



Council on
Vertical Urbanism

Vertical Urbanism Index

2025 Report



About the Vertical Urbanism Index

Cities worldwide are grappling with how to absorb rapid population growth while sustaining livability, affordability, and environmental performance. The Vertical Urbanism Index (VUI) was developed to examine how cities respond to this challenge through vertical development—measuring not only how tall cities build, but how effectively vertical growth aligns with density and quality of life.

Produced as part of CVU’s City Advocacy Forum initiative, the VUI is a comparative, data-driven framework that evaluates the intersection of vertical construction, population distribution, and livability outcomes. To enable meaningful comparison across diverse global contexts, each component of the Index is normalized on a standardized scale from 0 to 10, where higher values indicate stronger relative performance among peer cities.

The Index not intended as a conventional “best cities” ranking. Instead, it identifies cities that are simultaneously advancing all three dimensions at various scales.

What the Index Measures

The Vertical Urbanism Index evaluates cities across three core dimensions:

1. **Tall Buildings**—Assesses the scale and trajectory of tall and mid-rise construction using the Skyscraper

Center, CVU’s tall building database. Rather than relying on headline tower counts alone, the Index considers existing building stock, recent completions, and ongoing construction to capture the intensity and momentum of vertical growth.

2. **Density**—Evaluates how population is distributed across the urban agglomeration, not simply how dense a city is on average. Using satellite-derived population and built-surface data, the VUI measures both nominal density and the spatial efficiency of density—capturing whether population is concentrated near urban cores and infrastructure or dispersed through low-density expansion.
3. **Livability**—Assesses social, environmental, and economic conditions that shape everyday urban life. Metrics include education and health outcomes, access to transit and green space, air quality, housing affordability, income inequality, and the balance between population growth and land consumption. Livability scores are standardized to allow comparison across diverse global contexts.

Changes in This Year’s Methodology

The 2025 edition of the VUI represents a substantive evolution from the inaugural

About the Vertical Urbanism Index

2024 Index. While the 2024 methodology emphasized tall building counts and height thresholds, this year's approach places greater weight on overall volumetric growth and cumulative vertical intensity.

This refinement allows the Index to better capture cities where density is achieved through sustained, citywide vertical development rather than isolated supertall clusters. It also brings greater visibility to megacities—particularly in the Global South—where rapid population growth and mid- to high-rise construction are reshaping urban form at scale but may fall outside traditional tall-building industry narratives.

As a result, the 2025 Index expands its scope to 83 urban areas with populations of at least 5 million, offering a more globally representative and analytically robust assessment of contemporary vertical urbanism.

How to Read the Rankings

The VUI rankings on the following page) reflect cities where **tall buildings**, **density**, and **livability** occur together at relatively high levels. A higher ranking does not imply a higher overall quality of life, nor does it suggest an optimal or ideal urban model. Instead, the Index highlights cities that are actively pursuing vertical growth while maintaining functional density and mid- to high-level livability outcomes—providing a

comparative framework for understanding different pathways of urban intensification.

Data Sources

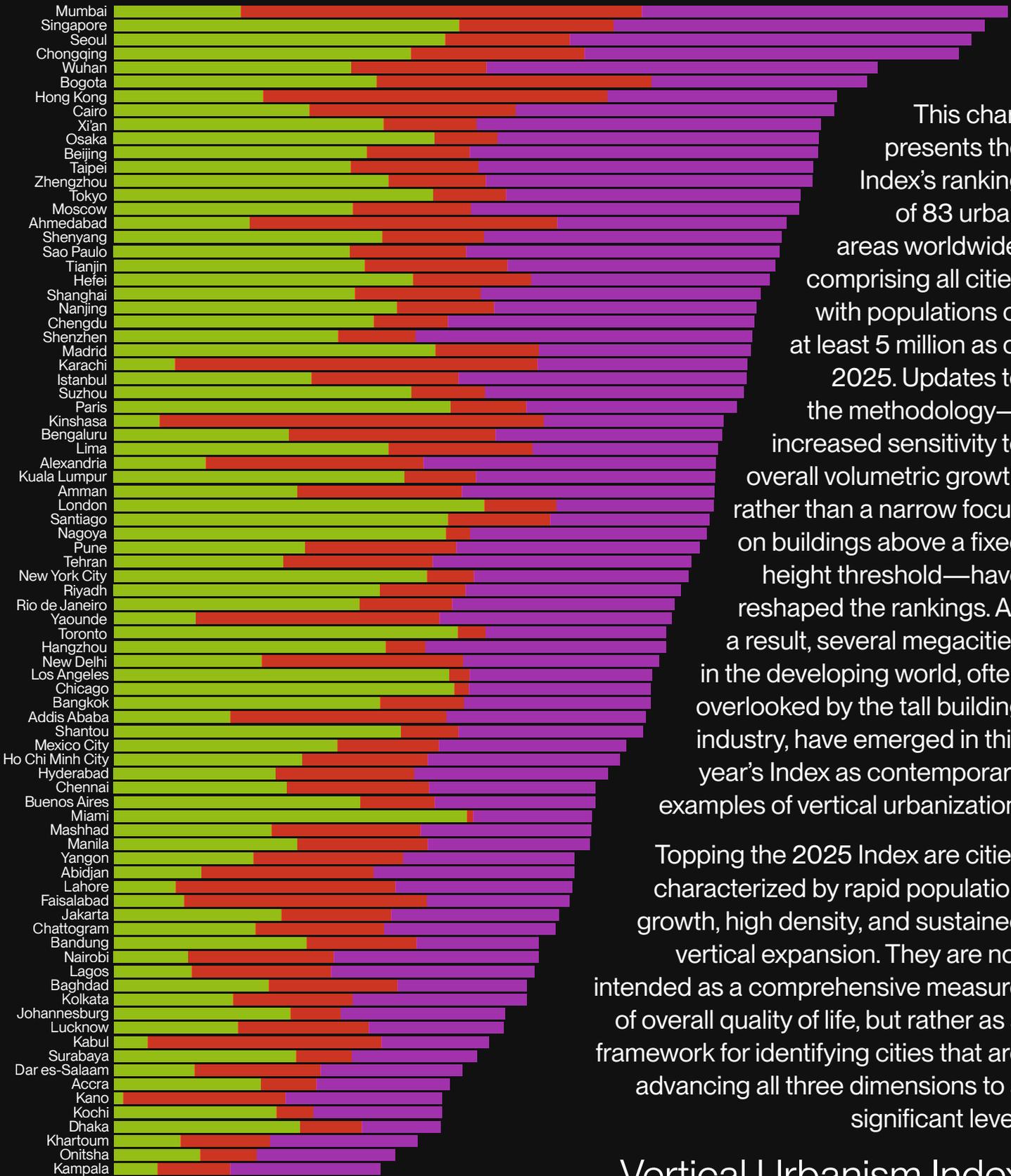
The Vertical Urbanism Index draws on a combination of proprietary and open-access datasets to ensure global consistency and comparability.

Vertical development data are sourced from CVU's [Skyscraper Center](#) database, including completed and active projects.

Population, built-surface, and density metrics are derived from satellite-based datasets from the [Global Human Settlement Layer \(GHSL\)](#) and its [Urban Centre Database \(GHS-UCDB 2024A\)](#).

Livability indicators are compiled from internationally recognized sources, including the [World Bank World Development Indicators](#) and the [UN-Habitat Urban Indicators Database](#).

All datasets are standardized and normalized to enable cross-city comparison across varying geographic, economic, and governance contexts.



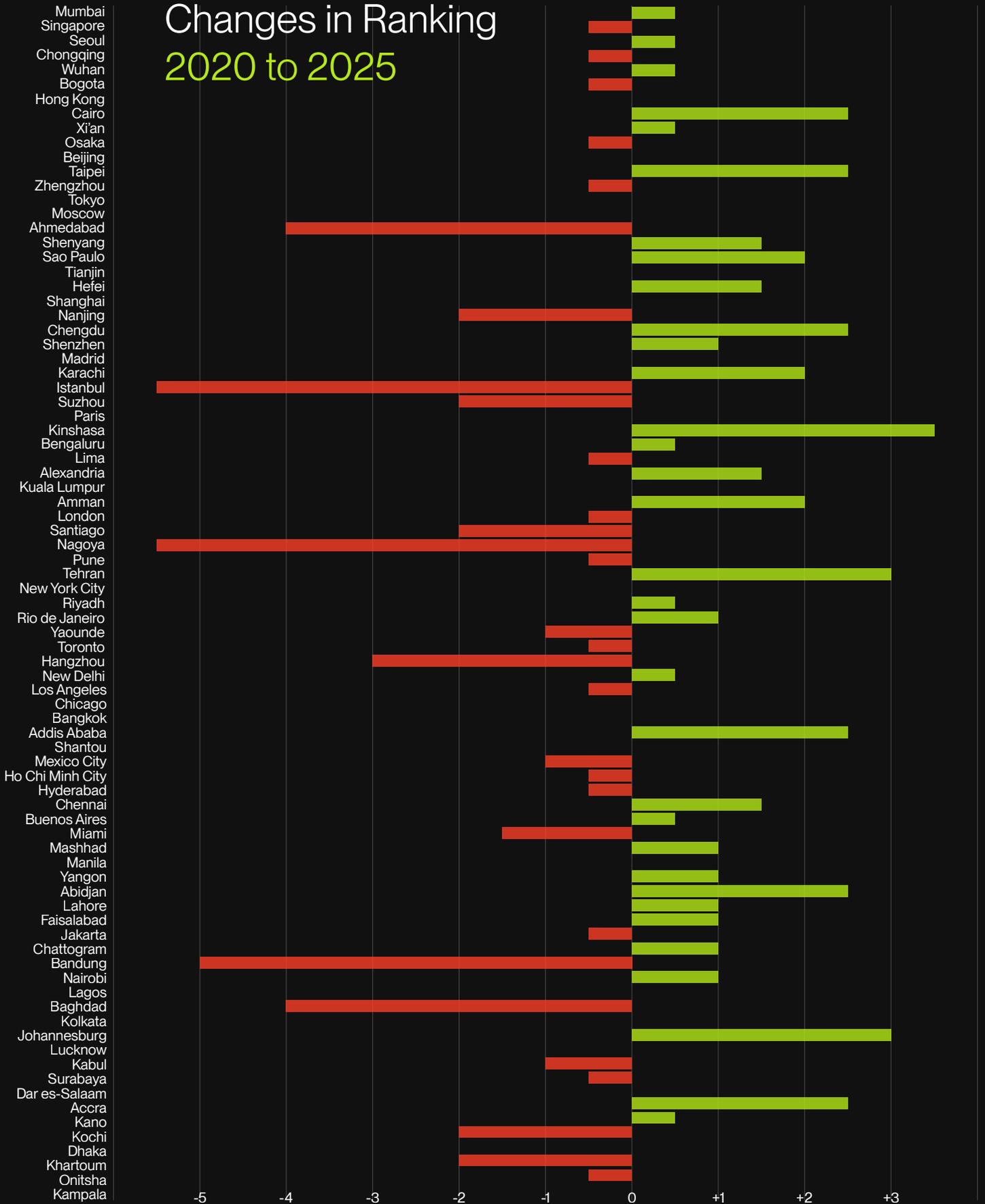
This chart presents the Index's ranking of 83 urban areas worldwide, comprising all cities with populations of at least 5 million as of 2025. Updates to the methodology—increased sensitivity to overall volumetric growth rather than a narrow focus on buildings above a fixed height threshold—have reshaped the rankings. As a result, several megacities in the developing world, often overlooked by the tall building industry, have emerged in this year's Index as contemporary examples of vertical urbanization.

Topping the 2025 Index are cities characterized by rapid population growth, high density, and sustained vertical expansion. They are not intended as a comprehensive measure of overall quality of life, but rather as a framework for identifying cities that are advancing all three dimensions to a significant level.

Vertical Urbanism Index 2025 Rankings



Changes in Ranking 2020 to 2025

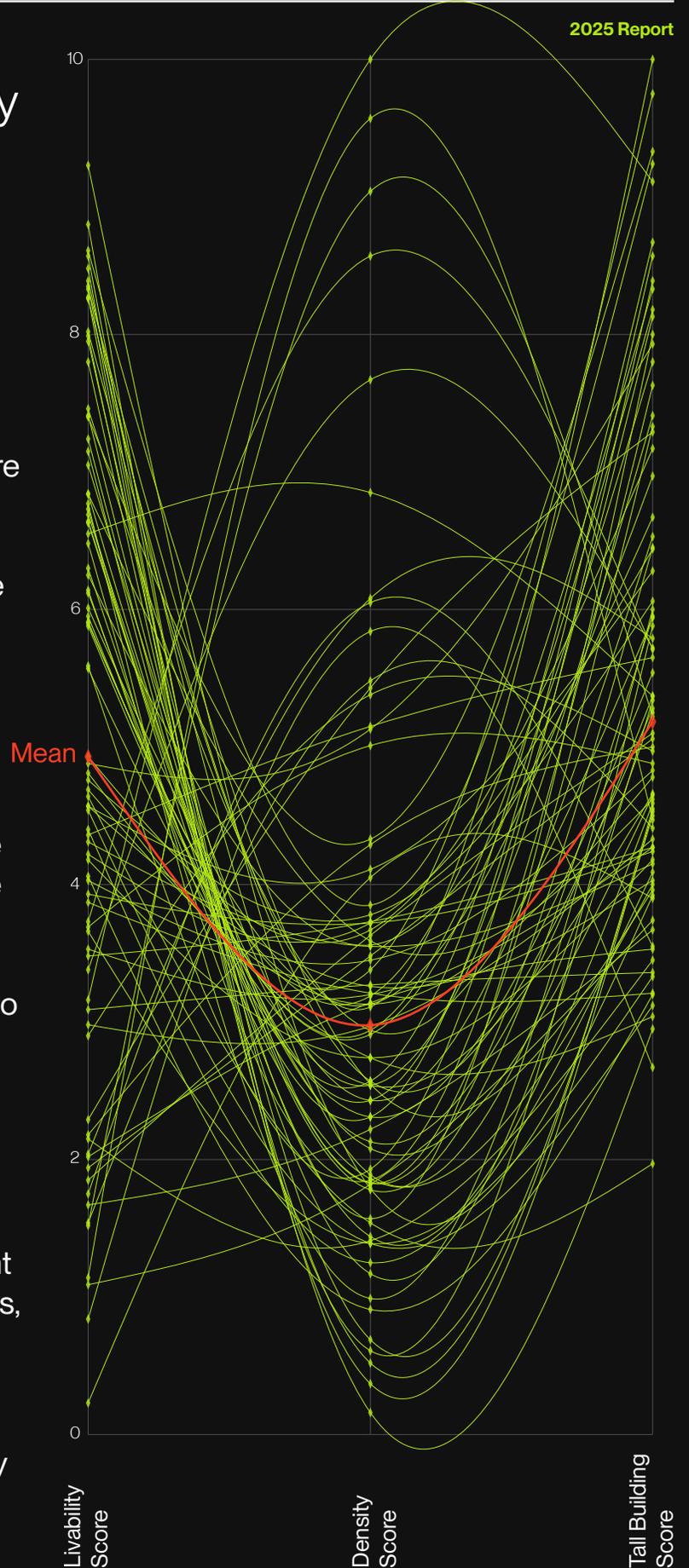


Livability, Density, Verticality What's the Connection?

While vertical development and density are often treated as proxies for urban success, the data suggest that neither reliably predicts livability. Tall building scores show a moderate positive relationship with density, most evident in rapidly urbanizing Asian megacities, where vertical growth helps absorb population increases without proportional sprawl. This relationship weakens in high-income cities, however, where substantial tall building stock in places like New York City, Toronto, and Chicago coexists with comparatively modest density levels.

The relationship between density and livability is more conflicted. Cities with the highest density scores record among the lowest livability outcomes, suggesting that density driven by overcrowding or infrastructure strain does not translate into improved urban conditions. By contrast, lower-density, higher-income cities in North America and Europe consistently achieve higher livability scores.

Cities such as Singapore, Seoul, and Tokyo show that tall building development can coexist with strong livability outcomes, but these remain exceptions. In many cities, vertical and density growth can outpace investments in infrastructure and services, leading to declining livability despite increasingly vertical skylines.



Three Dimensions of Urban Growth

Population, built volume, and real density

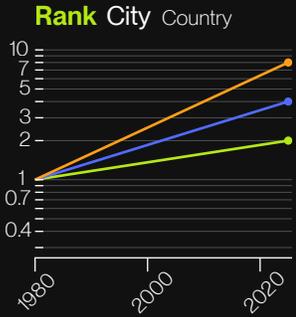
Reading the Growth Charts

All charts are indexed to a common baseline year of 1980, with **population**, **built volume**, and **real density** normalized to a value of 1 for each city. Values shown for subsequent years represent the factor of change relative to that 1980 baseline, rather than absolute quantities. For example, a population value of 2.0 indicates that a city's population has doubled since 1980, while a real density value below 1.0 indicates that population has grown more slowly than the expansion of built-up surface area. This normalization allows cities with vastly different sizes, starting conditions, and growth rates to be compared on equal footing, highlighting how cities grow.

Observations

Population growth and built-volume growth do not move in lockstep, and “real density” (e.g., population per built-up surface) is often the deciding variable in whether growth reads as intensification or expansion. We summarize the observations in three patterns:

1. Crowding without verticalization: cities such as Kinshasa (2025 **population 7.93× growth from 1980**, **built volume 1.21×**, **real density 6.42×**) and Yaoundé (**population 8.46× growth from 1980**, **volume 1.87×**, **density 4.24×**) show populations rising faster than built volume, pushing real density upward. This suggests intense pressure is put on built-up land without a proportional increase in volumetric capacity.
2. Volume-led urbanization with declining real density: several fast-growing metros dramatically expand built volume while real density fell below the 1980 baseline, implying that built-up land is spreading even faster than population is rising. Examples include Pune (**2025 density 0.44× growth from 1980**, **volume 4.90×**, **population 2.32×**) and Chengdu (**density 0.33× growth from 1980**, **volume 3.38×**, **population 1.49×**). This is consistent with rapid outward urbanization and large additions of floor area that don't translate into tighter settlement patterns.
3. Balanced intensification: Shenzhen–Guangzhou stands out as a hybrid: explosive **population growth (8.48× from 1980)** and **volumetric growth (4.49×)**, with a meaningful rise in **real density (1.56×)**, indicating that expansion and vertical capacity-building have both been central to its trajectory. Mature metros like Tokyo and London show comparatively modest shifts, with real density hovering near (or moderately above) baseline while built volume and population rise steadily; this means more incremental intensification than structural transformation.



Three Dimensions of Urban Growth

Population, built volume, and real density

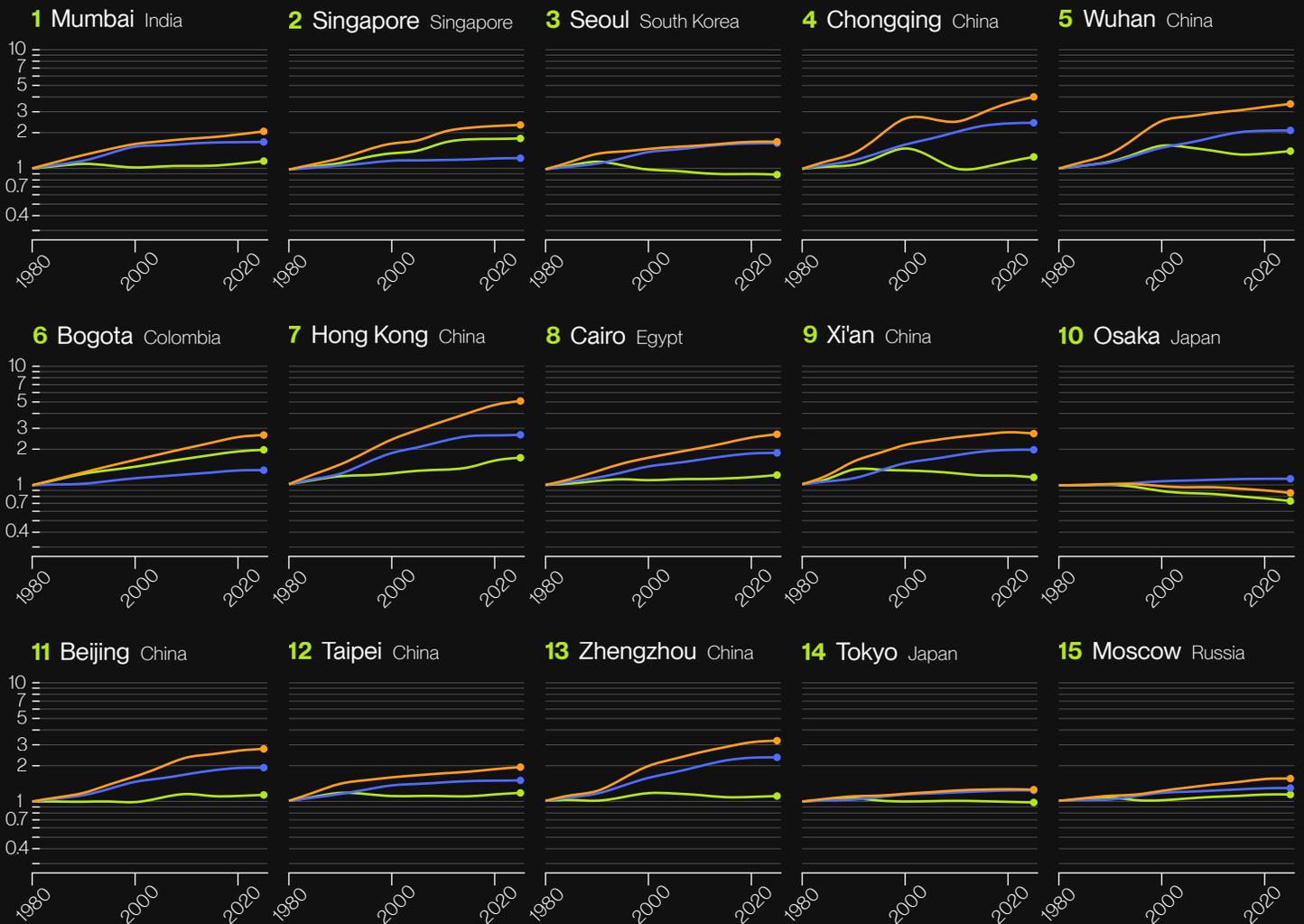
Rank and name = VUI rank, urban agglomeration name, country

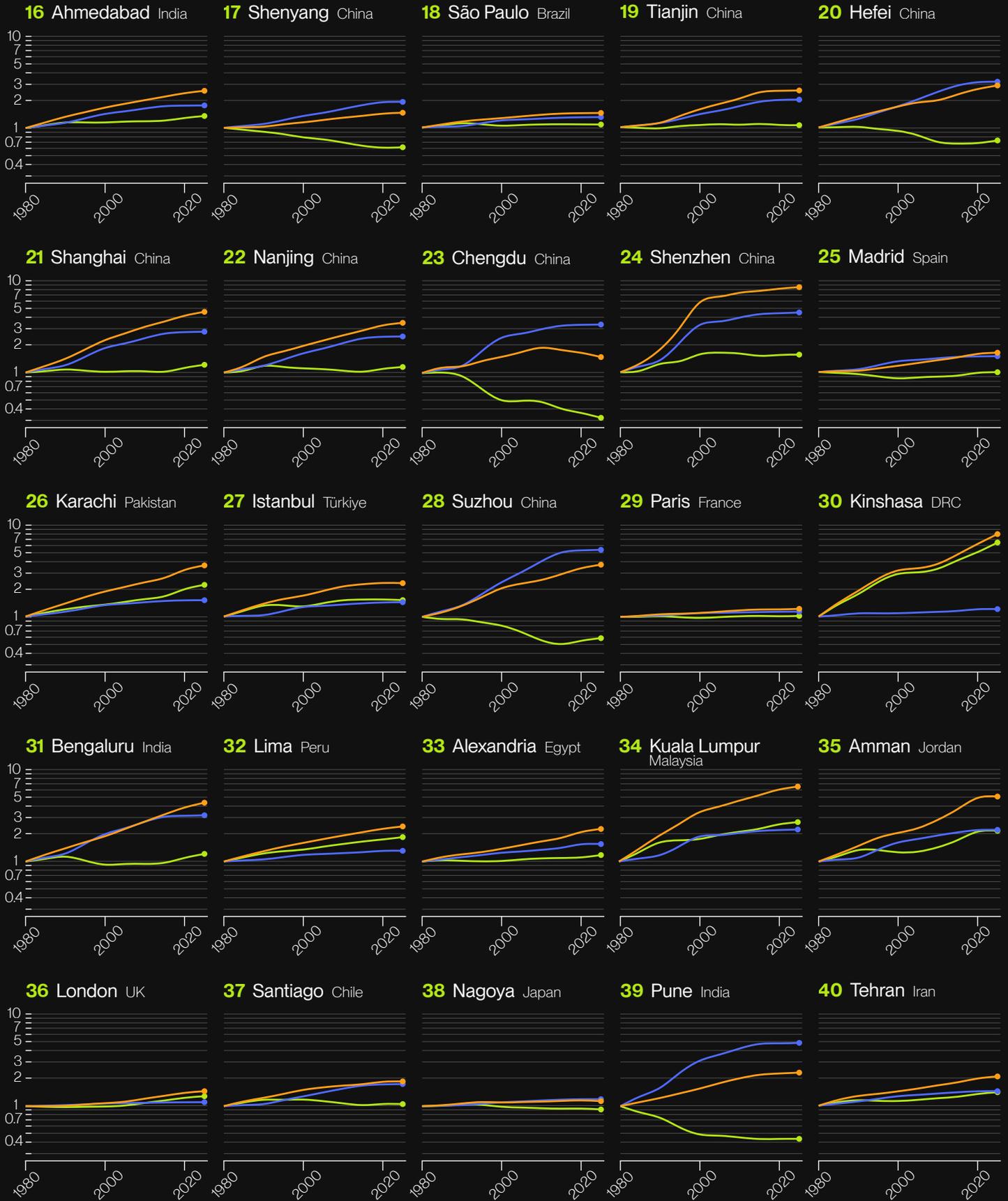
Population = number of inhabitants in the urbanized area

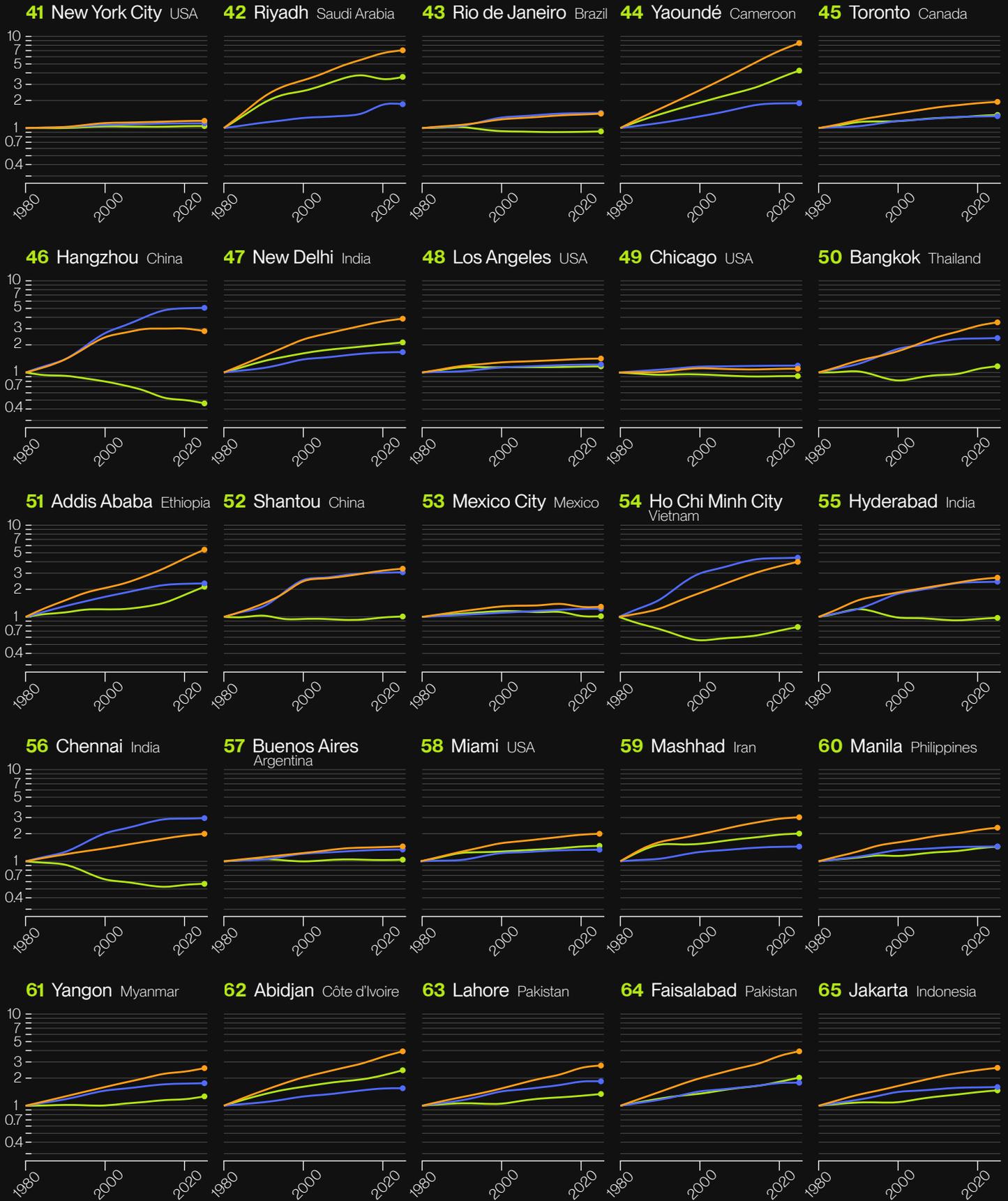
Built-up volume = total cubic meters of building volume

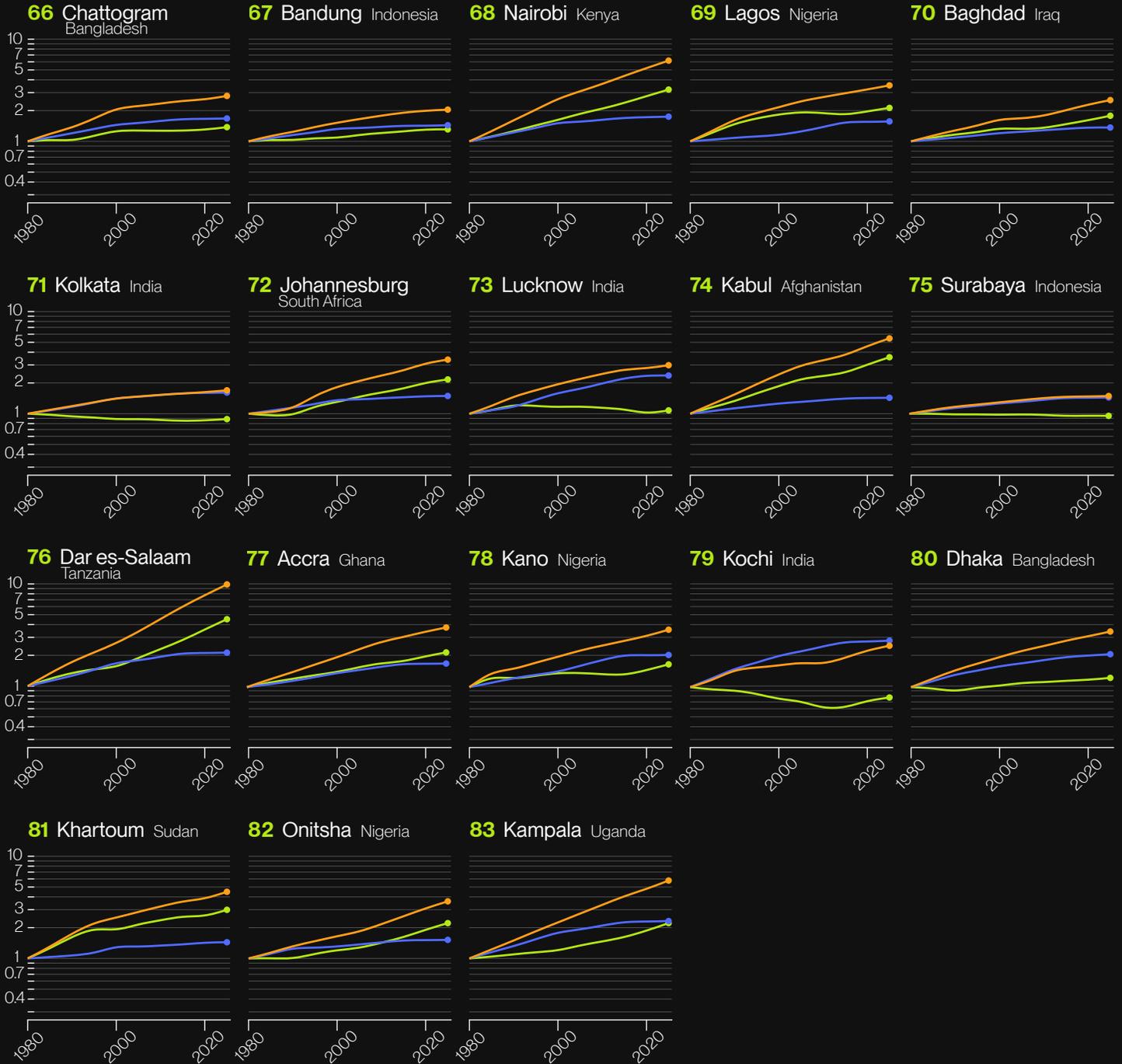
Real density = ratio of total population to total built-up surface

These charts shows how a city's **population**, **built volume**, and **real density** have changed relative to a shared baseline, with all values indexed to 1.0 in 1980. Values above 1 indicate growth compared to 1980. The Y-axis uses a logarithmic scale, allowing growth rates of very different magnitudes to be compared on the same chart. When population grows faster than built volume, real density rises; when built volume outpaces population, real density declines. Reading the three lines together shows whether growth is being absorbed through crowding, expansion of built form, or a balance of both.









Averages by Region



Conclusion: Rethinking Vertical Growth

The 2025 Vertical Urbanism Index underscores a central finding: how cities grow matters as much as how fast they grow. Across 83 urban areas and over four decades of data, this year's Index reveals that population growth, built-volume expansion, and real density have rarely advanced in tandem. Where these dimensions diverge, the consequences for livability and long-term sustainability are profound.

The results challenge several prevailing assumptions. Vertical development alone does not guarantee effective density, nor does density reliably translate into improved livability. In many rapidly growing cities, population increases outpace investments in service capacity, inflating real density without corresponding improvements in living conditions. In others, dramatic volumetric expansion disperses growth across expanding urban footprints, diluting density gains and reinforcing urban sprawl.

At the same time, the Index highlights a smaller set of cities—such as Singapore, Seoul, Tokyo, and parts of the Shenzhen–Guangzhou region—where vertical growth, density management, and livability outcomes remain more closely aligned. These cases demonstrate that balanced intensification is possible, but they also underscore that it requires coordinated planning, investment, and governance

Key Takeaways

- 1. Vertical growth is not a proxy for success.** Tall buildings do not singularly produce effective density or improved livability. Outcomes depend on how vertical development is integrated with infrastructure, services, and land-use policy.
- 2. Density can reflect both efficiency and stress.** Rising real density may indicate compact, efficient urban form, or it may signal overcrowding and underinvestment. Understanding the drivers behind density growth is essential.
- 3. Population growth often outpaces built capacity.** In fast-growing cities, population increases continue to exceed gains in built volume, placing sustained pressure on housing, transit, and public space.
- 4. Volume-led expansion can dilute density gains.** Large increases in built volume do not translate into higher density if growth is absorbed through outward expansion rather than intensification.
- 5. Balanced intensification is possible but rare.** A small group of cities demonstrate that vertical development, density management, and livability can advance together. These outcomes require long-term intergovernmental coordination across planning and political systems.
- 6. How cities grow matters more than how tall they build.** The Vertical Urbanism Index shifts the focus from symbolic height to structural urban performance, highlighting growth trajectories rather than static end states.

capacity. To be clear, such outcomes are the exception, not the norm.

Shifting emphasis from height thresholds to cumulative volumetric growth, the 2025 Index offers a more globally representative lens on contemporary urbanization, particularly in the developing megacities of the Global South that are reshaping the future of urbanity at unprecedented scale. Rather than prescribing a single model of success, the Index provides a comparative framework for understanding the trade-offs embedded in different growth trajectories.

As cities continue to confront mounting demographic, environmental, and affordability pressures, the Vertical Urbanism Index serves as a tool for reframing the conversation: away from tall building-oriented symbolism and toward the deeper structural relationships between built form, population, and lived experience. Future editions of the Index will continue to refine this framework, offering the industry a clearer view of what vertical urbanization achieves and where it falls short.

For questions or feedback about the contents or data used in this report, contact CVU's Research and Thought Leadership team at research@cvu.org.

Implications for Policymakers

- 1. Plan for capacity, not just height.** Tall buildings alone do not resolve growth pressures. Policies should focus on increasing usable overall built volume in locations already supported by transit, utilities, and social infrastructure.
- 2. Distinguish healthy density from overcrowding.** Rising density metrics should trigger closer evaluation of housing conditions, service capacity, and public space, and should not be treated as evidence of success in isolation.
- 3. Align new vertical growth with new infrastructure investment.** Cities that pair vertical development with proportional investment in transit, utilities, schools, and healthcare consistently perform better on livability outcomes.
- 4. Avoid volume-led sprawl.** Large increases in built volume diffuse density gains if said growth is absorbed through outward expansion. Zoning and land-use policies should prioritize intensification of existing developed land over peripheral growth.
- 5. Use trajectory-based metrics to guide decisions.** Monitoring how population, built volume, and real density are evolving together over time provides more actionable insight than static benchmarks.
- 6. Context matters.** Effective vertical urbanism depends on governance capacity, market conditions, and demographic trends. Policymakers should adapt strategies to local growth dynamics rather than replicating high-profile global examples.