

The Universe of City Indices 2017

Decoding City Performance

JLL and The Business of Cities



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Executive Summary

Comparative city indices are more prevalent than ever. In this latest update on the state of the art of city indices by JLL and The Business of Cities, we reveal that their number has reached a new threshold – there are now over 300 indices worldwide that score, benchmark and rank cities on almost every aspect of urban life.

Increasingly, these indices have a bearing on how we understand city dynamics, guiding investors, businesses and workers as they make location choices and shaping the viewpoints of visitors, students and entrepreneurs.

They cover an ever more diverse range of attributes that signal where cities are heading. They point to which cities have the ingredients for future success and help steer the real estate industry in its response to the rapidly changing urban landscape.

10 Imperatives for a Successful City



1. Fostering Innovation Pathways

The number of indices measuring innovation ecosystems has more than doubled. They reveal that different types of cities are achieving success in the ‘innovation economy’ through distinct pathways – whether it is as a dynamic cluster of tech start-ups, a centre for corporate R&D, or on the back of knowledge-intensive industries. Recognising these varied innovation pathways is vital to responding successfully to the real estate opportunities in tech-rich cities.



2. Uncovering Hidden Talents

Access to talent is firmly at the top of the agenda of most corporations, but ‘talent’ doesn’t just mean the proportion of citizens with academic degrees or the concentration of universities. It is also about the diversity of vocational skills, specialist skills, the social mix and inclusiveness. These aspects are now being recognised as a key driver in corporate location decision-making.



3. Investing in Infrastructure

It is now universally accepted that a city’s infrastructure platform is a critical determinant of how well cities can participate in the global economy. Yet, while hard infrastructure and network coverage is important, just as essential is the real-time frequency and reliability of public transit, considerations that are now being factored into city indices.



4. Thinking Long-Term

Cities are facing a range of long-term challenges, including pollution, environmental degradation and climate change – and the number of indices measuring environmental sustainability and resilience is expanding commensurately. Likewise, real estate investors and businesses are beginning to incorporate city future-proofing considerations and resilience strategies into their location decision-making.



5. Creating a Well-Run City

Good governance is critical for cities managing their growth. Metropolitan-level governance, institutional accountability and e-government are now featuring in indices. Real estate markets are impacted by long-term visions, coordinated planning and the ability of cities to act as stable partners. Evaluating the nuances of how cities are run will be crucial to identifying the next set of successful cities and real estate markets.



6. Ensuring Transparency

JLL's Global Real Estate Transparency Index has for many years emphasised the importance of transparency to an efficient and flexible real estate market – and this holds true beyond our own sector. Cities are increasingly being differentiated by their business environments, market openness and levels of risk.



7. Being Smart

'Smartness' is one of the buzzwords in city development. New indices are highlighting those cities that are forging ahead with long-term strategies and integrated interventions, which they hope will lead to new efficiency in city operations – from traffic to waste management.



8. Keeping it Affordable

The housing affordability crisis in our major cities is a mounting concern and thus costs and affordability are being more closely tracked. This is prompting much debate about how to build more homes, how to ensure affordability, and the roles of the public and private sectors.



9. Building Brand

Interest in a city's brand, appeal, identity, reputation and visibility is on the rise. Reputation is key in attracting businesses, talent and visitors; and cities are using innovative real estate and impressive skylines to project their brands and identities.



10. Going Global

The geographical range of new indices underlines just how global this strand of the new 'science of cities' has become. New rankings are emerging from a diverse set of regions, from China and India, to Latin America and Sub-Saharan Africa. These attest to the expanding attention of international businesses and investors in the future of cities, and the value to be found in them.

Which Cities are Among the Top Tiers of World Cities?

The expansion in the number of indices has enabled us to draw on a larger dataset than ever before to update our assessment of which cities are challenging and contending to be among the top tiers of world cities.

It reveals that the 'Big Six' – London, New York, Paris, Singapore, Tokyo and Hong Kong – which we identified first in 2013 as the leading global cities, have consolidated their positions over the past couple of years; and in 2017 they have been joined by Seoul to create the '**Big Seven**':

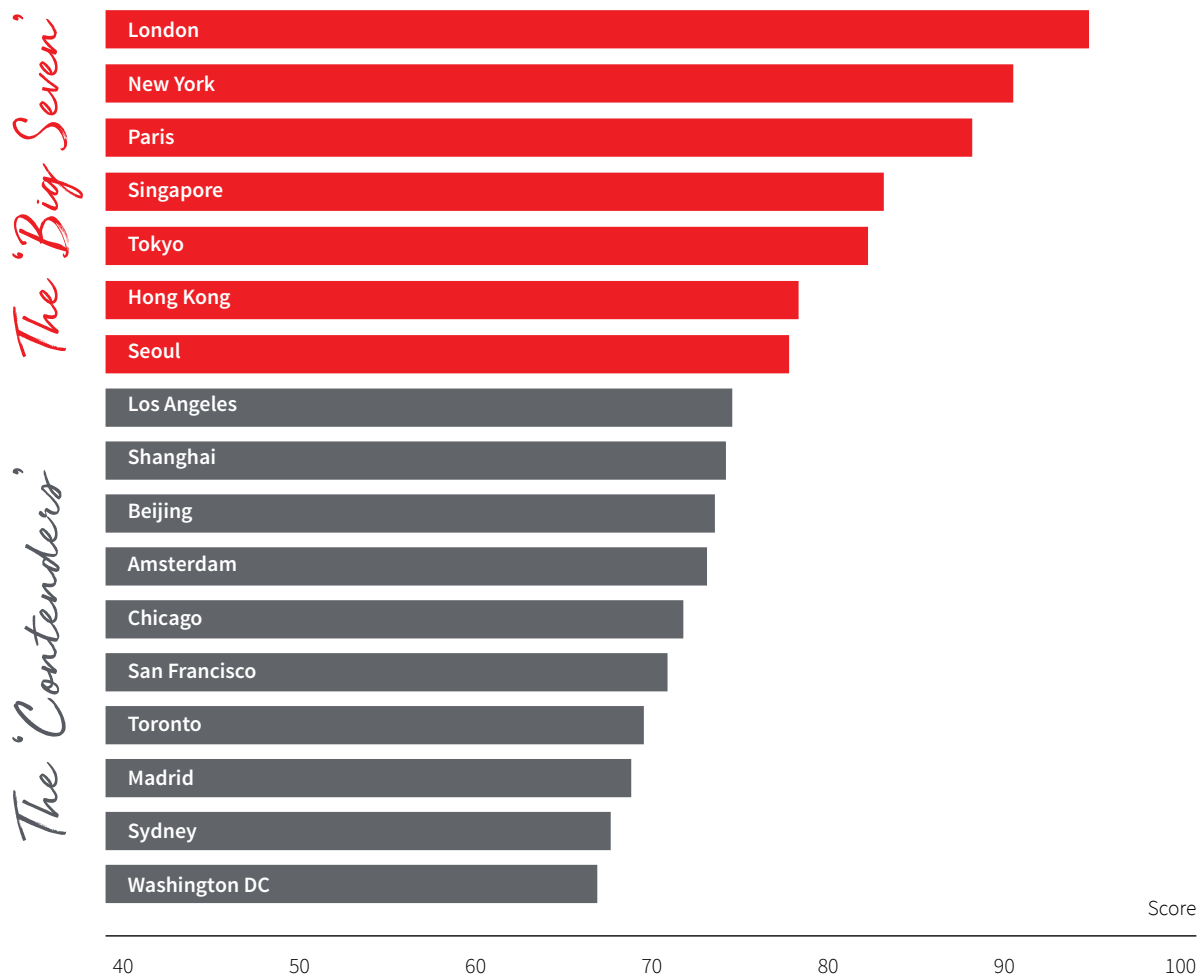
- **London** and **New York** continue to lead the pack, but their global competitiveness has come under scrutiny from the fallout from the UK's EU referendum and a possible new era of U.S. protectionism.
- **Tokyo** and **Paris**, which had slipped behind in the last decade, are renewing their offers in the current cycle. They are hosts to the next two Summer Olympics and have ambitious infrastructure programmes.
- **Hong Kong** and **Singapore** have confirmed their positions among the elite group, although they will need to work hard to maintain their global rankings in the face of strong competition from Asian peers. Nonetheless, this duo will continue to shape the next generation of urbanism in Asia Pacific.
- **Seoul** has stepped up to join the top group having equipped itself for the 21st century through a combination of modern infrastructure, innovative global firms and exceptional digital connectivity. However, Seoul's position within the elite group will continue to be challenged by geopolitical headwinds, a lack of openness and comparatively low transparency.



More cities are becoming competitive with the biggest and best cities, and a 'second tier' group of **10 'Contenders'** has emerged, close on the heels of the 'Big Seven':

- China's Alpha Cities – **Beijing** and **Shanghai** – have been promoted from the pack of 'Emerging World Cities'. Their assets are reaching a critical mass, and the country's 'Belt and Road Initiative' represents the next step in these cities' global pathway.
- **Amsterdam, San Francisco, Toronto, Madrid** and **Sydney** have graduated from the group of 'New World Cities' as they acquire more of the assets and characteristics of 'Established World Cities'.
- U.S. Alpha Cities – **Los Angeles, Chicago** and **Washington DC** – are among the world's top 10 real estate investment destinations, but they lack some of the global gateway functions and infrastructure platforms required to make the step up to the top group. Los Angeles is closest to joining the top group due to its scale, appeal, soft power and specialisation.

The Order of Established World Cities, 2017



Scored from 44 indices selected on the basis of range, robustness and currency. Cities ranked by percentile performance in each index. Equal weighting between each of seven categories (corporate presence, gateway functions, market size, infrastructure platform, talent, specialisation and innovation, and soft power).

Source: The Business of Cities, JLL, 2017

The Universe

of City Indices



The Growing Importance of City Indices

The current dynamic global cycle of rapid urban development and change means that city investment, business and real estate choices are much larger than in previous cycles, and they present a far wider range of risks and opportunities than ever before. Insights into which cities could deliver the best results, or the most dependable outcomes over the next cycle, are essential. How different cities can align with different risk appetites increasingly depends on a keen grasp of how cities are really performing, what their growth prospects and potential are, and how far their management systems can translate growth into long-term success.

For over a decade, JLL and The Business of Cities have been shining a spotlight on the role that city benchmarks, indices and rankings can play to help better understand city performance. Our last update in 2015¹ identified more than 200 indices being published around the world. The collective intelligence of these comparative reports helped inform our groundbreaking follow-up report *Globalisation and Competition: The New World of Cities*², which laid out a new typology of cities and their common imperatives to stay competitive and investment-friendly.

Over 300 Indices Measuring Urban Life

In the past two years, indices work has continued to mature and expand. In this fifth edition of the series we reveal that the volume of comparative city indices worldwide has reached a new threshold – there are currently over 300.

These indices now have a significant influence on how the world ‘reads’ cities and, while it may be premature to suggest that they are being used actively in real estate strategies, they are certainly guiding investors, businesses and talent when locations are being shortlisted. They are also shaping the appetites of visitors, students and entrepreneurs and, crucially, they are motivating city governments as they develop plans and prepare for the future.

This edition reviews and reveals the state-of-the-art of city indices in 2017. We look at the big new trends in how cities are being measured, and which cities appear to be on the move or coming out on top. We also draw on a larger dataset than ever before to assess which cities are challenging and contending to be among the top tier of world cities, placing this within the context of JLL’s real estate insights.

¹ The Business of Cities 2015, JLL and The Business of Cities, May 2015

² Globalisation and Competition: The New World of Cities, JLL and The Business of Cities, November 2015



The Changing *Landscape of Cities*

Since our last report in 2015, three major factors have altered the landscape of city performance around the world:



Geopolitical Shifts

The UK's Brexit referendum, the election of Donald Trump as U.S. President, and military escalations in Asia, have all increased geopolitical uncertainty in ways that affect global investor appetite. The threats of conflict, displacement, protectionism, populist domestic policies, slowdowns in productivity, and tensions between the big cities and their nation states, all alter perceptions about which cities appear to be 'safe bets' or present higher risks for investment.



Cities Taking the Lead to Deliver Global Goals

2015 and 2016 saw a unique convergence of several global agreements on the future of sustainability, cities and climate change. Together, these agreements – which include the Sustainable Development Goals, the Paris Agreement on climate change (COP21) and the New Urban Agenda – have put cities at the forefront of the global development and climate agenda, and promise to accelerate low carbon infrastructure investment into bankable cities. Indeed, the Global Parliament of Mayors – which met for the first time in September 2016 – and the Global Coalition of Mayors for Climate and Energy demonstrates that city-level action is growing and filling the void where nation states' political leadership has left a gap.



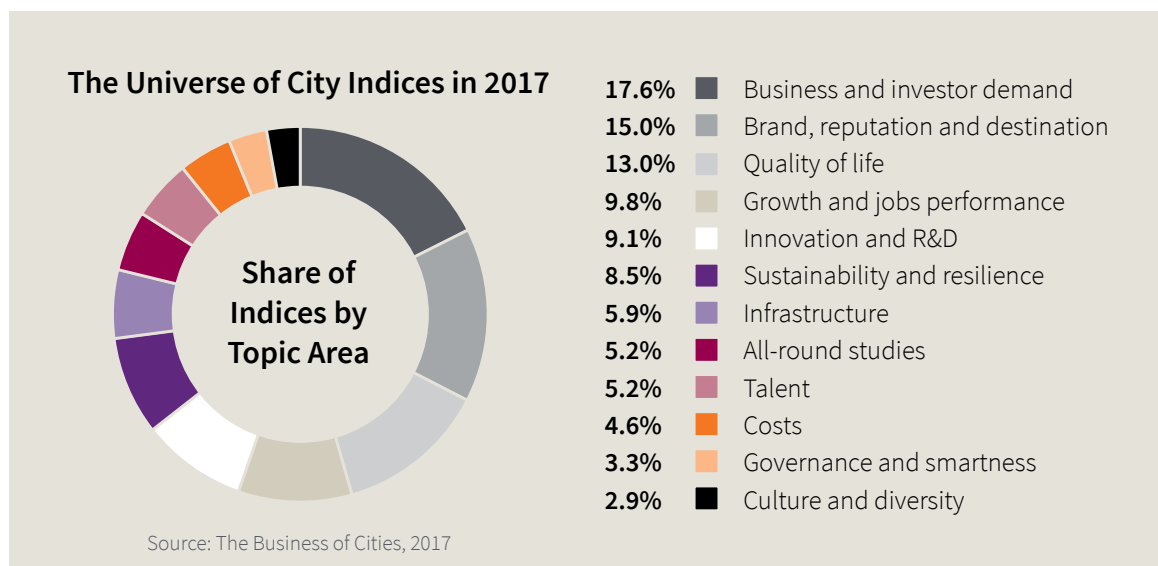
Technological Innovation

Rapid technology changes are driving the growth of new economies and transforming the demand for real estate product. The rise of the 'innovation economy' is triggering a new wave of competition among cities to accommodate firms in innovation-friendly locations.

The State of the Art of City Indices in 2017

The range of urban indices, rankings and benchmarks has continued to grow and evolve, now to over 300. The appetite to measure and compare cities is greater than ever, with new indices being developed by governments and firms in South East Asia, the Middle East and Latin America.

In the past, city indices were dominated by assessments of past economic performance, quality of life for visitors and expats, and cost of living. Today, they use a range of data, surveys and research tools to measure a much wider set of factors, and to a higher standard. Their insights provide a guide not only to past performance but also the future preferences of firms and talent, the capacity of cities to absorb growth, and the preparedness of cities for the big future challenges of sustainability, resilience and job creation.



How and Why are City Indices Innovating?

Indices are helping to reveal a number of new lenses on how cities are performing, which offer insights to investors and businesses seeking a more refined or comprehensive approach. There are now measures that show how cities with similar sizes, assets or specialisations are doing against each other, and others that drill down to look at the success of certain districts. At the same time, new data sources allow those who observe indices to see how perceptions 'stack up' against a city's measurable performance.

These innovations reflect increased demand across the world to understand the direction cities are taking at a finer-grained level, and to encourage virtuous competition among cities to improve their long-term productivity and sustainability.

- **Groupings of Peer Cities**

As different types of cities are identified and categorised, there is often little benefit in comparing smaller cities to global megacities, or emerging cities to well-established rivals. Instead, it is increasingly beneficial to identify peer cities and direct competitors in order to make comparisons more useful and relevant.

- **Crowdsourcing**

As digital access grows, crowdsourcing is becoming an ever more important tool in shifting indices creation from the realms of consulting firms to the opinions of the public in an attempt to avoid limitations in existing data and other biases. This is essential in evaluating brand and perception.

- **District and Sub-Regional Comparisons**

While comparison between cities is vital, increasingly the comparison is between different neighbourhoods. Comparing between cities hides the variability within cities, while investors may be looking at similar areas across different cities (e.g. financial districts, tech hubs) rather than comparing within a city.

- **Long-Term Resilience and Risk**

Environmental and security concerns mean that longer-term measures of risk and resilience are coming to the fore as businesses and investors factor this into decision-making.

- **The Sharing Economy**

Indices are tackling how cities are responding to and being impacted by the rise in the sharing economy. Which cities are embracing the sharing economy, and are therefore able to best accommodate new economic models?

Most Innovative New Indices

		Successful cities
Brookings Redefining Global Cities	A new typology of cities based on unique metropolitan indicators.	Chongqing, Delhi, Singapore
Council of Europe Intercultural Cities Index	In-depth tool to measure social integration over time.	Copenhagen, Oslo, Zurich
DHL Global Connectedness Index	Hard data on cities' 'junction box' capability for flows of goods, capital and people.	Dublin, Osaka, Singapore
Igarapé Fragile Cities Index	High-level global partnership to measure long-term risks.	Birmingham (UK), Brisbane, Gothenburg
INSEAD Global Cities Talent Competitiveness Index	First major dataset on talent retention and future-proof jobs market.	Copenhagen, Helsinki, Zurich
Movmi/Inov360 Shared Mobility City Index	First attempt to measure policies and provision on car and bike sharing, combined with density and mobility patterns.	New York, Paris, Vienna
Nesta European Digital Cities Index	Robust assessment of cities' conditions for start-ups and scale-ups.	Bristol (UK), Stockholm, Vienna
Nestpick Millennial Cities Ranking	All-round weighting of job opportunities vs. lifestyle and affordability.	Amsterdam, Berlin, Munich
Resonance World's Best City Brands	Strong data on cities' promotional activity and placemaking.	Melbourne, San Diego, Singapore
UITP Urban Mobility Innovation Index	Evaluates cities' innovation system for improving transport.	Amsterdam, Helsinki, Singapore





1. Fostering Innovation Pathways

The number of indices measuring the drivers and ingredients of innovation ecosystems has more than doubled as organisations in the public and private sector seek to trace the links between innovation and a city's economic performance and infrastructure demand.

The growing availability of data around VC funding, start-ups, incubators and other dimensions of the ecosystem is resulting in a rich set of measures to show how cities are adjusting to this new economy.

High Performing Cities Across Major Knowledge and Innovation Indices

The indices reveal that different types of city appear to be achieving success in the innovation economy:

- Mature multidisciplinary innovation locations, such as **London**, **New York** and **Tel Aviv**, combine public and private science and research, active start-up scenes, and a fertile mix of innovation-led sectors.
- The knowledge production and spillovers of high-technology and engineering multinationals are very prominent in cities like **Tokyo** and **Seoul**.
- Others are building innovation profile in certain niches, whether **Los Angeles** in digital media, **Rotterdam** in water or **Oslo** in fintech.
- A further group is enhancing the commercialisation potential of basic research and corporate R&D, such as **Paris** and **Beijing**.

High Performing Cities for Knowledge and Innovation

Rank	City
1	San Francisco
2	Tokyo
3	New York
4	Seoul
5	Boston
6	London
7	Paris
8	Los Angeles
9	Berlin
10	Munich
11	Beijing
12	Seattle
13	Singapore
14	Toronto
15	Chicago
16	Tel Aviv
17	Shanghai
18	Hong Kong
19	Stockholm
20	Amsterdam

See Appendix for details
Source: The Business of Cities, JLL, 2017

“Real estate providers must be attuned to the diverse types of space required for the innovation economy”

As the digital economy dominates, those cities which have robust tech and innovation-centred economies will stand the best chance of succeeding. Real estate must adapt to this new reality, where technology firms with more flexible workforces, substantial digital requirements and asset-light strategies are becoming the principal driver of absorption. But, as different cities have different styles and landscapes of innovation, real estate providers must be attuned to the diverse types of space required – including laboratories, accelerators, incubators, co-working spaces and flexible workspaces.



2. Uncovering Hidden Talents

Talent is a key part of a city's long-term appeal. Strong talent attraction and development provides a solid basis for future progress, and is an increasingly vital part of the decision-making process of international businesses. As a result, indices are diving deeper into how well cities attract, accommodate and develop talent. The data is improving on education systems, student environments and expat talent attraction.

High Performing Cities for Talent and Human Capital

London, Boston and **Paris** have long been leaders in talent indices, and although this hasn't changed, the diversified skills of other cities have become more visible. **Tokyo, Seoul** and **Toronto** stand out for their domestic attainment, multiple talent specialisations and growing appeal for students.

One big breakthrough is INSEAD's Global Cities Talent Competitiveness Index which highlights the importance not just of top-end talent to cities, but also of vocational skills and migrant education to future-proof the whole workforce. In this measure, **Copenhagen** and **Zurich** have emerged at the head of the rankings, emphasising the strength of smaller European cities in nurturing, attracting and retaining talent.

In addition, mid-sized cities like **Salt Lake City, Nashville, Columbus, Amsterdam** and **Berlin** are seeing their attractiveness boosted by strong universities and access to talent. With an unprecedented focus by businesses on talent, it is no coincidence that these cities are registering among the greatest growth in demand for commercial real estate.

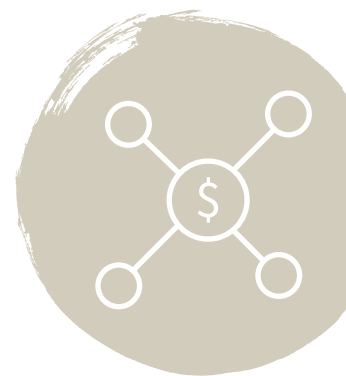
In a growing number of cases, real estate – specifically workplace design and amenity provision – is explicitly used as a draw for talent. The 'human experience' is becoming a crucial factor as businesses turn their minds to the best way to attract, engage and retain talent.

High Performing Cities for Talent

Rank	City
1	London
2	Boston
3	Paris
4	Tokyo
5	Washington DC
6	San Francisco
7	New York City
8	Seoul
9	Toronto
10	Singapore
11	Berlin
12	Zurich
13	Sydney
14	Copenhagen
15	Melbourne
16	Vancouver
17	Madrid
18	Chicago
19	Los Angeles
20	Hong Kong

See Appendix for details
Source: The Business of Cities, JLL, 2017

“ Real estate is being used explicitly as a draw for talent



3. Investing in Infrastructure

The infrastructure platform of cities – transport, utilities, telecoms, logistics and, increasingly, digital connectivity – is a critical determinant of how well cities can participate in globally traded sectors and accommodate future growth.

A number of exciting new ways to compare cities' infrastructure have emerged. For example, real-time tracking data allow index providers to assess transit bottlenecks and to measure at the metropolitan scale.

High Performing Cities for Infrastructure

Cities that have underinvested in their metropolitan infrastructure are now seen to be falling behind. While **Singapore** and **Amsterdam** routinely excel, cities such as **Sydney** and **Los Angeles** are penalised due to long commute times, congestion or low public transport usage and coverage. The long-term process of infrastructure investment means that these gaps are likely to grow before those in deficit start to catch up.

New infrastructure investment unlocks new areas of opportunity for real estate actors, transforming the attractiveness of locations through improving links to other important hubs. At the same time, digital connectivity – at both city and asset levels – is coming increasingly to the fore as more demands are being placed on the workplace by the changing economy.

“ New infrastructure investment unlocks new areas of opportunity for real estate actors, transforming the attractiveness of locations

High Performing Cities for Infrastructure

Rank	City
1	London
2	Paris
3	Copenhagen
4	Madrid
5	Seoul
6	Berlin
7	Amsterdam
8	Vienna
9	New York
10	Munich
11	Oslo
12	Singapore
13	Tokyo
14	Hong Kong
15	Barcelona
16	Stockholm
17	Milan
18	Shanghai
19	Toronto
20	San Francisco

See Appendix for details

Source: The Business of Cities, JLL, 2017

4. Thinking Long-Term



There are now more than 25 indices worldwide that address the environmental sustainability and resilience of cities. New technology is helping to build better comparative data on water management, air pollution, green buildings and green space.

These approaches can reveal that some cities which appear to be sound and sustainable bets today may appear riskier in the longer run. Longer-term real estate investors must be wary of the possibility that some popular cities are unable to escape their 'lock in' to a high carbon high pollution equilibrium, or to vulnerability to floods and earthquakes. This can result in interruption to businesses' trade activity and expensive demands placed on investors to make their assets flood proof or future proof. Furthermore, unexpected events and a worsening environment can result in reputational damage which undermines a city's appeal to business and talent.

Among real estate investors the conversation is shifting ever more to future-proofing, to a city's resilience and sustainability. Long-term investors – sovereign wealth funds, institutions and pension funds – see resilience and future-proofing as a way to preserve capital over the course of 10 to 20 years. Yet, while many investors may implicitly acknowledge issues surrounding future-proofing, most won't recognise it explicitly in their decision-making until it has practical implications for their portfolios.

“ Among real estate investors, the conversation is shifting increasingly to future-proofing, to a city's resilience and sustainability



5. Creating a Well-Run City



City governance is increasingly recognised to be a critical factor in the ability of cities to manage their growth and create new opportunities for development and investment. Awareness is growing that the real estate market is affected by whether cities have the ability and appetite to build long-term vision, develop clear planning frameworks, manage and coordinate land use rationally, prepare investable sites, and act as a willing development partner.

Indices have expanded their attention on cities' fiscal prudence, e-government capabilities, institutional transparency and accountability. There have also been attempts to measure cities based on surveys of city leaders and decision-makers, which can help gauge sentiment about the future.

The growing evidence base on the links between city/metropolitan governance and growth dynamics, combined with the rise of resident surveys and crowdsourcing applications, means that this category of indices is likely to grow quickly, especially as the momentum builds to implement the New Urban Agenda.

“Evaluating the nuances of how cities are run will be key to identifying the next set of successful cities and real estate markets





6. Ensuring Transparency

There is a clear shift in attention towards comparing transparency in cities, whether it is in indices of cities' real estate, open data initiatives or air pollution. This reflects a twin set of demands – to make local governments more responsive and accountable, and to assess long-term stability and risk in cities.

There is widening recognition among governments and urban planners of the crucial role that a transparent real estate sector plays in city competitiveness, not only as a facilitator of new investment and business activity, but also in community well-being and inclusiveness. In response, JLL's Global Real Estate Transparency Index, which has been tracking the evolution of real estate transparency for nearly two decades, is focusing increasingly on transparency at a city level. The world's most transparent markets – **London, Sydney, Toronto and New York** – come as little surprise, but more tellingly it reveals those cities – such as **Tokyo** and **Seoul** – where transparency is failing to match their economic maturity and status. The Index also identifies several less transparent cities and regions that are narrowing the gap – for example, **Warsaw** and **Taipei**.

The World's Most Transparent Real Estate Markets

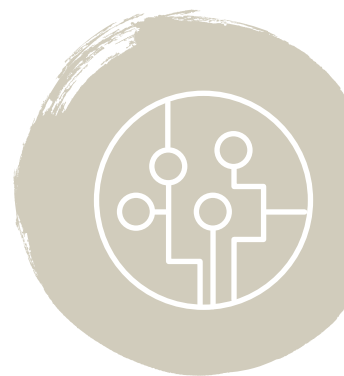
1. London	2. Sydney	Highly Transparent
3. Toronto	4. New York	
5. Paris	6. Auckland	
7. Amsterdam	8. Dublin	
9. Frankfurt	10. Helsinki	
11. Singapore	12. Stockholm	
13. Warsaw	14. Zurich	
15. Hong Kong	16. Brussels	
17. Copenhagen	18. Oslo	
19. Tokyo	20. Prague	
21. Milan	22. Madrid	Transparent
23. Taipei	24. Vienna	
25. Johannesburg	26. Budapest	
27. Lisbon	28. Kuala Lumpur	
29. Bratislava	30. Bucharest	

“ There is widening recognition among governments of the crucial role that a transparent real estate sector plays in city competitiveness

Covers the main commercial city in each country
Source: JLL Global Real Estate Transparency Index, 2016

Aside from JLL's Global Real Estate Transparency Index, several of the leading indices feature transparency: AT Kearney now incorporates a transparency measure within its Global Cities Index, and the Singapore-based Global Liveable Cities Index examines transparency of cities' economic policy and political decision-making. They highlight cities like Los Angeles and Philadelphia which have been improving partly because of the commitment of ambitious mayors.

7. Being Smart



The last 12 months have seen the first smart cities indices that properly measure cities' future strategies, and which try to show the real impact of smart cities' interventions. There have also been important efforts to understand return of investment (ROI) in digital infrastructure and marketing.

These indices are highlighting that large, well-resourced city governments have tended to build more coherent cross-cutting strategies, participate into more effective partnerships, and make more integrated interventions in the Internet of Things.

Vienna and **Singapore**, two of the most self-governing cities, perform extremely well, while cities such as **Malmo** and **Dubai** do well in terms of smart buildings' adoption. **New York**, **Barcelona** and **Mexico City** have also made significant moves in these areas, while many cities in Asia Pacific are still catching up.

Top 10 Smart City Strategies

Rank	City
1	Vienna
2	Chicago
3	Singapore
4	London
5	New York
6	Seoul
7	Barcelona
8	Denver
9	Hong Kong
10	Tokyo

(Among Large Cities)

Source: Roland Berger Smart Cities Strategies Index (2017)

“ Well-resourced city governments build more coherent cross-cutting strategies



8. Keeping it Affordable



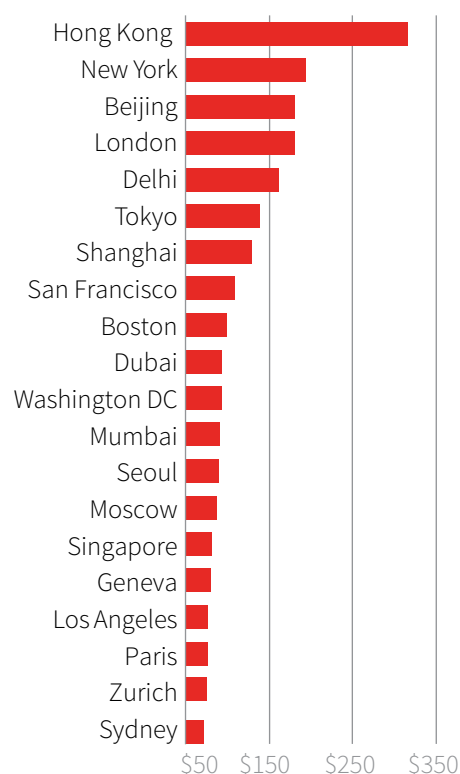
Costs and affordability in cities are once again becoming more closely tracked in a range of insightful indices. The costs for residents, visitors and start-up companies are all analysed. But, it is the increasing unaffordability of housing in many cities that is driving interest in housing costs in a host of new indices.

This new wave of indices inform investors as to the patterns of demand, the saturation points, and the capacity of cities to absorb future growth. They also help investors to refine their information on population fundamentals with insights as to the risks to value growth if a city does not do enough to ensure economic inclusion and social participation.

City governments are increasingly cognisant of a potential tipping point at which the lack of affordable housing outweighs the potential benefits of being in a city – effectively restricting the pool of talent in the city. A key issue is the balance between foreign investment in a city's residential stock and housing affordability, provision and policy. In cities such as **London**, **Vancouver** and **Sydney** there are vocal debates around these topics.

Affordability of operating a business is another element, in terms of both real estate and staff costs. Companies are looking more forensically at their portfolios in order to increase efficiencies and reduce costs. In the last few years we have seen, for example, financial services operations and technology firms in the United States shift to cities such as **Salt Lake City**, **Charlotte** and **Nashville**, where both wages and commercial rents are significantly lower. More and more, back office functions are being separated from executive functions in global cities and moved to lower-cost cities. In Europe, **Berlin** and **Amsterdam**, for instance, are benefiting from lower costs (compared to their peer European cities) and are building their positions as thriving tech hubs.

JLL Premium Office Rent Tracker



Total occupancy costs for premium office space in the premium office district of each city (US\$, per sq ft, per annum)
Source: JLL, April 2017

“JLL’s Premium Office Rent Tracker highlights the most expensive cities in the world in which to occupy premium office space

Will prohibitive costs for both residential and commercial space in these cities weigh down on their momentum, especially in terms of the ability of start-ups and smaller enterprises to grow and thrive?



9. Building Brand

Interest in city brand, appeal, identity, reputation and visibility is on the rise, with two-thirds of studies centred on subjective or perception-based surveys. Travel and lifestyle media companies use rankings to stimulate debate about city attractiveness, while several consulting firms are building a comprehensive picture about the brand appeal of cities to distinct audiences.

The big change in this field of indices is the rise of niche identities – cities that have a special association with sport, diplomacy, higher education, nightlife or gastronomy, for example. These indices illustrate the way cities are communicating their distinct offer, and through unique channels.

These results highlight three important factors:

- A strong city brand in one area (e.g. liveability) often does not translate to another (e.g. business environment).
- Size and scale is more important to city visibility as more cities globalise.
- Trust in and admiration for a city is fragile and can easily be set back by negative shocks.

“Cities are using innovative real estate and impressive skylines to project their brand and identities”

High Performing Cities for Brand and Reputation

Many cities are responding accordingly to raise their profile. **San Diego** is reorganising its brand beyond quality of life and tourism, towards an offer that appeals to would-be employees – captured by its new story called ‘San Diego. Life. Changing’. **Amsterdam** is leading an effort to communicate its metropolitan scale by leveraging the assets of its three near neighbours (The Hague, Rotterdam and Utrecht) within a brand called ‘Holland Metropole’. Meanwhile, **London** is moving to develop a ‘post-Brexit’ brand strategy to reaffirm the city’s credentials and deep DNA as an open city of trade.

High Performing Cities for Brand

Rank	City
1	Melbourne
2	Sydney
3	New York
4	Toronto
5	Amsterdam
6	London
7	Madrid
8	Tokyo
9	San Francisco
10	Paris
11	Singapore
12	Barcelona
13	Los Angeles
14	Berlin
15	Chicago
16	Milan
17	Dubai
18	Hong Kong
19	Mexico City
20	Beijing

See Appendix for details
Source: The Business of Cities, JLL, 2017



10. Going Global

No longer are city indices the exclusive domain of North American and Western European countries; they are becoming truly global. New indices are emerging from regions as diverse as Latin America, China, India and Southern Africa. As these regions and their cities globalise and become more competitive, the need to track cities has become greater – while the growing availability of data has made comparisons possible.

At the same time the universe of corporate and investor interest is expanding. New cities are emerging as viable and attractive options for both international businesses and investors. Indices help inform decision-makers, revealing new strengths and patterns of cities and allowing for simple comparison.

It is not just the destinations of interest that are new, but there are also new sources of capital. For example, new sources of capital have emerged from East Asia, including China, South Korea, Taiwan and Malaysia. The growing range of city indices reflects the expanding universe of international business.

The deep dives that indices are taking confirm the improvements of cities near the top of the global system: **Seoul, Beijing, Shanghai, Sydney, San Francisco** and **Amsterdam**, for example. They also raise instances of lower-profile cities that are not on the radar of many global investors. **Shenzhen** consistently performs well in measures developed in China; **Santiago** and **Sao Paulo** have cemented their lead in Latin America; and **Nairobi** and **Addis Ababa** are slowly building more of the scale, connectivity and efficiency necessary to attract investment.

“ New cities are emerging as viable and attractive options for both international businesses and investors



What Do the 10 Trends Tell Us About the Leading Cities?

These trends send two clear messages about city performance moving forward that have implications for real estate in the major cities:

- **A More Competitive Landscape:** More cities are becoming competitive with the biggest and best cities by demonstrating quality, efficiency, flexibility and borrowed scale. There are now several new 'Contenders' (see page 28) which are competing with the most 'Established World Cities' for global reach.
- **The Imperative to be Future Proof:** The leading cities have to be future proof in terms of their infrastructure and economic base, but their frameworks for delivering and coordinating this resilience vary a lot. Some – such as Singapore and London – have robust and maturing systems already in place. Others that are midway through major reform processes – like Paris and Sydney – have a challenge to ensure their arrangements are fit for purpose. Otherwise their ability to offer multicycle opportunities may be uncertain.

Filling the Gaps

There are several fields where there is exciting new work emerging but where more is still required. Indices on governance, basic infrastructure and softer issues of diversity and belonging are still rare, mainly because of the challenges and nuances around data collection:

Governance

Evaluating the nuances of how a city works and is run, rather than current performance, could be key to identifying the next set of successful cities.

Infrastructure Performance

Moving towards the real-time useability of infrastructure, rather than relying on scale.

Culture and Diversity

A city's social mix, inherited values and level of inclusiveness remain difficult to assess because of a lack of data comparability, and the fact that many of these softer issues are still outside empirical measurement.

Quality of Life

Moving beyond quality of life indices based on expat populations and towards the needs of citizens across the spectrum of income and geography.

Growth Capacity

The available capacity cities possess to absorb more growth and capital, and their ability to unlock new sources of capacity (new sub centres, neighbouring cities, district densification, etc.) at the right point in the cycle.

Identifying

the Top Tier of Cities

Since 2013³ we have drawn on the aggregate insights of city indices to help identify a core group of **Established World Cities**.

These are leaders in the global economy; they are the quintessential global cities – not only do they have unique scale, quality and assets, but they also have influence and help to set and shape the ‘rules of the game’.

What are the Characteristics of an Established World City?



³ The Business of Cities 2013, JLL and The Business of Cities, November 2013

The Leaders of the Global Economy – the ‘Big Seven’



London · New York · Paris · Singapore
Tokyo · Hong Kong · Seoul

In 2015⁴ we identified the ‘Big Six’ – six archetypal ‘Established World Cities’: **Hong Kong, London, New York, Paris, Singapore** and **Tokyo**.

The latest data leave little doubt that **London** and **New York** still head the pack. This duo continues to lead for corporate presence, magnetic appeal to talent, attraction to capital, and soft power and informal influence. London’s competitiveness, however, has come under increased scrutiny as the fallout from the EU referendum continues, while New York faces an indirect challenge from a possible new era of U.S. protectionism. The prospect of curbed immigration means that there are medium-term risks around talent supply in both cities, with new restrictions and changing sentiment making them less open to international talent.

This may create opportunities for other cities. **Tokyo** and **Paris** possess many of the same assets. Although they have slipped behind in the last decade, both cities are renewing their offer in the current cycle. In Tokyo, the upcoming events of the 2020 Summer Olympics offer a once-in-a-generation catalyst for change. Meanwhile, Paris is currently implementing one of the most ambitious infrastructure programmes in the world – the ‘Grand Paris’ project – while the new ‘Métropole du Grand Paris’ body is creating greater alignment of city-regional decision-making. The city will also be host to the 2024 Summer Olympics.

Meanwhile, **Singapore** and **Hong Kong** have consolidated their positions as ‘Established World Cities’; both continue to enjoy great institutional freedom and to shape the next generation of urbanism in Asia Pacific.

The ‘Big Six’ become the ‘Big Seven’

Now, according to analysis of more than 300 indices, **Seoul** has stepped up to join the ranks of the ‘Established World Cities’. Its rise from low-income city to global megacity over the past 40 years has been remarkable. The South Korean capital has recently made significant strides in raising its business and visitor profile, developing world-class universities and building its innovation capacity. However, its position within the premier group will continue to be threatened by geopolitical headwinds, lack of openness and comparatively low transparency (see page 27).

⁴ The Business of Cities 2015, JLL and The Business of Cities, May 2015



Seoul

a leading global city?

Seoul's scale and diverse offer have catapulted the city into the elite set of 'Established World Cities'.

The South Korean capital's strengths are geared towards the 21st century, with modern infrastructure networks; leading positions in a range of technology and engineering-related industries; high-profile, innovative global firms; exceptional digital connectivity; and an international talent base that has widened.

Seoul's economy is underpinned by a robust spatial plan for polycentric and flexible growth in districts such as the CBD (professional and financial services), Gangnam (software) and Yeouido (finance, media and government), as well as the master planned satellite district of Pangyo, South Korea's 'Silicon Valley'.

And while other major global cities struggle to agree and execute new rail infrastructure, Seoul now has another high-speed rail service, the SRT, unlocking growth in the south east of the city. At the same time, the city has been rated one of the most socially sustainable because of very strong inclusion, health, housing and crime indicators.

Yet for Seoul to retain its position at the top table of global cities, the city government's ongoing programme of internationalisation and greater market openness will need support from national government to accelerate reforms around transparency, corporate governance and the labour market.

While Seoul is one of the world's top 15 largest destinations for direct real estate investment due to the strength of domestic investors and large Korean conglomerates ('chaebols'), limited levels of real estate transparency remain a constraint.

Moreover, geopolitical and security concerns on the Korean peninsula continue to weigh on prospects, with Seoul only 35 miles from the DMZ with North Korea.

Tracking Real Estate Market Transparency

While the 'Established World Cities' share a set of attributes that puts them at the apex of the global economy, crucially they continue to exhibit different levels of real estate market transparency, resulting in some disconnect between economic status and real estate market activity.

In JLL's Global Real Estate Transparency Index 2016, the majority of 'Established World Cities' sit in the 'Highly Transparent' category, with **London, Sydney, New York** and **Toronto** registering the highest real estate transparency globally. These top cities continue to push the boundaries of what it means to be transparent.

However, there is still room for improvement in several other 'Established World Cities'. For example, despite its rapid progress, Seoul's position as a 'Semi Transparent' market contrasts sharply with its advanced economy. It currently trails the other 'Big Seven', sitting alongside the likes of **Shanghai** and **Beijing**. Unless improvements are made to these semi-transparent markets, investors and businesses will continue to gravitate to the most transparency cities.

Real Estate Transparency: Established World Cities

Big Seven

Contenders

Highly Transparent

London	Sydney
New York	Toronto
Paris	Los Angeles
	Chicago
	San Francisco
	Washington DC
	Amsterdam

Transparent

Singapore	Madrid
Hong Kong	
Tokyo	

Semi Transparent

Seoul	Shanghai
	Beijing

Source: JLL Global Real Estate Transparency Index, 2016

Who are the ‘Contenders’?



Los Angeles · Shanghai · Beijing · Amsterdam
Chicago · San Francisco · Toronto · Madrid
Sydney · Washington DC

Comparative indices and performance data make it clear that a ‘second tier’ of cities has emerged just behind the seven leading cities. Most of these cities have been ‘promoted’ from their previous status as ‘New World’ or ‘Emerging World Cities’⁵, having started to acquire more of the assets and characteristics of ‘Established World Cities’.

China’s Alpha Cities

Beijing and **Shanghai** are the two cities that have moved up from the pack of ‘Emerging World Cities’, closing the gap with neighbouring Seoul and Tokyo. Their assets are reaching a critical mass – in the case of Beijing, it is the city’s corporate headquarters, knowledge, media and innovation, while Shanghai has become a highly dynamic business and professional services gateway, underpinned by world-class infrastructure.

With their hosting of the 2008 Summer Olympics, 2010 World Expo and 2022 Winter Olympics, Beijing and Shanghai are marking their intentions to grow their global reach. China’s ‘Belt and Road’ Initiative represents the next step in these cities’ global pathway.

Beijing’s next focus is on addressing congestion, pollution and housing – partly through the development of new cities and regional sub-centres, such as Xiongan New Area. Shanghai is pushing towards developing a more robust mixed-use offer, including culture, arts and entertainment developments, as well as furthering financial innovations and attracting more headquarters.

The ‘New World City’ Graduates

Amsterdam, San Francisco, Toronto, Madrid and **Sydney** have graduated from the group of ‘New World Cities’:

- **Amsterdam**, a surprisingly powerful performer in the indices given its size, is an example of a high-quality city that is now leveraging the borrowed scale, diversity and knowledge of its wider region (the ‘Holland Metropole’). It is notably a strong university and FDI destination – which if consistently measured at the regional level, might even feature closer to the leading pack.
- **San Francisco**’s ongoing success in terms of IT and tech innovation has seen it record very impressive results in respect of business services, fuelling its business appeal to levels approaching those of the dominant business hubs.

⁵ Globalisation and Competition: The New World of Cities, JLL and The Business of Cities, November 2015

- **Toronto** combines diverse business sectors with a very strong institutional presence, and the city may stand to benefit from potential immigration reforms in the U.S., especially with regards to attracting tech talent.
- **Madrid** is crafting a new position on the world stage. The city government is seeking to improve the urban environment, and its vision of 'nature is poised to reconquer Madrid' is set to have a profound effect on the city's future.
- **Sydney** is strengthening through its renewed focus on metropolitan governance and infrastructure, supporting an increasingly dynamic real estate sector.

The U.S. Alpha Cities

Los Angeles, Chicago and **Washington DC** represent another distinct group of 'Contender' cities. These major U.S. cities, while all among the world's top 10 real estate investment destinations, lack some of the global gateway functions and infrastructure platforms required to make the step up to the top group. Their global power and influence is, to some degree, constrained by the presence of New York and the intense competition from other major U.S. cities, including San Francisco, Boston and Dallas.

Of the 10 'Contender' cities, **Los Angeles** is closest to joining the top group, due to its scale, appeal, soft power and global specialisation. Prospects are enhanced further by a renewed focus on infrastructure improvements and the impetus provided by hosting the Summer Olympics in 2028.

Imperatives for the 'Established World City' Contenders

City	Imperatives
Los Angeles	Infrastructure, specialisation, innovation.
Shanghai	Optimise land use, manage sprawl, brand and identity, talent attraction.
Beijing	Soft power and culture, address congestion and environmental bottlenecks, quality of life.
Amsterdam	Borrowed scale, further develop innovation ecosystem, densification.
Chicago	Corporate presence, talent, infrastructure, brand and identity.
San Francisco	Densification, updated infrastructure, effective scale.
Toronto	Profile and soft power, infrastructure, metropolitan management.
Madrid	Global reach, corporate critical mass, innovation, environment.
Sydney	Infrastructure, connectivity, increase scale.
Washington DC	Infrastructure financing, scale, diversification, innovation.



Amsterdam

the hub of the 'Holland Metropole'

Amsterdam is an example of a high-quality city that is now leveraging the borrowed scale, diversity and knowledge of its wider region – now referred to as the 'Holland Metropole'.

Amsterdam has made substantial improvements in global city indices because many of its attributes are now being measured at the metropolitan scale (of roughly seven million people). The city and the region both possess significant knowledge and university capabilities as well as very strong infrastructure connectivity both internally and externally. Amsterdam itself is making a concerted move into the smart economy and the collaborative economy, and has one of the most robust strategies for a sustainable transition of any city.

The city's new North-South metro line will have a major impact on the office and residential markets, unlocking new locations in Amsterdam-Noord and providing a boost to ex-industrial waterfront sites. In addition, the city is seeking to enhance the attractiveness of its core commercial district (Zuidas) through improved infrastructure and mixed-use development.

The 'Holland Metropole' has, in recent years, failed to punch its weight as a real estate investment destination, and is the only city region among the top city categories that does not feature in the global top 30 for real estate investment. Nonetheless, its attraction for investors will be enhanced by increasing scale and agglomeration, combined with a dynamic business environment.

An aerial photograph of the Los Angeles skyline, featuring prominent skyscrapers like the US Bank Tower. The image is overlaid with a white, torn-paper-like graphic that separates the city view from the text on the right.

Los Angeles

a unique global city?

Los Angeles is a distinctive example of a world city that has many of the quality characteristics of the most advanced world cities, helping to elevate the city to the top of the group of 'Contenders'. It sits firmly among the world's top five real estate investment destinations.

The film and media industry provides this Southern Californian metropolitan area with one of the most obvious and globally visible specialisations. In many respects, Los Angeles has the scale, appeal and soft power to push it into the top category of 'Established World Cities'. However, the city region faces several long-standing challenges including sprawl, pollution, infrastructure deficits and inequalities.

Los Angeles has an opportunity to shift towards a new model of development, with the 2028 Summer Olympics expected to provide an important catalyst for change over the coming decade. Transit-oriented development is being boldly promoted by Mayor Eric Garcetti and 'Measure M', passed in November 2016, has provided a considerable boost to transport spending, on the heels of expansions to the Expo, Crenshaw and Purple Lines. Real estate developers are embracing the new links in areas including Downtown, the Arts District, Santa Monica and Culver City.

The Geography of Real Estate Investment

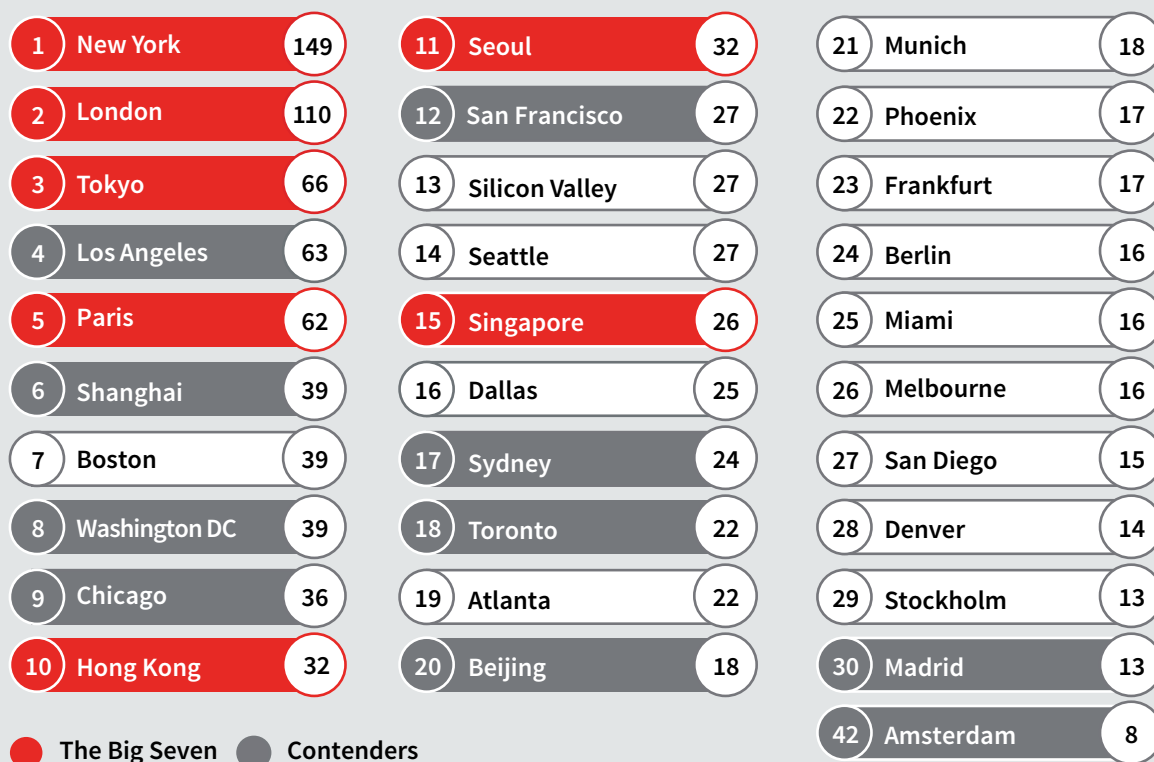
The 'Big Seven' and the majority of the 'Contenders' are already among the world's largest real estate investment destinations, as their expanded role as global gateways attracts a wide spectrum of investors. **New York** and **London** sit head and shoulders above all other cities as investment destinations, with **Tokyo**, **Los Angeles** and **Paris** vying for the next positions. **Shanghai**, **Seoul** and **Beijing** have seen rapid investment volume growth as they acquire more of the characteristics of truly global cities.

A few of the 'Contenders' are failing to punch their weight as premier real estate investment locations, with **Madrid** only just squeezing in the top 30, while **Amsterdam** sits in 42nd position globally.

On the other hand, the 'Contender' cities in the United States – Los Angeles, **Washington DC** and **Chicago** – feature prominently in terms of real estate investment, reflecting the depth of tradable real estate and high market transparency.

Top 30 Cities for Commercial Real Estate Investment

Q3 2014 - Q2 2017, US\$ billions



The Challenges

of 'Established World Cities'

'Established World Cities' face a number of shared challenges:



Housing Affordability

In nearly all 'Established World Cities' the housing affordability crisis is a mounting concern. This is prompting much debate about how to build more homes, how to ensure affordability, where to develop and the roles of the public and private sectors.



Growing Inequality

The debate over inequality is growing, both within cities and between cities and the rest of their country. This adds pressure for more cohesive spatial development and improved skills provision, and creates added risk in terms of potential political disruptors.



Air Pollution

Air pollution has emerged as a major health challenge and is forcing the 'Established World Cities' to consider new solutions such as extensive pedestrianisation, reforms to vehicle requirements and regulations on logistics.





What Next?

The rapid growth in number and ambition of city indices matches the pace of global change and the scale of demand among businesses, investors, governments and citizens to understand the fast-moving world of cities. This paper has highlighted some of the important new trends in city data, the ingredients for future success, and the cities that are challenging and contending to be the most competitive world cities in the future.

In this paper we have identified the top tiers of 'Established World Cities' – i.e. the 'Big Seven' and the 10 'Contenders'. But the changes we see in the global economy, and the ever-improving breadth and depth of urban indices and data, allow us to observe many more types of cities that are proving globally competitive and that offer value to different kinds of investors and businesses.

Stay tuned to the follow-up to this report, to be released in November 2017, which provides a global 'map' of 10 types of world city.

Appendix

Elo Ranking Algorithm:

The city rankings provided on pages 13, 14, 15 and 21 are based on an algorithm derived from the Elo rating system. This method is highly effective for evaluating how well a city performs relative to a set of other cities in those situations where city coverage varies between different indices.

High Performing Cities for Knowledge and Innovation:

Ranking based on:

- 2thinknow Innovation Cities™ Index 2016-17;
- Startup Genome – ‘Global Startup Ecosystem Report 2017’;
- Expert Market – ‘World’s Best Tech Hubs to Live and Work In’;
- Business Insider UK – ‘The 25 Most High-Tech Cities in the World’;
- Dubai Innovation Index 2016;
- Bergquist et al. ‘Identifying and Ranking the World’s Largest Clusters of Inventive Activity’, WIPO Economic Research Working Paper No. 34;
- KPMG – ‘The Changing Landscape of Disruptive Technologies’ - Innovation Hubs ranking.

High Performing Cities for Talent:

Ranking based on:

- QS Best Student Cities 2017;
- Brookings Redefining Global Cities ‘Higher Education Attainment’;
- INSEAD ‘Global Cities Talent Competitiveness Index 2017’;
- IESE ‘Cities in Motion Index 2017’ – Human Capital (sub-index);
- Citi Foundation ‘Accelerating Pathways’ – Human and Social Capital (sub-index);
- The BCG Innovation Index - Human Capital (sub-index);
- PwC ‘Cities of Opportunity 7’ – Intellectual Capital and Innovation (sub-index).

High Performing Cities for Infrastructure:

Ranking based on:

- PwC ‘Cities of Opportunity 7’ – Transportation and Infrastructure (sub-index);
- Mori ‘Global Power City Index 2016’ – Accessibility (sub-index);
- IESE ‘Cities in Motion Index 2017’ – Mobility and Transportation (sub-index);
- Movmi and Inov360 ‘Shared Mobility City Index 2017’;
- ITDP ‘People Near Transit’ – Percent of Population Near Rapid Transit (Metro Area);
- Cebr and Qualcomm ‘Urban Mobility Index’.

High Performing Cities for Brand:

Ranking based on:

- Reputation Institute ‘2016 City RepTrak’;
- Resonance ‘2017 World’s Best City Brands Report’;
- Adobe ‘State of Create: 2016’ – Most Creative City;
- Time Out’s City Index: The Most Fun Cities;
- PwC and BAV Consulting ‘World’s Happiest Cities’;
- InterNations ‘Expat Insider 2016’ – Urban Living: The Best Cities for Expatriates.

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