Global Research

Global Real Estate Transparency Index, 2022

Transparency in an age of uncertainty

Welcome

I am delighted to share our 12th edition of the Global Real Estate Transparency Index, which JLL and LaSalle have produced every two years as an essential and unique guide for cross-border real estate investors, lenders and corporate occupiers.

Our 2022 Index comes at a time of heightened uncertainty and rapid change across the industry, economy and society. Geopolitical conflict, the climate emergency, and widescale changes in how we live and work, together with mounting economic pressures, mean that the steady improvement that we have seen in global transparency over the past 20 years cannot be taken for granted. In fact, this year's survey reveals a widening gap between the most transparent countries and the rest. The highly transparent markets are forging ahead on the back of technology adoption, climate action, capital markets diversification and regulatory change. Meanwhile, many other markets are at best treading water, even regressing, or in some cases, regrettably disappearing completely off the radar.

The urgent drive for decarbonization is leading to new transparency requirements. I, like many in the real estate industry, am learning about the impact of sustainability on the built environment. It's truly encouraging to see the progress being made towards higher standards to support the rollout of net zero carbon, resilient and healthy buildings as these become additional markers of transparency. However, there is no room for complacency as investors, companies and governments grapple with the challenges of complex regulatory environments and a lack of consistent information to meet their goals. Advances in technology, particularly around the ease of collecting and processing data, will enable and accelerate progress towards greater transparency.

As the climate emergency intensifies, we anticipate more regulation and a greater harmonization of approach. Collaboration on a scale not yet seen before will ultimately benefit our communities.

We believe that a robust global benchmark is an essential tool for the real estate industry. Transparency is the foundation which allows corporate occupiers, investors and lenders to operate and make decisions with confidence.

We very much hope that our 2022 edition meets this challenge and provides a truly objective assessment of real estate transparency across the world which in turn contributes to higher standards that ensure healthy real estate markets that work for all stakeholders.

Richard Bloxam
CEO, Capital Markets, JLL

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Global Real Estate Transparency Index, 2022

Transparency level	Composite rank 2022	Market	Composite score 2022
High	1	United Kingdom	1.25
	2	United States	1.34
	3	France	1.34
	4	Australia	1.38
	5	Canada	1.44
	6	Netherlands	1.54
	7	Ireland	1.69
	8	Sweden	1.76
	9	Germany	1.76
	10	New Zealand	1.77
	11	Belgium	1.84
	12	Japan	1.88
Transparent	13	Finland	1.96
	14	Singapore	1.96
	15	Switzerland	1.97
	16	Hong Kong SAR	1.98
	17	Denmark	2.01
	18	Spain	2.06
	19	Italy	2.12
	20	Poland	2.15
	21	Czech Republic	2.27
	22	Norway	2.27
	23	Hungary	2.34
	24	Portugal	2.37
	25	Luxembourg	2.39
	26	South Africa	2.40
	27	Slovakia	2.44
	28	South Korea	2.49
	29	Chinese Taipei	2.52
	30	China – SH/BJ	2.54
	31	UAE - Dubai	2.56
	32	Romania	2.58
	33	Malaysia	2.61
	34	Thailand	2.63
Semi	35	Israel	2.66
	36	India	2.73
	37	Greece	2.73
	38	Turkey	2.83
	39	Indonesia	2.86
	40	Mexico	2.87
	41	Bulgaria	2.89
	42	Philippines	2.91
	43	Croatia	2.95
	44	Brazil	2.97
	45	UAE - Abu Dhabi	2.98
	46	Chile	3.10
	47	Peru	3.22
	48	Kenya	3.27
	49	Saudi Arabia	3.27
	50	Slovenia	3.30
Semi	51	Mauritius	3.35
	52	Vietnam	3.36
	53	Serbia	3.42
	54	Botswana	3.46
	55	Macao SAR	3.46
	56	Argentina	3.48
Low	57	Colombia	3.51
	58	Morocco	3.55
	59	Puerto Rico	3.57
	60	Nigeria	3.60
	61	Egypt	3.60
	62	Malta	3.64
	63	Costa Rica	3.64
	64	Sri Lanka	3.67
	65	Zambia	3.67
	66	Bahrain	3.80
	67	Cayman Islands	3.91
	68	Pakistan	3.91
	69	Jordan	3.93
	70	Kuwait	3.95
	71	Qatar	3.98
	72	Bahamas	4.00
	73	Uruguay	4.08
	74	Kazakhstan	4.09
	75	Rwanda	4.11
	76	Ghana	4.13
Opaque	77	Oman	4.18
	78	Ecuador	4.27
	79	Angola	4.30
	80	Tunisia	4.36
	81	Uganda	4.40
	82	Mozambique	4.41
	83	Panama	4.42
	84	Lebanon	4.43
	85	Iran	4.43
	86	Ivory Coast	4.44
	87	Algeria	4.46
	88	Senegal	4.49
	89	Honduras	4.50
	90	Tanzania	4.52
	91	Dominican Republic	4.54
	92	Iraq	4.59
	93	Guatemala	4.59
	94	Ethiopia	4.60

China – SH/BJ = Shanghai and Beijing
Source: JLL, LaSalle, 2022

Key messages

1

Diverging progress in transparency as expectations build

The 2022 Global Real Estate Transparency Index (GRETI) reveals a widening transparency gap as the leading countries pull further ahead and set higher standards, from new regulations covering energy efficiency and emissions standards for buildings and climate risk reporting; to raising the bar for Anti-Money Laundering (AML) and beneficial ownership reporting; to providing deeper data on everything from office utilization rates to niche property types, supported by the rapid uptake of technology. Progress lower down the global rankings has been slow as many jurisdictions plateau or even regress and they will need to move faster to meet heightened expectations.

2

Real estate transparency critical for decarbonization

Pressure has continued to grow for the real estate industry to meet the challenge of decarbonization. Sustainability – and the race to net zero emissions – has become the new marker of transparency as investors, companies, governments and the public look for clear long-term targets, regulatory standards and metrics to measure their environmental impact and risk. Sustainability has been the biggest driver of transparency improvements across markets in GRETI 2022, with increasing numbers of countries and cities setting mandatory energy efficiency and emissions standards for buildings and the more widespread adoption of green and healthy building certifications. The leading markets are now also beginning to mandate sustainability reporting from companies and are collecting public building-level information on energy efficiency and emissions.

However, sustainability measures remain among the least transparent globally and the fractured regulatory landscape – with different standards being set at the municipal, state, region and country levels, and a proliferating array of sustainability credentials, benchmarks and standards – is making it increasingly difficult for investors and companies to navigate and understand their responsibilities. Alignment of regulatory initiatives, harmonization of targets and more standardized data will be needed to help improve transparency and enable companies to achieve their decarbonization targets.[1]

[1] Decarbonizing Cities and Real Estate, JLL, May 2022

3 Technology and digitization driving innovation

The drive to improve productivity and uncover new revenue streams in the industry – as well as to respond to changes in how we live and work after the COVID pandemic – has spurred a rapid increase in the use of real estate technology platforms. The availability of new, high-frequency data and more granular data is boosting the transparency of real estate in ways that were unimaginable just a decade ago. In some countries, the result is a more in-depth understanding of buildings and markets than ever before, from real-time occupancy or foot-traffic tracking to data aggregators compiling information on developing asset types, and even the use of building and city-level digital twins for urban planning and forecasting.

The maturing real estate technology ecosystem has the potential to significantly boost transparency. However, the use of new technologies is highly varied across organizations and markets, the landscape of solutions and providers is complex, and many tech standards are specific to individual companies or use-cases. While GRETI 2022 underlines how quickly the uptake of this deeper and more frequent data has expanded, particularly in markets with well-funded technology sectors and advanced digital infrastructure, we are still in the early stages of seeing the massive impact that technology will have on markets and transparency.[2]

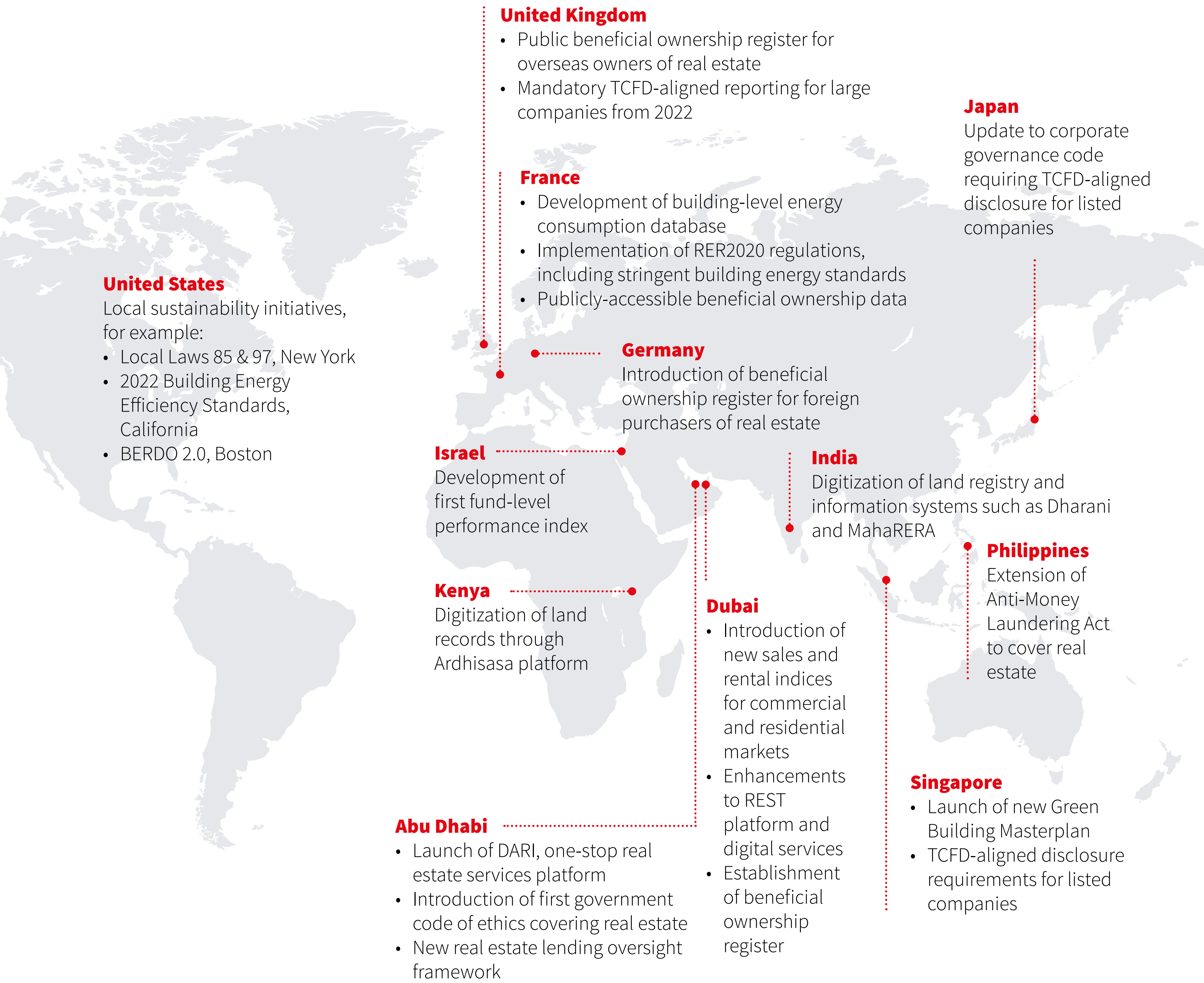
4 Diversification and the rise of alternative property sectors

Diversification is a core theme for many investors, and with institutional capital active in 'alternative' sectors in nearly two-thirds of markets tracked, expectations for higher transparency across niche property types like lab space, data centers and student housing have grown. Transparency and information on operating and pricing fundamentals in many of these niche parts of the market is rising but remains considerably lower than in established property types, with over one-third of markets lacking any reliable data outside the 'core' sectors.

[2] Transform with technology: Shaping the future of real estate, JLL, August 2021

Selected highlights

Among new initiatives in real estate transparency over the last two years



"Transparency is a critical component of the investment process and it is embedded in LaSalle's culture and business. As investors, we are heavily dependent on data to assess financial, legal and physical factors before establishing a market price for an asset. Our research teams conduct in-depth analysis on the market before projecting rent growth and occupancy. Our asset management and finance teams make sure that performance reports are accurate, clear, and reflective of the risk. Rising transparency lowers the cost of capital for real estate by reducing the uncertainty associated with projecting cash flows and capital expenses. History has proven that capital gravitates to transparent markets.

Investors play an important part in the process of raising transparency by producing comprehensive financial records and then sharing this information with the marketplace when it comes time to sell or re-finance an asset.

The 2022 Transparency Report focuses on three areas that will be highly influential for real estate investment decisions in the decades to come: sustainability, technology and the growth of specialized sectors. At LaSalle, we have joined with JLL to develop deeper expertise in all three of these categories. This edition of the report shows that, despite steady progress, there is plenty of runway to improve the industry's track record in reducing greenhouse gas emissions, disclosing and benchmarking energy data, undertaking climate risk analysis and improving health and wellness factors in buildings. The adoption of proptech tools can raise efficiency, improve sustainability reporting and reduce risks. Finally, the expansion of the investable universe to include specialized property types can contribute to superior risk-adjusted returns, provided that these efforts are accompanied by rising transparency for the underlying real estate.

Mark Gabbay
CEO, LaSalle Investment Management

Global Real Estate Transparency Index, 2022

Introducing the 12th edition of the Global Real Estate Transparency Index

The Global Real Estate Transparency Index (GRETI), produced jointly by JLL and LaSalle Investment Management, has been charting the evolution of real estate transparency across the globe since 1999. Updated every two years, this 12th edition of GRETI is based on a comprehensive survey of the availability and quality of performance benchmarks and market data, governance structures, regulatory and legal environments, transaction processes and sustainability instruments in 156 cities across 94 countries and territories.

GRETI is an essential guide for cross-border investors, developers and occupiers of real estate – as well as government and industry bodies looking for international benchmarks.

What's new with the 2022 Index?

Reflecting the growing importance of decarbonizing the built environment and the pressures on investors, corporates and governments to understand and manage their buildings' sustainability and resilience, the 2022 Index has been enhanced to cover a range of new sustainability instruments, including building energy use and efficiency reporting, energy performance standards, emissions tracking and benchmarks, and climate risk reporting.

We have also continued to add new elements to our index to better capture more granular differences in transparency. For example, we have incorporated elements in 2022 measuring the number and quality of data providers in each market and the frequency with which data is updated, as well as the availability of information on rent collection rates and asset utilization levels. We have also included the availability of data on new alternatives sectors such as single-family rental and retirement housing, as well as disaggregated data on leasing terms across the core property types. Acknowledging the growing role of CRE outsourcing, we have added questions on the quality and transparency of the procurement and tendering process.

In recognition of the increasing impact of technology platforms and digital tools in boosting data availability and improving market processes, we have enhanced questions relating to the adoption of different types of proptech platforms (for example, smart buildings and sensors, finance and valuations, and urban planning and governance).

Combined, these new elements have expanded the number of individual factors covered by 21%, to 254 factors. Greater scrutiny and the explicit inclusion of more factors underpin some of the score changes between 2020 and 2022.

Our approach

As in previous surveys, teams of researchers and business leaders from JLL and LaSalle have worked together to assess the transparency in each of the 156 city markets, with the best-performing city in each territory counted as the national score. Our Alliance Partners have also helped to provide additional on-the-ground information. JLL's accounting, finance, legal and sustainability experts have been consulted too, especially in emerging markets, in order to supplement our collective real estate knowledge.

Since we launched the Index 24 years ago, its components have evolved and been refined to reflect the changing requirements of cross-border investors and corporate occupiers. Therefore, to enable comparisons to be made across time, we have recreated an historic Transparency Index based on current weights and questions. We should like to emphasize that the recalibrated historic Indices differ from those published at the time of each survey.

Access our website

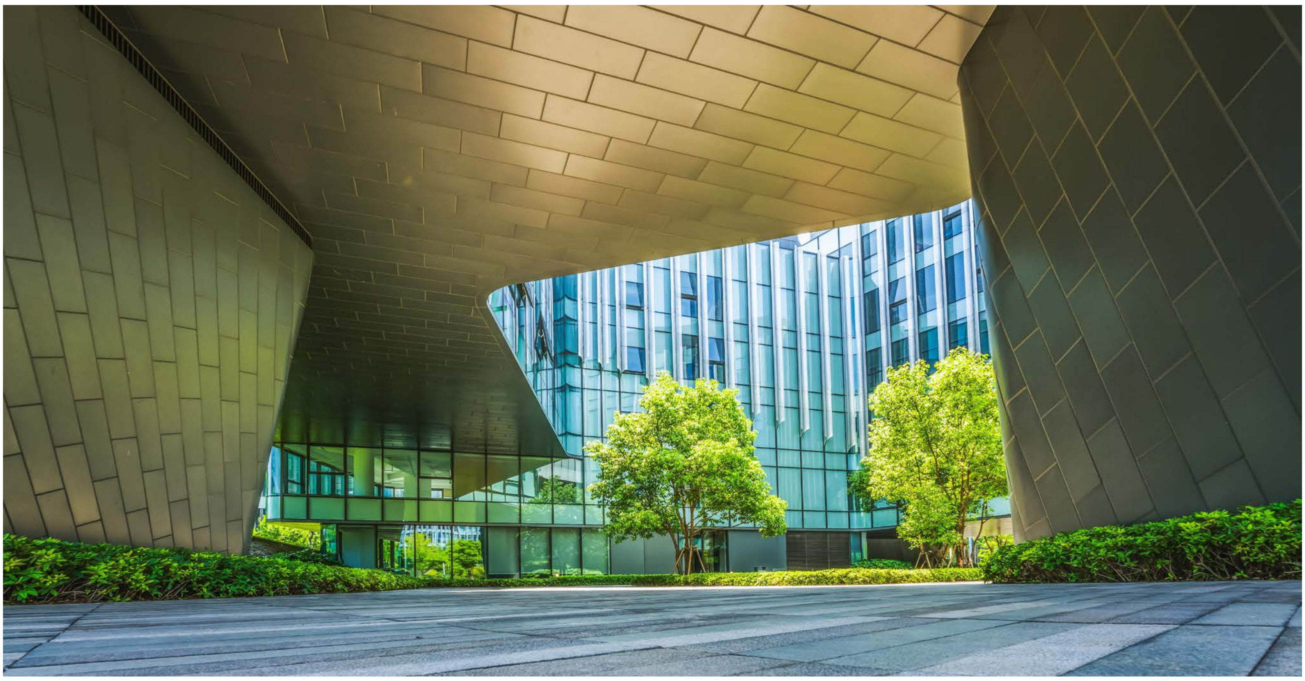
In addition to this report, the results of the 2022 Transparency Index are also presented in an interactive website:

Global Real Estate Transparency Index

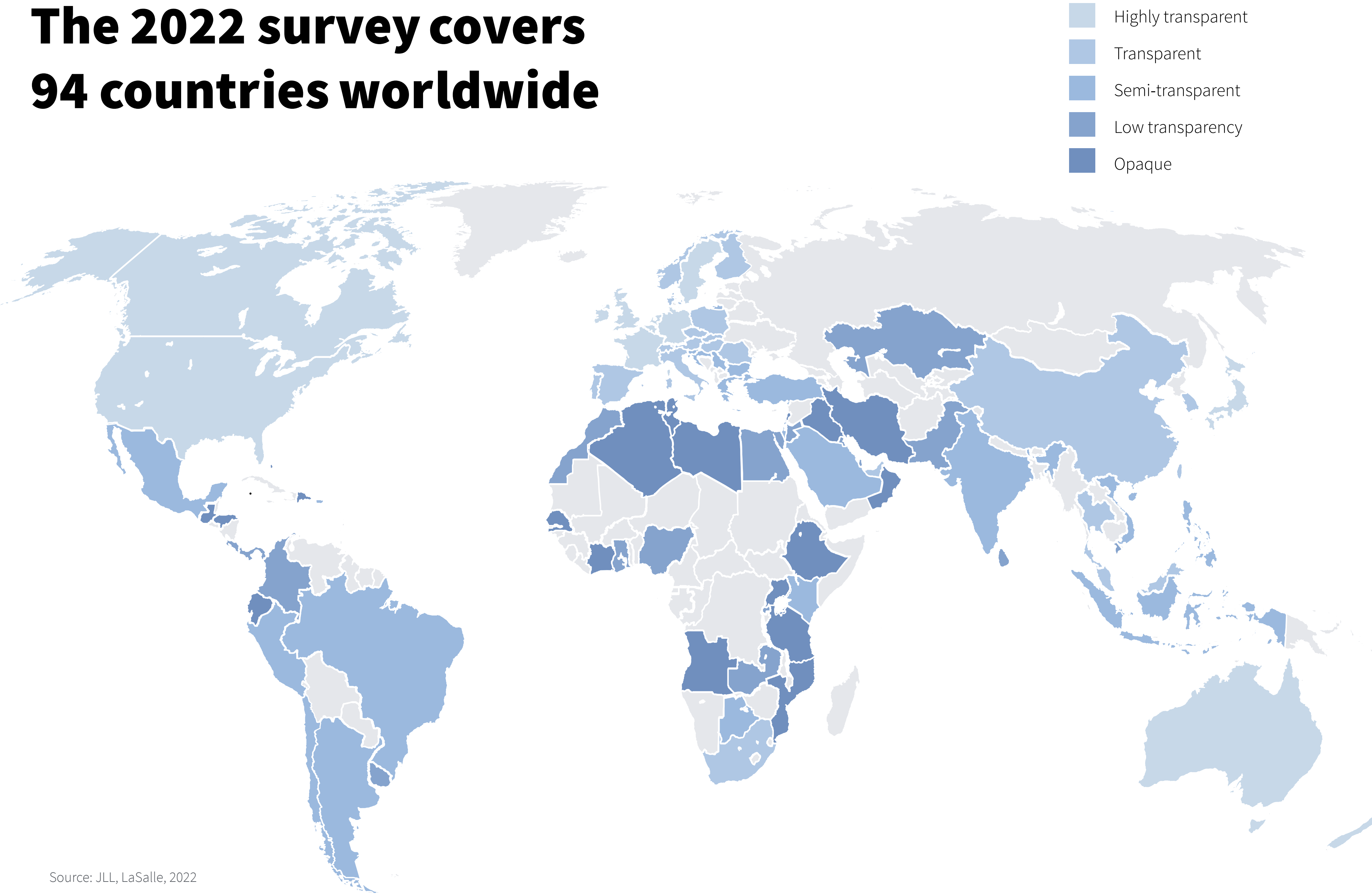
The website allows users to explore the different components of real estate transparency at a global, regional and national level. Datasets for all 94 countries and territories covering composite and sub-index scores can also be downloaded, while a series of interactive visualizations facilitate a comparison of transparency between locations. We trust that GRETI 2022 will provide valuable insights into the changes in real estate transparency across the globe. A complete description of the methodology used to create this Index is set out in the **Technical note**.

Get in touch with the team

For more information about the Index and how we can help with your real estate decisions, please contact our **Global Real Estate Transparency Index Team**.



The 2022 survey covers 94 countries worldwide



Source: JLL, LaSalle, 2022

Transparency Index components

Incorporates 254 different factors, a 21% increase on 2020

Composite score

6 Sub-indices

1 Performance measurement	2 Market fundamentals	3 Governance of listed vehicles	4 Regulatory and legal	5 Transaction process	6 Sustainability
14 Transparency topics					
• Direct property indices • Listed real estate securities indices • Private real estate fund indices • Valuations	• Market fundamentals data: - Offices - Retail - Industrial - Hotels - Residential - Alternatives	• Financial disclosure • Corporate governance	• Real estate tax, Land-use planning, Building controls, Enforceability of contracts • Property registration, Beneficial ownership • Compulsory purchase • Debt regulation	• Pre-sale information, Bidding processes, Professional standards of agents, Anti-Money Laundering regulations • Occupier services	• Green Building certifications; Energy reporting; Energy benchmarking and efficiency standards; Emissions reporting and standards; Green leases; Financial performance of green buildings; Health and wellness certification; Resilient building standards; Climate risk reporting
254 individual questions and datapoints					

Source: JLL, LaSalle, 2022

Findings from the 2022 survey

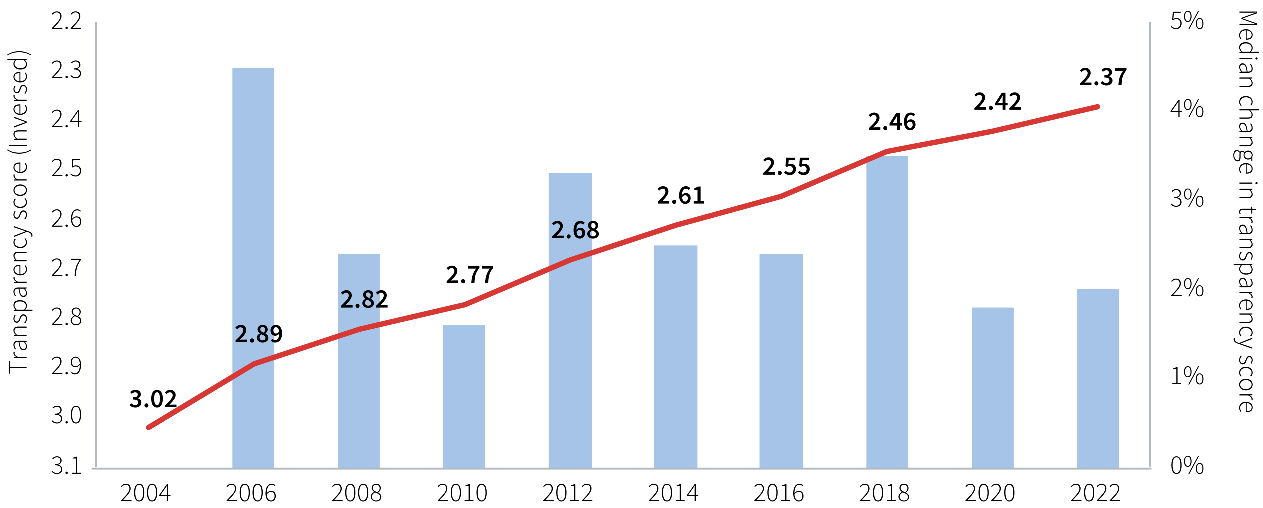
Progress in transparency diverging as leading markets drive change

JLL's 2022 Global Real Estate Transparency Index shows that transparency is continuing to improve across most countries and territories. However, an average change of transparency score of only 2.0% since 2020 is one of the slowest rates of progress in the survey's history and marks a growing divergence between the leading markets – which are pushing the boundaries on sustainability commitments, regulation, technology adoption and data availability – and limited progress in most other jurisdictions, with many plateauing or even moving backwards.

At a time of heightened uncertainty, geopolitical conflict and widespread shifts in how we all live and work, the built environment has a major role to play in responding to these rapid changes, from reducing the sector's outsized impact on emissions to cleaning up flows of illicit finance. Faster progress and greater global alignment in industry initiatives and standards will be needed to meet growing pressure from companies, consumers, investors and the public for higher levels of transparency.

Real estate transparency improvements since 2004

Progress still muted as many markets plateau



Change for 50 markets with continuous history since 2004

Source: JLL, LaSalle, 2022

World's most transparent countries in 2022

Level	Composite rank 2022	Market	Composite score 2022	
Highly transparent	1	**United Kingdom**	1.25	
	2	**United States**	1.34	The **U.S.**'s leading cities (e.g., New York) among most improved
	3	**France**	1.34	**France** leads on Sustainability measures, among global top improvers
	4	**Australia**	1.38	
	5	**Canada**	1.44	**Canada**'s top market Toronto benefits from ambitious sustainability requirements
	6	**Netherlands**	1.54	New energy performance requirements, beneficial ownership regulations and open data push **Netherlands** higher
	7	**Ireland**	1.69	
	8	**Sweden**	1.76	
	9	**Germany**	1.76	Greater data coverage of niche property types, beneficial ownership and sustainability boost **Germany**
	10	**New Zealand**	1.77	
	11	**Belgium**	1.84	
	12	**Japan**	1.88	**Japan** continues to advance and enters the 'Highly transparent' tier for the first time

Source: JLL, LaSalle, 2022

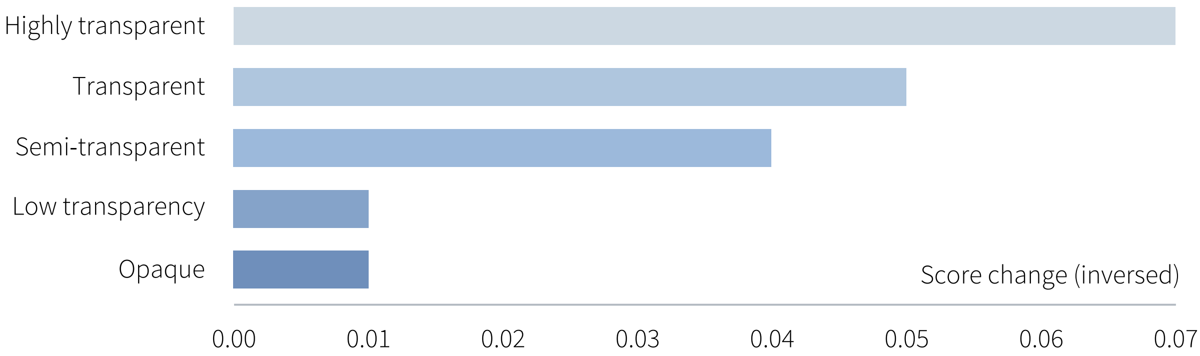
Anglophone and European countries top the rankings; Japan joins the leading markets

The top ranks of 'Highly transparent' countries continue to be held by the Anglophone countries, with the **UK** and **U.S.** taking the first and second positions. European markets have made the most progress on average since GRETI 2020 and now account for six of the twelve 'Highly transparent' countries. A combination of enhanced regulations and tracking of sustainability metrics, greater integration of technology from both private companies and governments, as well as more institutional investment and growing data in alternative property types, mean that **France**, **Netherlands**, **Germany** and **Belgium** – the latter of which enters the top group for the first time – are all among the leading global improvers.

Japan also joins the top tier of 'Highly transparent' markets for the first time, boosted by initiatives to enhance climate risk reporting and meet sustainability targets as well as improvements in data availability, particularly for alternatives sectors like life sciences, self-storage and senior housing.

Transparency improvement by tier, 2020-2022

'Highly transparent' markets lead progress



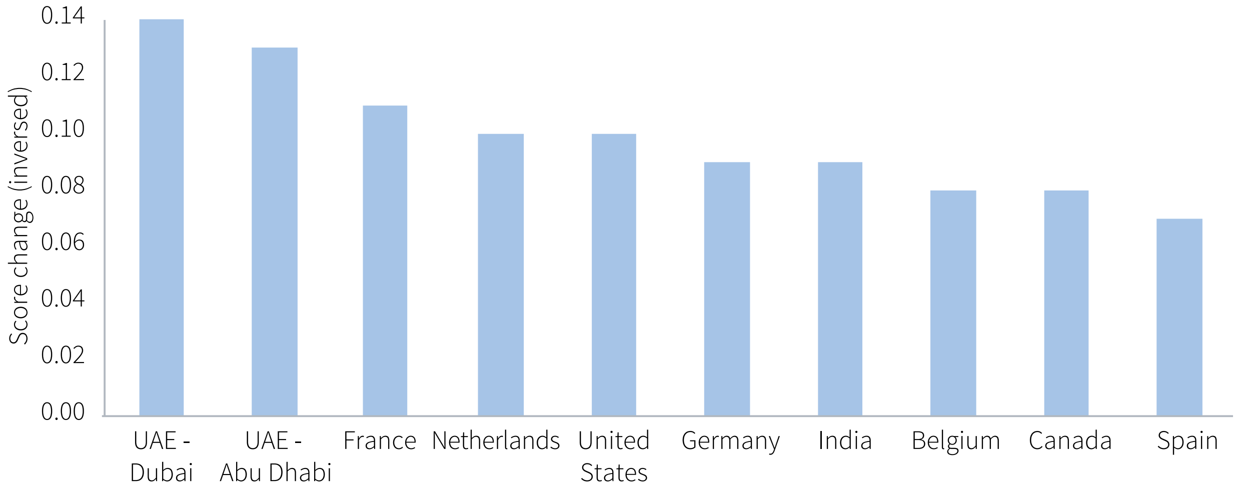
Source: JLL, LaSalle, 2022

Most transparent markets driving change

The top improvers are led by markets in the 'Highly transparent' and 'Transparent' tiers. These markets are setting new standards and expectations for transparency as they push ahead with new sustainability initiatives such as mandatory energy efficiency and emissions standards for buildings and TCFD-aligned company reporting to understand climate risks; raise the bar for Anti-Money Laundering (AML) and beneficial ownership reporting; and provide deeper data on everything from office utilization rates to niche sectors, supported by the rapid uptake of technology. This progress is widening the transparency gap between the leading markets and countries in other tiers, which will need to advance faster to catch up to these new benchmarks.

Top transparency improvers, 2020-2022

Largest improvers in MENA, Western Europe and North America



Source: JLL, LaSalle, 2022

Real estate transparency in **Europe**

Level	Composite rank 2022	Market	Composite score 2022
High	1	**United Kingdom**	1.25
	3	**France**	1.34
	6	**Netherlands**	1.54
	7	**Ireland**	1.69
	8	**Sweden**	1.76
	9	**Germany**	1.76
	11	**Belgium**	1.84
Transparent	13	**Finland**	1.96
	15	**Switzerland**	1.97
	17	**Denmark**	2.01
	18	**Spain**	2.06
	19	**Italy**	2.12
	20	**Poland**	2.15
	21	**Czech Republic**	2.27
	22	**Norway**	2.27
	23	**Hungary**	2.34
	24	**Portugal**	2.37
	25	**Luxembourg**	2.39
	27	**Slovakia**	2.44
	32	**Romania**	2.58
Semi	35	**Israel**	2.66
	37	**Greece**	2.73
	38	**Turkey**	2.83
	41	**Bulgaria**	2.89
	43	**Croatia**	2.95
	50	**Slovenia**	3.30
	53	**Serbia**	3.42
Low	62	**Malta**	3.64
	74	**Kazakhstan**	4.09

France and the **Netherlands** among top global improvers, boosted by sustainability initiatives, technology and regulatory reforms

Germany and **Belgium** are among leading improvers, with implementation of new sustainability standards and digitization pushing Belgium into the 'Highly transparent' tier for the first time

Regulatory reforms and enhanced data availability for niche sectors make **Spain** one of top improvers

A new fund performance index, sustainability standards and market data push **Israel** to the cusp of the 'Transparent' tier

Belarus, Ukraine and Russia, which have been included in previous indices, are not covered in the 2022 Index
Source: JLL, LaSalle, 2022

European markets register strongest transparency improvement

European countries have recorded the strongest average transparency improvements since 2020, with with the EU helping to helping to drive higher standards in sustainability transparency, such as enhanced energy tracking and performance requirements – through a range of initiatives like the revised Environmental Performance of Buildings Directive (EPBD), Green New Deal and Fit for 55 package – as well as implementation of beneficial ownership registries across the region. Deeper data availability, particularly for niche property types, implementation of new AML and beneficial ownership legislation, and updated building energy performance standards have helped **Spain** join France, Netherlands, Germany and Belgium among the top global improvers.

Outside Continental Europe, the **UK** has continued to improve its score at the head of the rankings through passage of the Property Beneficial Ownership Register, enhanced tracking of alternative sectors, and moves towards TCFD-aligned company reporting. The first national fund performance index, mandatory green building regulations and greater institutional investment in alternative sectors have also boosted **Israel**'s position, and it now sits on the cusp of the 'Transparent' tier.

Real estate transparency in **Asia Pacific**

Level	Composite rank 2022	Market	Composite score 2022
High	4	**Australia**	1.38
	10	**New Zealand**	1.77
	12	**Japan**	1.88
Transparent	14	**Singapore**	1.96
	16	**Hong Kong SAR**	1.98
	28	**South Korea**	2.49
	29	**Chinese Taipei**	2.52
	30	**China – SH/BJ**	2.54
	33	**Malaysia**	2.61
	34	**Thailand**	2.63
Semi	36	**India**	2.73
	39	**Indonesia**	2.86
	42	**Philippines**	2.91
	52	**Vietnam**	3.36
	55	**Macao SAR**	3.46
Low	64	**Sri Lanka**	3.67

Japan enters the 'Highly transparent' tier for the first time on the back of sustainability initiatives

Singapore makes progress but remains on the cusp of 'Highly transparent'

Mainland China's largest markets solidify their position in the 'Transparent' tier

Digitization, a developing REIT market and new sustainability regulations make **India** among the top improvers

China – SH/BJ = Shanghai and Beijing
Source: JLL, LaSalle, 2022

Asia Pacific markets continue to advance

The majority of Asia Pacific's countries have also made progress. **Japan** joins the 'Highly transparent' markets for the first time as it drives ahead on net zero carbon goals through higher building standards and transparency around climate risk reporting, with an update to its corporate governance code mandating TCFD-aligned disclosure for listed companies, as well as data on niche property types.

Singapore continues to improve and has pulled ahead of Hong Kong, with both markets sitting on the verge of the 'Highly transparent' tier. Singapore's data coverage has become deeper and it has consolidated its place among the leading markets in spelling out its sustainability commitments, for example through the Singapore Green Building Masterplan. Several other Southeast Asian markets, including **Vietnam**, **Thailand** and the **Philippines**, have also registered gains.

In South Asia, **India** is among the top global improvers, with institutional investment and the growing numbers of REITs helping to increase market data, greater professionalization of the sector, regulatory initiatives like the Model Tenancy Act, and digitization of land registries, such as through the Dharani and MahaRERA platforms.

Considerable disparities in transparency remain between cities in the region's largest market, Mainland China, but new building efficiency and emissions standards and better processes and data for sales transactions have helped its leading cities, **Shanghai** and **Beijing**, cement their position in the 'Transparent' tier.

Real estate transparency in **the Americas**

Level	Composite rank 2022	Market	Composite score 2022
High	2	**United States**	1.34
	5	**Canada**	1.44
Semi	40	**Mexico**	2.87
	44	**Brazil**	2.97
	46	**Chile**	3.10
	47	**Peru**	3.22
	56	**Argentina**	3.48
Low	57	**Colombia**	3.51
	59	**Puerto Rico**	3.57
	63	**Costa Rica**	3.64
	67	**Cayman Islands**	3.91
	72	**Bahamas**	4.00
	73	**Uruguay**	4.08
Opaque	78	**Ecuador**	4.27
	83	**Panama**	4.42
	89	**Honduras**	4.50
	91	**Dominican Republic**	4.54
	93	**Guatemala**	4.59

Leading markets in the **U.S.** and **Canada** such as New York and Toronto among the most improved on the back of sustainability initiatives and deeper alternatives data coverage

New MSCI index in **Brazil** boosts performance tracking

Lack of progress pushes **Honduras**, **Dominican Republic** and **Guatemala** down the rankings

Source: JLL, LaSalle, 2022

North American markets among top improvers, with limited advances in Latin America

Leading cities in the **U.S.** and **Canada** such as New York and Toronto are among the top improvers globally, although there are significant differences in transparency between markets in both countries and not all are advancing at the same speed.

New York has been particularly active in implementing clear, long-term building energy standards through measures that include Local Laws 84 and 97, the Construction Codes Revision Bill and mandating the tracking of energy consumption at the building level. It is also benefitting from national measures like the Corporate Transparency Act and deeper, more granular data on core and alternative sectors. Several other U.S. markets, including Boston, Los Angeles, San Francisco, Austin, Chicago and Denver, have also introduced new measures to raise or track progress towards sustainability goals.

In Canada, higher-frequency and non-traditional data has become more available, while the national government's move towards TCFD-aligned company reporting and a beneficial ownership registry have also been supplemented with plans to drive higher sustainability standards, like Toronto's Transform to Net Zero strategy and Vancouver's Zero Emissions Building plan.

Progress elsewhere in the Americas has been morelimited. Although some South American markets have seen gains - for example, improved performance tracking through a new MSCI index in **Brazil** and new building efficiency standards in **Chile** – most other markets across the region have recorded little change, with stalling scores causing several already in the 'Opaque' tier to decline further.

Real estate transparency in **MENA**

Level	Composite rank 2022	Market	Composite score 2022
Transparent	31	**UAE - Dubai**	2.56
Semi	45	**UAE - Abu Dhabi**	2.98
Semi	49	**Saudi Arabia**	3.27
Low	58	**Morocco**	3.55
Low	61	**Egypt**	3.60
Low	66	**Bahrain**	3.80
Low	68	**Pakistan**	3.91
Low	69	**Jordan**	3.93
Low	70	**Kuwait**	3.95
Low	71	**Qatar**	3.98
Opaque	77	**Oman**	4.18
Opaque	80	**Tunisia**	4.36
Opaque	84	**Lebanon**	4.43
Opaque	85	**Iran**	4.43
Opaque	87	**Algeria**	4.46
Opaque	92	**Iraq**	4.59

Dubai and **Abu Dhabi**, the top two global improvers due to regulatory changes, digitization of services and enhanced data availability; Dubai enters the 'Transparent' tier

Political and economic challenges lead several markets to stall or regress, including **Lebanon**, **Iran**, **Algeria** and **Iraq**

Source: JLL, LaSalle, 2022

MENA – UAE top global improver with muted progress across rest of region

The UAE markets of **Dubai** and **Abu Dhabi** are the top global improvers in 2022, benefitting from a concerted government focus on increasing market transparency. In Dubai, this has led to enhanced digital services and data provision, such as service charge management, automated valuations and transactions databases through the Dubai REST platform, as well as new regulations around market lending practices, beneficial ownership tracking and sustainability reporting. These changes have helped to push Dubai into the 'Transparent' category for the first time. The government has also been partnering with private companies on several new initiatives, including transaction-based sales indices and a building wellbeing certification.

Abu Dhabi has also continued to expand its digital services through its Dari platform, which includes sales and lease management and development and transaction databases, while the Department of Municipalities and Transport (DMT) has published its first code of ethics covering real estate professions. The market has also benefitted from increased data provision by private providers in new sectors.

Elsewhere in the region, transparency advances have been limited, with political and economic issues resulting in regression in several countries including **Jordan**, **Iran** and **Iraq**.

Real estate transparency in **Sub-Saharan Africa**

Level	Composite rank 2022	Market	Composite score 2022
Transparent	26	**South Africa**	2.40
Semi	48	**Kenya**	3.27
Semi	51	**Mauritius**	3.35
Semi	54	**Botswana**	3.46
Low	60	**Nigeria**	3.60
Low	65	**Zambia**	3.67
Low	75	**Rwanda**	4.11
Low	76	**Ghana**	4.13
Opaque	79	**Angola**	4.30
Opaque	81	**Uganda**	4.40
Opaque	82	**Mozambique**	4.41
Opaque	86	**Ivory Coast**	4.44
Opaque	88	**Senegal**	4.49
Opaque	90	**Tanzania**	4.52
Opaque	94	**Ethiopia**	4.60

South Africa registers moderate improvements with mandatory display of EPCs and implementation of the Property Practitioners Act

Digitization of land registry and new beneficial ownership regulations boost **Kenya**'s score

Implementation of Lagos State Real Estate Regulatory Authority and beneficial ownership legislation in **Nigeria**

Stalling progress leads several markets including **Ivory Coast**, **Senegal**, **Tanzania** and **Ethiopia** to slip in the rankings

Source: JLL, LaSalle, 2022

Sub-Saharan Africa – Modest advances in larger markets as progress plateaus

The Sub-Saharan Africa region has seen improvements continue to stall for the third consecutive survey, following limited progress in 2018 and 2020. Several of the region's larger markets have registered modest advances:

- In **South Africa** for example, Environmental Performance Certificates (EPCs) are now required to be publicly displayed and there is work ongoing on a public national database of EPC registrations.
- **Kenya** has seen the launch of Ardhisasa (a national land information system), and new beneficial ownership regulations.
- In **Nigeria**, the establishment of the Lagos State Real Estate Regulatory Authority and the development of an online portal for planning applications have also brought more clarity.

However, most markets across the region have seen progress plateau over the past two editions, with several declining in rank including **Ethiopia**, which comes last in this year's survey.

Real estate transparency at a **city level**

Sustainability ambitions highlight transparency differences within countries

The third iteration of the City Real Estate Transparency Index shows three of the world's most established investment destinations – **London**, **New York** and **Paris** – in the top positions. With investors increasingly looking for clarity around sustainability commitments and standards, in addition to deep capital markets and extensive data coverage, these markets also have among the most ambitious and clear climate goals of any of the cities covered and all three also head the Sustainability Sub-Index.

The 2022 Index highlights intra-national differences in transparency. While these are relatively modest in many 'Highly transparent' countries such as the **UK** and **Germany**, the widest range of scores is found in the **U.S.** and **China**.

In the U.S., differences in local, city, state and federal rules around transaction disclosure regulations and taxation, as well as data availability, are being compounded by widely varying approaches to sustainability-related regulations. Whereas markets like **Washington DC** and **San Francisco** join **New York** in the top 5, the lowest-scoring U.S. cities are 40 ranks below.

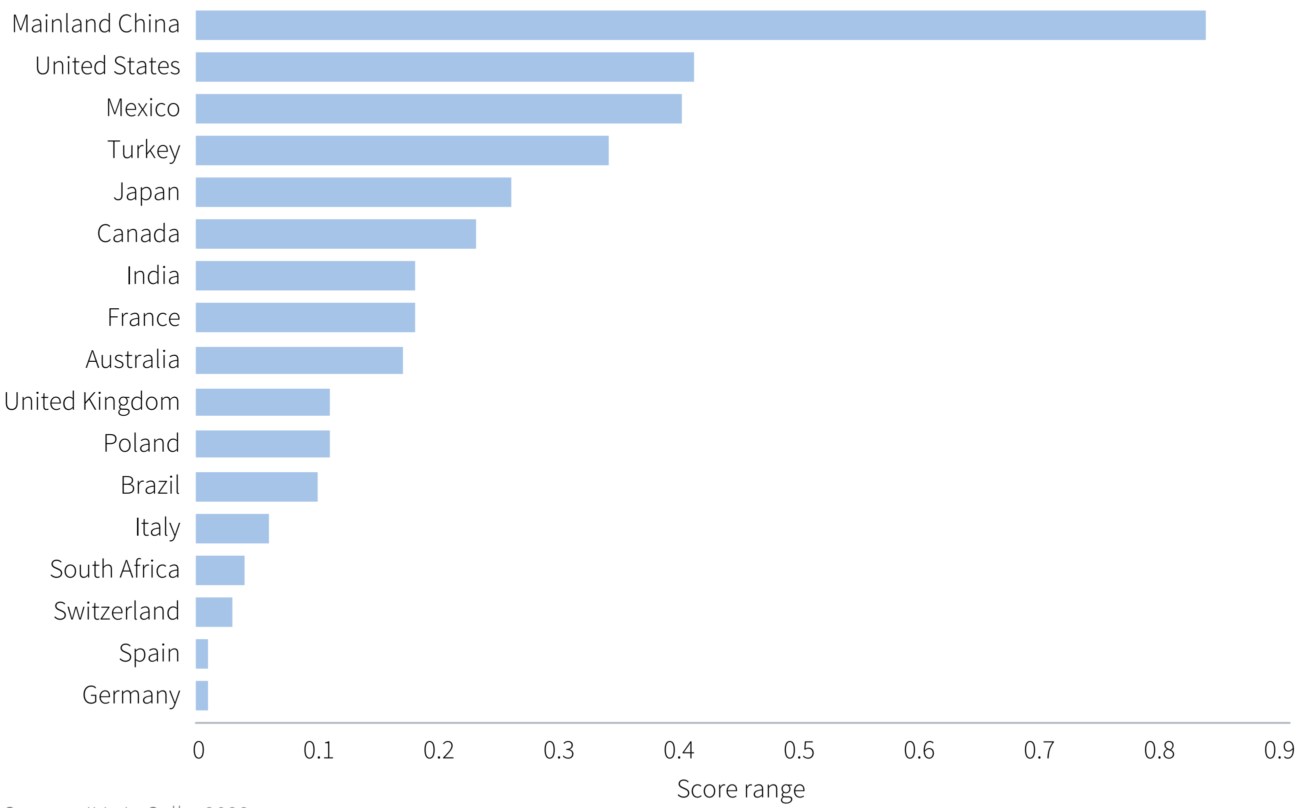
In Mainland China, **Shanghai** and **Beijing** have solidified their positions in the 'Transparent' tier with enhancements in data availability, technology, consistency of regulations, and property management, while lower-tier cities still have significant room for improvement.

Composite rank 2022	Market	Composite score 2022
1	London	1.25
2	New York	1.34
3	Paris	1.34
4	Washington DC	1.36
5	San Francisco	1.36
6	Boston	1.36
7	Los Angeles	1.36
8	Seattle	1.37
9	Sydney	1.38
10	Birmingham	1.38
11	San Diego	1.39
12	Manchester	1.39
13	Portland	1.39
14	Denver	1.39
15	Edinburgh	1.39
16	Melbourne	1.42
17	Toronto	1.44
18	Glasgow	1.44
19	Chicago	1.45
20	Brisbane	1.46

Source: JLL, LaSalle, 2022

Intranational transparency score range, 2022

Largest differences between cities found in Mainland China and the U.S.

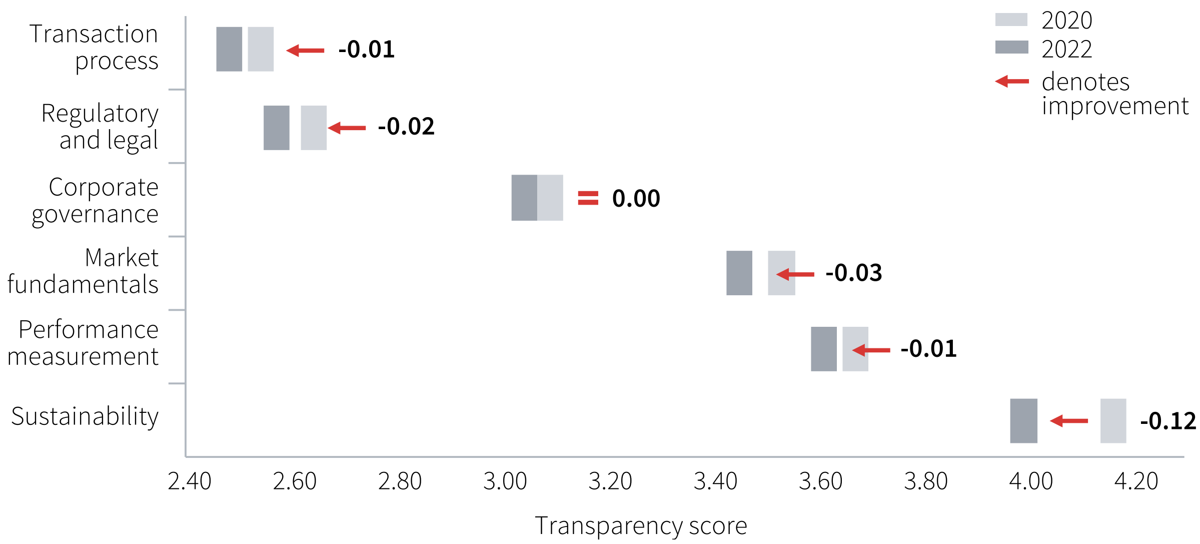


Source: JLL, LaSalle, 2022

Transparency by topic area

Transparency sub-index change, 2020-2022

Increase in sustainability initiatives and market data drives transparency improvements



Covers markets included in both the 2020 and 2022 surveys. Lower score = higher transparency

Source: JLL, LaSalle, 2022

Advances in sustainability transparency, but considerable room for progress

The most significant advances since 2020 have been made in the Sustainability components of the survey, as countries and cities follow up on their climate commitments with increasing building energy performance standards and reporting requirements while green and healthy building certifications become more widespread.

European markets have made most progress in these areas, with implementation of the EU's updated Energy Performance of Buildings Directive (EPBD) and a range of other regulations impacting the built environment, such as the Green New Deal and Fit for 55 package which are set to bring further clarity and alignment regionally.

Sustainability Sub-index, top 10

Composite rank 2022	Market	Composite score 2022
1=	France	1.70
1=	United States	1.70
3	United Kingdom	1.80
4	Canada	1.90
5	Australia	2.10
6=	Singapore	2.20
6=	Japan	2.20
8=	Belgium	2.50
8=	Netherlands	2.50
8=	Sweden	2.50

Source: JLL, LaSalle, 2022

The leading markets are now also starting to mandate climate risk reporting from companies and are even collecting and sharing building-level information on energy efficiency and emissions, with others set to follow. **France** and the top **U.S.** markets (e.g., New York) head the Sustainability rankings with new regulations establishing limits on embodied carbon in buildings and minimum requirements for existing buildings (as well as new construction), and the creation of databases to track building-level energy consumption.

The **UK**, **Canada**, **Australia**, **Singapore, Japan, Belgium**, **Netherlands** and **Sweden** round out the top 10 in the Sustainability rankings with a range of ambitious climate transparency initiatives. However, there is considerable scope for progress. The Sustainability Transparency Sub-Index is the lowest scoring within the survey on average and, beyond the leading markets, there is still low implementation of mandatory standards in areas such as building resilience standards and emissions reporting, as well as in the uptake of green leases and financial performance tracking. The regulatory environment and industry practice around measuring and reporting sustainability metrics is also highly fractured across jurisdictions and companies, making it even more difficult to navigate. In markets with federal systems of government such as the U.S. and Canada, there is frequently a wide disparity between cities, states and provinces. Our national Sustainability Sub-Index scores are based on the leading cities in each market (e.g., New York and Toronto) but in many cases there is significant variability within these countries (see Sustainability and transparency: A crowded intersection).

Progress in availability and quality of real estate data

The availability, quality and depth of real estate market data has also continued to improve with greater adoption of technology and increased demand for information covering a wider set of geographies, sectors and types of data. Drivers of change include:

Technology and digitization

The accelerating diffusion of technology across the built environment is leading to the provision of new, more granular and higher-frequency data in many markets. Modern data management tools are allowing providers, investors and corporates to understand their portfolios and markets in more detail than ever before, while data aggregators are using technology to gather, aggregate and analyze previously scattered data or collate information from listings websites, particularly for niche sectors. Although some companies in emerging markets are using technology to build market data more quickly than was previously possible, it's typically companies in markets with established technology ecosystems, digitized data sources and governance, advanced infrastructure and deeper capital markets that are best able to leverage these advances to provide more detailed market information and analysis. This is widening the gap between the already transparent markets and those with less-developed technology systems (see Technology: Digitization driving new benchmarks in transparency).

Enhanced tracking of alternatives sectors

With institutional investors active in alternatives sectors in nearly two-thirds of markets tracked, data availability is rising to meet demand. Transparency in these niche sectors is still significantly lower than for more established asset types, but with data providers continuing to deepen and split out their coverage of these sectors and new data aggregation technologies being applied, we expect transparency in alternatives to continue spreading to new geographies and asset types in the coming years (see Alternatives transparency: New investment stokes appetite for better data).

Broader geographic coverage

Investors and corporate occupiers are increasingly looking to secondary and tertiary cities, or beyond 'core' submarkets within established investment destinations that have robust demand or talent potential, and to new countries as niche asset types develop in these markets. This is driving a requirement for data providers to enhance the information they collect in these locations; for example, more in-depth coverage of logistics markets in Southeast Asia and MENA, and more expansive tracking of residential rents and pricing outside primary cities in Europe.

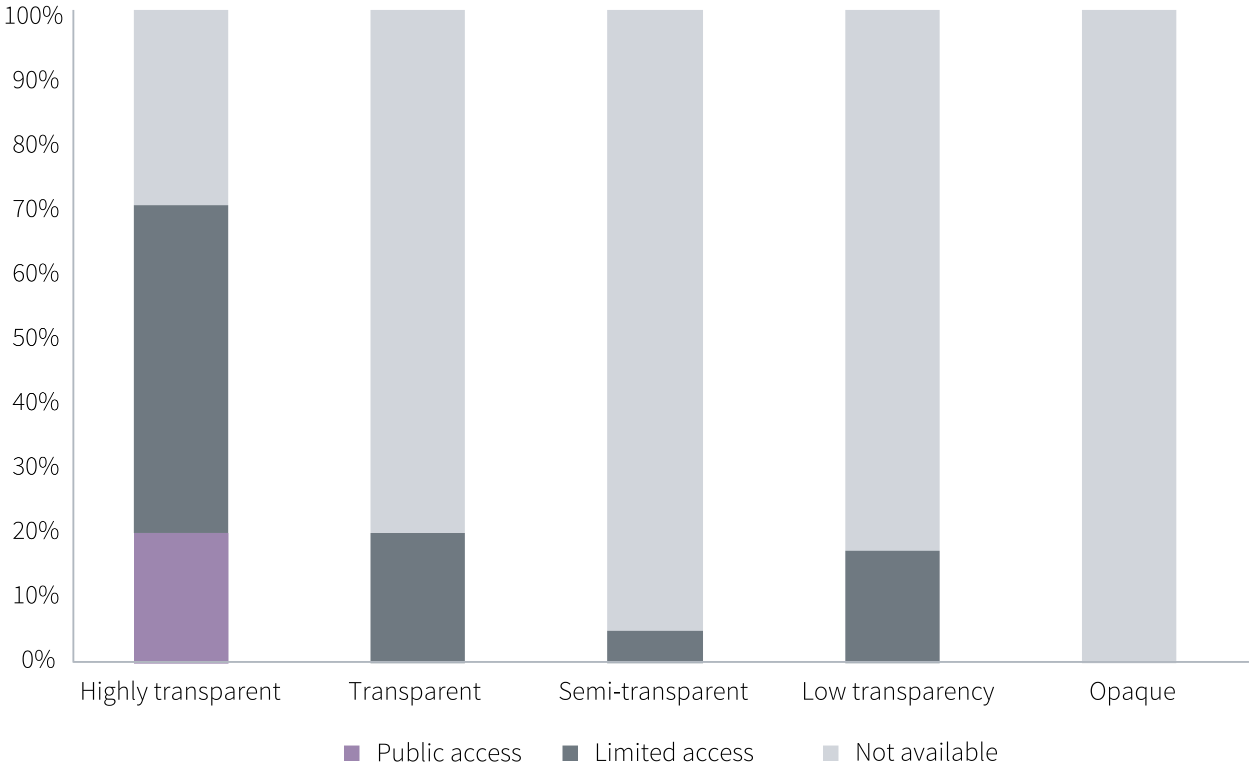
Regulatory reforms continue, though implementation remains patchy

Regulatory reforms have continued to be implemented in many countries across transparency tiers and topic areas, from new real estate lending requirements in the **UAE** to the implementation of the Lagos State Real Estate Regulatory Authority in **Nigeria**. However, the conflict in Ukraine and subsequent sanctions, as well as continued disclosures relating to illicit activity in the financial sector, have provided a renewed impetus to AML and beneficial ownership regulations in particular.

Progress has been made across a number of markets in recent years, with EU countries improving as they implement the EU's 5th Anti-Money Laundering Directive and institute beneficial ownership records, while the U.S. Corporate Transparency Act 2021 requires selective beneficial ownership disclosure. There have also been commitments towards stronger AML legislation from countries including **China**, the **UAE**, **Canada**, **Norway**, **Kenya** and **Turkey**.

The **UK** and **Germany** have among the most ambitious initiatives, with the conflict in Ukraine reviving stalled legislation in the UK which will require overseas owners of real estate to disclose their beneficial owners in a publicly accessible register, while Germany has also established a register to record the ultimate owner of foreign purchasers of real estate.

Availability of beneficial ownership records by tier, 2022



Relates to availability and public access to company beneficial ownership records
Source: JLL, LaSalle, 2022

Nonetheless, although legislative advances have been made, regulations continue to be inconsistent between markets. Some of the largest countries, such as the U.S., are still largely unregulated in terms of AML requirements for the real estate industry, implementation has been patchy and considerable loopholes remain. For example, many jurisdictions only make it mandatory for those with a greater than 25% ownership stake to register, making it easy to circumvent via holdings or shell companies in locations which don't collect ownership information. At the same time, beneficial ownership registries tend to be unconnected to wider company or individual databases, and authorities implementing them often lack the powers or resources to verify the information collected.

A significant divergence between regulation and enforcement capacity also continues to be evident, particularly in 'Semi-transparent' and 'Low transparency' markets. As investors and corporations pay greater attention to risk and diverging policy paths and gravitate towards markets with robust regulatory structures, additional progress in the ability to put regulations into practice – across financial regulations, land-use planning, taxation, AML and eminent domain – will be necessary to increase transparency levels and match heightened expectations.

What's next for real estate transparency?

1 A pressing need for harmonization and global alignment

A common aspect of the factors driving structural change across global real estate markets and impacting transparency is a highly decentralized industry and regulatory landscape, with a pressing need for greater harmonization and alignment across sustainability metrics, regulatory environments, technologies and data frameworks.

There are a range of initiatives underway to improve alignment across these areas – from the OSCRE Industry Model for building-level data standards to the IFRS International Sustainability Standards Board (ISSB) on financial reporting – but further progress will be required to enable faster transformation and greater transparency.

2 Enhancing climate resilience

Many sustainability initiatives are currently targeted at reducing building emissions, but with examples of unprecedented climate impacts already evident in recent years, attention will turn to ensuring that standards are in place to provide clarity around making cities, urban planning frameworks and buildings more resilient to the risks of expected changes.

3 Supporting positive health and social outcomes

Sustainability and ESG concerns are now broadening beyond climate change to the impacts of the built environment on sustainable social outcomes and supporting community health, wellbeing and equitability. Many companies are now focusing more strategically on the social and governance aspects of their business, and further regulations and metrics to enhance and provide guidelines for these goals across the sector are likely.

4 Cybersecurity and data protection rising up the agenda

As the amount of data being collected by companies and governments on their buildings, employees and communities increases rapidly, the privacy risks and need for more clear and rigorous regulations around data management and security are also growing.

Perspectives on transparency

Sustainability and transparency: A crowded intersection

Lori Mabardi, Global Research Director, Sustainability and ESG, JLL
Jacques Gordon, Global Strategist, LaSalle

Two of the most powerful forces influencing the modern management of real estate are **transparency** and **sustainability**. Rising transparency has been a trend for decades; sustainability's impact is much more recent. During the interviews for the 2022 edition of GRETI, it became clear that these two forces are now colliding in ways that are simultaneously inspiring, insightful, confusing, time-consuming and potentially game-changing.

Sustainability initiatives have moved from building certifications and fast-payback improvements, like the installation of LED lighting, to more complex data capture, disclosure and benchmarking efforts. Energy reporting and tracking, calculation of Greenhouse Gas (GHG) emissions and overall carbon footprint from operational and embodied carbon, climate risk analysis, tenant reporting and health/wellness features are among the efforts most often mentioned and increasingly regulated.

> "In Europe we have moved from tunnel vision five years ago – just looking at where we could cut costs through energy conservation or LED lighting. Now we have a much more holistic view. We are looking for sustainability projects that are value-enhancing or risk-reducing. We don't want to end up with a stranded, obsolete asset in the portfolio. And we already see evidence through faster tenant lease-up and higher rates achieved that the leasing market will reward our efforts, which will have a positive overall impact on the building's value."
>
> **European Portfolio Manager**

The Real Estate Environmental Sustainability Transparency Sub-Index, in its 6th iteration, ranks markets across many different dimensions. In this edition, we continue to refine our approach as sustainability initiatives are rapidly implemented in different countries and cities. We focused on these characteristics as signals of transparency:

- When data disclosure moves from simply establishing a baseline to being fully benchmarked.
- When reported data is publicly available.
- When there is clarity around performance standards and expectations over time.
- If there is clarity around the consequences of missing a target.
- If there is clarity around current sustainability and/or resilience building standards and how they may change over time.
- If there are health and green-centric certifications that are consistent and clear.

Our scoring methodology in 2022 focused on energy reporting, GHG emissions, construction standards, climate risk reporting, green leases and health and wellness in buildings. Many of these topics were covered in prior editions, but all the questions were sharpened to include topics like benchmarking and access to data once it is collected.

In a period of flux

The speed of change across the many aspects of sustainability in just the last five years is staggering. The climate-progressive have quickly moved from 'talk' to 'walk' and building owners and occupiers in some countries are in an all-out sprint to set and meet United Nations Sustainable Development Goals (U.N. SDGs). The spotlight is clearly now on data.

> "Climate risk data is rapidly working its way up the list of data feeds that we want for our portfolio. Ten years ago, all we cared about was building certifications like LEED. Now we want the data required to give us the highest Energy Star rating or GRESB score. Next is for us to actually learn from all the data we are collecting and to engage with tenants to manage the electricity usage in the building. Health and wellness ratings are also rapidly rising in importance for our tenant base – but only for office buildings."
>
> **U.S. Portfolio Manager**

For instance, the Global Real Estate Sustainability Benchmark (GRESB) is now in its 13th year of operation. This voluntary scoring system originally started by Dutch pension funds, now requires reporting on over 130 pieces of information at the fund level. Voluntary frameworks like this can feel mandatory because of strong market forces in many parts of the world. Although they are more likely to be consistent across borders than regulations, validation of the data by independent sources still has to occur for credibility. For instance, while many of the 'net zero carbon' pledges made by real estate owners may share common features, there is little consistency around how 'net zero' is defined and the range of self-reporting versus independent validation is still quite broad.

"We have become big believers that on our watch, the best thing we can do is to improve our building-specific sustainability credentials. This information is going to start going in OMs (offering memorandums) that are used when we go to sell the building. The next buyer is going to want to see if the building they are bidding on is subject to future fines, rising insurance premiums or major cap-ex projects to fix out-of-date chillers and building systems."

U.S. Portfolio Manager

Regarding mandatory regulatory requirements, there is a tapestry of instruments being used at city, country and regional levels. For example, building-specific data is required at a regional level (Europe's Sustainable Finance Disclosure Regulation - SFDR), at a country level (UK's Energy Performance Certificates [EPC] requirements) and by city-level entities (for example, Local Law 97 in New York City). In federal systems, like those found in Australia, Canada, Germany and the U.S., local jurisdictions (states, provinces and municipalities) have considerably greater power to create their own regulatory frameworks.

Additionally, regulations target different elements, ranging from building standards, emissions, and building codes to energy use, carbon pricing and more. The wide spectrum of these regulations can be confusing, which creates complexity around the consequences of non-compliance or the benefits of meeting the new standards ahead of schedule.

Portfolio managers that we interviewed observed that the new regulations are frequently complex and often inconsistent. LaSalle's Head of Sustainability in North America reports that:

"Some regulations and reporting frameworks focus on whole-building energy consumption (including tenant usage), while others only focus on the energy controlled directly by the building owner. Some allow renewable energy purchases to be considered as part of energy performance, while others are just focused on the property's total consumption regardless of source. In other cases, regulations focus first on the elimination of on-site fossil fuels or certain refrigerants. It is a very time-consuming and complex process to manage all the different regulations and understand when fines will phase in across U.S. cities and States."

On the other side of the globe, LaSalle's Head of Development and ESG in Asia Pacific notes that:

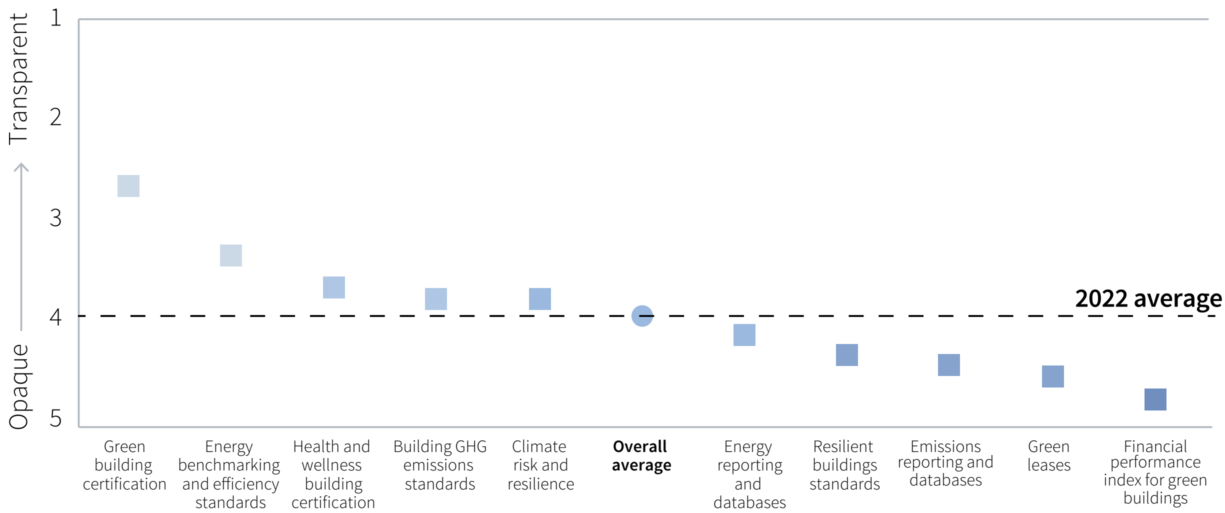
"Across Asia Pacific, each country has its own sustainability focus. There are no pan-Asia directives the way there is in Europe. Japan tracks climate risk and natural disasters closely, due to its history of earthquakes, tsunamis and typhoons. However, health and wellness in buildings is not yet given as much attention – although Covid has changed some of that."

The Sustainability Sub-Index: Least transparent, most improved

With all the new guidelines, disclosure regulations and pledges, it is no surprise that the Sustainability Sub-Index ranks the lowest of all the transparency sub-indices, reminding us of the nascency, complexity and noise surrounding this critical topic. Yet, the Sustainability Sub-Index is also the most improved, showing that many countries across the world are working through the noise and striving to build the guardrails necessary to measure and influence positive outcomes related to sustainability.

This figure showcases the variability in transparency scores across all sustainability-related questions, with only the longer-standing instruments like green building certification and energy benchmarking exhibiting any significant transparency.

Sustainability transparency by category, 2022



Based on average for 94 markets assessed in 2022
Source: JLL, LaSalle, 2022

A few of the notable findings:

Green Leases (Global average: 4.59): Highest points for transparency were awarded for mandatory regulations enforcing the use of green leases. France bubbles up to the top, being the only market with such laws in place. Most cities and countries listed green leases as voluntary but not widely adopted. We anticipate that the adoption of green leases will be greatly pushed in the coming years through both regulatory and market forces.

Energy Reporting and Databases (Global average: 4.16): We set the bar high in this category by awarding the highest scores to those markets that not only make energy reporting mandatory but also publicly available. Only eight cities spanning Australia, North America and Europe make this list, including Sydney, Toronto, New York and Copenhagen.

Energy Benchmarking and Efficiency Standards (Global average: 3.37): This question explored the prominence and availability of energy benchmarking data and examined efficiency standards, where the best transparency score was awarded for having clear energy standards that get more stringent over time. This question has seen a meaningful improvement since 2020; most advancements in the score were recorded in efficiency standards for new and existing buildings, showing an encouraging uptake in moving from benchmarking to actually lowering energy use.

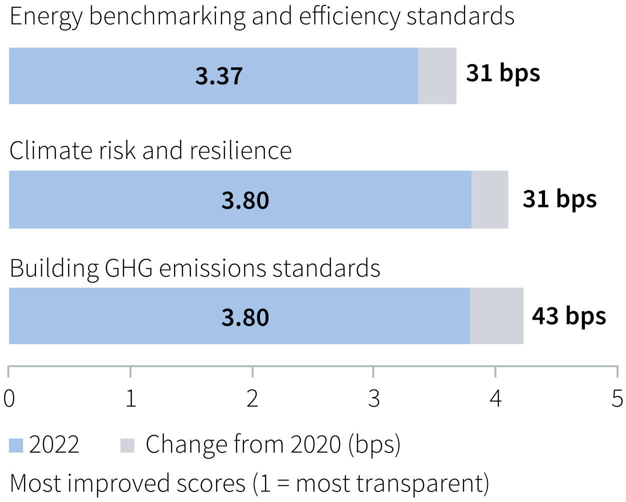
- As of January 2023, energy labels of the major part of office buildings in the Netherlands will have to be at least in category C (EPC rating), because of an amendment to the Dutch Buildings Decree 2012.

- The UK is making acceptable EPC ratings mandatory by limiting sales and leasing if properties do not meet standards.

Climate Risk and Resilience (Global average: 3.8): In a world facing unavoidable impacts from the warming already underway (even if emissions were to stop today), climate risk and resilience is fundamental for the prioritization of climate action and investment strategy. Transparency was awarded to those markets where climate risk reporting is or will become mandatory. This is a category that has also experienced one of the biggest positive changes as European and Canadian markets lead in pushing towards mandatory reporting and a few markets in the U.S. and Asia follow.

Building GHG Emissions Standards (Global average: 3.8): Another attribute showing significant improvement was GHG emissions standards, with the uptick in score stemming mostly from a rise in GHG emissions standards in new construction. The score was also positively influenced by GHG emissions standards on existing stock, but to a lesser extent. JLL's recent research titled Decarconizing cities and real estate revealed that buildings account for 60% of city emissions in cities, and over 70% in several global business hubs like London, Tokyo and Paris. Facing the retrofit challenge and lowering GHG emissions in the existing stock is critical to meeting any net zero carbon goal. The likelihood is that GHG emissions standards will continue to become more stringent for existing and new building. In the interim, this momentum already signals an encouraging increase in carbon consciousness, moving beyond energy use to considering the environmental impact of energy use. The push towards more transparency in this category was primarily driven by markets in Europe and select cities in other regions like New York, Toronto and Tokyo.

Questions that show most improvements signal focus on carbon and climate change



Source: JLL, LaSalle, 2022

Moving towards harmonization and greater transparency

At this relatively early stage of the implementation of so many new sustainability initiatives, international comparisons are often difficult. For example, consistency in calculating Energy Performance Certificates (EPCs) for buildings is still a work in progress across Europe [3], and many countries outside of Europe don't use the EPC grading system. The U.S. uses an Energy Star scoring system that does not translate seamlessly to the EPC framework. China's Ministry of Housing and Urban and Rural Development has developed its own energy efficiency rating system. Moreover, each market deploys different packages of incentives and penalties for buildings with low energy ratings. Harmonization of benchmarking has been greatly helped by global standards like GRESB and Carbon Risk Real Estate Monitor (CRREM); however, data collection and verification systems that report into these global systems often remain country-specific. Global pathways set out by the United Nations Environmental Programme (UNEP) and other NGOs are helpful in establishing a common framework, but inevitably different measurement systems used in specific countries make harmonization challenging.

As JLL monitors progress towards harmonization, proposed regulations play a major role. Government ministries tend to react to waves of regulation by comparing of what other countries are doing. Sometimes these comparisons lead to convergence, but often divergencies persist. We see similarities to the process of international standard setting that occurred decades ago which resulted in broad agreement on basic building measurement systems, structural and fireproof standards, and market availability and occupancy statistics. The forces of global harmonization for sustainability are growing in strength, but the persistence of local practices will likely also remain.

"The listed market has experienced rapid adoption of sustainability reporting. Of the top 100 listed companies in the U.S., all now report publicly on their ESG efforts, and the number of REITs issuing sustainability reports has tripled. A few years ago, less than half of all REITs reported their carbon emissions, now 78% do so. In addition, 60 REITs now report to GRESB. Even though getting tenant data is increasingly important, many REITs have tenants with triple net leases which do not easily allow landlords to report or benchmark carbon emissions. The capital markets will have to sort this out, by raising the cost of capital for 'brown' buildings and lowering it for 'green' buildings. To some degree this process is already playing out."

Director of Research
NAREIT

[3] "A technical assessment commissioned by the EU [5] noted that the 28 member states of the EU had 35 calculation methodologies in place which could be used to generate EPCs for new and existing buildings. Of these 35 methodologies, 13 used actual energy consumption to assess the energy performance of residential buildings."

In April 2022, the Securities and Exchange Commission in the U.S. proposed a rule that would make emissions and climate risk reporting mandatory for publicly traded companies. Such legislation would bring a step-change in transparency. If this regulation is passed in December 2022, the earliest reporting would be required in 2024, based on 2023 performance. This federal mandate in the U.S. is a particularly good example of how improvements in transparency are likely to come over time. The path to reach such legislation is complex and can lead some organizations who were working ahead of policy to stop and wait for clear directions, causing a slowdown in progress.

In addition, the European Financial Reporting Advisory Group (EFRAG) announced the release of its initial draft of European Sustainability Reporting Standards in May 2022, setting out the proposed rules and requirements for companies to report on sustainability-related impacts, opportunities and risks under the EU's upcoming Corporate Sustainable Reporting Directive (CSRD). This proposal extends existing reporting requirements to 50,000 firms, up from the current 12,000, and expands reporting requirements.

Lastly, the International Sustainability Standards Board (ISSB), established at COP26 to develop a comprehensive global baseline of sustainability disclosures for the capital markets, has released two proposed standards: One sets out general sustainability-related disclosure requirements and the other specifies climate-related disclosure requirements.

Each will have recommendations that are based on the Task Force on Climate-Related Financial Disclosures (TCFD), a once voluntary framework to evaluate physical and transition climate risk that is becoming the global standard and driving harmonization across mandatory reporting frameworks. Still, while these proposals may not mirror each other entirely today, they have the potential to provide much needed clarity and further synchronization over time.

These proposals, along with regulations that are taking shape in the EU, UK, Canada and other parts of the world, should continue to provide standardization over time. The key is for regulations to not only impact reporting requirements however, but to also incentivize action.

Supporting positive health and social outcomes

Sustainability and ESG concerns are now broadening beyond climate change to the impacts of the built environment on sustainable social outcomes and supporting community health, wellbeing and equitability. Many companies are beginning to focus more strategically on the social and governance aspects of their business, and more regulations and metrics to enhance and provide guidelines for these goals across the sector are likely.

"The next big thing for the real estate industry to wrap its head around, is the broader set of stakeholders implied by the 'S' in ESG. This means more tenant and community engagement. More regulations, like we see in Toronto for inclusionary zoning and off-site improvements, are likely to be put in place in other cities. The rise of impact investing means that the management model used to govern sustainability will be examined and rated. Are ESG issues supported by a diverse set of disciplines and voices at an organization? Are they reflected in the governance and decision-making process?"

Professor of Real Estate Finance
York University, Toronto

Just as investors and owners have made great strides in raising the transparency of their sustainability metrics, occupiers have also put more emphasis on health, wellbeing and productivity alongside sustainable design and operations. Covid has accelerated the need for higher levels of reporting and disclosure on health and wellness in the workplace, and JLL's Work Dynamics practice has been conducting periodic global surveys that reveal the rapidly rising desire of occupiers for transparency relating to sustainable practices. Dr. Marie Puybaraud, JLL's Director of Work Dynamics Research and leader of the Future of Work research platform, puts it this way:

> "We're living through an era of climate accountability, where the impetus on companies to promote and foster a more sustainable future has never felt stronger. With the adoption of net zero carbon expected to more than double between now and 2025, employees are looking to their employers to close the gap between commitment and action on sustainability, and many want employers who are engaged on all fronts. This means it's important to translate sustainability goals into credible action plans that will drive tangible impact among their real estate operations and investments, and for employees and the community."

Interview participants

Ryota Morioka
Portfolio Manager
LaSalle Japan Core Fund

Hidya Yamanaka
Development Manager
LaSalle Japan Core Fund

Tom Miller
Head of ESG and Development Asia Pacific
LaSalle

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David Ironside
Portfolio Manager
LaSalle EnCore+ Fund

Max Walmsley
Associate Portfolio Manager
LaSalle Encore+ Fund

Avis Devine
Associate Professor of Real Estate
Brookfield Centre for Real Estate
and Infrastructure
York University

Jim Clayton
Professor in Real Estate and Infrastructure
Schulich School of Business
York University

John Worth
Director of Research
NAREIT

"Governments are rolling out regulations and reporting structures at pace – it's a welcome move but it's far from a perfect solution. There's currently no consistency in how jurisdictions are measuring, reporting and regulating emissions. We need cross-border collaboration to boost transparency and mitigate the worst impacts of climate change."

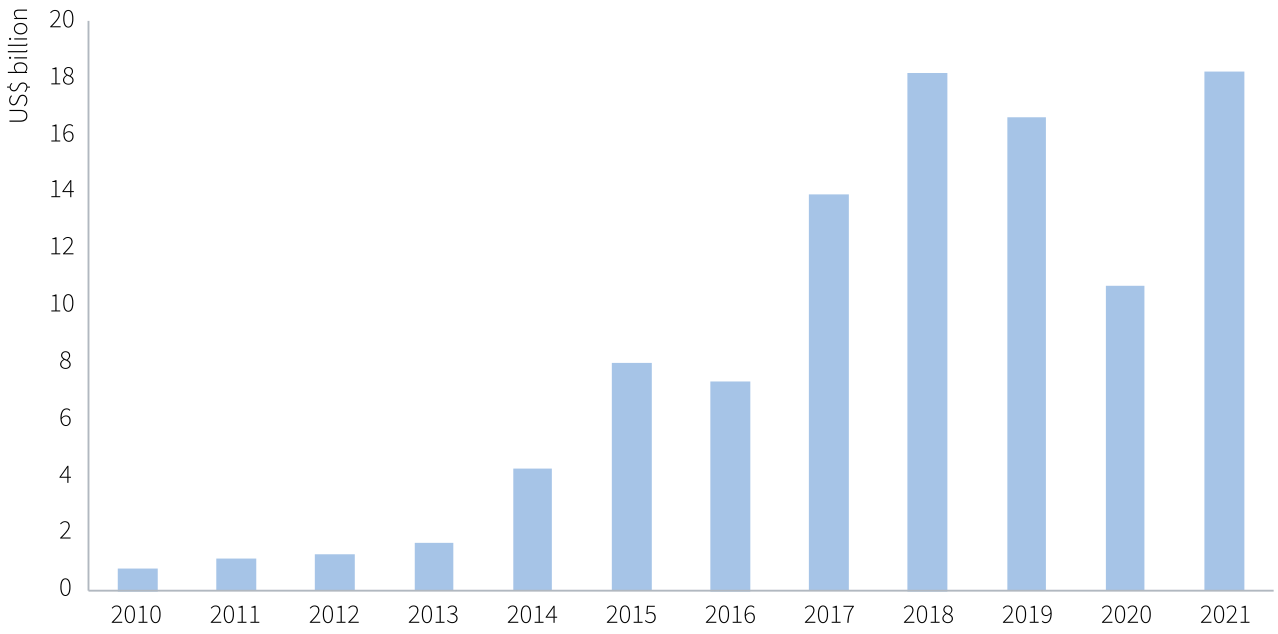
Guy Grainger
Global Head of Sustainability Services and ESG, JLL

Technology:
Digitization driving new benchmarks in transparency

Matthew McAuley, Director, Global Insight, JLL

The digitization of the built environment and real estate markets is causing a rapid increase in data availability and enabling a more in-depth understanding of buildings and markets than ever before, from collated pricing information for niche sectors to real-time occupancy tracking and even simulated digital twins of buildings and cities. Many of these technologies are still at an early stage of development but adoption is growing rapidly, with venture capital funding for real estate technology companies reaching a record high of US$18.2 billion in 2021 and nearly 8,000 companies providing technology solutions across the built environment globally, an increase of over 300% from 10 years ago.

Proptech venture capital investment, 2010-2021



Source: JLL, LaSalle, Crunchbase, 2022

Established tech hubs pulling further ahead

The highest levels of technology adoption across the built environment are in 'Highly transparent' markets such as the **UK**, **U.S.**, **France**, **Netherlands**, **Belgium**, **Ireland**, **Canada** and **Germany**. Deep technology ecosystems, advanced digital infrastructure and the availability of capital are allowing these countries to generate significant volumes of granular and real-time information across property types and to speed up transaction processes. This is widening the information gap with less digitized markets.

Several high-income Asia Pacific markets, including **Singapore**, **Hong Kong SAR** and **South Korea**, also feature near the top of the rankings, while **Mainland China**'s leading cities benefit from one of the largest technology sectors globally. Chinese companies such as Alibaba and Tencent are active in the sector through IoT and data aggregation services, and China is also the largest venture capital destination for start-up proptech companies outside the U.S.

City and national governments are also taking a growing interest in technology to realize the potential of open data, connected infrastructure and advanced analysis in improving the quality of the built environment, services and city competitiveness. Many urban governments are reassessing their technology programs more strategically, and a number of new initiatives – from organizations like the OECD and WEF – are helping cities to utilize technology and data more effectively, and even create digital rights charters for citizens.

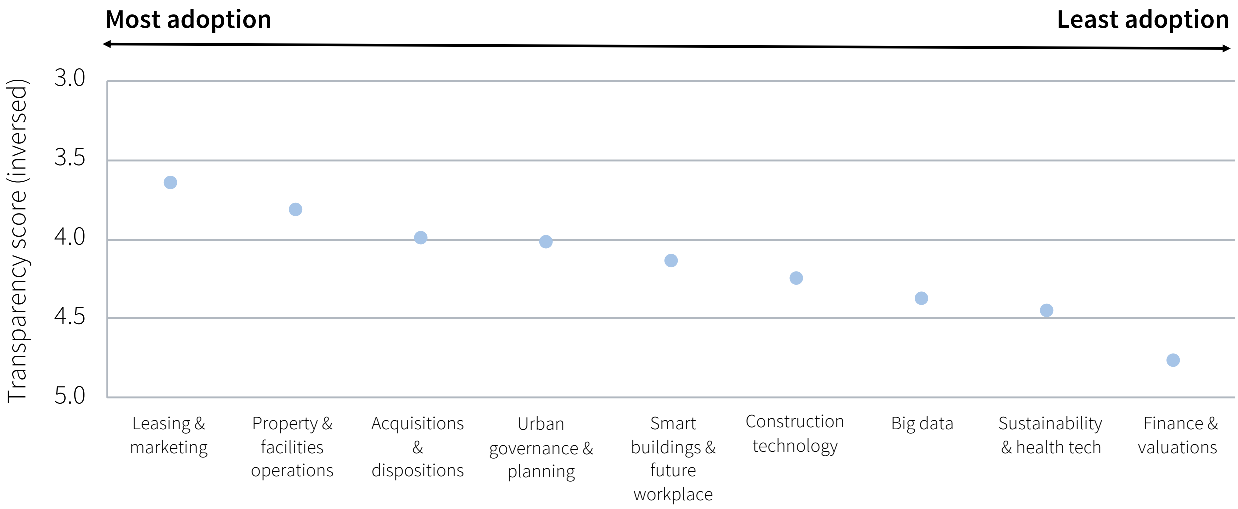
Technology adoption by market, top 20

Rank	Market	Adoption score
1	United Kingdom	2.11
2	United States	2.11
3	France	2.33
4	Netherlands	2.33
5	Spain	2.44
6	Belgium	2.56
7	Ireland	2.56
8	Canada	2.56
9	Germany	2.56
10	Singapore	2.56
11	UAE - Dubai	2.67
12	Australia	2.67
13	Sweden	2.67
14	Switzerland	2.78
15	Israel	2.78
16	Hong Kong SAR	2.78
17	China – SH/BJ	2.78
18	New Zealand	2.78
19	South Korea	2.89
20	India	2.89

China – SH/BJ = Shanghai and Beijing

Source: JLL, LaSalle, 2022

Adoption of global technology tools, 2022



Source: JLL, LaSalle, 2022

Adoption of technologies varies widely across the categories covered in the survey, although listings websites and marketing tools are now prevalent across most markets. The pandemic has also spurred greater adoption of facilities and asset management tools like Corrigo and Real Page, while online data rooms, digital conveyancing tools and CRM software are now commonplace during the acquisitions process. More complex technologies and those which depend on in-depth market data availability, such as 'big data' companies and automated valuation models, remain at an early stage of take-up.

Impact of digitization still at an early stage

The growing adoption of technology platforms and digitized processes is already boosting transparency across the real estate industry, but we are still in the early stages of seeing the massive impact that technology will have. Much of the data being generated – from listings sites and workplace apps to infrastructure IoT sensors and BIM models – continues to be siloed in individual platforms or companies, while data and technology standards remain incompatible in many cases and the landscape of solutions and providers is highly varied and complex. There are now a number of initiatives aiming to overcome some of these obstacles – for example, the OSCRE Industry Data Model to align standards in the industry – and greater integration of disparate datasets and use-cases will be needed to unlock the full potential of technology in driving greater transparency.

"The technologies that are now available across the built environment – and others still being developed – are set to be a critical driver of greater market transparency and will reshape how we interact with and use buildings. The proliferation of new technologies and operating models has made it difficult to navigate the shifting landscape and there is so much technology out there that businesses are often left overwhelmed. But as we work towards a more mature technology sector and the volume of available data grows, this presents an immense opportunity to uncover new insights and better manage real estate and its impact on people."

Ben Breslau
Global Chief Research Officer, JLL

Alternatives transparency: New investment stokes appetite for better data

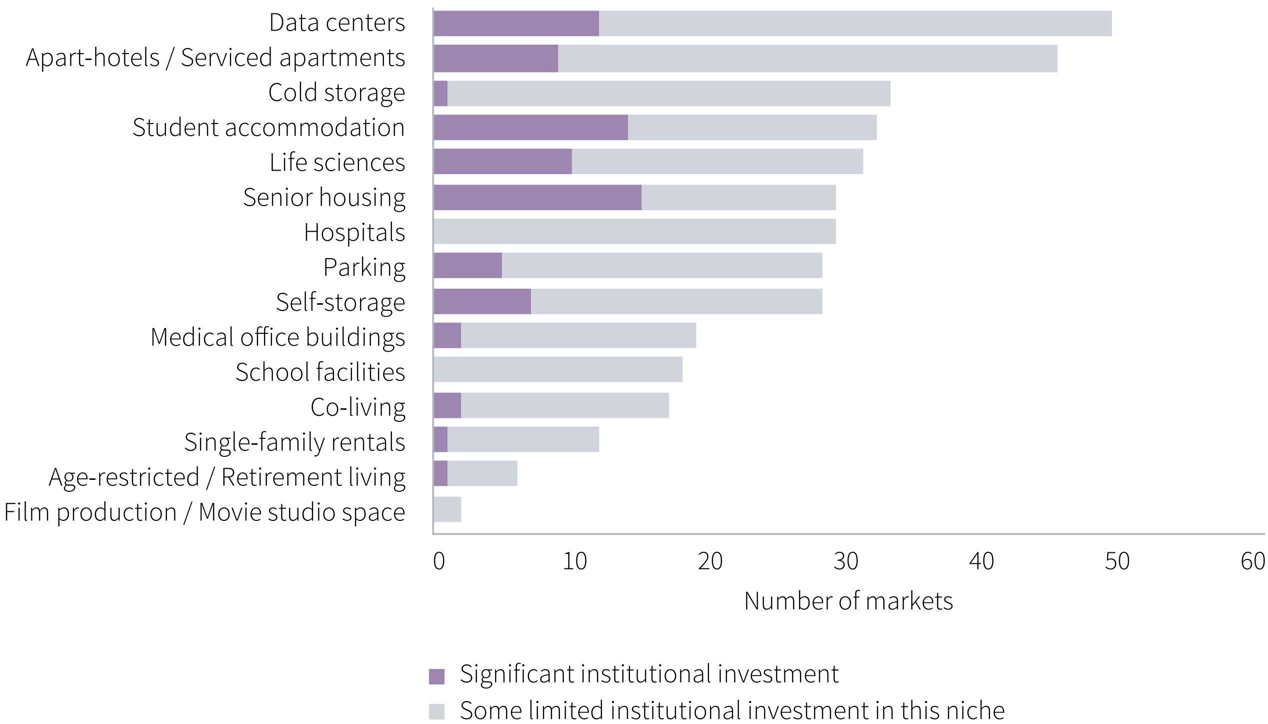
Dan Mahoney, Investment Strategist, U.S., LaSalle
Lee Fong, Director, Asia Pacific Research, JLL
Matthew McAuley, Director, Global Insight, JLL

Alternative, niche property types continue to live on the frontier of improvements in global real estate transparency in 2022. Investor interest in niche property types such as life sciences and data centers surged during the pandemic, attracted by compelling secular demand growth that proved resilient during this disruptive period. These property types are a varied bunch, especially across borders, with big differences in market conventions, existing inventory and tenant preferences.

They are united, however, by a few common themes:

First, they are almost everywhere. Every country in our 2022 survey reported having some existing inventory of property types historically outside the mainstream for investors. 65% of countries have reported some institutional investment in alternatives, with data centers having the broadest global reach.

Global investment in alternative property types



Source: JLL, LaSalle, 2022

Examples of new interest in alternatives since our last update abound. In Asia Pacific, cold storage investment continues to build momentum. Notably, Lineage recently announced an expansion into Singapore cold storage and Hines is developing cold storage in Korea. Asian logistics developers, like Singapore-based Logos and ESR, have entered the data center market; so too has SC Capital, who launched SC Zeus Data Centers in 2021 with a maiden investment in a Seoul hyperscale project. Meanwhile, Shanghai saw the first round-trip transaction for a co-living investment by an offshore investor, and Hong Kong witnessed several co-living conversion investments in 2022. In Singapore, Warburg Pincus-backed Weave Living invested in a serviced apartment conversion.

Rented residential straddles alternative and major property types, with apartments mainstream in many markets but emerging in others – a good example of how one country's 'alternative' can be mainstream in another. China has seen institutional investment in rental multifamily over the last several years as new public policies have encouraged development of this product and pledged to provide full local services to tenants. On the other side of the globe, UK rented residential is also garnering new investment. Retailer John Lewis announced in 2021 that it would enter the UK build-to-rent market, joining a growing group of investors in this property type, such as Legal & General, M&G and Greystar.

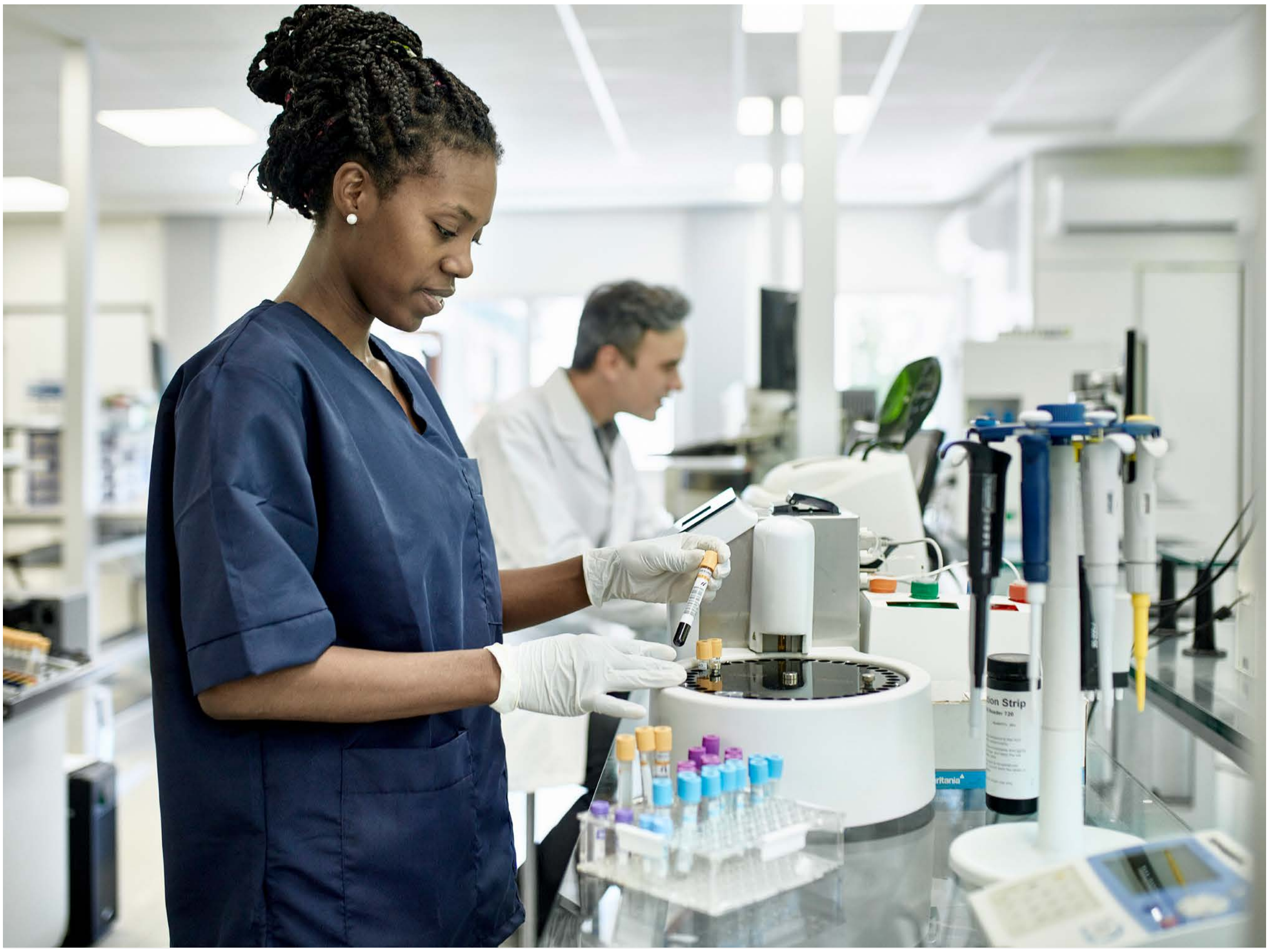
Even in markets where rental apartments are already established, the variety of Living sectors with institutional investment is expanding to include property types like single-family rentals (SFR) and active-adult apartments. In the U.S., private institutional SFR investment has surged since 2020, though it remains a very small part of the larger U.S. SFR market, with small owners dominant. The number of significant purpose-built U.S. SFR developments has approximately doubled since 2020. Life sciences is another standout for new investment. In MSCI's ACOE Index of U.S. core funds, life science and medical office properties have doubled their share of index assets from 2% in 2019 to 4% today.

A second common global theme is that reliable market data on alternatives is often scarce, or non-existent, even in otherwise 'Highly transparent' real estate markets. In scoring markets on the availability of data on rental levels and growth, using our ratings scale from 1 (high-quality data with widespread coverage) to 5 (no data at all), the global average is very low at 4.5.

This humble starting point has created big opportunities for improvement, and there are many examples of enhanced niche data since 2020 – concentrated in markets with the greatest scale and towards the top of the transparency rankings. Real estate service providers such as JLL, as well as other brokers, have been at the leading edge of gathering and cleaning data for alternative property types, notably on life sciences and data centers.

Their internal datasets and published reports are often the best source available for insight into everything from Shanghai life science space availability to BTR capital flows in the UK.

Surveys by industry associations – for instance, FEDESSA's European Self-Storage Report – are another beacon of alternatives transparency. Data providers have also taken new steps to collect and publish alternatives data. In China, IDC Quan and others are collecting more data center market information. A new magazine on life sciences in Europe, Life Sciences Real Estate, published its first issue in 2022 with the goal of improving data quality in the property type. And in the U.S., MSCI has started to publish new investment returns data for life sciences and medical offices.



Our transparency survey also reveals notable differences across countries and regions. Student accommodation, as well as senior housing investment, are relatively more prevalent in Europe. Both Europe and Asia Pacific have more serviced apartment investment, whereas life sciences and medical offices are relatively more institutionally invested in the Americas.

Institutional investment: Top 3 alternative property types by region

Rank within region based on the average national survey response on the extent of institutional investment

Asia Pacific	Europe	Americas
1. Data centers	1. Student accommodation	1. Life sciences
2. Serviced apartments	2. Data centers	2. Student accommodation
3. Life sciences & senior housing (Tie)	3. Senior housing	3. Data centers & self-storage (Tie)

Source: JLL, LaSalle, 2022

We added three additional alternative property types to our survey in 2022:

Single-family rentals (SFR)

The U.S. stands out as the market where this property type has taken off over the last two years, likely helped by having multiple high-quality data sources on rent trends, construction and prices. Just 12 countries reported having any institutional investment in SFR, well behind most other niches.

Age-restricted / Active-adult apartments and retirement living

These properties occupy a space between rented flats/apartments and higher acuity seniors housing, like independent living and memory care. Six markets in our survey reported some institutional investment, but age-restricted apartment market data even in these markets is more opaque.

Film production studios

Two countries, the UK and U.S., have institutional investment in this property type. Across the 15 alternative property types covered in the 2022 survey, it is the most opaque in terms of market data availability.

Alternative property types will remain a key space to watch over the next two years. Rising investor interest goes hand-in-hand with transparency improvements – we find a 0.68 correlation between degree of institutional investment and market data availability in our 2022 results, which bodes well for greater progress in alternatives transparency.

With contributions from
Petra Blazkova and Shetal Patel

Transparency in tables and charts

Top 20 markets
by Transparency Sub-Index, 2022

Performance measurement

Sub-index rank	Market	2022 sub-index score	2022 composite score
1	United Kingdom	1.01	1.25
2	United States	1.12	1.34
3	Australia	1.18	1.38
4	France	1.25	1.34
5	Canada	1.49	1.44
6	Japan	1.60	1.88
7	Netherlands	1.60	1.54
8	Switzerland	1.65	1.97
9	Sweden	1.81	1.76
10	New Zealand	1.83	1.77
11	Germany	1.94	1.76
12	Hong Kong SAR	2.01	1.98
13	Italy	2.09	2.12
14	Belgium	2.10	1.84
15	Singapore	2.17	1.96
16	Ireland	2.25	1.69
17	Spain	2.29	2.06
18	Finland	2.36	1.96
19	South Africa	2.53	2.40
20	Norway	2.56	2.27

Market fundamentals

Sub-index rank	Market	2022 sub-index score	2022 composite score
1	United States	1.48	1.34
2	Australia	1.64	1.38
3	Netherlands	1.64	1.54
4	Hong Kong SAR	1.77	1.98
5	France	1.77	1.34
6	United Kingdom	1.77	1.25
7	Canada	1.79	1.44
8	Ireland	1.93	1.69
9	Singapore	1.95	1.96
10	New Zealand	1.96	1.77
11	China – SH/BJ	1.96	2.54
12	Germany	2.05	1.76
13	Poland	2.17	2.15
14	Denmark	2.18	2.01
15	South Korea	2.18	2.49
16	Indonesia	2.21	2.86
17	India	2.24	2.73
18	Czech Republic	2.27	2.27
19	Belgium	2.29	1.84
20	Italy	2.30	2.12

Source: JLL, LaSalle, 2022

Governance of listed vehicles

Sub-index rank	Market	2022 sub-index score	2022 composite score
1=	United States	1.00	1.34
1=	Australia	1.00	1.38
1=	United Kingdom	1.00	1.25
1=	Ireland	1.00	1.69
5	New Zealand	1.01	1.77
6	Belgium	1.10	1.84
7	Switzerland	1.13	1.97
8	Canada	1.17	1.44
9	Finland	1.23	1.96
10	Denmark	1.28	2.01
11	France	1.31	1.34
12	Sweden	1.32	1.76
13	Germany	1.39	1.76
14	Netherlands	1.40	1.54
15	South Africa	1.60	2.40
16	UAE - Dubai	1.62	2.56
17	Singapore	1.70	1.96
18	Spain	1.73	2.06
19	Czech Republic	1.87	2.27
20	UAE - Abu Dhabi	1.92	2.98

Regulatory and legal

Sub-index rank	Market	2022 sub-index score	2022 composite score
1	United Kingdom	1.15	1.25
2	France	1.21	1.34
3	Canada	1.23	1.44
4	Sweden	1.25	1.76
5	Ireland	1.26	1.69
6	Netherlands	1.31	1.54
7	Denmark	1.32	2.01
8	United States	1.38	1.34
9	Poland	1.38	2.15
10	Australia	1.41	1.38
11	Japan	1.47	1.88
12	Germany	1.49	1.76
13	Czech Republic	1.57	2.27
14	New Zealand	1.59	1.77
15	Switzerland	1.62	1.97
16	Hong Kong SAR	1.62	1.98
17	Israel	1.66	2.66
18	Slovenia	1.69	3.30
19	Finland	1.71	1.96
20	Belgium	1.76	1.84

Source: JLL, LaSalle, 2022

Transaction process

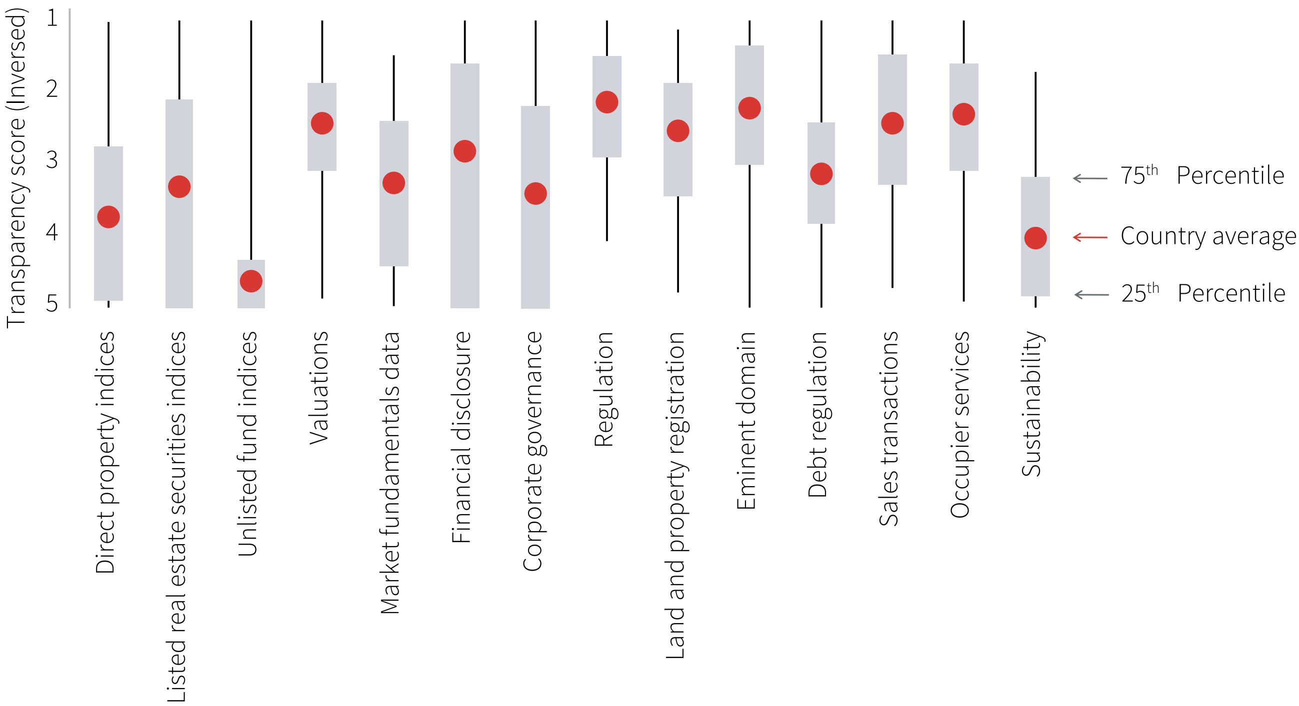
Sub-index rank	Market	2022 sub-index score	2022 composite score
1=	United Kingdom	1.00	1.25
1=	France	1.00	1.34
1=	Ireland	1.00	1.69
1=	Denmark	1.00	2.01
1=	New Zealand	1.00	1.77
6	Belgium	1.10	1.84
7	Australia	1.13	1.38
8	Netherlands	1.15	1.54
9	Spain	1.17	2.06
10	Canada	1.20	1.44
11	Portugal	1.23	2.37
12	Czech Republic	1.25	2.27
13	Finland	1.27	1.96
14=	Sweden	1.30	1.76
14=	Germany	1.30	1.76
16	Italy	1.33	2.12
17	Switzerland	1.40	1.97
18	Poland	1.43	2.15
19	United States	1.45	1.34
20	Luxembourg	1.46	2.39

Sustainability

Sub-index rank	Market	2022 sub-index score	2022 composite score
1=	France	1.70	1.34
1=	United States	1.70	1.34
3	United Kingdom	1.80	1.25
4	Canada	1.90	1.44
5	Australia	2.10	1.38
6=	Singapore	2.20	1.96
6=	Japan	2.20	1.88
8=	Belgium	2.50	1.84
8=	Netherlands	2.50	1.54
8=	Sweden	2.50	1.76
11	Germany	2.57	1.76
12	Ireland	2.60	1.69
13	Finland	2.70	1.96
14=	Denmark	2.80	2.01
14=	Spain	2.80	2.06
14=	Italy	2.80	2.12
17	Norway	2.90	2.27
18	Poland	2.97	2.15
19	Hungary	3.07	2.34
20	Slovakia	3.08	2.44

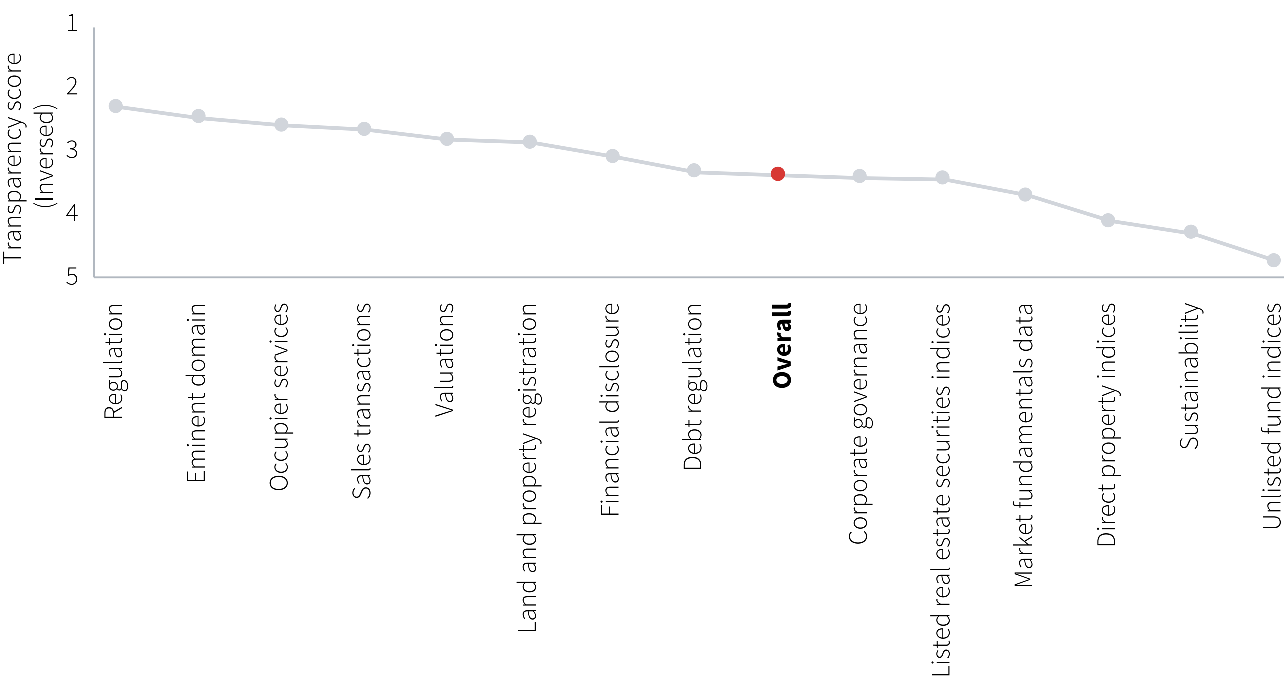
Source: JLL, LaSalle, 2022

Score range by topic area, 2022



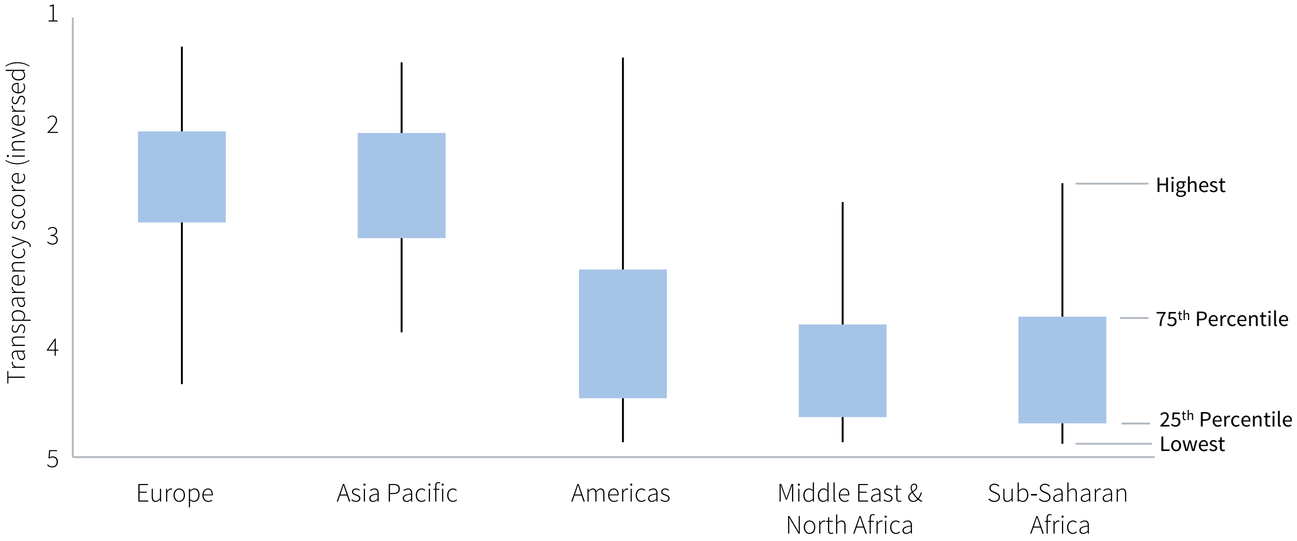
Source: JLL, LaSalle, 2022

Average score by topic area, 2022



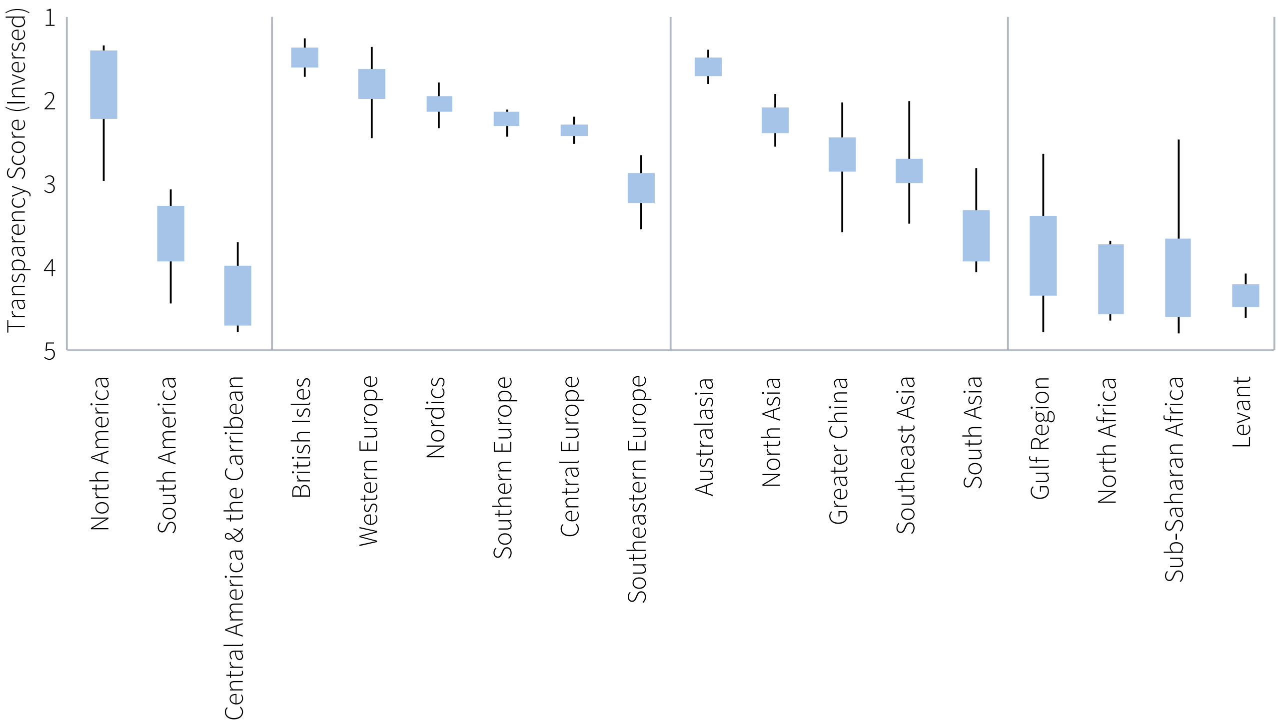
Source: JLL, LaSalle, 2022

Transparency Index by region, 2022



Source: JLL, LaSalle, 2022

Transparency Index by sub-region, 2022



Source: JLL, LaSalle, 2022

Technical note

The Transparency Index

The JLL Global Real Estate Transparency Index is based on a combination of quantitative market data and information gathered through a survey of the global business network of JLL and LaSalle across 94 countries and 156 city markets. For each market we use 254 separate factors, both quantitative datapoints and survey questions, to calculate the composite score. The survey data and quantitative measures complement each other. For instance, knowing the market coverage and length of a country's direct real estate index is only one half of the story; for a complete picture, we also gather qualitative data on whether investors actually trust and use the index. Local research teams, in consultation with business leaders and real estate professionals active in each market, complete the survey. A table summarizing the factors behind the Index is at the end of this note.

In the 2022 Index we have continued to break general questions into more specific, granular components and to include new elements, moving from 210 constituent factors to 254. For example, we have expanded the list of alternatives sectors covered from 12 to 15, to include: single-family rentals, age-restricted and retirement living, and film production and movie studio space. We have also revised the list of Sustainability topics covered, with new questions on building energy use and efficiency reporting; energy performance standards and benchmarks; building emissions databases and standards; and climate risk reporting. These changes allow us to drill deeper into where markets differ and to reduce measurement error by making the overall scoring less reliant on any single factor.

Quantitative factors

53 of the 254 scoring factors, accounting for 27% of the overall factor weighting, are quantitative. These quantitative factors, primarily added to the Index in 2012, include the number of years fundamentals' data series (like vacancy) have been available, the market coverage of property returns indices, and the free float of publicly-listed real estate securities markets. We score most of these quantitative factors on a continuous scale from 1 to 5, with 1.00 indicating very high transparency. For datapoints on performance measurement indicators, such as the market coverage of property returns indices, we have set the top score of 1 equal to the 90th percentile observation in 2012. The cut-off thresholds to qualify as a 'Highly transparent' market have been fixed at their 2012 level, so that markets can improve to higher tiers over time. For datapoints on market fundamentals data, like the length of a market's office vacancy series, we have set the top score of 1 equal to a time series of 30 years or more, which we view as the 'gold standard'.

Researchers at JLL and LaSalle have collected detailed data on the available market fundamentals' time-series for each of five property types: office, retail, industrial, residential and hotels. We have included all available data series, not only those produced by JLL. For national surveys, the market fundamentals data is based on conditions in the top-scoring city of each country.

Data on property-level returns indices is from MSCI, NCREIF and other industry associations. Data on publicly-listed real estate comes from the European Public Real Estate Association (EPRA), Bloomberg, NAREIT and the LaSalle Investment Management Securities group. Fund-level index data is primarily from INREV, NCREIF, MSCI and ANREV.

Qualitative survey factors

The balance of the scoring factors, totaling 201 datapoints, are qualitative survey questions scored by local JLL and LaSalle teams. For each, local research teams are provided with a detailed rubric of five answer choices, ranging from 1 – most transparent – to 5 – opaque. Based on where their market fits within that rubric of options, local experts assign a score. Respondents consult JLL's local accounting, finance, asset management and legal experts to inform their responses to questions in those topic areas.

Scores within each region are then reviewed by regional and then global coordinators to ensure objectivity and rigor. Global and regional reviewers interrogate country teams' responses and challenge teams to justify changes in question scores from prior updates. The review process, high level of detail provided in the answer choices, and improved question granularity reduce subjective bias in scoring, and all contributors strive for impartiality in their responses.

Compiling the Transparency Index

We group the 254 individual transparency measures into 14 topic areas, summarized in the table at the end of this note. These topic areas are grouped and weighted into six broad sub-indices:

- Performance measurement – 25%
- Market fundamentals – 16.5%
- Governance of listed vehicles – 10%
- Regulatory and legal – 23.5%
- Transaction process – 15%
- Sustainability – 10%

The Transparency Index scores range on a scale from 1 to 5. A country or market with a perfect 1.00 score has total real estate transparency; a country with a 5.00 score has total real estate opacity. Markets are then assigned to one of five transparency tiers. The thresholds for these tiers are based on Jenks' Natural Breaks classification. 2012 scores are used to fix the thresholds, so that markets can move between tiers as transparency changes over time, even if their relative position does not change. This algorithm finds the cut-offs that minimize within-group variance and maximize between-group differences. We create 10 groups using this method and then aggregate them into five tiers with the following thresholds:

Tier 1: Highly transparent
Total composite score: 1.00–1.97

Tier 2: Transparent
Total composite score: 1.98–2.65

Tier 3: Semi-transparent
Total composite score: 2.66–3.50

Tier 4: Low transparency
Total composite score: 3.51–4.16

Tier 5: Opaque
Total composite score: 4.17–5.00

Transparency Index time series

2022 marks the 12th edition of the JLL Global Real Estate Transparency Index. Since its inception in 1999, the Index has evolved and been refined to reflect the changing demands of cross-border investors and corporate occupiers. Factors added over time have been included historically where available. Where no historic data is available, we have extended back data from the edition in which a factor was added so that changes in the new factors do not drive movement in the historic scores. A brief history of recent additions to the Index includes:

2008

New questions were added to embrace the perspective of corporate occupiers relating to occupier service charges and facilities management. Questions concerning debt financing and the frequency and credibility of property valuations were also included.

2010

The existing questions regarding debt financing were substantially revised to more appropriately reflect the key issues of debt transparency relating to the availability of information on commercial real estate debt and the role of bank regulators in monitoring commercial real estate lending. There were also revisions to questions on the transaction process covering pre-sale information and the bidding and negotiating process.

2012

Major additions were made to incorporate a greater number of quantitative measures of investment performance and market fundamentals. In each of these two areas, general questions were divided into many different granular questions to better capture nuanced differences between markets. In all, 50 new factors were added by decomposing general questions into more detailed questions.

2014

We continued to decompose general questions into more specific ones, resulting in the addition of 31 new factors. These additions were spread across categories, as shown in the table on the next page. For example, rather than asking a single general question on tax fairness as we did in 2012, we included four questions on tax in 2014 covering the consistency of enforcement and predictability of tax rates for both domestic investors and foreign investors.

2016

We added 18 new factors that captured the proportional market coverage of disaggregated databases on leasing, buildings and transactions, one example being Real Capital Analytics. We included coverage of alternative property sectors (such as student accommodation and self-storage). We also enhanced our debt questions to make them quantitative (based on the start year of data time series) and to cover LTV and margin data.

2018

New questions were included to capture the extent of investor activity and data on alternative property sectors, resulting in 32 new factors being added. To reflect the growing importance of property ownership transparency, we incorporated questions on beneficial ownership disclosure and Anti-Money Laundering (AML) regulations. Questions on city-level direct performance indices, availability of fund indices by investment style (for example, core versus higher-return), publicly available appraisal assumptions, and the alignment of local property measurement conventions with global standards were also added. The 2018 GRETI also marked the first time the Real Estate Environmental Sustainability Transparency Index, comprised of seven questions, was incorporated within the main survey results as a sub-index.

2020

We increased the number of alternative property sectors covered from 8 to 12, leading to 16 new factors being added. We enhanced our coverage of aggregated data series by including questions on net effective rental value series for the core sectors. Reflecting the greater importance of a broad range of sustainability issues across all aspects of the built environment, we added questions on health and wellness certification systems, climate-resilient building codes and net zero carbon building frameworks.

2022

Responding to the growing focus on sustainability for investors, corporates and governments, we have enhanced our coverage with new questions on building energy use and efficiency reporting; energy performance standards; building emissions tracking and benchmarks; and climate risk reporting. We have also deepened our coverage of aggregated data series by including questions on the number and quality of data providers, frequency of data updates, and availability of information on rent collection rates and office re-entry levels. We have also increased the number of alternative property sectors covered from 12 to 15.

	Number of factors					
Factor comparison	2012	2014	2016	2018	2020	2022
Direct property indices	5	6	6	9	9	12
Listed real estate securities indices	5	6	6	6	6	6
Unlisted fund indices	2	3	3	5	5	5
Valuations	2	4	4	5	5	5
Market fundamentals data	47	47	68	94	110	151
Financial disclosure	2	4	4	5	5	5
Corporate governance	2	3	4	4	4	4
Regulation	6	13	13	13	13	13
Land and property registration	3	7	7	9	9	9
Eminent domain	2	3	3	3	3	3
Debt regulation	2	7	8	8	8	8
Sales transactions	3	5	5	9	9	9
Occupier services	2	6	7	9	9	11
Sustainability	0	0	0	7	13	13

Source: JLL, LaSalle, 2022

Global Real Estate Transparency Index 2022: Transparency components

Sub-index	14 Topics	Factors (254 total)
Performance measurement	Direct property indices	Existence of direct property index
		Reliability of the index and extent to which it is used as a benchmark of performance
		Type of index (valuation based vs. Notional)
		Length of national direct property-level returns index time series
		Size of national institutional invested real estate market
		Market coverage of direct property index
		Length of city-level direct property returns index time series
		City-level private real estate index publication frequency
		Size of city institutional invested real estate market
	Listed real estate securities indices	Dominant type of listed RE securities (i.e., Long-term holders of real estate vs. homebuilders and conglomerates)
		Use of listed real estate securities data on the real estate market
		Years since the first commercial real estate company was listed
		Value of public real estate companies as % of gdp
		Existence of a domestic listed real estate index and its use as a benchmark
		Existence of an international listed real estate index and its use as a benchmark
		Length of public real estate index time series
	Private real estate fund indices	Existence of a domestic fund index and its use as a benchmark
		Existence of international fund index and its use as a benchmark
		Length of unlisted fund index time series
		Existence of unlisted fund indices for distinct investment styles (i.E., Core vs. Higher-return)
	Valuations	Independence and quality of third-party appraisals
		Use of market-based appraisal approaches
		Competition in the market for valuation services
		Frequency of third-party real estate appraisals
		Availability of appraisal assumptions
Market fundamentals	Market fundamentals data	Existence and length of time series on property rents (office, retail, industrial, residential)
		Existence and length of time series on net effective rents (office, retail, industrial, residential)
		Existence and length of time series on take-up/absorption (office, retail, industrial, residential)
		Existence and length of time series on vacancy (office, retail, industrial, residential)
		Existence and length of time series on yields/cap rates (office, retail, industrial, residential, hotels)
		Existence and length of time series on capital values (office, retail, industrial, residential, hotels)
		Existence and length of time series on investment volumes (office, retail, industrial, residential, hotels)
		Existence and length of time series on revenue per available room for hotels
		Depth of data providers for time series data (office, retail, industrial, residential, hotels)
		Frequency of publication of time series data (office, retail, industrial, residential, hotels)
		Availability of data on rent collection rates (office, retail, industrial, residential)
		Availability of data on office re-entry / physical occupancy
		Existence and geographical coverage of a database of individual buildings (office, retail, industrial, residential, hotels)
		Existence and geographical coverage of a database of leases (office, retail, industrial, residential, hotels)
		Existence and geographical coverage of a database of property transactions (office, retail, industrial, residential, hotels)
		Existence and geographical coverage of a database of rental deal terms (office, retail, industrial, residential, hotels)
Governance of listed vehicles	Financial disclosure	Stringency of accounting standards
		Level of detail in financial statements
		Frequency of financial statements
		Data disclosure by listed vehicles
		Availability of financial reports in english
	Corporate governance	Manager compensation and incentives
		Use of outside directors and international corporate governance best practice
		Alignment of interests / shareholder power
		Free float share of the public real estate market

Regulatory and legal	Regulation	Extent to which the tax code is consistently applied for domestic investors
		Extent to which real estate tax rates are predictable for domestic investors
		Extent to which the tax code is consistently applied for foreign investors
		Extent to which real estate tax rates are predictable for foreign investors
		Existence of land use rules and zoning
		Predictability of changes in land use and zoning
		Enforcement of land use rules and zoning
		Existence of building codes and safety standards for buildings
		Enforcement of building codes and safety standards for buildings
		Simplicity of key regulations in contract law
		Efficiency of the legal process
		Level of contract enforceability for domestic investors
		Level of contract enforceability for foreign investors
	Land and property registration	Existence of land registry
		Accessibility of land registry records to public
		Accuracy of land registry records
		Completeness of land registry records on ownership
		Completeness of public records on transaction prices
		Completeness of public records on liens and easements
		Existence of property beneficial ownership records
		Accessibility of beneficial ownership records to public
		Enforcement of beneficial ownership disclosure legislation
	Eminent domain / compulsory purchase	Notice period given for compulsory purchase
		Fairness of compensation to owners in compulsory purchase
		Ability to challenge compulsory purchase in court of law
	Real estate debt information	Existence and length of time series on commercial real estate debt outstanding
		Existence and length of time series on maturities and originations of real estate loans
		Existence and length of time series of delinquency and default rates of commercial real estate loans
		Availability of data on loan-to-value ratios for commercial real estate loans
		Availability of data on margin rates for commercial real estate loans
		Requirements for lenders to monitor cash flows and collateral value of property with loan facilities
		Requirements for lenders to carry out real estate appraisals
		Penalties for non-compliance with requirements
Transaction process	Sales transactions	Quality and availability of pre-sale information
		Fairness of the bidding process
		Confidentiality of the bidding process
		Professional and ethical standards of property agents
		Enforcement of professional and ethical standards of property agents
		Existence of anti-money laundering regulations
		Enforcement of anti-money laundering regulations
	Occupier services	Availability of professional third-party facilities and project management companies
		Providers of property management services known to occupiers
		Service expectations for property management clear to occupiers
		Alignment of occupier and property manager interests
		Frequency of service charge reconciliation
		Accuracy and level of detail in service charge reports
		Ability for tenants to audit landlord's accounts and challenge discrepancies
		Quality and clarity of corporate procurement and tendering process
Sustainability	Sustainability	Existence of green building financial performance index
		Existence and accessibility of building energy reporting databases
		Existence and accessibility of building energy benchmarks
		Existence of resilient building standards
		Existence and stringency of minimum energy efficiency standards for new buildings
		Existence and stringency of minimum energy efficiency standards for existing buildings
		Existence and accessibility of building energy ghg emissions databases
		Existence and stringency of minimum ghg emissions standards for new buildings
		Existence and stringency of minimum ghg emissions standards for existing buildings
		Existence of coverage of green building certifications
		Requirements for climate risk reporting
		Existence of climate resilient building codes and standards
		Existence and coverage of health and wellness building certifications
		Existence and use of green lease framework

Source: JLL, LaSalle, 2022

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