuperscript{f} |
| GDP growth rate                                | 9.3 percent\textsuperscript{a} (municipality 2017) | New York metropolitan area: 1.1 percent (2017)\textsuperscript{g}  
Tokyo Prefecture: -0.6 percent (2017)\textsuperscript{h}  
Seoul Capital Area: 3.1 percent (2017)\textsuperscript{i}  
Singapore: 3.6 percent (2017)\textsuperscript{j}  
Hong Kong SAR: 3.8 percent (2017)\textsuperscript{k} |
| Percentage of secondary industry in GDP         | 44.2 percent\textsuperscript{a} (municipality 2016) | New York metropolitan area: 8 percent\textsuperscript{l}  
Tokyo Prefecture: 11.5 percent\textsuperscript{m}  
Singapore: 26 percent\textsuperscript{n}  
Hong Kong SAR: 7.7 percent\textsuperscript{o} |

### Labor force

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Chongqing</th>
<th>International benchmarks</th>
</tr>
</thead>
</table>
| Labor productivity (GDP/worker) in US$ at current prices | 15,720\textsuperscript{a} (municipality) | Singapore: US$66,406\textsuperscript{p}  
Hong Kong SAR: US$61,485\textsuperscript{q} |
| Share of college graduates in the labor market | 27 percent by 2030 (projection for China as a whole) | Korea: 58 percent\textsuperscript{r} |

### Innovation capacity

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Chongqing</th>
<th>International benchmarks</th>
</tr>
</thead>
</table>
| R&D expenditure as a share of GDP              | 1.57 percent\textsuperscript{a} (municipality) | Korea: 4.15 percent\textsuperscript{s}  
Japan: 3.49 percent\textsuperscript{t} |

### Connectivity

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Chongqing</th>
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</tr>
</thead>
</table>
| High-speed rail network length                 | 2,032 km at municipality scale (when [railway network is complete])\textsuperscript{u} | Japan: 2,765 km\textsuperscript{v}  
Korea: 1,048 km\textsuperscript{w} |
| International passenger annual air traffic\textsuperscript{v} (2017) | 5 million (2020 target)\textsuperscript{y} | Greater London: 110 million\textsuperscript{z}  
New York JFK: 32 million  
Seoul Capital Area: 57 million  
Tokyo Narita: 32 million  
Hong Kong SAR: 70 million  
Singapore: 58 million |
| Digital connectivity                           | 45.9 (China)\textsuperscript{a} | New York metropolitan area: 98\textsuperscript{a}  
Korea: 121\textsuperscript{a}  
Hong Kong SAR: 129.5\textsuperscript{a}  
Singapore: 184.5\textsuperscript{a} |

\textsuperscript{a} Chongqing Municipal Bureau of Statistics and NBS Survey Office in Chongqing 2016.
\textsuperscript{b} Based on data from New York statistics.
\textsuperscript{c} Based on data from Tokyo Metropolitan Government.
\textsuperscript{d} Based on data from Seoul Metropolitan Government.
\textsuperscript{e} Based on data from the World Bank.
\textsuperscript{f} Based on data from Singapore Government.
\textsuperscript{g} Based on data from Census and Statistics Department, Hong Kong SAR.
\textsuperscript{h} In 2016, manufacturing accounted for 11 percent of GDP for Hong Kong SAR. Electricity, gas and water supply, and waste management accounted for 1.4 percent. Construction accounted for 5.2 percent. Services accounted for 92.2 percent of the economy, with financing and insurance representing 17.7 percent.
\textsuperscript{i} Calculated from employment and GDP data.
\textsuperscript{j} Yue 2016.
\textsuperscript{k} Lee 2017.
\textsuperscript{l} Chongqing Municipal Government 2017.
\textsuperscript{m} Migiro 2018.
\textsuperscript{n} ACI 2018.
\textsuperscript{o} Based on data from Chongqing Planning Bureau.
\textsuperscript{p} Figures for London include Heathrow and Gatwick.
\textsuperscript{q} Akamai 2017.
III. Environmental Sustainability

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Chongqing Municipality</th>
<th>International benchmarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CO₂ emissions and energy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO₂ emissions per capita (tons)</td>
<td>8.22</td>
<td>Greater Tokyo Area: 4.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Seoul Capital Area: 3.7</td>
</tr>
<tr>
<td>CO₂ emissions per unit of GDP (US$10,000 at PPP)</td>
<td>7.8</td>
<td>Greater Tokyo Area: 1.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Seoul Capital Area: 1</td>
</tr>
<tr>
<td>Energy consumption per unit of GDP (MJ/US$1,000 at current prices)</td>
<td>12</td>
<td>Greater Tokyo Area: 1.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Singapore: 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hong Kong SAR: 1.5</td>
</tr>
<tr>
<td><strong>Water</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water consumption (daily per capita in liters)</td>
<td>720</td>
<td>New York metropolitan area: 262</td>
</tr>
<tr>
<td><strong>Air quality</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PM₂.₅ concentration</td>
<td>61</td>
<td>New York metropolitan area: 9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Greater Tokyo Area and Greater London: 15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Singapore and Paris: 18</td>
</tr>
</tbody>
</table>

Note: PPP = purchasing power parity.

a. Data for Chongqing Municipality are calculated for this report from Chongqing Municipal Bureau of Statistics and NBS Survey Office in Chongqing (2016).
b. Data in this column are from Economist Intelligence Unit (2011).

IV. Social Inclusiveness

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Chongqing Municipality</th>
<th>International benchmarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public government spending on education as percentage of GDP</td>
<td>3.21 percent</td>
<td>Korea: 6.26 percent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Japan: 4.43 percent</td>
</tr>
<tr>
<td>Public government spending on education as share of public expenses</td>
<td>13 percent</td>
<td>Korea: 14.5 percent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Singapore: 19.9 percent</td>
</tr>
<tr>
<td>Public education expenditure per student</td>
<td>US$1,337</td>
<td>Korea: US$19,900</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Japan: US$27,960</td>
</tr>
<tr>
<td><strong>Health care</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total health care expenditure per capita at PPP</td>
<td>US$256</td>
<td>Singapore: US$3,578</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Japan: US$3,741</td>
</tr>
<tr>
<td>Government health care expenditure as a share of GDP</td>
<td>1.72 percent</td>
<td>Japan: 8.6 percent</td>
</tr>
</tbody>
</table>

Note: PPP = purchasing power parity.

a. Data for Chongqing Municipality are calculated for this report from Chongqing Municipal Bureau of Statistics and NBS Survey Office in Chongqing (2016).
b. International benchmarks are based on data from the World Bank.
References


1. This refers to the “hukou-registered” population. The actual resident population in 2016 was 30.48 million according to Chongqing Municipal Bureau of Statistics and NBS Survey Office in Chongqing (2016).

2. First-tier Chinese cities include Beijing, Shanghai, Guangzhou, and Shenzhen.

3. In 2011, China’s State Council set out the vision for several major Chinese cities, including Chongqing, to become international metropolises whose influence could radiate to the region and play a leading role globally.

4. See President Xi Jinping’s report at the 19th National Congress at http://www.xinhuanet.com/english/special/2017-11/03/c_136725942.htm. During the first stage, from 2020 to 2035, the country is meant to achieve modernization and become a leader in innovation. During the second stage, from 2035 to 2050, it is meant to become a global power.

5. The real economy refers to the part of the economy concerned with actual produced goods and services, as opposed to the part of the economy concerned with buying and selling on the financial markets.

6. Currently, Chongqing’s tertiary sector contributes to 48.9 percent of GDP, with financial services accounting for only 8.9 percent.

7. The per capita disposable income of Chongqing’s urban residents is RMB 27,239, while it is only RMB 10,505 for rural residents.


9. In the leading global indices, six cities stand out. They include the traditional megacities of London, New York, Paris, and Tokyo, as defined by JLL’s Commercial Attraction Index (Jones Lang LaSalle 2014); and this quartet has been more recently joined by Hong Kong SAR and Singapore. The cities in this group, known as the “Big Six,” are often described as the “command and control centers” of the world economy (Clark, Moonen, and Couturier 2015).

10. In the age of globalization, the activities of production are scattered globally. These complex, globalized production networks require new forms of financial and production services to manage them. These services are often complex and require highly specialized skills. Thus they are subject to agglomeration economies, and tend to cluster in a limited number of cities (Sassen 2005).

11. Populations and areas are as follows: Tokyo’s 23 wards that form the city’s core—9.37 million in 2016; 619 km²; Seoul Special City—9.84 million in 2018; 605 km²; Singapore—5.6 million in 2018; 719.9 km²; Hong Kong SAR—7.347 million in 2016; 2,754 km²; Greater London—8.778 million in 2016; 1,569 km²; and New York City—8.538 million in 2016; 789 km².

12. Superblocks are large blocks served by wide arterial streets; they are characterized by single-use zoning that separates residential and commercial areas and are oriented primarily to cars rather than pedestrians.

13. The finding is according to an assessment made by Calthorpe Associates for this report.

14. UN-Habitat (2014) recommends at least 80 to 100 intersections and 18 km of streets per km².

15. The two dimensions can be defined as follows: specialization refers to the proportion of employment or output of Chongqing’s most important industry or industries; diversification refers to the number of different industries and their size in relation to the economy’s total size. Together, these indicators thus reflect the variety or balance of Chongqing’s industrial base.

16. An aging society is generally understood as one in which 10 percent of the population is over the age of 60, or 7 percent of the population is 65 and above.

17. Singapore developed from a third world to a first world country, ranked among the top six global cities, in a span of less than 50 years. Singapore has built on its favorable geographical location and has established a strong network of air and sea routes, supported by a conducive and
cosmopolitan business environment. Singapore has also developed innovative solutions to overcome its land and resource constraints and has made itself a livable and multicultural city.

18. The full study is published separately as *Chongqing 2035: Urban Growth Scenarios*.

19. Using river transport in the Yangtze River for shipping is cost effective. By combining river and sea modes, this route has the lowest total cost of transportation among all multimodal routes. To fully reap this cost advantage, interregional cooperation along the Yangtze River is needed to improve efficiency throughout the Chongqing-Shanghai waterway. Goals should include increasing the efficiency of the current service networks and the handling capacity in some intermediate ports.

20. As a proxy for the cost of infrastructure, the length of streets per unit of generated GDP increases significantly between (for example) Yuzhong walkable mixed-use areas and Jiulongpo superblocks. Studies on road networks (Ingram and Liu 1997) and urban water and wastewater networks (Müller et al. 2013) suggest that per capita network length and material stocks tend to increase with lower urban density. Müller et al. (2013) computed data on a representative sample of about 40 cities, which have been mathematically analyzed by the Urban Morphology and Complex Systems Institute (Salat 2016; Salat, Bourdic, and Kamiya 2017) to calculate the elasticity of water, wastewater, and street network lengths and costs per capita with regard to average residential density. Reducing the density by half generally increases water network costs per capita by 72 percent and street networks costs per capita by 117 percent.

21. The Greater Tokyo Area is the most populous metropolitan area in the world, consisting of the Kantō region of Japan, which includes the Tokyo Metropolis, as well as the prefecture of Yamanashi in the neighboring Chūbu region. In Japanese, it is referred to by various terms, one of the most common being National Capital Region.

22. The Seoul Capital Area (SCA) is the metropolitan area of Seoul, Incheon, and Gyeonggi-do located in northwest Korea.

23. The New York metropolitan area, also referred to as the Tri-State Area, includes New York City, Long Island, and the mid- and lower Hudson Valley in the state of New York; the five largest cities in New Jersey—Newark, Jersey City, Paterson, Elizabeth, and Edison—and their vicinities; and six of the seven largest cities in Connecticut—Bridgeport, New Haven, Stamford, Waterbury, Norwalk, and Danbury—and their vicinities.