CHINA NUMBERS

Data Visualization

Research Team
Dr Scott N Romaniuk, Postdoctoral Research Fellow
Dr Sadiq Javer, Postdoctoral Research Fellow
Liang Ma, Research Associate

Design
Genevieve Ongaro, Design and Communications Specialist

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Introduction

December 2018 marked the 40th anniversary of China's Economic Reform, also known as the Opening of China, introduced by Deng Xiaopeng. The growth of China in terms of gross domestic product (GDP), population, and even the size of some state-owned enterprises (SOEs) as well as private enterprises is colossal and the numbers defining the magnitude of China are staggering.

The data visualization, referred to as "China Numbers," presents three key areas of China's growth: GDP, population, and the size of large Chinese enterprises. Altogether, five data sets are included in the project: (1) Annual GDP compared to other countries ; (2) City level GDP compared to countries; (3) Population of cities compared to countries; (4) Population of cities compared to other cities; and (5) The number of employees in large Chinese enterprises with equivalents to populations, personnel, and capacities.

The visualization facilitates a clear understanding of key numbers in China's growth as a snapshot of its current position. It highlights the East/West divide, not only in terms of the large economic gaps, but also in terms of what is not included in the data set. It illustrates the incongruous growth of Central and East China at the expense of the westernmost provinces and autonomous regions. It also shows that even though China has free and open markets, a large number of companies are still fully or partially held by the State.

Finally, the numbers are often lost in other charts, are part of poorly constructed visualizations, or buried deeply in reports and papers, and so on. As such, the aim of "China Numbers" data visualization is simply to highlight numbers, putting them into something meaningful and easy to understand.

CHINA ANNUAL GDP GROWTH COMPARED TO COUNTRIES
China annual GDP growth equivalent to other countries' overall GDP (in millions) USD

2016-2017

2015-2016

2014-2015

2013-2014

Mexico
$1,150,887

Turkey
$863,721

Netherlands
$757,999

Saudi Arabia
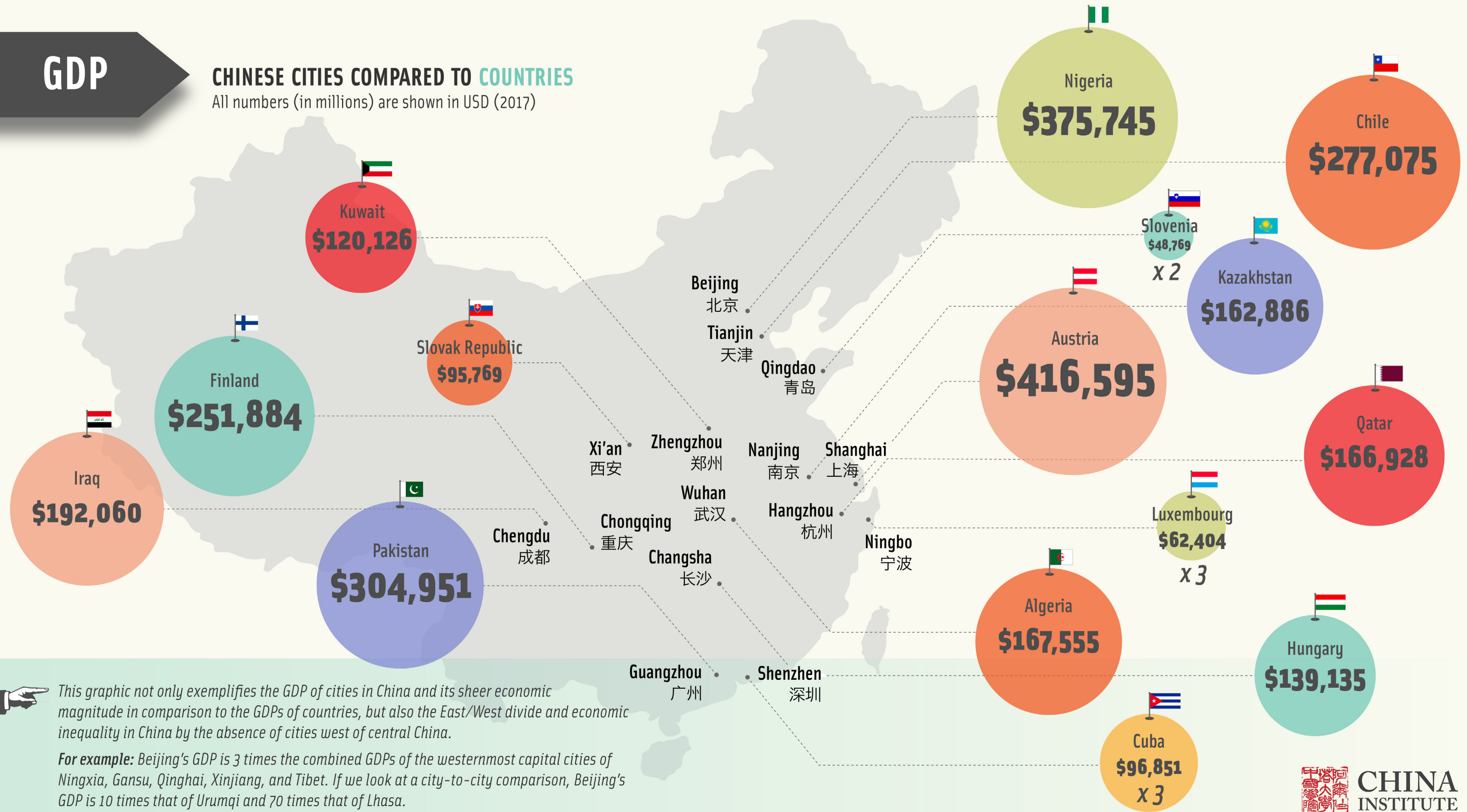**$756,350**

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China Annual GDP Growth Compared to Countries

China's annual GDP data are extracted from the National Bureau of Statistics of China. GDP growth is calculated as a simple difference of nominal GDPs. GDP data for other countries are extracted from the World Bank, 2019. All GDP numbers (in millions) are expressed in current US dollars.

GDP

CHINESE CITIES COMPARED TO COUNTRIES
All numbers (in millions) are shown in USD (2017)

Nigeria
$375,745

Chile
$277,075

Kuwait
$120,126

Slovenia
$48,769
x 2

Kazakhstan
$162,886

Slovak Republic
$95,769

Beijing
北京

Tianjin
天津

Qingdao
青岛

Austria
$416,595

Qatar
$166,928

Finland
$251,884

Iraq
$192,060

Xi'an
西安

Zhengzhou
郑州

Nanjing
南京

Shanghai
上海

Wuhan
武汉

Chongqing
重庆

Hangzhou
杭州

Luxembourg
$62,404
x 3

Pakistan
$304,951

Chengdu
成都

Changsha
长沙

Ningbo
宁波

Algeria
$167,555

Hungary
$139,135

Guangzhou
广州

Shenzhen
深圳

Cuba
$96,851
x 3

This graphic not only exemplifies the GDP of cities in China and its sheer economic magnitude in comparison to the GDPs of countries, but also the East/West divide and economic inequality in China by the absence of cities west of central China.

For example: Beijing's GDP is 3 times the combined GDPs of the westernmost capital cities of Ningxia, Gansu, Qinghai, Xinjiang, and Tibet. If we look at a city-to-city comparison, Beijing's GDP is 10 times that of Urumqi and 70 times that of Lhasa.
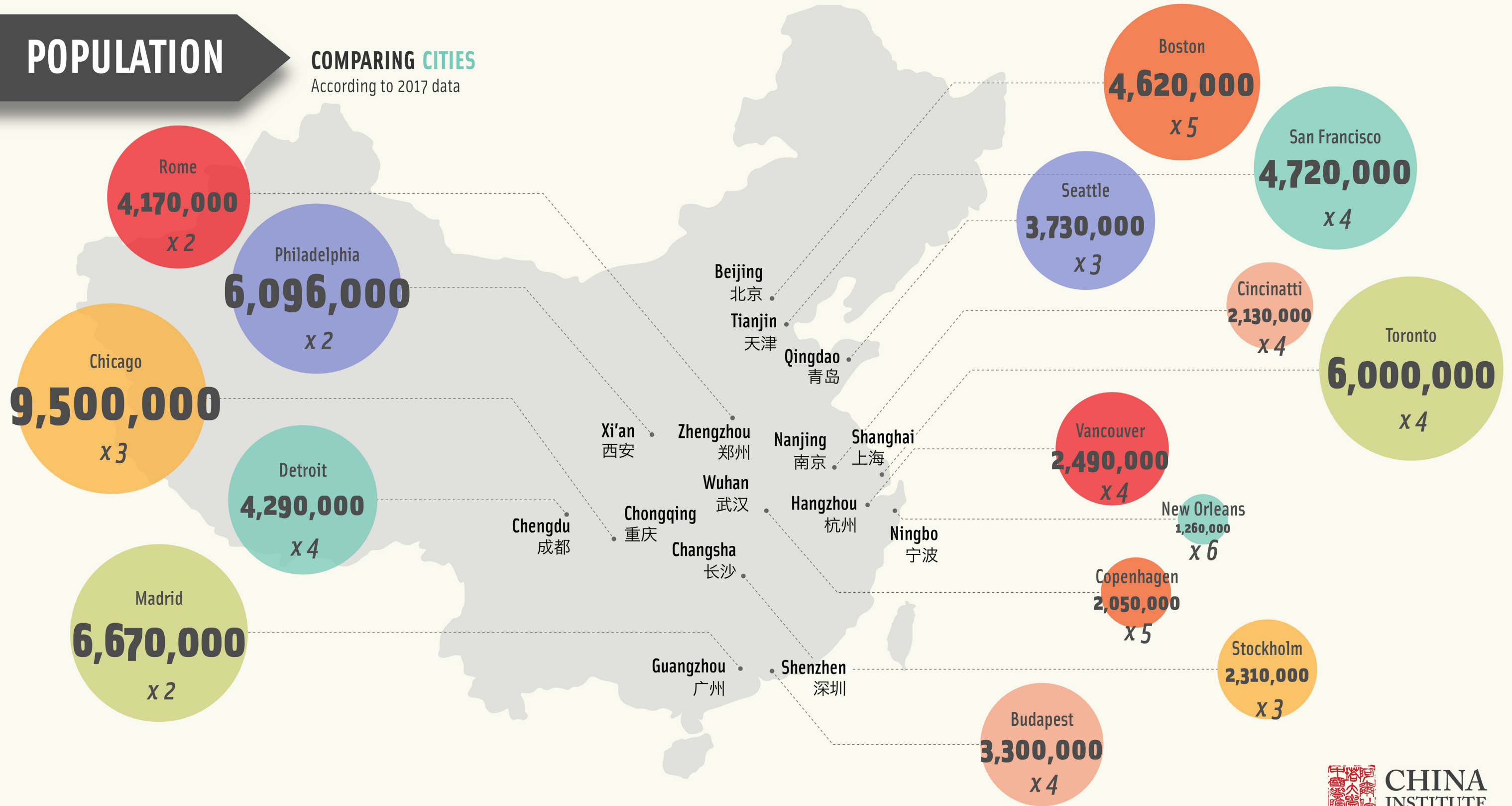
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Chinese Cities Compared to Countries

China's GDP data in 2017 are extracted from the China City Statistical Yearbook 2017; 2017 GDP data for different countries are extracted from World Bank. All GDP numbers (in millions) are expressed in 2017 US dollars.

POPULATION

Sri Lanka
21,477,000

Norway
5,282,000
x 3

Hungary
9,781,000

Rwanda
12,208,000

New Zealand
4,793,000

Switzerland
8,466,000

Malaysia
31,624,000

Australia
24,598,000

Beijing
北京

Tianjin
天津

Qingdao
青岛

United Arab
Emirates
9,400,000

Cambodia
16,005,000

Xi'an
西安

Zhengzhou
郑州

Nanjing
南京

Shanghai
上海

Chengdu
成都

Chongqing
重庆

Wuhan
武汉

Hangzhou
杭州

Ningbo
宁波

Changsha
长沙

Slovenia
2,066,000
x 4

Finland
5,511,000
x 2

Somalia
14,742,000

Bulgaria
7,075,000

Guangzhou
广州

Shenzhen
深圳

Mongolia
31,624,000

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Chinese Cities Compared to Countries

China's city level population data are extracted from the statistical bureau of the respective city. For cities in China, population refers to the total number of people living within the city regardless of resident registration (Hukou).

COMPARING CITIES
According to 2017 data

Rome
4,170,000
x 2

Philadelphia
6,096,000
x 2

Chicago
9,500,000
x 3

Detroit
4,290,000
x 4

Madrid
6,670,000
x 2

Boston
4,620,000
x 5

San Francisco
4,720,000
x 4

Seattle
3,730,000
x 3

Cincinatti
2,130,000
x 4

Toronto
6,000,000
x 4

Vancouver
2,490,000
x 4

New Orleans
1,260,000
x 6

Copenhagen
2,050,000
x 5

Stockholm
2,310,000
x 3

Budapest
3,300,000
x 4

Beijing
北京

Tianjin
天津

Qingdao
青岛

Xi'an
西安

Zhengzhou
郑州

Nanjing
南京

Shanghai
上海

Wuhan
武汉

Hangzhou
杭州

Chongqing
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Chengdu
成都

Changsha
长沙

Ningbo
宁波

Guangzhou
广州

Shenzhen
深圳

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Comparing Cities

China's city level population data are extracted from the statistical bureau for the respective city. For cities in China, population refers to the total number of people living within the city regardless of resident registration (Hukou). Other city populations refer to populations in the metropolitan area; data are mainly from the World Population Review, with additional data extracted from the United States Census Bureau, 2017.

CORPORATIONS

CHINESE COMPANIES IN NUMBERS
Largest companies and conglomerates equivalent to populations, personnel, and capacities

Number of Employees

Company	Number of Employees	Equivalent
China National Petroleum Corporation	1,589,508	Population of Metropolitan Calgary
State Grid Corporation of China	913,546	Canada's Police Force x 13
Aviation Industry Corporation of China	542,236	United Nations Peacekeeping Force x 5
China Mobile	493,000	Toronto's Rogers Centre Capacity x 9
Industrial and Commercial Bank of China	453,048	Population of the Bahamas
Ping An Insurance	342,550	Canadian Automotive Industry Direct Employment x 2
Huawei	180,000	Population of Geneva
Alibaba Group	66,421	US Foreign Service Employees
Tencent	44,796	University of Alberta Campus Enrolled Students
Baidu	42,200	Royal Canadian Navy Personnel x 3

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Chinese Companies in Numbers

All data regarding employee numbers in Chinese companies are extracted from official company websites (employee figures vary between 2016 and 2018). City and country population data are extracted from the World Bank (population figures vary between 2016 and 2018). Royal Canadian Navy (RCN) data are extracted from the Government of Canada website. RCN data show 8,300 Regular Force and 3,600 Reserve as well as 3,800 civilian employees. Canada's automotive industry direct employment data are extracted from the Canadian Vehicle Manufacturer's Association (CVMA). US Foreign Service employee data are extracted from the US Department of State website. Total student enrolment at the University of Alberta data are extracted from the University of Alberta (UofA) website. UofA data show 38,311 students from 148 countries, and 5,291 academic and administrative staff, 2016-2017. Canada's total number of police officers data are extracted from Statistics Canada.