



# The Smart Centres Index 5

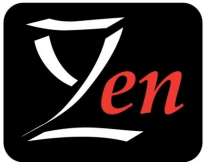


May 2022



Distributed Futures





We are pleased to present the fifth edition of the [Smart Centres Index](#) (SCI 5).

The SCI has been developed by Z/Yen, as part of its Long Finance Initiative and the Distributed Futures Programme, to track commercial centres' ability to create, develop, and deploy technology. It aims to help investors, governments, and regulators track the attractiveness of technology centres for new technologies and products by measuring how attuned centres and their regulatory systems are to attracting innovation and growth in Science, Technology, Energy Systems, Machine Learning, Distributed Ledgers, and Fintech.

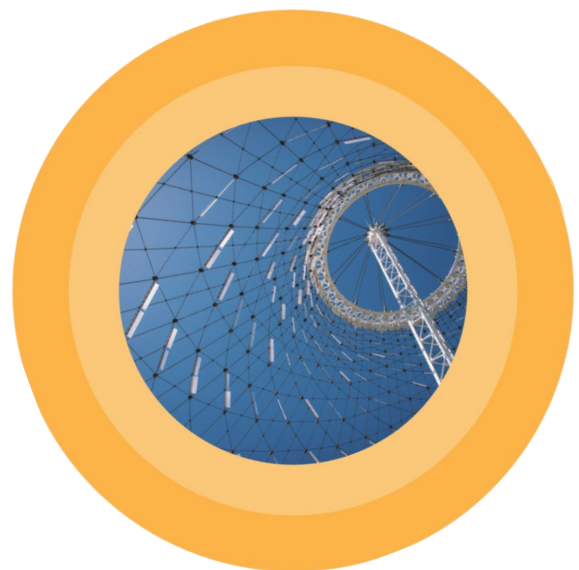
The SCI tracks three dimensions related to innovation and technology in the cities that we rank:

- Innovation Support - the support provided by regulatory and other systems to innovation and technology in a centre.
- Creative Intensity - the intensity of technology and innovation services and opportunities in a centre.
- Delivery Capability - the quality of the technology and innovation work that is taking place in a centre.

[Z/Yen](#) helps organisations make better choices - our clients consider us a commercial think-tank that spots, solves, and acts. Our name combines Zen and Yen - 'a philosophical desire to succeed' - in a ratio, recognising that all decisions are trade-offs. One of Z/Yen's specialisms is the development and publication of research combining factor analysis and professional assessments.

[Long Finance](#) is a Z/Yen initiative designed to address the question **"When would we know our financial system is working?"** This question underlies Long Finance's goal to improve society's understanding and use of finance over the long-term. In contrast to the short-termism that defines today's economic views, the Long Finance timeframe is roughly 100 years.

The authors of this report, Mike Wardle and Professor Michael Mainelli, would like to thank Bikash Kharel and the rest of the Z/Yen team for their contributions with research, modelling, and ideas.



Cover Photo by [Timothy Eberly](#) on [Unsplash](#)

## Foreword

In a post-Covid-19 world, with all the associated challenges, it is more important than ever to maintain a clear perspective of the underlying issues. The 21<sup>st</sup> Century can and should be a golden age for the human race. The missing factor is not resources, finance or human capital, it is vision and a common purpose. A critical factor in achieving this is the need for accurate, unbiased analytical assessment of global innovation and technology development.

The advent of AI, Deep Learning and huge computer power has made large-scale data analytics possible as never before. It is equivalent to the arrival of radio telescopes in astronomy; when we began to perceive the Cosmos in a far deeper sense. We now have the technical means to sense and measure the pulse of global processes in all aspects of human development. We have the capacity to vastly increase human vision and cognitive scope.

*“If you want to teach people a new way of thinking, don't bother trying to teach them. Instead, give them a tool, the use of which will lead to new ways of thinking.”*

**R. Buckminster Fuller**

The Z/Yen Smart Centres Index (SCI) is a prime example of such a tool and enhanced engine for vision. It provides timely and accurate data that has been sifted from the oceans of noise we all now navigate. The ability to track innovation clusters, new services, business development and the evolution of technology is of vital importance. It is of particular value in understanding what drives cluster development, a complex and challenging problem in itself.

The established clusters in North America, Europe, Asia and UK continue to thrive, yet the question is where the new clusters will emerge and how can governments accelerate their development? A policy report by the UK Royal Society in 2020, provides an excellent analysis of the cluster process and challenges<sup>1</sup>.

As a global communications company, BT strives to connect people and we invest heavily in R&D to drive new technologies and innovation. The ability to connect with global centres of innovation is a vital element of our research, which makes the SCI a key tool.

The future of humanity can be brilliant: we have the technology and an entire galaxy, what more do we need.

*“Nature is a totally efficient, self-regenerating system. If we discover the laws that govern this system and live synergistically within them, sustainability will follow and humankind will be a success.”*

**R. Buckminster Fuller**

**Robert Hercock**  
Chief Research Scientist, Security Research Practice  
BT



---

1 <https://royalsociety.org/topics-policy/publications/2020/research-and-innovation-clusters/>

## Summary And Headlines

### Commentary

The Smart Centres Index , including Science, Energy Systems, and Machine Learning, along with other applications. The index is designed to improve our understanding of science & technology policy, regulation, and delivery.

The SCI takes into account the three dimensions of Innovation Support, Creative Intensity, and Delivery Capability. In broad terms, centres in North America and Western Europe score well for Innovation Support and Delivery Capability but vary in terms of their Creative Intensity. Centres in Asia/Pacific score lower for Innovation Support.

In this edition of the SCI, leading US and Western European centres show a strong performance. Asia/Pacific centres continue to lag slightly behind, which is surprising given the technology and science strengths of China in particular.

Leading centres in the SCI are based in places which combine a high performing university sector across STEM subjects, with well-developed regulatory, commercial, and financial services.

### SCI 5 Results

- New York maintained its first position in the index, with London second, and Hong Kong in third place.
- Five Western European centres feature in the top 10, with four from the US. Hong Kong is the only Asia/Pacific centre in the top 10.
- The average rating for all centres rose 2.3%, compared with SCI 4. Only five centres fell in the SCI ratings.
- Only five centres rose 10 or more places in the rankings in SCI 5, while nine centres fell 10 or more places.
- US centres generally rank lower for Creative Intensity than their overall rank; and Chinese and other Asia/Pacific centres score lower for Innovation Support, including regulation, than they do for the other dimensions.

### North America

- 11 North American centres feature in SCI 5 and four are in the world top 10.
- The leading centres in the region maintained or improved their ranking, while other centres fell back.

### Asia/Pacific

- 21 Asia/Pacific centres now feature in the SCI, with Chengdu joining the index for the first time.
- Hong Kong, Singapore, and Shanghai rank in the top 20 in the world.
- 12 centres improved their ranking, with Busan, Tokyo, Shenzhen, and Osaka rising more than 10 places.

### Western Europe

- 28 Western European centres feature in SCI 5, with five centres ranking in the top 10.
- Gibraltar entered the index in SCI 5.
- 19 centres in the region fell in the rankings as other centres improved their position.

### **Middle East & Africa**

- Tel Aviv leads this region, rising five places to 13th position.
- Bahrain entered the index for the first time.

### **Eastern Europe & Central Asia**

- Prague maintained its lead in the region, although it fell 12 places in the rankings in SCI 5. Sofia takes second place in the region.
- Athens entered the SCI for the first time.

### **Latin America & The Caribbean**

- Mexico City and the Cayman Islands are the only two centres in the region to feature in the SCI.
- While Mexico City improved its ranking by 3 places, Cayman Islands fell 23 places.

### **SCI 5**

The SCI is a factor assessment index, combining a number of instrumental factors - data measures drawn from a range of data providers across the world - and assessments given by business and finance professionals of three dimensions related to innovation and technology in major commercial centres:

- Innovation Support - the support provided by regulatory and other systems to innovation and technology in a centre.
- Creative Intensity - the intensity of technology and innovation services and opportunities in a centre.
- Delivery Capability - the quality of the technology and innovation work that is taking place in a centre.

These dimensions are brought together in the overall SCI ratings to produce the index, which is updated every six months.

SCI 5 was compiled using 134 instrumental factors. These quantitative measures are provided by third parties including the World Bank, The Economist Intelligence Unit, the OECD, and the United Nations. Details can be found in Appendix 4.

The instrumental factors were combined with 2,083 assessments provided by respondents to the [SCI online questionnaire](#). Details of the 296 respondents are shown in Appendix 2. Further details of the methodology behind SCI 5 are in Appendix 3.

We researched 131 commercial and financial centres for this fifth edition of the Smart Centres Index (SCI 5). The number of centres in the index has increased from 72 to 76. The 76 centres listed in SCI 5 are those which received an adequate number of assessments from survey respondents. Assessments of respondents' home centres were excluded from the data, in order to avoid home centre bias.

## SCI 5 Ranks And Ratings

Table 1 | Smart Centres Index 5: Ranks And Ratings

Centre	SCI 5		SCI 4		Change In Rank	Change In Rating
	Rank	Rating	Rank	Rating		
New York	1	746	1	731	0	▲15
London	2	736	2	730	0	▲6
Hong Kong	3	721	5	702	▲2	▲19
Zurich	4	716	7	696	▲3	▲20
Copenhagen	5	715	8	695	▲3	▲20
Boston	6	713	16	687	▲10	▲26
Cambridge, UK	7	712	4	707	▼3	▲5
Lugano	8	711	12	691	▲4	▲20
San Francisco	9	710	17	686	▲8	▲24
Los Angeles	10	709	13	690	▲3	▲19
Chicago	11	708	11	692	0	▲16
Singapore	12	707	6	700	▼6	▲7
Tel Aviv	13	706	18	685	▲5	▲21
Oxford, UK	14	703	3	710	▼11	▼7
Malta	15	702	20	683	▲5	▲19
Geneva	16	700	15	688	▼1	▲12
Stockholm	17	698	9	694	▼8	▲4
Seattle	18	697	14	689	▼4	▲8
Amsterdam	19	695	19	684	0	▲11
Shanghai	20	692	28	659	▲8	▲33
Dublin	21	691	10	693	▼11	▼2
Beijing	22	685	23	664	▲1	▲21
Dubai	23	681	26	661	▲3	▲20
Seoul	24	680	25	662	▲1	▲18
Luxembourg	25	679	30	657	▲5	▲22
Glasgow	26	678	21	669	▼5	▲9
Busan	27	676	41	643	▲14	▲33
Tokyo	28	675	47	633	▲19	▲42
Brussels	29	674	40	644	▲11	▲30
Berlin	30	673	22	666	▼8	▲7
Toronto	31	672	27	660	▼4	▲12
Bangkok	32	671	34	653	▲2	▲18
Abu Dhabi	33	670	32	655	▼1	▲15
Shenzhen	34	669	48	628	▲14	▲41
Washington DC	35	668	29	658	▼6	▲10
Prague	36	667	24	663	▼12	▲4
Sofia	37	666	46	636	▲9	▲30
Paris	38	665	31	656	▼7	▲9

Table 1 (continued) | Smart Centres Index 5: Ranks And Ratings

Centre	SCI 5		SCI 4		Change In Rank	Change In Rating
	Rank	Rating	Rank	Rating		
Osaka	39	664	50	623	▲11	▲41
Austin	40	663	39	645	▼1	▲18
Vienna	41	662	36	650	▼5	▲12
Sydney	42	661	38	646	▼4	▲15
Dallas / Fort Worth	43	660	33	654	▼10	▲6
Vancouver	44	659	35	652	▼9	▲7
Melbourne	45	657	42	642	▼3	▲15
Guangzhou	46	655	53	618	▲7	▲37
Frankfurt	47	652	45	637	▼2	▲15
Edinburgh	48	650	37	648	▼11	▲2
Cape Town	49	647	59	610	▲10	▲37
GIFT City-Gujarat	50	646	44	638	▼6	▲8
Mexico City	51	645	54	617	▲3	▲28
Chengdu	52	643	New	New	New	New
Guernsey	53	642	43	641	▼10	▲1
Hamburg	54	641	51	620	▼3	▲21
Gibraltar	55	638	New	New	New	New
Budapest	56	632	56	613	0	▲19
Kuala Lumpur	57	631	65	587	▲8	▲44
Istanbul	58	627	64	589	▲6	▲38
Tianjin	59	625	57	612	▼2	▲13
Munich	60	624	52	619	▼8	▲5
Manila	61	623	68	573	▲7	▲50
Johannesburg	62	622	63	597	▲1	▲25
Warsaw	63	621	61	603	▼2	▲18
Madrid	64	620	60	604	▼4	▲16
Milan	65	619	62	602	▼3	▲17
Isle of Man	66	613	55	616	▼11	▼3
Athens	67	605	New	New	New	New
Moscow	68	604	58	611	▼10	▼7
Riyadh	69	600	67	579	▼2	▲21
Rome	70	598	69	561	▼1	▲37
Stuttgart	71	593	66	580	▼5	▲13
Cayman Islands	72	585	49	624	▼23	▼39
Bahrain	73	576	New	New	New	New
Taipei	74	562	70	546	▼4	▲16
Mumbai	75	501	71	458	▼4	▲43
New Delhi	76	472	72	446	▼4	▲26

## The Three SCI Dimensions

We develop the SCI ratings and rankings by looking at three separate dimensions of technology and innovation development:

- Innovation Support - the approach taken to regulation and support for the innovation and technology industry provided by the commercial ecosystem.
- Creative Intensity - the extent to which technology and innovative industries are embedded in the economy of the centre.
- Delivery Capability - the quality of the work being undertaken in the field in the centre.

We develop ratings for each dimension, which are ranked equally in creating the SCI. Full details of the separate ratings for each dimension are at Appendix 1. Table 2 shows the rating details for each dimension for the top 20 centres in SCI 5.

**Table 2 | Rating Details For SCI 5 Dimensions: Top 20 Centres in SCI 5**

SCI 5 Ranking	Centre	SCI Dimensions					
		Innovation Support		Creative Intensity		Delivery Capability	
		Rank	Rating	Rank	Rating	Rank	Rating
1	New York	1	253	1	245	1	248
2	London	2	252	3	241	2	243
3	Hong Kong	9	242	2	241	4	237
4	Zurich	3	248	8	235	14	233
5	Copenhagen	11	240	4	238	5	237
6	Boston	6	243	10	234	6	236
7	Cambridge, UK	6	243	27	227	3	242
8	Lugano	4	247	11	233	20	231
9	San Francisco	10	241	11	233	6	236
10	Los Angeles	5	244	16	230	10	235
11	Chicago	6	243	20	230	9	235
12	Singapore	17	236	6	236	10	235
13	Tel Aviv	11	240	13	232	13	234
14	Oxford, UK	11	240	24	228	10	235
15	Malta	15	238	25	228	6	236
16	Geneva	14	239	15	231	22	230
17	Stockholm	22	235	16	230	15	233
18	Seattle	16	237	26	228	17	232
19	Amsterdam	32	228	7	235	17	232
20	Shanghai	48	223	5	237	16	232

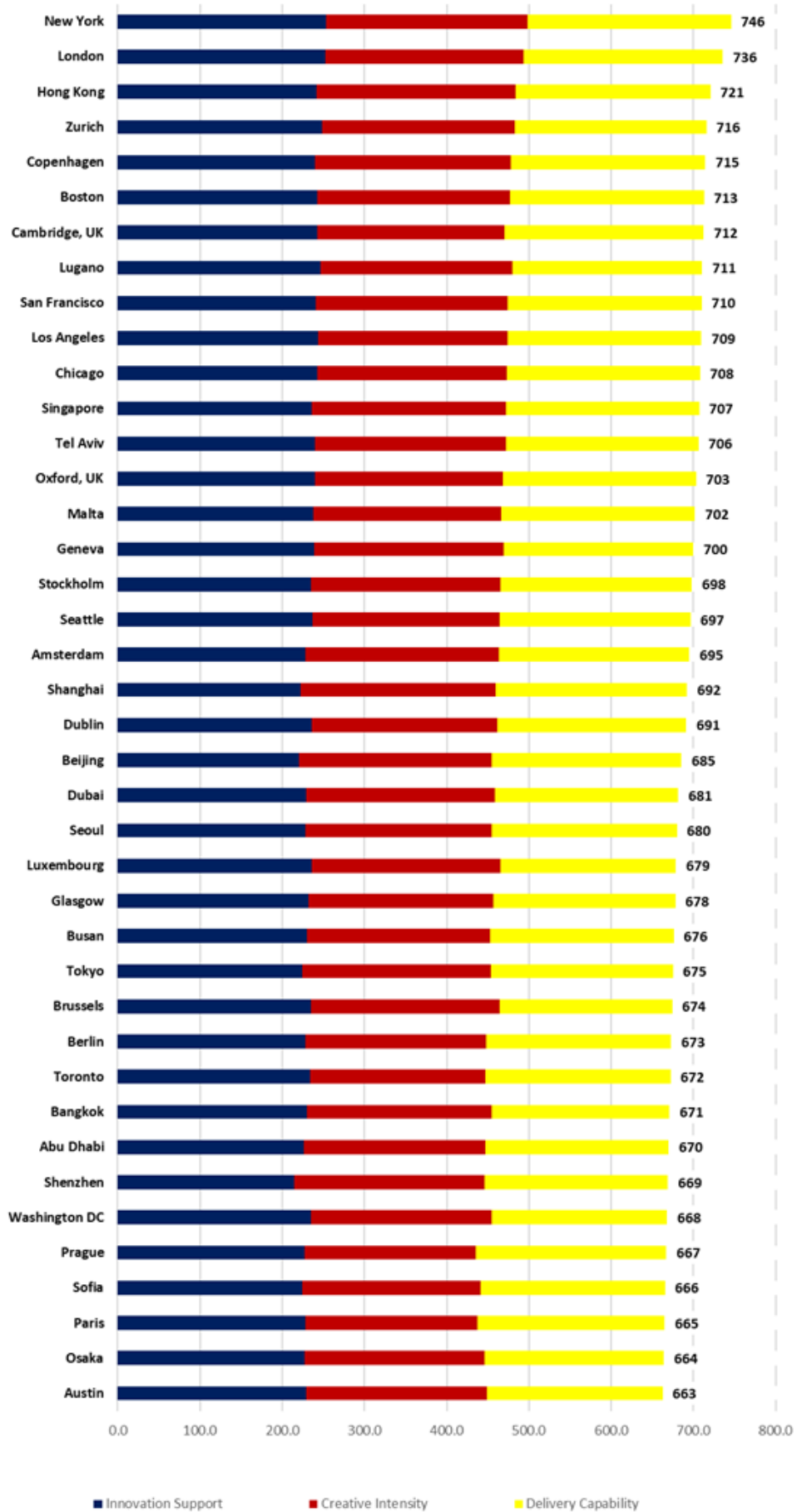
This analysis shows the effect that particular dimensions have on the placing of centres in the SCI. In particular:

- Leading centres have a spread of strengths across the dimensions.
- Individual centres have differing areas of strength, with Zurich and Copenhagen, for example, closely matched in their overall rank, but with different profiles in the dimensions.

The SCI 5 results showing the contribution of each dimension for the top 40 centres are shown in Chart 1.



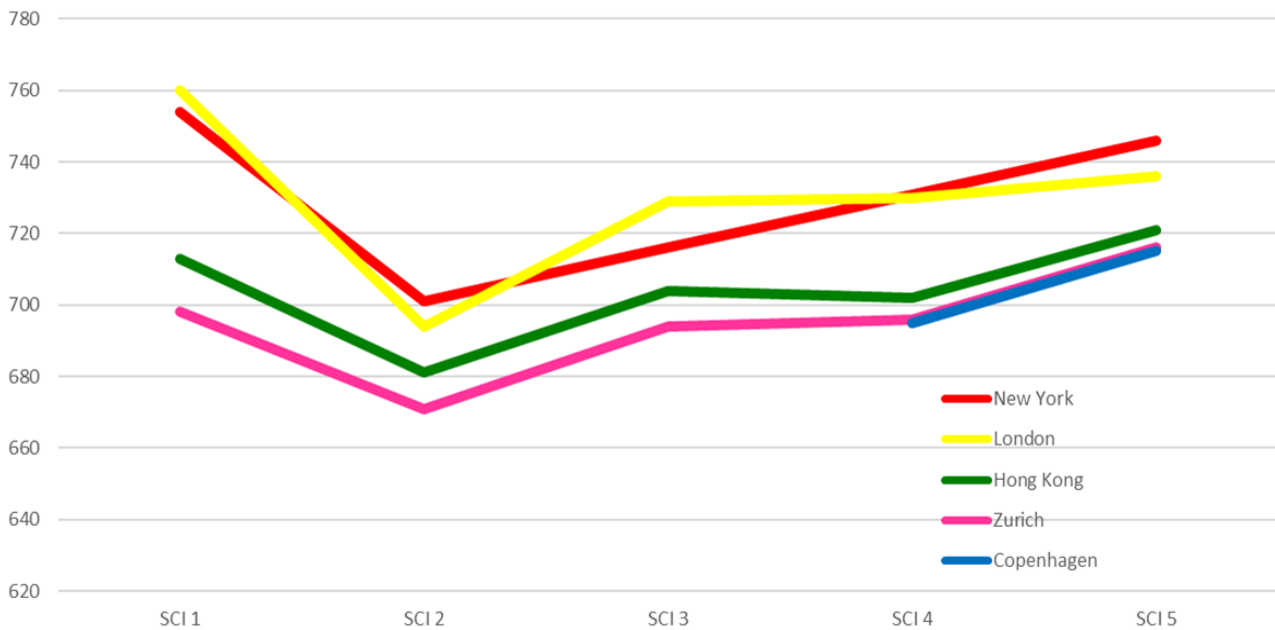
Chart 1 | SCI 5: Contribution Of The Dimensions To Overall Ratings: Top 40 Centres



## Top Five Centres

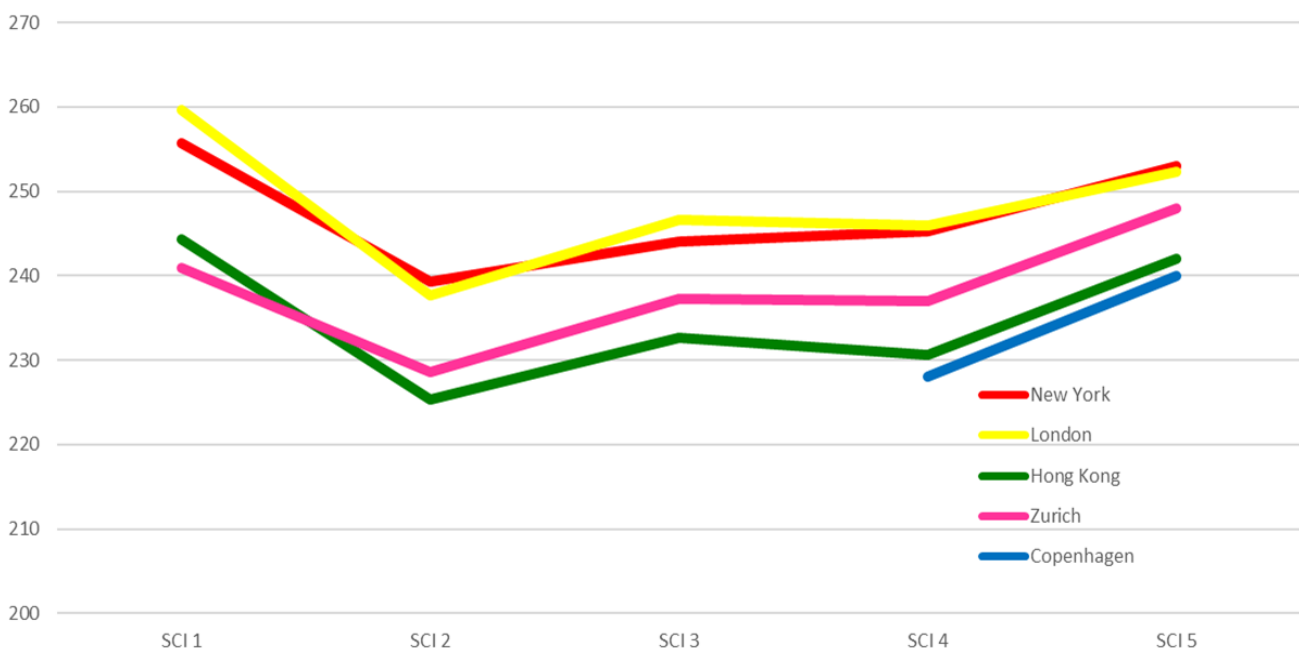
Among the top five centres in the SCI, New York has extended its lead over London, although all centres in this group improved their rating.

**Chart 2 | The Top Five Centres Over Time**



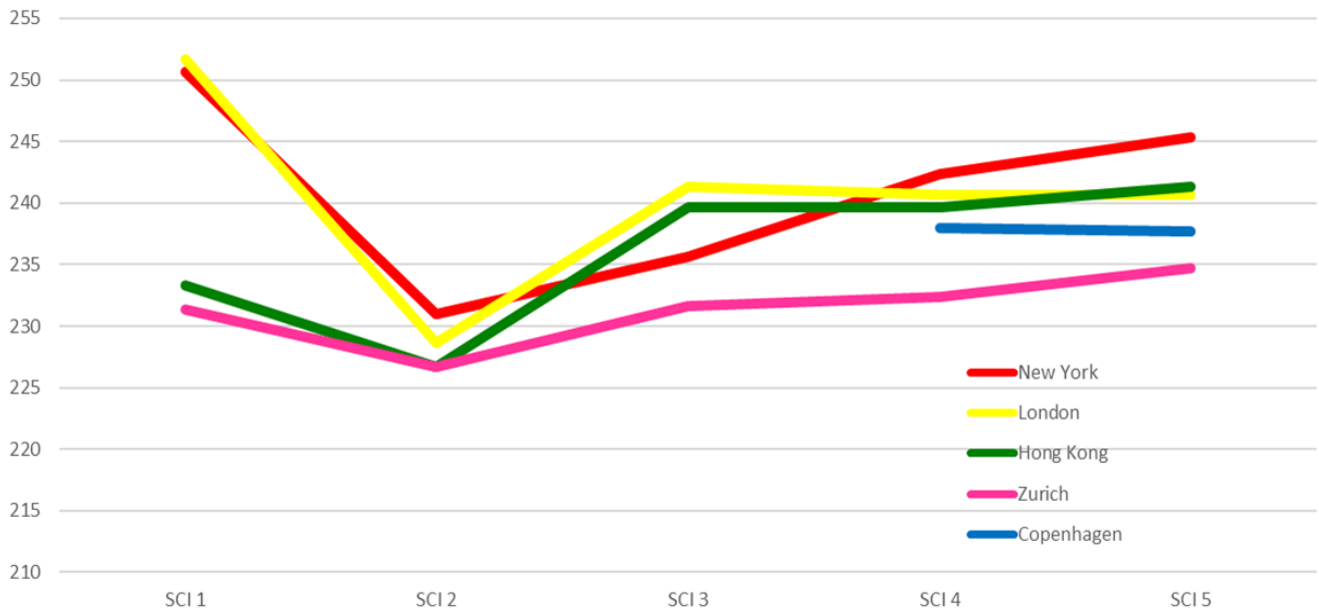
New York has overtaken London in SCI 5 in the ratings for Innovation Support. Hong Kong and Copenhagen perform less well than other leading centres in this measure.

**Chart 3 | Top Five Centres Innovation Support - Ratings Over Time**



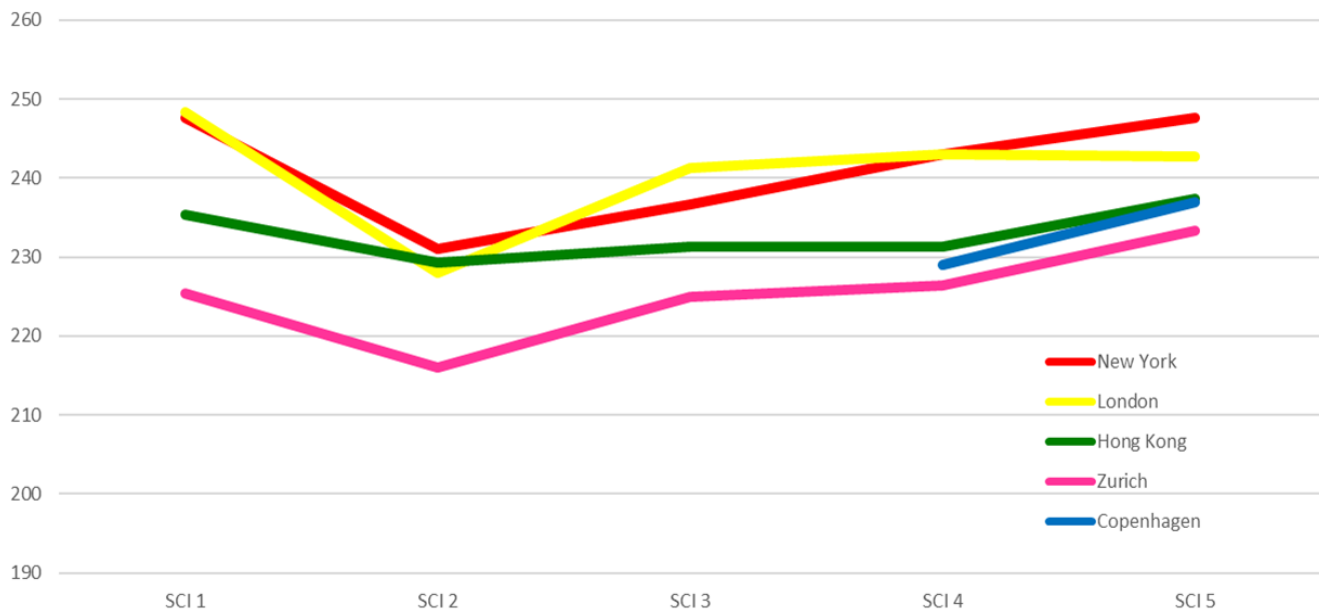
In the Creative Intensity dimension, New York has a clear lead, and Hong Kong takes second position, overtaking London.

**Chart 4 | Top Five Centres - Creative Intensity Ratings Over Time**



For Delivery Capability, as in other areas, New York has risen in the ratings in the last two editions of the SCI. London has fallen back, while other leading centres are improving.

**Chart 5 | Top Five Centres - Delivery Capability - Ratings Over Time**

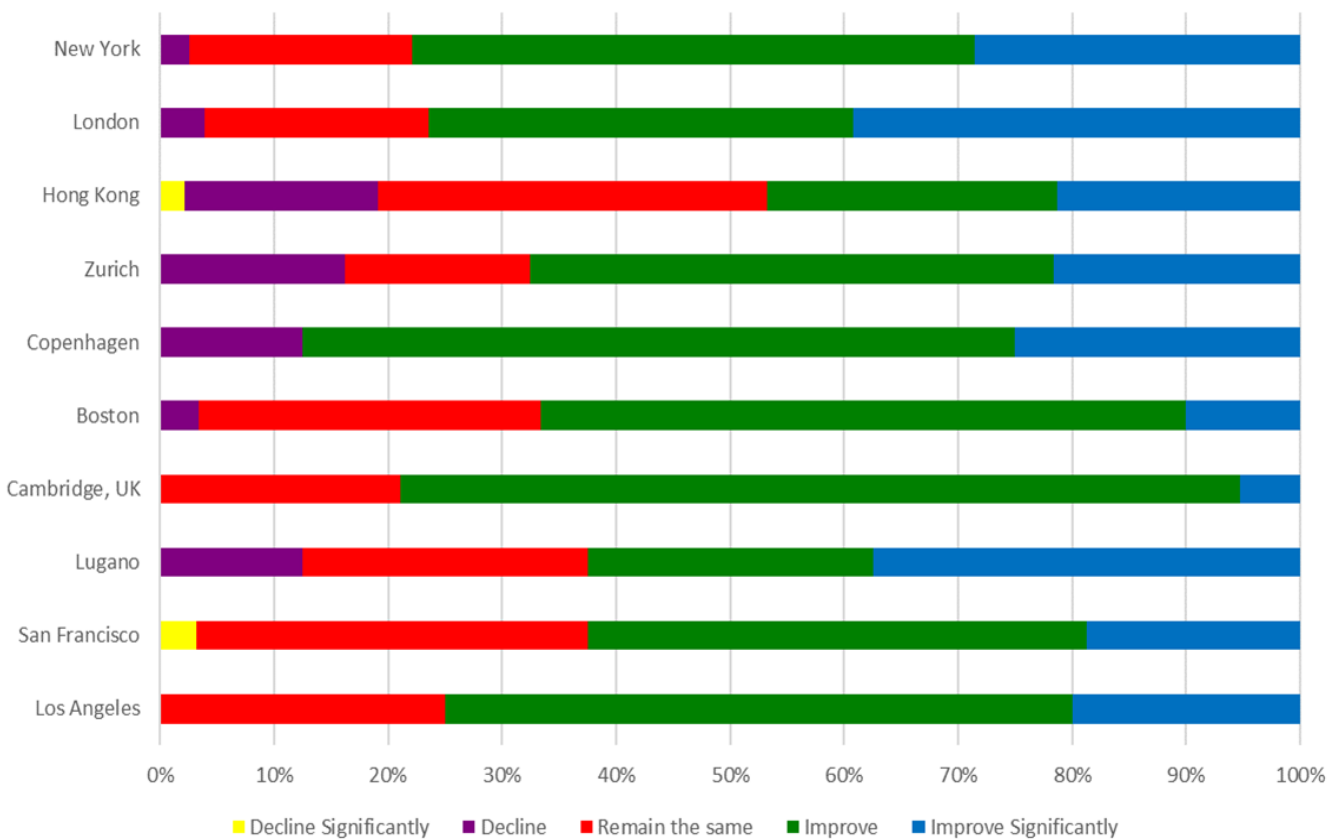


## SCI 5: Further Analysis

### Future Performance

We asked respondents to the SCI survey to assess whether the centres they rated were likely to improve, decline or stay the same in relation to their innovation and technology offerings over the next two to three years. The results for the top 10 centres are shown in Chart 6. For all centres in this group other than Hong Kong, the majority of respondents thought that the centre would improve over this period.

**Chart 6 | Future Performance - Top 10 Centres**



*“The policy or regulatory regimes should be pro-innovation, protective of intellectual property, and friendly towards market & acquisitions and capital markets.”*

**Chief Adviser, Bank, Hong Kong**

## Areas Of Competitiveness

SCI 5 is created using 134 instrumental factors which relate to a range of aspects of competitiveness, including measures relating to technology development. These factors are grouped into six broad areas of competitiveness:

- Technology
- Financial Services
- Reputational
- Business Environment
- Human Capital
- Infrastructure.

These areas and the instrumental factor themes which comprise each area are shown in Chart 7.

**Chart 7 | SCI Areas Of Competitiveness**

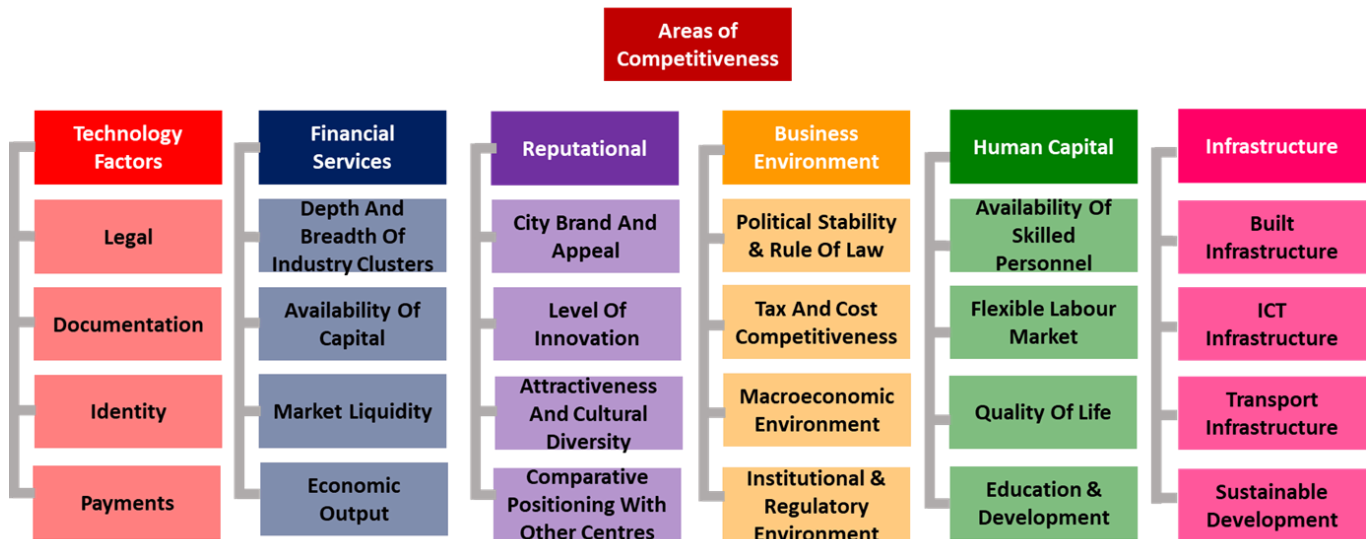


Table 3 shows the top 10 instrumental factors in terms of their correlation with the SCI ranking. This shows the impact of general measures of infrastructure, competitiveness, and trade on developing an innovation ecosystem.

**Table 3 | Top 10 Instrumental Factors By R Squared Correlation**

Instrumental Factor	R Squared
Urban Mobility Readiness Index	0.474
Telecommunication Infrastructure Index	0.440
Global Innovation Index	0.433
E-Participation Index	0.420
Safe Cities	0.408
Adjusted Net National Income Per Capita	0.380
Global Power City Index	0.357
Global Enabling Trade Report	0.356
World Competitiveness Scoreboard	0.355
Legatum Prosperity Index	0.355

Focusing only on the instrumental factors which relate to technology, the factors most closely correlated in terms of their R Squared relationship with the SCI ratings are set out in Table 4.

**Table 4 | Top 10 Technology Instrumental Factors By R Squared Correlation**

Technology Factors	R Squared
Telecommunication Infrastructure Index	0.440
E-Participation Index	0.420
ICT Development Index	0.294
Smart City Index	0.267
FinTech Index	0.178
Global AI Index	0.155
Open Data Barometer	0.150
Worldwide Broadband Speed League	0.125
The Global Fintech Index	0.096
Use Of Blockchain In Healthcare	0.055

To assess centres' technology and innovation offerings against each of these areas, the SCI model is run for each area separately. The top ranked 15 centres in each sub-index are shown in Table 5.

The leading centres in the index have a balance of strengths across all six areas of competitiveness. Some centres have distinct areas of strength, for example, Singapore for the business environment and infrastructure, and Lugano and Oxford for reputational measures.

**Table 5 | Top 15 Centres By Areas Of Competitiveness**

Rank	Technology	Business Environment	Human Capital	Infrastructure	Financial Services	Reputational
1	New York	New York	New York	London	New York	New York
2	London	London	London	New York	San Francisco	Lugano
3	Hong Kong	Singapore	Hong Kong	Singapore	Los Angeles	London
4	Singapore	Hong Kong	Singapore	Hong Kong	London	Oxford, UK
5	Los Angeles	Tel Aviv	Tel Aviv	Zurich	Chicago	Hong Kong
6	San Francisco	Amsterdam	Luxembourg	Tel Aviv	Boston	Cambridge, UK
7	Lugano	San Francisco	Boston	Amsterdam	Hong Kong	Singapore
8	Boston	Copenhagen	Los Angeles	Los Angeles	Geneva	Boston
9	Zurich	Zurich	San Francisco	San Francisco	Zurich	Tel Aviv
10	Chicago	Chicago	Chicago	Lugano	Seoul	Geneva
11	Busan	Los Angeles	Zurich	Chicago	Singapore	Los Angeles
12	Oxford, UK	Boston	Seattle	Boston	Amsterdam	San Francisco
13	Geneva	Geneva	Lugano	Oxford, UK	Dublin	Stockholm
14	Malta	Lugano	Geneva	Geneva	Washington DC	Malta
15	Luxembourg	Malta	Cambridge, UK	Berlin	Oxford, UK	Zurich

## Index Ranking For Technology

As shown in Table 5, we have conducted an analysis of the assessments provided by respondents using only the instrumental factors that have a direct relationship to technology. We compare this analysis with the main index in Table 6. The plus and minus figures show the difference between the main index and the index calculated using only technology factors.

Comparing the rankings using only technology factors with the overall SCI rankings makes minor differences for some centres. However, in the technology rankings, Singapore, Busan, and Luxembourg gain a significant advantage.

**Table 6 | Top 15 Centres Using All Factors And Only Technology Factors**

SCI 5		
Rank	All Factors	Technology Factors
1	New York	New York
2	London	London
3	Hong Kong	Hong Kong
4	Zurich	Singapore (+8)
5	Copenhagen	Los Angeles (+5)
6	Boston	San Francisco (+3)
7	Cambridge, UK	Lugano (+1)
8	Lugano	Boston (-2)
9	San Francisco	Zurich (-4)
10	Los Angeles	Chicago (+1)
11	Chicago	Busan (+16)
12	Singapore	Oxford, UK (+2)
13	Tel Aviv	Geneva (+3)
14	Oxford, UK	Malta (+1)
15	Malta	Luxembourg (+10)

*“What makes a difference is the ability to encourage movement of people, diversity, competitive remuneration and an attractive living environment.”*

**Financial Attaché, Embassy, London**

## Commentary On Factors

The SCI survey asks respondents to comment on factors that affect the development of technology and innovation in centres, and in particular regulation, taxation, and the availability of skills. The results are summarised in Table 7.

**Table 7 | Commentary On Areas Of Competitiveness**

Area Of Competitiveness	Number Of Mentions	Main Themes
Regulatory Environment	60	<ul style="list-style-type: none"> <li>• Clarity and consistency of regulation are important.</li> <li>• Regulators are starting to come to terms with digital technologies and risk.</li> <li>• Regulatory systems need to be pro-innovation and avoid the risk of placing burdens on business that do not provide investor or consumer protection.</li> </ul>
Taxation	48	<ul style="list-style-type: none"> <li>• Simplicity in tax regimes is seen as important in assisting start ups and technology investment.</li> <li>• Innovation and success should be rewarded through tax regimes which are not punitive.</li> </ul>
The Availability Of Skills	57	<ul style="list-style-type: none"> <li>• There is a perceived shortage of talent, which may lead to wage inflation.</li> <li>• Local incubation of talent is important alongside being open to recruit from other places.</li> <li>• A greater focus on technology skills in education is vital to the development of smart centres.</li> </ul>

We also asked respondents to identify current interesting and successful initiatives in the fields of technology and innovation. These included:

- Central Bank Digital Currencies (CBDCs)
- AI
- Open Banking
- Robotics
- Drone Technologies
- Quantum Computing
- Genomics
- Graphene
- Cryogenics
- The Metaverse
- Gibraltar's DLT Regulatory Principles.



## Reputation

We analyse the reputational advantage of centres by comparing the average assessment given in the survey to the overall SCI 5 rating. Centres with a high reputational advantage are perceived by respondents to the survey to be performing better than the underlying data may suggest and may need to pay attention to the strength of their underlying ecosystem. Those with a negative reputational advantage may need to market their strengths better to achieve a truer perception of their performance. The top 15 and lowest 15 centres on this measure are shown in Tables 8 and 9.

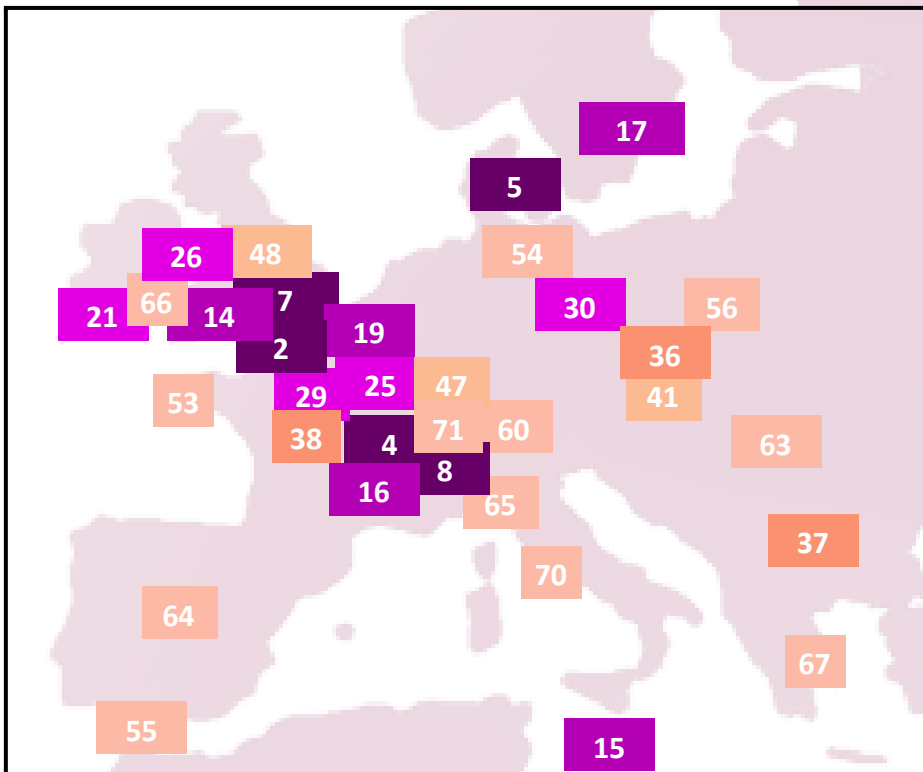
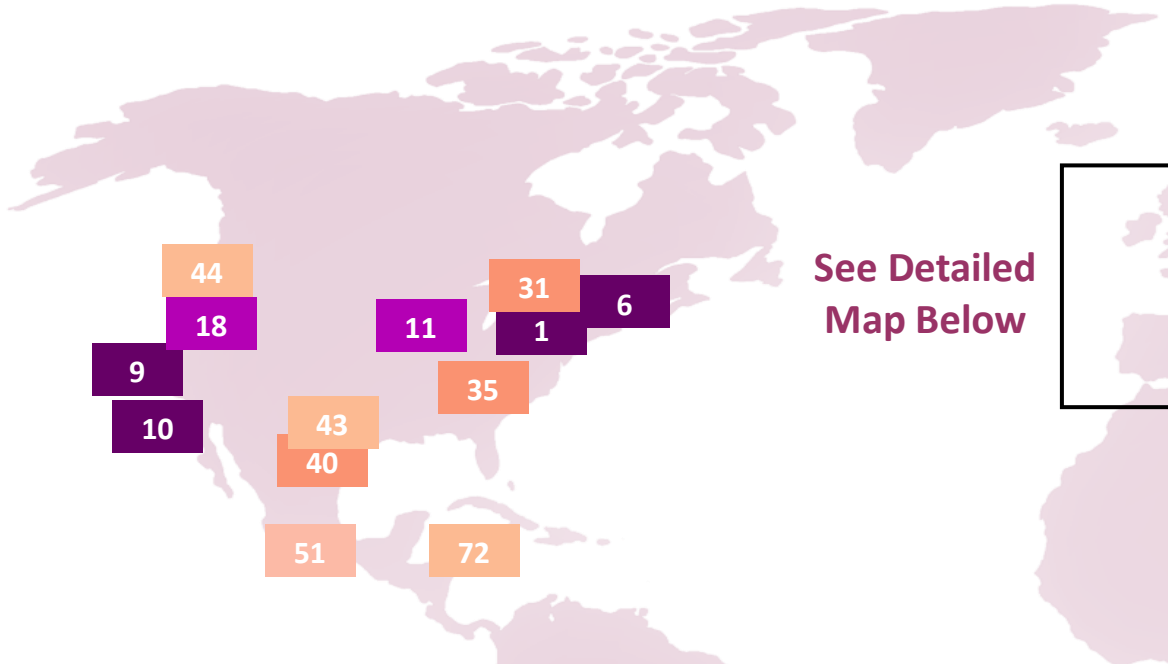
**Table 8 | Top 15 Centres By Reputational Advantage**

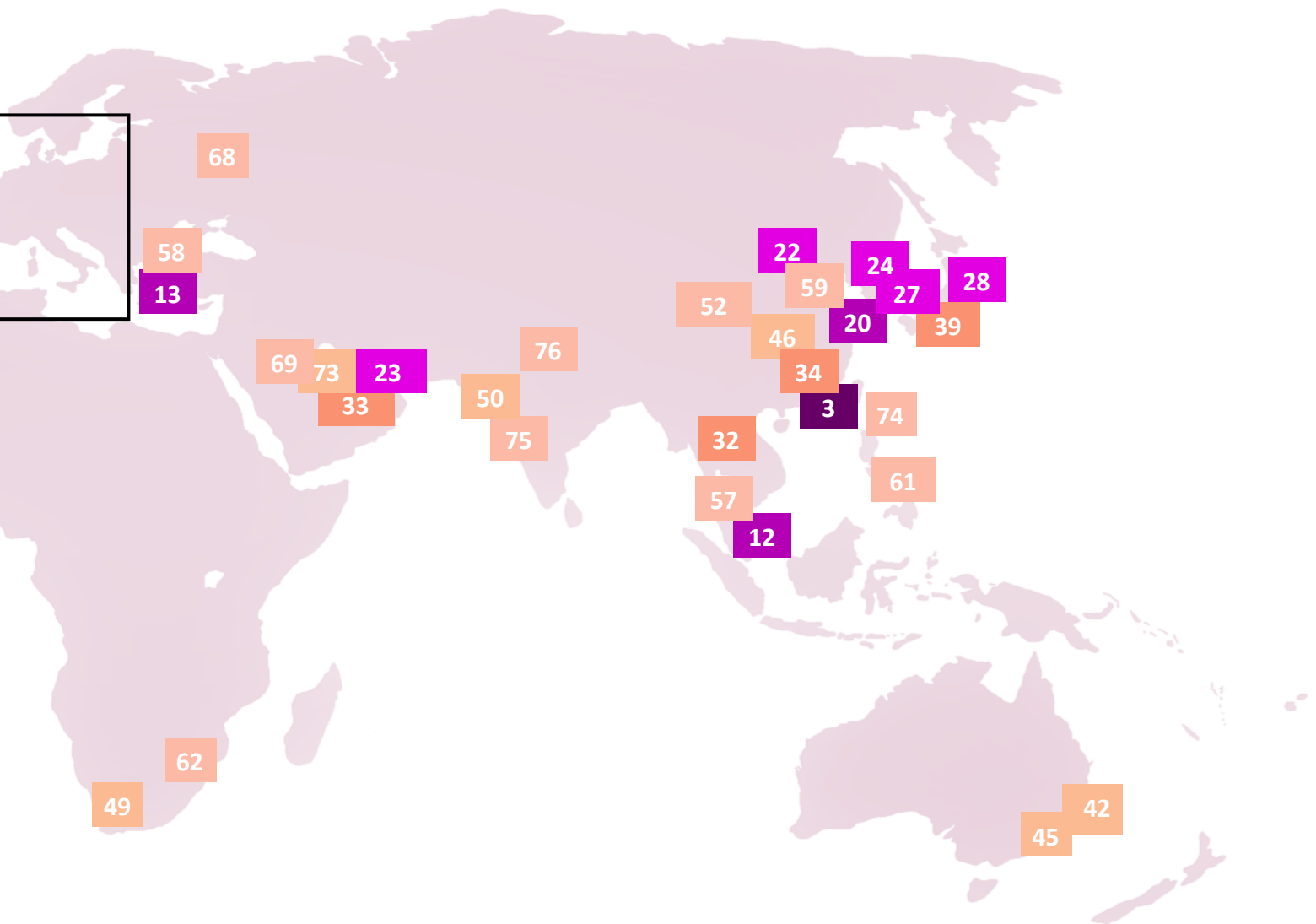
Centre - Top 15	Weighted Average Assessment	SCI 5 Rating	SCI 5 Reputational Advantage
GIFT City-Gujarat	792	646	146
Tel Aviv	824	706	118
London	834	736	98
Los Angeles	807	709	98
Copenhagen	811	715	96
San Francisco	804	710	94
Stockholm	788	698	90
New York	835	746	89
Boston	799	713	86
Singapore	791	707	84
Geneva	772	700	72
Gibraltar	707	638	69
Chicago	775	708	67
Oxford, UK	766	703	63
Zurich	779	716	63

**Table 9 | Lowest 15 Centres By Reputational Advantage**

Centre - Lowest 15	Weighted Average Assessment	SCI 5 Rating	SC 5 Reputational Advantage
Kuala Lumpur	546	631	-85
Stuttgart	495	593	-98
Cape Town	539	647	-108
Glasgow	569	678	-109
Moscow	493	604	-111
Bangkok	551	671	-120
Chengdu	512	643	-131
Melbourne	525	657	-132
Guangzhou	522	655	-133
Tianjin	474	625	-151
Osaka	510	664	-154
Taipei	402	562	-160
Athens	401	605	-204
New Delhi	183	472	-289
Mumbai	197	501	-304

## The SCI 5 World - Centres In The Index





The numbers indicate the rank of each centre in SCI 5.

An interactive map showing the data for each centre is at <https://www.longfinance.net/programmes/financial-centre-futures/smart-centres-index/sci-5-explore-data/sci-5-map/>

## Regional Analysis

In our analysis of the SCI data, we look at six regions of the world to explore centres' strengths in technology and finance.

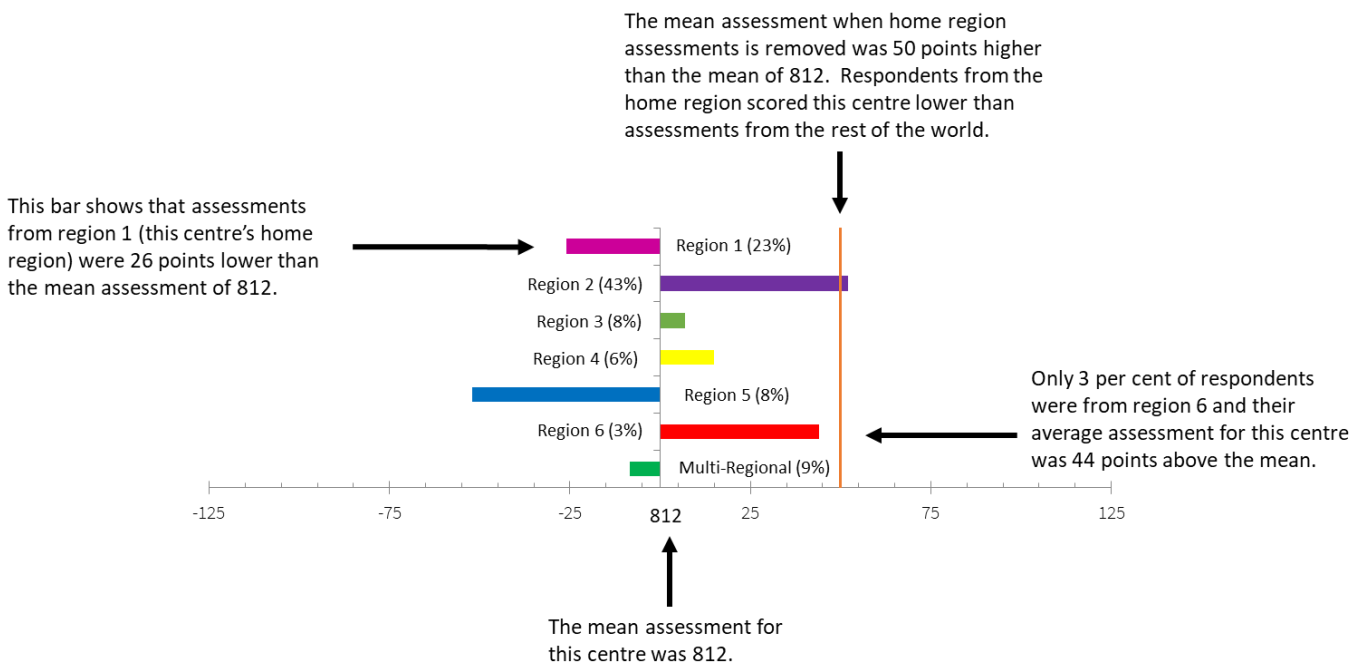
Alongside the ranks and ratings of centres, we investigate the average assessments received by regions and centres in more detail. We display this analysis in charts, which show:

- The mean assessment provided to that centre.
- The difference in the mean assessment when home region assessments are removed from the analysis.
- The difference between the mean and the assessments provided by respondents based in other regional centres.
- The proportion of assessments provided by each region.

Chart 8 shows an example of this analysis. Coloured bars to the left of the vertical axis indicate that respondents from that region gave lower than average assessments. Bars to the right indicate respondents from that region gave higher than average assessments. Assessments given to a centre by people based in that centre are excluded to remove 'home' bias.

The additional vertical axis (in red) shows the mean of assessments when assessments from the home region are removed. The percentage figure noted by each region indicates the percentage of the total number of assessments that are from that region.

**Chart 8 | Example: Assessments Compared With The Mean For A Centre**



## North America

- Innovation Support continues to score higher than the other dimensions among North American centres.
- Boston, San Francisco, and Los Angeles all moved into the top 10 in SCI 5.
- Respondents from Western Europe, North America, and Eastern Europe & Central Asia score New York lower than the overall average.

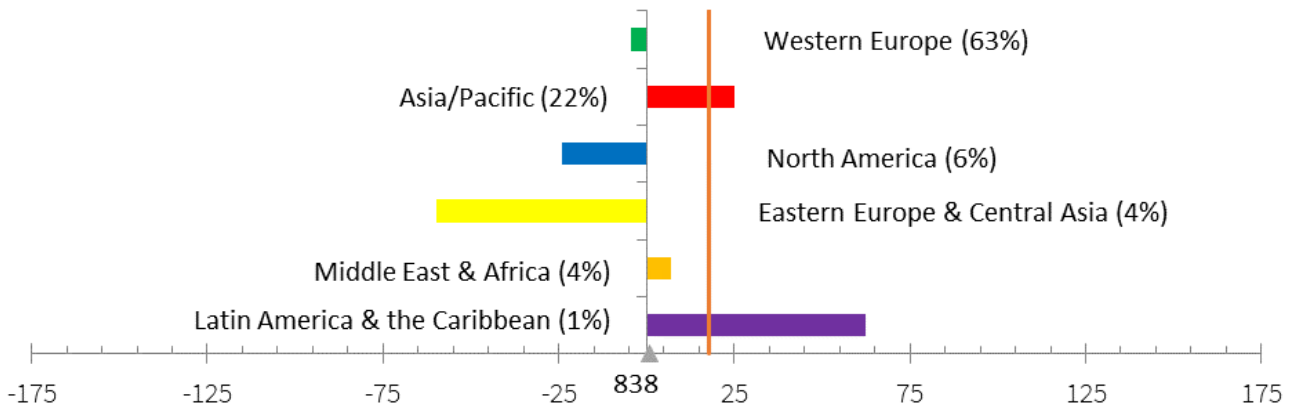
**Table 10 | North American Centres In SCI 5: Ranks And Ratings**

Centre	SCI 5		SCI 4		Change In Rank	Change In Rating
	Rank	Rating	Rank	Rating		
New York	1	746	1	731	0	▲15
Boston	6	713	16	687	▲10	▲26
San Francisco	9	710	17	686	▲8	▲24
Los Angeles	10	709	13	690	▲3	▲19
Chicago	11	708	11	692	0	▲16
Seattle	18	697	14	689	▼4	▲8
Toronto	31	672	27	660	▼4	▲12
Washington DC	35	668	29	658	▼6	▲10
Austin	40	663	39	645	▼1	▲18
Dallas / Fort Worth	43	660	33	654	▼10	▲6
Vancouver	44	659	35	652	▼9	▲7

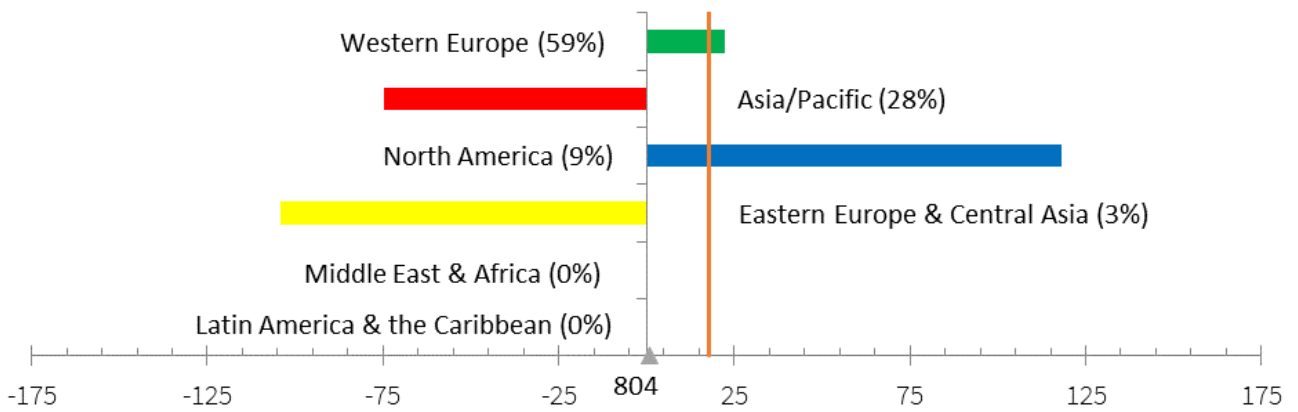
**Table 11 | North American Centres In SCI 5: SCI Dimensions**

Centre	SCI 5 Dimensions					
	Innovation Support		Creative Intensity		Delivery Capability	
	Rank	Rating	Rank	Rating	Rank	Rating
New York	1	253	1	245	1	248
Boston	6	243	10	234	6	236
San Francisco	10	241	11	233	6	236
Los Angeles	5	244	16	230	10	235
Chicago	6	243	20	230	9	235
Seattle	16	237	26	228	17	232
Toronto	24	234	45	213	25	225
Washington DC	21	235	37	219	52	213
Austin	29	229	35	220	50	214
Dallas / Fort Worth	40	227	42	216	44	217
Vancouver	35	228	48	213	42	219

**Chart 9 | New York Average Assessments – Difference From The Mean**



**Chart 10 | Boston Average Assessments – Difference From The Mean**



*“Human capital and exchanges between the UK and Switzerland are improving by the day. It is quite amazing.”*

**CEO, Professional Services Firm, London**

## Asia/Pacific

- Hong Kong retains its place in the top 10 centres in the SCI, with respondents from Western Europe and Eastern Europe & Central Asia scoring Hong Kong lower than average.
- Most centres in the region rose in the rankings and in the ratings.
- The majority of Asia/Pacific centres scored lower for Innovation Support, including regulation, than their overall ranking in the SCI; and higher for Creative Intensity.
- Chengdu joined the index for the first time.

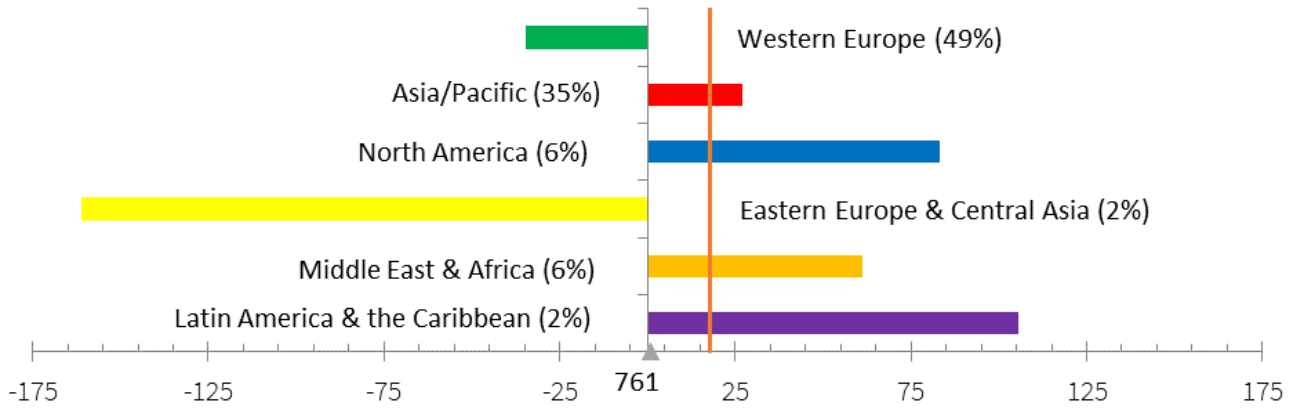
**Table 12 | Top 15 Asia/Pacific Centres In SCI 5: Ranks And Ratings**

Centre	SCI 5		SCI 4		Change In Rank	Change In Rating
	Rank	Rating	Rank	Rating		
Hong Kong	3	721	5	702	▲2	▲19
Singapore	12	707	6	700	▼6	▲7
Shanghai	20	692	28	659	▲8	▲33
Beijing	22	685	23	664	▲1	▲21
Seoul	24	680	25	662	▲1	▲18
Busan	27	676	41	643	▲14	▲33
Tokyo	28	675	47	633	▲19	▲42
Bangkok	32	671	34	653	▲2	▲18
Shenzhen	34	669	48	628	▲14	▲41
Osaka	39	664	50	623	▲11	▲41
Sydney	42	661	38	646	▼4	▲15
Melbourne	45	657	42	642	▼3	▲15
Guangzhou	46	655	53	618	▲7	▲37
GIFT City-Gujarat	50	646	44	638	▼6	▲8
Chengdu	52	643	New	New	New	New

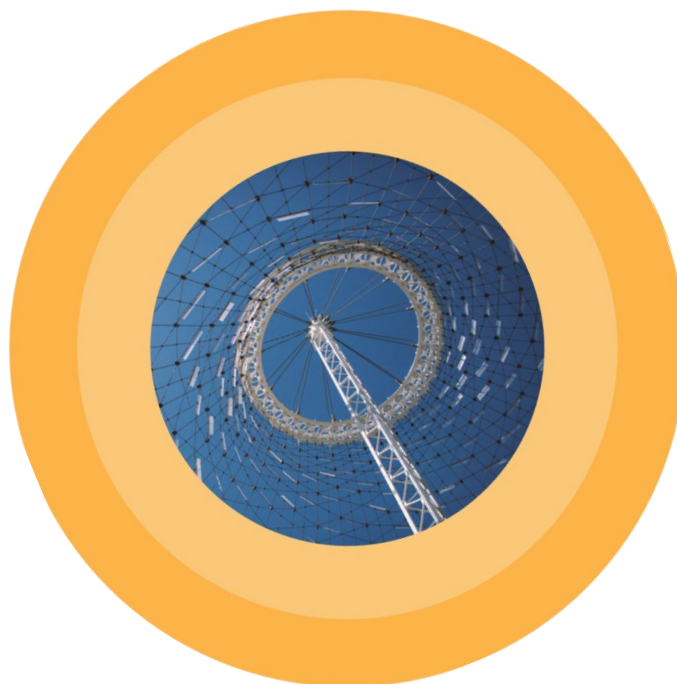
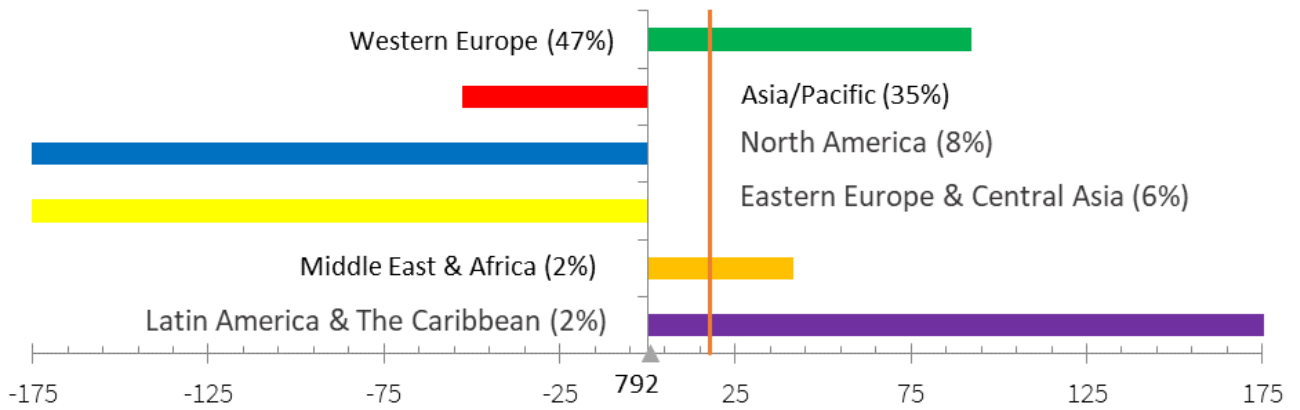
**Table 13 | Top 15 Asia/Pacific Centres In SCI 5: SCI Dimensions**

Centre	SCI 5 Dimensions					
	Innovation Support		Creative Intensity		Delivery Capability	
	Rank	Rating	Rank	Rating	Rank	Rating
Hong Kong	9	242	2	241	4	237
Singapore	17	236	6	236	10	235
Shanghai	48	223	5	237	16	232
Beijing	51	220	8	235	21	231
Seoul	32	228	27	227	25	225
Busan	26	230	32	223	30	223
Tokyo	43	224	18	230	37	221
Bangkok	26	230	31	225	45	216
Shenzhen	59	215	14	231	30	223
Osaka	36	227	38	219	43	218
Sydney	46	223	45	213	29	224
Melbourne	50	221	43	216	40	220
Guangzhou	70	205	18	230	38	221
GIFT City-Gujarat	47	223	50	211	53	212
Chengdu	53	219	40	217	62	208

**Chart 11 | Hong Kong Average Assessments – Difference From The Mean**



**Chart 12 | Singapore Average Assessments – Difference From The Mean**





## Western Europe

- London takes the top position in the region, with Zurich and Copenhagen rising to 4th and 5th positions.
- Respondents in all regions other than Western Europe and Latin America & The Caribbean score London higher than average.
- Gibraltar joins the index for the first time, at 55th position.
- Performance was mixed for centres in the region, with centres rising in the ratings, but a number of centres falling in the rankings.

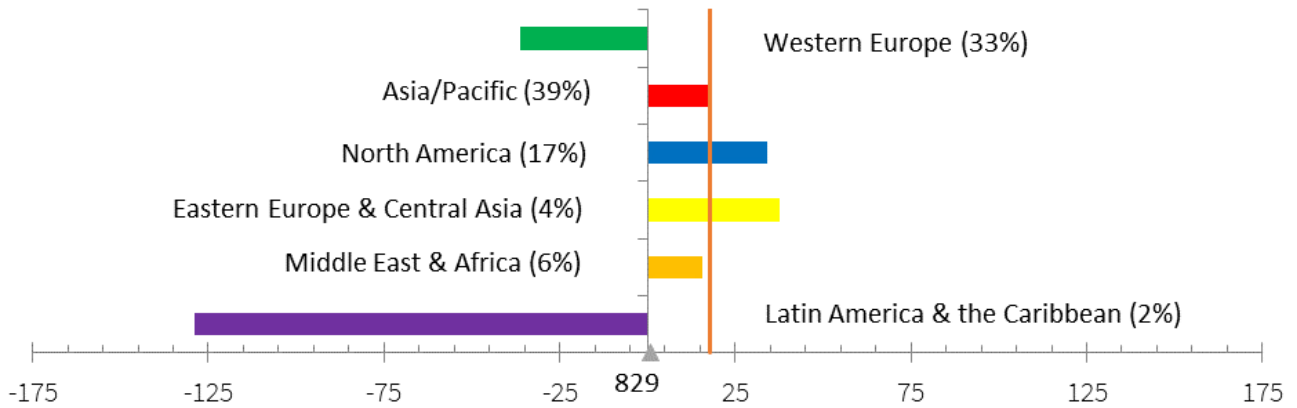
**Table 14 | Top 15 Western European Centres In SCI 5: Ranks And Ratings**

Centre	SCI 5		SCI 4		Change In	
	Rank	Rating	Rank	Rating	Rank	Rating
London	2	736	2	730	0	▲6
Zurich	4	716	7	696	▲3	▲20
Copenhagen	5	715	8	695	▲3	▲20
Cambridge, UK	7	712	4	707	▼3	▲5
Lugano	8	711	12	691	▲4	▲20
Oxford, UK	14	703	3	710	▼11	▼7
Malta	15	702	20	683	▲5	▲19
Geneva	16	700	15	688	▼1	▲12
Stockholm	17	698	9	694	▼8	▲4
Amsterdam	19	695	19	684	0	▲11
Dublin	21	691	10	693	▼11	▼2
Luxembourg	25	679	30	657	▲5	▲22
Glasgow	26	678	21	669	▼5	▲9
Brussels	29	674	40	644	▲11	▲30
Berlin	30	673	22	666	▼8	▲7

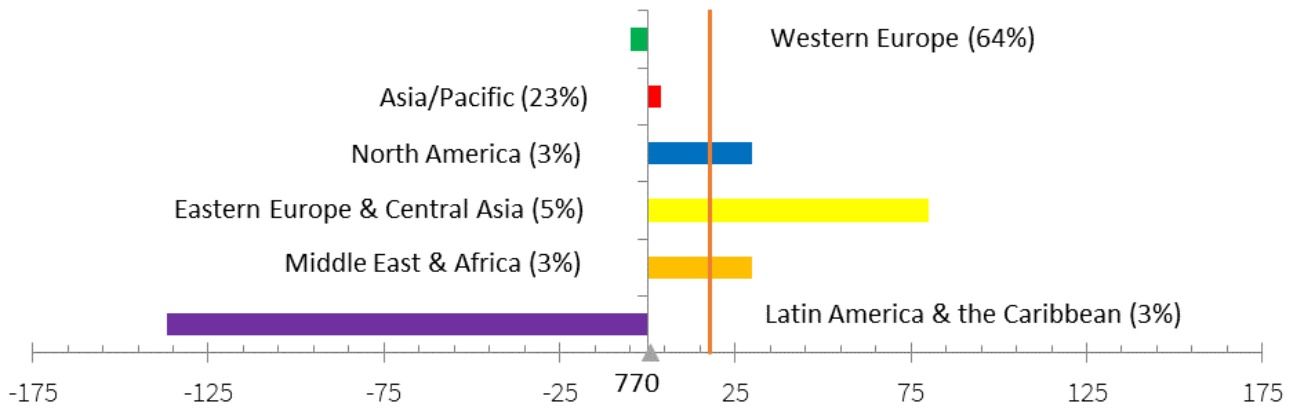
**Table 15 | Top 15 Western European Centres In SCI 5: SCI Dimensions**

Centre	SCI 5 Dimensions					
	Innovation Support		Creative Intensity		Delivery Capability	
	Rank	Rating	Rank	Rating	Rank	Rating
London	2	252	3	241	2	243
Zurich	3	248	8	235	14	233
Copenhagen	11	240	4	238	5	237
Cambridge, UK	6	243	27	227	3	242
Lugano	4	247	11	233	20	231
Oxford, UK	11	240	24	228	10	235
Malta	15	238	25	228	6	236
Geneva	14	239	15	231	22	230
Stockholm	22	235	16	230	15	233
Amsterdam	32	228	7	235	17	232
Dublin	17	236	29	225	23	230
Luxembourg	19	236	22	229	51	214
Glasgow	25	232	29	225	36	221
Brussels	22	235	23	229	58	210
Berlin	31	228	35	220	27	225

**Chart 13 | London Average Assessments – Difference From The Mean**



**Chart 14 | Zurich Average Assessments – Difference From The Mean**



*“Taxation has to be simple. This is the trick. Not the level, not the loopholes, but simplicity matters.”*

**CEO, Banking Services, London**

## Middle East & Africa

- Tel Aviv continues to lead the region, improving five rank places, and leads the region across all three dimensions.
- Respondents from Western Europe and Eastern Europe & Central Asia score Tel Aviv higher than average.
- Dubai ranks second in the region, and rose three places in the rankings.
- Bahrain joined the index for the first time.

**Table 16 | Middle Eastern & African Centres In SCI 5: Ranks And Ratings**

Centre	SCI 5		SCI 4		Change In Rank	Change In Rating
	Rank	Rating	Rank	Rating		
Tel Aviv	13	706	18	685	▲ 5	▲ 21
Dubai	23	681	26	661	▲ 3	▲ 20
Abu Dhabi	33	670	32	655	▼ 1	▲ 15
Cape Town	49	647	59	610	▲ 10	▲ 37
Johannesburg	62	622	63	597	▲ 1	▲ 25
Riyadh	69	600	67	579	▼ 2	▲ 21
Bahrain	73	576	New	New	New	New

**Table 17 | Middle Eastern & African Centres In SCI 5: SCI Dimensions**

Centre	SCI 5 Dimensions					
	Innovation Support		Creative Intensity		Delivery Capability	
	Rank	Rating	Rank	Rating	Rank	Rating
Tel Aviv	11	240	13	232	13	234
Dubai	29	229	20	230	32	223
Abu Dhabi	41	226	34	222	34	222
Cape Town	45	224	58	202	35	222
Johannesburg	51	220	70	191	57	211
Riyadh	66	210	69	193	67	197
Bahrain	74	190	66	194	69	192

**Chart 15 | Tel Aviv Average Assessments – Difference From The Mean**

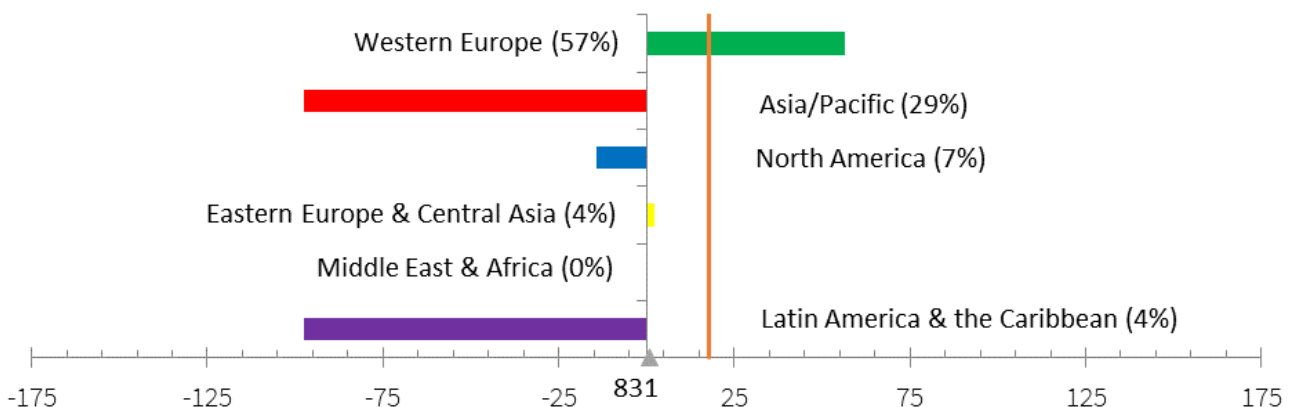
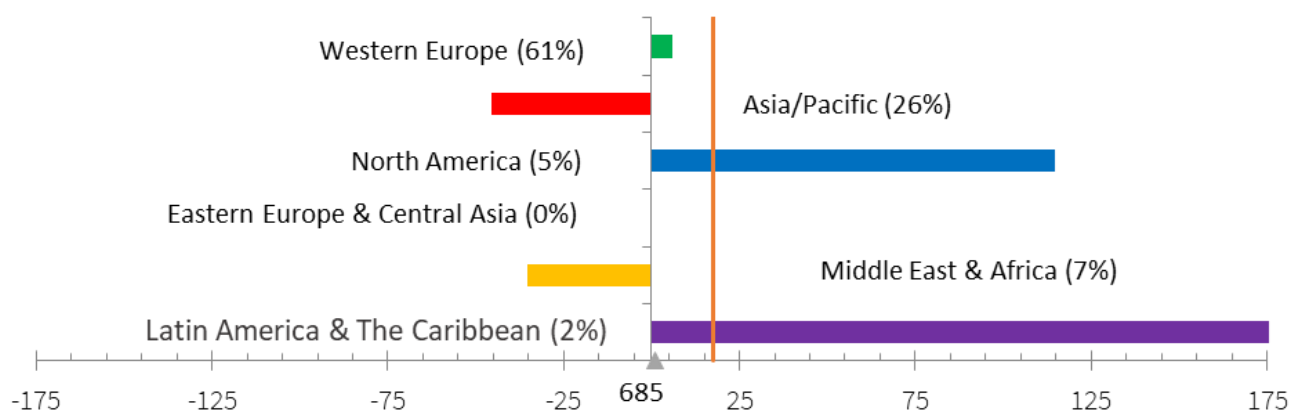


Chart 16 | Dubai Average Assessments – Difference From The Mean



## Eastern Europe & Central Asia

- Prague maintained its leading position in the region, just ahead of Sofia, although it fell in the rankings as Sofia gained ground.
- Athens entered the index for the first time.
- Respondents from North America scored Prague higher than average.
- Istanbul also improved its ranking.

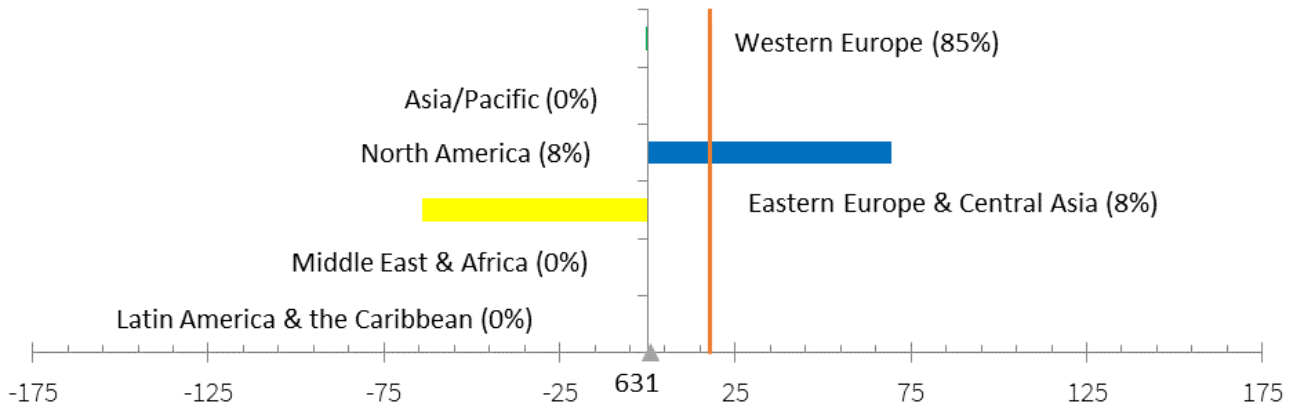
Table 18 | Eastern European & Central Asian Centres In SCI 5: Ranks And Ratings

Centre	SCI 5		SCI 4		Change In Rank	Change In Rating
	Rank	Rating	Rank	Rating		
Prague	36	667	24	663	▼ 12	▲ 4
Sofia	37	666	46	636	▲ 9	▲ 30
Budapest	56	632	56	613	0	▲ 19
Istanbul	58	627	64	589	▲ 6	▲ 38
Warsaw	63	621	61	603	▼ 2	▲ 18
Athens	67	605	New	New	New	New
Moscow	68	604	58	611	▼ 10	▼ 7

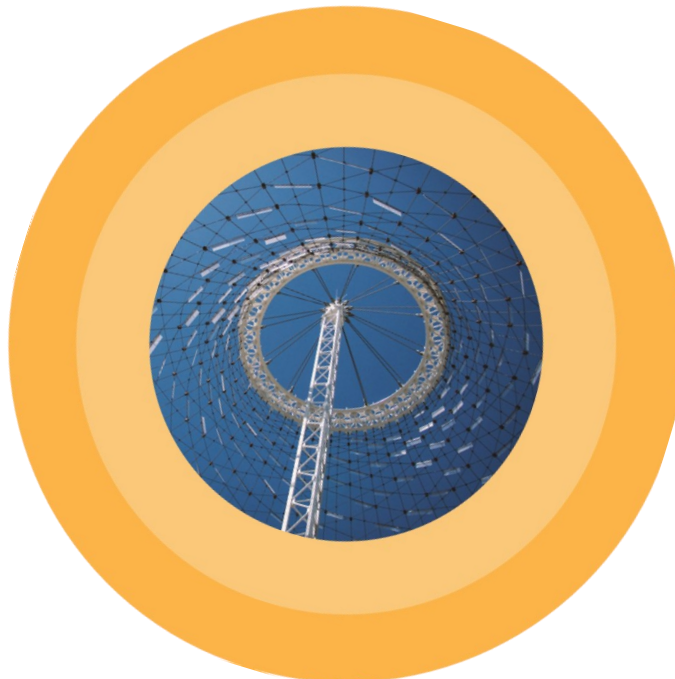
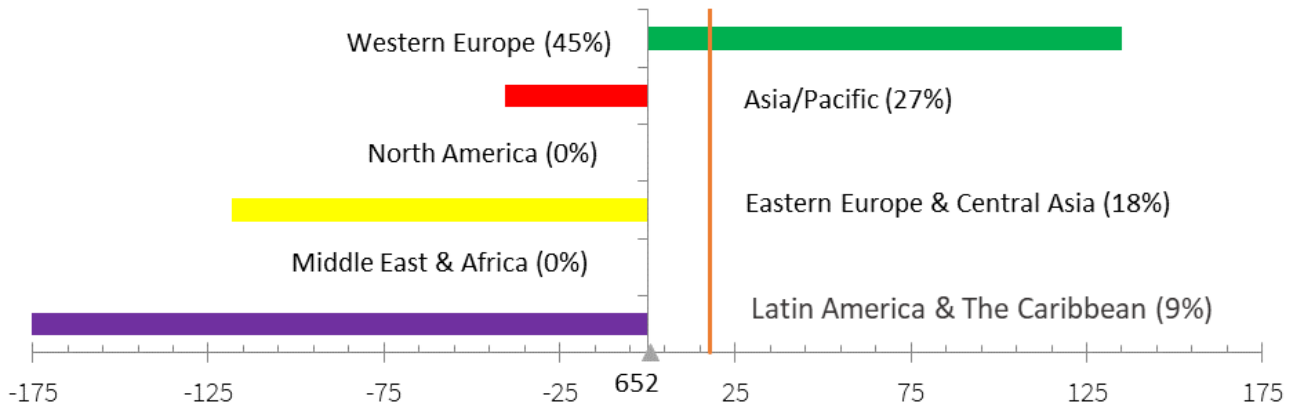
Table 19 | Eastern European & Central Asian Centres In SCI 5: SCI Dimensions

Centre	SCI 5 Dimensions					
	Innovation Support		Creative Intensity		Delivery Capability	
	Rank	Rating	Rank	Rating	Rank	Rating
Prague	36	227	54	208	17	232
Sofia	43	224	39	217	27	225
Budapest	53	219	62	201	53	212
Istanbul	55	219	74	185	32	223
Warsaw	58	215	71	190	46	216
Athens	57	216	63	200	71	190
Moscow	69	206	67	194	64	204

**Chart 17 | Prague Average Assessments – Difference From The Mean**



**Chart 18 | Sofia Average Assessments – Difference From The Mean**



## Latin America & The Caribbean

- Mexico City takes the lead in the region rising 3 rank places, while Cayman Islands fell sharply in the ranking and ratings.
- Mexico City was rated highly by respondents from Western Europe and higher than average by those from Asia/Pacific and Eastern Europe & Central Asia.

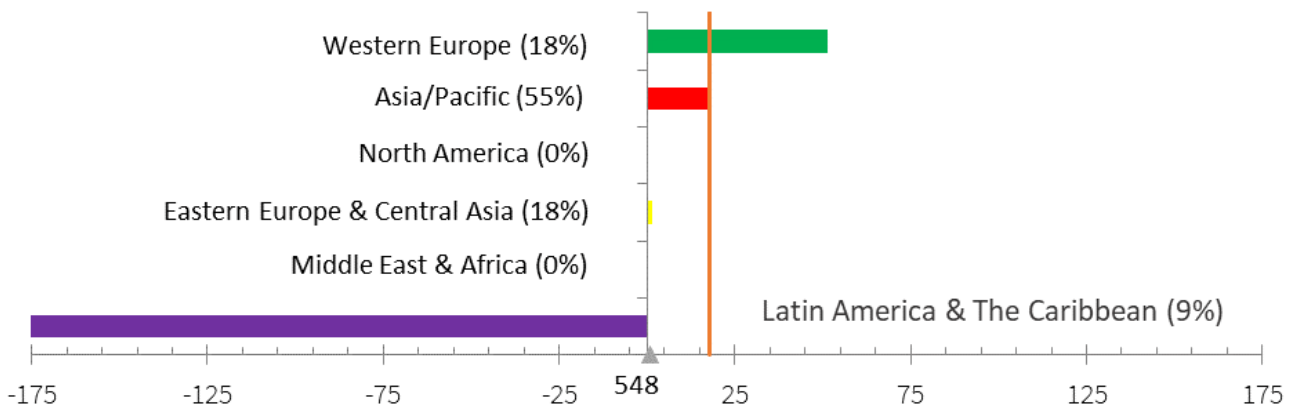
**Table 20 | Latin America & The Caribbean Centres In SCI 5: Ranks And Ratings**

Centre	SCI 5		SCI 4		Change In Rank	Change In Rating
	Rank	Rating	Rank	Rating		
Mexico City	51	645	54	617	▲ 3	▲ 28
Cayman Islands	72	585	49	624	▼ 23	▼ 39

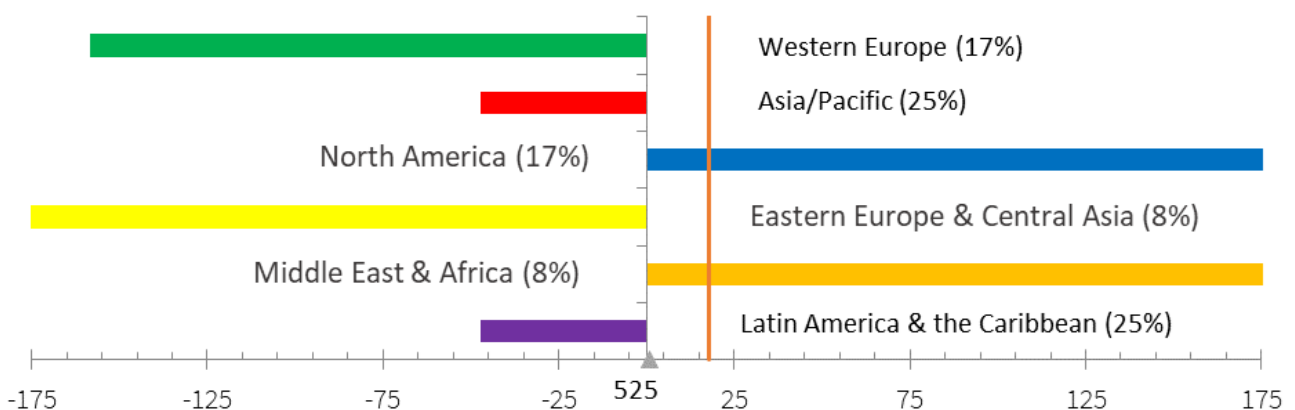
**Table 21 | Latin America & The Caribbean Centres In SCI 5: SCI Dimensions**

Centre	SCI 5 Dimensions					
	Innovation Support		Creative Intensity		Delivery Capability	
	Rank	Rating	Rank	Rating	Rank	Rating
Mexico City	49	222	58	202	38	221
Cayman Islands	73	198	73	188	66	199

**Chart 19 | Mexico City Average Assessments – Difference From The Mean**



**Chart 20 | Cayman Islands Average Assessments – Difference From The Mean**



## Appendix 1: Assessment Details

Table 22 | Details Of SCI Assessments By Centre

Centre	SCI 5 Rank	SCI 5 Rating	Assessments		
			Number	Average	St. Dev
New York	1	746	79	838	130
London	2	736	54	829	146
Hong Kong	3	721	49	761	180
Zurich	4	716	39	770	171
Copenhagen	5	715	8	792	129
Boston	6	713	32	804	167
Cambridge, UK	7	712	21	714	200
Lugano	8	711	8	767	234
San Francisco	9	710	34	806	199
Los Angeles	10	709	21	803	147
Chicago	11	708	41	775	119
Singapore	12	707	49	792	221
Tel Aviv	13	706	28	831	205
Oxford, UK	14	703	20	757	196
Malta	15	702	9	733	148
Geneva	16	700	17	767	192
Stockholm	17	698	13	777	174
Seattle	18	697	11	670	275
Amsterdam	19	695	36	734	140
Shanghai	20	692	31	685	263
Dublin	21	691	38	669	182
Beijing	22	685	34	700	227
Dubai	23	681	61	685	200
Seoul	24	680	19	663	285
Luxembourg	25	679	22	720	173
Glasgow	26	678	10	623	214
Busan	27	676	14	683	190
Tokyo	28	675	23	675	281
Brussels	29	674	20	650	175
Berlin	30	673	29	694	212
Toronto	31	672	16	723	190
Bangkok	32	671	11	548	218
Abu Dhabi	33	670	18	657	243
Shenzhen	34	669	16	650	298
Washington	35	668	16	650	242
Prague	36	667	13	631	150
Sofia	37	666	11	652	199
Paris	38	665	34	610	131

Centre	SCI 5 Rank	SCI 5 Rating	Assessments		
			Number	Average	St. Dev
Osaka	39	664	14	517	308
Austin	40	663	5	593	290
Vienna	41	662	11	706	145
Sydney	42	661	16	644	269
Dallas / Fort Worth	43	660	7	724	187
Vancouver	44	659	18	687	207
Melbourne	45	657	13	551	324
Guangzhou	46	655	13	544	262
Frankfurt	47	652	42	694	148
Edinburgh	48	650	32	652	153
Cape Town	49	647	16	554	223
GIFT City-Gujarat	50	646	138	791	134
Mexico City	51	645	11	548	166
Chengdu	52	643	11	533	269
Guernsey	53	642	7	600	285
Hamburg	54	641	11	609	189
Gibraltar	55	638	10	693	262
Budapest	56	632	15	604	156
Kuala Lumpur	57	631	15	560	244
Istanbul	58	627	11	600	177
Tianjin	59	625	12	492	270
Munich	60	624	18	626	189
Manila	61	623	15	576	268
Johannesburg	62	622	13	559	159
Warsaw	63	621	17	620	186
Madrid	64	620	17	573	188
Milan	65	619	19	596	220
Isle of Man	66	613	7	648	237
Athens	67	605	10	393	200
Moscow	68	604	18	496	232
Riyadh	69	600	10	577	245
Rome	70	598	11	530	226
Stuttgart	71	593	9	515	285
Cayman Islands	72	585	12	525	229
Bahrain	73	576	10	543	239
Taipei	74	562	9	389	345
Mumbai	75	501	88	219	252
New Delhi	76	472	87	216	251

Table 23 | Details Of Assessments Of SCI Dimensions By Centre

Centre	SCI Dimensions					
	Innovation Support		Creative Intensity		Delivery Capability	
	Average	St. Dev	Average	St. Dev	Average	St. Dev
New York	837	134	834	127	842	130
London	852	141	813	157	822	141
Hong Kong	759	197	773	163	751	182
Zurich	805	167	756	177	749	170
Copenhagen	813	99	813	146	750	141
Boston	822	166	794	154	797	180
Cambridge, UK	719	194	657	229	767	177
Lugano	825	149	738	262	738	292
San Francisco	782	226	835	174	800	195
Los Angeles	814	165	810	126	786	149
Chicago	776	118	785	115	763	124
Singapore	804	206	786	234	786	223
Tel Aviv	854	190	807	209	832	216
Oxford, UK	780	204	740	193	750	191
Malta	756	174	678	120	767	150
Geneva	812	162	753	212	735	203
Stockholm	792	161	777	148	762	214
Seattle	664	269	682	275	664	280
Amsterdam	728	128	756	142	719	151
Shanghai	648	267	713	267	694	254
Dublin	684	178	666	182	658	185
Beijing	635	246	735	219	729	215
Dubai	692	198	715	192	649	209
Seoul	642	295	668	281	679	280
Luxembourg	755	157	709	160	695	201
Glasgow	640	232	620	230	610	179
Busan	679	193	679	181	693	198
Tokyo	648	283	678	278	700	281
Brussels	655	157	655	193	640	176
Berlin	717	221	669	229	697	186
Toronto	738	186	694	195	738	189
Bangkok	545	207	582	252	518	194
Abu Dhabi	689	181	650	275	633	274
Shenzhen	581	283	719	293	650	318
Washington DC	675	224	650	253	625	249
Prague	654	161	592	155	646	133
Sofia	664	191	609	207	682	199
Paris	626	140	588	130	615	123



Table 23 (Continued) | Details Of Assessments Of SCI Dimensions By Centre

Centre	SCI Dimensions					
	Innovation Support		Creative Intensity		Delivery Capability	
	Average	St.Dev	Average	St.Dev	Average	St.Dev
Osaka	529	322	521	302	500	299
Austin	640	321	580	277	560	270
Vienna	727	142	664	157	727	135
Sydney	650	266	619	264	663	278
Dallas / Fort Worth	714	219	757	190	700	153
Vancouver	711	217	689	197	661	209
Melbourne	562	338	546	313	546	320
Guangzhou	500	271	546	263	585	251
Frankfurt	693	161	693	137	698	146
Edinburgh	697	156	631	160	628	144
Cape Town	563	231	525	224	575	214
GIFT City-Gujarat	789	133	788	135	796	133
Mexico City	555	192	509	158	582	147
Chengdu	509	274	582	271	509	263
Guernsey	629	275	586	267	586	313
Hamburg	618	209	582	178	627	179
Gibraltar	760	232	670	258	650	295
Budapest	560	164	587	164	667	140
Kuala Lumpur	573	231	560	238	547	261
Istanbul	591	181	600	184	609	164
Tianjin	500	266	483	269	492	275
Munich	622	196	617	182	639	188
Manila	553	259	593	289	580	257
Johannesburg	615	157	500	153	562	166
Warsaw	629	199	582	198	647	162
Madrid	600	180	565	184	553	200
Milan	621	223	600	224	568	214
Isle of Man	657	190	657	257	629	263
Athens	430	263	340	158	410	179
Moscow	472	230	467	220	550	246
Riyadh	600	194	560	232	570	309
Rome	573	205	518	244	500	228
Stuttgart	533	296	489	276	522	282
Cayman Islands	550	220	492	231	533	235
Bahrain	600	249	550	207	480	262
Taipei	400	350	400	343	367	343
Mumbai	218	249	215	249	224	257
New Delhi	209	237	211	244	228	274

## Appendix 2: Respondents' Details

**Table 24 | Respondents By Industry Sector**

Industry Sector	Number Of Respondents	Percentage Of Respondents
Banking	14	5%
Debt Capital Markets	7	2%
Equity Capital Markets	5	2%
Insurance	18	6%
Investment Management	30	10%
Knowledge	26	9%
Policy and Public Finance	20	7%
Professional Services	55	19%
Technology	90	30%
Trading	24	8%
Not Specified	7	2%
<b>Total</b>	<b>296</b>	<b>100%</b>

**Table 25 | Respondents By Region**

Region	Number Of Respondents	Percentage Of Respondents
Western Europe	132	45%
Asia/Pacific	68	23%
North America	30	10%
Middle East & Africa	21	7%
Eastern Europe & Central Asia	26	9%
Latin America & the Caribbean	19	6%
Multi-Regional	0	0%
<b>Total</b>	<b>296</b>	<b>100%</b>

**Table 26 | Respondents By Size Of Organisation**

Size Of Organisation	Number Of Respondents	Percentage Of Respondents
Fewer than 50	167	56%
50 to 100	43	15%
100 to 500	19	6%
500 to 1,000	14	5%
1,000 to 2,000	14	5%
2,000 to 5,000	8	3%
More than 5,000	31	10%
Not Specified	0	0%
<b>Total</b>	<b>296</b>	<b>100%</b>



## Appendix 3: Methodology

The SCI provides ratings for the innovation and technology offerings of commercial and financial centres. The process involves taking two sets of ratings – one from survey respondents and one generated by a statistical model – and combining them into a single rating.

For the first set of ratings, the **centre assessments**, respondents use an online questionnaire to rate three dimensions:

- Innovation Support - the approach taken to regulation and support for the innovation and technology industry provided by the commercial ecosystem.
- Creative Intensity - the extent to which technology and innovative industries are embedded in the economy of the centre.
- Delivery Capability - the quality of the work being undertaken in the field in the centre.

Ratings are given using a 10 point scale ranging from very poor to excellent. Responses are sought from a range of individuals drawn from the financial services and technology sectors, non-governmental organisations, regulators, universities, and trade bodies.

For the second set of ratings, we use a database of indicators, or **Instrumental Factors**, that contain quantitative data about each centre. We use a machine learning algorithm to investigate the correlation between the financial centre assessments and these Instrumental Factors to predict how each respondent would have rated the centres they do not know. These 134 Instrumental Factors draw on data from a range of sources. A full list of the Instrumental Factors used in the model is in Appendix 4.

The respondents' actual ratings as well as their predicted ratings for the centres they did not rate, are then combined into a single table to produce ratings for each dimension. These are then added together, using equal weighting, to create the SCI rating.

### Factors Affecting The Inclusion Of Centres In The SCI

The questionnaire lists a total of 131 commercial and financial centres which can be rated by respondents. The questionnaire also asks whether there are centres not currently in the survey that will become significant over the next two to three years. Centres which are not currently within the questionnaire and which are mentioned repeatedly in response to this question will be added to the questionnaire for future editions.

We give a centre a SCI rating and ranking if it receives a statistically significant minimum number of assessments from individuals based in other geographical locations - at least 10 in SCI 5. This means that not all 131 centres in the questionnaire receive a ranking. We will keep this number under review for further editions of the index as the number of assessments increases.

We will also develop rules as successive indices are published as to when a centre may be removed from the rankings, for example, if over a 24 month period, a centre has not received a minimum number of assessments.

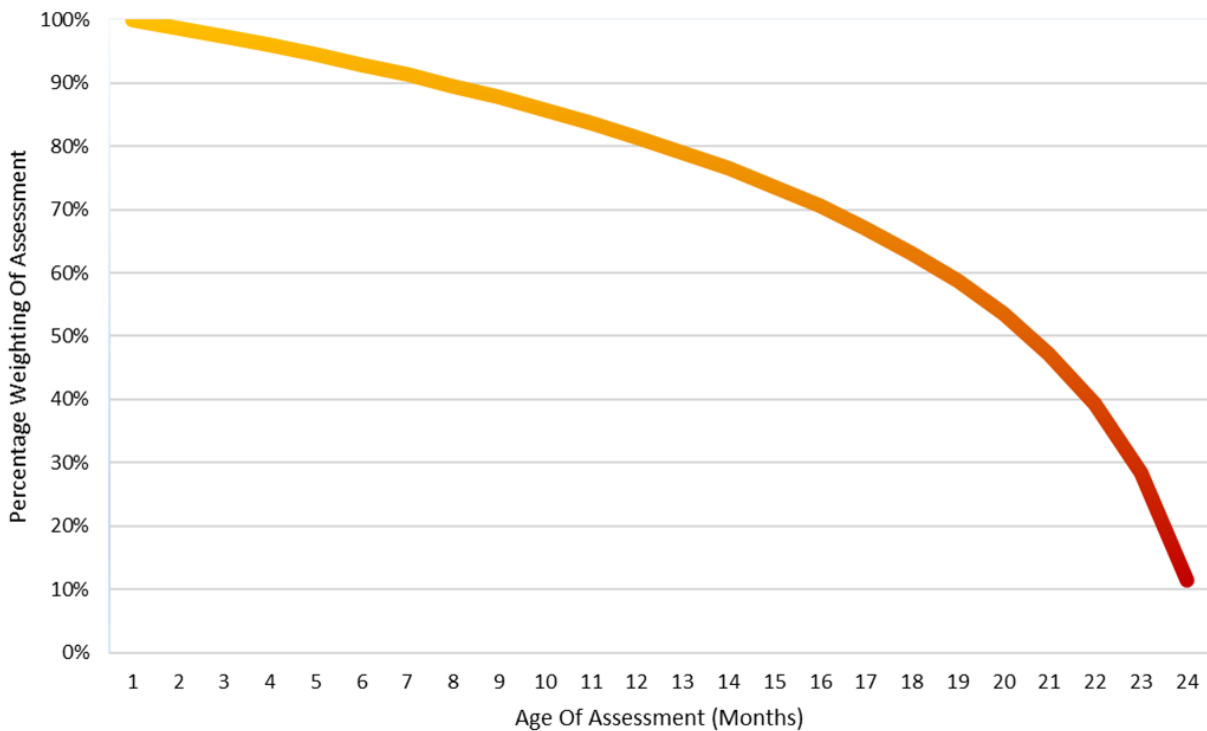
## Centre Assessments

Centre assessments are collected via an online questionnaire which runs continuously and which is at [www.smartcentresindex.net/survey/](http://www.smartcentresindex.net/survey/). A link to this questionnaire is emailed to a target list of respondents at regular intervals. Other interested parties can complete the questionnaire by following the link given in SCI publications.

In calculating the SCI:

- The score given by a respondent to their home centre, and scores from respondents who do not specify a home centre, are excluded from the model – this is designed to prevent home bias.
- Financial centre assessments are included in the SCI model for 24 months after they have been received – we consider that this is a period during which assessments maintain their validity.
- Financial centre assessments from the month when the SCI is created are given full weighting with earlier responses given a reduced weighting on a logarithmic scale as shown in Chart 21 - this recognises that older ratings, while still valid, are less likely to be up-to-date.

**Chart 21 | Reduction In Weighting As Assessments Become Older**



### Instrumental Factor Data

For the instrumental factors, we have the following data requirements:

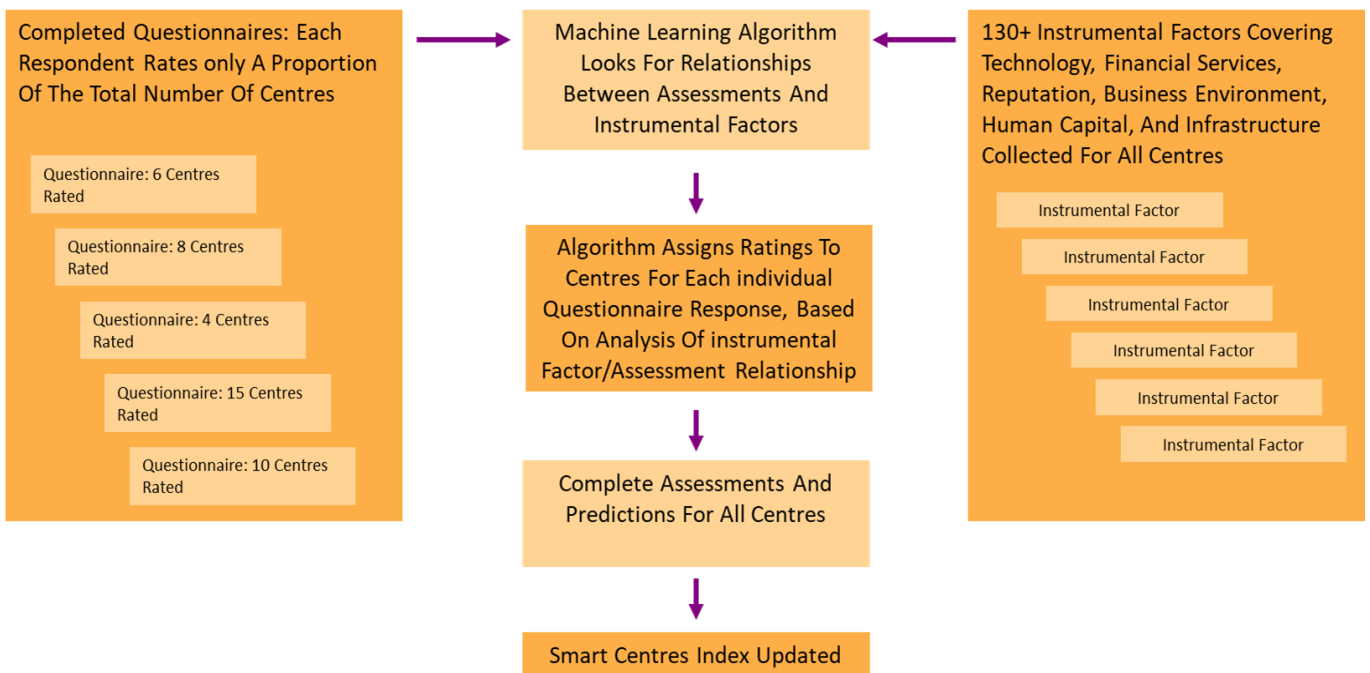
- Data series should come from a reputable body and be derived by a sound methodology.
- Data series should be readily available (ideally in the public domain) and be regularly updated.

The rules on the use of instrumental factor data in the model are as follows:

- Updates to the indices are collected and collated every six months.
- No weightings are applied to indices.
- Indices are entered into the SCI model as directly as possible, whether this is a rank, a derived score, a value, a distribution around a mean, or a distribution around a benchmark.
- If a factor is at a national level, the score will be used for all centres in that country; nation-based factors will be avoided if centre (city)-based factors are available.
- If an index has multiple values for a city or nation, the most relevant value is used.
- If an index is at a regional level, the most relevant allocation of scores to each centre is made (and the method for judging relevance is noted).
- If an index does not contain a value for a particular centre, a blank is entered against that centre (no average or mean is used).

The process of creating the SCI is outlined in Chart 22.

**Chart 22 | The SCI Process**



## Appendix 4: Instrumental Factors

**Table 27 | Instrumental Factor Correlation With SCI Ratings - Highest 30 Factors**

Instrumental Factors	R-squared
Urban Mobility Readiness Index	0.474
Telecommunication Infrastructure Index	0.440
Global Innovation Index	0.433
E-Participation Index	0.420
Safe Cities	0.408
Adjusted Net National Income Per Capita	0.380
Global Power City Index	0.357
Global Enabling Trade Report	0.356
World Competitiveness Scoreboard	0.355
Legatum Prosperity Index	0.355
Business Environment Rankings	0.337
Sustainable Economic Development	0.316
The Global Green Finance Index (Depth)	0.313
World Talent Rankings	0.311
Global Competitiveness Index	0.311
Energy Transition Index	0.305
Best Countries For Business	0.305
Innovation Cities Global Index	0.298
Economic Freedom	0.297
ICT Development Index	0.294
Government Effectiveness	0.290
JLL Real Estate Transparency Index	0.289
The Global Green Finance Index (Quality)	0.280
Domestic Credit To Private Sector (% Of GDP)	0.278
Human Development Index	0.270
Smart City Index	0.267
Networked Readiness Index	0.267
Rule Of Law	0.266
Regulatory Quality	0.263
Operational Risk Rating	0.262

Table 28 | Technology Factors

Instrumental Factor	Source	Website	Updated Since SCI 4 Y/N
E-Participation Index	United Nations	<a href="https://publicadministration.un.org/egovkb/Data-Center">https://publicadministration.un.org/egovkb/Data-Center</a>	Y
UN International Sale Of Goods	United Nations	<a href="https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&amp;mtdsg_no=X-10&amp;chapter=10">https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&amp;mtdsg_no=X-10&amp;chapter=10</a>	Y
ISO TC307 Participation	International Organisation For Standardisation	<a href="https://www.iso.org/committee/6266604.html?view=participation">https://www.iso.org/committee/6266604.html?view=participation</a>	Y
Internet Censorship Rank	comparitech	<a href="https://www.comparitech.com/blog/vpn-privacy/internet-censorship-map/">https://www.comparitech.com/blog/vpn-privacy/internet-censorship-map/</a>	Y
Volume Of Bitcoin Trades	Coin Dance	<a href="https://coin.dance/volume/localbitcoins">https://coin.dance/volume/localbitcoins</a>	Y
Legal Status Of Bitcoin	Coin Dance	<a href="https://coin.dance/poli/legality">https://coin.dance/poli/legality</a>	Y
Use Of Blockchain In Land Registration	Airtable Blockchain in Government Tracker	<a href="https://airtable.com/universe/expsQEGKoZO2lExKK/blockchain-in-government-tracker?explore=true">https://airtable.com/universe/expsQEGKoZO2lExKK/blockchain-in-government-tracker?explore=true</a>	N
Use Of Blockchain In Identity Management	Airtable Blockchain in Government Tracker	<a href="https://airtable.com/universe/expsQEGKoZO2lExKK/blockchain-in-government-tracker?explore=true">https://airtable.com/universe/expsQEGKoZO2lExKK/blockchain-in-government-tracker?explore=true</a>	N
Use Of Blockchain For Trade Finance	Airtable Blockchain in Government Tracker	<a href="https://airtable.com/universe/expsQEGKoZO2lExKK/blockchain-in-government-tracker?explore=true">https://airtable.com/universe/expsQEGKoZO2lExKK/blockchain-in-government-tracker?explore=true</a>	N
Use Of Blockchain In Healthcare	Airtable Blockchain in Government Tracker	<a href="https://airtable.com/universe/expsQEGKoZO2lExKK/blockchain-in-government-tracker?explore=true">https://airtable.com/universe/expsQEGKoZO2lExKK/blockchain-in-government-tracker?explore=true</a>	N
Use Of Blockchain In Voting	Airtable Blockchain in Government Tracker	<a href="https://airtable.com/universe/expsQEGKoZO2lExKK/blockchain-in-government-tracker?explore=true">https://airtable.com/universe/expsQEGKoZO2lExKK/blockchain-in-government-tracker?explore=true</a>	N
Global AI Index	Tortoise Intelligence	<a href="https://www.tortoisemedia.com/intelligence/ai">https://www.tortoisemedia.com/intelligence/ai</a>	Y
FinTech Index	Z/Yen	<a href="https://www.longfinance.net/programmes/financial-centre-futures/global-financial-centres-index/">https://www.longfinance.net/programmes/financial-centre-futures/global-financial-centres-index/</a>	Y
The Global Fintech Index	Findexable	<a href="https://findexable.com/">https://findexable.com/</a>	N
Global Cybersecurity Index	ITU	<a href="http://www.itu.int/en/ITU-D/Cybersecurity/Pages/GCI.aspx">http://www.itu.int/en/ITU-D/Cybersecurity/Pages/GCI.aspx</a>	N
ICT Development Index	ITU	<a href="http://www.itu.int/net4/ITU-D/idi/2017/index.html">http://www.itu.int/net4/ITU-D/idi/2017/index.html</a>	N
Telecommunication Infrastructure Index	United Nations	<a href="https://publicadministration.un.org/egovkb/en-us/Data-Center">https://publicadministration.un.org/egovkb/en-us/Data-Center</a>	N
Open Data Barometer	World Wide Web Foundation	<a href="https://opendatabarometer.org/4thedition/?_year=2016&amp;indicator=ODB">https://opendatabarometer.org/4thedition/?_year=2016&amp;indicator=ODB</a>	N
Worldwide Broadband Speed League	Cable	<a href="https://www.cable.co.uk/broadband/speed/worldwide-speed-league/">https://www.cable.co.uk/broadband/speed/worldwide-speed-league/</a>	Y
Smart City Index	IMD	<a href="https://www.imd.org/smart-city-observatory/smart-city-index/">https://www.imd.org/smart-city-observatory/smart-city-index/</a>	Y

Table 29 | Financial Sector Development Factors

Instrumental Factor	Source	Website	Updated Since SCI 4 Y/N
Capitalisation of Stock Exchanges	The World Federation of Stock Exchanges	<a href="https://focus.world-exchanges.org/issue/december-2021/market-statistics">https://focus.world-exchanges.org/issue/december-2021/market-statistics</a>	Y
Value of Share Trading	The World Federation of Stock Exchanges	<a href="https://focus.world-exchanges.org/issue/december-2021/market-statistics">https://focus.world-exchanges.org/issue/december-2021/market-statistics</a>	Y
Volume of Share Trading	The World Federation of Stock Exchanges	<a href="https://statistics.world-exchanges.org/ReportGenerator/Generator#">https://statistics.world-exchanges.org/ReportGenerator/Generator#</a>	Y
Broad Stock Index Levels	The World Federation of Stock Exchanges	<a href="https://focus.world-exchanges.org/issue/december-2021/market-statistics">https://focus.world-exchanges.org/issue/december-2021/market-statistics</a>	Y
Value of Bond Trading	The World Federation of Stock Exchanges	<a href="https://statistics.world-exchanges.org/ReportGenerator/Generator#">https://statistics.world-exchanges.org/ReportGenerator/Generator#</a>	Y
Domestic Credit To Private Sector (% Of GDP)	The World Bank	<a href="https://data.worldbank.org/indicator/FS.AST.PRVT.GD.ZS?most_recent_value_desc=false">https://data.worldbank.org/indicator/FS.AST.PRVT.GD.ZS?most_recent_value_desc=false</a>	New
Percentage of Firms Using Banks To Finance Investment	The World Bank	<a href="http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators&amp;series=IC.FRM.BNKS.ZS">http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators&amp;series=IC.FRM.BNKS.ZS</a>	Y
Total Net Assets Of Regulated Open-End Funds	Investment Company Institute	<a href="http://www.icifactbook.org/">http://www.icifactbook.org/</a>	N
Islamic Finance Country Index	Islamic Banks and Financial Institutions	<a href="http://www.gifr.net/publications">http://www.gifr.net/publications</a>	N
Net External Positions Of Banks	The Bank for International Settlements	<a href="http://www.bis.org/statistics/annex_map.htm">http://www.bis.org/statistics/annex_map.htm</a>	N
External Positions Of Central Banks As A Share Of GDP	The Bank for International Settlements	<a href="http://www.bis.org/statistics/annex_map.htm">http://www.bis.org/statistics/annex_map.htm</a>	N
Liner Shipping Connectivity Index	The World Bank	<a href="http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IS_SHP.GCNW.XQ">http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=IS_SHP.GCNW.XQ</a>	N
Global Connectedness Index	DHL	<a href="https://www.dhl.com/global-en/spotlight/globalization/global-connectedness-index.html">https://www.dhl.com/global-en/spotlight/globalization/global-connectedness-index.html</a>	N
Economic Performance Index	The Brookings Institution	<a href="https://www.brookings.edu/research/global-metro-monitor-2018/#rank">https://www.brookings.edu/research/global-metro-monitor-2018/#rank</a>	N
Financial System Green Alignment	Corporate Knights	<a href="https://www.finance-watch.org/publication/global-green-finance-index-3/">https://www.finance-watch.org/publication/global-green-finance-index-3/</a>	N
Protected Land Area % Of Land Area	The World Bank	<a href="http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=ER.LND.PTLD.ZS&amp;country=">http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=ER.LND.PTLD.ZS&amp;country=</a>	N
Climate-Aligned Bonds Outstanding By Country Of Issuer	CBI	<a href="https://www.finance-watch.org/publication/global-green-finance-index-3/">https://www.finance-watch.org/publication/global-green-finance-index-3/</a>	N
Sustainable Stock Exchanges (Y/N)	UN Sustainable Stock Exchange Initiative	<a href="https://sseinitiative.org/members/">https://sseinitiative.org/members/</a>	N
Green Bond Segments on Stock Exchanges (Y/N)	CBI	<a href="https://www.climatebonds.net/green-bond-segments-stock-exchanges">https://www.climatebonds.net/green-bond-segments-stock-exchanges</a>	N
The Global Green Finance Index (Depth)	Z/Yen	<a href="https://www.longfinance.net/programmes/financial-centre-futures/global-green-finance-index/">https://www.longfinance.net/programmes/financial-centre-futures/global-green-finance-index/</a>	Y
The Global Green Finance Index (Quality)	Z/Yen	<a href="https://www.longfinance.net/programmes/financial-centre-futures/global-green-finance-index/">https://www.longfinance.net/programmes/financial-centre-futures/global-green-finance-index/</a>	Y
The Global Financial Centres Index	Z/Yen	<a href="https://www.longfinance.net/programmes/financial-centre-futures/global-financial-centres-index/">https://www.longfinance.net/programmes/financial-centre-futures/global-financial-centres-index/</a>	Y



Table 30 | Reputational Factors

Instrumental Factor	Source	Website	Updated Since SCI 4 Y/N
World Competitiveness Scoreboard	IMD	<a href="https://www.imd.org/wcc/world-competitiveness-center-rankings/world-competitiveness-ranking-2020/">https://www.imd.org/wcc/world-competitiveness-center-rankings/world-competitiveness-ranking-2020/</a>	N
Global Competitiveness Index	World Economic Forum	<a href="http://reports.weforum.org/global-competitiveness-report-2019/competitiveness-rankings/">http://reports.weforum.org/global-competitiveness-report-2019/competitiveness-rankings/</a>	N
Foreign Direct Investment Inflows	UNCTAD	<a href="http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=96740">http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=96740</a>	Y
GDP Per Person Employed (Constant 2017 PPP \$)	The World Bank	<a href="https://databank.worldbank.org/reports.aspx?source=world-development-indicators&amp;series=SL.GDP.PCAP.EM.KD">https://databank.worldbank.org/reports.aspx?source=world-development-indicators&amp;series=SL.GDP.PCAP.EM.KD</a>	Y
Global Innovation Index	INSEAD	<a href="http://www.globalinnovationindex.org/content.aspx?page=GII-Home">http://www.globalinnovationindex.org/content.aspx?page=GII-Home</a>	Y
International IP Index	GIPC	<a href="https://www.theglobalipcenter.com/ipindex2020/">https://www.theglobalipcenter.com/ipindex2020/</a>	N
RPI (% Change On Year Ago)	The Economist	<a href="https://www.economist.com/economic-and-financial-indicators/2021/07/24/economic-data-commodities-and-">https://www.economist.com/economic-and-financial-indicators/2021/07/24/economic-data-commodities-and-</a>	N
Number Of International Association Meetings	World Economic Forum	<a href="http://reports.weforum.org/travel-and-tourism-competitiveness-report-2019/rankings/#series=NRFAIREX">http://reports.weforum.org/travel-and-tourism-competitiveness-report-2019/rankings/#series=NRFAIREX</a>	N
Innovation Cities Global Index	2ThinkNow Innovation Cities	<a href="https://www.innovation-cities.com/city-rankings-2021/">https://www.innovation-cities.com/city-rankings-2021/</a>	N
Big Mac Index	The Economist	<a href="https://www.economist.com/news/2020/07/15/the-big-mac-index">https://www.economist.com/news/2020/07/15/the-big-mac-index</a>	N
Sustainable Economic Development	Boston Consulting Group	<a href="https://www.bcg.com/en-gb/publications/2021/prioritizing-societal-well-being-seda-report">https://www.bcg.com/en-gb/publications/2021/prioritizing-societal-well-being-seda-report</a>	Y
Global Enabling Trade Report	World Economic Forum	<a href="https://www.weforum.org/focus/global-enabling-trade-report-2016">https://www.weforum.org/focus/global-enabling-trade-report-2016</a>	N
Good Country Index	Good Country Party	<a href="https://www.goodcountry.org/index/results">https://www.goodcountry.org/index/results</a>	N
Legatum Prosperity Index	Legatum Institute	<a href="http://www.prosperity.com/#!/ranking">http://www.prosperity.com/#!/ranking</a>	Y
FDI Inward Stock (In Million Dollars)	UNCTAD	<a href="https://unctad.org/webflyer/world-investment-report-2021">https://unctad.org/webflyer/world-investment-report-2021</a>	N
Quality Of Nationality Index	Henley Partners	<a href="https://nationalityindex.com/#">https://nationalityindex.com/#</a>	N
Global Power City Index	The Mori Memorial Foundation	<a href="http://mori-m-foundation.or.jp/english/ius2/gpci2/index.shtml">http://mori-m-foundation.or.jp/english/ius2/gpci2/index.shtml</a>	Y
Economic Freedom	The Heritage Foundation	<a href="https://www.heritage.org/index/ranking">https://www.heritage.org/index/ranking</a>	N
Safe Cities Index	Economist	<a href="https://safecities.economist.com/">https://safecities.economist.com/</a>	Y
The Global Green Economy Index	Dual Citizen	<a href="https://dualcitizeninc.com/global-green-economy-index/">https://dualcitizeninc.com/global-green-economy-index/</a>	New

Table 31 | Business Environment Factors

Instrumental Factor	Source	Website	Updated Since SCI 4 Y/N
Business Environment Rankings	EIU	<a href="http://country.eiu.com/All">http://country.eiu.com/All</a>	Y
Ease Of Doing Business Index	The World Bank	<a href="https://www.doingbusiness.org/en/reports/global-reports/doing-business-2020">https://www.doingbusiness.org/en/reports/global-reports/doing-business-2020</a>	N
Operational Risk Rating	EIU	<a href="http://www.eiu.com/site_info.asp?info_name=VW2_RISK_nib&amp;page=rk&amp;page_title=Risk%20table">http://www.eiu.com/site_info.asp?info_name=VW2_RISK_nib&amp;page=rk&amp;page_title=Risk%20table</a>	Y
Real Interest Rate	The World Bank	<a href="https://databank.worldbank.org/reports.aspx?source=world-development-indicators&amp;series=FR.INR.RINR">https://databank.worldbank.org/reports.aspx?source=world-development-indicators&amp;series=FR.INR.RINR</a>	N
Global Services Location	AT Kearney	<a href="https://www. Kearney.com/digital/article/?a/the-2021-kearney-global-services-location-index">https://www. Kearney.com/digital/article/?a/the-2021-kearney-global-services-location-index</a>	N
Corruption Perception Index	Transparency International	<a href="https://www.transparency.org/en/cpi/2020/">https://www.transparency.org/en/cpi/2020/</a>	N
Corporate Tax Rates	KPMG	<a href="https://home.kpmg/xx/en/home/services/tax/tax-tools-and-resources/tax-rates-online/corporate-tax-rates-table.html">https://home.kpmg/xx/en/home/services/tax/tax-tools-and-resources/tax-rates-online/corporate-tax-rates-table.html</a>	New
Personal Tax Rates	OECD	<a href="https://stats.oecd.org/index.aspx?DataSetCode=TABLE_I6">https://stats.oecd.org/index.aspx?DataSetCode=TABLE_I6</a>	N
Tax Revenue As Percentage Of GDP	The World Bank	<a href="https://databank.worldbank.org/reports.aspx?source=2&amp;series=GC.TAX.TOTL.GD.ZS&amp;country=#">https://databank.worldbank.org/reports.aspx?source=2&amp;series=GC.TAX.TOTL.GD.ZS&amp;country=#</a>	N
Bilateral Tax Information Exchange Agreements	OECD	<a href="http://www.oecd.org/ctp/exchange-of-tax-information/taxinformationexchangeagreementstieas.htm">http://www.oecd.org/ctp/exchange-of-tax-information/taxinformationexchangeagreementstieas.htm</a>	N
Economic Freedom Of The World	Fraser Institute	<a href="https://www.fraserinstitute.org/economic-freedom/map?geozone=world&amp;page=map&amp;year=2019">https://www.fraserinstitute.org/economic-freedom/map?geozone=world&amp;page=map&amp;year=2019</a>	Y
Government Debt As % Of GDP	CIA	<a href="https://www.cia.gov/the-world-factbook/field/public-debt/country-comparison">https://www.cia.gov/the-world-factbook/field/public-debt/country-comparison</a>	Y
OECD Country Risk Classification	OECD	<a href="http://www.oecd.org/trade/topics/export-credits/documents/cre-crc-current-english.pdf">http://www.oecd.org/trade/topics/export-credits/documents/cre-crc-current-english.pdf</a>	Y
Global Peace Index	Institute for Economics & Peace	<a href="https://www.visionofhumanity.org/maps/#/">https://www.visionofhumanity.org/maps/#/</a>	Y
Financial Secrecy Index	Tax Justice Network	<a href="http://www.financialsecrecyindex.com/">http://www.financialsecrecyindex.com/</a>	N
Government Effectiveness	The World Bank	<a href="http://info.worldbank.org/governance/wgi/">http://info.worldbank.org/governance/wgi/</a>	Y
Open Government	World Justice Project	<a href="http://worldjusticeproject.org/rule-of-law-index">http://worldjusticeproject.org/rule-of-law-index</a>	Y
Regulatory Enforcement	World Justice Project	<a href="http://worldjusticeproject.org/rule-of-law-index">http://worldjusticeproject.org/rule-of-law-index</a>	Y
Press Freedom Index	Reporters Without Borders (RSF)	<a href="https://rsf.org/en/ranking/2021">https://rsf.org/en/ranking/2021</a>	Y
Currencies	Swiss Association for Standardization (SNV)	<a href="https://www.six-group.com/en/products-services/financial-information/data-standards.html#scrollTo=current-historical-lists">https://www.six-group.com/en/products-services/financial-information/data-standards.html#scrollTo=current-historical-lists</a>	N
Commonwealth Countries	The Commonwealth	<a href="http://thecommonwealth.org/member-countries">http://thecommonwealth.org/member-countries</a>	N
Common Law Countries	CIA	<a href="https://www.cia.gov/the-world-factbook/countries/">https://www.cia.gov/the-world-factbook/countries/</a>	N
Inflation, GDP Deflator	The World Bank	<a href="https://data.worldbank.org/indicator/NY.GDP.DEFL.KD.ZG">https://data.worldbank.org/indicator/NY.GDP.DEFL.KD.ZG</a>	Y
Rule Of Law	The World Bank	<a href="http://info.worldbank.org/governance/wgi/">http://info.worldbank.org/governance/wgi/</a>	Y
Political Stability And Absence Of Violence/Terrorism	The World Bank	<a href="http://info.worldbank.org/governance/wgi/">http://info.worldbank.org/governance/wgi/</a>	Y
Regulatory Quality	The World Bank	<a href="http://info.worldbank.org/governance/wgi/">http://info.worldbank.org/governance/wgi/</a>	Y
Control Of Corruption	The World Bank	<a href="http://info.worldbank.org/governance/wgi/">http://info.worldbank.org/governance/wgi/</a>	Y
Best Countries For Business	Forbes	<a href="https://www.forbes.com/best-countries-for-business/list/">https://www.forbes.com/best-countries-for-business/list/</a>	N

**Table 31 | (Continued) Business Environment Factors**

Instrumental Factor	Source	Website	Updated Since SCI 4 Y/N
Open Budget Survey	International Budget Partnership	<a href="http://survey.internationalbudget.org/#download">http://survey.internationalbudget.org/#download</a>	N
Refined Oil Products Production	Enerdata Statistical Yearbook	<a href="https://yearbook.enerdata.net/download/">https://yearbook.enerdata.net/download/</a>	N
Global Business Complexity Index	TMF Group	<a href="https://www.tmf-group.com/en/news-insights/publications/2021/global-business-complexity-index/">https://www.tmf-group.com/en/news-insights/publications/2021/global-business-complexity-index/</a>	N

**Table 32 | Human Capital Factors**

Instrumental Factor	Source	Website	Updated Since SCI 4 Y/N
Graduates In Social Science, Business And Law (As % Of Total Graduates)	The World Bank	<a href="http://databank.worldbank.org/data/reports.aspx?source=Education%20Statistics&amp;series=UIS.FOSGP.5T8.F400">http://databank.worldbank.org/data/reports.aspx?source=Education%20Statistics&amp;series=UIS.FOSGP.5T8.F400</a>	N
Gross Tertiary Graduation Ratio	The World Bank	<a href="http://databank.worldbank.org/data/reports.aspx?source=Education%20Statistics&amp;series=SE.TER.CMPL.ZS">http://databank.worldbank.org/data/reports.aspx?source=Education%20Statistics&amp;series=SE.TER.CMPL.ZS</a>	N
Henley Passport Index	Henley Partners	<a href="https://www.henleypassportindex.com/passport">https://www.henleypassportindex.com/passport</a>	Y
Human Development Index	UN Development Programme	<a href="http://hdr.undp.org/en/2020-report/download">http://hdr.undp.org/en/2020-report/download</a>	N
Purchasing Power Index	Numbeo	<a href="https://www.numbeo.com/quality-of-life/rankings.jsp?title=2021-mid&amp;displayColumn=1">https://www.numbeo.com/quality-of-life/rankings.jsp?title=2021-mid&amp;displayColumn=1</a>	N
Number Of High Net Worth Individuals	Capgemini	<a href="https://www.worldwealthreport.com/">https://www.worldwealthreport.com/</a>	N
Homicide Rates	UN Office of Drugs & Crime	<a href="https://dataunodc.un.org/content/data/homicide/homicide-rate">https://dataunodc.un.org/content/data/homicide/homicide-rate</a>	N
Average Precipitation In Depth (Mm Per Year)	The World Bank	<a href="http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators&amp;series=AG.LND.PRCP.MM">http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators&amp;series=AG.LND.PRCP.MM</a>	N
Global Skills Index	Hays	<a href="http://www.hays-index.com/">http://www.hays-index.com/</a>	N
Linguistic Diversity	Ethnologue	<a href="https://www.ethnologue.com/guides/countries-most-languages">https://www.ethnologue.com/guides/countries-most-languages</a>	N
Global Terrorism Index	Institute for Economics & Peace	<a href="https://www.visionofhumanity.org/wp-content/uploads/2020/11/GTI-2020-web-2.pdf">https://www.visionofhumanity.org/wp-content/uploads/2020/11/GTI-2020-web-2.pdf</a>	N
World Talent Rankings	IMD	<a href="https://www.imd.org/centers/world-competitiveness-center/rankings/">https://www.imd.org/centers/world-competitiveness-center/rankings/</a>	Y
Adjusted Net National Income Per Capita	The World Bank	<a href="https://data.worldbank.org/indicator/NY.ADJ.NNTY.PC.CD">https://data.worldbank.org/indicator/NY.ADJ.NNTY.PC.CD</a>	N
Household net financial wealth	OECD	<a href="https://stats.oecd.org/Index.aspx?DataSetCode=BLI">https://stats.oecd.org/Index.aspx?DataSetCode=BLI</a>	N
Educational Attainment, At Least Bachelor's Or Equivalent, Population 25+, Total (%)	The World Bank	<a href="https://data.worldbank.org/indicator/SE.TER.CUAT.BA.ZS">https://data.worldbank.org/indicator/SE.TER.CUAT.BA.ZS</a>	Y
Life Expectancy At Birth, Total	The World Bank	<a href="https://data.worldbank.org/indicator/SP.DYN.LE00.IN">https://data.worldbank.org/indicator/SP.DYN.LE00.IN</a>	N
Employees Working Very Long Hours	OECD	<a href="https://stats.oecd.org/Index.aspx?DataSetCode=BLI">https://stats.oecd.org/Index.aspx?DataSetCode=BLI</a>	N
Human Freedom Index	Cato Institute	<a href="https://www.cato.org/human-freedom-index">https://www.cato.org/human-freedom-index</a>	Y
Global Health Security Index	Nuclear Threat Initiative, Johns Hopkins Center for Health Security, and Economist Impact	<a href="https://www.ghsindex.org/">https://www.ghsindex.org/</a>	New

Table 33 | Infrastructure Factors

Instrumental Factor	Source	Website	Updated Since SCI 4 Y/N
JLL Real Estate Transparency Index	Jones Lang LaSalle	<a href="https://www.jll.co.uk/en/trends-and-insights/research/global-real-estate-transparency-index">https://www.jll.co.uk/en/trends-and-insights/research/global-real-estate-transparency-index</a>	N
Quality Of Domestic Transport Network	World Economic Forum	<a href="http://reports.weforum.org/travel-and-tourism-competitiveness-report-2019/rankings/#series=TRSPEFFICY">http://reports.weforum.org/travel-and-tourism-competitiveness-report-2019/rankings/#series=TRSPEFFICY</a>	N
Quality Of Roads	World Economic Forum	<a href="http://reports.weforum.org/travel-and-tourism-competitiveness-report-2019/rankings/#series=EOSQ057">http://reports.weforum.org/travel-and-tourism-competitiveness-report-2019/rankings/#series=EOSQ057</a>	N
Roadways Per Land Area	CIA	<a href="https://www.cia.gov/the-world-factbook/field/roadways/country-comparison">https://www.cia.gov/the-world-factbook/field/roadways/country-comparison</a>	N
Railways Per Land Area	CIA	<a href="https://www.cia.gov/the-world-factbook/field/railways/country-comparison">https://www.cia.gov/the-world-factbook/field/railways/country-comparison</a>	N
Networked Readiness Index	World Economic Forum	<a href="http://reports.weforum.org/global-information-technology-report-2016/">http://reports.weforum.org/global-information-technology-report-2016/</a>	N
Energy Sustainability Index	World Energy Council	<a href="https://trilemma.worldenergy.org/">https://trilemma.worldenergy.org/</a>	Y
Environmental Performance Index	Yale University	<a href="https://epi.yale.edu/epi-results/2020/component/epi">https://epi.yale.edu/epi-results/2020/component/epi</a>	N
Global Sustainable Competitiveness Index	Solability	<a href="http://solability.com/the-global-sustainable-competitiveness-index/the-index">http://solability.com/the-global-sustainable-competitiveness-index/the-index</a>	Y
Logistics Performance Index	The World Bank	<a href="http://lpi.worldbank.org/international/global">http://lpi.worldbank.org/international/global</a>	N
Proportion Of Population Using Safely-Managed Drinking-Water Services (%)	WHO	<a href="https://www.who.int/data/gho/publications/world-health-statistics">https://www.who.int/data/gho/publications/world-health-statistics</a>	N
INRIX Traffic Scorecard	INRIX	<a href="http://inrix.com/scorecard/">http://inrix.com/scorecard/</a>	Y
Labelled Green Bonds Issued By Country Of Issuer	Corporate Knights	<a href="https://www.finance-watch.org/publication/global-green-finance-index-3/">https://www.finance-watch.org/publication/global-green-finance-index-3/</a>	N
Forestry Area	World Bank	<a href="http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=AG.LND.FRST.ZS&amp;country=">http://databank.worldbank.org/data/reports.aspx?source=2&amp;series=AG.LND.FRST.ZS&amp;country=</a>	Y
CO2 Emissions Per Capita	World Bank	<a href="https://databank.worldbank.org/reports.aspx?source=2&amp;series=EN.ATM.CO2E.PC&amp;country=#">https://databank.worldbank.org/reports.aspx?source=2&amp;series=EN.ATM.CO2E.PC&amp;country=#</a>	N
4G Availability	Open Signal	<a href="https://www.opensignal.com/reports/2020/05/global-state-of-the-mobile-network">https://www.opensignal.com/reports/2020/05/global-state-of-the-mobile-network</a>	N
Share Of Wind And Solar In Electricity Production	Enerdata Statistical Yearbook	<a href="https://yearbook.enerdata.net/download/">https://yearbook.enerdata.net/download/</a>	N
Energy Intensity Of GDP	Enerdata Statistical Yearbook	<a href="https://yearbook.enerdata.net/download/">https://yearbook.enerdata.net/download/</a>	N
Share Of Renewables In Electricity Production	Enerdata Statistical Yearbook	<a href="https://yearbook.enerdata.net/download/">https://yearbook.enerdata.net/download/</a>	N
Energy Transition Index	World Economic Forum	<a href="https://www.weforum.org/reports/1edb4488-deb4-4151-9d4f-ff355eec499a/in-full/rankings">https://www.weforum.org/reports/1edb4488-deb4-4151-9d4f-ff355eec499a/in-full/rankings</a>	N
Urban Mobility Readiness Index	Oliver Wyman	<a href="https://www.oliverwymanforum.com/mobility/urban-mobility-readiness-index/rankings.html">https://www.oliverwymanforum.com/mobility/urban-mobility-readiness-index/rankings.html</a>	New
The Green Future Index	MIT Technology Review	<a href="https://www.technologyreview.com/2021/01/25/1016648/green-future-index/">https://www.technologyreview.com/2021/01/25/1016648/green-future-index/</a>	New

**Vantage**

**Financial Centres**

Vantage Financial Centres is an exclusive network of financial centres around the world looking for a deeper understanding of financial centre competitiveness. Members receive enhanced access to SCI GFCI and GGFI data, marketing opportunities, and training for centres seeking to enhance their profile and reputation.



**Dubai International Financial Centre (DIFC)** is one of the world's most advanced financial centres, and the leading financial hub for the Middle East, Africa and South Asia (MEASA) region, which comprises 72 countries with an approximate population of 3 billion and a nominal GDP of US\$ 7.7 trillion.

DIFC is home to an internationally recognised, independent regulator and a proven judicial system with an English common law framework, as well as the region's largest financial ecosystem of more than 24,000 professionals working across over 2,300 active registered companies – making up the largest and most diverse pool of industry talent in the region. The Centre's vision is to drive the future of finance. Today, it offers one of the region's most comprehensive FinTech and venture capital environments, including cost-effective licensing solutions, fit-for-purpose regulation, innovative accelerator programmes, and funding for growth-stage start-ups.

Comprising a variety of world-renowned retail and dining venues, a dynamic art and culture scene, residential apartments, hotels and public spaces, DIFC continues to be one of Dubai's most sought-after business and lifestyle destinations.

[www.difc.ae](http://www.difc.ae) [Twitter @DIFC](#)



Approved by the China's State Council, China Development Institute (CDI) was founded in 1989 with 116 representatives from the government, academia and business in China. Being an independent think tank, CDI is committed to developing policy solutions via research and debates that help to advance China's reform and opening-up. After years of development, CDI has become one of the leading think tanks in China. CDI focuses on the studies of open economy and innovation-driven development, regional economy and regional development, industrial policies and industrial development, urbanization and urban development, business strategies and investment decision-making. Via conducting research, CDI provides policy recommendations for the Chinese governments at various levels and develops consultation for corporate sectors at home and abroad. CDI organizes events in different formats that evokes dialogue among scholars, government officials, business people and civil society members around the globe. Based in Shenzhen, Southern China, CDI has one hundred and sixty staff, with an affiliated network that consists of renowned experts from different fields.

**Carol Feng at [carolf@cdi.org.cn](mailto:carolf@cdi.org.cn) [www.cdi.org.cn](http://www.cdi.org.cn)**



Since 2009 Busan Metropolitan City has been developing a financial hub specialising in maritime finance and derivatives. With its strategic location in the center of the southeast economic block of Korea and the crossroads of a global logistics route, Busan envisions growing into an international financial city in Northeast Asia. Busan Finance Center (BFC) will continue to develop and implement measures to promote Busan as a financial hub and bolster the local financial industry, while working together with various local economic players to pursue sustainable growth of the financial sector including FinTech. These efforts will enable BFC to play a leading role in taking Busan to the next level and become the international financial center and maritime capital of Northeast Asia.

BFC offers an attractive incentive package to global financial leaders and cooperation network of Busan Metropolitan City, and Busan Finance Center will support you to identify opportunities in Busan, one of the fastest developing cities in Asia.

[info@kbfc.or.kr](mailto:info@kbfc.or.kr)  
[www.kbfc.or.kr/eng/](http://www.kbfc.or.kr/eng/)



Casablanca Finance City is an African financial and business hub located at the crossroads of continents. Recognized as the leading financial center in Africa, and partner of the largest financial centers in the world, CFC has built a strong and thriving community of members across four major categories: financial companies, regional headquarters of multinationals, service providers, and holdings.

CFC offers its members an attractive value proposition and a premium "Doing Business" support that fosters the deployment of their activities in Africa. Driven by the ambition to cater to its community, CFC is committed to promoting its members expertise across the continent, while enabling fruitful business and partnership synergies through its networking platform.

**Manal Bernoussi at [manal.bernoussi@cfca.ma](mailto:manal.bernoussi@cfca.ma) [www.casablancafinancecity.com](http://www.casablancafinancecity.com)**

**Vantage**

Financial  
Centres

Please find out more at: [www.vantagefinancialcentres.net](http://www.vantagefinancialcentres.net) or by contacting Mike Wardle at [mike\\_wardle@zyen.com](mailto:mike_wardle@zyen.com)



Luxembourg for Finance (LFF) is the Agency for the Development of the Financial Centre. It is a public-private partnership between the Luxembourg Government and the Luxembourg Financial Industry Federation (PROFIL). Founded in 2008, its objective is to develop Luxembourg's financial services industry and identify new business opportunities. LFF connects international investors to the range of financial services provided in Luxembourg, such as investment funds, wealth management, capital market operations or advisory services. In addition to being the first port of call for foreign investors, LFF cooperates with the various professional associations and monitors global trends in finance, providing the necessary material on products and services available in Luxembourg.

Furthermore, LFF manages multiple communication channels, organises seminars in international business locations, and takes part in selected world-class trade fairs and congresses.

[lff@lff.lu](mailto:lff@lff.lu)  
[luxembourgforfinance.com](http://luxembourgforfinance.com)



Supported by the industry, the Financial Services Development Council (FSDC) is a high-level, cross-sectoral advisory body to the Hong Kong Special Administrative Region Government.

FSDC formulates proposals to promote the further development of Hong Kong's financial services industry and to map out the strategic direction for the development. As of March 2020, 110 of the 137 policy recommendations had been adopted by the Government and relevant regulators since FSDC's inception in 2013. On top of research, FSDC also carries out market promotion and human capital development functions.

Among others, FSDC focuses on topics including Mainland and international connectivity, green and sustainable finance, FinTech, as well as asset and wealth management.

[enquiry@fsdc.org.hk](mailto:enquiry@fsdc.org.hk)  
<https://www.fsdc.org.hk/en>



The Long Finance initiative grew out of the London Accord, a 2005 agreement among investment researchers to share environmental, social and governance research with policy-makers and the public. Long Finance was established more formally by Z/Yen Group and Gresham College from 2007 with the aim of exploring long-term thinking across a global network of people.

We work on researching innovative ways of building a more sustainable financial system. In so doing, we try to operate openly and emulate scientific ideals. At the same time, we are looking to create a supportive and caring community where people can truly question the accepted paradigms of risk and reward.

[www.longfinance.net](http://www.longfinance.net)



AIFC is an all-around financial centre located in Nur-Sultan, the capital of Kazakhstan, which offers ample opportunities for businesses to grow. AIFC provides greater access to world-class capital markets and the asset management industry. It also promotes financial technology and drives the development of niche markets such as Islamic and green finance in the region.

AIFC provides unprecedented conditions and opportunities for its participants and investors: legal system based on the principles of English law, independent judicial system, regulatory framework consistent with internationally recognised standards, wide range of financial services and instruments, simplified visa and labour regimes, zero corporate tax rate, and English as a working language.

Located in the heart of Eurasia, AIFC is striving to become the gateway to the Eurasian Economic Union, Central Asia and Caucasus, and play a key role in the Belt and Road Initiative. AIFC is already gaining tremendous recognition as a leading financial hub in the region: recently, Asiamoney Awards recognised it as the best Belt and Road Initiative project of 2019.

[Daniyar Kelbetov at d.kelbetov@aifc.kz](mailto:Daniyar.Kelbetov@aifc.kz)  
[www.aifc.kz](http://www.aifc.kz)

**Vantage**

Financial Centres

Vantage Financial Centres is an exclusive network of financial centres around the world looking for a deeper understanding of financial centre competitiveness. Members receive enhanced access to SCI, GFCI, and GGFI data, marketing opportunities, and training for centres seeking to enhance their profile and reputation.



ABU DHABI GLOBAL MARKET  
سوق أبوظبي العالمي

Abu Dhabi Global Market (ADGM), an award-winning financial centre in the capital of the UAE, opened for business in October 2015, consisting of three independent authorities: the Registration Authority (RA); the Financial Services Regulatory Authority (FSRA); and ADGM Courts. Comprised of the three independent authorities where English Common Law is directly applicable, ADGM plays an essential role in the diversification of the economy in the UAE and is committed to providing a comprehensive business ecosystem operating with the highest standards of integrity and is renowned for its ease of doing business.

Strategically situated in Abu Dhabi, home to one of the world's largest sovereign wealth funds, ADGM plays a vital role in positioning Abu Dhabi as a global trade and business hub and serves as a link between the growing economies of the Middle East, Africa and South Asia to the rest of the world. ADGM has earned industry recognition as the Financial Centre of the Year (MENA) four years in a row as well as being recognized as the leading FinTech Hub in the region.

[www.adgm.com/](http://www.adgm.com/) [info@adgm.com](mailto:info@adgm.com)



Global Times Consulting

Global Times Consulting Co. is a strategic consultancy with a focus on China. We help Chinese (local) governments at all levels to build their reputation globally, providing strategic counsel, stakeholder outreach and communications to support their sustainable development. We also partner with multinational companies operating in this dynamic but challenging market, serving as a gateway to China. In addition, we help Chinese companies extend their reach overseas.

Global Times Consulting Co. adopts a research and knowledge-based approach. With extensive contacts and deep insights into China's political and economic landscape, we develop and execute integrated programs for stakeholder relations and reputation management. Our extensive relationship with media and government organizations in China and worldwide helps us successfully execute programs and achieve desired goals.

Daniel Wang at [danielwang@globaltimes.com.cn](mailto:danielwang@globaltimes.com.cn)  
[www.globaltimes.com.cn](http://www.globaltimes.com.cn)



SEOUL METROPOLITAN  
GOVERNMENT

Seoul is a rising star among the financial cities of the world. It is already one of the top 10 cities in the world based on various indices, and it has many more opportunities to offer as a financial hub and great growth potential. Seoul believes global financial companies are our true partners for growth. There are many incentives provided to global financial companies that enter into Seoul, such as the financial incentives provided when moving into IFC, so that we can all jointly work towards the growth and development of the financial market.

It is sure that Seoul will become a top star of global financial hubs in the near future! Pay close attention to Seoul's potentials and pre-emptively gain a foothold in the Seoul financial hub. Seoul is the gateway to Northeast Asia and the world.

Lee Jongho, [ozone123@seoul.go.kr](mailto:ozone123@seoul.go.kr)  
[www.seoul.go.kr/main/index.jsp](http://www.seoul.go.kr/main/index.jsp)



Finance Montréal's mandate is to promote Montréal as a world-class financial hub and foster cooperation among its member institutions to accelerate the industry's growth. With renowned research capacities in artificial intelligence and a booming fintech sector, Montréal offers an experienced, diversified and innovative pool of talent as well as a stable, low cost and dynamic business environment.

For financial institutions searching for an ideal location to set up an intelligent service centre and operationalize their digital transformation, Finance Montréal can advise on the advantageous tax incentives aimed at facilitating the establishment and development of financial services corporations in the city.

[info@finance-montreal.com](mailto:info@finance-montreal.com)  
[www.finance-montreal.com/en](http://www.finance-montreal.com/en)

PRODUCED BY Z/YEN GROUP



[www.zyen.com](http://www.zyen.com)

Z/Yen helps organisations make better choices - our clients consider us a commercial think-tank that spots, solves and acts. Our name combines Zen and Yen - 'a philosophical desire to succeed' - in a ratio, recognising that all decisions are trade-offs. One of Z/Yen's specialisms is the development and publication of research combining factor analysis and perception surveys.

### THE SMART CENTRES INDEX



[www.smartcentresindex.net](http://www.smartcentresindex.net)

The Smart Centres Index is designed to track commercial centres' ability to create, develop, and deploy technology. It aims to measure how attuned centres and their regulatory systems are to attracting innovation and growth in Science, Technology, Energy Systems, Machine Learning, Distributed Ledgers, and Fintech.

### PUBLISHED BY LONG FINANCE AND DISTRIBUTED FUTURES



[www.longfinance.net](http://www.longfinance.net)

Long Finance is a Z/Yen initiative designed to address the question "**When would we know our financial system is working?**" This question underlies Long Finance's goal to improve society's understanding and use of finance over the long-term. In contrast to the short-termism that defines today's economic views, the Long Finance timeframe is roughly 100 years.



[www.distributedfutures.net](http://www.distributedfutures.net)

Distributed Futures is a Long Finance programme dedicated to exploring new technologies and finance. The programme looks at Smart Ledgers, but also wider technologies ranging from quantum computing to machine learning to biological finance.