

Global Urban Competitiveness Report (2020-2021)

Global Urban Value Chain:

Insight into Human Civilization over Time and Space

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Introduction of GUCR

The Global Urban Competitiveness Report (GUCR) is a cooperative research conducted by the Chinese Academy of Social Sciences (CASS) and UN-Habitat focusing on sustainable urban competitiveness, urban land and urban finance. Led the project is participated by experts from CASS, UN-Habitat and well-known scholars in relevant fields. Through theoretical research and empirical investigation, the report establishes an indicator system to measure the economic competitiveness and sustainable competitiveness of more than 1,000 cities in the world.

Meanwhile, it selects important issues of global urban development as the themes for in-depth studies, aiming to promote the implementation of the UN 2030 agenda through the assessment of urban competitiveness. Currently, five annual reports have been published successively, among which GUCR (2018-2019) was launched at the UN headquarters in New York City during the 74th session of the UN General Assembly, and the GUCR (2019-2020) was released in Abu Dhabi during the 10th World Urban Forum.

About the Authors



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Marco Kamiya is a Senior Economist of Knowledge & Innovation Branch of UN-HABITAT, and his research interests

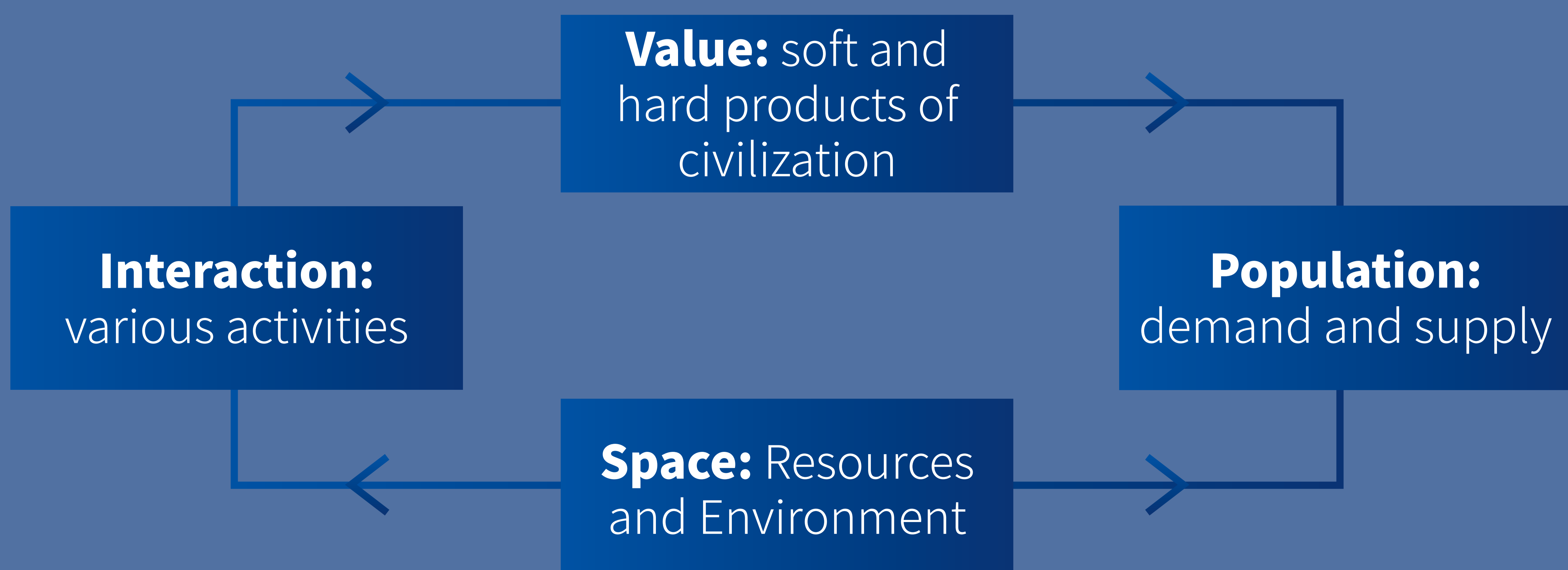
include development economics and public economics. Mr. Marco leads global operational work on urban economy and finance and conducts research on municipal finance, the economics of urban expansion and local infrastructure-investment policy.

Part I : Annual General Report

1. Global Urban Value Chain: Insight into Human Civilization over Time and Space

The city is not only a great human project, but also a symbol and container of civilization, and a spatial unit of the laws of nature. The research on the world development from the angle of cities not only manifests exact and concrete goals, but also shows a novel perspective. **The global urban value chain goes through human civilization.** The study shows that to research on the biggest changes in a century entails investigation into the world system from the perspective of the urban system evolution. Human civilization is the positive value created continuously through interaction in a certain space. Cities and their systems are the fruits and containers created by human civilization. The global urban value chain accurately captures the evolution of the global urban civilization over time and space.

Figure 1 Dynamic conditions and mechanism of human settlement

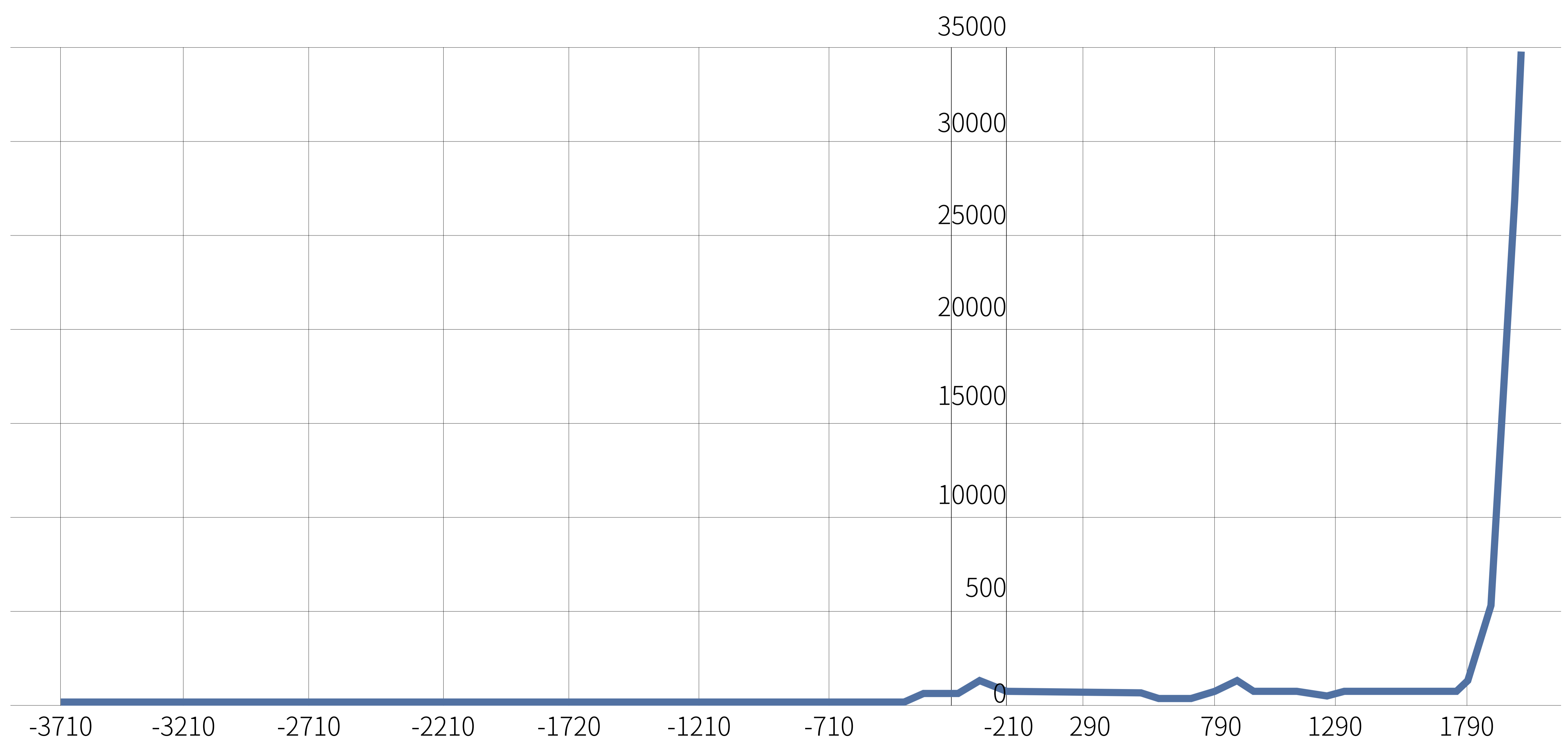


2. Global central cities are the locomotives of global development but always facing sustainable challenges

Global central cities lead the world's development by leading cities across the world. They not only create core value but also determine the global distribution of value, thus exerting global influence on an even greater scale. The agricultural age, the industrial age and the bio-intelligence age are completely different in scale, form, function and value creation. The center of the global central city value chain, after hovering around a low level for a long time, has taken off at a growing speed.

(1) The population rapidly grows after hovering over a level for a long time

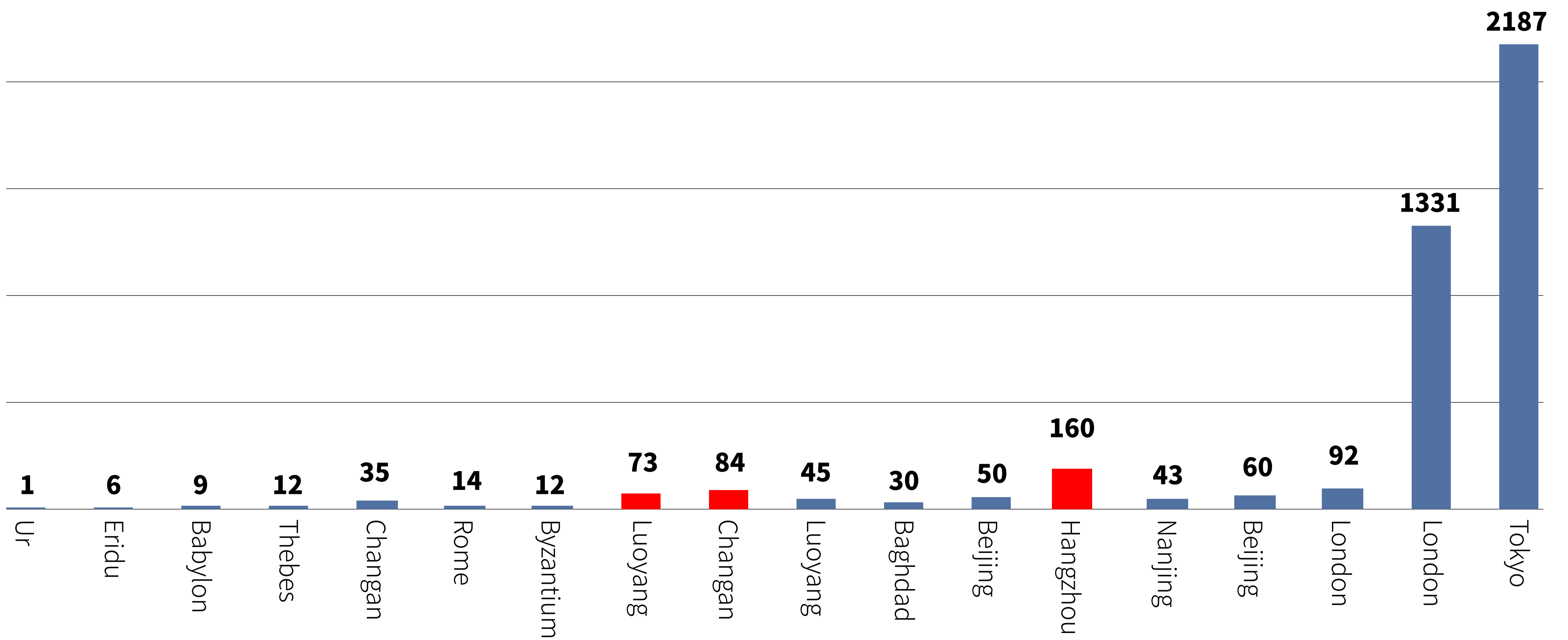
Figure 2 Population change in the largest city (population in the 10,000s)



(2) The dominant function undergoes political, economic and cultural dominance in turn.

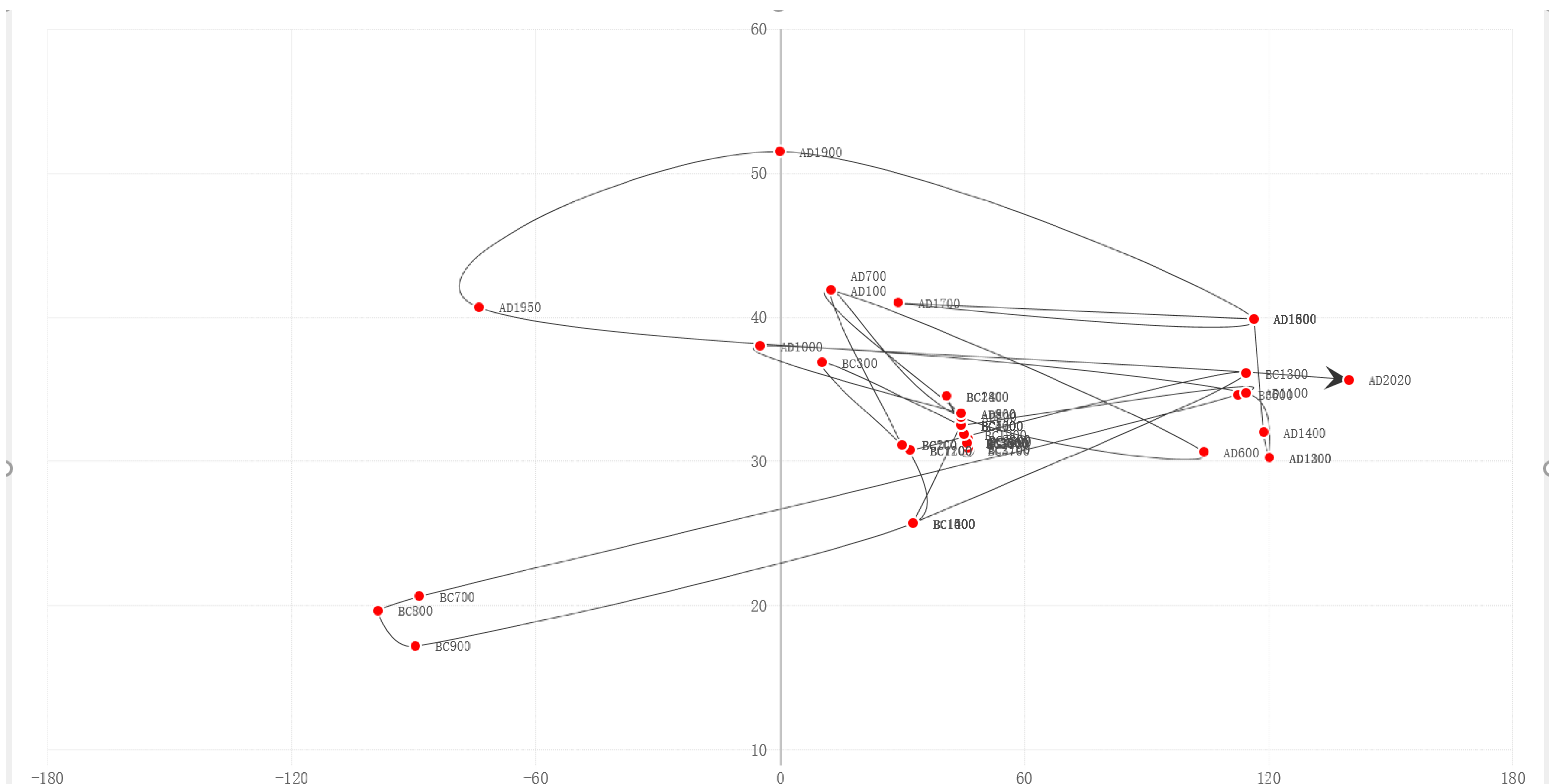
(3) The spatial form has undergone a long-term slow change and then gets expanded and diversified through accelerated development.

Figure 3 Changes in urban area in different periods (BC2900—AD2000)



(4) The value centers, in continuous variation, undergo long-term slow change and short-term rapid rise.

Figure 4 Variation of the world's largest urban center



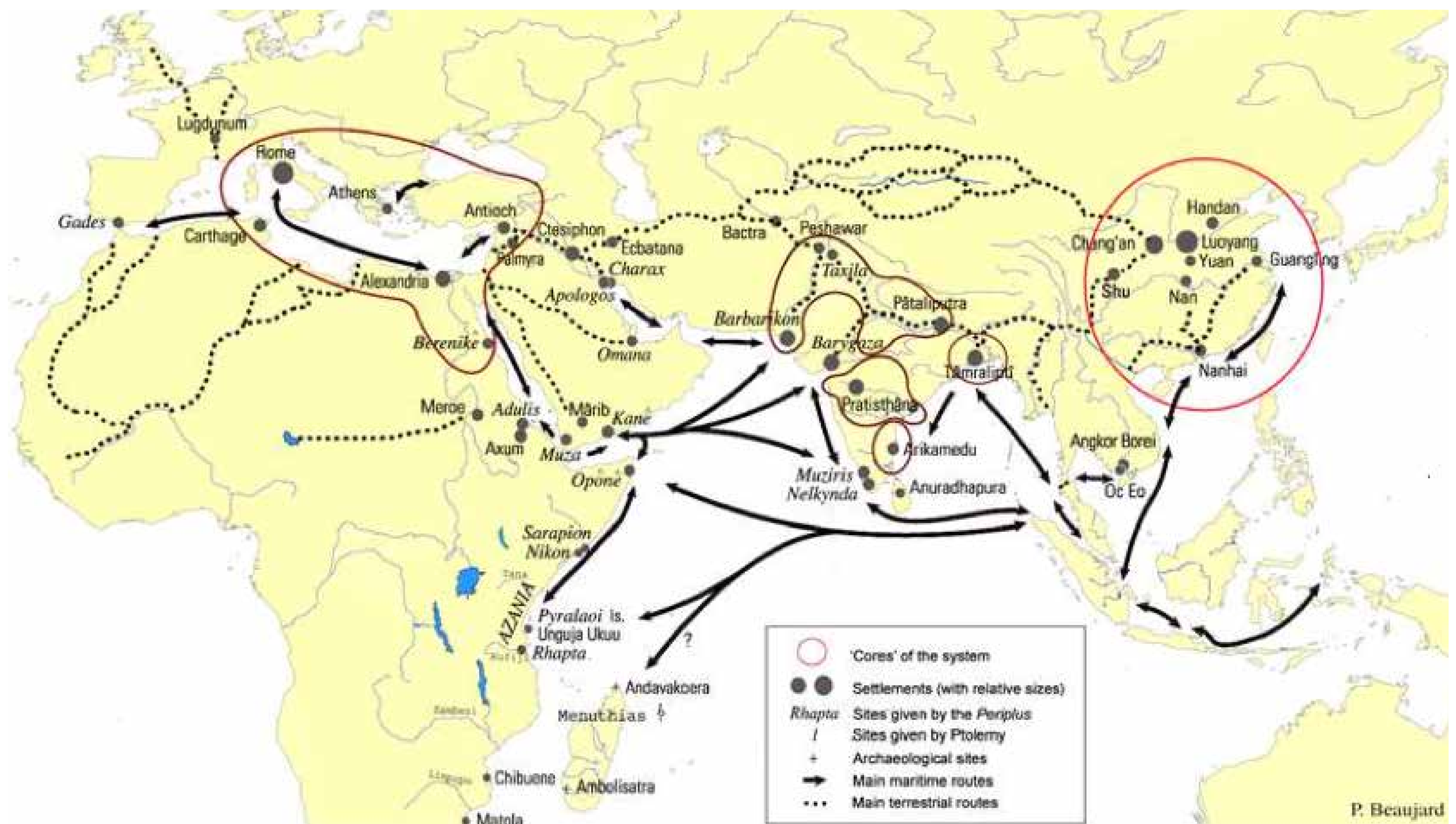
3.Cities and their value chain system attributes are completely different in the era of agriculture, industry and intelligence

As for the global urban value chain system, the initial international city system has given way to the domestic and international two-tier system, and then to the multi-tier international system that has emerged and become prominent since the Industrial



Revolution. Almost all newly emerging cities were city-states, including those at the Two Rivers, the Nile, the Yellow River and Greece. Especially during the heyday of the “New Land” urban revolution, about 3,000 city states strewed the Mesopotamian plains. Over the past 6,000 years, the global urban system composed of hubs, gateways and nodes has undergone more than 20 global collapses and reconstructions in the evolution from a transnational market town system to a transcontinental urban system and then to a global metropolitan network system. In this process the global urban value chain has undergone repeated shrinking and expansion in scope, structure and thickness, and now the value chain is the largest. It demonstrates the rise and fall of the global urban system and its value chain system. Besides, it shows completely different cities and their value chain system’s attributes in the agricultural era, industrial era, and bio-intelligence era.

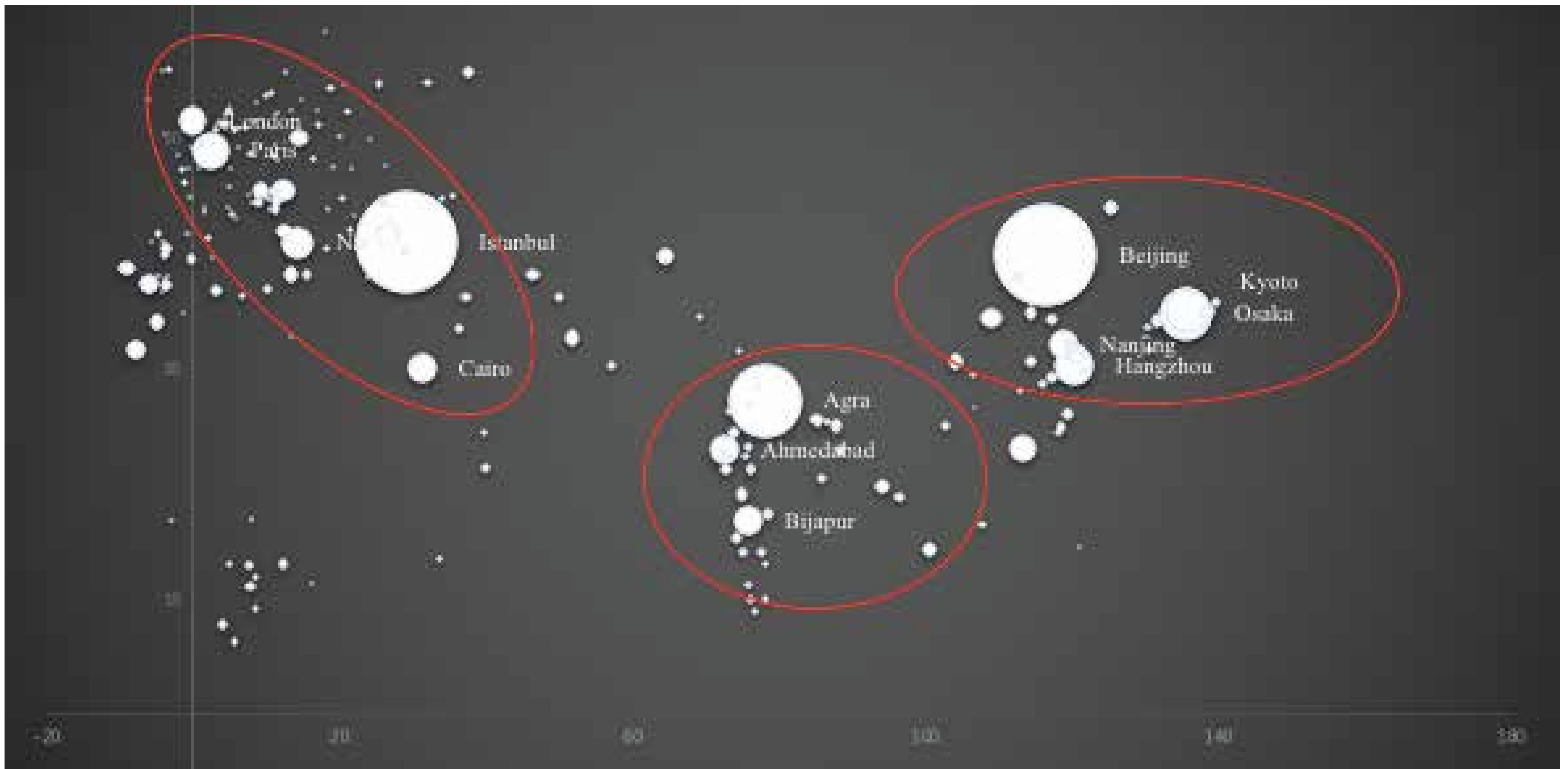
Figure 5 The Eurasian and African World-System from the 1st to the 3rd century



Source: E. Murray. Available at n.cn/sjs/201404/t20140408_1059121.shtml

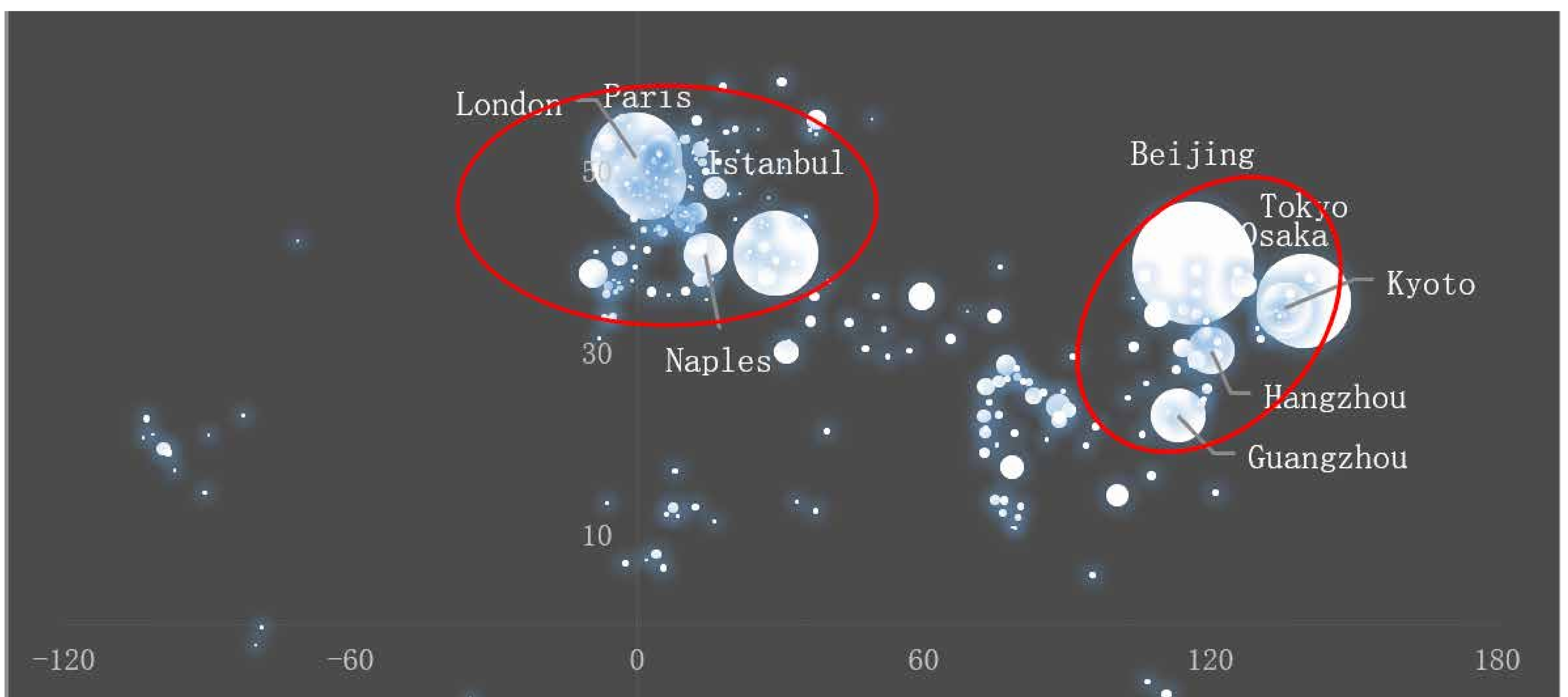
(1) The flow of global urban population mainly occurs among small cities and is always dominated by domestic mobility.

Figure 6 The global city system in 1600



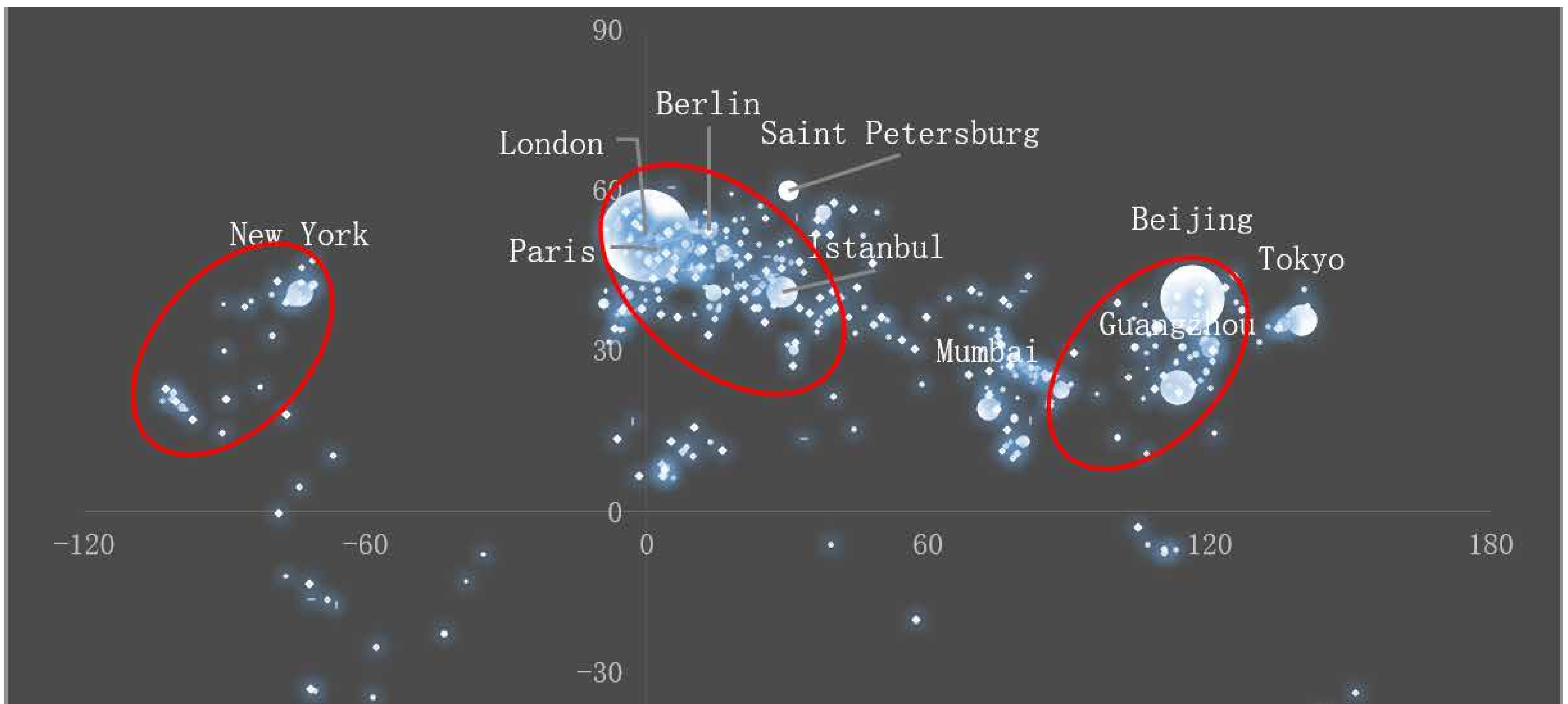
(2) The three global urban systems of power, goods and culture are relatively independent and exert mutual influence

Figure 7 The global city system in 1750



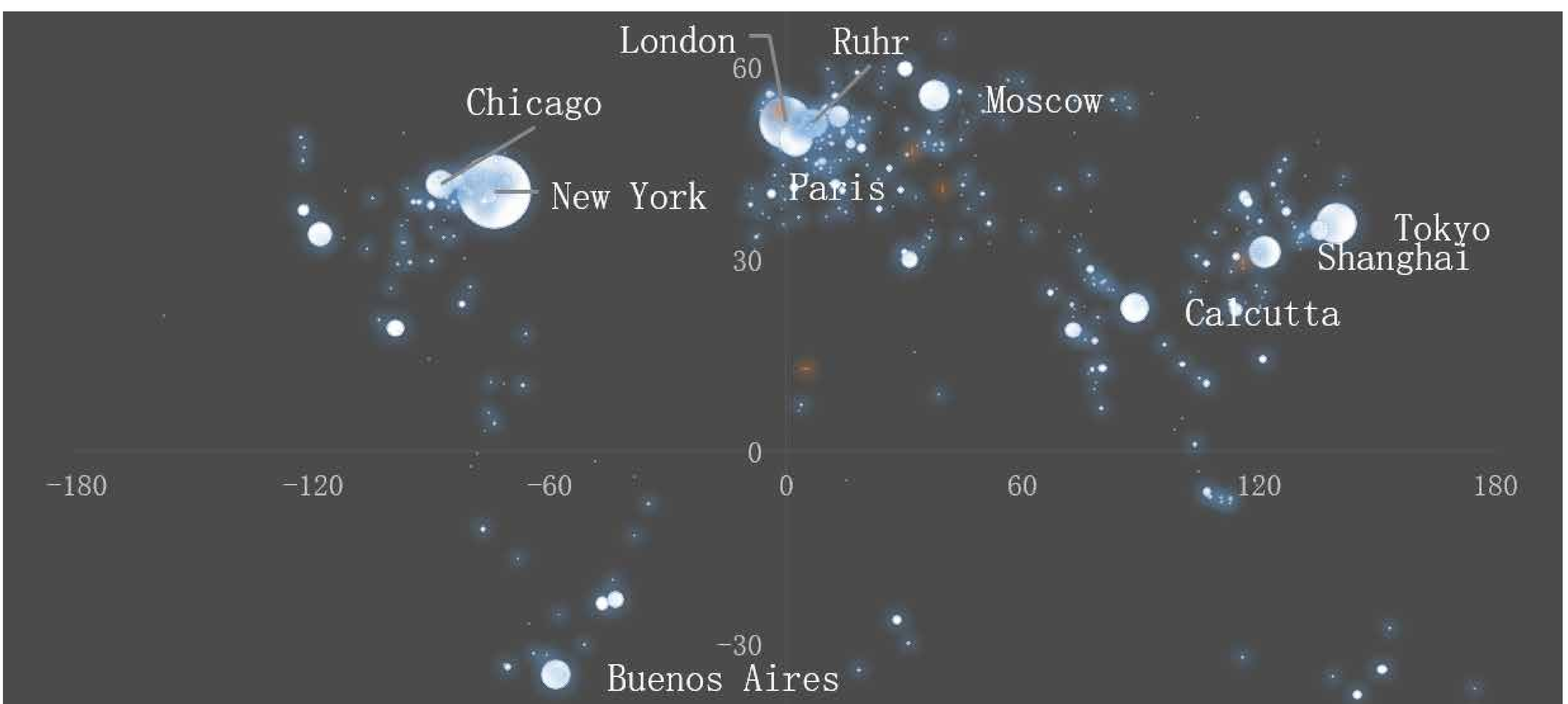
(3) Improved transportation and communication affect the coverage and density of the urban system.

Figure 8 The global city system in 1850



(4) The global city value chain system has been reconstructed more than 20 times. The value chain has undergone repeated shrinking and expansion in scope, structure and thickness, and now the value chain is the largest.

Figure 9 The global city system in 1850



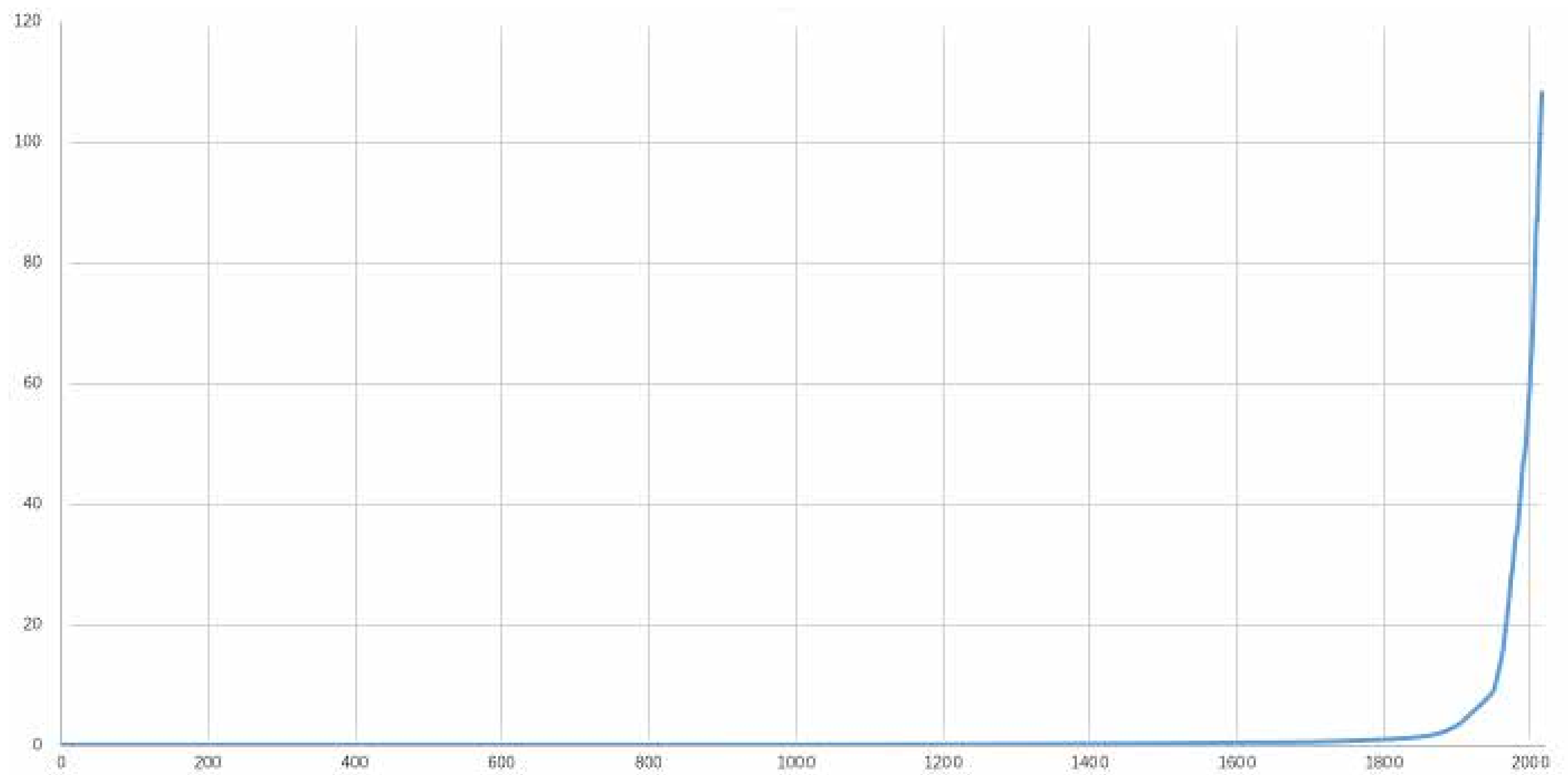
4. Cities always dominate the main human civilization, but the speed of value creation has changed from long hesitation to rapid acceleration

Urban population, urban space, and urban activities accounted for only a negligible proportion of the world in the long agricultural era. While the value and civilization created by cities accounted for the majority of the world, but the speed of value creation by cities was relatively slow. In the industrial and bio-intelligence eras, the urban world will not only create all the value, but more importantly, create the value at an accelerated growth rate.

(1) The world's urban population has changed from a small minority in the world to a key minority in the world, and then an overwhelming majority in the world. The proportion of urban population hovered around a level below 5.5% for a long time before 1750. From 1750 to 2008 the global urban population grew at an accelerated speed to reach a half of the world's total.

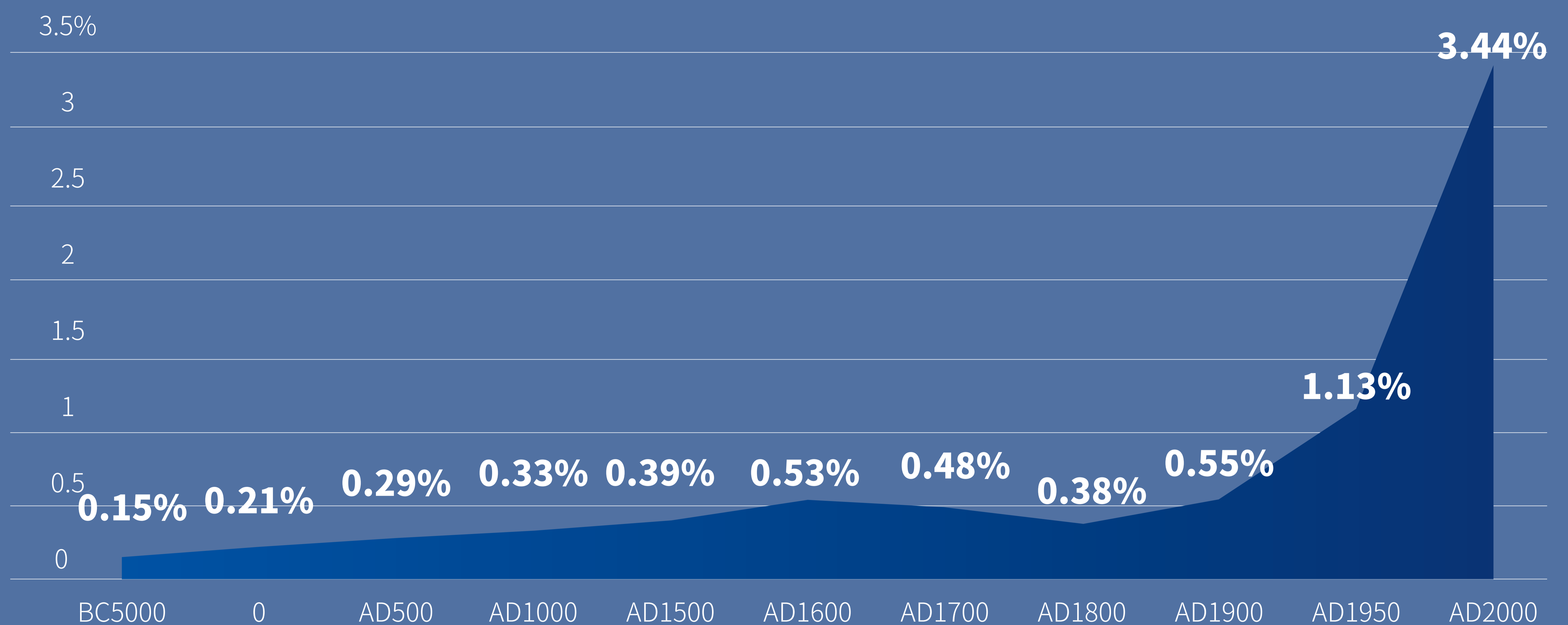
(2) Global urban activities have changed from key basic activities to major basic activities, and then to main human activities. Before urbanization exceeded 50%, only a small part of living, production, and consumption took place in cities; when the rate exceeds 50%, all take place in the city which serves both production and living purposes.

Figure 10 Changes in global economic aggregates (US dollars in the trillions)



(3) Urbanized areas are keep growing in number.

Figure 11 Proportion of urban area in total urban and rural land



Note: The total area is urban area + agricultural land area.

(4) The evolution of the global urban value chain equals the evolution of the value of global civilization.

5.The four characteristics of cities globally have gradually become the spatial characteristics of the human planet

With the development of cities, the agglomeration, connection, sharing and mobility will deepen, but the dispersion, isolation, exclusiveness and fixation will also be maintained or strengthened. At the same time, as the degree of urbanization in the world deepens, the characteristics of cities have increasingly become spatial characteristics of the human planet.

(1) The gradual intensification of agglomeration brings about increased dispersion, like the local and global agglomeration, and agglomeration in both physical and virtual space.

(2) The connection is closer while isolation persists, as is seen in various connections from regional connection to global connection, from the “hard connection” of tangible substances and services to the “soft connection” of intangible substance and services, and from individual connections to the interconnection of everything.

(3) Sharing is becoming more common while there is still room for exclusive use, like the things from infrastructure contribution to public service sharing, from hardware product sharing to software product sharing, from public product sharing to private product sharing.

(4) Fixed things still exist while fluidity is more extensive, as is seen in local migration, transnational flow and global migration.

6. It is more than technology that determines the civilization of cities globally and their value chains

Through the evolution of cities and value chains, an analysis upon the evolution of urban civilization over time and space by using the framework of urban development economics clearly shows the United Nations Sustainable Development Goals (UN SDGs) to eliminate poverty, maintain peace, pursue prosperity, and protect the earth are very important. An overview of the main factors affecting the evolution of the city-based global system and its mechanism in association with the current world situation reveals it is all the more urgent for the world to jointly maintain free trade, protect the ecological environment, promote technological innovation, and be alert to security threats.

- (1) Human needs and wisdom are the eternal driving force for the evolution of cities and value chains.**
- (2) The spatial environment and its changes determine the evolution of cities and value chains over time and space.**
- (3) Technological innovation is the fundamental driving force that determines the evolution of cities and value chain systems.**
- (4) Political power always influences the evolution of cities and value chain systems over time and space.**
- (5) Free trade spares no effort to expand cities and their value chain systems.**
- (6) Ideology and culture have always overwhelmingly influenced the creation of global urban value.**

Part II : Annual Keynote Report

7. Competitiveness and SDGs



Urban sustainable competitiveness is an effective tool to measure SDGs.

The annual keynote report attempts for the first time to measure the progress towards the UN SDGs, especially SDG11 (Sustainable cities and communities), from the perspective of sustainable competitiveness. The report creatively proposes a theoretical framework to decompose and refine the content of SDGs, including SDG11, in a matrix form and constructs a unified indicator system with sustainable competitiveness indicators as the main body to monitor the progress towards SDGs in urban dimensions, especially SDG11. For the first time, a comprehensive global evaluation of sample cities with a population of more than 500,000 was carried out.

Figure 12 Comparison of urban sustainable competitiveness and global sustainable development goals

		Eradicate Poverty (fairness, inclusiveness, affordability)	Protect the Planet (ecology, resilience)	nsure peace and prosperity (security, well- being)	Sustainability (innovation, sustainability)
Human & Society	Goal 2 Zero hunger	*Food security index			
	Goal 3 Good health and well-being			Medical and health institutions	
	Goal 4 Quality education			Historical and cultural index Cultural facilities	Paper index University index
	Goal 5 Gender equality	*WEF gender gap index			
	Goal 10 Reduced inequalities	Social equity			
	Goal 16 Peace, justice and strong institutions			Social security	Property protection inde
Resources & Environment	Goal 6 Clean water and sanitation		Medical and health institutions		
	Goal 7 Affordable and clean energy				Power adequacy
	Goal 13 Climate action		Climate comfort Environmental pollution		
	Goal 11 Sustainable cities and communities	Convenience of indirect market financing Labor productivity Social equity	Ecological diversity Environmental pollution Natural disaster index *Human-land relationship	Traffic convenience Social security Housing cost index *Citizen participation	Historical and cultural index
	Goal 14 Life below water		Ecological diversity		
	Goal 15 Life on land		Ecological diversity		
Economy Development	Goal 1 No poverty	*Proportion of per capita national income below \$1000			
	Goal 8 Decent work and economic growth	Labor productivity			Youth talent ratio Economic growth rate
	Goal 9 Industry, innovation, infrastructure			Business convenience index Openness index	Patent index Technology enterprise index Connection degree of researchers
	Goal 12 Responsible consumption and production		Environmental pollution		*Unit GDP energy consumption
Global Connections	al 17 Partnerships for the goals	Aviation connectivity Connection degree of financial enterprises Connection degree of technology enterprises Shipping connection			

Source: Chinese Academy of Social Sciences City and Competitiveness Index Database, the same below.

8. Globally, cities are having “a short distance” from achieving SDGs

(1) Globally, cities’ progress towards the SDGs is olive-shaped. Only 10.0% of the sample cities are “very close” to or have “a great distance” away from completing the SDGs. The overall average score of progress towards SDGs in the 1,006 sample cities is 0.624.

City level	SDGs score	SDGs completion	Number of cities	Proportion
I	[0.75,1.00]	Very close	45	4.5%
II	[0.65,0.75)	Relatively close	257	25.5%
III	[0.60,0.65)	A short distance	387	38.5%
IV	[0.50,0.60)	A fair distance	260	25.8%
V	[0.00,0.50)	A great distance	57	5.7%

(2) Globally, cities’ progress towards different SDGs is not synchronized.

Overall, cities globally are “very close” to achieving SDG1 (No Poverty) and SDG2 (Zero Hunger), while still “a great distance” away from achieving SDG4 (Quality Education), SDG9 (Industrial Innovation & Infrastructure) and SDG17 (Partnerships for the Goals).

(3) No cities have achieved all SDGs. All cities have certain shortcomings. Dublin is the best performing city, with the highest overall SDG score.

(4) Cities that are in “very close” status have basically achieved SDG1 and SDG2 but faced with different challenges in completing the other 15 SDGs.

(5) Overall, the cities in the Chinese mainland are “a short distance” away from completing the SDGs. They are lagging behind in moving towards SDG4, SDG7 (Affordable and Clean Energy), etc. Great efforts are needed to achieve the SDGs. Among them, Beijing has the highest overall SDG score. Cities with an SDG score of more than 0.7 include Beijing, Shenzhen, Guangzhou, Shanghai, Hangzhou, Nanjing, Wuhan, Chengdu, Xi’an, Xiamen, Hefei, Qingdao, and Chongqing. These cities are moving from the “relatively close” status to the “very close” status.

(6) Typical countries of each continent are faced with different challenges in completing the SDGs and associated targets. Overall, major cities in the United States are “relatively close” to completing the SDGs, but still faced with great challenges in completing goals concerning climate action and environmental management. Brazilian cities in general have “a short distance” away from completing the SDGs and are faced with bigger challenges in achieving SDG10 (Reduced Inequalities). Japanese cities are “very close” to achieving the SDGs, but its performance in relation to SDG8 (Decent Work and Economic Growth) is relatively insufficient. German cities as a whole are “very close” to achieving the SDGs and have made outstanding progress on SDG7. South African cities in general have “a short distance” achieving the SDGs and are leading Africa in this regard, but the problem of inequality is severe in South Africa. Overall, Nigerian cities have “a fair distance” away from achieving the SDGs, but have made great progress in attaining SDG1. Australian cities in general are “relatively close” to achieving the SDGs, but its performance in environment or resource-related SDGs is relatively insufficient.

9. Globally, cities are still “quite a distance” away from achieving SDG11 but are approaching the “relatively close” status

Figure 13 Comparison of urban sustainable competitiveness and sustainable city and settlement goals

	Human				Society				Nature			
	Efficiency	Convenience	Accessibility	Affordability	Life	Property	Equality	Universalization	Disaster reduction	Pollution reduction	Green	Persistence
11.1 Housing	Labor productivity		Indirect financing market convenience	Living cost			Social equality					
11.2 Transportation		Traffic congestion										
11.3 Administration							*Citizen participation					* Human-land relations
11.4 Heritage protection									Natural disaster index		Ecological diversity	Historical and cultural index
11.5 Disaster relief												
11.6 Environment										Environmental pollution		
11.7 Public space					Social security index							
11.a Regional connections												
11.b Urban communities												
11.c Construction assistance												

(1) The diagram of cities’ progress towards achieving SDG11 is spindle-shaped.

Among the 1,006 sample cities, 1.8% are very close to achieving SDG11, 44.33% are relatively close to achieving SDG11, 47.51% are still quite a distance away from achieving the goal, and 6.36% are far from achieving the goal.

City level	Completion	SDG11 scores	Number of cities	Proportion	Mean value
I	Very close	[0.8,1]	18	1.80%	0.820
II	Relatively close	[0.7, 0.8)	446	44.33%	0.731
III	Quite a distance	[0.6, 0.7)	478	47.51%	0.666
IV	A great distance	[0, 0.6)	64	6.36%	0.549

(2) The overall progress towards SDG11 is at a critical stage when the accumulation of quantitative changes reaches a certain limit and a change in the quality is about to occur. At present, the average score of cities globally in the progress towards SDG11 is 0.69, **which means they are “quite a distance away from achieving the goal” but is about to enter the “relatively close to achieving the goal” stage.** As a large number of cities are in a critical period of entering the next stage in terms of target achievement, we predict that if global cities continue to progress towards SDG11, **they are expected to enter the “relatively close to achieving the goal” stage in the foreseeable future.**

(3) The progress towards the targets associated with SDG11 is not synchronized. Globally, there are obvious gaps in progress towards Target 11.1 (housing security) and Target 11.7 (public space); cities are making outstanding progress towards Target 11.3 (urban management) and Target 11.5 (disaster prevention and mitigation) and faced with common challenges in making progress towards Target 11.2 (efficient transportation), Target 11.4 (heritage protection), and Target 11.6 (environmental governance).

(4) City groups in different stages in terms of progress towards SDG11 are faced with different challenges. Cities which are close to achieving the goal are lagging behind in environmental governance and heritage protection. Cities which are relatively close to achieving the goal are faced with challenges in making

progress towards Target 11.1 (housing security), Target 11.2 (efficient transportation), Target 11.4 (heritage protection) and Target 11.7 (public space). Cities that are quite a distance from achieving the goal are lagging behind those in the preceding category in making progress towards Target 11.1 (housing security), Target 11.4 (heritage protection), Target 11.5 (disaster prevention and mitigation) and Target 11.7 (public space) but are performing better than those in the preceding category in making progress towards Target 11.6 (environmental governance). Cities that are far away from achieving the goal, except those with smaller burden in environmental governance (Target 11.6), are faced with severe challenges in all other aspects.

(5) The average SDG11 score of Chinese cities is 0.695, slightly higher than the international average. Among the 291 Chinese sample cities, 123 cities are relatively close to achieving the goal, accounting for 42.26%, including Qingdao, Dalian, Chengdu, Chongqing, Hangzhou, Nanjing, Wuxi, and Hefei; 168 are quite a distance away from achieving the goal, accounting for 57.73% of the Chinese sample cities.



The case study part of the keynote report focuses on the practical experience and methods of typical cities in terms of SDGs, and analyzes **cases in different regions, countries and stages of development, including Stockholm, Singapore, Madrid, Mexico City, Escobedo, Nairobi, Mombasa, Kisumu, Beijing, Shanghai, Cape Town, and Tshwane**. It refines and summarizes the experiences and practices of these cities in making progress towards the SDGs.

Part III : Economic competitiveness (2020-2021)

10. The overall economic competitiveness of the Northern Hemisphere rises and that of the Southern Hemisphere falls amid the global convergence

Figure 14 Distribution of global urban competitiveness (2020-2021)

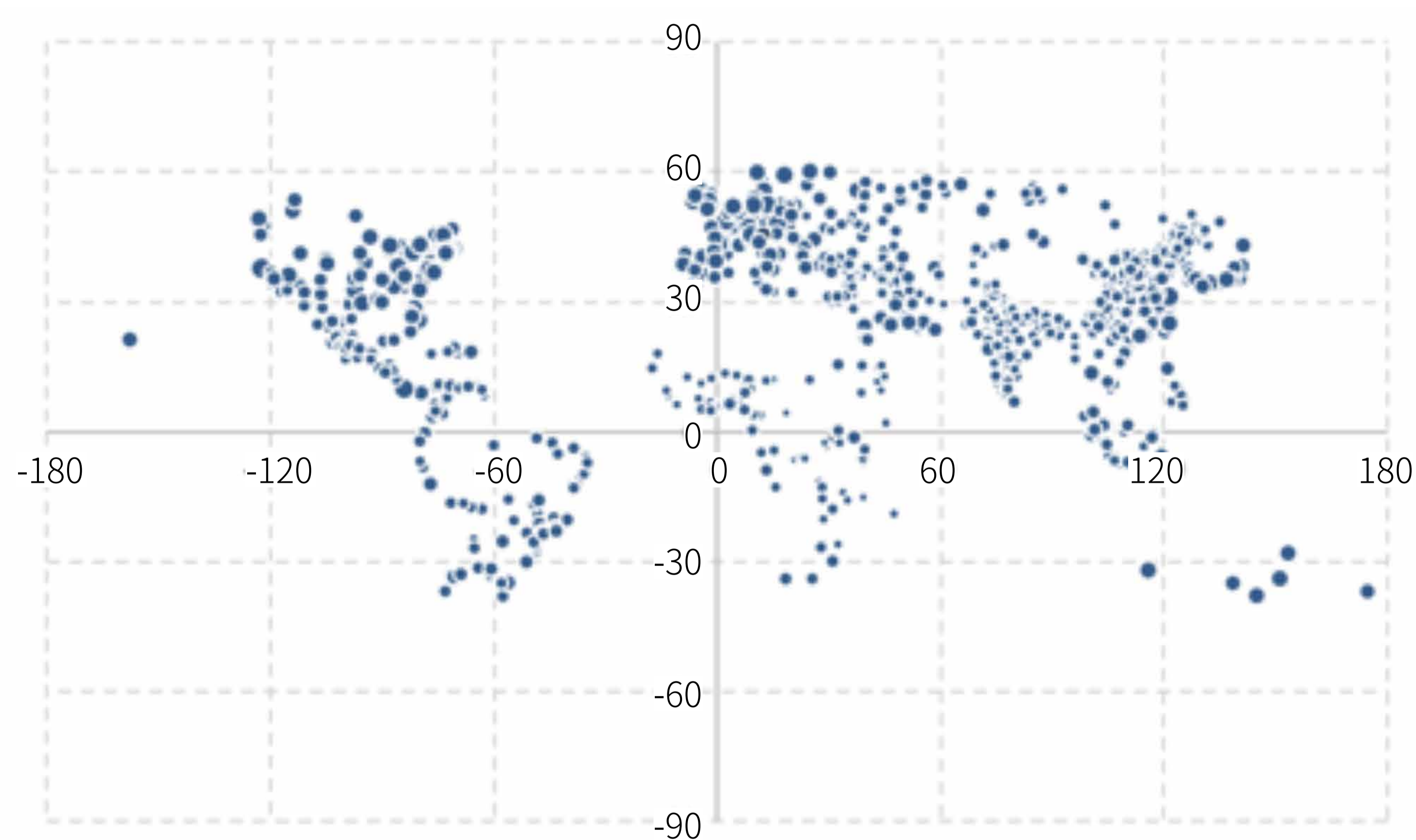
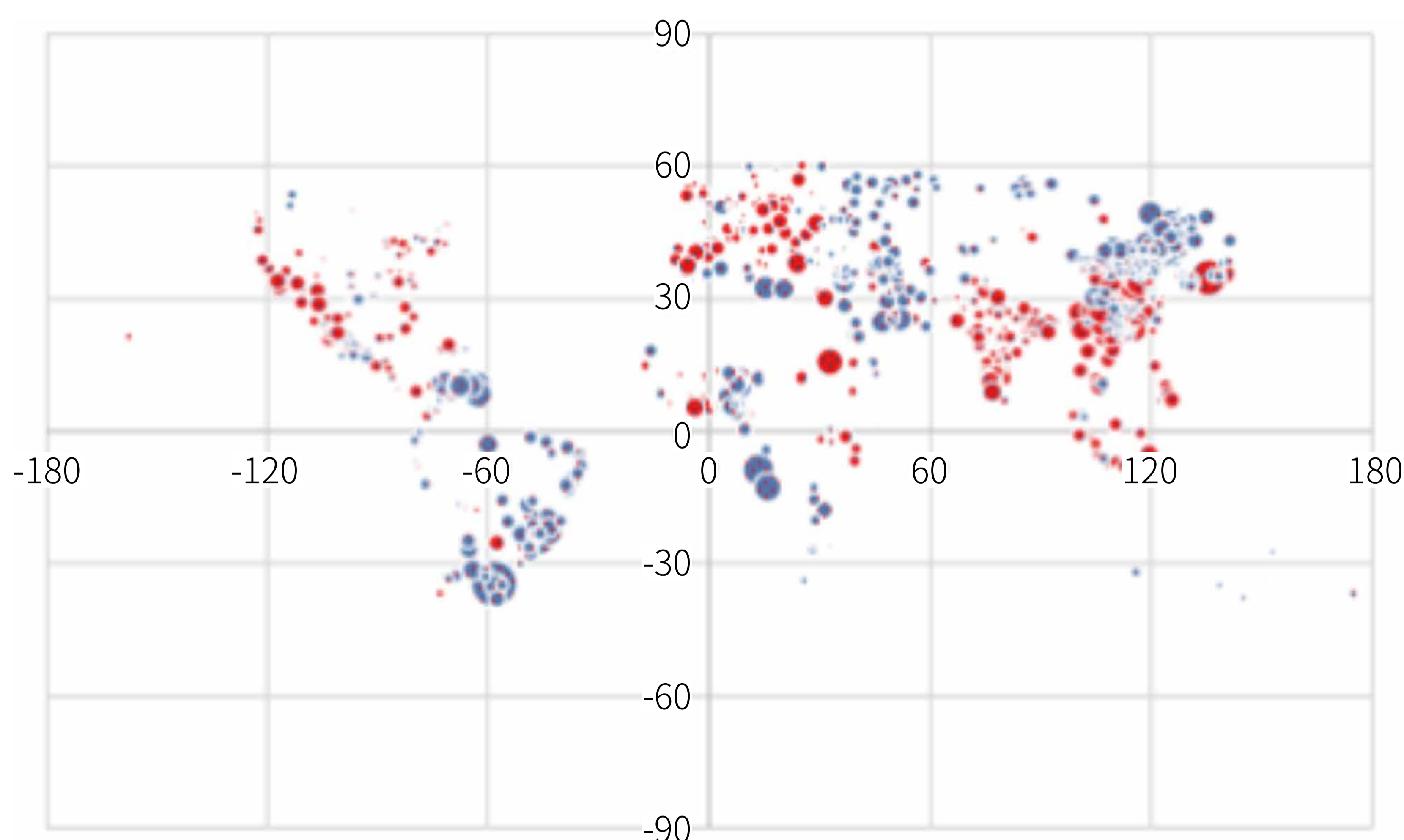


Figure 15 Five-year changes in the ranking of global urban competitiveness



Note: Red indicates that the ranking has increased, and blue indicates that the ranking has decreased.

Economic competitiveness is the decisive factor of a city's current and short-term economic performance. It is also the key foundation for a city's future and long-term development.

Reshuffling of the top cities. The top 20 cities by comprehensive economic competitiveness were New York, Singapore, Tokyo, London, Munich, San Francisco, Los Angeles, Paris, Shenzhen, San Jose, Hong Kong, Shanghai, Frankfurt, Boston, Dublin, Vienna, Dusseldorf, Stuttgart, Hamburg and Seattle. Tech startup cities broke into the top 10, and many developed small and medium-sized metropolitan areas broke into the top 20.

Compared with 2015-2016, the economic competitiveness rankings of New York and Singapore remained unchanged, London rose by 14 places, and Munich and Paris dropped by 2 places due to the decrease in growth. The competition of top cities is still fierce.

The overall economic competitiveness of the Northern Hemisphere rises and that of the Southern Hemisphere falls. Over the past five years, the comprehensive economic competitiveness of cities in Asia, Europe, and North America steadily increased, while the economic competitiveness of cities in South America, Africa, and Oceania declined. More specifically, cities in North America had the sharpest rise, with an average increase of 13.8 places, Asian cities rose by an average of 8.6 places, European cities rose by an average of 3.4, and cities in South America had the sharpest drop, with an average decrease of 65.1 places. African cities dropped 21.1 places on average, and cities in Oceania dropped 7.1 places on average.

Top ranked cities show divergence in economic competitiveness while lower ranked cities show convergence. Both countries and regions show clear divergence in comprehensive economic competitiveness, while lower ranked cities show convergence. More specifically, in 2020-2021, the average competitiveness of countries showing divergence in economic competitiveness is 0.42, while that of countries showing convergence in economic competitiveness is 0.32; the comprehensive economic competitiveness of North America is 0.72, and the coefficient of variation rose from 0.1406 in 2015- 2016 to 0.1421; Europe's comprehensive economic competitiveness was 0.70, and its coefficient of variation rose from 0.1545 to 0.1624. **North America and Europe showed larger divergence.** Asia's comprehensive economic competitiveness was 0.59, and its coefficient of variation decreased from 0.1575 to 0.1470. The comprehensive economic competitiveness of South America is 0.60, and the coefficient of variation dropped from 0.1060 to 0.0827. The comprehensive economic competitiveness of Africa is 0.52, and the coefficient of variation dropped from 0.1657 to 0.1540, showing **convergence at a lower level.**

Table 1 Top 20 cities by urban competitiveness (2020-2021) and their five-year changes

City	Country	Continent	Economic competitiveness		Economic density competitiveness		Comprehensive incremental competitiveness	
			Rank	Ranking changes	Rank	Ranking changes	Rank	Ranking changes
New York	United States	North America	1	0	21	2	1	2
Singapore	Singapore	Asia	2	0	2	1	23	1
Tokyo	Japan	Asia	3	122	32	-3	5	975
London	United Kingdom	Europe	4	14	18	2	7	50
Munich	Germany	Europe	5	-2	1	0	40	22
San Francisco	United States	North America	6	2	11	5	10	25
Los Angeles	United States	North America	7	31	94	16	2	26
Paris	France	Europe	8	-2	39	3	6	10
Shenzhen	China	Asia	9	-5	50	40	8	-1
San Jose	United States	North America	10	1	10	8	29	9
Hong Kong	China	Asia	11	-6	8	0	31	2
Shanghai	China	Asia	12	-2	131	49	3	-1
Frankfurt	Germany	Europe	13	2	4	0	59	114
Boston	United States	North America	14	2	27	3	15	27
Dublin	Ireland	Europe	15	51	44	41	22	65
Vienna	Austria	Europe	16	5	6	-1	107	109
Dusseldorf	Germany	Europe	17	7	5	1	116	145
Stuttgart	Germany	Europe	18	8	9	1	73	80
Hamburg	Germany	Europe	19	13	15	-1	65	111
Seattle	United States	North America	20	16	59	7	14	32

Source: Chinese Academy of Social Sciences City and Competitiveness Index Database, the same below.

The global ranking of China's urban economic competitiveness is generally on the rise. The 2020 top 10 cities by comprehensive economic competitiveness in China are Shenzhen (9), Hong Kong (11), Shanghai (12), Beijing (21), Guangzhou (42), Suzhou (71), Taipei (74), Nanjing (83), Wuhan (87) and Wuxi (91). According to their five-year changes, **these cities experience a decline in global rankings due to the slowdown in China's economic growth**, but they remain one of the world's top 100 cities, with Shenzhen ranking 9th, Hong Kong 11th and Shanghai 12th. Their global rankings by economic density competitiveness rise while those by economic incremental competitiveness drop. **All in all, compared with the figure in 2015-2016, the economic competitiveness rankings of Chinese cities increase in 2020-2021.** Among 291 cities sampled, 106 cities witness a decline but 183 cities a growth by economic competitiveness, **so the overall ranking of Chinese cities rises by 6.5 places.** Ten Chinese cities enter the world's top 100 and 30 enter the world's top 200 cities.

Table 2 China's top 10 cities by comprehensive economic competitiveness (2020-2021) and their five-year changes

Rank	City	Comprehensive economic competitiveness		Economic density competitiveness		Economic incremental competitiveness	
		Rank	Ranking changes	Rank	Ranking changes	Rank	Ranking changes
1	Shenzhen	9	-5	50	40	8	-1
2	Hong Kong	11	-6	8	0	31	2
3	Shanghai	12	-2	131	49	3	-1
4	Beijing	21	-1	190	47	4	-3
5	Guangzhou	42	-25	138	35	11	-5
6	Suzhou	71	-38	159	42	20	-12
7	Taipei	74	-31	54	-3	140	-51
8	Nanjing	83	-8	177	46	28	-11
9	Wuhan	87	1	208	66	17	-5
10	Wuxi	91	-7	147	59	39	-13

The economic competitiveness of the Guangdong-Hong Kong-Macao Greater Bay Area is spearheaded by three centers: Shenzhen, Hong Kong and Guangzhou.

The average value of the Guangdong-Hong Kong-Macao Greater Bay Area is 0.75, lower than that of the Tokyo Bay (0.94), the San Francisco Bay (0.86) and the New York Bay (0.84). Specifically, Shenzhen ranks the 9th in the world, Hong Kong the 11th and Guangzhou the 42nd, all within the top 50 in the world. Foshan, Macao, Dongguan and Zhuhai are also among the world's top 200 cities, but are weaker than the leading cities. From the perspective of global ranking changes, the Greater Bay Area is in a state of “falling at the head and rising at the middle and end”, with Dongguan, Zhuhai, Huizhou and Jiangmen in the middle rising in economic competitiveness, while Shenzhen, Hong Kong and other cities in the head declining, and the differences in the whole bay area narrowing.

Table 3 Comprehensive economic competitiveness of cities in the Greater Bay Area (2020-2021) and their five-year changes

City	Comprehensive economic competitiveness		Economic density competitiveness		Economic incremental competitiveness	
	Rank	Ranking changes	Rank	Ranking changes	Rank	Ranking changes
Shenzhen	9	-5	50	40	8	-1
Hong Kong	11	-6	8	0	31	2
Guangzhou	42	-25	138	35	11	-5
Foshan	120	-15	181	29	51	-17
Macao	124	-69	71	-43	618	-285
Dongguan	147	12	203	42	56	0
Zhuhai	170	75	172	58	158	52
Zhongshan	221	-6	214	24	173	-51
Huizhou	283	21	330	44	125	-23
Jiangmen	346	42	384	29	201	-10
Zhaoqing	455	-59	484	-42	322	-144

11. Young talent is the most important factor of local elements competitiveness

Young talent is the most important element of competitiveness. Local elements, as important factors influencing the economic competitiveness of a city, mainly include convenience of credit market financing, convenience of capital market financing, academic paper index, patent application index, young talent index, and labor force index. **The top 20 cities by local factor competitiveness** are New York, Shenzhen, Chicago, London, Boston, Shanghai, Tokyo, Seoul, Dublin, Singapore, Beijing, Paris, San Francisco, Moscow, Sydney, Los Angeles, Mumbai, Hong Kong, Dubai and Toronto. They are global, regional or national central cities, attracting technology, capital and talents from all over the world. **The sub-indices show that** convenience of capital market financing, patent application index and young talent index have the greatest impact on local factor competitiveness. Their coefficients of variation are 0.94, 0.82 and 1.09, respectively. Among them, **the young talent index has the largest coefficient of variation and has the most obvious impact. Its level determines the level of local elements competitiveness.**

Most of the Chinese sample cities have relatively competitive Local elements. Specifically, Shenzhen,



Shanghai, Beijing, Hong Kong, Guangzhou, Taipei, Chengdu, Hangzhou and Nanjing enter the top 50 in the world, with Shenzhen (2) and Shanghai (6) ranking in the world's top 10, Beijing (11) and Hong Kong (18) in the top 20. A total of 19 cities enter the global top 100, 50 cities enter the top 200, and 183 cities the top 500, which embodies China's leading role in local factor competitiveness.

The Greater Bay Area shows incomparable superiority in this field, with an average score of 0.58 that is **close to the value of foreign bays** (New York Bay: 0.65; San Francisco Bay: 0.59) **and much greater than that of Bohai Bay and Hangzhou Bay**. As for cities in the Greater Bay Area, Shenzhen plays the absolutely central role in local factor competitiveness, Hong Kong and Guangzhou have a similar level, and the competitiveness of Jiangmen, Macao and Zhaoqing is relatively low.

Figure 16 Internal indicators of the top 20 cities by local factors

- 1.1 Indirect market financing convenience
- 1.2 Direct market financing convenience
- 1.3 Paper index
- 1.4 Patent application index
- 1.5 Young talent proportion index
- 1.6 Total working population

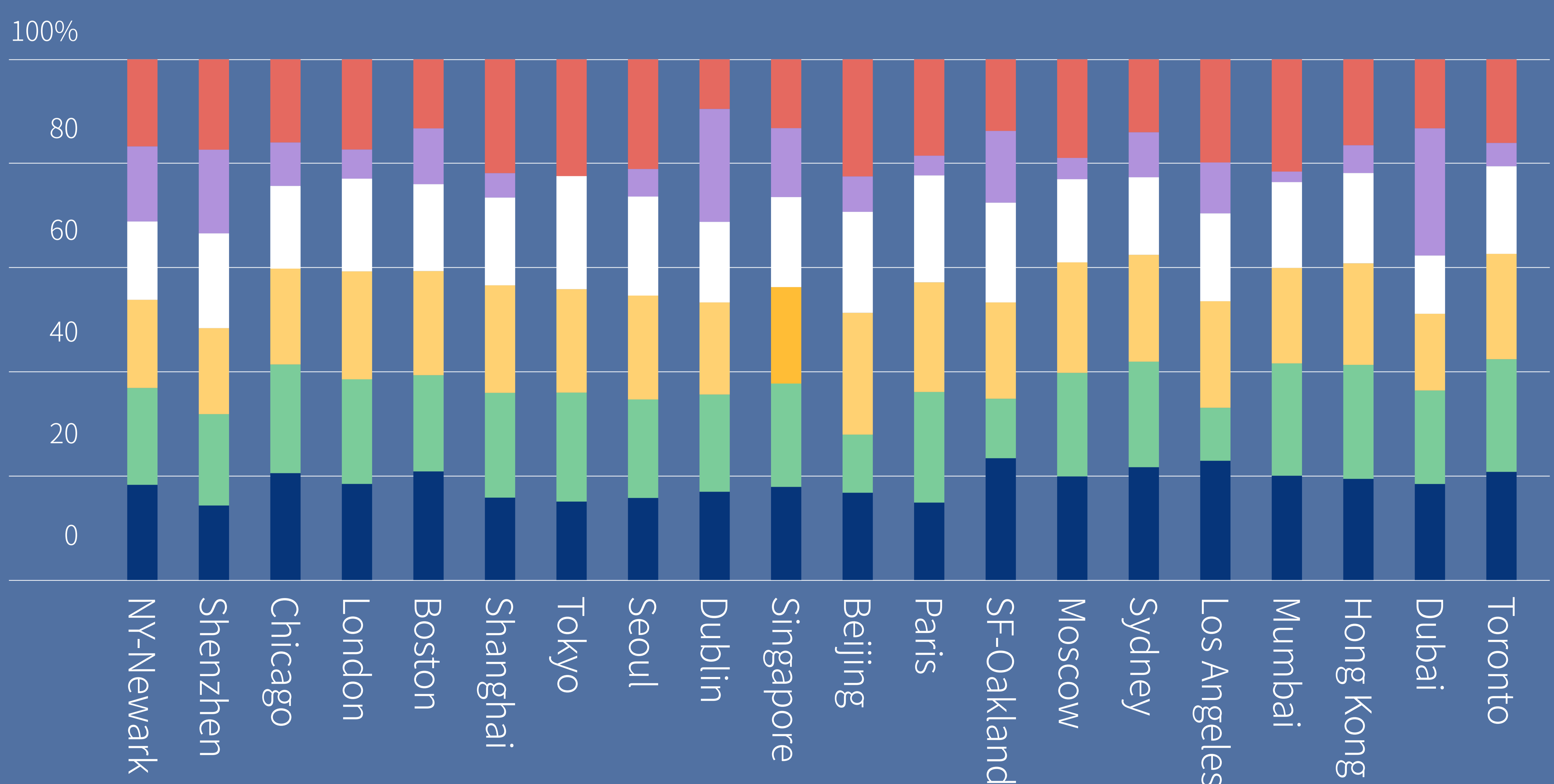
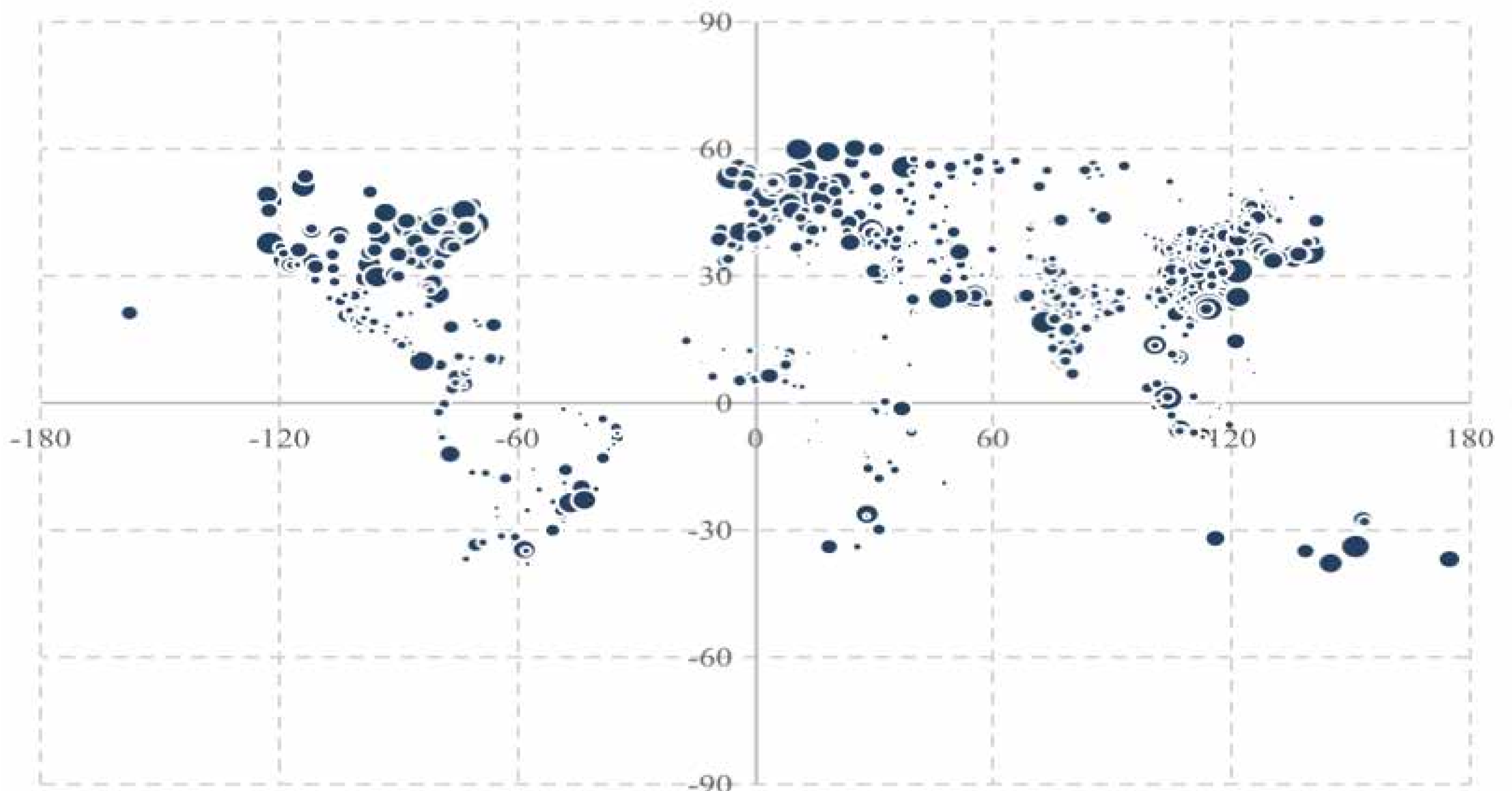


Table 4 Top 20 cities by local factor indicators

Region	Country	City	Index	World Ranking
North America	United States	New York	1.000	1
Asia	China	Shenzhen	0.937	2
North America	United States	Chicago	0.841	3
Europe	United Kingdom	London	0.837	4
North America	United States	Boston	0.834	5
Asia	China	Shanghai	0.833	6
Asia	Japan	Tokyo	0.832	7
Asia	South Korea	Seoul	0.815	8
Europe	Ireland	Dublin	0.801	9
Asia	Singapore	Singapore	0.799	10

Region	Country	City	Index	World Ranking
Asia	China	Beijing	0.783	11
Europe	France	Paris	0.772	12
North America	United States	San Francisco	0.767	13
Europe	Russia	Moscow	0.766	14
Oceania	Australia	Sydney	0.765	15
North America	United States	Los Angeles	0.760	16
Asia	India	Mumbai	0.759	17
Asia	China	Hong Kong	0.757	18
Asia	United Arab Emirates	Dubai	0.747	19
North America	Canada	Toronto	0.747	20

Figure 17 Distribution of local factor indicators in 1,006 cities around the world



12.Environmental quality is still a common challenge faced by cities around the world

Environmental quality is still a common challenge faced by cities around the world. The overall quality of environment in emerging economies needs to be improved urgently, and they show considerable divergence in various sub-indices. A good environment is not only a premise for human settlements, but also an important factor for entrepreneurship. According to the study, the top 20 cities by environmental quality are Tokyo, New York, Osaka, Singapore, Rome, Hiroshima, Berlin, Vienna, London, Los Angeles, San Francisco, Nagoya, Kitakyushu-Fukuoka, Houston, Boston, Kumamoto, Munich, Chicago, Sapporo and Philadelphia. Globally, cities' average score of environmental pollution index is the lowest, indicating that environmental quality is still a common challenge faced by cities around the world. Emerging economies typically score low on environment indicators. For example, India (0.432) and Indonesia (0.562) are lower than the global average (0.583), and they also show large divergence in environmental sub-indices.

There is great room for improvement of Chinese cities in living environment competitiveness. China gains an index (0.586) only slightly higher than the global average. Cities from Hong Kong, Macao and Taiwan rank higher, and Shanghai and Guangzhou are leaders among cities of China's mainland. Fifteen Chinese cities are among the world's top 200 in living environment. They are Taipei (49), Hong Kong (55), Tainan (104), Kaohsiung (118), Taichung (123), Shanghai (137), Guangzhou (158), Hsinchu (168), Macao (170), Shenzhen (173), Dongguan (183), Beijing (189), Hangzhou (192), Kunming (194) and Chongqing (197). China's lower rank as a whole is affected by the high house

price. Nevertheless, first- and second-tier cities perform well in fitness and leisure facilities, cultural facilities, historical and cultural index, so they remain in the top list.

From the global perspective, the Greater Bay Area enjoys a better living environment on the whole with an average index of 0.709. The score is much higher than both the global and national average, superior to 0.672 of Hangzhou Bay and 0.634 of Bohai Bay, and close to other foreign bays. Other cities in the Greater Bay Area enjoys a better living environment and share a close score to each other except for Jiangmen and Zhaoqing.

Figure 18 Internal indicators of the top 20 cities by living environment

- 2.1 Historical and cultural index
- 2.2 Healthcare facility index
- 2.3 Climate comfort index
- 2.5 Citizens' consumption index
- 2.6 Living cost index
- 2.7 Fitness and leisure facility index
- 2.8 Cultural facility index
- 2.4 Environmental pollution index

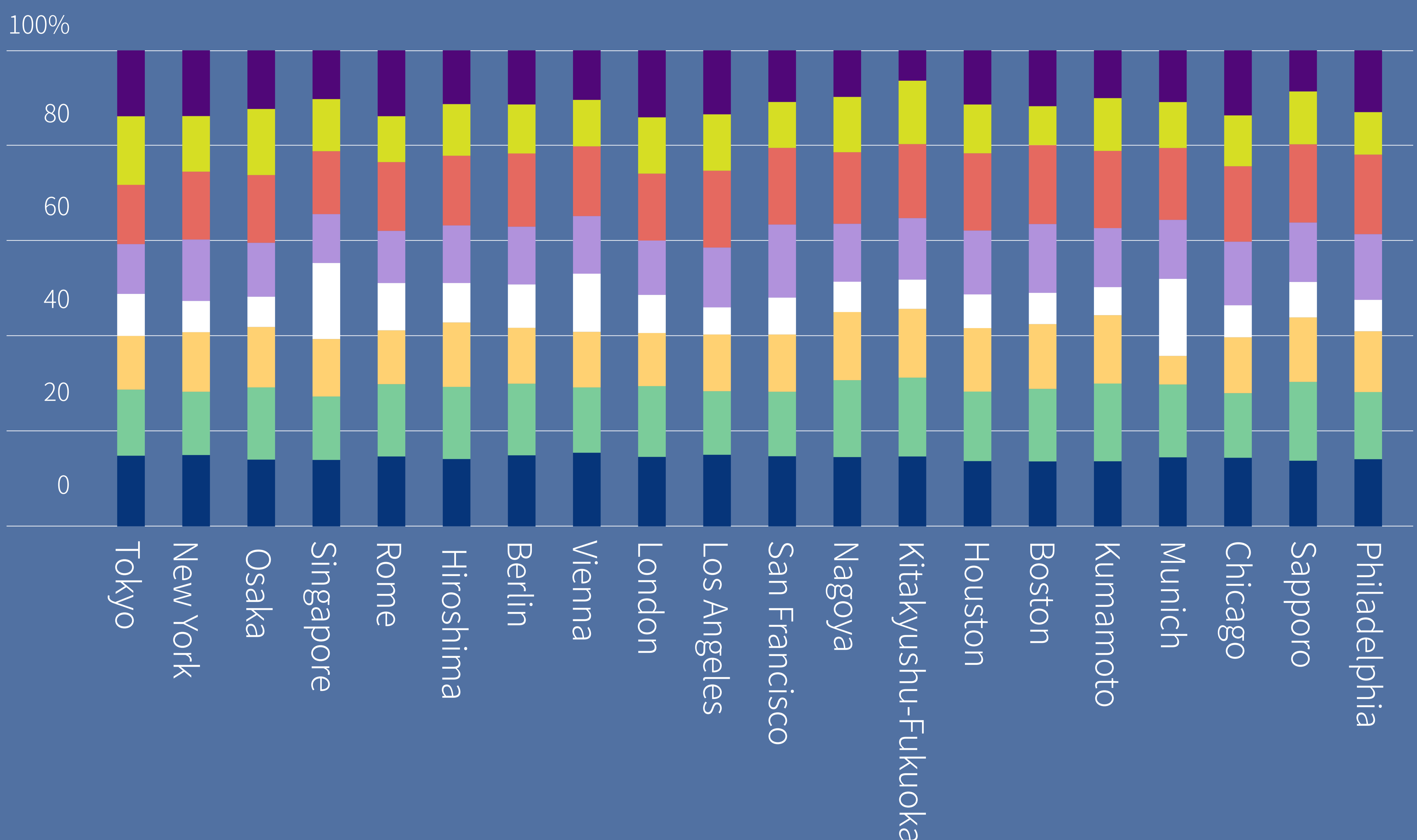


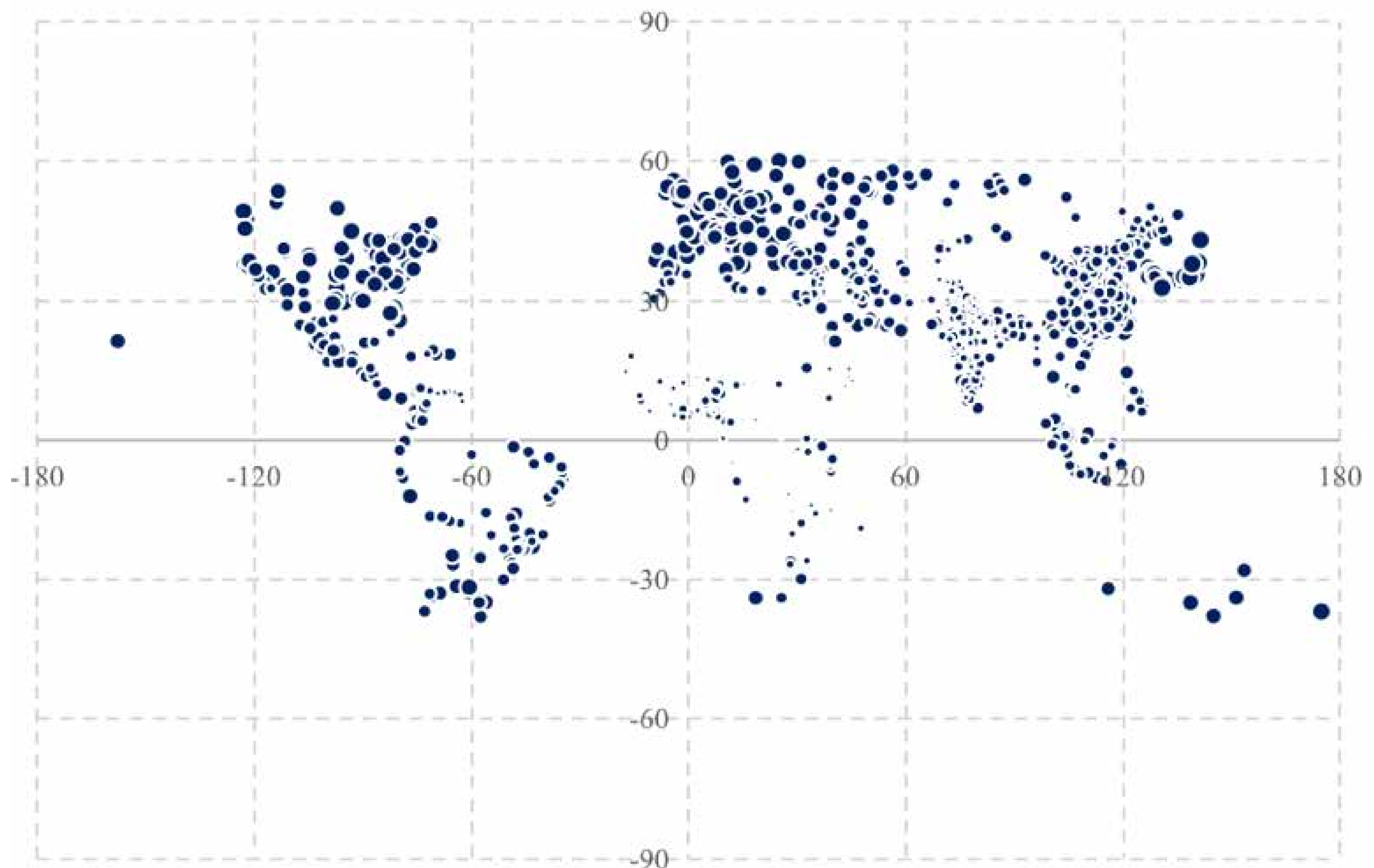
Table 5 Top 20 cities by living environment indicators

Region	Country	City	Index	World Ranking
Asia	Japan	Tokyo	1.000	1
North America	United States	New York	0.960	2
Asia	Japan	Osaka	0.945	3
Asia	Singapore	Singapore	0.942	4
Europe	Italy	Rome	0.927	5
Asia	Japan	Hiroshima	0.927	6
Europe	Germany	Berlin	0.926	7
Europe	Austria	Vienna	0.912	8
Europe	United Kingdom	London	0.908	9
North America	United States	Los Angeles	0.906	10

Region	Country	City	Index	World Ranking
North America	United States	San Francisco	0.902	11
Asia	Japan	Nagoya	0.882	12
Asia	Japan	Kitakyushu to Fukuoka	0.880	13
North America	United States	Houston	0.877	14
North America	United States	Boston	0.875	15
Asia	Japan	Kumamoto	0.873	16
Europe	Germany	Munich	0.869	17
North America	United States	Chicago	0.869	18
Asia	Japan	Sapporo	0.867	19
North America	United States	Philadelphia	0.865	20

Source: Research by the authors of this report.

Figure 19 Distribution of living environment indicators in 1,006 cities around the world



13. The degree of openness is the key to determining soft business environment competitiveness

The essence of improving business environment is to build a good environment for business operators and investors. Business environment consists of two aspects: the hard environment and the soft environment. The soft business environment mainly refers to local government affairs, laws, policies, market and culture that are related to economic and social development. **The impact of the soft environment on competitiveness is increasing, and the degree of openness is the key to determining soft business environment competitiveness.** The degree of openness is not only the result of the business environment, but also the means of its realization. In the sub-indices of soft business environment, the coefficient of variation of openness is 0.799. It has an important effect on the soft business environment.

North America, Asia and Europe perform exceptionally well in soft business environment, and China and the United States lead the world in soft business environment competitiveness. There are large differences in the mean values of the sub-indices of the soft business environment, and the gaps in higher education index and openness are even greater. Among G20 countries, the United States and China lead the world in soft business environment competitiveness, and the European Union also performs strongly in this regard. The average soft business environment score





of G20 countries is significantly higher than that of other countries, and the degree of internal differentiation is lower. The UK and Australian cities perform well in the various sub-indices of the soft business environment. The average score of soft business environment competitiveness of emerging economies such as India and Brazil remains low.

China's top cities in soft business environment are competitive but greatly divergent. There are 42 cities entering the global top 200, among which Beijing (2), Hong Kong (6), and Shanghai (7) are ranked the top 10; Taipei (15) and Hangzhou (19) are ranked the top 20; Nanjing (24), Guangzhou (25), Shenzhen (29), Wuhan (39), Xi'an (45), and Tianjin (48) are ranked the top 50; Chengdu (54), Dalian (62), Qingdao (65), Suzhou (66), Xiamen (67), Changsha (79), Macao (82), Hefei (82), Shenyang (88), Jinan (90), Chongqing (91), Zhuhai (97) and Harbin (100) are ranked

the top 100. As a whole, China’s coefficient of variation for soft business environment reaches a high level of 0.355, indicating a large divergence among cities.

With a large gap between top and bottom cities, the Greater Bay Area gains an average score of 0.639 in soft business environment, which is significantly greater than the global average (0.407) and national average (0.423), superior to 0.6 of Bohai Bay and 0.585 of Hangzhou Bay, and lower than the score of Tokyo Bay (0.936), San Francisco Bay (0.726), and New York Bay (0.692). As for cities in Greater Bay Area, Hong Kong gains the highest score, followed by Guangzhou and Shenzhen which also enter the world’s top 30; Jiangmen and Zhaoqing, with the lowest score, do not enter the top 500. The large gap between top and bottom cities in the Greater Bay Area is noticeable.

Figure 20 Internal indicators of the top 20 cities by soft business environment

- 3.1 Safety index
- 3.2 Marketization index
- 3.3 Openness index
- 3.4 Property rights protection index
- 3.5 Higher education index
- 3.6 Ease of Doing Business Index

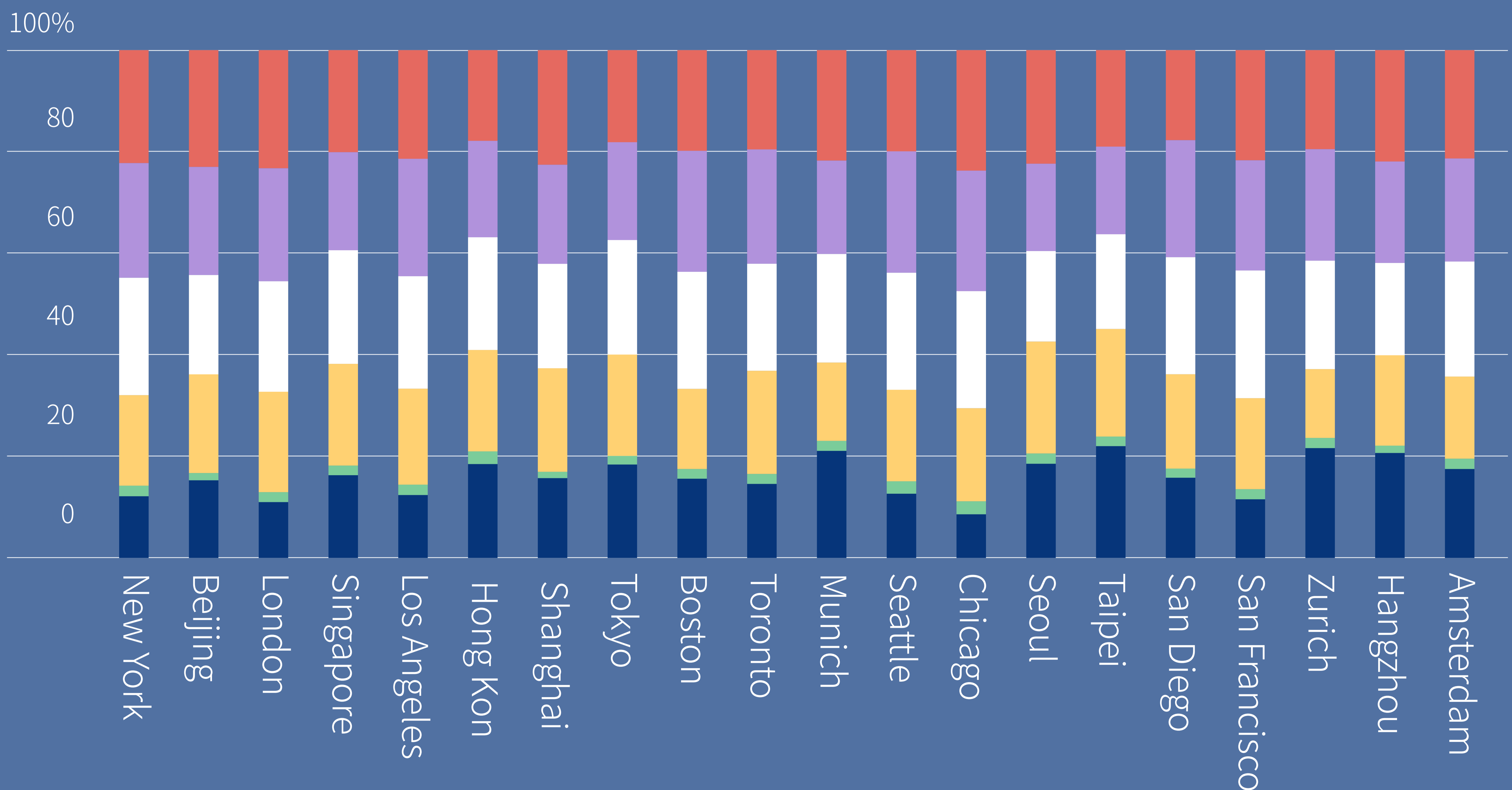


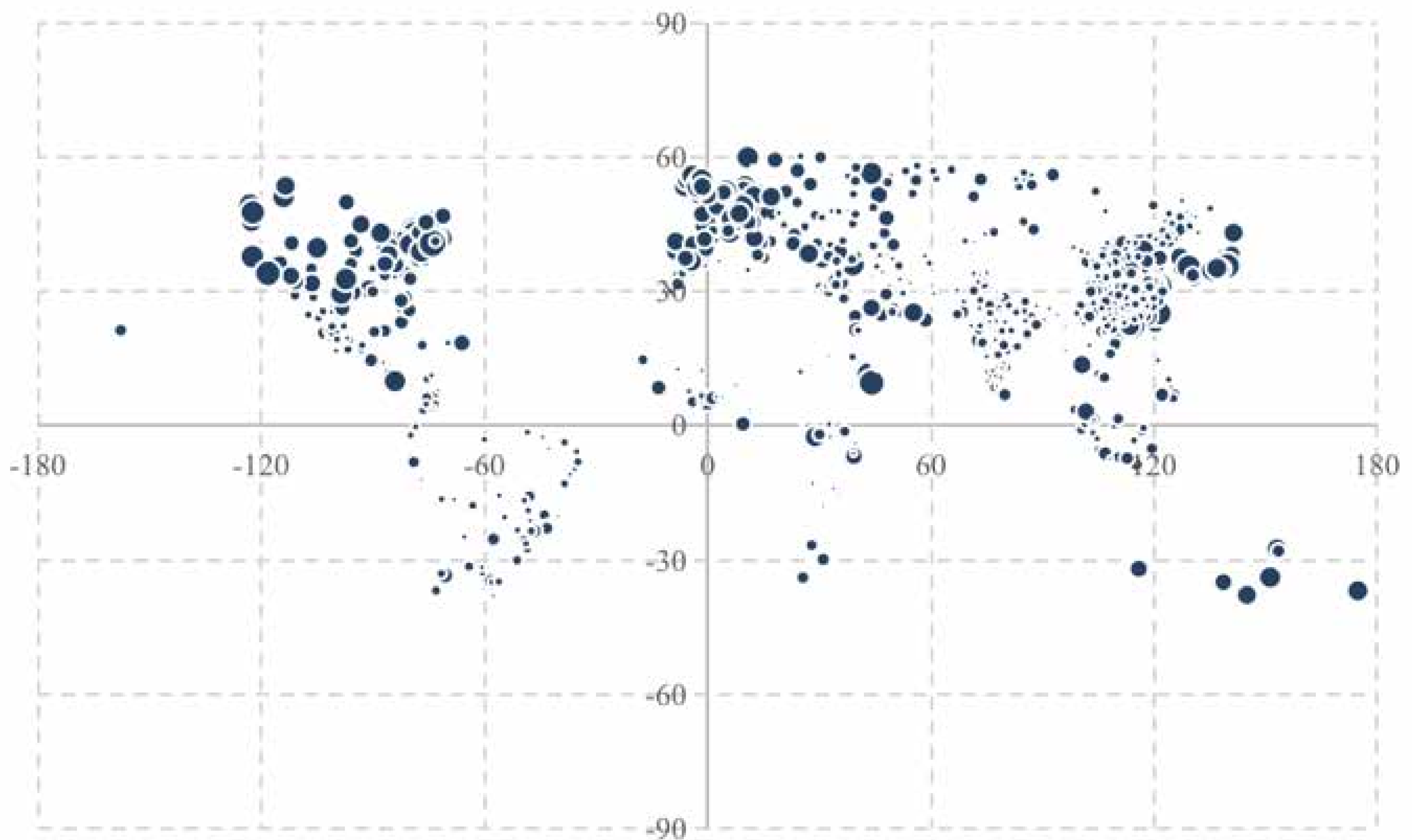
Table 6 Top 20 cities by soft business environment indicators

Region	Country	City	Index	World Ranking
North America	United States	New York	1.000	1
Asia	China	Beijing	0.976	2
Europe	United Kingdom	London	0.953	3
Asia	Singapore	Singapore	0.953	4
North America	United States	Los Angeles	0.942	5
Asia	China Hong Kong	Hong Kong	0.942	6
Asia	China	Shanghai	0.942	7
Asia	Japan	Tokyo	0.936	8
North America	United States	Boston	0.915	9
North America	Canada	Toronto	0.905	10

Region	Country	City	Index	World Ranking
Europe	Germany	Munich	0.905	11
North America	United States	Seattle	0.902	12
North America	United States	Chicago	0.900	13
Asia	South Korea	Seoul	0.897	14
Asia	Taiwan, China	Taipei	0.877	15
North America	United States	San Diego	0.876	16
North America	United States	San Francisco	0.875	17
Europe	Switzerland	Zurich	0.869	18
Asia	China	Hangzhou	0.863	19
Europe	Netherlands	Amsterdam	0.859	20

Source: Research by the authors of this report.

Figure 21 Distribution of soft business environment in 1,006 cities around the world



14. Airports and Internet facilities have the greatest impact on hard business environment competitiveness

Airports and Internet facilities have the greatest impact on hard business environment competitiveness. The hard business environment is an important part of a city's competitiveness. It consists of six dimensions: transportation convenience, power supply, bandwidth, airport facility index, natural disaster index, and shipping convenience. The top 20 cities by hard business environment competitiveness are Amsterdam, Singapore, Vancouver, Dusseldorf, Melbourne, Lisbon, Hamburg, Brussels, Frankfurt, Philadelphia, Atlanta, Dallas, Paris, New York, London, Shanghai, Kuala Lumpur, Sydney, Baltimore and Berlin, **all of which are air hub cities or port cities.** Relatively speaking, the difference in hard business environment between cities are shrinking, but as an important factor for hard business environment competitiveness, the coefficient of variation of airport facilities is 0.434, which is quite high among the various hard business environment indicators. The impact of Internet facilities on business activities is becoming more and more important. The coefficient of variation of 0.527 shows that there is still a large gap in Internet facilities in cities around the world.

Though China has made great progress on hard business environment, it should endeavor to improve the quality in this field, according to comparison with its international counterparts. In 2020-2021, China has 19 cities entering the world's top 200, namely Shanghai (16), Hong Kong (39), Tianjin (40), Shenzhen (47), Taipei (48), Beijing (57), Macao (68), Suzhou (69), Wuxi (82), Guangzhou (90), Ningbo (91), Xiamen (93), Changzhou (94), Dongguan (96), Langfang (104), Zhuhai (138), Hangzhou (165), Qingdao

(179) and Fuzhou (191). Overall, the average score of China’s cities in hard business environment is only 0.438, lower than the global average (0.504). Compared with 73.2% of the European Union, China accounts for only 18.2% in the global top 500 cities, so it still needs to put more effort into the quality improvement of hard business environment.

Thanks to the high score in shipping convenience, the Greater Bay Area has the potential to be a world leader in hard business environment. It gains an average score of 0.683, higher than Hangzhou Bay (0.618) and Bohai Bay (0.577). The figure is lower than 0.783 of New York Bay but close to 0.72 of San Francisco Bay, showing that the Greater Bay Area is a leader in China and close to the world-class level. Specifically, the Greater Bay Area has a prominent advantage of shipping convenience over the New York Bay and San Francisco Bay, but it has to face the large gap with these foreign bays in other aspects.

Figure 22 Internal indicators of the top 20 cities by hard business environment

4.1 Traffic convenience 4.2 Power supply 4.3 Internet speed 4.4 Shipping convenience
4.5 Airport facility index 4.6 Natural disaster index

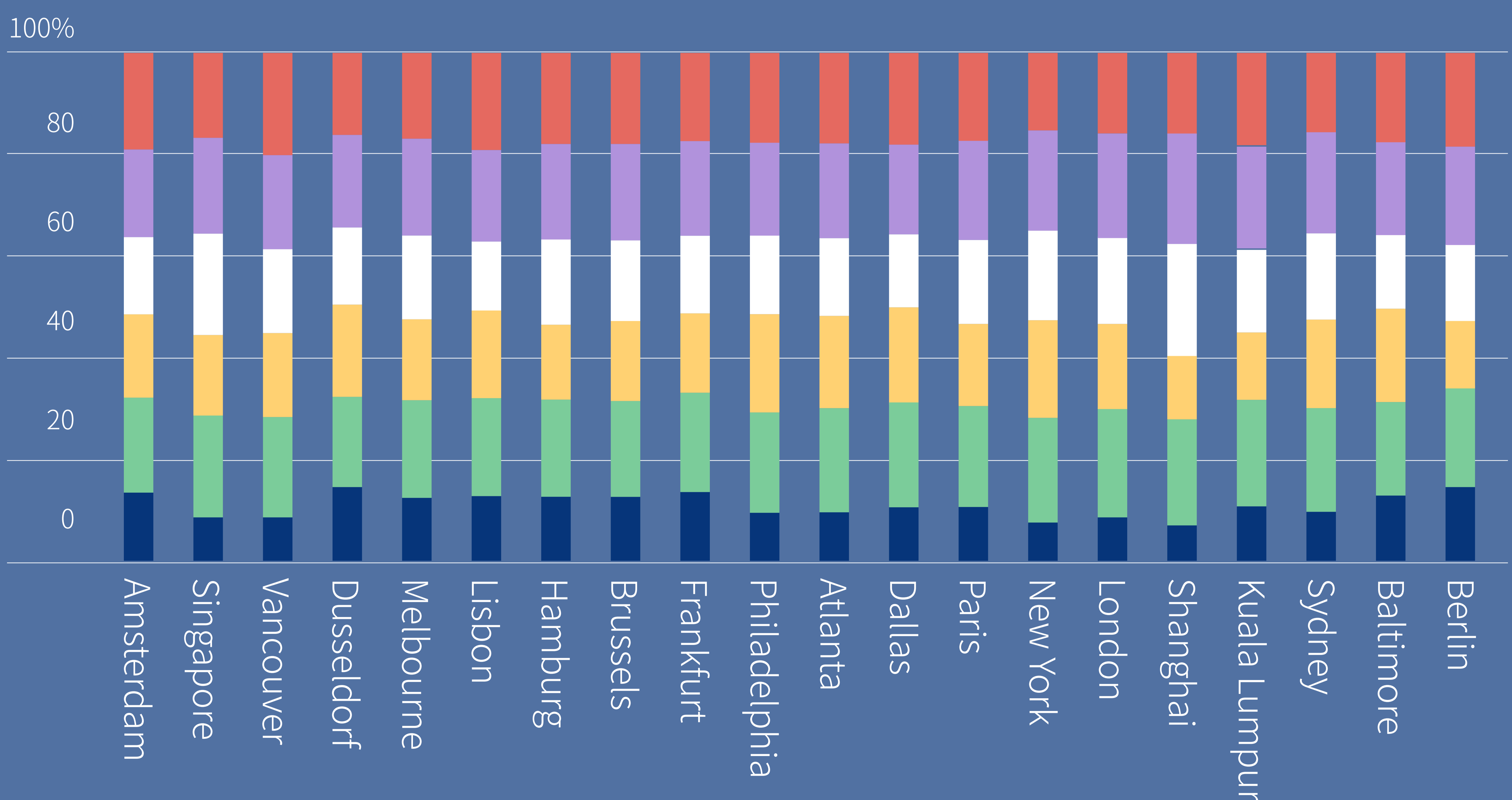
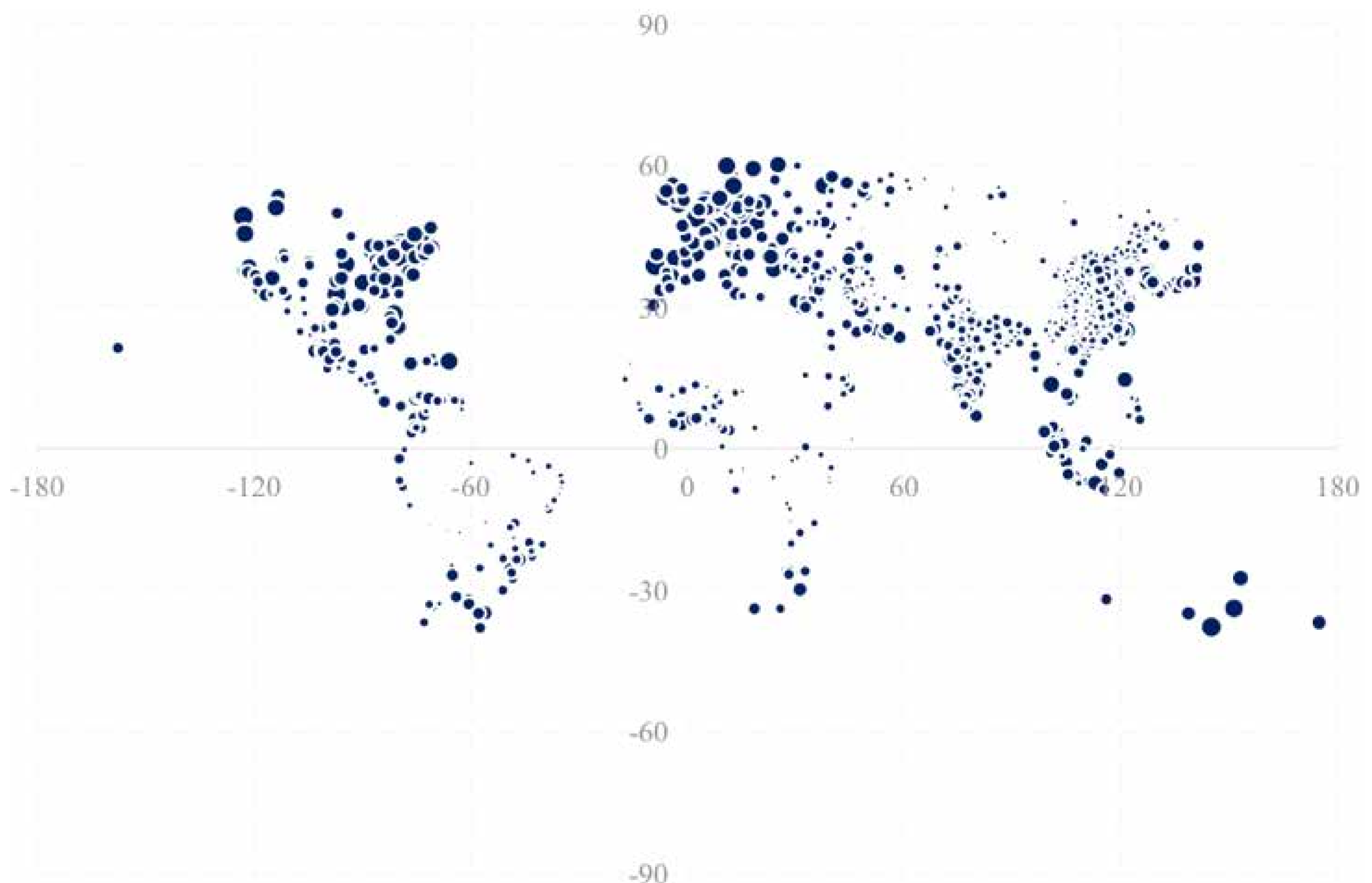


Table 7 Top 20 cities by hard business environment

Region	Country	City	Index	World Ranking
Europe	Netherlands	Amsterdam	1.000	1
Asia	Singapore	Singapore	0.988	2
North America	Canada	Vancouver	0.957	3
Europe	Germany	Dusseldorf	0.956	4
Oceania	Australia	Melbourne	0.947	5
Europe	Portugal	Lisbon	0.943	6
Europe	Germany	Hamburg	0.940	7
Europe	Belgium	Brussels	0.935	8
Europe	Germany	Frankfurt	0.931	9
North America	United States	Philadelphia	0.930	10

Region	Country	City	Index	World Ranking
North America	United States	Atlanta	0.922	11
North America	United States	Dallas	0.920	12
Europe	France	Paris	0.920	13
North America	United States	New York	0.915	14
Europe	United Kingdom	London	0.913	15
Asia	China	Shanghai	0.910	16
Asia	Malaysia	Kuala Lumpur	0.907	17
Oceania	Australia	Sydney	0.903	18
North America	United States	Baltimore	0.902	19
Europe	Germany	Berlin	0.902	20

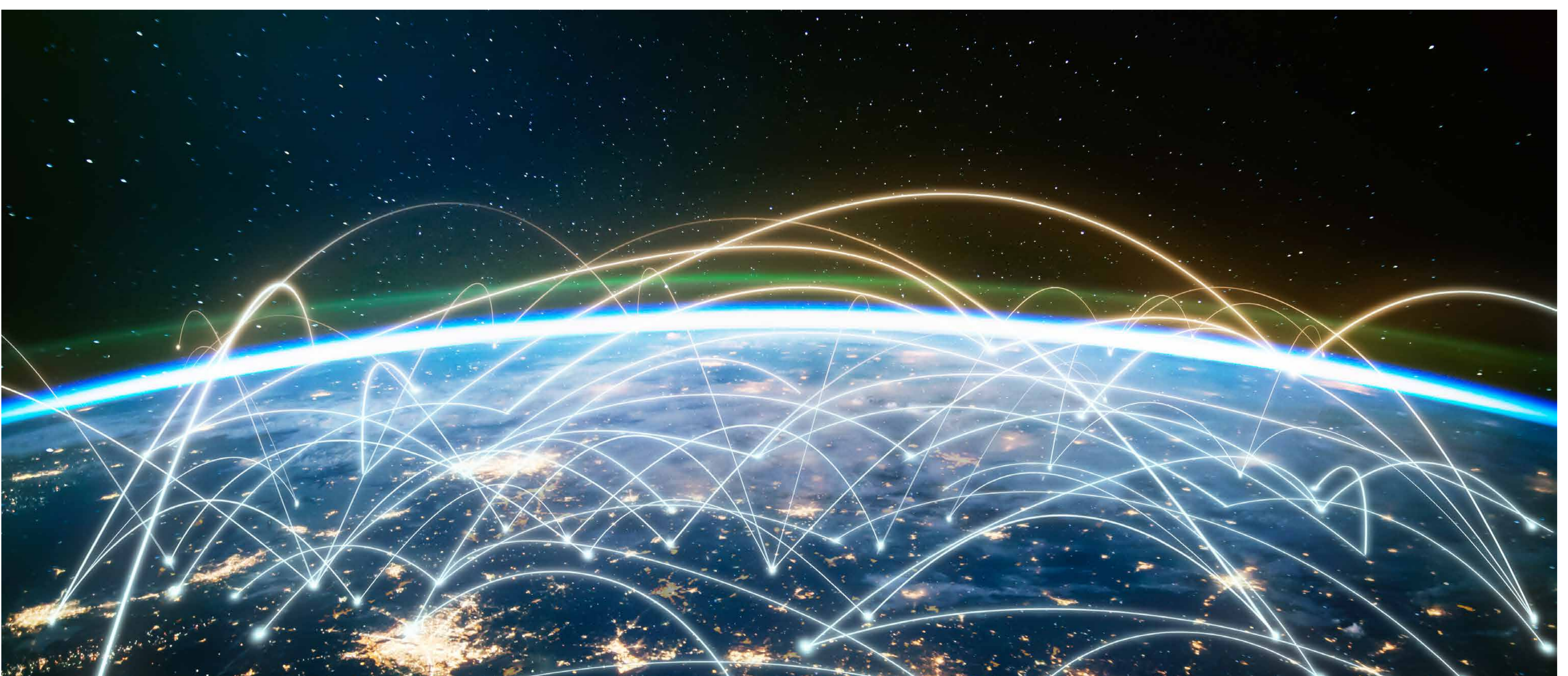
Figure 23 Distribution of hard business environment in 1,006 cities around the world



15. De-globalization and COVID-19 will weaken global connectivity competitiveness

Global connectivity is an important aspect of a city's competitiveness. It includes air connectivity, Internet impact, connectivity of scientific researchers, connectivity of financial companies, connectivity of tech companies, and shipping connectivity. In the context of rising trends of de-globalization and the COVID-19 pandemic, global connectivity is significantly affected and may become the main shortcoming of cities' competitiveness.

Air connectivity, connectivity of financial companies, and connectivity of tech companies are the main factors that determine the global connectivity competitiveness of a city. The top 20 cities ranked by the 2020 Global City Connectivity Index are Shanghai, New York, London, Amsterdam, Hong Kong, Paris, Beijing, Singapore, Tokyo, Istanbul, Dubai, Guangzhou, Milan, Los Angeles, Shenzhen, Sydney, Washington DC, Houston, Barcelona, and Madrid. **The most connected cities in the world are all global technology and financial centers.** Among the Level-3 indicators of global connectivity, the coefficients of variation of tech company connectivity (1.331), air



connectivity (1.248), and connectivity of financial companies (0.920) are relatively high. These three indicators are the main factors affecting global connectivity competitiveness of a city. De-globalization and COVID-19 are posing major challenges to tech company connectivity, air connectivity, and financial company connectivity of cities.

In the context of COVID-19, scientific researchers may become important contributors for global connectivity. According to the International Air Transport Association (IATA), some countries and regions have tightened immigration control measures to control the spread of COVID-19, and the number of international flights has been drastically reduced, leading to a sharp drop in air connectivity between cities. The impact of the pandemic on air travel will last for many years, and this poses a serious threat to cities' global connectivity. In contrast, online scientific research activities such as online conferences have strengthened the connections between researchers, and the number of co-authored scientific research papers published has increased significantly, which means connectivity of scientific researchers will become an important driving force for global connectivity. The top 10 cities by scientific researcher connectivity are Beijing, Paris, London, Shanghai, New York, Boston, Sao Paulo, Madrid, Milan and Toronto. **The gaps between cities in emerging economies in scientific researcher connectivity are large, with more than 65% of cities below the global average.**

The overall index of Chinese cities' global connectivity (0.440) is higher than the global average (0.344). However, there is an internal divergence. In the top 200 most connected cities in the world, 47 Chinese cities are listed, including Shanghai that ranks first, and Hong Kong, Beijing, Guangzhou, Shenzhen, Hangzhou, Tianjin, Qingdao, Xi'an, Nanjing, Xiamen, Chengdu and Dalian that enter the top 50. The above-mentioned cities all enjoy an advantage of financial enterprise connections. However, more than half of 291 Chinese sample cities have an index lower than the global average. They boast advantages of aviation connectivity, search trends, shipping connectivity and especially financial enterprise connections with an average index of 0.773 that is much higher than the global average (0.484). But they gain lower scores in research connections and

technology enterprise connections, and the former has an index (0.389) significantly lower than the global average (0.502).

Though the Greater Bay Area is a leader in global connectivity among Chinese cities, it lags behind its international counterparts. It gains an average index of 0.591, which is much lower than that of Tokyo Bay (0.896), San Francisco Bay (0.728) and New York Bay (0.689). Though keeping ahead of Hangzhou Bay (0.550) and Bohai Bay (0.558), the Greater Bay Area experiences a prominent divergence internally, with 11 cities sampled having an index lower than the average value. Overall, the Greater Bay Area plays a leading role in financial enterprise connections, but has a main weakness in research connections. The score of this indicator is much lower than the global average.

Figure 24 Internal indicators of the top 20 cities by global connectivity

- 5.1 Airline connectivity
- 5.2 Internet impact
- 5.3 Connectivity of scientific researchers
- 5.4 Connectivity of financial companies
- 5.5 Connectivity of tech companies
- 5.6 Shipping connectivity

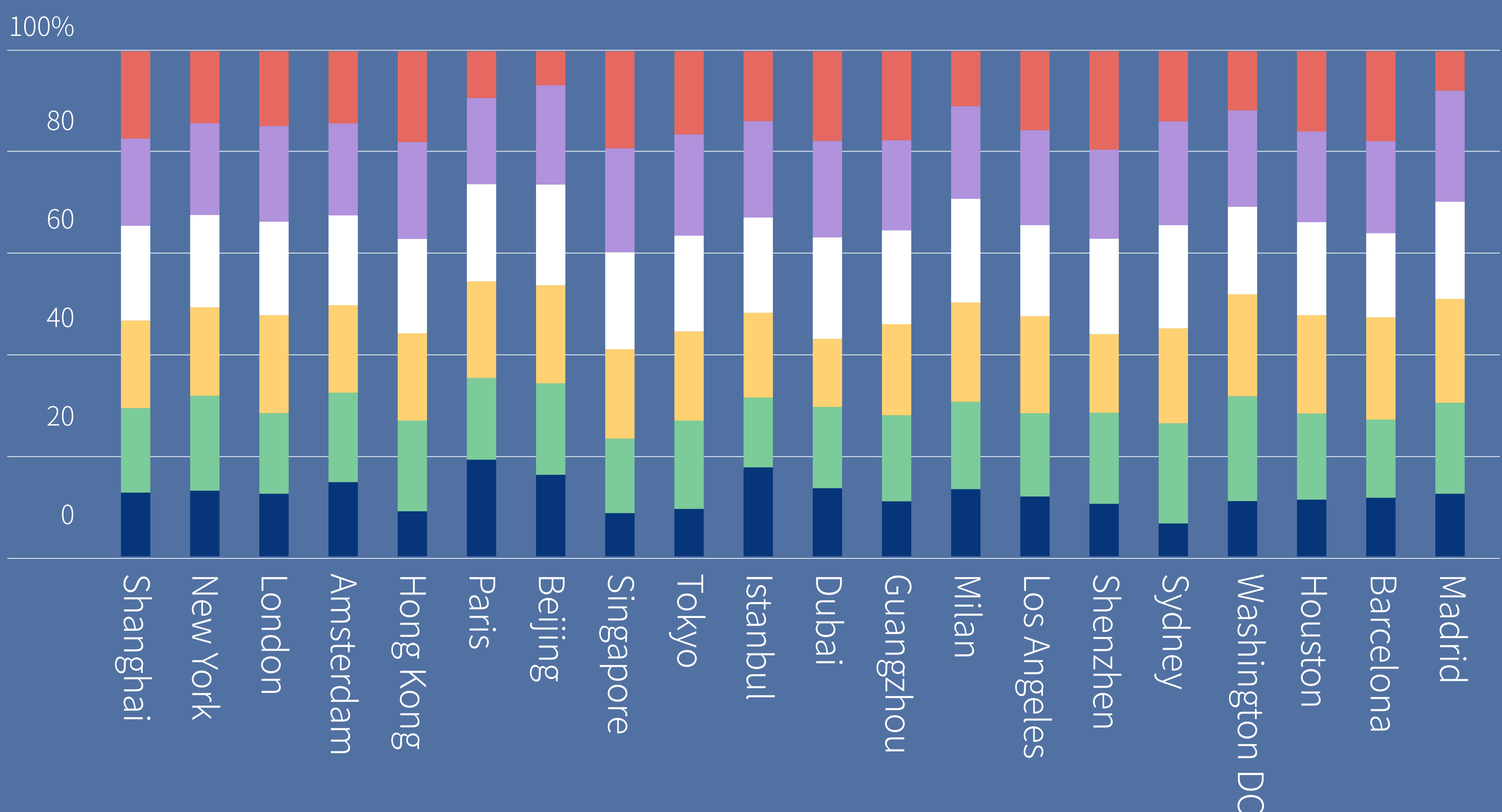
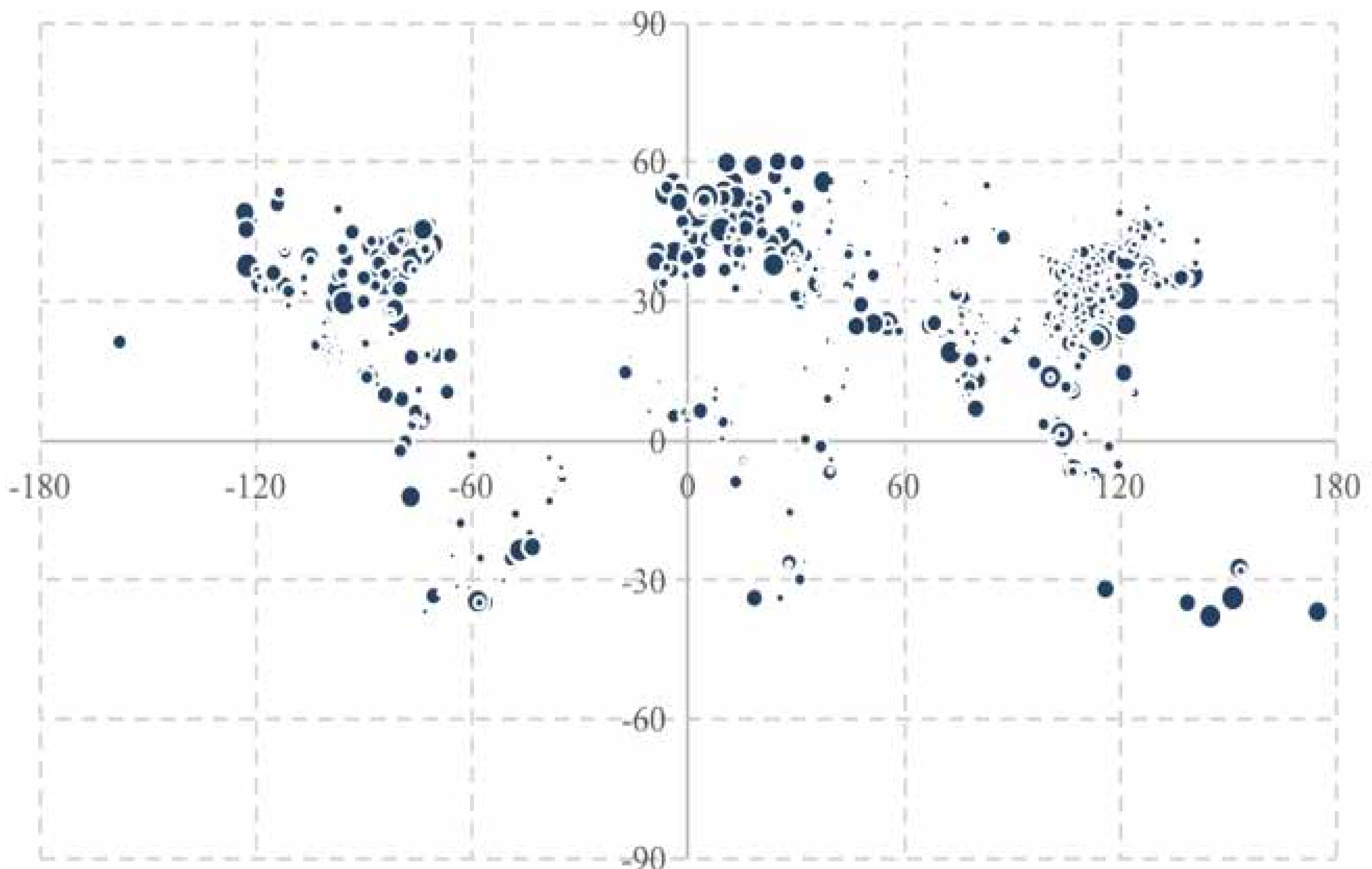


Table 8 Top 20 cities by global connectivity indicators

Region	Country	City	Index	World Ranking
Asia	China	Shanghai	1.000	1
North America	United States	New York	0.982	2
Europe	United Kingdom	London	0.934	3
Europe	Netherlands	Amsterdam	0.932	4
Asia	China	Hong Kong	0.930	5
Europe	France	Paris	0.928	6
Asia	China	Beijing	0.903	7
Asia	Singapore	Singapore	0.897	8
Asia	Japan	Tokyo	0.896	9
Asia	Turkey	Istanbul	0.895	10

Region	Country	City	Index	World Ranking
Asia	United Arab Emirates	Dubai	0.859	11
Asia	China	Guangzhou	0.858	12
Europe	Italy	Milan	0.852	13
North America	United States	Los Angeles	0.849	14
Asia	China	Shenzhen	0.848	15
Oceania	Australia	Sydney	0.844	16
North America	United States	Washington DC	0.842	17
North America	United States	Houston	0.841	18
Europe	Spain	Barcelona	0.841	19
Europe	Spain	Madrid	0.837	20

Figure 25 Distribution of the global connectivity index of 1,006 cities in the world



Part IV : Sustainable competitiveness (2020-2021)

16.Asia's overall improvement

Figure 26 Distribution of sustainable competitiveness of cities around the world (2020-2021)

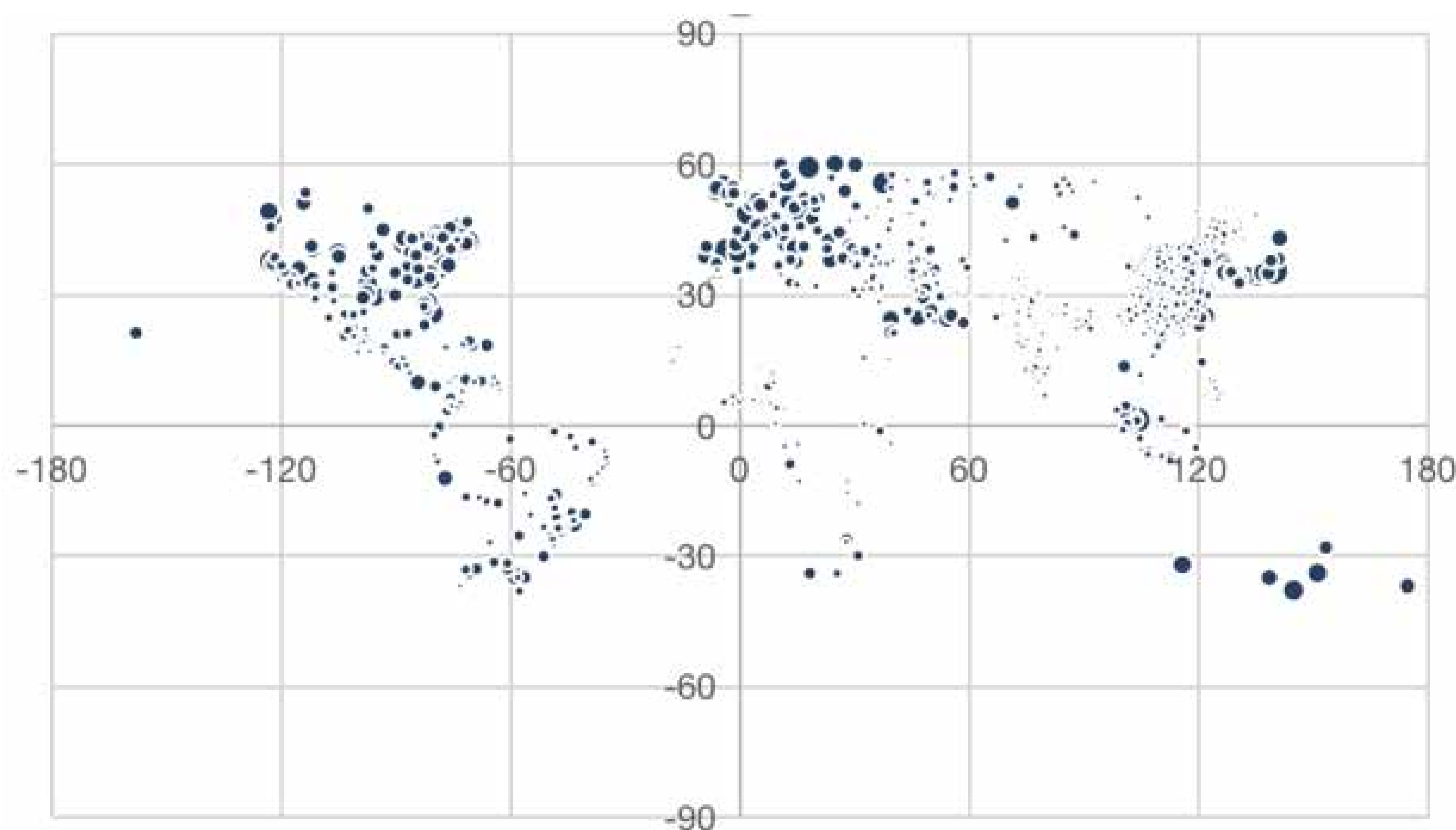
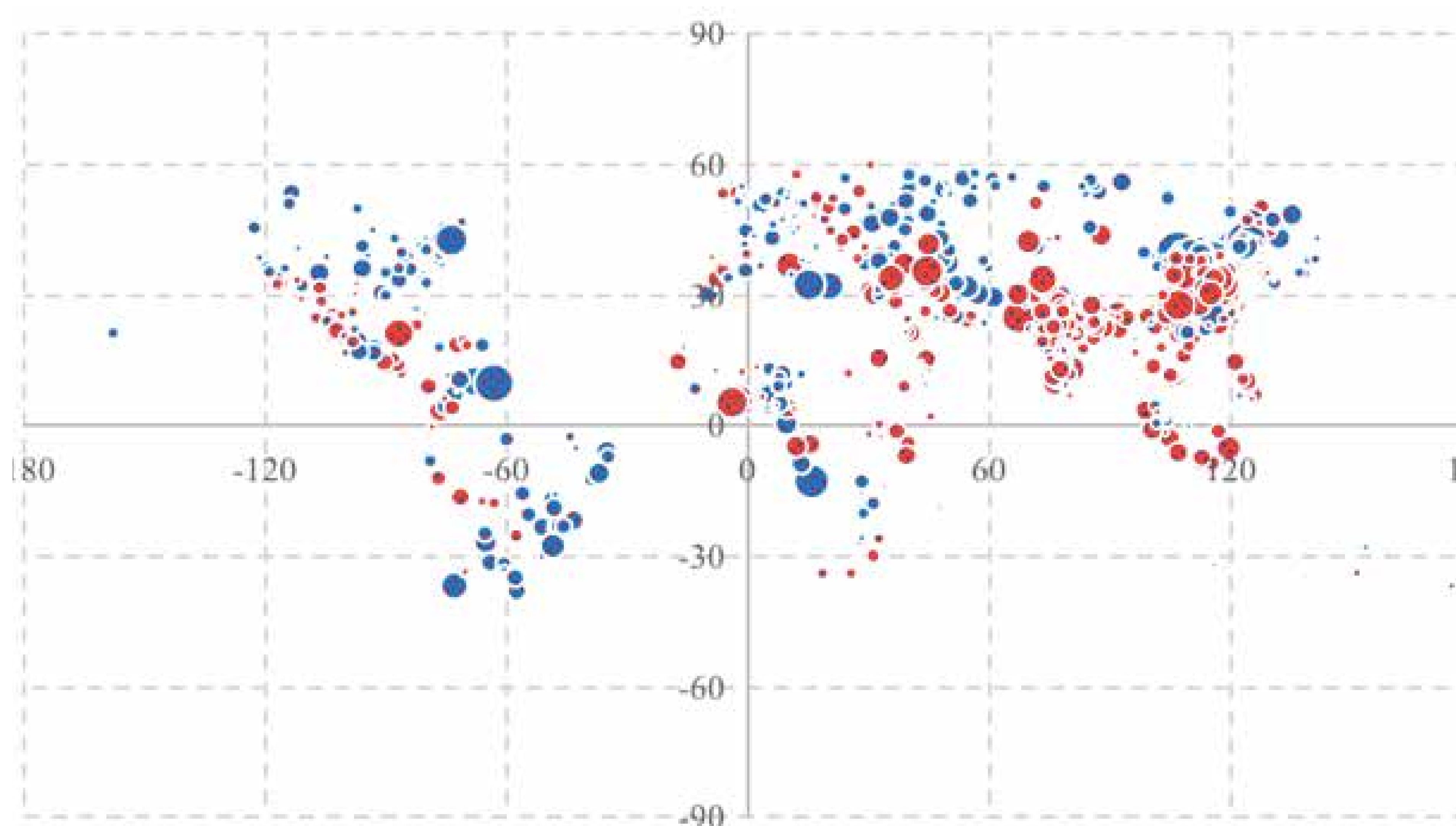


Figure 27 Five- year changes in the ranking of cities' sustainable competitiveness



Note: Red indicates that the ranking has increased, and blue indicates that the ranking has decreased.

Sustainable competitiveness is the decisive factor in the long-term development of a city, and it is also the key to continuously satisfying the increasingly complex and demanding social welfare needs of residents.

The sustainable competitiveness of Asian cities has been comprehensively improved. The top 10 cities in the world by sustainable competitiveness are Tokyo, Singapore, New York, Hong Kong, London, Paris, San Francisco, Barcelona,

Shenzhen, and Osaka. Compared with 2015-2016, Tokyo, Singapore, and New York continued to claim the top 3 cities; the rankings of Hong Kong, San Francisco, Barcelona and Shenzhen climbed, and Shenzhen made particularly significant progress; the rankings of London and Paris dropped slightly. Asian cities have increased significantly. In 2020-2021, the number of Asian cities among the world's top 200 cities by sustainable competitiveness increased from 60 five years ago to 66, which is the largest increase among the six continents. The average ranking of these 66 cities rose by 19.20 places, and the overall average ranking of Asian cities rose by 11.78 places, indicating an overall improvement of sustainable competitiveness of Asian cities.

Interregional gaps in sustainable competitiveness are widening, with Asia, Europe, and North America leading the world. Among them, the United States has an absolute competitive edge in this regard among North American cities. Top cities in Europe by sustainable competitiveness are also ranked among the world's top cities by sustainable competitiveness. The impact of talent density and talent growth on sustainable competitiveness in these European cities is obvious. Asian top cities by sustainable competitiveness are ranked high in the world, and the impact of talent growth is obvious. The rankings of South American cities by sustainable competitiveness are generally high. The sustainable competitiveness rankings of African cities are generally low and the divergence among African cities is striking.

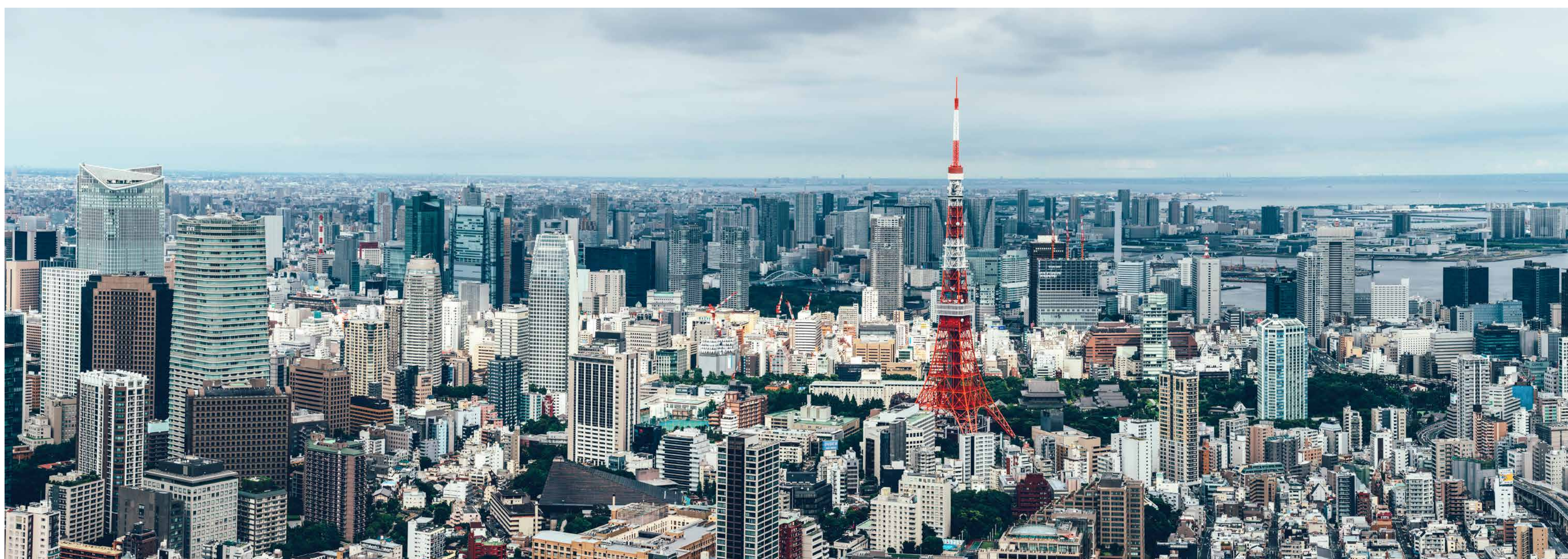


Table 9 Top 20 cities in sustainable competitiveness (2020-2021) and their changes

City	Country	Continent	Economic competitiveness		Economic density competitiveness		Comprehensive incremental competitiveness	
			Rank	Ranking changes	Rank	Ranking changes	Rank	Ranking changes
Tokyo	Japan	Asia	1	0	12	-3	1	0
Singapore	Singapore	Asia	2	0	1	0	13	-1
New York	United States	North America	3	0	50	-7	2	0
Hong Kong	China	Asia	4	2	3	0	19	4
London	United Kingdom	Europe	5	-1	23	0	5	1
Paris	France	Europe	6	-1	40	0	3	0
San Francisco	United States	North America	7	1	38	0	9	1
Barcelona	Spain	Europe	8	1	10	0	27	0
Shenzhen	China	Asia	9	14	8	5	32	18
Osaka	Japan	Asia	10	-3	91	-8	6	-2
Chicago	United States	North America	11	0	93	-4	7	0
Moscow	Russia	Europe	12	1	22	-2	26	0
Seoul	South Korea	Asia	13	6	65	7	11	4
Stockholm	Sweden	Europe	14	4	19	2	28	4
Madrid	Spain	Europe	15	2	42	2	21	-2
Frankfurt	Germany	Europe	16	-1	7	0	48	1
Stuttgart	Germany	Europe	17	-5	4	0	55	-11
Munich	Germany	Europe	18	-8	2	0	70	-18
Boston	United States	North America	19	-5	64	-2	18	-5
Philadelphia	United States	North America	20	-4	68	1	16	-2

The sustainable competitiveness of Chinese cities is generally weaker than the global average but its top cities are experiencing an increase in global rankings.

For one thing, the gap among different cities is larger. In the 291 sample cities, 5 cities enter the world's top 50, 9 cities enter the top 100 and 30 cities enter the top 200; a total of 157 cities (about 54%) are outside the top 500, however. **For another, the divergence in sustainable competitiveness is more serious.** According to the five-year changes of the cities sampled in China, the ranking of 159 cities (accounting for 54.63%) rises, while ranking of 130 cities (accounting for 44.67%) drops. **Nevertheless, top cities in China are seeing a rise in sustainable competitiveness rankings.** In Chinese top 10 cities by sustainable competitiveness, namely Hong Kong (4), Shenzhen (9), Taipei (24), Shanghai (33), Beijing (47), Guangzhou (69), Suzhou (78), Nanjing (89), Qingdao (94) and Wuhan (102), all cities gain an increase in global rankings except for Taipei whose ranking remains unchanged, and 9 cities enter the top 100. Besides, Wuhan rises by 81 places, ranking 102nd in the world.

Table 10 China's top 10 cities in sustainable competitiveness (2020-2021) and their changes

Rank	City	Sustainable competitiveness		Talent density		Talent increment	
		Rank	Five-year change	Rank	Five-year change	Rank	Five-year change
1	Hong Kong	4	2	3	0	19	4
2	Shenzhen	9	14	8	5	32	18
3	Taipei	24	0	17	1	46	-4
4	Shanghai	33	25	52	14	43	18
5	Beijing	47	36	97	20	36	15
6	Guangzhou	69	17	83	8	62	25
7	Suzhou	78	18	107	16	59	24
8	Nanjing	89	29	99	17	84	30
9	Qingdao	94	39	125	22	72	45
10	Wuhan	102	81	124	65	95	68

In an overall gradient distribution, cities of the Greater Bay Area can be divided into three tiers in sustainable competitiveness. The top tier consists of Hong Kong (4), Shenzhen (9), and Guangzhou (69) who are ranked the world's top 100. The three cities serve as the core engine in the Greater Bay Area; members of the top 200 including Dongguan (119), Foshan (123), Macao (138), Zhongshan (160) and Zhuhai (194) constitute the second tier, serving as the pillar of this system; other cities such as Huizhou (296), Jiangmen (390) and Zhaoqing (487) are the third tier that plays the supportive role. Compared with the rankings in 2015-2016, 9 cities see an increase except for Macao and Zhaoqing, among which Dongguan rises by 60 places, Zhuhai 46 places, Foshan 36 places and Zhongshan 30 places.

Table 11 Sustainable competitiveness of cities in the Greater Bay Area (2020-2021) and their changes

City	Sustainable competitiveness		Talent density		Talent increment	
	Rank	Five-year change	Rank	Five-year change	Rank	Five-year change
Hong Kong	4	2	3	0	19	4
Shenzhen	9	14	8	5	32	18
Guangzhou	69	17	83	8	62	25
Dongguan	119	60	102	39	135	70
Foshan	123	36	123	21	118	48
Macao	138	-44	21	-5	506	-177
Zhongshan	160	30	113	6	210	30
Zhuhai	194	46	128	39	288	51
Huizhou	296	10	363	-8	219	23
Jiangmen	390	12	432	-10	356	40
Zhaoqing	487	-101	577	-132	411	-60

17. The ease of doing business and young talent are of great importance for economic vitality and competitiveness

Economic vitality is an important indicator for evaluating a city's economic potential. It is an important part of a city's sustainable competitiveness. The economic vitality competitiveness index consists of five sub-indices: the ease of doing business, IP protection, proportion of young talents, economic growth rate and labor productivity.

Emerging cities dominate the world's top 10 cities by economic competitiveness, while business convenience and young and high-quality population are crucial factors in determining economic vitality. The top 10 cities in the world by economic vitality are Dublin, New York, Oslo, Dubai, Shenzhen, San Francisco, San Jose, Abu Dhabi, Singapore and Seattle. Cities with strong economic vitality are mainly emerging cities with a relatively high index of business convenience and proportion of young and high-quality people. The gaps in the level of economic vitality among global cities are still obvious. The world now has multiple economic centers.

Overall, Chinese cities form a pyramidal distribution in economic vitality, with youth population ratio being the reason behind their differences. There are 15 cities entering the world's top 100, namely Shenzhen (5), Beijing (23), Guangzhou (26), Shanghai (30), Zhuhai (39), Hong Kong (44), Nanjing (50), Hangzhou (55), Suzhou (71), Xiamen (72), Changsha (76), Wuhan (78), Ningbo (92), Chengdu (93) and Hefei (98). Besides, China has 44 cities entering the top 200 and 181 cities entering the top 500. **The sub-indices for cities in the top 200 show that these cities are close to each other in economic growth but divergent in youth population ratio.** Regarding to the location,

Shenzhen leads the economic growth and other cities show a falling economic level from the east to the west.

The Greater Bay Area leads China in economic vitality, but there is a significant divergence among cities in this area. The economic vitality index of the Greater Bay Area is 0.627, higher than that of Hangzhou Bay and Bohai Bay which are 0.582 and 0.492 respectively. Meanwhile, it is close to the score of Tokyo Bay (0.660) and lower than the 0.707 of New York Bay and 0.763 of San Francisco Bay. A multicenter development pattern led by the Greater Bay Area has taken shape in China. However, a significant divergence in youth talent ratio still exists among cities in this area, so does the polarization in business convenience, economic vitality and economic growth.

Figure 28 Internal indicators of the top 20 cities by economic vitality

1.1 The Ease of Doing Business index 1.2 Property rights protection index
 1.3 Index of Young Talent Proportion 1.4 Economic growth rate 1.5 Labor productivity

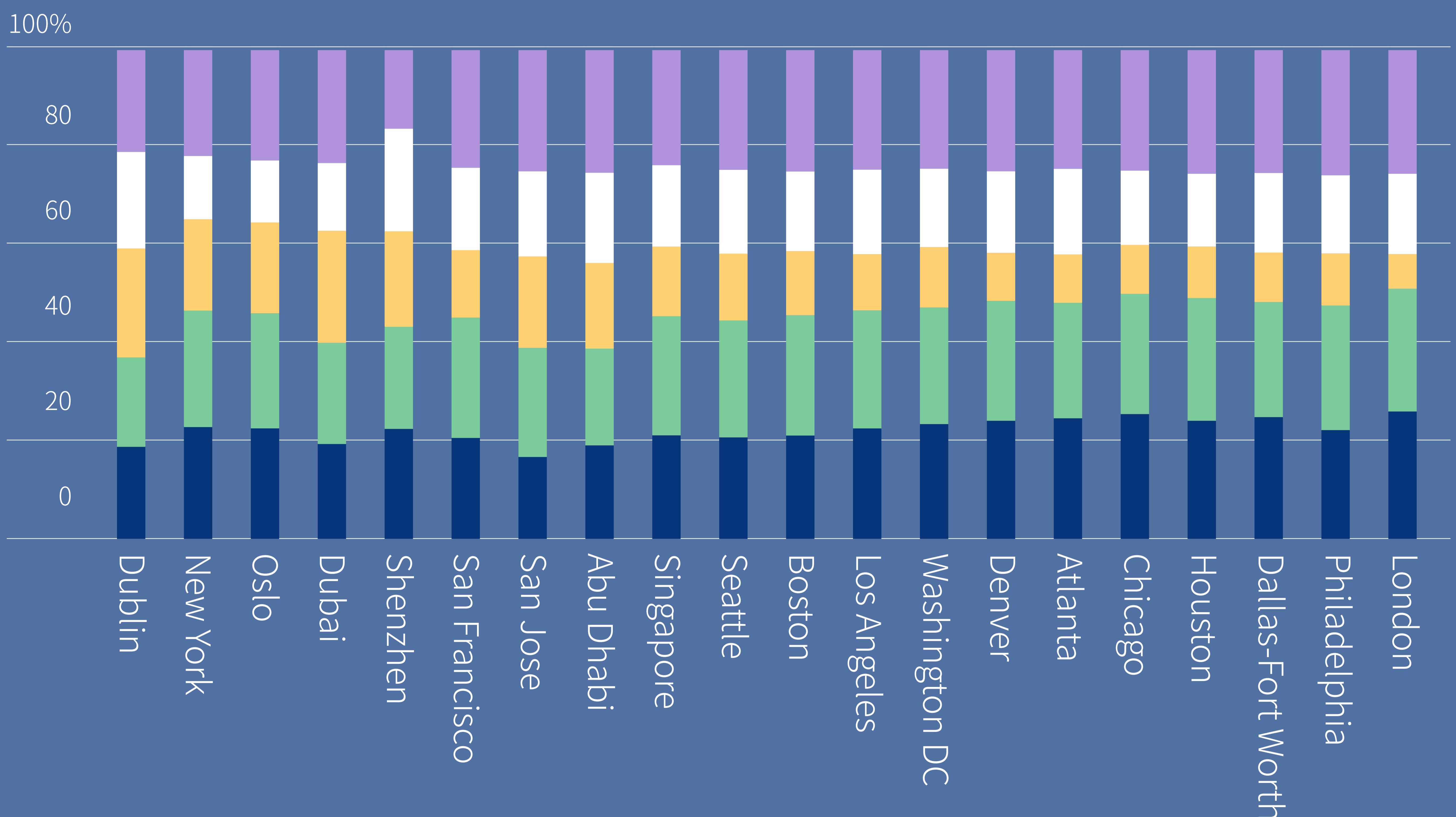
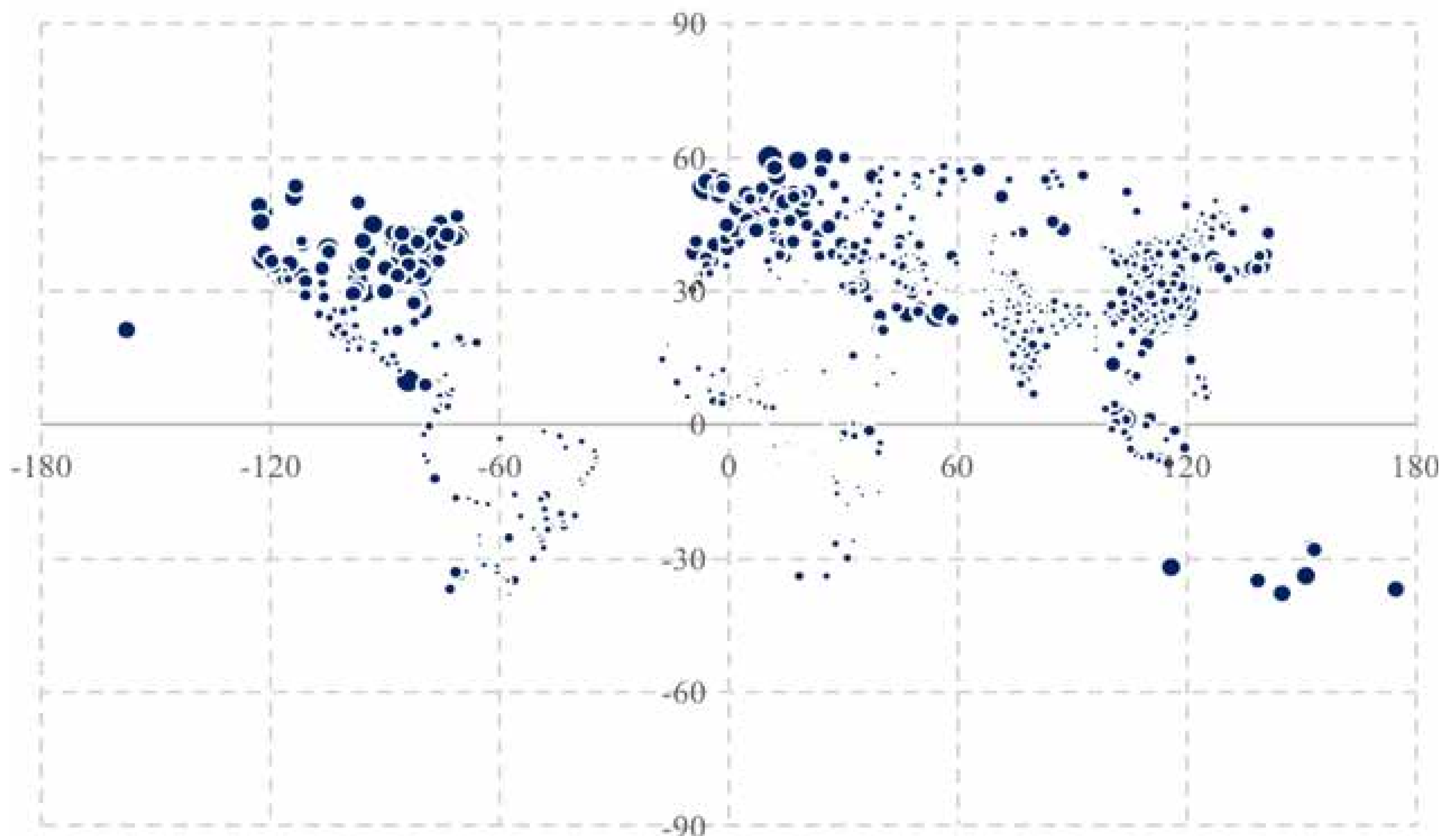


Table 12 Top 20 cities by economic vitality indicators

Region	Country	City	Index	World Ranking
Europe	Ireland	Dublin	1.0000	1
North America	United States	New York	0.9556	2
Europe	Norway	Oslo	0.9463	3
Asia	UAE	Dubai	0.9207	4
Asia	China	Shenzhen	0.9061	5
North America	United States	San Francisco	0.8920	6
North America	United States	San Jose	0.8814	7
Asia	UAE	Abu Dhabi	0.8685	8
Asia	Singapore	Singapore	0.8537	9
North America	United States	Seattle	0.8534	10
North America	United States	Boston	0.8461	11
North America	United States	Los Angeles	0.8369	12
North America	United States	Washington DC	0.8325	13
North America	United States	Denver	0.8132	14
North America	United States	Atlanta	0.8070	15
North America	United States	Chicago	0.8036	16
North America	United States	Houston	0.7968	17
North America	United States	Dallas-Fort Worth	0.7854	18
North America	United States	Philadelphia	0.7850	19
Europe	United Kingdom	London	0.7834	20

Figure 29 Distribution of economic vitality indicators of 1,006 cities in the world



18. The quality of development is a decisive factor in environmental resilience competitiveness of cities

The quality of development is a decisive factor in environmental resilience competitiveness of cities. Some small and medium-sized cities which demonstrate high development quality have stood out in this regard. African cities have low average environmental resilience competitiveness score and show considerable divergence, while North American cities have a high average score and the divergence among North American cities is small. The divergence of environmental resilience competitiveness among cities globally is sharp. Cities score low on environmental pollution and ecological diversity. Improving environmental governance and maintaining ecological diversity are the keys to enhancing the environmental resilience competitiveness of cities globally.

A small minority of Chinese cities have ascended to the top tier in environmental resilience competitiveness, but different regions in China have obviously divergent situation. Seven cities including Hong Kong, Shenzhen, Macao, Taipei, Dongguan, Zhongshan and Hsinchu are ranked the world's top 200 by environmental resilience competitiveness. China's good performers in this field are mainly located at the southeast region with favorable natural environment and developed economy, because of which medium-sized cities such as Dongguan, Zhongshan and Hsinchu surge to the top 200. **Though a falling trend is shown both from the east to the west and from the south to the north in China, the divergence in environmental resilience competitiveness between the east and the west is more significant than that between the south and the north. In addition, compared with other indices, China gains the lowest score in environmental pollution.**

The Greater Bay Area is now among the world’s leading players in terms of environmental resilience competitiveness and keeps a balance among cities in this area. With a score of 0.723, it is preceded by Tokyo Bay (0.815) and New York Bay (0.812), but followed by San Francisco Bay, Hangzhou Bay and Bohai Bay whose scores are 0.677, 0.615 and 0.550 respectively, showing that it has taken a world-leading position. At the same time, cities in this area keep a relative balance in environmental resilience competitiveness. Compared with other bay areas in the world, the Greater Bay Area has deficiencies mainly in environmental pollution and traffic congestion, so treatment of environment pollution and construction of transportation infrastructure are key to improve the environmental resilience competitiveness of the Greater Bay Area.

Figure 30 Internal indicators of the top 20 cities by environmental resilience

■ 2.1 Traffic convenience
 ■ 2.2 Power supply
 ■ 2.3 Ecological diversity
 ■ 2.4 Climate comfort index
 ■ 2.5 Environmental pollution index
 ■ 2.6 Natural disaster index

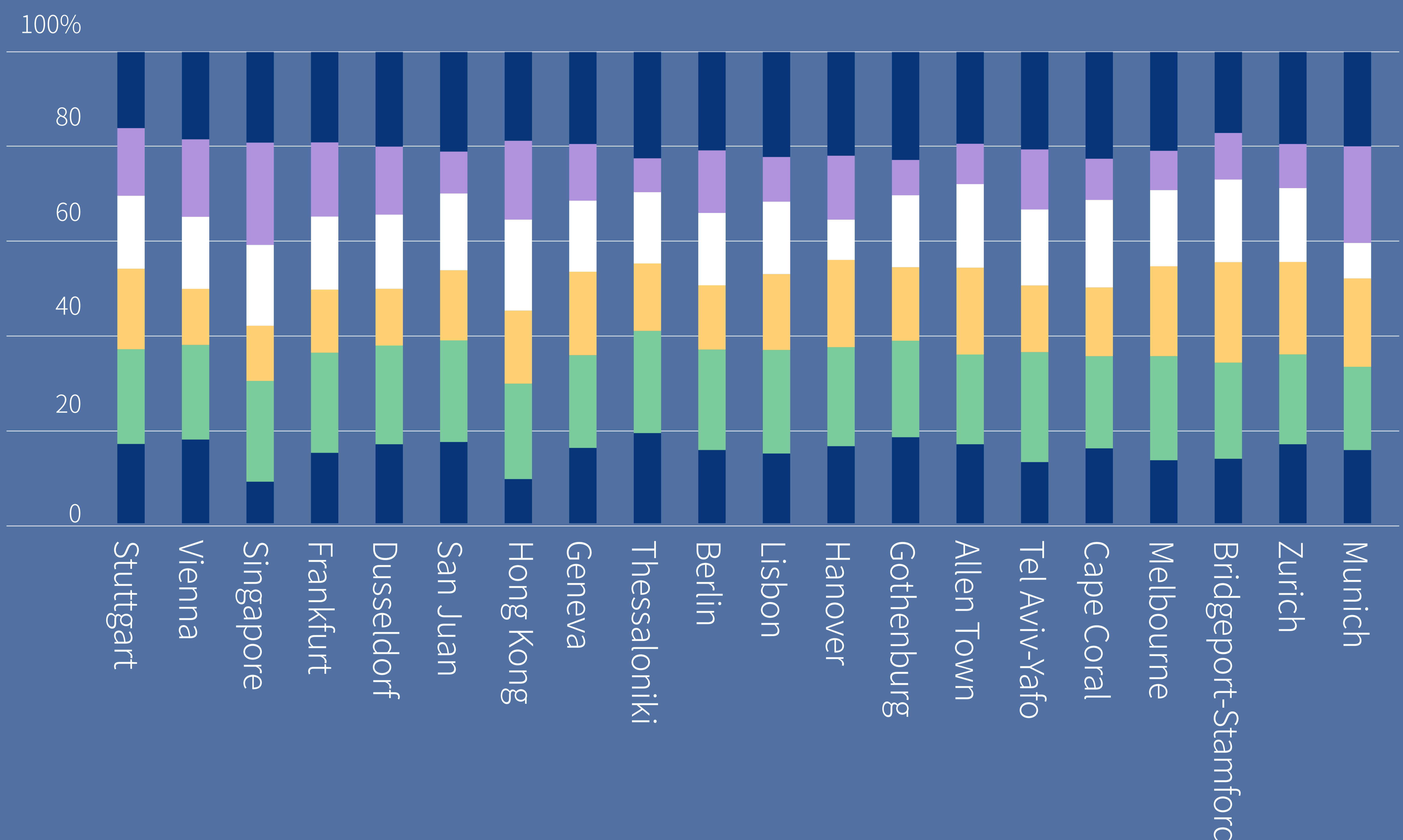
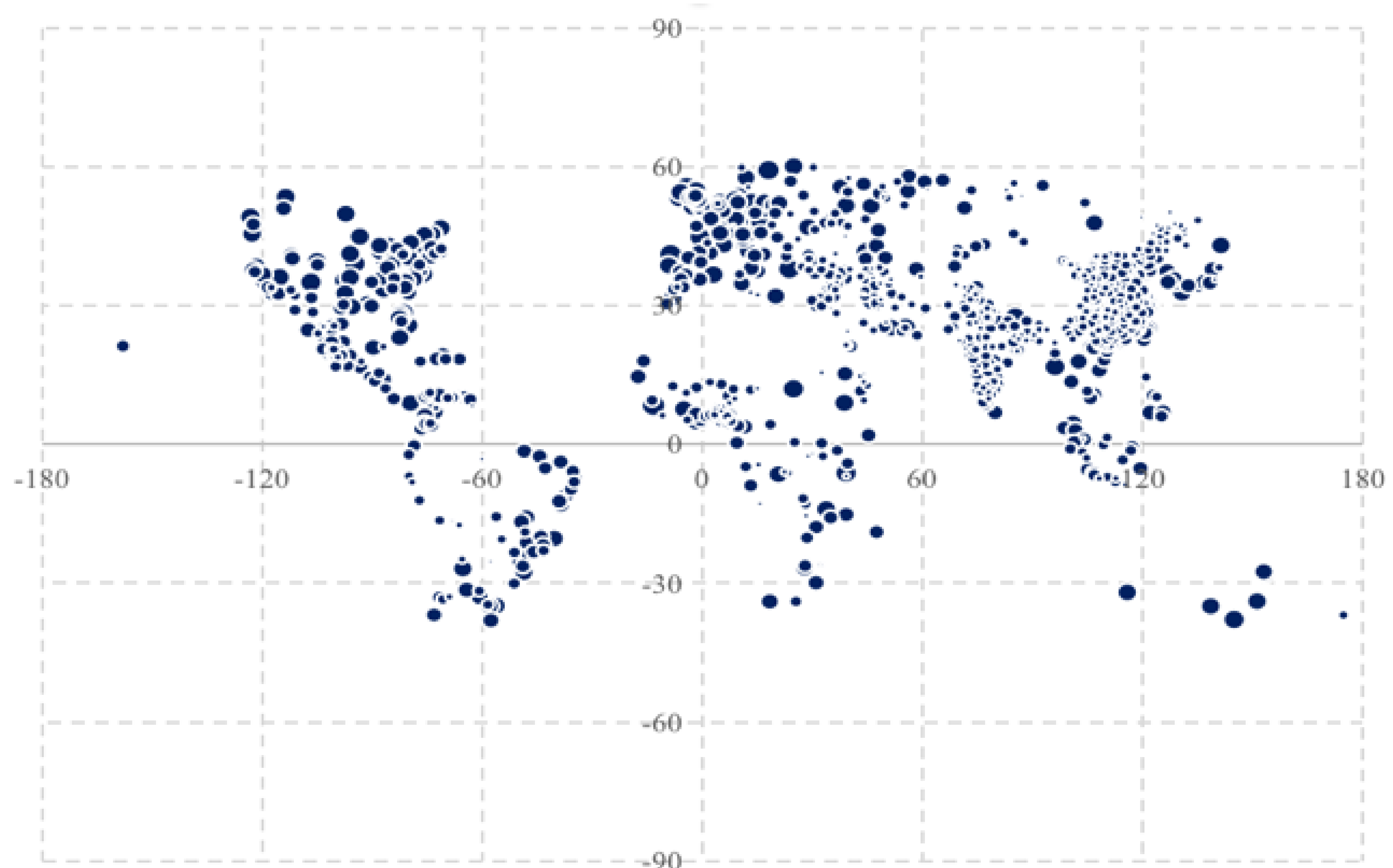


Table 13 Top 20 cities by environmental resilience indicators

Region	Country	City	Index	World Ranking
Europe	Germany	Stuttgart	1.000	1
Europe	Austria	Vienna	0.979	2
Asia	Singapore	Singapore	0.961	3
Europe	Germany	Frankfurt	0.954	4
Europe	Germany	Dusseldorf	0.936	5
North America	Puerto Rico	San Juan	0.930	6
Asia	China	Hong Kong	0.924	7
Europe	Switzerland	Geneva	0.923	8
Europe	Greece	Thessaloniki	0.907	9
Europe	Germany	Berlin	0.902	10

Region	Country	City	Index	World Ranking
Europe	Portugal	Lisbon	0.894	11
Europe	Germany	Hanover	0.891	12
Europe	Sweden	Gothenburg	0.890	13
North America	United States	Allen Town	0.886	14
Asia	Israel	Tel Aviv-Yafo	0.884	15
North America	United States	Cape Coral	0.879	16
Oceania	Australia	Melbourne	0.877	17
North America	United States	Bridgeport-Stamford	0.876	18
Europe	Switzerland	Zurich	0.875	19
Europe	Germany	Munich	0.875	20

Figure 31 Distribution of environmental resilience indicators in 1,006 cities around the world



19. Openness is a key factor that contributes to social inclusion of cities

Openness is a key factor that contributes to social inclusion of global cities.

Social inclusion is an important factor contributes to the sustainable competitiveness of cities. In the context of rising trends of de-globalization, an increase in social inclusion will serve as a new driving force for sustainable development of cities globally. However, among all social inclusion indicators, most cities perform poorly in openness. Seventeen cities out of the top 20 cities by social inclusion are in Asia. The most inclusive cities in the world are mainly small-scale cities rather than big cities worldwide. The coefficient of

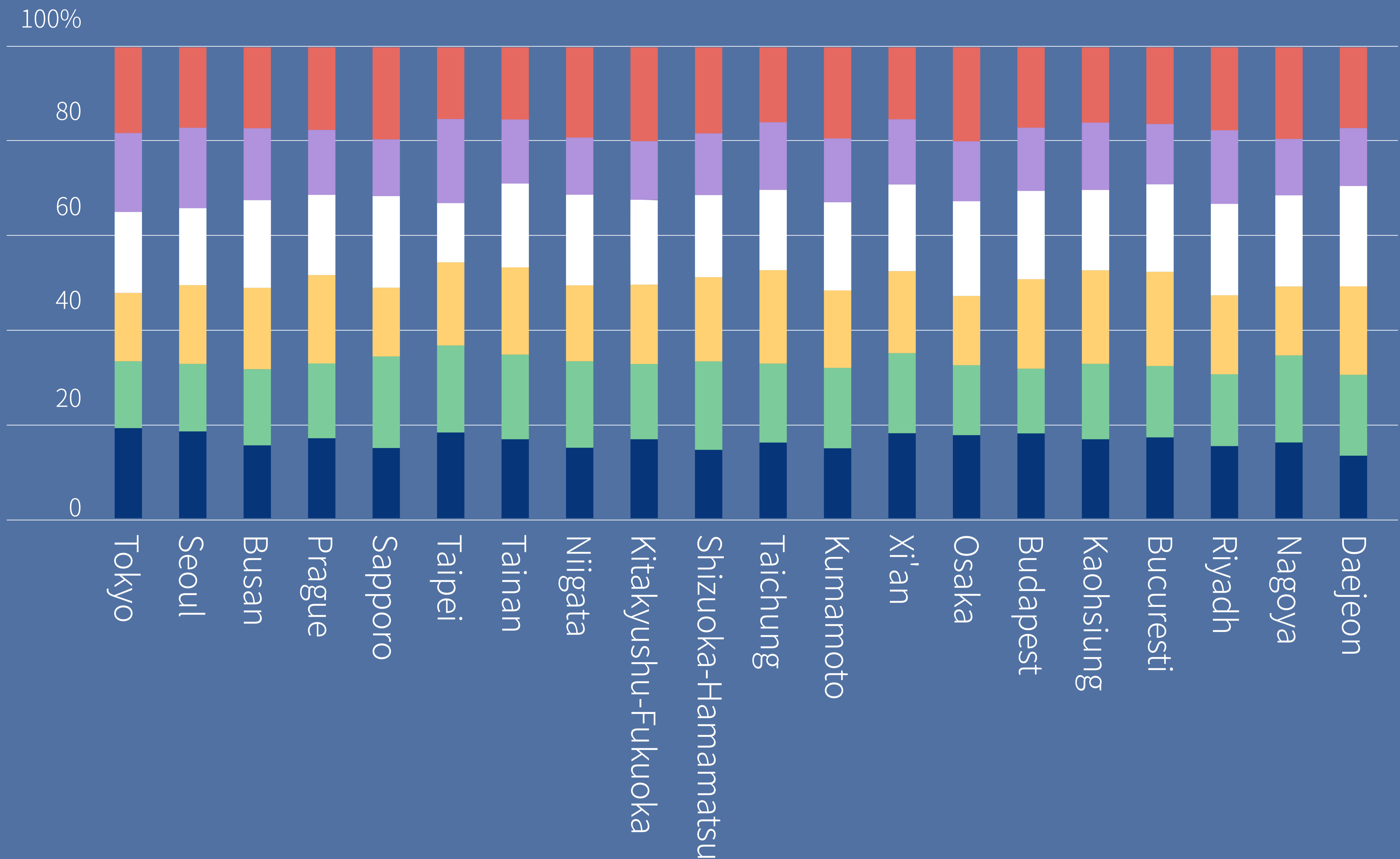


variation of openness (0.801) is the largest among the sub-indexes of social inclusion. The level of openness of cities globally vary hugely. De-globalization will strengthen the impact of openness on social inclusion.

With an average score of 0.669, **social inclusion of Chinese cities is at a slightly higher level than the global average** (0.622), but showing a falling trend. As its coefficient of variation (0.147) is lower than the global average (0.259), China shows certain advantages in social inclusion. However, Chinese cities gain an average score of 0.241 in openness, lower than the global average (0.308), and a coefficient of variation of 0.89, higher than the global value of 0.801. Since the low level of openness and significant

Figure 32 Internal indicators of the top 20 cities by social inclusion

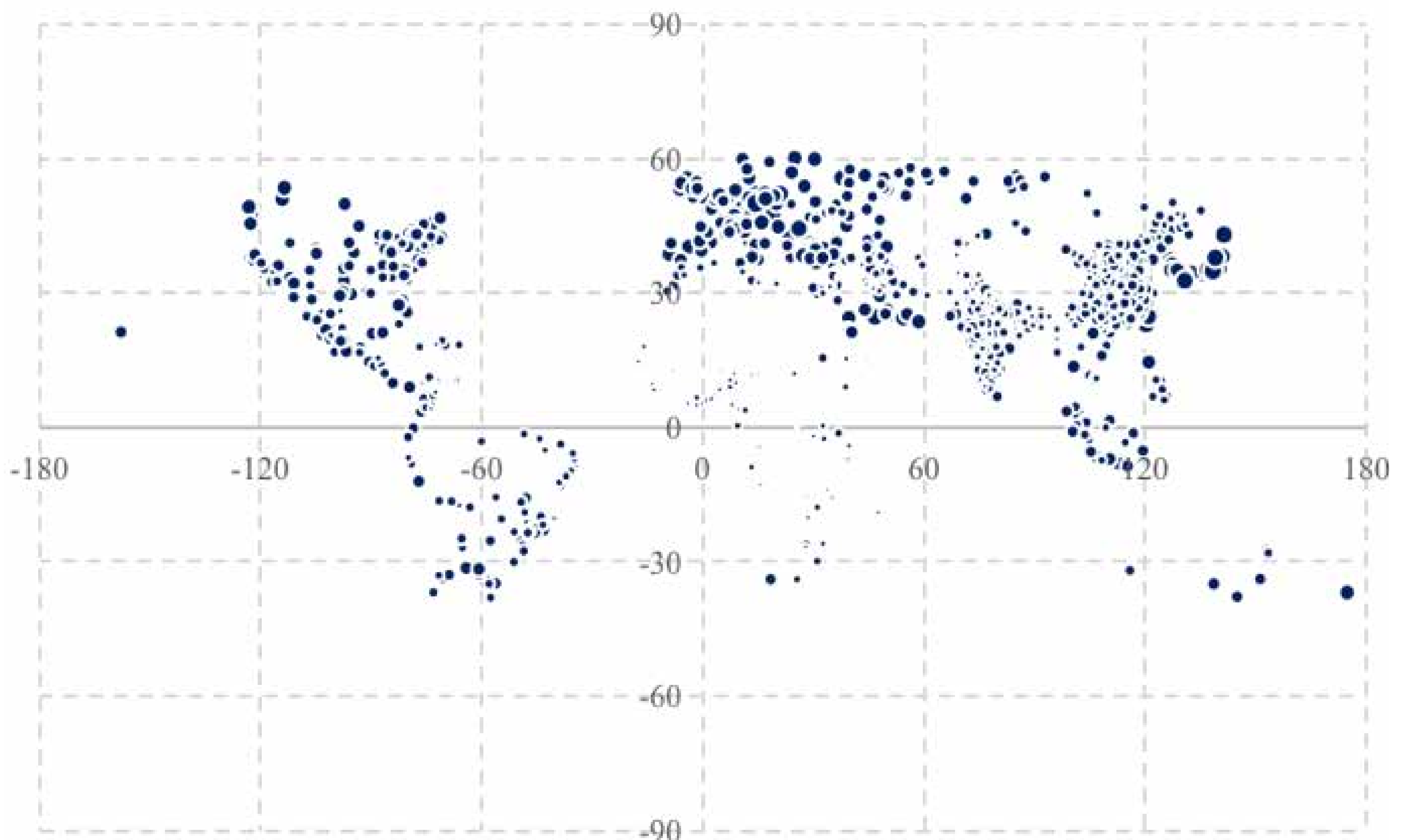
■ 3.1 Historical and cultural index
 ■ 3.2 Social security index
 ■ 3.3 Social equity index
■ 3.4 Living cost index
 ■ 3.5 Openness Index
 ■ 3.6 Healthcare facility index



divergence are important influencing factors, deepening Chinese cities' opening up to the outside world is the key to improving their social inclusion.

The Greater Bay Area has a higher level of social inclusion than the global average and cities in this area show small discrepancy. It gains an average score of 0.796, higher than the global average (0.622). Being second only to the Tokyo Bay (1.000), the Greater Bay Area keeps ahead of the New York Bay (0.663), San Francisco (0.785), Bohai Bay (0.773) and Hangzhou Bay (0.775), and all 11 cities in this area gain a score higher than the national average (0.669). Besides, the Greater Bay Area is at a high level of openness with an average score of 0.648, about 2.5 times higher than the national value. Besides, the area's coefficient of variation is 0.25, much lower than the national index of 0.89, indicating a small discrepancy in openness among cities in this area.

Figure 33 Distribution of social inclusion indicators in 1,006 cities in the world



20. Tech companies are the most important factor in global technological innovation

Tech companies are the most important factor in global technological innovation. Studies on technological innovation competitiveness show that Tokyo, Beijing, New York, London, Seoul, Boston, San Francisco, Shanghai, Chicago, and Seattle are the top 10 cities by technological innovation competitiveness. **All of them are not only global technological innovation centers, but also global core cities and financial centers.** Intercontinental distribution of technologically competitive cities is obviously uneven. Overall, emerging economies are lagging behind in technological innovation competitiveness. There are gaps between cities in the same continent. Asian cities and Africa cities show large divergence, while European cities show less divergence. The degree of divergence within each continent is roughly inversely related to the average level of technological innovation competitiveness. **In terms of factors, tech companies are the most important factor in global technological innovation.**

There is great room for China to promote its technological innovation. A total of 32 Chinese cities enter the top 200 in the world, including Beijing, Shanghai and Hong Kong who rank higher, embodying a strengthened comparative advantage of the county. However, China's average index (0.269) in technological innovation is lower than the global average (0.316), indicating that China has to make more efforts in this field. Despite a coefficient of variation (0.589) close to the global average (0.596), China witnesses a significant and increasing divergence among different regions, and the coefficient above-mentioned is higher than that of developed counties from the European Union and the United States. Sub-indices in tech enterprises, universities and cultural facilities are lower than the global average and gain a high coefficient of variation. Besides, Chinese cities have a significant difference in average score and coefficient of variation of all sub-indicators for the technological innovation.

Although the Greater Bay Area is the domestic leader in technological innovation, a gap between it and its international counterparts is identified.

The Greater Bay Area gains an average score of 0.482 in technological innovation, greatly higher than the global average (0.316), national average (0.269), Hangzhou Bay (0.404) and Bohai Bay (0.452). However, it lags far behind its international counterparts such as New York Bay, San Francisco Bay and Tokyo Bay whose average score is above 0.7. As for cities in the Greater Bay Area, core cities including Hong Kong (14), Shenzhen (30) and Guangzhou (40) that enter the world’s top 40 all gain a score of above 0.7; while others are outside the top 200 with an index lower than 0.5. Cities in this area have a decreasing divergence in tech enterprise index, university index and cultural facilities, with small difference in patent and paper indices.

Figure 34 Internal indicators of the top 20 cities by technological innovation

- 4.1 Patent application index
- 4.2 Academic paper index
- 4.3 Tech company index
- 4.4 University index
- 4.5 Cultural facility index

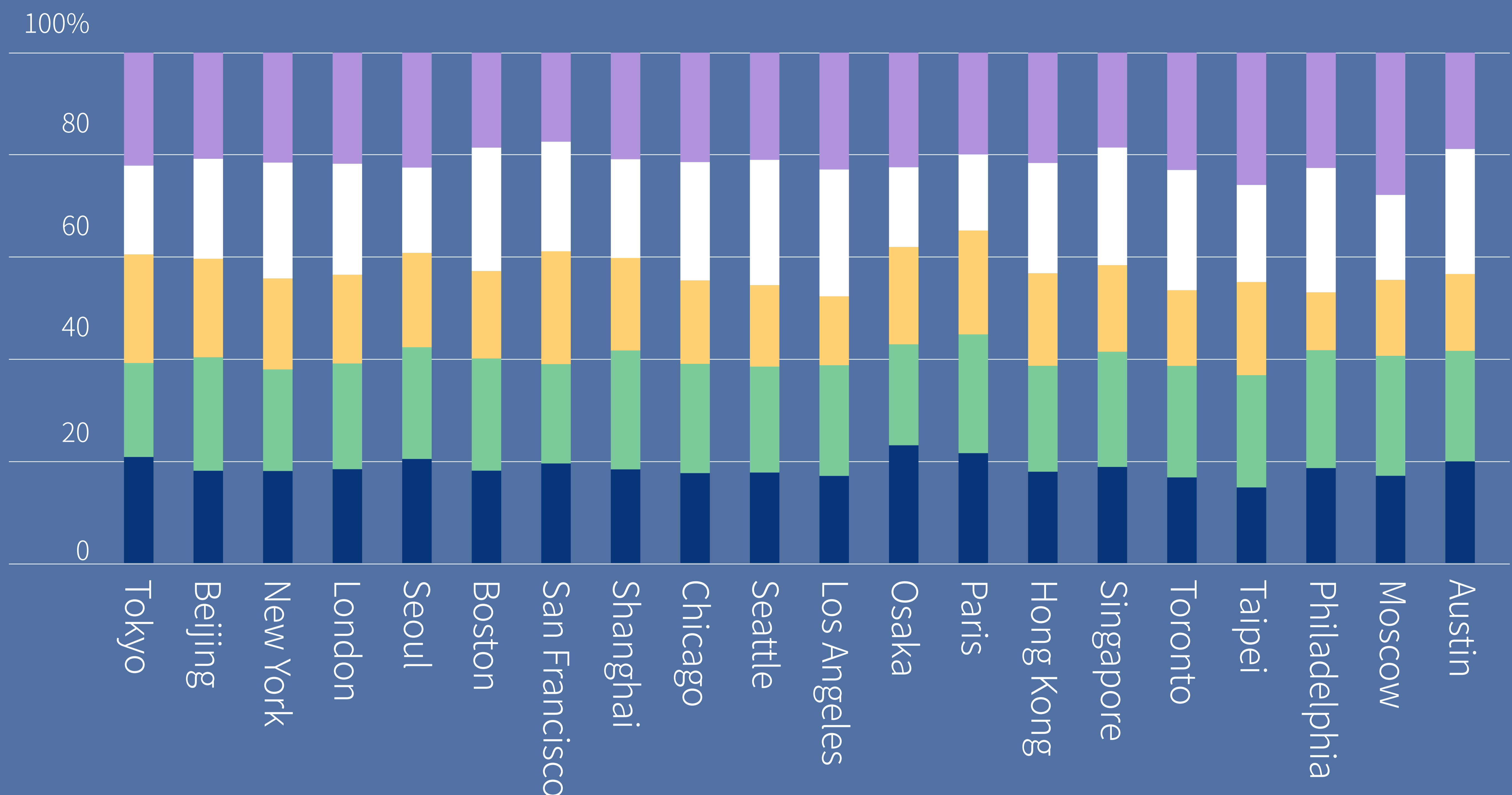
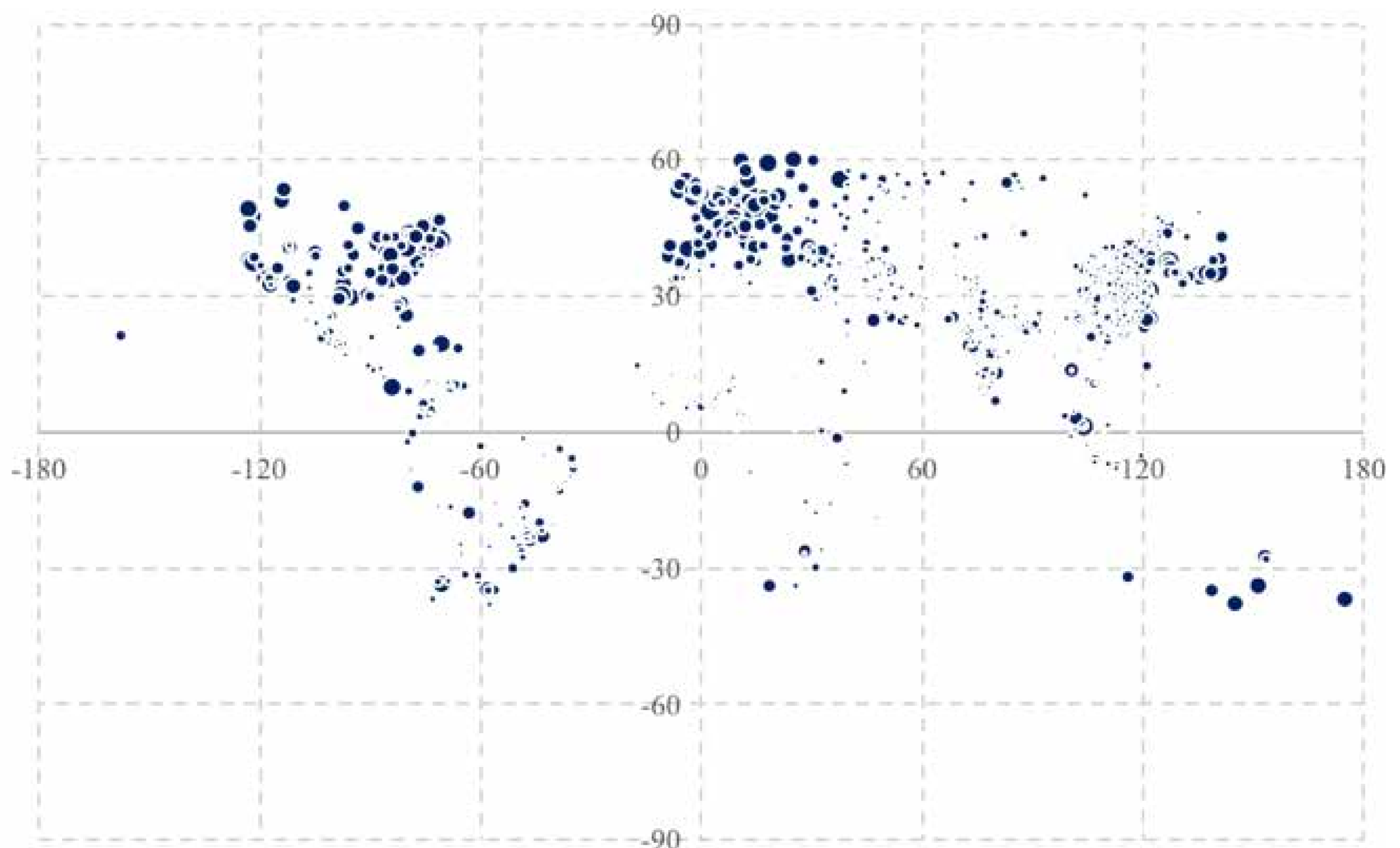


Table 14 Top 20 cities by technological innovation

Region	Country	City	Index	World Ranking
Asia	Japan	Tokyo	1.000	1
Asia	China	Beijing	0.959	2
North America	United States	New York	0.954	3
Europe	United Kingdom	London	0.930	4
Asia	South Korea	Seoul	0.874	5
North America	United States	Boston	0.872	6
North America	United States	San Francisco	0.865	7
Asia	China	Shanghai	0.858	8
North America	United States	Chicago	0.842	9
North America	United States	Seattle	0.829	10

Region	Country	City	Index	World Ranking
North America	United States	Los Angeles	0.828	11
Asia	Japan	Osaka	0.828	12
Europe	France	Paris	0.820	13
Asia	China	Hong Kong	0.816	14
Asia	Singapore	Singapore	0.804	15
North America	Canada	Toronto	0.799	16
Asia	Taiwan, China	Taipei	0.781	17
North America	United States	Philadelphia	0.777	18
Europe	Russia	Moscow	0.769	19
North America	United States	Austin	0.768	20

Figure 35 Distribution of scientific and technological innovation indicators in 1,006 cities in the world



Conclusion

This report is jointly prepared by the National Academy of Economic Strategy, CASS and UN-Habitat. Based on the indicator system and objective data, this report has evaluated the competitiveness of 1,006 cities around the world in detail. The report analyzes the global urban competitiveness development as a whole and discusses important theoretical and practical issues in global urban development. It is highly relevant for city governments around the world, domestic and foreign enterprises, research institutions, and the public in making decisions and doing research.

Appendix

I. Ranking for Economic Competitiveness and Sustainable Competitiveness (2020-2021)

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
New York-Newark	United States	1.000	1	0.935	3	I	II
Singapore	Singapore	0.947	2	0.959	2	I	II
Tokyo	Japan	0.942	3	1.000	1	I	II
London	United Kingdom	0.939	4	0.901	5	I	II
Munich	Germany	0.934	5	0.785	18	I	I
San Francisco-Oakland	United States	0.933	6	0.833	7	II	II
Los Angeles-Long Beach-Santa Ana	United States	0.928	7	0.769	23	II	II
Paris	France	0.916	8	0.884	6	I	II
Shenzhen	China	0.904	9	0.826	9	II	III
San Jose	United States	0.897	10	0.716	35	II	II
Hong Kong	China	0.897	11	0.903	4	I	II
Shanghai	China	0.894	12	0.722	33	II	III
Frankfurt am Main	Germany	0.893	13	0.794	16	II	II
Boston	United States	0.891	14	0.784	19	I	II

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Dublin	Ireland	0.873	15	0.567	129	I	II
Vienna	Austria	0.868	16	0.719	34	I	I
Dusseldorf	Germany	0.867	17	0.564	132	II	II
Stuttgart	Germany	0.865	18	0.793	17	I	I
Hamburg	Germany	0.863	19	0.702	43	I	I
Seattle	United States	0.861	20	0.726	31	I	II
Beijing	China	0.860	21	0.692	47	II	II
Geneva	Switzerland	0.858	22	0.649	72	I	I
Philadelphia	United States	0.857	23	0.780	20	I	II
Baltimore	United States	0.857	24	0.675	57	I	II
Seoul	Korea, Rep.	0.856	25	0.802	13	I	II
Tel Aviv-Yafo	Israel	0.849	26	0.742	28	II	II
Dallas-Fort Worth	United States	0.848	27	0.707	38	II	II
Berlin	Germany	0.848	28	0.753	25	I	II
Cologne	Germany	0.848	29	0.649	71	II	II
Miami	United States	0.847	30	0.769	22	II	II
Bridgeport-Stamford	United States	0.844	31	0.623	84	II	II
Chicago	United States	0.843	32	0.814	11	I	II
Cleveland	United States	0.843	33	0.705	42	II	II
Hannover	Germany	0.843	34	0.690	48	I	I
Stockholm	Sweden	0.842	35	0.801	14	I	I
Milan	Italy	0.841	36	0.698	44	I	II
Atlanta	United States	0.839	37	0.725	32	II	II
Zurich	Switzerland	0.834	38	0.684	50	I	I
Barcelona	Spain	0.834	39	0.833	8	I	II
Brussels	Belgium	0.833	40	0.669	62	II	II
Osaka	Japan	0.832	41	0.817	10	I	II
Guangzhou	China	0.831	42	0.660	69	II	II
Houston	United States	0.827	43	0.752	26	II	II
Copenhagen	Denmark	0.826	44	0.695	46	I	I
Richmond	United States	0.826	45	0.645	73	II	II

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Hartford	United States	0.824	46	0.616	90	II	III
Nashville-Davidson	United States	0.824	47	0.550	146	II	II
Orlando	United States	0.823	48	0.665	64	II	III
Amsterdam	Netherlands	0.823	49	0.683	52	I	I
Salt Lake City	United States	0.822	50	0.673	58	II	II
Dortmund	Germany	0.821	51	0.603	95	II	II
Raleigh	United States	0.820	52	0.682	53	II	II
Milwaukee	United States	0.819	53	0.600	98	II	II
Las Vegas	United States	0.818	54	0.575	122	II	II
Rome	Italy	0.816	55	0.726	30	I	II
Washington, D.C.	United States	0.814	56	0.672	59	II	II
Toronto	Canada	0.814	57	0.776	21	II	II
Denver-Aurora	United States	0.813	58	0.696	45	II	II
Madrid	Spain	0.811	59	0.797	15	II	II
San Diego(US)	United States	0.810	60	0.677	56	II	II
Antwerp	Belgium	0.809	61	0.627	81	II	II
Rotterdam	Netherlands	0.808	62	0.551	144	II	II
Louisville	United States	0.807	63	0.587	108	II	III
Detroit	United States	0.807	64	0.663	65	II	II
Ulsan	Korea, Rep.	0.803	65	0.641	75	II	III
Charlotte	United States	0.803	66	0.560	137	II	III
Hague	Netherlands	0.802	67	0.536	159	II	II
Sydney	Australia	0.802	68	0.711	37	I	II
Birmingham	United Kingdom	0.802	69	0.707	40	II	II
Moscow	Russian	0.801	70	0.802	12	II	II
Suzhou	China	0.800	71	0.638	78	II	II
Perth	Australia	0.799	72	0.670	61	II	II
Manchester	United Kingdom	0.799	73	0.716	36	II	II
Taipei	China	0.797	74	0.760	24	I	II
Oslo	Norway	0.796	75	0.538	157	I	I
Abu Dhabi	UAE	0.794	76	0.626	82	III	II

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Helsinki	Finland	0.793	77	0.659	70	I	I
Baton Rouge	United States	0.790	78	0.508	185	II	III
Hiroshima	Japan	0.785	79	0.707	39	II	II
Minneapolis-Saint Paul	United States	0.784	80	0.548	149	II	II
Vancouver	Canada	0.784	81	0.666	63	I	II
Hamilton	Canada	0.783	82	0.566	131	II	II
Nanjing	China	0.783	83	0.618	89	II	II
Virginia Beach	United States	0.782	84	0.575	121	II	II
Melbourne	Australia	0.782	85	0.748	27	I	II
Haifa	Israel	0.782	86	0.622	86	II	II
Wuhan	China	0.781	87	0.595	102	II	II
Columbus	United States	0.781	88	0.634	80	II	II
Nagoya	Japan	0.780	89	0.672	60	II	II
Allentown	United States	0.780	90	0.442	277	II	II
Wuxi	China	0.780	91	0.592	105	II	II
Calgary	Canada	0.779	92	0.573	124	II	I
Tampa-St. Petersburg	United States	0.779	93	0.576	120	II	II
Dresden	Germany	0.779	94	0.566	130	II	I
Austin	United States	0.778	95	0.661	67	II	II
Provo-Orem	United States	0.778	96	0.561	136	III	II
Phoenix-Mesa	United States	0.777	97	0.639	77	II	III
Gold Coast	Australia	0.776	98	0.518	176	II	II
Essen	Germany	0.775	99	0.588	107	II	II
Dubai	UAE	0.774	100	0.728	29	II	II
Montreal	Canada	0.774	101	0.705	41	II	II
Hangzhou	China	0.773	102	0.570	127	II	II
Lyon	France	0.773	103	0.589	106	II	II
Leipzig	Germany	0.772	104	0.556	143	II	II
Kansas City	United States	0.771	105	0.513	184	II	II
Colorado Springs	United States	0.768	106	0.556	142	II	II
Chengdu	China	0.767	107	0.548	148	II	II

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Charleston-North Charleston	United States	0.766	108	0.490	209	II	III
West Yorkshire	United Kingdom	0.766	109	0.661	68	II	II
Valencia	Spain	0.766	110	0.689	49	II	II
Incheon	Korea, Rep.	0.766	111	0.679	54	II	II
Worcester	United States	0.763	112	0.563	133	II	II
Ningbo	China	0.763	113	0.543	153	II	III
Providence	United States	0.763	114	0.523	170	II	II
Indianapolis	United States	0.761	115	0.507	188	II	III
Bristol	United Kingdom	0.761	116	0.487	211	II	II
Birmingham(US)	United States	0.760	117	0.447	269	II	III
Ottawa-Gatineau	Canada	0.758	118	0.514	181	II	II
Istanbul	Turkey	0.757	119	0.639	76	II	II
Foshan	China	0.757	120	0.575	123	III	III
Liverpool	United Kingdom	0.757	121	0.545	152	II	II
Cincinnati	United States	0.757	122	0.468	232	I	II
Dayton	United States	0.756	123	0.472	225	II	III
Macao	China	0.756	124	0.559	138	II	III
Sendai	Japan	0.755	125	0.534	161	II	II
Honolulu	United States	0.755	126	0.505	190	II	II
Pittsburgh	United States	0.754	127	0.507	186	I	II
Changsha	China	0.754	128	0.528	166	II	II
New Haven	United States	0.754	129	0.559	140	II	II
Oklahoma City	United States	0.753	130	0.500	201	II	II
Marseille-Aix-en-Provence	France	0.753	131	0.493	207	II	II
Belfast	United Kingdom	0.752	132	0.568	128	II	II
Göteborg	Sweden	0.752	133	0.469	228	I	II
Columbia	United States	0.752	134	0.489	210	I	II
Riverside-San Bernardino	United States	0.751	135	0.523	169	III	III
Knoxville	United States	0.750	136	0.458	251	II	II
Qingdao	China	0.750	137	0.610	94	II	II
Grand Rapids	United States	0.749	138	0.460	244	II	II

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Changzhou	China	0.749	139	0.532	163	II	II
Lisbon	Portugal	0.748	140	0.530	164	I	I
Sapporo	Japan	0.748	141	0.611	92	I	I
Buffalo	United States	0.748	142	0.551	145	II	II
Venice	Italy	0.747	143	0.521	174	II	II
Cape Coral	United States	0.746	144	0.494	205	II	II
Prague	Czech Republic	0.745	145	0.500	202	I	II
San Jose Costa Rica	Costa Rica	0.744	146	0.579	116	II	II
Dongguan	China	0.743	147	0.577	119	II	III
Akron	United States	0.743	148	0.459	249	II	II
Changwon	Korea, Rep.	0.742	149	0.452	263	II	II
Glasgow	United Kingdom	0.741	150	0.601	97	II	II
Jerusalem	Israel	0.741	151	0.634	79	II	II
Kuala Lumpur	Malaysia	0.741	152	0.662	66	II	II
Bucuresti	Romania	0.740	153	0.481	213	II	II
Zhengzhou	China	0.740	154	0.528	165	II	II
Adelaide	Australia	0.739	155	0.602	96	II	II
Hefei	China	0.738	156	0.542	154	II	II
Doha	Qatar	0.737	157	0.621	87	III	II
Xiamen	China	0.736	158	0.578	118	II	III
Ogden	United States	0.736	159	0.514	182	II	II
Brisbane	Australia	0.735	160	0.584	112	II	II
Zaragoza	Spain	0.734	161	0.559	139	II	II
Naples	Italy	0.734	162	0.594	103	II	II
Memphis	United States	0.732	163	0.478	215	II	III
Daejeon	Korea, Rep.	0.732	164	0.643	74	II	II
Kaohsiung	China	0.732	165	0.561	134	II	II
Samut Prakan	Thailand	0.732	166	0.496	203	III	III
Auckland	New Zealand	0.731	167	0.584	110	I	II
Liege	Belgium	0.731	168	0.561	135	II	II
Busan	Korea, Rep.	0.731	169	0.610	93	II	II

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Zhuhai	China	0.730	170	0.503	194	II	III
Gwangju	Korea, Rep.	0.730	171	0.615	91	II	II
Jedda	Saudi Arabia	0.729	172	0.578	117	IV	III
Nantong	China	0.729	173	0.480	214	II	II
Medina	Saudi Arabia	0.728	174	0.623	85	IV	II
Fuzhou(FJ)	China	0.728	175	0.468	230	II	III
San Antonio	United States	0.727	176	0.541	155	II	II
Nice	France	0.726	177	0.414	309	II	II
Sheffield	United Kingdom	0.726	178	0.454	260	II	II
Lille	France	0.726	179	0.522	172	II	II
Quanzhou	China	0.726	180	0.455	255	II	III
Edmonton	Canada	0.725	181	0.445	272	II	II
Jakarta	Indonesia	0.724	182	0.500	200	III	III
Rochester	United States	0.724	183	0.473	223	II	II
Budapest	Hungary	0.724	184	0.522	171	II	II
Omaha	United States	0.723	185	0.402	326	II	II
Toulouse	France	0.722	186	0.513	183	II	II
New Orleans	United States	0.722	187	0.516	179	II	II
Xi'an	China	0.722	188	0.501	197	II	II
Bangkok	Thailand	0.721	189	0.504	193	II	III
Kitakyushu-Fukuoka	Japan	0.721	190	0.683	51	I	II
Mecca	Saudi Arabia	0.721	191	0.549	147	IV	III
Montevideo	Uruguay	0.721	192	0.502	196	II	II
jinan	China	0.721	193	0.478	216	II	II
Bologna	Italy	0.721	194	0.506	189	II	II
Nantes	France	0.721	195	0.463	238	II	II
Chongqing	China	0.720	196	0.468	231	II	II
Verona	Italy	0.720	197	0.514	180	II	II
Santiago de Chile	Chile	0.720	198	0.593	104	II	III
Poznan	Poland	0.719	199	0.469	229	II	II
Warsaw	Poland	0.719	200	0.430	287	II	I

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Daegu	Korea, Rep.	0.719	201	0.596	101	II	II
Toulon	France	0.718	202	0.404	322	II	III
Taichung	China	0.718	203	0.584	111	II	III
Mexico City	Mexico	0.718	204	0.618	88	II	II
Riyadh	Saudi Arabia	0.718	205	0.598	100	III	II
Leicester	United Kingdom	0.718	206	0.527	167	II	II
Yangzhou	China	0.718	207	0.456	253	II	II
Florence	Italy	0.716	208	0.501	199	II	II
Torino	Italy	0.715	209	0.546	150	II	II
Yantai	China	0.715	210	0.454	257	II	II
Nottingham	United Kingdom	0.714	211	0.461	243	I	II
Taizhou(js)	China	0.713	212	0.435	282	III	II
Panama City	Panama	0.713	213	0.463	236	II	II
Shizuoka-Hamamatsu	Japan	0.712	214	0.518	175	I	II
Zhenjiang	China	0.712	215	0.477	220	III	III
Malaga	Spain	0.712	216	0.599	99	II	II
Bordeaux	France	0.711	217	0.429	288	II	II
Genoa	Italy	0.710	218	0.460	245	II	II
Sarasota-Bradenton	United States	0.710	219	0.386	355	II	II
Bremen	Germany	0.709	220	0.361	402	II	II
Zhongshan	China	0.709	221	0.535	160	II	II
Tulsa	United States	0.707	222	0.372	382	II	II
Quebec	Canada	0.706	223	0.458	250	II	II
Hsinchu	China	0.706	224	0.427	289	II	III
Sacramento	United States	0.705	225	0.414	308	II	II
Jiaxing	China	0.704	226	0.474	222	II	II
Winnipeg	Canada	0.704	227	0.445	274	II	II
Saint Petersburg	Russian	0.703	228	0.581	113	II	II
Astana	Kazakhstan	0.702	229	0.557	141	III	II
Albany	United States	0.701	230	0.293	555	II	II
Kumamoto	Japan	0.700	231	0.454	259	II	II

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Delhi	India	0.698	232	0.449	268	II	III
Muscat	Oman	0.698	233	0.462	240	III	II
Bogota	Colombia	0.698	234	0.572	125	II	III
Bakersfield	United States	0.697	235	0.409	316	III	II
Tyumen	Russian	0.696	236	0.416	305	III	II
Xuzhou	China	0.694	237	0.443	275	II	II
Nanchang	China	0.694	238	0.463	237	II	II
Lima	Peru	0.694	239	0.581	115	III	III
Tainan	China	0.693	240	0.521	173	II	II
Monterrey	Mexico	0.692	241	0.454	261	III	II
Shaoxing	China	0.690	242	0.459	248	III	III
Sharjah	UAE	0.690	243	0.532	162	IV	III
Jundiai	Brazil	0.689	244	0.371	384	III	III
Niigata	Japan	0.689	245	0.484	212	II	II
Porto	Portugal	0.688	246	0.494	206	II	II
Krakow	Poland	0.687	247	0.434	283	II	II
San Juan	Puerto Rico	0.686	248	0.504	192	II	II
Pretoria	South Africa	0.685	249	0.572	126	IV	III
Taizhou(zj)	China	0.685	250	0.414	310	III	III
Sofia	Bulgaria	0.684	251	0.516	178	II	II
Wuhu	China	0.683	252	0.372	381	III	III
Lodz	Poland	0.683	253	0.404	324	II	II
Ashgabat	Turkmenistan	0.682	254	0.324	477	IV	III
Kuwait City	Kuwait	0.681	255	0.491	208	IV	III
Newcastle upon Tyne	United Kingdom	0.680	256	0.458	252	II	II
Athens	Greece	0.679	257	0.586	109	II	II
Manila	Philippines	0.679	258	0.376	376	III	IV
Catania	Italy	0.678	259	0.477	219	II	II
Buraydah	Saudi Arabia	0.677	260	0.398	338	IV	II
Taiyuan	China	0.677	261	0.447	270	II	II
Guadalajara	Mexico	0.674	262	0.440	278	III	III

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
El Paso	United States	0.673	263	0.411	314	III	II
Tianjin	China	0.673	264	0.581	114	II	II
Karaj	Iran, Islamic Rep.	0.672	265	0.472	224	IV	IV
Dammam	Saudi Arabia	0.672	266	0.537	158	IV	III
Zhoushan	China	0.672	267	0.392	347	III	III
Portland	United States	0.672	268	0.443	276	II	II
Porto Alegre	Brazil	0.671	269	0.472	226	III	III
Dongying	China	0.670	270	0.413	312	III	II
Asuncion	Paraguay	0.670	271	0.425	292	III	III
Fresno	United States	0.669	272	0.378	368	II	II
Rosario	Argentina	0.669	273	0.468	233	III	III
Bari	Italy	0.669	274	0.454	258	II	II
Johannesburg	South Africa	0.669	275	0.505	191	III	III
Padova	Italy	0.669	276	0.419	302	II	II
Santo Domingo	Dominican	0.669	277	0.475	221	II	III
Yancheng	China	0.668	278	0.393	342	III	II
Minsk	Belarus	0.668	279	0.523	168	II	II
Surabaya	Indonesia	0.667	280	0.447	271	III	III
Gebze	Turkey	0.667	281	0.418	304	III	III
Guiyang	China	0.667	282	0.416	306	II	III
Huizhou	China	0.666	283	0.421	296	II	III
Ahvaz	Iran, Islamic Rep.	0.666	284	0.494	204	IV	III
Langfang	China	0.665	285	0.387	353	III	III
Johor Bahru	Malaysia	0.664	286	0.461	241	III	III
Weihai	China	0.664	287	0.432	285	III	II
Jining	China	0.663	288	0.380	363	III	III
Tangshan	China	0.663	289	0.425	293	III	III
Zibo	China	0.663	290	0.459	247	II	III
Weifang	China	0.662	291	0.410	315	III	III
Mumbai	India	0.662	292	0.387	352	II	III
Brasilia	Brazil	0.661	293	0.477	217	II	II

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Kunming	China	0.661	294	0.406	320	II	II
Huzhou	China	0.661	295	0.393	344	III	III
Zagreb	Croatia	0.660	296	0.400	331	II	II
Changchun	China	0.659	297	0.449	267	II	II
Putian	China	0.658	298	0.368	386	III	III
Thessaloniki	Greece	0.658	299	0.418	303	II	II
Albuquerque	United States	0.658	300	0.340	442	II	II
Wenzhou	China	0.658	301	0.431	286	II	II
Leon	Mexico	0.657	302	0.507	187	III	II
Dalian	China	0.656	303	0.503	195	II	II
Tijuana	Mexico	0.656	304	0.450	266	III	II
Samarinda	Indonesia	0.656	305	0.363	397	III	III
Seville	Spain	0.654	306	0.452	262	II	II
McAllen	United States	0.653	307	0.376	375	III	III
Havana	Cuba	0.653	308	0.456	254	III	III
Luoyang	China	0.653	309	0.389	350	II	II
Yichang	China	0.652	310	0.364	395	III	II
Huaian	China	0.652	311	0.377	370	III	II
Tucson	United States	0.652	312	0.390	349	II	II
Ezhou	China	0.651	313	0.306	518	III	III
Bangalore	India	0.651	314	0.400	330	II	II
Palermo	Italy	0.650	315	0.424	294	II	II
Campinas	Brazil	0.650	316	0.426	290	III	III
San Luis Potosi	Mexico	0.650	317	0.421	299	III	II
Guatemala City	Guatemala	0.650	318	0.393	343	III	III
Xiangyang	China	0.649	319	0.359	407	III	II
Baku	Azerbaijan	0.649	320	0.409	317	III	II
Urumqi	China	0.649	321	0.421	298	III	III
Nairobi	Kenya	0.649	322	0.356	410	III	III
Santa Fe	Argentina	0.649	323	0.387	354	III	II
Yueyang	China	0.649	324	0.353	415	III	III

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Bursa	Turkey	0.649	325	0.465	235	III	II
Ipoh	Malaysia	0.648	326	0.392	345	III	III
Zhangzhou	China	0.647	327	0.374	380	II	III
Rio de Janeiro	Brazil	0.647	328	0.546	151	II	III
Amman	Jordan	0.647	329	0.540	156	IV	III
Be'er Sheva	Israel	0.647	330	0.422	295	IV	III
Changde	China	0.647	331	0.342	434	III	II
Medellin	Colombia	0.646	332	0.445	273	II	III
Xuchang	China	0.646	333	0.376	377	III	II
Rizhao	China	0.645	334	0.362	400	III	II
Oran	Algeria	0.645	335	0.404	323	IV	III
Almaty	Kazakhstan	0.644	336	0.388	351	IV	II
Mendoza	Argentina	0.644	337	0.459	246	IV	III
Jinhua	China	0.643	338	0.399	332	III	III
Ma'anshan	China	0.642	339	0.336	456	III	III
Sao Jose dos Campos	Brazil	0.642	340	0.397	339	III	II
Beirut	Lebanon	0.641	341	0.436	281	III	III
Cali	Colombia	0.641	342	0.398	336	II	III
Villahermosa	Mexico	0.641	343	0.352	416	III	II
Lianyungang	China	0.640	344	0.368	387	III	III
Shantou	China	0.640	345	0.399	333	III	III
Jiangmen	China	0.640	346	0.365	390	III	III
Greater Vitória	Brazil	0.639	347	0.461	242	IV	III
Pekanbaru	Indonesia	0.639	348	0.357	409	III	III
Haikou	China	0.639	349	0.397	340	II	III
Dhaka	Bangladesh	0.639	350	0.336	455	III	IV
Belgrade	Serbia	0.638	351	0.395	341	II	II
Ufa	Russian	0.638	352	0.407	318	III	II
Riga	Latvia	0.638	353	0.335	458	II	I
Maracay	Venezuela, RB	0.638	354	0.438	280	IV	IV
Jiaozuo	China	0.638	355	0.392	346	III	III

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Zhuzhou	China	0.637	356	0.359	406	III	III
Xiangtan	China	0.637	357	0.381	362	III	III
Merida	Mexico	0.636	358	0.402	327	II	II
Ribeirao Preto	Brazil	0.636	359	0.399	335	III	III
Linyi	China	0.636	360	0.355	413	III	III
Huangshi	China	0.636	361	0.338	451	III	III
Nanning	China	0.636	362	0.365	392	II	II
Valparaiso	Chile	0.635	363	0.385	357	III	IV
Shenyang	China	0.635	364	0.455	256	II	II
Izmir	Turkey	0.635	365	0.462	239	II	II
Joinville	Brazil	0.635	366	0.329	466	III	III
Tehran	Iran, Islamic Rep.	0.635	367	0.517	177	III	IV
Shijiazhuang	China	0.634	368	0.415	307	II	II
Lanzhou	China	0.634	369	0.383	360	II	II
Quito	Ecuador	0.633	370	0.421	297	III	III
Balikpapan	Indonesia	0.633	371	0.340	444	III	III
Ankara	Turkey	0.633	372	0.469	227	II	II
Maracaibo	Venezuela, RB	0.633	373	0.439	279	IV	IV
Cancun	Mexico	0.632	374	0.400	329	III	II
Wroclaw	Poland	0.632	375	0.325	474	II	II
Yulin(sx)	China	0.632	376	0.315	491	IV	II
Torreon	Mexico	0.631	377	0.376	373	IV	II
Suqian	China	0.631	378	0.339	447	III	III
Barcelona-Puerto La Cruz	Venezuela, RB	0.630	379	0.501	198	IV	IV
Sanming	China	0.630	380	0.299	539	III	II
Santiago de Los Caballeros	Dominican	0.630	381	0.433	284	III	III
Zaozhuang	China	0.630	382	0.338	452	III	II
Chennai	India	0.629	383	0.356	412	II	III
Karamay	China	0.629	384	0.271	618	IV	III
Cairo	Egypt, Arab Rep.	0.629	385	0.328	469	III	III
Tongling	China	0.629	386	0.269	627	III	III

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Tripoli	Libya	0.629	387	0.398	337	III	III
Hengyang	China	0.628	388	0.335	459	III	III
Zunyi	China	0.628	389	0.303	532	III	II
Samara	Russian	0.628	390	0.381	361	III	II
Cape Town	South Africa	0.628	391	0.467	234	II	III
Dezhou	China	0.628	392	0.358	408	III	III
Yingtian	China	0.627	393	0.292	561	III	III
Longyan	China	0.627	394	0.310	508	III	III
Queretaro	Mexico	0.627	395	0.377	372	II	II
Hohhot	China	0.626	396	0.365	393	III	II
Deyang	China	0.626	397	0.351	418	III	II
Panjin	China	0.626	398	0.342	435	III	III
Valencia(Venezuela)	Venezuela, RB	0.626	399	0.405	321	IV	IV
Antalya	Turkey	0.625	400	0.363	399	II	II
Xianyang	China	0.625	401	0.353	414	III	II
Puyang	China	0.625	402	0.330	464	III	II
Yinchuan	China	0.625	403	0.364	396	III	III
Adana	Turkey	0.625	404	0.420	301	III	II
Maoming	China	0.624	405	0.343	433	III	II
Ningde	China	0.623	406	0.311	503	III	III
Baghdad	Iraq	0.622	407	0.450	265	IV	III
Durban	South Africa	0.622	408	0.413	311	IV	III
Recife	Brazil	0.622	409	0.380	365	III	III
Batam	Indonesia	0.622	410	0.390	348	IV	III
Liuzhou	China	0.621	411	0.339	446	III	III
Jingmen	China	0.621	412	0.305	520	III	III
Juarez	Mexico	0.621	413	0.426	291	III	II
Binzhou	China	0.621	414	0.344	431	III	III
Erbil	Iraq	0.620	415	0.451	264	IV	III
Luohe	China	0.620	416	0.326	473	III	III
Hufuf-Mubarraz	Saudi Arabia	0.620	417	0.307	517	IV	III

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Perm	Russian	0.619	418	0.369	385	III	II
Jieyang	China	0.619	419	0.325	475	III	III
Sorocaba	Brazil	0.619	420	0.348	424	IV	III
Beihai	China	0.619	421	0.321	483	III	III
Kuching	Malaysia	0.619	422	0.341	439	II	II
Matamoros	Mexico	0.618	423	0.377	371	IV	II
Liaocheng	China	0.618	424	0.361	403	III	II
Toluca	Mexico	0.618	425	0.356	411	III	II
Ta'if	Saudi Arabia	0.617	426	0.329	467	IV	III
Anyang	China	0.617	427	0.360	405	III	III
Xinyu	China	0.617	428	0.322	480	III	III
Sao Paulo	Brazil	0.617	429	0.626	83	III	III
Chenzhou	China	0.617	430	0.306	519	III	III
Zigong	China	0.616	431	0.312	498	III	III
Huaibei	China	0.616	432	0.309	510	III	II
Saltillo	Mexico	0.615	433	0.348	427	III	II
Liupanshui	China	0.614	434	0.293	554	IV	III
Quzhou	China	0.614	435	0.305	523	III	III
Hebi	China	0.614	436	0.311	504	III	III
Yingkou	China	0.614	437	0.263	643	III	III
Pingdingshan	China	0.613	438	0.323	479	III	II
Sanya	China	0.613	439	0.318	486	III	III
Kiev	Ukraine	0.612	440	0.378	369	II	II
Qinhuangdao	China	0.612	441	0.333	461	III	III
Baoji	China	0.612	442	0.314	496	III	II
Mar Del Plata	Argentina	0.612	443	0.348	425	III	III
Cordoba	Argentina	0.612	444	0.399	334	III	III
Kochi	India	0.611	445	0.338	450	II	II
Belo Horizonte	Brazil	0.611	446	0.403	325	III	III
Wuhai	China	0.611	447	0.182	859	IV	III
Cartagena	Colombia	0.611	448	0.376	374	III	III

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Yibin	China	0.610	449	0.293	556	III	III
Phnom Penh	Cambodia	0.610	450	0.277	599	IV	III
Bandung	Indonesia	0.610	451	0.349	422	II	III
Heze	China	0.609	452	0.320	485	III	III
Yaroslavl	Russian	0.609	453	0.324	476	III	II
Xining	China	0.609	454	0.321	484	III	II
Zhaoqing	China	0.609	455	0.318	487	III	II
Aguascalientes	Mexico	0.608	456	0.383	359	III	II
Concepcion	Chile	0.608	457	0.222	762	II	III
Coimbatore	India	0.608	458	0.322	481	II	II
Cangzhou	China	0.608	459	0.348	426	III	II
Mianyang	China	0.607	460	0.311	505	III	II
Yuxi	China	0.607	461	0.291	566	III	II
Curitiba	Brazil	0.607	462	0.374	379	III	III
Bengbu	China	0.607	463	0.326	472	III	III
Lagos	Nigeria	0.606	464	0.412	313	III	III
Colombo	Sri Lanka	0.606	465	0.252	680	II	III
Taian	China	0.605	466	0.386	356	III	II
Luanda	Angola	0.605	467	0.420	300	V	IV
Semarang	Indonesia	0.604	468	0.286	576	III	III
Guayaquil	Ecuador	0.604	469	0.351	417	III	III
Jiujiang	China	0.604	470	0.321	482	III	II
Xinxiang	China	0.604	471	0.350	419	III	III
Harbin	China	0.603	472	0.383	358	II	II
San Salvador	El Salvador	0.603	473	0.366	388	III	III
Tolyatti	Russian	0.603	474	0.304	524	III	II
Jingzhou	China	0.603	475	0.298	540	III	III
Kaifeng	China	0.603	476	0.345	429	III	III
Hengshui	China	0.602	477	0.289	570	III	III
Khartoum	Sudan	0.602	478	0.261	649	IV	III
Panzhuhua	China	0.602	479	0.300	537	III	II

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Ganzhou	China	0.601	480	0.290	568	III	II
Malappuram	India	0.600	481	0.249	689	IV	III
Yangjiang	China	0.600	482	0.297	542	III	III
Kollam	India	0.600	483	0.223	754	III	II
Yiyang	China	0.600	484	0.291	564	III	III
Luzhou	China	0.600	485	0.303	531	III	II
Chaozhou	China	0.600	486	0.312	501	III	III
Zhanjiang	China	0.600	487	0.341	440	III	II
Makassar	Indonesia	0.599	488	0.316	489	III	III
Huanggang	China	0.599	489	0.271	619	III	II
Shiyan	China	0.599	490	0.296	546	III	II
Baotou	China	0.599	491	0.324	478	IV	III
Tbilisi	Georgia	0.599	492	0.341	438	II	II
Samsun	Turkey	0.599	493	0.303	530	II	II
Jincheng	China	0.598	494	0.296	548	III	II
Leshan	China	0.598	495	0.286	577	III	III
Sanmenxia	China	0.598	496	0.297	543	III	II
Pingxiang	China	0.598	497	0.304	529	IV	III
Zhoukou	China	0.597	498	0.296	547	III	II
Nanyang	China	0.597	499	0.347	428	III	II
Saratov	Russian	0.597	500	0.350	421	III	II
Xianning	China	0.597	501	0.296	544	III	III
Algiers	Algeria	0.597	502	0.407	319	III	III
Londrina	Brazil	0.597	503	0.308	512	III	III
Jiayuguan	China	0.597	504	0.240	711	IV	III
Shangrao	China	0.596	505	0.282	585	III	II
Caracas	Venezuela, RB	0.596	506	0.477	218	IV	IV
Shizuishan	China	0.595	507	0.254	675	IV	III
Port Elizabeth	South Africa	0.595	508	0.341	441	IV	III
Daqing	China	0.594	509	0.342	437	III	III
Goiania	Brazil	0.594	510	0.339	448	III	III

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Arequipa	Peru	0.594	511	0.374	378	IV	III
Pune	India	0.594	512	0.309	509	II	II
Palembang	Indonesia	0.594	513	0.330	465	IV	III
Benin City	Nigeria	0.594	514	0.251	684	IV	III
Culiacan	Mexico	0.593	515	0.343	432	III	II
Meishan	China	0.593	516	0.274	607	III	II
San Miguel de Tucuman	Argentina	0.593	517	0.281	589	IV	III
Barnaul	Russian	0.593	518	0.317	488	III	II
Hermosillo	Mexico	0.593	519	0.332	462	III	II
Lishui	China	0.593	520	0.304	525	III	III
Zhumadian	China	0.593	521	0.287	575	III	II
Uberlandia	Brazil	0.593	522	0.315	492	IV	III
Trujillo	Peru	0.593	523	0.307	515	IV	III
Suzhou (AH)	China	0.592	524	0.273	609	III	III
Xinyang	China	0.592	525	0.294	551	III	III
Fortaleza	Brazil	0.592	526	0.366	389	III	III
Yangquan	China	0.592	527	0.271	617	III	III
Handan	China	0.592	528	0.344	430	III	III
Chihuahua	Mexico	0.591	529	0.305	522	III	II
Karachi	Pakistan	0.591	530	0.312	500	IV	III
Belem	Brazil	0.591	531	0.349	423	IV	III
Ordoss	China	0.591	532	0.327	471	IV	II
Reynosa	Mexico	0.591	533	0.334	460	IV	III
Baoding	China	0.591	534	0.311	506	III	III
Puebla	Mexico	0.590	535	0.378	366	II	II
Krasnodar	Russian	0.590	536	0.282	583	III	II
Grande Sao Luis	Brazil	0.590	537	0.314	494	IV	III
Xiaogan	China	0.589	538	0.304	526	III	III
Medan	Indonesia	0.589	539	0.304	528	III	III
Changzhi	China	0.589	540	0.292	560	III	II
Tunis	Tunisia	0.589	541	0.380	364	II	III

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Nanchong	China	0.588	542	0.291	563	III	II
Port Harcourt	Nigeria	0.588	543	0.312	499	IV	III
Abidjan	Côte d'Ivoire	0.588	544	0.305	521	IV	III
Anshan	China	0.587	545	0.329	468	III	II
Suining	China	0.587	546	0.289	571	III	II
Guangan	China	0.587	547	0.269	626	III	II
Hyderabad	India	0.587	548	0.264	639	II	III
Tomsk	Russian	0.587	549	0.313	497	III	II
Manaus	Brazil	0.587	550	0.363	398	IV	III
Kolkata	India	0.586	551	0.278	595	II	III
Shanwei	China	0.586	552	0.275	604	III	III
Shangqiu	China	0.586	553	0.298	541	III	III
Weinan	China	0.586	554	0.282	584	III	II
Nanping	China	0.586	555	0.279	594	III	II
Qinzhou	China	0.586	556	0.279	593	III	III
Xingtai	China	0.585	557	0.293	557	III	III
Chuzhou	China	0.585	558	0.291	562	III	III
Chittagong	Bangladesh	0.585	559	0.285	578	IV	III
Shaoguan	China	0.584	560	0.307	516	III	III
Kozhikode	India	0.583	561	0.279	592	III	II
Huainan	China	0.583	562	0.269	623	III	III
Jinzhou	China	0.582	563	0.340	443	III	II
Wuzhou	China	0.582	564	0.241	710	III	III
Accra	Ghana	0.582	565	0.314	493	III	III
Santa Cruz	Bolivia	0.582	566	0.402	328	IV	III
Fangchenggang	China	0.582	567	0.252	683	III	III
Gaza	State of Palestine	0.582	568	0.261	650	IV	III
Yulin(gx)	China	0.582	569	0.262	647	III	III
Tegucigalpa	Honduras	0.582	570	0.308	514	III	III
Loudi	China	0.582	571	0.293	553	III	III
Cochabamba	Bolivia	0.582	572	0.339	445	IV	III

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Shaoyang	China	0.582	573	0.255	669	IV	III
Ryazan	Russian	0.582	574	0.288	572	III	II
Neijiang	China	0.581	575	0.254	673	III	III
Anqing	China	0.581	576	0.308	511	III	II
Ahmedabad	India	0.581	577	0.258	656	II	II
Yan'an	China	0.581	578	0.287	574	III	II
Buenos Aires	Argentina	0.581	579	0.678	55	II	II
Hanoi	Vietnam	0.581	580	0.228	742	II	II
Jingdezhen	China	0.581	581	0.327	470	III	III
Veracruz	Mexico	0.581	582	0.255	671	III	II
Datong	China	0.580	583	0.272	614	III	III
Yichun(jx)	China	0.580	584	0.291	565	III	II
Kazan	Russian	0.580	585	0.372	383	III	II
Qingyuan	China	0.580	586	0.279	591	III	II
Shuozhou	China	0.580	587	0.274	606	III	II
Kemerovo	Russian	0.579	588	0.283	581	III	II
Ho Chi Minh City	Vietnam	0.579	589	0.227	745	II	III
San Pedro Sula	Honduras	0.579	590	0.272	615	IV	III
Lahore	Pakistan	0.579	591	0.282	586	III	III
Xuancheng	China	0.579	592	0.272	616	III	II
Yongzhou	China	0.579	593	0.256	666	III	III
Padang	Indonesia	0.578	594	0.310	507	III	II
Hanzhong	China	0.578	595	0.299	538	III	II
Sulaymaniyah	Iraq	0.578	596	0.342	436	IV	III
Shiraz	Iran, Islamic Rep.	0.578	597	0.365	391	IV	IV
Cuernavaca	Mexico	0.577	598	0.266	634	III	III
Dehra Dun	India	0.577	599	0.273	610	III	II
Fushun	China	0.577	600	0.275	605	III	III
Guilin	China	0.577	601	0.338	449	III	III
Owerri	Nigeria	0.577	602	0.221	764	IV	III
Jilin	China	0.577	603	0.332	463	III	II

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Ji'an	China	0.577	604	0.267	630	III	II
Liaoyang	China	0.576	605	0.281	587	III	II
Salvador	Brazil	0.575	606	0.350	420	III	III
Irkutsk	Russian	0.575	607	0.290	567	III	II
Huangshan	China	0.575	608	0.276	601	III	II
Can Tho	Vietnam	0.575	609	0.242	703	III	II
Ziyang	China	0.574	610	0.295	550	III	III
Joao Pessoa	Brazil	0.574	611	0.294	552	IV	III
Yuncheng	China	0.574	612	0.265	637	III	III
Gaziantep	Turkey	0.573	613	0.364	394	III	III
Orenburg	Russian	0.573	614	0.269	625	III	II
Chizhou	China	0.573	615	0.244	699	III	III
Chisinau	Moldova	0.572	616	0.214	782	II	II
Fuyang	China	0.572	617	0.264	638	III	III
Suizhou	China	0.572	618	0.254	674	III	III
Vereeniging	South Africa	0.572	619	0.260	653	IV	IV
Alexandria	Egypt, Arab Rep.	0.572	620	0.303	533	III	III
Xalapa	Mexico	0.572	621	0.206	800	III	II
Kampala	Uganda	0.571	622	0.257	660	IV	III
Celaya	Mexico	0.571	623	0.263	645	III	III
Malang	Indonesia	0.571	624	0.336	454	III	III
Teresina	Brazil	0.571	625	0.296	545	IV	III
Uyo	Nigeria	0.570	626	0.216	773	IV	III
Jinzhong	China	0.570	627	0.277	600	III	II
Anshun	China	0.569	628	0.250	686	IV	III
Tabriz	Iran, Islamic Rep.	0.569	629	0.336	457	IV	III
Aba	Nigeria	0.569	630	0.235	727	IV	III
Casablanca	Morocco	0.569	631	0.308	513	II	III
Barranquilla	Colombia	0.569	632	0.314	495	III	III
Mexicali	Mexico	0.569	633	0.288	573	IV	III
Mersin	Turkey	0.568	634	0.260	651	III	III

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Villavicencio	Colombia	0.568	635	0.217	772	III	III
Benxi	China	0.568	636	0.281	588	III	III
Bucaramanga	Colombia	0.568	637	0.224	753	III	III
Pachuca de Soto	Mexico	0.567	638	0.303	534	III	II
Juiz De Fora	Brazil	0.567	639	0.292	559	III	III
Warri	Nigeria	0.566	640	0.201	815	IV	III
La Plata	Argentina	0.566	641	0.295	549	III	III
Baise	China	0.566	642	0.222	759	III	III
Bozhou	China	0.566	643	0.255	672	III	II
Liaoyuan	China	0.566	644	0.245	697	IV	III
Meizhou	China	0.566	645	0.242	704	III	III
Florianopolis	Brazil	0.566	646	0.211	791	III	III
Pereira	Colombia	0.565	647	0.315	490	III	III
Cebu	Philippines	0.565	648	0.274	608	III	III
Kannur	India	0.565	649	0.273	611	IV	III
Dazhou	China	0.564	650	0.262	648	III	II
Guigang	China	0.564	651	0.252	681	IV	III
Zhangjiakou	China	0.563	652	0.248	691	III	II
Astrakhan'	Russian	0.563	653	0.292	558	IV	II
Huaihua	China	0.563	654	0.246	695	III	III
Denizli	Turkey	0.563	655	0.218	770	III	II
Fuzhou(JX)	China	0.562	656	0.257	661	III	II
Thiruvananthapuram	India	0.562	657	0.222	758	II	II
Abuja	Nigeria	0.562	658	0.362	401	IV	III
Campo Grande	Brazil	0.562	659	0.284	579	IV	III
Bhiwandi	India	0.561	660	0.268	628	IV	III
Novosibirsk	Russian	0.561	661	0.312	502	III	III
Chongzuo	China	0.561	662	0.212	786	III	III
Chengde	China	0.560	663	0.278	596	III	II
Davao	Philippines	0.560	664	0.242	701	IV	III
Denpasar	Indonesia	0.560	665	0.229	739	IV	III

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Feira De Santana	Brazil	0.560	666	0.278	597	IV	III
Cuiaba	Brazil	0.560	667	0.269	624	IV	III
Morelia	Mexico	0.559	668	0.276	602	II	II
Haiphong	Vietnam	0.559	669	0.248	693	III	III
Benghazi	Libya	0.559	670	0.272	613	IV	III
Khabarovsk	Russian	0.559	671	0.221	766	IV	II
Qijing	China	0.558	672	0.267	629	III	III
Da Nang	Vietnam	0.558	673	0.239	716	III	III
Yunfu	China	0.558	674	0.253	679	III	II
Puducherry	India	0.557	675	0.248	694	III	II
Songyuan	China	0.557	676	0.265	636	IV	III
Jiamusi	China	0.557	677	0.273	612	IV	II
Port-au-Prince	Haiti	0.557	678	0.267	633	IV	IV
Ikorodu	Nigeria	0.557	679	0.378	367	IV	III
Ankang	China	0.557	680	0.242	706	III	II
Ulan Bator	Mongolia	0.556	681	0.269	622	IV	II
Rostov-on-Don	Russian	0.556	682	0.265	635	III	II
Shymkent	Kazakhstan	0.556	683	0.302	535	IV	III
Liuan	China	0.556	684	0.253	678	III	III
Kano	Nigeria	0.556	685	0.284	580	IV	III
Luliang	China	0.556	686	0.257	659	III	II
Guangyuan	China	0.556	687	0.211	790	IV	III
Thrissur	India	0.555	688	0.214	781	III	II
Port Said	Egypt, Arab Rep.	0.555	689	0.239	717	IV	III
Krasnoyarsk	Russian	0.555	690	0.238	720	IV	III
Linfen	China	0.554	691	0.262	646	III	II
Rajshahi	Bangladesh	0.554	692	0.277	598	IV	III
Ibadan	Nigeria	0.554	693	0.227	748	IV	III
Baishan	China	0.553	694	0.234	732	IV	II
Novokuznetsk	Russian	0.553	695	0.248	692	III	II
Mombasa	Kenya	0.552	696	0.225	749	IV	III

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Cagayan de Oro	Philippines	0.552	697	0.219	768	IV	III
Zaria	Nigeria	0.552	698	0.249	688	IV	III
Ibague	Colombia	0.552	699	0.250	685	III	III
Ludhiana	India	0.552	700	0.235	726	III	II
Mashhad	Iran, Islamic Rep.	0.551	701	0.337	453	IV	III
Qiqihar	China	0.551	702	0.228	743	IV	III
Nagpur	India	0.550	703	0.221	765	III	II
Acapulco	Mexico	0.550	704	0.249	690	III	III
Surat	India	0.549	705	0.223	755	III	II
Omsk	Russian	0.549	706	0.255	667	IV	II
Tongchuan	China	0.549	707	0.186	849	III	III
Libreville	Gabon	0.549	708	0.236	725	IV	III
Heyuan	China	0.549	709	0.252	682	III	III
Nizhny Novgorod	Russian	0.548	710	0.236	724	III	II
Mudanjiang	Kyrgyz Republic	0.548	711	0.243	700	IV	III
Chelyabinsk	Russian	0.548	712	0.267	632	IV	III
Kota	India	0.548	713	0.237	722	III	II
Marrakech	Morocco	0.548	714	0.258	655	IV	III
Maturín	Venezuela, RB	0.548	715	0.256	663	IV	IV
Tampico	Mexico	0.548	716	0.264	640	III	III
Tiruppur	India	0.547	717	0.187	846	IV	II
Jinchang	China	0.547	718	0.199	821	IV	III
Mangalore	India	0.547	719	0.233	735	III	II
Managua	Nicaragua	0.547	720	0.255	668	IV	III
Izhevsk	Russian	0.547	721	0.227	744	III	II
General Santos City	Philippines	0.546	722	0.208	797	IV	III
Harare	Zimbabwe	0.546	723	0.229	740	IV	III
Zhangjiajie	China	0.546	724	0.222	761	III	III
Ya'an	China	0.546	725	0.222	760	III	III
Visakhapatnam	India	0.545	726	0.209	795	III	III
Rabat	Morocco	0.545	727	0.203	807	III	III

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Madurai	India	0.545	728	0.195	832	III	II
Volgograd	Russian	0.545	729	0.201	816	III	II
Tangier	Morocco	0.545	730	0.239	715	III	III
Kingston	Jamaica	0.545	731	0.275	603	II	III
La Paz	Bolivia	0.544	732	0.283	582	IV	III
Tonghua	China	0.544	733	0.255	670	IV	II
Asmara	Eritrea	0.544	734	0.197	828	IV	IV
Laibin	China	0.544	735	0.216	776	III	III
Douala	Cameroon	0.544	736	0.269	621	IV	III
Huludao	China	0.543	737	0.240	712	IV	III
Krivoi Rog	Ukraine	0.542	738	0.241	708	III	II
Asansol	India	0.542	739	0.206	802	IV	III
Suihua	China	0.542	740	0.233	734	IV	II
Durg-Bhilai Nagar	India	0.542	741	0.256	664	IV	II
Cucuta	Colombia	0.542	742	0.238	719	IV	III
Hezhou	China	0.541	743	0.216	774	III	III
Konya	Turkey	0.541	744	0.180	864	III	II
Poza Rica	Mexico	0.541	745	0.228	741	IV	III
Misratah	Libya	0.541	746	0.280	590	V	III
Zhaotong	China	0.541	747	0.198	825	IV	III
Tianshui	China	0.540	748	0.207	798	III	III
Shangluo	China	0.540	749	0.225	750	III	III
Voronezh	Russian	0.539	750	0.254	676	III	II
Kayseri	Turkey	0.539	751	0.263	641	III	II
Maceio	Brazil	0.539	752	0.242	705	IV	III
Kumasi	Ghana	0.539	753	0.253	677	IV	III
Akure	Nigeria	0.539	754	0.240	714	IV	III
Diyarbakir	Turkey	0.538	755	0.222	757	III	III
Meknes	Morocco	0.538	756	0.242	702	III	III
Vientiane	Lao PDR	0.538	757	0.163	902	IV	III
Yekaterinburg	Russian	0.538	758	0.240	713	III	II

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Bandar Lampung	Indonesia	0.538	759	0.200	817	IV	III
WuZhong	China	0.538	760	0.197	827	IV	III
Xinzhou	China	0.538	761	0.234	731	III	III
Hechi	China	0.537	762	0.190	840	III	II
Hamadan	Iran, Islamic Rep.	0.537	763	0.267	631	IV	III
Dandong	China	0.537	764	0.234	730	III	II
Barquisimeto	Venezuela, RB	0.537	765	0.263	644	V	IV
Chaoyang	China	0.536	766	0.205	804	IV	III
Kitwe	Zambia	0.536	767	0.208	796	V	IV
Chiclayo	Peru	0.536	768	0.242	707	IV	III
Aracaju	Brazil	0.536	769	0.221	763	IV	III
Kirkuk	Iraq	0.535	770	0.361	404	IV	III
Oaxaca	Mexico	0.535	771	0.220	767	II	II
Baoshan	China	0.535	772	0.229	738	III	III
Guwahati	India	0.535	773	0.260	652	III	III
Kathmandu	Nepal	0.535	774	0.224	751	III	III
Karbala	Iraq	0.535	775	0.249	687	V	III
Chifeng	China	0.534	776	0.218	771	IV	III
Vladivostok	Russian	0.534	777	0.181	862	II	II
Dar es Salaam	Tanzania	0.534	778	0.213	784	IV	III
Mosul	Iraq	0.534	779	0.159	909	V	IV
Tieling	China	0.533	780	0.215	777	IV	III
Eskisehir	Turkey	0.533	781	0.257	662	III	II
Tasikmalaya	Indonesia	0.533	782	0.258	657	IV	III
Bogor	Indonesia	0.533	783	0.302	536	III	III
Basra	Iraq	0.532	784	0.271	620	V	IV
Rajkot	India	0.532	785	0.169	886	III	II
Tlaxcala	Mexico	0.531	786	0.235	729	III	II
Qitaihe	China	0.531	787	0.187	844	IV	III
Zhongwei	China	0.531	788	0.179	867	IV	III
Jalandhar	India	0.531	789	0.206	801	III	III

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Pu'er	China	0.530	790	0.180	865	IV	III
Tuxtla Gutierrez	Mexico	0.530	791	0.219	769	III	II
Enugu	Nigeria	0.530	792	0.245	696	IV	III
Pointe-Noire	Congo, Dem. Rep.	0.530	793	0.244	698	V	IV
Lincang	China	0.530	794	0.194	834	IV	III
Patna	India	0.530	795	0.216	775	III	II
Jodhpur	India	0.529	796	0.227	747	IV	II
Tongliao	China	0.529	797	0.237	723	IV	III
Lijiang	China	0.529	798	0.170	885	III	II
Erode	India	0.529	799	0.191	839	III	III
Jos	Nigeria	0.529	800	0.233	733	IV	III
Amritsar	India	0.529	801	0.212	787	III	III
Oshogbo	Nigeria	0.529	802	0.199	820	IV	III
Jaipur	India	0.528	803	0.197	830	III	II
Vellore	India	0.528	804	0.186	847	III	II
Dakar	Senegal	0.527	805	0.215	779	IV	IV
Natal	Brazil	0.527	806	0.239	718	III	III
Salem	India	0.526	807	0.215	780	II	II
Cherthala	India	0.526	808	0.163	900	IV	II
Sylhet	Bangladesh	0.526	809	0.198	823	IV	III
Faisalabad	Pakistan	0.526	810	0.212	788	IV	III
Vijayawada	India	0.526	811	0.160	907	III	III
Siping	China	0.526	812	0.304	527	III	II
Tiruchirappalli	India	0.526	813	0.183	856	III	II
Fes	Morocco	0.526	814	0.198	826	IV	III
Qingyang	China	0.525	815	0.204	805	IV	III
Bazhong	China	0.525	816	0.202	811	IV	II
Mysore	India	0.524	817	0.194	833	III	II
Huambo	Angola	0.524	818	0.241	709	V	IV
Bayannur	China	0.524	819	0.189	841	IV	III
Sekondi	Ghana	0.524	820	0.212	785	IV	III

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Hyderabad Pakistan	Pakistan	0.523	821	0.209	794	V	IV
Fuxin	China	0.523	822	0.224	752	IV	III
Kabul	Afghanistan	0.523	823	0.171	881	V	IV
Jamshedpur	India	0.522	824	0.207	799	IV	II
Tirupati	India	0.522	825	0.186	848	III	II
Pingliang	China	0.522	826	0.181	860	IV	III
Sanliurfa	Turkey	0.522	827	0.289	569	IV	II
Brazzaville	Congo, Dem. Rep.	0.522	828	0.238	721	V	IV
Bacolod	Philippines	0.521	829	0.193	838	IV	III
Nashik	India	0.521	830	0.170	884	III	II
Jambi	Indonesia	0.521	831	0.185	851	IV	III
Bahawalpur	Pakistan	0.521	832	0.258	658	V	III
Ulyanovsk	Russian	0.521	833	0.167	891	IV	III
Orumiyeh	Iran, Islamic Rep.	0.521	834	0.256	665	IV	III
Jamnagar	India	0.520	835	0.159	908	III	II
Baicheng	China	0.520	836	0.200	818	IV	III
Ulanqab	China	0.520	837	0.183	858	IV	III
Meerut	India	0.520	838	0.175	874	III	III
Lucknow	India	0.519	839	0.203	808	III	III
Nasiriyah	Iraq	0.518	840	0.232	736	V	III
Baiyin	China	0.518	841	0.188	842	IV	III
Kolhapur	India	0.518	842	0.201	813	III	II
Najaf	Iraq	0.517	843	0.187	843	V	IV
Khulna	Bangladesh	0.517	844	0.204	806	IV	III
Zamboanga	Philippines	0.517	845	0.164	899	IV	III
Siliguri	India	0.517	846	0.171	879	IV	III
Rasht	Iran, Islamic Rep.	0.517	847	0.232	737	III	III
Bhubaneswar	India	0.516	848	0.215	778	III	II
Lusaka	Zambia	0.516	849	0.210	792	IV	IV
Guyuan	China	0.515	850	0.166	895	IV	III
Hubli-Dharwad	India	0.515	851	0.166	896	III	II

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Rawalpindi	Pakistan	0.515	852	0.203	810	IV	III
Makhachkala	Russian	0.514	853	0.185	850	IV	III
Shuangyashan	China	0.514	854	0.193	836	IV	II
Tabuk	Saudi Arabia	0.514	855	0.235	728	IV	III
Esfahan	Iran, Islamic Rep.	0.514	856	0.259	654	IV	III
Hulunbuir	China	0.514	857	0.201	814	IV	III
Kurnool	India	0.514	858	0.176	871	IV	III
Raurkela	India	0.514	859	0.158	910	IV	III
Donetsk	Ukraine	0.513	860	0.127	960	III	III
Agadir	Morocco	0.513	861	0.096	986	IV	III
Srinagar	India	0.512	862	0.166	894	IV	III
Warangal	India	0.512	863	0.120	967	III	II
Kayamkulam	India	0.512	864	0.123	965	III	II
Ciudad Guayana	Venezuela, RB	0.511	865	0.206	803	V	IV
Rangoon	Myanmar	0.511	866	0.154	920	III	III
Kinshasa	Congo, Dem. Rep.	0.511	867	0.193	835	V	IV
Nouakchott	Mauritania	0.511	868	0.201	812	V	III
Wuwei	China	0.511	869	0.170	882	IV	III
Nyala	Sudan	0.511	870	0.144	932	IV	III
Santa Marta	Colombia	0.511	871	0.211	789	III	III
Chandigarh	India	0.511	872	0.141	935	III	III
Islamabad	Pakistan	0.510	873	0.263	642	III	III
Aurangabad	India	0.510	874	0.213	783	IV	II
Yerevan	Armenia	0.510	875	0.187	845	III	II
Jixi	China	0.509	876	0.193	837	IV	III
Ranchi	India	0.509	877	0.195	831	III	II
Indore	India	0.509	878	0.179	866	III	II
Safaqis	Tunisia	0.509	879	0.227	746	IV	III
Gwalior	India	0.508	880	0.183	857	IV	III
Vadodara	India	0.508	881	0.171	880	III	II
Gujranwala	Pakistan	0.507	882	0.163	903	IV	IV

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Bien Hoa	Vietnam	0.507	883	0.147	929	III	III
Zhangye	China	0.507	884	0.167	889	IV	III
Onitsha	Nigeria	0.507	885	0.181	861	V	III
Lome	Togo	0.507	886	0.209	793	V	III
Qom	Iran, Islamic Rep.	0.505	887	0.222	756	IV	IV
Bokaro Steel City	India	0.505	888	0.184	855	IV	III
Heihe	China	0.504	889	0.173	875	IV	II
Sangali	India	0.504	890	0.150	925	III	II
Kaduna	Nigeria	0.504	891	0.165	898	IV	III
Bhopal	India	0.504	892	0.175	873	III	II
Hegang	China	0.503	893	0.163	904	IV	III
Peshawar	Pakistan	0.503	894	0.184	853	IV	IV
Ilorin	Nigeria	0.503	895	0.184	854	IV	III
Kigali	Rwanda	0.503	896	0.153	921	IV	III
Pontianak	Indonesia	0.501	897	0.177	868	IV	III
Guntur	India	0.501	898	0.162	905	III	III
Saharanpur	India	0.501	899	0.168	888	IV	III
Banjarmasin	Indonesia	0.500	900	0.177	869	IV	III
Dingxi	China	0.500	901	0.151	923	IV	III
Longnan	China	0.499	902	0.149	926	IV	III
Bogra	Bangladesh	0.499	903	0.143	933	IV	III
Solapur	India	0.499	904	0.133	949	III	III
Varanasi	India	0.497	905	0.197	829	III	II
Kerman	Iran, Islamic Rep.	0.497	906	0.200	819	IV	III
Durango	Mexico	0.497	907	0.176	870	III	II
Agra	India	0.496	908	0.147	928	IV	III
Sialkot	Pakistan	0.496	909	0.203	809	IV	III
Bhavnagar	India	0.495	910	0.138	939	IV	II
Dhanbad	India	0.495	911	0.158	913	IV	II
Kharkov	Ukraine	0.494	912	0.198	824	III	II
Belgaum	India	0.494	913	0.137	942	III	II

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Kanpur	India	0.494	914	0.146	931	IV	III
Damascus	Syrian	0.493	915	0.157	914	V	IV
Addis Ababa	Ethiopia	0.493	916	0.140	937	IV	III
Dnipropetrovs'k	Ukraine	0.492	917	0.160	906	III	II
Lubumbashi	Congo, Dem. Rep.	0.492	918	0.155	917	V	IV
Jiuquan	China	0.492	919	0.133	950	IV	III
Malegaon	India	0.492	920	0.119	968	IV	II
Tirunelveli	India	0.491	921	0.129	956	III	II
Amravati	India	0.491	922	0.129	954	III	III
Muzaffarnagar	India	0.491	923	0.171	878	IV	III
Kermanshah	Iran, Islamic Rep.	0.491	924	0.198	822	IV	III
Sukkur	Pakistan	0.491	925	0.163	901	V	III
Nellore	India	0.489	926	0.115	974	III	III
Zaporizhzhya	Ukraine	0.489	927	0.155	918	III	II
Yichun(hlj)	China	0.488	928	0.143	934	IV	III
Sana'a'	Yemen, Rep.	0.488	929	0.165	897	V	IV
Bareilly	India	0.488	930	0.168	887	IV	III
Lvov	Ukraine	0.488	931	0.158	912	III	II
Aligarh	India	0.488	932	0.166	893	IV	III
Ardabil	Iran, Islamic Rep.	0.488	933	0.181	863	IV	III
Odessa	Ukraine	0.487	934	0.148	927	IV	III
Maiduguri	Nigeria	0.487	935	0.109	975	IV	III
Multan	Pakistan	0.487	936	0.172	877	IV	III
Niamey	Niger	0.486	937	0.135	944	V	IV
Moradabad	India	0.486	938	0.155	919	IV	III
Sokoto	Nigeria	0.486	939	0.170	883	V	III
Jabalpur	India	0.486	940	0.150	924	IV	III
Yaounde	Cameroon	0.486	941	0.184	852	IV	III
Gulbarga	India	0.485	942	0.129	955	III	II
Suez	Egypt, Arab Rep.	0.485	943	0.128	958	IV	III
Yazd	Iran, Islamic Rep.	0.485	944	0.156	916	IV	IV

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Cuttack	India	0.485	945	0.167	892	IV	II
Mwanza	Tanzania	0.484	946	0.132	951	IV	III
Allahabad	India	0.484	947	0.173	876	III	II
Imphal	India	0.483	948	0.167	890	IV	III
Jammu	India	0.482	949	0.138	940	IV	II
Tashkent	Uzbekistan	0.481	950	0.158	911	IV	III
Zanzibar	Tanzania	0.480	951	0.157	915	IV	IV
Nanded Waghala	India	0.480	952	0.123	964	IV	II
Salta	Argentina	0.479	953	0.146	930	III	II
Freetown	Sierra Leone	0.479	954	0.127	959	IV	III
Ujjain	India	0.479	955	0.134	945	III	II
Ajmer	India	0.478	956	0.139	938	IV	II
Quetta	Pakistan	0.477	957	0.175	872	V	III
Ouagadougou	Burkina Faso	0.476	958	0.116	970	V	IV
Bishkek	Kyrgyz Republic	0.475	959	0.117	969	IV	III
Durgapur	India	0.473	960	0.131	953	IV	III
Cotonou	Benin	0.473	961	0.126	961	IV	III
Bulawayo	Zimbabwe	0.472	962	0.125	963	V	IV
Bamako	Mali	0.472	963	0.116	971	IV	III
Firozabad	India	0.472	964	0.141	936	IV	III
Hamah	Syrian	0.472	965	0.120	966	V	IV
Conakry	Guinea	0.470	966	0.100	981	IV	III
Latakia	Syrian	0.470	967	0.115	973	IV	IV
Jhansi	India	0.469	968	0.134	947	IV	III
Aleppo	Syrian	0.467	969	0.105	980	V	IV
Bouake	Côte d'Ivoire	0.465	970	0.108	976	V	IV
Bikaner	India	0.463	971	0.107	978	IV	III
Raipur	India	0.462	972	0.106	979	III	II
Mogadishu	Somalia	0.462	973	0.098	984	V	IV
Nay Pyi Taw	Myanmar	0.462	974	0.099	983	IV	III
Namangan	Uzbekistan	0.462	975	0.137	943	IV	III

City	Country	Econ Comp	EC Ranking	Sus Comp	SC Ranking	SDGs completion	SDG11 completion
Antananarivo	Madagascar	0.460	976	0.096	985	V	IV
Zahedan	Iran, Islamic Rep.	0.459	977	0.134	948	V	III
Mathura	India	0.459	978	0.152	922	IV	III
Mandalay	Myanmar	0.458	979	0.094	987	IV	III
Nnewi	Nigeria	0.457	980	0.099	982	V	III
Matola	Mozambique	0.456	981	0.126	962	V	IV
Blantyre-Limbe	Malawi	0.455	982	0.108	977	IV	III
Monrovia	Liberia	0.454	983	0.137	941	V	III
homs	Syrian	0.453	984	0.077	994	V	IV
Djibouti	Djibouti	0.453	985	0.115	972	V	IV
Maputo	Mozambique	0.452	986	0.080	993	IV	III
Abomey-Calavi	Benin	0.451	987	0.128	957	V	III
Al-Raqqa	Syrian	0.449	988	0.094	988	V	IV
Gorakhpur	India	0.447	989	0.131	952	IV	III
Sargodha	Pakistan	0.445	990	0.134	946	IV	III
Mbuji-Mayi	Congo, Dem. Rep.	0.443	991	0.071	997	V	IV
Aden	Yemen, Rep.	0.442	992	0.072	996	V	IV
Bobo Dioulasso	Burkina Faso	0.441	993	0.085	991	V	III
Bujumbura	Burundi	0.434	994	0.074	995	V	IV
Hargeysa	Somalia	0.434	995	0.088	990	V	IV
Lilongwe	Malawi	0.433	996	0.089	989	V	III
Dushanbe	Tajikistan	0.432	997	0.065	998	IV	IV
N'Djamena	Chad	0.428	998	0.028	1004	V	III
Kananga	Congo, Dem. Rep.	0.425	999	0.059	1000	V	IV
Tshikapa	Congo, Dem. Rep.	0.419	1000	0.081	992	V	IV
Nampula	Mozambique	0.410	1001	0.063	999	V	IV
Bukavu	Congo, Dem. Rep.	0.405	1002	0.058	1001	V	IV
Taiz	Yemen, Rep.	0.401	1003	0.040	1002	V	IV
Bangui	Central African	0.399	1004	0.023	1005	V	IV
Hodeidah	Yemen, Rep.	0.381	1005	0.039	1003	V	IV
Kisangani	Congo, Dem. Rep.	- .000	1006	- .000	1006	V	IV

II. Sample cities, data and indices

The selection of sample cities is the basis for conducting research on the sustainable competitiveness of cities around the world. In order to ensure that the sample size is adequate and the sample cities are representative, the sample cities are selected based on the World Urbanization Prospects published by the Department of Economic and Social Affairs of the United Nations in 2015, excluding samples with urban populations less than 500,000, with conditions of China and some other countries taken into consideration. In the end, 1,006 cities were selected as the samples of this study. The 1,006 cities are distributed in 135 countries and regions on six continents. These 1,006 cities basically cover all fields and all levels of development in the world today.

In terms of data, the data collection team and the AI and big data research team of the global urban competitiveness study have selected a relatively comprehensive range of indicators after searching and sorting repeatedly for nearly half a year. There are four main sources of data, including national government statistical agencies, international statistical agencies, themed reports and survey data from international research institutions or companies, and big data captured by web crawlers. Please see the appendix for the explanation of specific indicators.

Table 1 Revealed Comparative Advantage Indices for Evaluating Economic Competitiveness of Cities

Index	Description	Source of data
Economic growth	Five-year GDP growth	EIU City Data and CEIC Data
Economic density	GDP per square kilometer of land area	EIU City Data and CEIC Data

Table 2 Explanatory Indices for Evaluating Economic Competitiveness of Cities

Level-1 Indices	Level-2 Indices	Description
1 Local elements	1.1 Convenience of indirect market financing	The credit availability index of the Business Environment Report (modified based on the city)
	1.2 Convenience of direct market financing	Transaction volume of the exchange and global listed companies
	1.3 Academic paper index	Number of papers published
	1.4 Patent application index	Number of patents
	1.5 Young talent proportion index	The proportion of youth (16-45 years old) population (modified based on per capita GDP)
	1.6 Total working population	The total number of Working population (15-59 years old)
2 Living environment	2.1 Historical and cultural index	Number of museums
	2.2 Healthcare facility index	Number of healthcare facilities per capita (modified based on healthcare accessibility and HAQ Index)
	2.3 Climate comfort index	The composite indicator of temperature, precipitation, severe weather, and visibility (modified based on GDP per square kilometer of land area)
	2.4 Environmental pollution index	The composite indicator of PM2.5, per capita CO2 emissions, per capita SO2 emissions
	2.5 Citizens' consumption index	Per capita disposable income (modified based on Gini coefficient)
	2.6 Living cost index	Ratio of house price to income
	2.7 Fitness and leisure facility index	Number of golf courses
	2.8 Cultural facility index	Number of libraries/area of the city

3 Soft business environment	3.1 Safety index	Crime rate
	3.2 Marketization index	The economic freedom index (modified based on the number of flight routes and GDP per capita)
	3.3 Openness index	Number of Starbucks, McDonald's, and Walmart stores
	3.4 Property rights protection index	International property rights protection report (modified based on cities)
	3.5 Higher education index	Classification and score of the best universities in each city (modified based on the number of city universities)
	3.6 Ease of Doing Business Index	The World Bank's Ease of Doing Business Index (modified based on the number of flight routes)
4 Hard business environment	4.1 Traffic convenience	Numbeo traffic index (modified based on Internet public opinions on the city's traffic)
	4.2 Power supply	Night light data
	4.3 Internet speed	Internet speed
	4.4 Shipping convenience	Distance from the top 100 ports
	4.5 Airport facility index	Airport infrastructure score
	4.6 Natural disaster index	Calculated based on historical data of six major natural hazards
5 Global connectivity	5.1 Airline connectivity	Number of flights
	5.2 Internet impact	Google Trends & Baidu Trends
	5.3 Connectivity of scientific researchers	Number of co-authored papers published - connectivity calculation
	5.4 Connectivity of financial companies	Distribution of 75 multinational financial companies - connectivity calculation
	5.5 Connectivity of tech companies	Distribution of 25 multinational tech companies - connectivity calculation
	5.6 Shipping connectivity	UNCTAD-Port liner shipping connectivity index (modified based on port throughput)

Table 3 Revealed Comparative Advantage Indices for Evaluating Sustainable Competitiveness

Index	Description	Source of data
Talent growth	1.1 Annual growth of high-income population	LandScan™ Global Population Database
Talent density	1.2 High-income population per square kilometer of land area	LandScan™ Global Population Database

Table 4 Explanatory Indices for Evaluating Sustainable Competitiveness

Level-1 Indices	Level-2 Indices	Description
1 Economic vitality	1.1 The Ease of Doing Business index	The World Bank's Ease of Doing Business Index (modified based on the number of flight routes)
	1.2 Property rights protection index	International property rights protection report (modified)
	1.3 Index of Young Talent Proportion	The proportion of youth (16-45 years old) population (modified based on per capita GDP)
	1.4 Economic growth rate	5-year average GDP growth rate
	1.5 Labor productivity	GDP/the total number of working population (15-59 years old)
2 Environmental resilience	2.1 Traffic convenience	Numbeo traffic index (modified based on Internet public opinions on the city's traffic)
	2.2 Power supply	Night light data
	2.3 Ecological diversity	Total area of 10 landforms, including forests, lakes, green spaces, and wetlands
	2.4 Climate comfort index	The composite indicator of temperature, precipitation, severe weather, and visibility
	2.5 Environmental pollution index	The composite indicator of PM2.5, per capita CO2 emissions, per capita SO2 emissions (modified based on per capita GDP)
	2.6 Natural disaster index	Calculated based on historical data of six major natural hazards

3 Social inclusivity	3.1 Historical and cultural index	Number of museums
	3.2 Social security index	Crime rate data
	3.3 Social equity index	Gini coefficient
	3.4 Living cost index	Ratio of house price to income
	3.5 Openness Index	Number of Starbucks, McDonald's, and Walmart stores
	3.6 Healthcare facility index	Number of healthcare facilities per capita modified based on healthcare accessibility and HAQ Index
4 Technological innovation	4.1 Patent application index	Number of patents
	4.2 Academic paper index	Number of papers published
	4.3 Tech company index	Distribution of headquarters of tech companies
	4.4 University index	Classification and score of the best universities in each city (modified based on the number of city universities)
	4.5 Cultural facility index	Number of libraries/the area of the city
5 Global connectivity	5.1 Airline connectivity	Number of flights
	5.2 Internet impact	Google Trends & Baidu Trends
	5.3 Connectivity of scientific researchers	Number of co-authored papers published - connectivity calculation
	5.4 Connectivity of financial companies	Distribution of 75 multinational financial companies - connectivity calculation
	5.5 Connectivity of tech companies	Distribution of 25 multinational tech companies - connectivity calculation
	5.6 Shipping connectivity	Port liner shipping connectivity index (modified based on port throughput)

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