In collaboration with C. H. Chen Institute for Global Real Estate Finance New York University Stern School of Business

Reimagining Real Estate: A Framework for the Future

INSIGHT REPORT

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Foreword

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During the COVID-19 pandemic's unprecedented economic and societal disruption, the World Economic Forum's Real Estate CEO community developed *A Framework for the Future of Real Estate*, which presented a vision for buildings and cities to be more liveable, sustainable, resilient and affordable.

The years since the 2021 publication have been punctuated by escalating geopolitical conflict, challenges to political stability and the strength of democratic institutions, an unprecedented hike in interest rates across many major markets and the proliferation of artificial intelligence (AI) into the mainstream lexicon.

While we could not fully anticipate every nuance of the sector's rapid evolution between the original Framework and this current iteration, we sensed a clear moment of opportunity at the inflexion of the global fight to tame inflation. The time felt right to revisit the original body of work and update the 2021 version to ensure the global real estate industry's continued advancement of the vision.

Progress towards that vision has been measured, and while forward momentum is evident in some areas, others are more accurately characterized by stagnation or even regression. This dynamic is not solely attributable to market participants but is also a reflection of the increasingly complex public and private landscape. Ultimately, it should serve as another clarion call to reinforce the vision and recalibrate the framework for evolving market conditions.

We hope this next iteration of the framework will underscore the urgency and importance of delivering on our commitments in the built environment and the role that real estate plays – as an asset class, as physical infrastructure and as an enabler of our economic and social goals – in the broader global context.

Executive summary

Liveability, sustainability, resilience and affordability are essential for real estate to advance our shared future.

Responding to the profound impact of COVID-19 on economies and populations globally, the World Economic Forum introduced *A Framework for the Future of Real Estate* in 2021. Reflecting insights from a global community of forward-looking real estate leaders, the framework set a vision consisting of four pillars: liveability, sustainability, resilience and affordability.

Since then, communities worldwide have embraced new ways of living, working and using technology, often impacting real estate. Meanwhile, developers, investors, lenders and others face headwinds from a redrawn capital markets landscape driven by central banks' response to inflation. Despite these shifts, liveability, sustainability, resilience and affordability remain key to long-term value and shared prosperity.

This framework draws from interviews with industry leaders and outlines specific calls to action for both the public and private sectors to drive progress.

Public sector actions:

Clear and standardized regulatory frameworks: Transparent laws, streamlined zoning and permitting processes, and reduced bureaucracy boost confidence and efficiency in real estate markets.

Encouraging an information-rich market: Promoting data accessibility, standardized reporting and mandatory disclosures reduces information asymmetries, enabling a competitive and efficient market.

Infrastructure development: Investments in transport, utilities and public spaces improve returns on collocated real estate.

Financial market stability and access to capital: Policies encouraging a diverse array of capital market participants, including banks, private lenders and institutional investors, help ensure resilience across economic cycles.

Financial incentives: Strategic deployment of tax incentives, grants and discounted credit instruments can attract private investment, especially in underdeveloped areas or for affordable housing.

Economic stability and growth: Policies that promote sustainable growth, job creation and income stability attract private capital and boost demand for residential and commercial properties.

Private sector actions:

Leadership and accountability: Embedding the framework's pillars into organizational goals and performance metrics ensures alignment and collaboration across teams.

Information, measurement and disclosure: Using advanced analytics, artificial intelligence (AI) and property technology (proptech) can improve decision-making and reporting. Comprehensive disclosures on property performance, sustainability and market trends build investor confidence and facilitate efficient resource allocation.

Technology: Technologies like smart building systems, AI-driven energy management and predictive analytics can enhance occupant experiences, optimize energy use and reduce operational costs.

Capital markets: A robust capital stack with traditional and non-traditional debt and equity is key to handling cash flow and valuation disruptions. Higher reserves, conservative loan-to-value (LTV) ratios, stringent reporting, and hedging tools can mitigate risks and support financial stability. Diversified portfolios should be a priority for lenders and investors.

Resilience and sustainability criteria: By prioritizing assets that meet high environmental standards and exhibit adaptability to evolving market needs, investors can create portfolios that are not only more sustainable but also more attractive and liquid in the long term.

By focusing on these actions among others, the real estate sector can adapt to evolving challenges while driving sustainable, long-term growth. The alignment of public and private efforts around shared goals ensures a more resilient, inclusive and forward-looking real estate ecosystem.

Introduction

The value of real estate assets exceeds global debt and equity markets combined, making it the world's most significant store of wealth.

$379 trillion

The value of global real estate in 2022 – more than all equities and debt securities combined.

The growth of institutional investment in real estate, which dates back to the mid-20th century, has reshaped cities and economies and raised the profile of real estate to one of significant, systemic importance. In 2022, all global real estate (residential and commercial real estate plus agricultural land) totalled $379.7 trillion, making it more valuable than all equities ($98.9 trillion) and debt securities ($129.8 trillion) combined and almost four times that of global gross domestic product (GDP) ($100.6 trillion).[1]

Given the sector's scale, scope and its foundational role in business and social activity, broader market stability is reliant on a well-functioning and well-capitalized real estate ecosystem. Previous economic shocks, such as the 2008 global financial crisis, when banks were over-exposed to a range of real estate debt, underscore its systemic importance and the influence of real estate capital markets on both Wall Street and Main Street.

Pension funds, insurance companies, sovereign wealth funds and other large institutions have sought exposure to real estate to hedge inflation, provide diversification from equities and fixed income, and generate reliable income streams. Even amid surging inflation and an unprecedented velocity of interest rate hikes, real estate broadly delivered on these investment theses, and long-term allocations to the asset class remain stable as inflation has subsided.

Buffeted in recent years by changing patterns of space use – a phenomenon especially prominent in the office sector in Western economies – and abrupt swings in capital markets, the sector is now on the cusp of unprecedented renewal. That renewal will depend on substantial reinvestment in public and private spaces, a sharper focus on sustainability and resilience, and prioritization of affordability and liveability goals.

What's changed:

The 2021 framework necessarily addressed the immediate challenges presented by the COVID-19 pandemic, including a dramatic decline in commercial real estate development and investment activity. Looking past the COVID-19 pandemic, the framework also presented the crisis as a catalyst for investment in liveable, sustainable, resilient and affordable real estate.

FIGURE 1 **Vision for the future of real estate: key pillars**

Key pillars

Liveability	Sustainability	Resilience	Affordability
Human-centric and smart spaces in support of health, well-being, equity and productivity	Resource-efficient and decarbonized spaces that deliver environmental, economic and social benefits	Future-proofed cities and buildings that mitigate and are prepared for a wide-range of risks, from environmental to economic	Inclusive and accessible spaces that minimize the effects of inequality and support access to economic opportunity and social capital

Source: BCG, based on discussions with World Economic Forum partners.

“ Uncertainty regarding the future remains a fixed feature of the market, underscoring the importance of resilience – and adaptability.

Liveability addressed healthy, human-centric and smart spaces, in part capturing a heightened focus on well-being during the pandemic. Sustainability addressed building decarbonization and energy efficiency, with a focus on reducing whole life-cycle carbon emissions. Resilience went well beyond any narrow focus on physical climate risk to include risks ranging from functional and competitive obsolescence to public health shocks. The discussion of affordability reflected the pervasiveness of housing shortages in urban centres around the world and the pernicious impact of high housing costs on social and economic mobility, health and well-being, and other outcomes.

Progress towards the frameworks' stated goals would not be automatic. It also articulated a clear set of enablers, relevant across the public and private sectors and across buildings and whole communities. These enablers included guidance in traditional areas such as stakeholder engagement and investment in talent across the spectrum of real estate's workforce needs. They also included a focus on asset monetization, transparency and innovative but prudent financing, harking back to lessons learned from the 2008 global financial crisis.

Years before artificial intelligence (AI) and large language models emerged into the everyday vocabulary of real estate industry professionals, the framework anticipated a growing role for technology and innovation. The original framework did not anticipate every feature of the global recovery from the COVID-19 pandemic, nor could it have. In particular, the dramatic shift in the capital markets environment was not among the prospective headwinds catalogued by decision-makers in the public or private spheres at the time. Similarly, the challenges associated with reimagining and recapitalizing spaces following a historically abrupt increase in the cost of financing were also unforeseen.

Additionally, the post-COVID-19 pandemic era has been marked by escalating geopolitical tensions. Given the fundamental dependency of real estate asset values on their specific locations, governance changes or outright conflicts can have a profound impact on returns. Supply chain breakages, ever-more-observable climate pressures, reliance on energy imports, global migration patterns and other factors have motivated states to pursue more protectionist or even nationalist policies. In some cases, investment decisions are increasingly motivated by political considerations in areas ranging from capital allocations to the de-prioritization of sustainability criteria in investment evaluation.

Over four years from the start of the COVID-19 pandemic, real estate market participants have a better sense of the scope, scale and speed of disruption to traditional real estate investment. However, uncertainty regarding the future remains a fixed feature of the market, underscoring the importance of resilience – and adaptability – as one of the framework's core features.

It reflects the prescience of the original framework's authors that the vision at the heart of this report is the same. The focus on the key pillars of liveability, sustainability, resilience and affordability captures that these goals transcend the cyclical features of the market or any particular shock. It also reflects that, as the industry has contended with the immediate challenges of a changed capital markets environment and rapidly evolving demand preferences, only modest progress has often been made towards its goals.

1 Shifting demand

The lines between spaces for living, working and leisure are blurring, driving the need for innovation and adaptation.

The human relationship with buildings and cities is undergoing a deep and lasting transformation. Around the world, people are rethinking the purpose and function of the spaces they live, work and socialize in, leading to a shift in how office, residential, retail and other property types are designed and used. No longer seen as fixed, singular-use structures, buildings are increasingly being viewed as flexible, multi-purpose environments that can adapt to the changing needs of individuals, communities and economies.

In cities across Europe, North America, Asia and Africa, there is a growing understanding that buildings constructed or improved today must be more human-centric, prioritizing the well-being of their users and cultivating social connectivity.

1.1 Demographic drivers

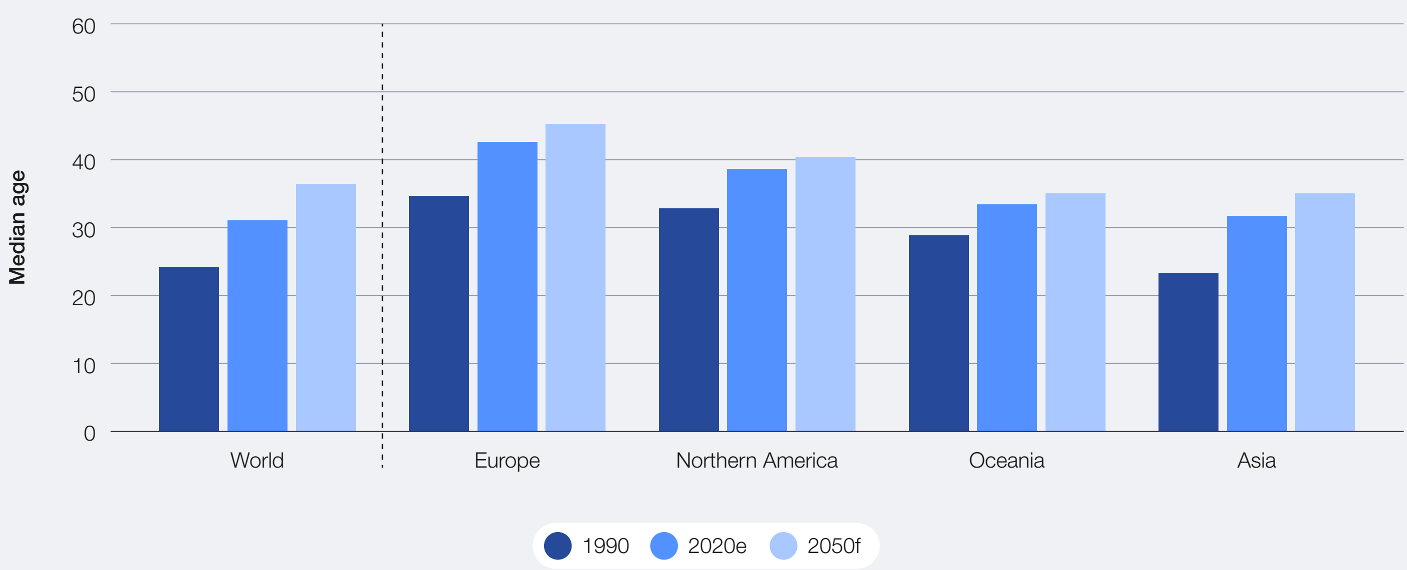
Demographic trends are a major driver of changing demand for space, particularly generational differences. Ageing populations in developed economies and younger, fast-growing populations across much of the Global South are poised to significantly influence real estate development and investment. Younger generations are demanding more flexible and affordable living arrangements, with many preferring vibrant, mixed-use neighbourhoods over traditional, single-use developments and paying attention to sustainability criteria.

As populations age, particularly in Europe, Asia Pacific and North America, the demand for properties that cater to older adults is expected to surge. This shift will bring a heightened focus on healthcare facilities, senior living accommodations and appropriately amenitized housing in support of liveability goals. Real estate developers will need to incorporate features such as accessibility, safety and proximity to medical services while also responding to a growing preference in some regions for "ageing in place", which emphasizes residential adaptability to accommodate seniors who prefer to remain in their homes.

Infrastructure investment priorities will also shift to accommodate an ageing population. Mobility and accessibility will be key concerns, with increased investment in transport infrastructure that supports easy, barrier-free movement for older individuals. Additionally, healthcare infrastructure will require expansion, not only to meet the demand for medical facilities but also to ensure that such services are equitably distributed, particularly in regions where ageing populations are more concentrated.

Looking forward, the success of real estate developments will increasingly depend on their ability to adapt to changing circumstances and meet a wide range of user needs. This will require real estate developers, investors and city planners to adopt innovative approaches and think creatively about how spaces can be reconfigured, repurposed and optimized over time.

FIGURE 2 **Median age of the population by region**



Source: United Nations. (2022). *World Population Prospects 2022.*

1.2 An asset class view

> **In recent years, performance has diverged across property types, with some showing resilience and others facing headwinds.**

The outlook for commercial real estate varies significantly across property types, regions and submarkets, reflecting each sector's unique characteristics alongside broader market trends. In recent years, performance has diverged across property types, with some showing resilience and others facing headwinds.

The office sector has received the most attention with regard to demand shifts, as the complexities of changing work patterns reshape the use of office space worldwide. Return-to-office rates differ by region, with Asia leading and many US markets still recovering or stabilizing below pre-pandemic levels. Despite this variance, hybrid work models are prevalent, vacancy rates remain high in many areas and demand for traditional office space has weakened. However, newer office properties in key global hubs, with tenant-responsive amenities and that are well-located relative to transport, including in cities like New York, London, Singapore and Tokyo, continue to perform relatively well as they attract tenants who prioritize premium locations, sustainability and flexibility. These properties, often referred to as Class A, are considered "flight-to-quality" assets, offering amenities and configurations that appeal to companies seeking to enhance their office environments and attract and retain talent. Vacancy rates for these high-quality spaces are lower, and rental rates have been stable, driven by demand from firms looking to upgrade their workspace as part of a broader talent strategy.

In contrast, Class B and C office buildings, which are typically older office properties with more limited amenities and at greater distances from transport hubs, are underperforming significantly. These properties often lack the modern amenities, environmental credentials and flexibility that today's tenants demand, making them less competitive in the current market. Many of these older buildings are at risk of obsolescence, struggling with high vacancy rates and downward pressure on rents. In cities across North America, Europe and Asia, building owners are exploring alternatives, including conversions to residential or mixed-use properties, particularly in regions with high office supply and low residential availability. However, the feasibility of such conversions varies significantly depending on vacancy rates, building structures, local market dynamics and regulatory environments, with some regions facing challenges in adapting older properties due to zoning restrictions or high retrofit costs.

The retail sector is also undergoing a nuanced transformation across global markets, which began years before the pandemic. Prime high-street locations and experiential retail spaces are seeing a resurgence, particularly in regions where consumers have returned to in-person shopping with a focus on integrated dining, entertainment and lifestyle offerings. Major urban centres like Paris, Hong Kong and Johannesburg are experiencing strong performance in these segments, as well-located retail properties adapt to provide experiences beyond traditional shopping. Community and neighbourhood shopping centres are another area of resilience – particularly in regions like the Middle East and Latin America – benefiting from their essential-service anchors, such as grocery stores, which attract consistent foot traffic. These locations have demonstrated stability, supported by a reliable customer base and growing demand for convenient retail options.

> There is an increasing crossover between real estate and emerging infrastructure asset types such as data centres.

In contrast, regional malls and big-box retail centres face ongoing structural challenges worldwide. High vacancy rates and declining rents are common as these properties struggle to compete with e-commerce and adapt to shifting consumer preferences. In response, some owners are reimagining these spaces, repurposing underperforming retail assets as logistics hubs or incorporating healthcare and residential uses where feasible. The success of such redevelopments varies by location, with regions like North America and parts of Europe leading in adaptive reuse, while other markets are still exploring viable strategies for revitalizing traditional retail spaces in a way that aligns with local demand patterns.

Multifamily rental housing trends evince both regional distinctions and common global challenges. In the US, the multifamily sector has recently seen a surge in new supply as developers have responded to growing demand; however, this influx is expected to be absorbed in the coming years as population growth and ongoing housing needs sustain demand. Globally, housing affordability remains a persistent issue, with the gap between market-rate and affordable housing especially pronounced in high-density urban centres. Across Europe, Asia and Latin America, rising urbanization is straining existing housing supplies, pushing prices upward and intensifying affordability challenges for low- and middle-income households. In rapidly urbanizing regions in Asia and Africa, the demand for multifamily housing is rising, driven by younger populations migrating to cities for job opportunities and improved quality of life. As urban areas expand, ensuring an adequate supply of affordable multifamily housing has become an urgent priority worldwide, with cities aiming to address these shortages to create more inclusive and sustainable housing markets.

Mixed-use properties are increasingly important as they provide flexibility in urban environments where space is at a premium and consumer needs are diverse. Mixed-use developments combine residential, commercial, retail and sometimes industrial elements, creating vibrant, multi-functional spaces that enhance convenience and liveability. Cities across the globe – from New York and London to Dubai and Shanghai – are seeing the value of these integrated spaces, particularly as they support community-building and reduce travel times for residents. In regions like Latin America and South-East Asia, mixed-use properties are becoming a more accepted feature of urban planning, as they help alleviate housing shortages while providing accessible amenities. By combining multiple uses, these developments contribute to urban resilience, enabling adaptability in response to shifts in market demand, whether for office, retail or residential space.

The demand for data centres continues to grow globally as digital transformation accelerates across all industries, fuelled by increasing data storage and processing needs. Key regions such as North America, Europe and East Asia remain hotspots for data centre investment, with established technology hubs like Virginia, Frankfurt and Singapore leading the way. However, emerging markets in regions like South-East Asia and Africa are also seeing growth as businesses and governments expand digital infrastructure to support economic development. These data centres are often located close to urban areas to reduce latency and improve service delivery, making connectivity to robust power grids and cooling resources critical. The rising focus on energy efficiency and sustainable operations is driving investments in renewable energy and water-saving technologies in data centres, aligning with broader environmental goals.

Beyond traditional infrastructure, including roads, bridges and telecommunications, there is an increasing crossover between real estate and emerging infrastructure asset types such as data centres. Some investors consider certain asset types like life sciences to be real estate, whereas others include them in infrastructure. There may be a need in the future for more formal integration. Buildings are also increasingly seen as potential providers of infrastructure, for example, through the provision of electric vehicle charging.

2

Global markets

Consistently attracting private capital is essential for delivering a better built environment.

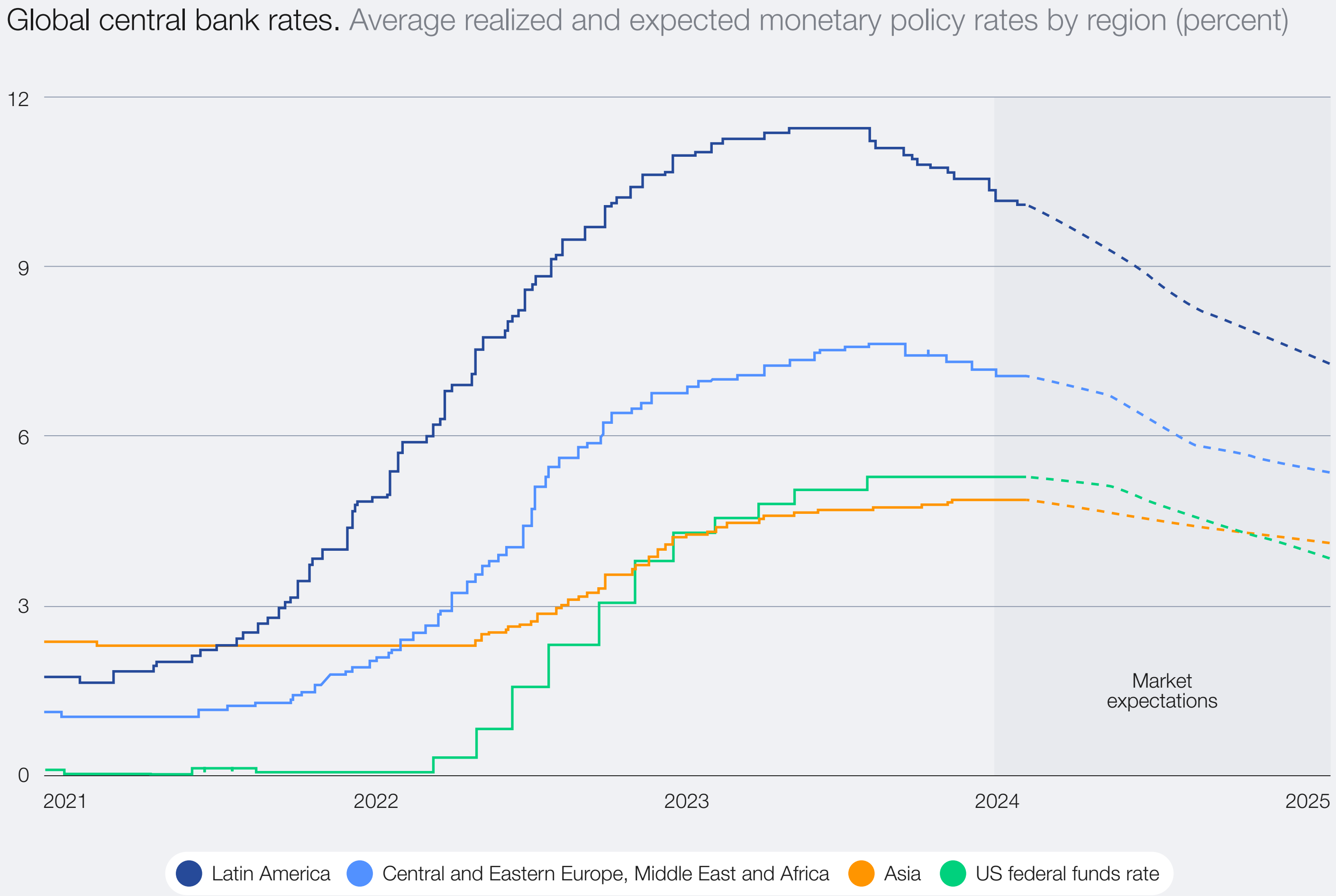
The commercial real estate capital markets have experienced significant challenges in recent years, with a historically abrupt increase in the cost of capital, reduced availability of financing and general economic uncertainty amid shifting demand for space. The impact of these factors has been felt globally, as rising borrowing costs and changing investor sentiment have created a turbulent environment for transactions and capital allocation. However, as the world enters a new phase of economic stabilization and anticipates a more favourable interest rate environment, the outlook for real estate capital markets is improving. In advancing the framework's vision, favourable capital markets are an essential condition, as progress depends on consistently attracting private capital.

2.1 Capital markets

Recent challenges:

Over the past few years, global real estate capital markets have navigated through a period marked by economic instability, high inflation and geopolitical uncertainties. A primary challenge has been the rapid rise in interest rates, which has affected the cost of capital and reduced access to financing for both existing assets and new developments. To combat inflation, the Federal Reserve and other central banks around the world have implemented aggressive monetary policies, resulting in elevated borrowing costs that have put pressure on the real estate sector. Higher interest rates have increased the cost of financing, leading to lower asset valuations and a slowdown in transaction activity. These forces have fomented a challenging environment for owners and investors, compelling them to reassess asset performance, re-evaluate portfolios and recalibrate capital strategies to better align with these new market dynamics and build resilience into the capital stack.

FIGURE 3 **Central bank policy rates**

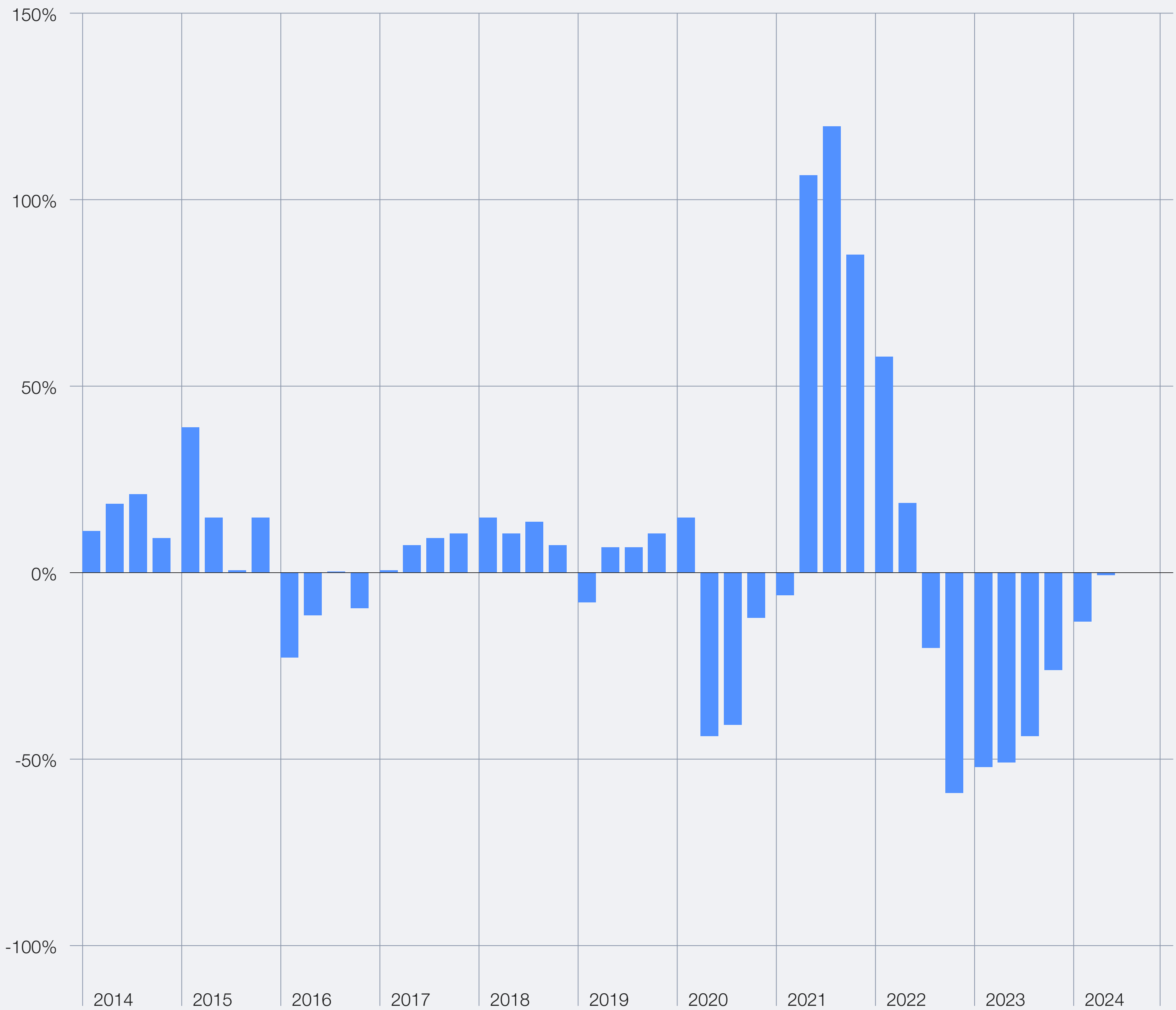


Source: Adrian, T., Natalucci, F. & Wu, J. (2024, 31 January). *Emerging Markets Navigate Global Interest Rate Volatility*. International Monetary Fund (IMF). https://www.imf.org/en/Blogs/Articles/2024/01/31/emerging-markets-navigate-global-interest-rate-volatility.

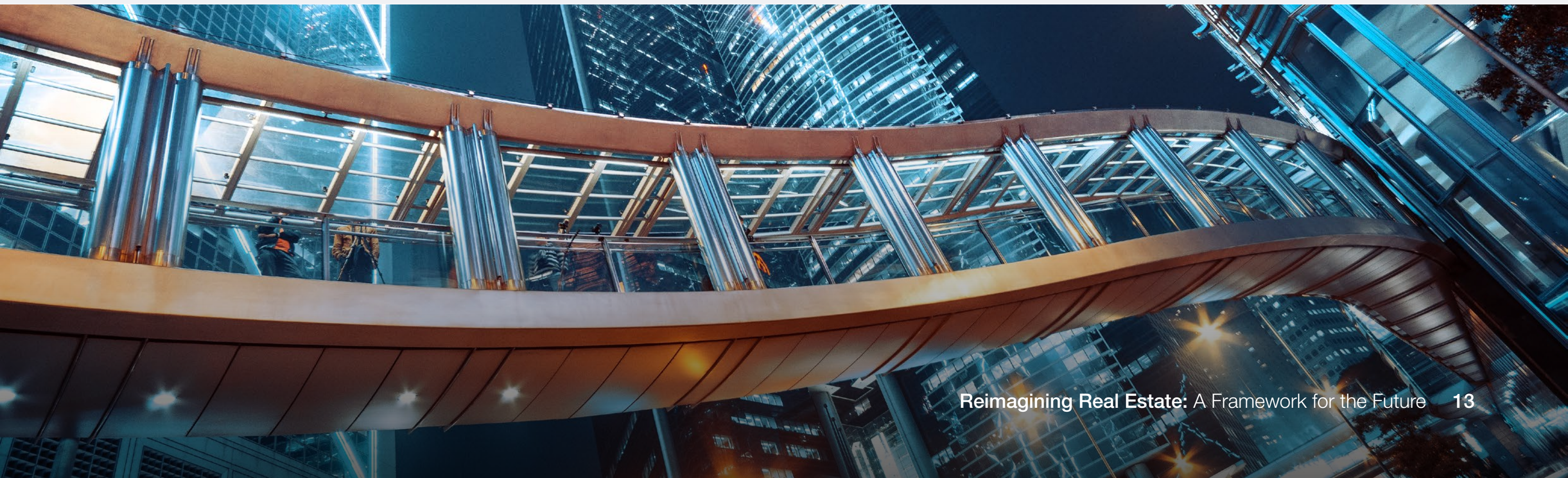
FIGURE 4 | **Global commercial real estate investment volumes**

Following a sharp rise in interest rates, global commercial real estate investment volume fell beginning in 2022 through 2023. The market subsequently stabilized and as short-term interest rates ease and investors' bid-ask spreads narrow, the market is poised for a period of recovery and growth. Buyers seeking to deploy capital, both for performing and distressed assets, are foundational to a rebound in investment volumes.

Year-on-year volume change in quarterly transaction volume



Source: MSCI.



$400+
billion
in "dry powder" stood ready at the end of 2023.

Despite these challenges, there are encouraging signs for global real estate in the equity and debt markets. With inflationary pressures stabilizing and central banks gradually shifting to more accommodative monetary policy, equity and debt are better poised to come off the sidelines. JLL's 2024 *Global Capital Markets Outlook* estimates that over $400 billion in "dry powder" stood ready at the end of 2023,[2] positioning institutional investors to re-engage the market, including in higher-yielding and value-add sectors of real estate.

Balancing the improving investment outlook, challenges in the cost and availability of debt continue to weigh on capital markets. Even as short-term rates ease, high financing costs pose significant barriers. In some instances, negative leverage has emerged, where rental yields no longer exceed financing costs, prompting institutional investors to pursue higher-return strategies or consider flexible capital structures to sustain returns. This recalibration is echoed by a more selective approach from lenders, who are increasingly cautious, requiring reduced loan-to-value (LTV) ratios and stringent debt-service coverage. This shift in lender priorities is directly impacting capital flows, as lenders favour low-risk, high-quality assets that can withstand economic volatility.

Private credit has emerged as a vital component in bridging capital gaps in real estate financing, particularly in areas where traditional lending remains constrained. Debt funds and private credit vehicles are increasingly significant, including in Asia-Pacific, where they are attracting global capital in search of diversification. As private credit expands across the capital stack with structures like mezzanine financing, preferred equity and distressed debt, it is providing investors with greater flexibility while simultaneously supporting market liquidity and stability. The growth of private credit reflects a broader evolution in real estate capital markets, offering innovative financing solutions that help sustain investment momentum and underpin market recovery across various global markets.

Price discovery remains an ongoing challenge, particularly for the office market, where the limited volume of recent transactions has made it difficult to determine accurate market values. This challenge is most pronounced in markets like New York and San Francisco, where hybrid work arrangements have disrupted traditional office demand. Furthermore, valuation gaps are apparent between public and private real estate markets, where liquidity and valuation cycles diverge. Public real estate investment trusts (REITs), which internalize market sentiment more observably, often experience immediate and volatile price adjustments compared to private market assets, which adjust more slowly due to infrequent trades and long-term capital commitments. As transaction volumes gradually increase, these valuation discrepancies are expected to narrow, although the pace of alignment will vary by asset class and region.

FIGURE 5 **US listed REIT returns versus private commercial real estate returns (cumulative total)**

Note: 1. Listed REITs are often a leading indicator for private commercial real estate. Listed real estate bottomed in 2023 while private was still climbing. Starting in late 2023, listed began recovering while private began hitting its trough. **2.** The NCREIF Fund Index – Open End Diversified Core Equity (NFI-ODCE), a commonly referenced benchmark for private real estate that tracks 25 open-end funds owning core commercial real estate, has declined for six straight quarters.
Source: NCREIF, Bloomberg, Cohen & Steers.

The tightening of lending conditions, while showing signs of easing, has made it more difficult for investors to secure traditional financing prompting a rise in the use of alternative financing structures.

Key trends shaping the future of commercial real estate investment:

Shifts in capital allocation and investment strategies: The post-COVID-19 pandemic volatility in commercial real estate capital markets led many investors to adjust their strategies. Institutional investors and lenders, in particular, tended to became more selective during the market's nadir, focusing on assets that offered long-term growth potential and stability – often referred to as core and core plus. These categories traditionally encompass stable, income-generating assets, which have historically included office buildings. Recent shifts in demand preferences and market fundamentals described earlier have strongly influenced the risk perception of those asset classes. As a result, while investors remain drawn to core and core plus for their relative safety, there is heightened scrutiny of what qualifies as "core" in today's environment and alternative asset classes are expected to attract increasing attention. Meanwhile, higher-risk strategies such as value-add and opportunistic investments – which involve enhancing or substantially repositioning assets with an expectation of greater returns – may attract renewed interest as risk-aversion abates with market recovery.

At the same time, there is growing recognition of the need for pricing of climate risk and related insurance costs in asset values. These include more careful assessments of physical and transition risks as sustainability and resilience become increasingly important criteria for investment decisions.

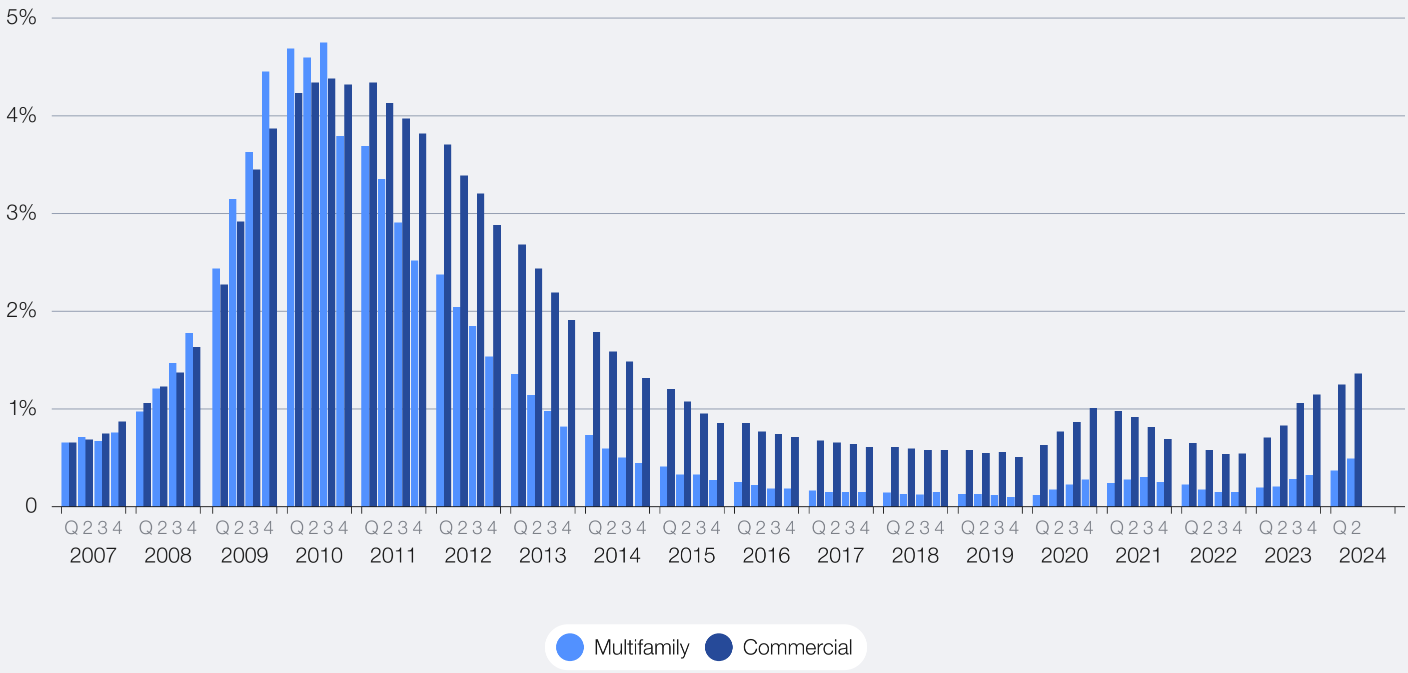
An evolving environmental, social and governance landscape: Overall, environmental, social and governance (ESG) has become a focal point for both businesses and governments striving to meet global sustainability goals. However, in some parts of the world, ESG has also become highly politicized, leading to polarization that impedes progress towards the framework's vision. Opponents of ESG frameworks might argue that they prioritize social or environmental goals at the expense of economic growth, job creation or energy independence. This politicization can lead to regulatory pushback, as seen in certain US states, where legislation has been introduced to limit or outright ban the consideration of ESG factors in investment decisions. Such measures hinder the ability of businesses and investors to fully align with sustainability objectives, ultimately slowing down efforts to transition to more sustainable practices. The framing of ESG as a political or ideological issue rather than a pragmatic approach to long-term resilience, risk management and profitability creates unnecessary divisions, making it harder to build the consensus needed to address pressing global challenges and, often, to fulfil fiduciary duties.

Emergence of alternative asset classes: In response to the shifts in traditional property sectors, investors are exploring alternative asset classes that are less affected by economic cycles. Segments such as healthcare real estate, senior housing and student accommodation continue to gain traction, driven by demographic trends, stable demand and an exodus from more traditional asset classes like office. Additionally, technological advancements are creating new opportunities in areas like data centres, which are seeing increased demand due to the growth of cloud computing and AI applications.

Focus on debt and structured finance: The tightening of lending conditions, while showing signs of easing, has made it more difficult for investors to secure traditional financing, prompting a rise in the use of alternative financing structures. Private lenders, debt funds and other non-bank financial institutions are stepping in to fill the gap left by traditional lenders, offering mezzanine financing, preferred equity and other creative capital solutions. While lending standards have eased for many high-quality borrowers and assets, and commercial mortgage-backed security (CMBS) issuance activity has recovered somewhat in the US, the shift to a more diversified lending landscape is expected to continue. Distress will remain a driver of these outcomes for the foreseeable future, with investors seeking flexible financing options in support of acquisitions and refinancing as banks and other legacy lenders work through varying levels of distress, consolidation and refinancing hurdles for seasoned loans.

The outlook for distress in regional banks' commercial real estate loans in the US reflects ongoing adjustments in the banking sector, but recent signs suggest a gradual improvement. Regional banks are key capital providers to commercial real estate and typically have more sizeable exposure to real estate than larger banks. According to 2023 FDIC data, the largest banks ($160 billion plus in assets) had a total of 4.4% total direct exposure to real estate (multifamily, commercial and construction loans), while banks with assets between $10-160 billion had 17.8% total direct exposure.[3] While regional banks are still managing a portfolio of distressed loans, and that portfolio may increase in size, there are indications that underwriting standards for new loans are beginning to ease. This shift comes as different classes of lenders cautiously return to levels of activity approaching pre-COVID-19 pandemic norms, providing increased liquidity to the market. While lending remains selective, particularly for assets in weaker segments, easing standards is expected to facilitate refinancing for stabilized properties and new acquisitions. As this gradual recovery unfolds, distressed asset sales and loan workouts may taper, though the pace will depend on broader economic conditions and how effectively banks can manage their exposure across different asset classes.

FIGURE 6 | US multifamily and commercial real estate quarterly loan default



Source: Federal Deposit Insurance Corporation (FDIC).

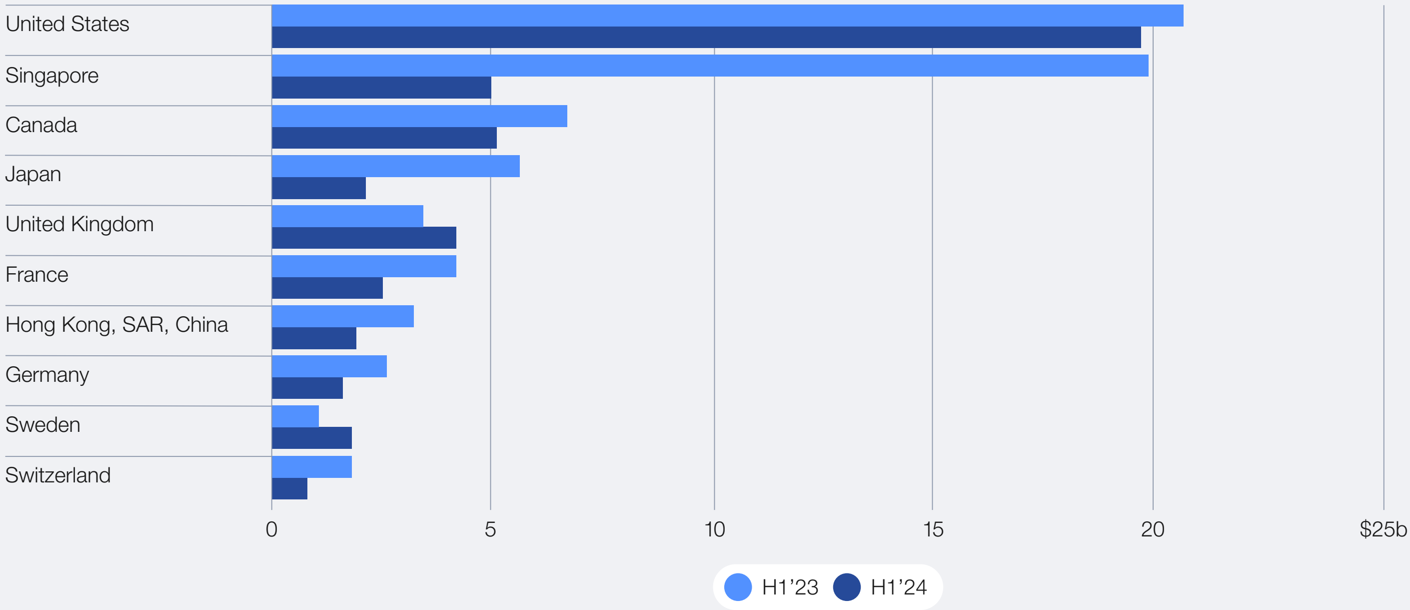
Regional variation in commercial real estate markets:

The outlook for commercial real estate capital markets varies significantly across regions, reflecting differences in economic conditions, regulatory environments and market maturity. In North America, the focus has been on navigating the challenges of high interest rates and adapting to changes in demand for office and retail space. The industrial and multifamily sectors remain strong, supported by solid fundamentals and investor confidence.

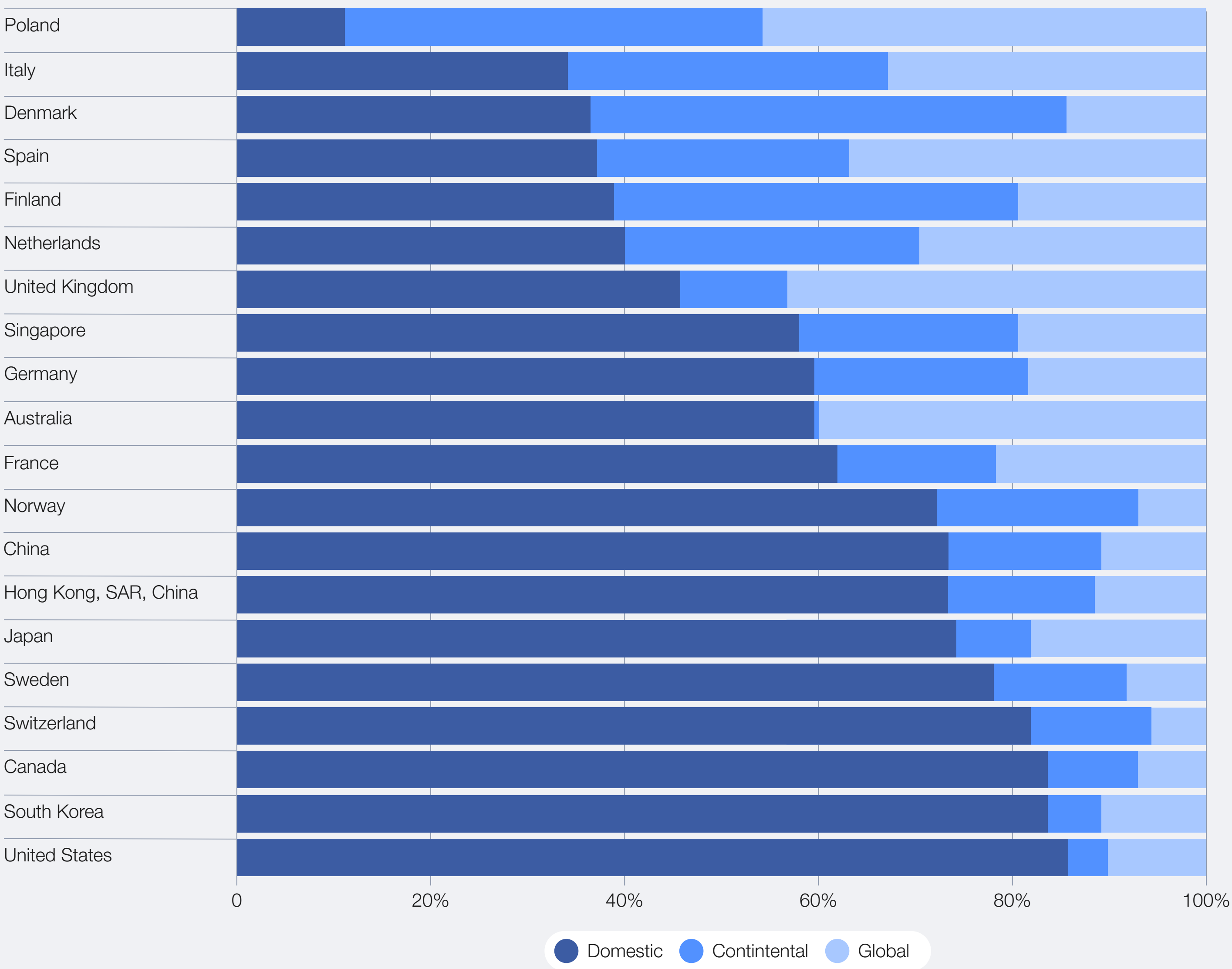
Cross-border investment in real estate continues to play a significant role in global markets, with the United States, Canada, Japan, Singapore and others accounting for a substantial share of cross-border capital flows. While cross-border investors' share of activity varies widely across regions, their impact is notable in major markets, especially in Europe and Asia-Pacific. In the US, cross-border investment represents a smaller percentage of overall real estate activity, but the dollar volume is considerable. Regional differences reflect diverse market dynamics and regulatory environments, with cross-border investors gravitating towards liquid, transparent markets with favourable governance and investment conditions.

FIGURE 7 | **Cross-border investment: key sources and global distribution of capital**

Top sources of cross-border capital



Share of overseas capital in the top 20 global markets



Source: MSCI.

The global commercial real estate capital markets are poised for a period of gradual recovery and stabilization as interest rates moderate and investor sentiment improves.

In Europe, the commercial real estate market is grappling with economic uncertainty related to energy costs, the monetary policy response to inflation and geopolitical risks. However, prime assets in major cities such as London, Paris and Berlin continue to attract capital, particularly from institutional investors seeking safe-haven investments.

In the Asia-Pacific region, the outlook is mixed. Markets such as Singapore and Sydney are benefitting from robust demand for logistics and office space, while emerging markets like India and Viet Nam are seeing increased interest from foreign investors seeking growth opportunities. However, concerns about an economic slowdown in China, rooted in a downturn in the residential real estate sector and over-levered developers, are tempering optimism, particularly in the office and retail sectors.

The global commercial real estate capital markets are poised for a period of gradual recovery and stabilization as interest rates moderate and investor sentiment improves. While the challenges of the past few years have reshaped the investment landscape, they have also created opportunities for those willing to adapt to new realities. Moving forward, investors will need to be agile, focusing on sectors and regions that offer resilience and growth potential. Through innovative financing structures and embracing sustainability, the commercial real estate industry can navigate this transitional period and emerge stronger in the years to come.

The outlook for commercial real estate capital markets is ultimately one of cautious optimism, with a recognition that the path to recovery will be uneven and subject to ongoing economic and geopolitical uncertainties. Nonetheless, for investors with a long-term perspective and a willingness to embrace change, the opportunities in global real estate remain compelling.

2.2 The role of fiscal stability in urban investment

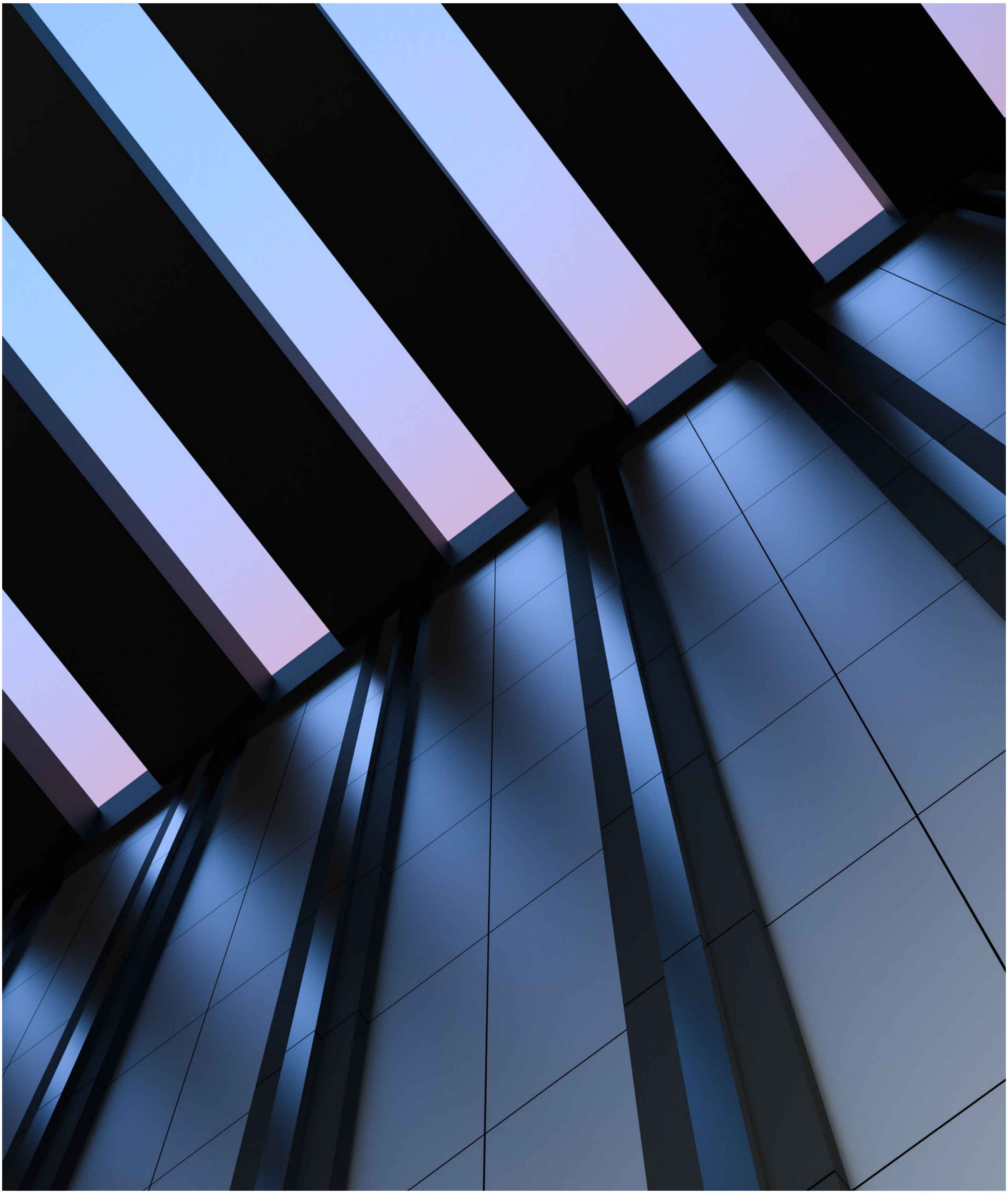
Just as stability in the real estate capital markets is an essential condition for investment, sovereign fiscal stability is also necessary to drive investment in real estate. Global cities are at a pivotal point as they navigate an increasingly complex and dynamic environment characterized by rapid urbanization, evolving demographics, climate challenges and technological advancements. To maintain competitiveness, enhance resilience and create an enabling environment for real estate investment, cities must prioritize key areas such as infrastructure, governance, housing affordability and sustainability. These areas require significant public funding along with the ability to attract private capital. According to a recent report by PGIM, 53 cities across the US lack adequate funds to cover their bills,[4] and both China and the UK have struggled with municipal financing challenges.

The World Economic Forum's 2022 report, *Rethinking City Revenue and Finance*, highlights critical financial obstacles, including limited local revenue sources, dependency on intergovernmental transfers and challenges in mobilizing private investment. This reliance on external funding can create vulnerabilities, as such funds are unpredictable or politically influenced. Moreover, urban infrastructure needs, driven by rapid population growth and climate resilience goals, further strain budgets and complicate long-term financial planning.

Mitigating these fiscal challenges requires cities to adopt diversified revenue sources and innovative financing models. For example, cities can expand their tax bases through property and land value capture mechanisms, such as development rights charges or tax-increment financing. By leveraging these approaches, cities can create more resilient and sustainable fiscal frameworks to support long-term growth and development.

3 The pillars

Investment in buildings that are more liveable, sustainable, resilient and affordable has never been more urgent.



Liveability, sustainability, resilience and affordability are necessary features of economies and communities at every level and require private-sector engagement with the public sector. This section outlines the key issues and challenges to realizing each pillar, along with strategic recommendations to drive progress.

3.1 Liveability

" Liveable cities of the future focus on compact, mixed-use developments that promote work-live-play models, cultivate social connections and provide equitable access to services.

Liveability refers to the combination of factors that enhance the comfort and well-being of individuals and communities at the level of individual assets and their larger communities. It encompasses human-centric and inclusive designs, where social, community and recreational facilities cater to the diverse needs of citizens. With most people spending up to 90% of their time indoors,[5] the quality and design of spaces significantly impact productivity, health and overall satisfaction. Liveable cities of the future focus on compact, mixed-use developments that promote work-live-play models, cultivate social connections and provide equitable access to services.

Key issues and challenges:

Flawed urban planning frameworks: Many urban planning frameworks lack adequate flexibility and appropriate levels of density. Some cities do not have robust planning regulations, leading to various consequences.

Urban sprawl: Cities and neighbourhoods that are designed around the use of private vehicles and have uses that are segmented, requiring increased travel.

Design limitations and poor space planning: Existing building designs that do not optimize space use or support occupant well-being.

Building material quality: The ubiquity of building materials, including furnishings, that are made with chemicals that harm indoor air quality and occupant health.

Strategic recommendations:

Community-centric development and flexible zoning: Mixed-use real estate and agile infrastructure are critical in enabling individuals to meet their daily needs without excessive transit times. By supporting flexible zoning that can help drive the integration of residential, commercial and recreational spaces, cities can promote vibrant communities where social interaction and accessibility are central.

Accessible essential services: Urban planning frameworks that ensure essential services like healthcare, education and retail are within walking distance from residential developments and close to public transit hubs. This reduces dependency on vehicles, removes stress from public transit infrastructure and lowers mobility-related emissions.

CASE STUDY 1

One Bangkok

Mixed-use development and proximity to economic opportunity, essential services and social connection are key components of liveability. One Bangkok, the largest integrated master-planned district in the city, demonstrates the success of mixed-use in driving foot traffic. One Bangkok attracts 90 million visitors annually and connects directly to the city's mass transit systems. With a gross floor area of 20 million square feet, the development includes offices, retail destinations, residential towers, hotels and a live entertainment arena, along with an extensive art and culture programme designed to be inclusive and accessible to the public.

With almost half of the development dedicated to green spaces, the public has better access to Lumphini Park and Benjakitti Park, forming a larger green canopy of almost 12 million square feet.

Source: Frasers Property

> Denser urban areas are often characterized by greater innovation, driven by the colocation of diverse populations, businesses and institutions.

Well-planned density: It is crucial to reframe density as a driver of liveable cities as it has myriad benefits, ranging from a reduction in transit-related carbon to helping increase housing supply. Baron Georges Eugène Haussmann's re-design of Paris in the 1800s is a testament to the potential for density as it continues to be a sought after global city. Density allows for more efficient use of infrastructure and public services, as concentrated populations make it economically viable to invest in amenities like public transit, parks and healthcare facilities near where people live. Denser urban areas are often characterized by greater innovation, driven by the colocation of diverse populations, businesses and institutions. Research shows that higher urban density is linked to increased innovation, as indicated by a 1.1% rise in patents per 1,000 people for every 10% increase in population density.[6] Frequent interactions among people from different backgrounds and fields spark new ideas and collaborations, creating a dynamic ecosystem of experimentation and entrepreneurship. This environment attracts forward-thinking companies and start-ups, accelerating innovation and positioning these cities as global leaders in technology, culture and business.

Hybrid work models and office space transformation: With hybrid work models remaining popular, offices are transitioning from static, desk-oriented environments to dynamic spaces designed for collaboration and creativity. The integration of technology plays a key role in this transformation, allowing seamless connectivity between remote and on-site employees. To enhance liveability, future office designs should focus on flexible work zones, co-working spaces and wellness-oriented features such as adjustable lighting and temperature controls. Co-working spaces are another solution poised for growth in liveable cities. With flexibility at the forefront, co-working provides businesses with the opportunity to scale up or down in response to changing needs, which is essential for facilitating economic growth in urban centres. These spaces are often more conveniently located than traditional offices, making them ideal for promoting the live-work-play balance crucial to modern urban living.

Spaces that support well-being: Habitability should extend beyond basic needs to ensure that buildings are designed for comfort, health and well-being. This includes enhancing natural light, providing outdoor spaces and ensuring homes are built to withstand changing climate conditions. Inclusive design principles should also consider accessibility for people of all abilities, ensuring cities are welcoming to everyone.

CASE STUDY 2

Ghaf Woods

The provision of green space and proximity to nature, even in dense urban areas, is increasingly becoming a priority as the recognition of benefits from mental health to climate resilience increases. Spanning close to eight million square feet, Majid Al Futtaim's Ghaf Woods development will feature over 7,000 premium residences nestled within a lush woodland. The architecture is inspired by and reflects the natural landscape, which features a forest of 35,000 trees. The development, which is slated for completion in 2031, provides not only stunning views and a sanctuary for residents but also promotes ecological balance. The forest will help improve air quality and reduce temperatures while providing a habitat for over 20 bird species. The amount of open space per resident will be 40% above World Health Organization (WHO) standards, and the forest will remain car-free with numerous walking paths. Connectivity will be a central feature and extend beyond just mobility to help drive both social bonds among residents and between residents and nature.

Source: Majid Al Futtaim Properties

As cities continue to grow, the importance of liveability becomes increasingly apparent. Sustainable, compact and community-oriented urban designs enhance the quality of life for residents while supporting economic growth and climate resilience. The integration of hybrid work models, co-working spaces and flexible office environments represents a shift in how urban spaces will be used post-COVID-19 pandemic. Moreover, the inclusion of affordable and adaptable housing solutions ensures that cities are equitable and accessible to all.

3.2 Sustainability

80%

of buildings will still exist in 2050.

Buildings account for nearly 40% of total global greenhouse gas (GHG) emissions.[7] As 80% of buildings will still exist in 2050, action to reduce these emissions must be accelerated.[8] Unfortunately, only a small percentage of buildings, approximately 1-2%,[9] are renovated annually. Therefore, achieving net-zero carbon goals necessitates significant energy retrofits, the use of renewable energy and a focus on sustainable building practices throughout the asset life cycle, from construction to decommissioning. The Forum's 2021 report, *Green Building Principles: the Action Plan for Net-Zero Carbon Buildings*, outlines the key steps for asset decarbonization to meaningfully reduce emissions in the interim and ultimately achieve net zero by 2050.

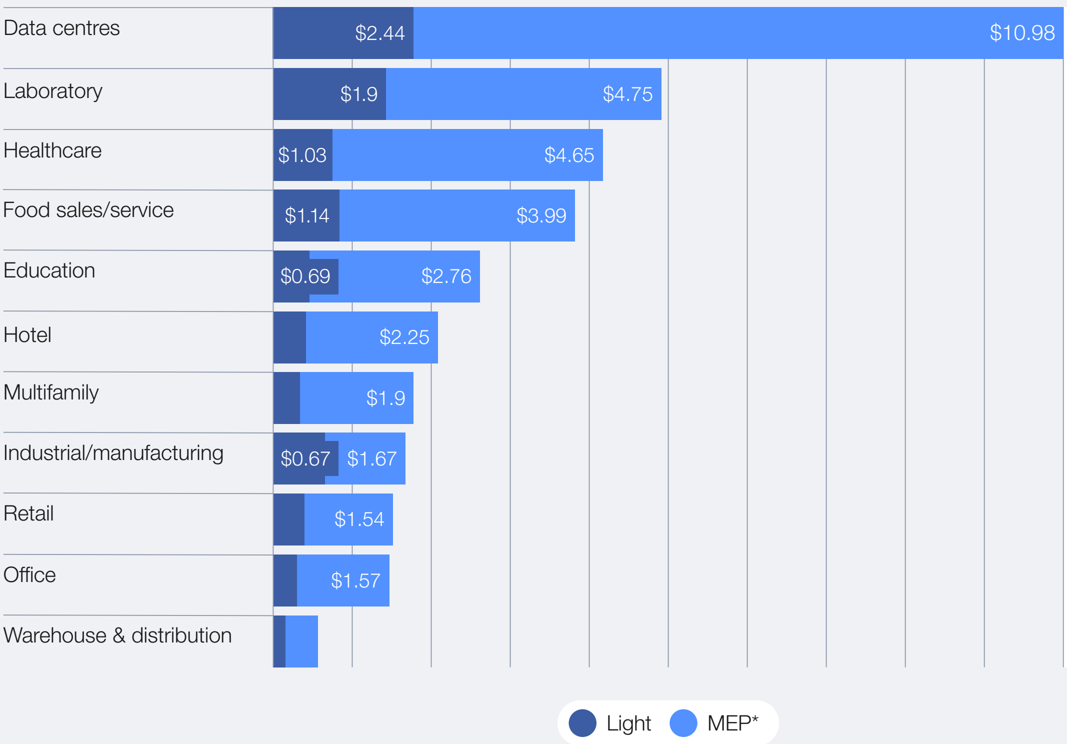
Key issues and challenges:

Whole-life carbon emissions from buildings: Buildings have a tremendous carbon impact throughout their life cycle. According to the Royal Institute of Chartered Surveyors (RICS),[10] 35% of those life cycle carbon emissions from a typical office building occur before the building is even occupied; for residential buildings, this figure is even higher at more than 50%. This indicates that constructing new buildings incurs a significant "carbon debt" that can take decades to offset, let alone the larger share of emissions that result from operations.

Low renovation rates: Given the upfront carbon impact of construction, keeping existing buildings in use is critical, which means addressing their significant operational carbon through retrofitting. These renovations can be costly and challenging, but they offer the potential to cut energy demand for heating by two-thirds and reduce overall CO_2 emissions when paired with renewable energy solutions. There is also increasingly demonstrable economic value tied to upgrades. According to JLL, light to medium energy retrofits can unlock 10-40% in energy savings, depending on the asset class.

Access to clean power: The provision of clean energy is necessary to meaningfully decarbonize real estate assets. Unfortunately, most cities' energy supply is not adequately clean and grid infrastructure needs a lot of improvement to effectively support widespread electrification. Owners and developers should aim for as much on-site generation as possible; however, this is not always feasible, and securing corporate or physical power purchase agreements (PPAs) or obtaining international renewable energy certificates (I-RECs) can also be challenging.

FIGURE 8 **Energy saving potential ($/square foot) across asset classes**



Improving energy efficiency is a crucial element of a successful energy strategy as it allows consumers to mitigate challenges from energy price volatility and reduce the risk of overwhelming ageing grids.

According to the International Energy Agency (IEA), energy efficiency has the potential to deliver the **second-largest** contribution to cutting down CO_2, emissions globally. At a building level, lower energy use intensity has a direct linear relationship with lower emissions in all cities in the JLL study. However, the marginal improvement in emissions from a unit improvement in energy efficiency becomes lower as the grid gets cleaner.

Note: *MEP = Mechanical, electrical and plumbing
Source: JLL research

Strategic recommendations:

Accelerate performance-based policies and certifications: Building on well-established credentialing mechanisms, a next generation of policies and certification schemes that measure success based on a building's actual emissions are necessary to ensure climate targets are met. Standardization across the policy landscape is also essential to support compliance and better benchmark progress. According to a recent study by JLL,[11] green certifications remain one of the most popular ways to assess a building's sustainability credentials. However, many of today's green building certifications still focus on design and construction rather than energy and emissions performance. As more corporate occupiers look to reduce their emissions, certifications are starting to evolve to rate buildings on their operational sustainability.

CASE STUDY 3

Decarbonizing industrial assets

Three distinct industrial projects in three vastly different regions demonstrate what is possible for this asset class to achieve efficiency and on-site energy generation. In São Paulo, Embu I Warehouse 9, the last warehouse of a 1.6 million-square-foot logistics campus, was a greenfield development that achieved LEED Gold. A rooftop photovoltaic (PV) system delivers on-site generation of clean electricity, and the building is outfitted with EV charging infrastructure. Design features to reduce energy consumption include the installation of prismatic skylights, which harness natural light, along with an automated system to adjust lighting throughout the day. The reduced energy consumption has translated into significant savings for the tenant as well. Bukit Batok Connection (BBC), a nine-story, 378,000-square-foot industrial facility in Singapore, was acquired and upgraded with a specific focus on sustainability, ultimately achieving Green Mark Certification. Green leases were implemented to improve energy consumption, LED lights were installed across the building to improve efficiency and a partnership was created with a global company to install EV charging infrastructure for tenants and third-party electric car and truck users. East Midlands Distribution Centre (EMDC) in East Midlands, UK, was a brownfield redevelopment that helped bolster the local economy. Achieving BREEAM Excellent, the logistics facility can provide on-site generation of clean electricity with the roof structure able to accommodate a rooftop PV system along with electric vehicle (EV) charging.

Source: Hines


Embu I Warehouse 9


BBC


EMDC

Promote circular economy practices: Focusing on reuse during capital projects like new construction or renovation can help address the embodied carbon component of building emissions. The construction sector should incorporate circular economy principles by reusing materials from demolished buildings and reducing raw material intake. Municipalities can facilitate this transition by establishing material exchange platforms and implementing regulations that mandate material reuse where feasible. While sometimes demolition is necessary, building retrofits should be encouraged to help avoid the additional embodied carbon cost associated with ground-up construction. Innovative planning mechanisms, flexible zoning and financial incentives can help encourage retrofits or adaptive reuse in cases where changing a building's use is necessary to avoid obsolescence.

CASE STUDY 4

Toyota Altona Research and Development Facility

Adaptive reuse of assets is an effective way to avoid the additional embodied carbon costs of new construction and promote circularity by reusing existing structures. JLL worked with Toyota to repurpose an existing manufacturing plant in Melbourne, Australia, into a centre for excellence to support research, development and education. Extensive collaboration across stakeholder groups was necessary to get input from occupiers on how to best activate a space that once produced over two million Camry engines. To ensure full stakeholder buy-in, JLL's approach followed the Japanese custom of "nemawashi", which Toyota defines as "the first step in the decision-making process. It is the sharing of information about the decisions that will be made to involve all employees in the process. During the nemawashi, the company is seeking the opinion of the employees about the decision".[12]

The first phase involved refurbishing the 65,000-square-foot head office to support collaboration and innovation. The second phase was the transformation of the manufacturing facility into a state-of-the-art redevelopment facility to support vehicle design and provide testing studios, training rooms, a mock sales dealership, an auditorium and a bistro. The challenge was to undergo the transformation without disrupting business activities and ensure effective cost planning and budget alignment. Strict sustainability requirements were adhered to in order to achieve a Five Star Green Star target.

Source: JLL

Innovative financing and incentive structures: While there is increasing evidence around the business case for decarbonizing real estate, sustainable development often faces increased upfront costs and other financial barriers. Certain asset types, like offices, have increasingly shown evidence of green premiums, however, sustainability is still not reflected in valuations broadly. Innovative financing mechanisms, such as land value capture and green bonds, can help recover some of the capital costs associated with green projects. Policy-makers should consider incentives and public-private partnerships to accelerate the net-zero transition.

3.3 Resilience

Resilience, in this context, refers to the capacity of cities and buildings to withstand and adapt to a range of unforeseen shocks while preserving their functionality, safety and cultural identity. This framework outlines key strategies for enhancing resilience by future-proofing infrastructure, promoting adaptive reuse of real estate, and using digital tools for risk management. By addressing these challenges, owners can protect the value and functionality of their assets, and cities can protect their residents while ensuring long-term sustainability.

Key issues and challenges:

Rapidly evolving demand patterns: Traditional demand patterns have been upended, making long-term planning and investment more challenging.

Physical climate risk: The increasing frequency and intensity of natural disasters and chronic climate impacts have resulted in subsequent rising premiums and reduced access to insurance markets.

Broadening and deepening risk spectrum: The potential for a wide range of shocks, including public health, fiscal and economic, has only increased. The variety and severity of these shocks have made resilience at both the asset and organizational levels essential.

Global fragmentation: An increasingly fragmented geopolitical landscape that has wide-ranging impacts, from portfolio construction to supply chain disruption. Relatedly, investment decisions are becoming increasingly politicized.

Pace of technological evolution: The proliferation of digital technologies, including AI, and the uncertainty around the scale and pace of their adoption can complicate both use decisions but also planning for their impact on business operations and demand.

Strategic recommendations:

Resilient capital stacks: Cyclical forces will inevitably drive shifts in market participants' access to capital and the resilience of property-level capital stacks. Combined with systematic shocks to property performance from evolving patterns of space use and other determinants of cash flow, these shifts have the potential to upend property markets, asset values and the stability of borrowers and lenders. Ensuring a capital stack, including a balance of traditional and non-traditional debt and equity, that can withstand both transitory or sustained changes in property cash flow and market values is a critical feature of financial resilience for properties and portfolios. On the debt side, measures like higher reserve requirements, conservative LTVs, debt service coverage ratios (DSCRs), debt yields, adjustments to escrow requirements, higher amortization requirements, more stringent documentation and reporting at origination, and throughout the life of the loan can help reduce risk of default and lower capital costs. Additionally, interest rate caps, swaps and other measures can be used to hedge interest rate risk.

Continued investment in leveraging proprietary and public data and analytics to support responsible underwriting and investment by both lenders and borrowers can also help mitigate risk. For example, borrowers can actively communicate with tenants and plan for lease rollovers. Diversification is also important for both lenders and borrowers – for lenders, varying exposure to different loan types across the debt stack that limits overexposure to construction loans, asset types and sub-markets is increasingly important. Lenders should proceed deliberately when entering a market where they lack a track record and specific sub-market expertise. For borrowers, asset type and sub-market diversification at the portfolio level is important along with increasing the variety of income streams at the asset level and ensuring they have the operational expertise to maximize revenue.

CASE STUDY 5

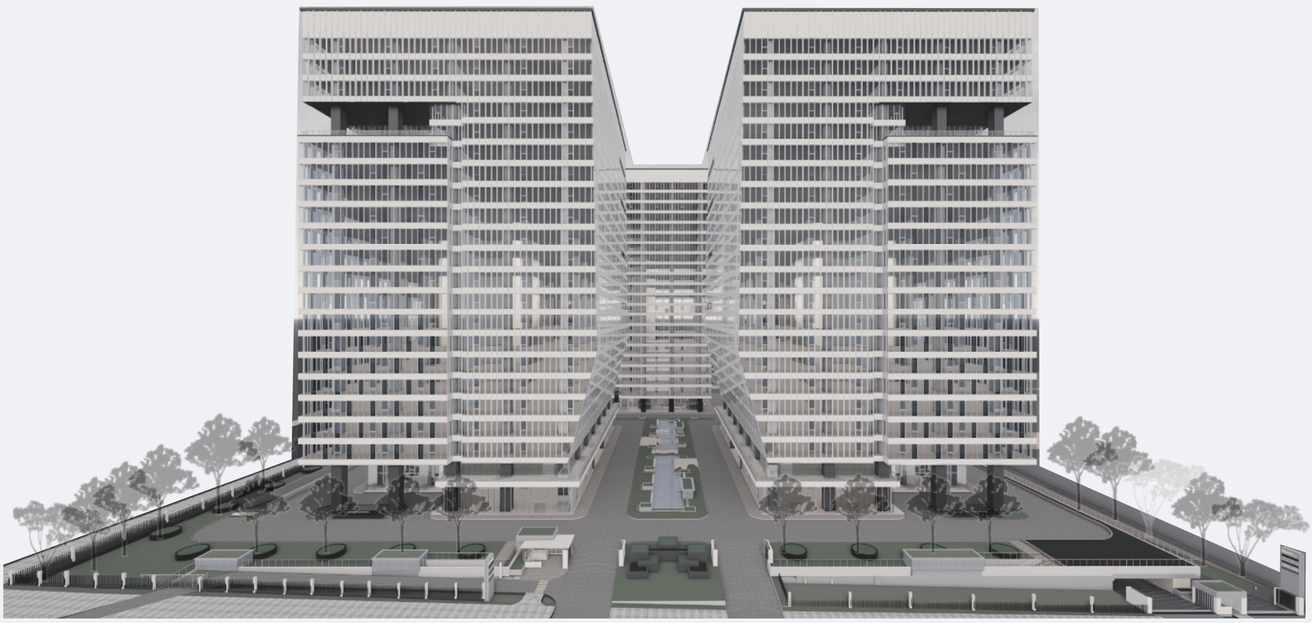
Nexity & The Loft

Financial resilience has been especially important in the wake of the COVID-19 pandemic and amidst capital markets shifts. Nexity & The Loft, a 3.3 million-square-foot greenfield mixed-use development in Hyderabad, India, had to weather multiple unforeseen shocks throughout the project timeline.

Initial COVID-19 pandemic lockdowns delayed construction, and the start of the war in Ukraine led to commodity price volatility. Value engineering enabled by efficient design and project management helped to get the project back on track, and a “just-in-time and just-in-case” approach was taken for procurement by carefully monitoring pricing trends of key materials such as cement and steel. To make up for lost time and reduce reliance on labour, the project transitioned from the traditional in-situ construction method, where all work occurs on-site, to precast construction, involving off-site casting and on-site assembly of concrete components, and monolithic construction, which creates seamless, joint-free structures.

Despite the Reserve Bank of India hiking interest rates by a total of 250 basis points during development, the project’s debt costs remained the same. Subsequently, the cost of debt was reduced by 160 basis points overall in two stages by proactively compressing spreads triggered by a reduction in project credit risk. Overall, the project demonstrated impressive financial performance, despite the macro headwinds. The project’s current gross asset value is $544 million, and the equity multiple is estimated to be 2.4 times. The project was 77% pre-letted and high-quality tenants like HSBC have been secured. Rents are 11.5-12% higher than the market rate, with escalations of 15% every three years over average lease terms of 9-10 years.

The project has achieved a five-star European Covered Bond Council (ECBC) rating, India’s Energy Conservation Building Code, and is US Green Building Council (USGBC) LEED v4 pre-certified GOLD and International Well Building Institute (IWBI) pre-certified WELL GOLD.



Source: RMZ.

One cause of asset obsolescence and asset stranding is the failure to manage transition risk.

Managing obsolescence risk and adaptive reuse: The COVID-19 pandemic accelerated shifts in the use and demand for commercial real estate and altered traditional highest-and-best uses. As a result, many assets have begun to face obsolescence risk from reduced demand. This is particularly affecting office space demand. In cities like New York, where a substantial minority of older office space may be competitively obsolete, there is a continued risk of financial distress in the commercial real estate sector and the urban areas it supports. One solution to the challenge is the potential for adaptive reuse. In the context of office space, there is a growing focus on how conversion to residential space might alleviate supply shortages. The most aggressive projections for office conversions may underestimate the very high capital expenditures associated with such conversion, as well as hurdles in areas such as zoning and the suitability of the building floorplate and location. For new developments, designing the structure with flexible uses in mind is increasingly important given more rapidly evolving demand preferences. For existing assets, strategic repositionings and continued improvements that drive asset value can help avoid more substantial write-downs during periods of distress.

Managing physical climate and transition risk: One cause of asset obsolescence and asset stranding is the failure to manage transition risk, which is the risk of asset devaluation for not meeting certain emissions criteria. In certain markets, legislation exists that financially penalizes asset owners for failing to meet certain emissions criteria. New York City's landmark legislation, Local Law 97 (LL97), for example, requires most buildings over 25,000 square feet to meet certain emissions targets over time. Failure to act triggers a substantial financial penalty, helping drive the business case for transitioning. Unfortunately, the vast majority of buildings need substantial work in order to comply with these laws. The 2022 GRESB (Global Real Estate Sustainability Benchmark) results show that the average Carbon Risk Real Estate Monitor (CCREM) stranding year for buildings submitted to GRESB is 2025. In total, 76% of cities worldwide remain highly vulnerable to climate-related risks, including extreme weather events such as floods, wildfires and heatwaves. Future-proofing cities requires robust, climate-smart infrastructure capable of withstanding these events. This includes upgrading physical assets such as roads, buildings and utilities to be resilient to climate hazards while also incorporating real-time data to monitor risks and improve preparedness. At the asset level, physical climate risk can be managed through the design and renovation of assets to better withstand both acute and chronic impacts. Nature-positive solutions, which include more green space to absorb storm surges and improve air quality can support resilience at both the asset and city levels. These include solutions that support the restoration and preservation of biodiversity.

CASE STUDY 6

The Fullerton Ocean Park Hotel

Nature-based solutions can help manage physical climate risk at the asset level and support biodiversity. The Fullerton Ocean Park Hotel, an oceanfront luxury resort in Hong Kong, partnered with Sino Group, Ocean Park, archiREEF and the Hong Kong Innovation Foundation to launch the CORAL REEFStoration project.[13] This initiative aims to preserve coral habitats in Hong Kong's southern waters by deploying 3D-printed terracotta reef tiles seeded with rescued coral fragments. The hotel also collaborated with "Hong Kong's father of marine conservation", the late Professor Brian Morton, to publish *Sea Creatures & Animals*, a meaningful bilingual children's book that brings to life forty fascinating sea creatures and animals from Hong Kong and around the world, to promote biodiversity and conservation.

Source: Sino Group

Cybersecurity as a pillar of resilience: With the growing reliance on digital infrastructure, cities face an increasing risk of cyberattacks that could disrupt critical services. The *Microsoft Digital Defense Report*[14] highlights a rise in the sophistication of cyberattacks during the COVID-19 pandemic, with remote work environments being particularly vulnerable. Ensuring resilience against such threats requires investment in robust cybersecurity measures, including the protection of critical digital assets, data encryption and secure remote access protocols.

For cities aiming to build resilience, cybersecurity must be integrated into urban planning, particularly in the design of smart infrastructure that relies on real-time data and automated systems. As cities become more digitally connected, safeguarding these systems from malicious attacks is paramount to maintaining the continuity of services such as healthcare, public transport and utilities.

Real-time data and transparent decision-making: Resilient cities of the future will rely on data-driven governance to manage risks effectively. Real-time data collection and analysis enable cities to respond to crises quickly and transparently, improving both preparedness and accountability. This approach is already being implemented in some cities through digital dashboards that track key metrics such as air quality, traffic flow and energy consumption.

Transparent decision-making is also essential for building public trust and ensuring that resilience strategies are equitable. During the COVID-19 pandemic, many cities struggled with communicating risk effectively, leading to confusion and, in some cases, exacerbating the crisis. By using real-time data to inform the public about risks and government responses, cities can encourage greater cooperation from residents and stakeholders during emergencies.

3.4 Affordability

For cities to remain inclusive, resilient and competitive, policies that ensure the adequate supply of affordable housing and equitable access to urban services must be prioritized.

The cost of locating in the urban environment, particularly as it relates to housing affordability, is a pervasive global issue. Approximately 80% of cities worldwide do not offer affordable housing options for the majority of their population. As urbanization accelerates, this crisis continues to push vulnerable populations, such as low-income households, migrants, youth, the elderly and minorities, into precarious living conditions. This not only exacerbates inequality but also limits access to vital services like healthcare, education and employment. For cities to remain inclusive, resilient and competitive, policies that ensure the adequate supply of affordable housing and equitable access to urban services must be prioritized.

Defining affordability and its components:

Affordability in an urban context involves both financial access to housing and ensuring that spaces meet households' needs in terms of access to transport and local amenities. "Financial access" refers to affordable rent or reasonable down payments and mortgage rates alongside manageable expenses like taxes, insurance and repairs. On the other hand, "appropriate asset standards" demand that homes provide sufficient space, healthy living conditions and access to essential services. It is generally believed that housing should not require more than 30% of a household's gross income.[15] It is important to note that a range of housing types, both rental and for sale, can be considered affordable. Terminology varies across regions and fixed definitions are elusive, but generally affordable housing refers to housing units that are specifically designated for low- to moderate-income individuals, often with government subsidies, rent control or stabilization.

Workforce or attainable housing serves as a critical category in the rental housing market, aimed at households earning too much to qualify for traditional affordable housing subsidies yet unable to comfortably afford market-rate units. Generally defined as housing affordable to households earning between 80% and 120% of area median income (AMI), workforce housing is designed to support middle-income workers essential to the local economy – such as educators, healthcare providers, first responders and service industry employees. This sector fills a vital gap between subsidized affordable housing and higher-priced market-rate rentals, providing stability to individuals and families whose income levels would otherwise leave them squeezed out of the housing market.

Key issues and challenges:

Fragmentation in the real estate market: One significant barrier to addressing affordability is the lack of alignment between developers, investors and occupiers in the real estate market. Traditionally, developers prioritize minimizing construction costs, often neglecting long-term operational expenses. This approach has resulted in buildings that may be cheaper to develop but are more costly to maintain. However, sustainability criteria are starting to reshape the market. While these buildings may require a higher initial investment, they have lower long-term operating costs due to energy efficiency and sustainability measures, especially in markets with regulatory pressures. These buildings are

> **Due to the increasing frequency of extreme weather, rising insurance costs are putting pressure on asset owners and increasing operating costs.**

increasingly commanding rental premiums and experiencing shorter vacancy periods, further incentivizing sustainable development.

Construction costs: According to Turner & Townsend, global construction costs are projected to experience average inflation of 3.3% in 2024.[16] While construction costs inflation varies greatly by region and sub-market, and some of the costs have moderated from their pandemic highs, they will remain elevated moving forward both for materials and labour. Long development timelines also exacerbate the expense of the construction phase.

Land costs and access to financing: Land costs and higher financing costs for developers have challenged the risk-return profiles of many housing developments, forcing developers to move forward with higher-end products that can offset these costs.

Inflexible zoning and minimal density allowances: Zoning that allows for multiple uses and the easier adaptive reuse of space is essential for keeping up with more rapidly evolving demand patterns and changes to highest-and-best use. As previously mentioned, density is a key component of supportive zoning for affordable housing. By allowing more housing units per area, higher-density developments increase the supply of housing, which can help stabilize or reduce housing costs.

Rising insurance costs: Due to the increasing frequency of extreme weather, rising insurance costs are putting pressure on asset owners and increasing operating costs. For example, home insurance prices in the US have risen 21% from 2022 to 2023.[17]

Counterproductive policies: Often well-intentioned policies, including rent controls and specialized requirements such as prohibiting accessory dwelling units, can have the unintended consequence of reducing supply and disincentivizing development.

NIMBY-ism ("not-in-my-backyard"): The phenomenon of community opposition known as "not-in-my-backyard" is particularly detrimental to housing development, especially housing that is on the affordability spectrum. Unfortunately, stigmas surrounding affordability, along with the misconception that adding supply will materially impact home values, fuels this opposition and has been shown to stop projects from progressing.

Strategies for supporting affordability:

Flexible zoning, land use and density: Zoning allows for easier adaptive reuse, the addition of accessory dwellings, and the ability to increase the number of units. Urban density plays a crucial role in promoting housing affordability, liveability, sustainability and even innovation. By allowing more housing units per area, higher-density developments increase the supply of housing, which can help stabilize or reduce housing costs.

Financial incentives: Financial intervention by the public sector is often necessary to adequately reduce project costs and manage risks. Tax incentives and credits, like the US's Low-Income Housing Tax Credit (LIHTC), tax-exempt bond financing and other discounted credit instruments, can help reduce acquisition, construction and renovation costs.

Innovative construction techniques: 3D-printed homes can save on both labour and material costs. Similarly, prefabricated housing (prefab), which is a method of undergoing construction either partially or completely offsite and then assembling on-site, can also save costs. This includes modular systems and offers the benefit of economies of scale.

Collaborative frameworks for housing development: Addressing the housing affordability crisis requires a collaborative approach that involves both the public and private sectors. These partnerships can align the interests of developers, investors and occupiers, ensuring that new developments meet sustainability standards and remain financially accessible. Such collaborations can also help tackle NIMBY-ism and work to get community support for projects.

CASE STUDY 7

Midtown MacPark

Given the complexity and cost barriers to affordable housing development, partnership models are becoming increasingly necessary to deliver supply. Midtown MacPark is an innovative partnership at Macquarie Park in northwest Sydney between Frasers Property Australia, state and federal governments and community housing provider Mission Australia Housing. The 20-acre site, which was formerly social housing known as Ivanhoe Estate, provides a model for tackling Australia's housing shortage. Once complete, the development will provide 3,300 apartments, including 950 new community housing apartments planned by the NSW Land and Housing Corporation and managed by Mission Australia and 130 new affordable homes owned and managed by Mission Australia. The mixed-tenure development will house a total of 6,500 people and more than triple the share of community and affordable housing available on the site. The community development programme will establish a new model for supporting community health and resilience and uniting residents from diverse socioeconomic backgrounds. The development has also achieved a 6-Star Green Star Communities rating by the Green Building Council of Australia (GBCA). One-third of Midtown MacPark will be dedicated to open space, parks and playgrounds. The community benefits from excellent public transport, close to Macquarie University Metro, Macquarie Centre and key institutions.

Source: Frasers Property

CASE STUDY 8

The Pulse

Affordability can be integrated into best-in-class developments, as evidenced by The Pulse, a 624,306-square-foot mixed-use development located in Amsterdam's Zuidas business district and rated BREEAM outstanding. Reflecting the renowned architectural style of the Amsterdam School, the joint venture between EDGE and VORM consists of office, residential, dining, a movie theatre and essential grocery retail.

Out of the 200 residential rental units, 150 fall into the regulated mid-sector segment, helping satisfy almost 10% of the Municipality of Amsterdam's target of developing 1670 mid-sector units annually. Mid-sector units, on average, are 20-40% less expensive than the free sector (market rate). Woningwaarderingsstelsel (WWS) is a regulatory framework in Amsterdam that controls rents. Properties are assigned an overall score and given points for everything from energy efficiency to overall property size, with the score then determining the specific rent levels for the mid-sector units.

Source: EDGE

Urban affordability is a critical issue that affects the well-being and resilience of cities worldwide. To promote inclusivity and address growing inequalities, it is essential to adopt comprehensive strategies that integrate affordable housing with sustainable development, mobility and access to essential services. Collaborative efforts between the public and private sectors, transparent real estate practices and innovative urban design are key to resolving the affordability crisis. By prioritizing inclusivity, cities can create equitable environments that promote economic opportunity and improve the quality of life for all residents.

4 Key value drivers

Increased infrastructure investment, people-focused development and technology are crucial for maintaining and increasing asset values.

While there are a number of enablers for liveable, sustainable, resilient and affordable buildings, and myriad factors that drive rental growth and asset appreciation, this section focuses on three specific areas for value creation: infrastructure investment, people-centric development and technology.

4.1 Real estate and infrastructure

$2.5 trillion

is needed to close the infrastructure investment gap in the United States.

Infrastructure investment remains a key catalyst for economic growth and real estate investment. Well-maintained roads, bridges, energy grids and data networks enable businesses to operate more efficiently, reduce costs and expand their operations. However, in 2021 the American Society of Civil Engineers (ASCE) highlighted that the United States alone faces an infrastructure investment gap of over $2.5 trillion,[18] with deteriorating infrastructure posing a threat to economic growth and real estate development. The ASCE estimates that continued underinvestment, based on the 2021 rate of investment, could cost $10 trillion in GDP by 2039.[19] Governments have begun taking steps to address this threat and narrow the funding gap. The United States Congress passed the Infrastructure Investment and Jobs Act[20] in 2021 to channel over $1 trillion in federal funds to projects across the country. However, given the size of the gap, increasing costs and other pressures, infrastructure will likely remain underfunded.

Addressing these infrastructure challenges, however, could unlock substantial economic value, create jobs, boost GDP and enhance demand for real estate. The relationship between infrastructure and real estate is reciprocal: well-developed, smart and sustainable infrastructure boosts property values and encourages further investment, while robust real estate development stimulates economic growth and the use of revenue-generating infrastructure. This section explores the significance of infrastructure investment as an enabler of real estate investment.

Transport infrastructure is one of the most visible and impactful drivers of real estate development and asset value. Efficient transport networks improve access to jobs, services and amenities, enhancing the desirability of real estate assets near transit hubs. Properties located near major transport nodes – such as subway stations, bus rapid transit (BRT) systems and airports – tend to command higher rents and property values due to their superior accessibility. King's Cross in London offers a helpful playbook for successful transit-oriented urban regeneration. Anchored by the King's Cross and St. Pancras transit hubs, the former industrial area is now a destination for business, culture and leisure, providing both economic activity and an inclusive mixed-use community.

Transport infrastructure also plays a critical role in promoting social equity by connecting underserved communities to economic opportunities. Boston's transit-oriented development (TOD) in Somerville transformed a neglected industrial area into a vibrant neighbourhood with residential, commercial and recreational spaces by constructing a new subway station.

Historically, infrastructure developments have sometimes divided communities or displaced marginalized populations. Cities that invest in multimodal transport systems – including public transit, cycling lanes and pedestrian-friendly streets – can reduce spatial inequality by ensuring that all residents, regardless of income or location, have access to jobs, education and healthcare.

By investing in robust transport networks, especially public transport, cities can open up access to more affordable land for housing without relying on models that encourage urban sprawl. This approach enables the development of higher-density housing in suburban or peri-urban areas, which can help alleviate pressure on housing supply and reduce costs for residents. In contrast, urban development that prioritizes private car ownership can lead to increased traffic congestion, higher infrastructure costs, reduced social mobility and a greater environmental footprint. Copenhagen's Finger Plan, initially developed in 1947 and continuously updated, encourages growth along five "fingers" extending from the city centre, each supported by rail transit and surrounded by green belts. This structure not only prevents urban sprawl but also ensures that residents have easy access to public transport and green space, cultivating both environmental sustainability and economic vibrancy.

Investment in airport infrastructure is another vital component of urban competitiveness, particularly as cities vie to attract international business, tourism and talent. Well-connected airports enhance a city's global reach, cultivating economic growth by facilitating the movement of people and goods across borders. However, as urban expansion encroaches on previously remote airports, managing the environmental and spatial impact of aviation is becoming more complex. Cities such as London and Amsterdam face resistance to airport expansions due to concerns over noise, emissions and land use.

Cities consume two-thirds of the world's energy[21] and investments in renewables and smart grid technologies can help cities ensure the delivery of reliable and clean energy. As cities aim to decarbonize buildings and shift towards electrification, investment in grid infrastructure has become increasingly essential. Modernizing the grid includes enhancing storage capacity and deploying smart grid technologies to balance supply and demand efficiently. These upgrades will ensure reliable power distribution, support increased loads from electric heating and vehicle charging, and provide the resilience needed to sustain higher electricity demand.

Infrastructure that can withstand and recover from shocks, whether environmental, social or economic, is essential to city-wide resilience, which in turn supports the long-term value of real estate assets. Investments in climate-resilient infrastructure – such as flood defences, green spaces and sustainable energy systems – help cities adapt to the growing impacts of climate change. For example, cities like Rotterdam and New York have led the way with comprehensive climate strategies that incorporate both grey and green infrastructure solutions, though with varied success in implementation. Grey infrastructure refers to the traditional built systems used for managing essential urban services, such as roads, bridges, pipelines, sewer systems and power grids. Whereas, green infrastructure includes nature-based solutions, such as urban wetlands, green roofs and tree planting, to mitigate the impacts of climate change while providing additional environmental and social benefits. In addition to environmental resilience, social resilience is cultivated through infrastructure projects that prioritize equitable access to services and opportunities for all residents. Investments in resilience also include those that help safeguard against terrorism, such as public surveillance systems or offer protection in the face of public health emergencies, such as adequate healthcare infrastructure.

Infrastructure that can withstand and recover from shocks, whether environmental, social or economic, is essential to city-wide resilience.

Key delivery mechanisms for infrastructure investment are public-private partnerships (PPPs), which are defined by the Organisation for Economic Co-operation and Development (OECD) as long-term contractual agreements between government and a private-sector partner. The private sector partner/s typically provide/s financing and/or delivery of services while sharing the risks with the government entity. PPPs play a pivotal role in addressing the substantial infrastructure investment needs that governments alone cannot meet. These collaborations use the strengths of both the public and private sectors to deliver infrastructure projects more efficiently and at scale. PPPs are particularly effective in complex, large-scale projects that require significant financial outlays, expertise and risk-sharing mechanisms. One of the key benefits of PPPs is the ability to tap into private capital to fund revenue-generating infrastructure projects, alleviating pressure on strained public budgets. In return, private sector investors can generate attractive, reliable revenue streams through mechanisms such as user fees, tolls or long-term leases on infrastructure assets. However, for PPPs to succeed, clear contractual frameworks and strong governance structures are essential to balance the interests of both sectors and ensure public accountability.

4.2 Prioritizing people and communities

In addition to shifting demand patterns, space that supports its occupants has risen to the fore post-pandemic. In order to drive occupancy, buildings must be designed not only for productivity and sustainability but also for the health, well-being and inclusion of all residents. At the city level, to remain competitive and attract investment, prioritizing the social and economic aspects of urban living ensures that cities become more than just hubs of innovation and economic activity – they become environments that nurture the communities they serve. This section explores a people-first approach to development.

> Cities can cultivate positive health outcomes by ensuring access to green spaces, promoting active transport and reducing environmental hazards like air and noise pollution.

Health and well-being: building health-focused cities and buildings:

The health and well-being of urban residents are profoundly influenced by the built environment. Cities can cultivate positive health outcomes by ensuring access to green spaces, promoting active transport and reducing environmental hazards like air and noise pollution. According to the World Bank's *Healthy Cities* report,[22] the design and management of urban spaces can either support or undermine public health, depending on how they prioritize access to health-related services and infrastructure.

A core principle of future-oriented city planning is to integrate health considerations into urban development at all stages. This includes promoting policies that reduce urban heat islands, enhance air quality, and provide clean water and sanitation. For example, cities like Singapore and Melbourne have adopted comprehensive green infrastructure strategies that include urban parks, green roofs and sustainable drainage systems, which not only mitigate the effects of climate change but also create healthier environments for residents.

Furthermore, the role of cities in promoting mental health is becoming increasingly recognized. Urban stressors such as noise pollution, overcrowding and long commutes can contribute to mental health issues. Cities have begun investing in quiet zones, reducing traffic congestion and designing inclusive public spaces reflecting a holistic approach to health.

Buildings must also be designed and operated in ways that enhance the well-being of their occupants. Features such as improved indoor air quality through ventilation systems that minimize pollutants and maximize fresh air flow, natural lighting that supports circadian rhythms, and biophilic design elements such as green walls or indoor plants can support both physical and mental health. Efficient climate control systems help maintain comfortable temperature and humidity levels, supporting occupant well-being. Additionally, the use of non-toxic, sustainable building materials is an important and growing consideration. These efforts, in turn, help drive occupancy.

CASE STUDY 9

T3 Minneapolis

The use of mass timber is an example of integrating wellness into design. Exposed wood has been shown to have psychological benefits as it helps bring occupants closer to nature. T3 Minneapolis, the first major multistorey US office building to be constructed of wood in the last 100 years, demonstrates the possibility of sustainable mass timber. T3, which stands for timber, transit and technology, is Hines's prototype for the use of mass timber in office projects. T3 buildings source renewable and sustainably sourced timber to cultivate well-being and productivity while helping reduce embodied carbon. A comprehensive and innovative suite of technology offerings helps drive connectivity and productivity for occupants, while the natural wood interior complements other wellness activities to support overall mental and physical health.

In addition to wellness, mass timber is also a more sustainable building material. The responsibly sourced timber used for T3 is less energy-intensive to extract and process, cleaner and quicker to build with, and produces less waste than concrete and steel. It is recyclable, biodegradable and non-toxic, and it is more fire-resistant than traditional building materials.

Source: Hines

Beyond these physical aspects, healthy buildings are designed to cultivate social interaction and mental health. Flexible spaces that encourage collaboration, physical activity areas and access to wellness programmes all contribute to healthier lifestyles. Incorporating quiet zones or spaces for relaxation can reduce stress and enhance mental well-being.

CASE STUDY 10

Inclusion champions

Frasers Property has introduced an industry-first "inclusion champions" programme across its malls in Singapore. In partnership with local community outreach organizations, they provide inclusivity training for mall employees and participating tenants to better support visitors with disabilities and those living with dementia. Participating retail tenants pledged to set aside spaces as dementia go-to points and provide calm shopping hours weekly, where noise and lighting levels are reduced to create a sensory-friendly environment for neurodivergent individuals and their caregivers. The programme uses Frasers Property's footprint as Singapore's largest suburban retail mall owner to create a more welcoming and inclusive shopper experience for people with diverse abilities and needs.

Source: Frasers Property

Enhancing social capital and economic opportunity:

Social capital – the networks, relationships and trust that exist within a community – is a key determinant of urban resilience and quality of life that also drives demand at both the asset and neighbourhood levels. Cities that provide access to quality education, skills development and job opportunities create pathways for residents to achieve economic stability and upward mobility. Ensuring that economic growth benefits all residents, rather than just a privileged few, is crucial for maintaining social cohesion. Investments in education, affordable housing, workforce development and entrepreneurship support are essential for creating an inclusive economy that makes use of the talents and potential of all residents.

To support these goals, cities need robust governance structures that promote transparency, participation and collaboration. Inclusive decision-making processes allow communities to have a voice in the planning and development of their neighbourhoods, cultivating a sense of ownership and engagement. This approach not only enhances social capital but also ensures that city policies and investments reflect residents' needs and aspirations.

CASE STUDY 11

The Spire

A people-centric approach is not only important for the end user but also during the development phase. RMZ's Spire, a 1.7 million square foot, mixed-use development in Hyderabad, India, involved an integrated delivery exercise with the designers, developers and a team of general contractors to ensure a safe workplace, especially during the initial phases of the pandemic. Building information modelling (BIM) was used to prevent errors during construction, and a control centre helped with project management and cost monitoring. Centralized and transparent procurement practices were also adhered to, along with best governance processes, to ensure smoother delivery and maintain ethical standards. The project has documented more than 4.87 million safe person-hours and obtained a five-star rating in the British Safety Council Audit. In addition to strict health and safety measures, high living standards were in place for workers at the community camps, and a skill development centre was created for upskilling the labour community and training over 500 workers.

The International WELL Building Institute (IWBI) announced RMZ as the first organization globally to achieve the WELL Health-Safety Rating for facility operations and management. The WELL Health-Safety Rating is an evidence-based, third-party-verified rating for all new and existing building and space types focused on operational policies, maintenance protocols, emergency plans and stakeholder engagement strategies to help organizations prepare their spaces for re-entry in a post-COVID-19 pandemic environment.

Source: RMZ.

4.3 Technology

> The integration of digital solutions into commercial real estate is no longer merely an option but a necessity for maintaining competitiveness and delivering value to stakeholders.

This section explores the role of technology in shaping the future of real estate and as a key enabler to the framework's vision. By examining core business drivers for adoption, key digital trends and strategic areas of action, it provides a comprehensive overview of how technology can enable commercial real estate to evolve and thrive.

The real estate industry is at a pivotal moment where technology stands as a transformative force that can significantly enhance the value, efficiency and sustainability of properties. Historically, the sector has been slow to adopt digital solutions due to its capital-intensive nature, conservative approach and fragmented operations. However, a confluence of factors, such as evolving tenant demands, the lingering impact of the COVID-19 pandemic and increased emphasis on sustainability criteria, is accelerating the adoption of technology across the industry.

The integration of digital solutions into commercial real estate is no longer merely an option but a necessity for maintaining competitiveness and delivering value to stakeholders. While it remains unclear exactly how new tools such as AI will reshape the industry, the relevance of innovation for the sector has never been more apparent.

Core business drivers for technology adoption:

As illustrated in the Forum's *Driving Digitalization, Value Creation for Commercial Real Estate* 2021 briefing paper, technology adoption in commercial real estate is fuelled by several core business drivers that influence landlords' decision-making processes. These drivers can broadly be categorized into health and well-being, sustainability, occupant satisfaction, use of space, risk reduction, cost efficiency and data aggregation. Understanding these drivers is essential for commercial real estate firms to align technology investments with business objectives.

Health and well-being: Landlords and tenants are increasingly focused on creating environments that support mental and physical health, which includes improved air quality, ventilation systems and touchless technologies. Digital tools such as real-time monitoring of indoor air quality, temperature and lighting can help create safer and healthier spaces, making technology an integral part of the tenant experience.

Sustainability: Technologies that enable energy efficiency, carbon emissions tracking and sustainable building practices not only help assets meet performance metrics but can also enhance asset value. For instance, buildings that meet certain sustainability criteria have been shown to achieve rental premiums and lower vacancy rates.

Occupant satisfaction: Occupant satisfaction is becoming a key differentiator for properties, especially in the wake of increased flexibility in work models. Digital tenant engagement services, which streamline communication and provide seamless access to building amenities, are increasingly being adopted to enhance the tenant experience. High occupant satisfaction leads to better tenant retention, higher occupancy rates and an enhanced reputation for building owners.

Use of space: As hybrid and remote work models become more prevalent, landlords and tenants need a granular understanding of how space is used. Technologies such as occupancy sensors, space management software and AI-driven analytics can provide actionable insights on space use, helping optimize office layouts and reduce unused spaces. This not only improves the efficiency of existing spaces but also aids in strategic decision-making for future developments and lease decisions.

Risk reduction: The adoption of technology can help mitigate various risks, including those related to cybersecurity, asset obsolescence, mechanical problems and fluctuating occupancy rates. For instance, digital solutions such as digital twins can automate risk assessments, monitor critical

> High-quality data can enable better decision-making, support innovative business models and even open new revenue streams.

building systems and ensure compliance with safety standards, thereby reducing the likelihood of costly incidents and interruptions.

Cost reduction and efficiency: Automation and digitalization offer significant potential for cost reduction and increased operational efficiency. AI-driven solutions can optimize energy consumption; predictive maintenance can lower repair costs and digital workflows can reduce administrative overhead. These efficiencies ultimately lead to higher profitability and better asset performance.

Data aggregation: As data becomes an increasingly valuable asset, the ability to aggregate and analyse data from various sources is becoming a business driver in and of itself. High-quality data can enable better decision-making, support innovative business models and even open new revenue streams. Technologies that support data aggregation and analytics are, therefore, critical for unlocking the full potential of digital transformation.

Strategic areas for action:

To fully realize the potential of technology in commercial real estate, stakeholders must address several strategic areas:

Increasing data access and transparency: Despite the availability of valuable data, accessing and sharing it remains a significant challenge due to isolated data systems and fragmented data, privacy concerns and lack of standardization. To overcome these barriers, both real estate firms and occupiers, as well as corporate real estate managers, should develop strategies for data governance, establish data-sharing agreements and invest in platforms that enable secure and seamless data exchange.

Advancing standardization: Standardizing data formats and processes is crucial for enabling meaningful comparisons across properties and portfolios. Adoption of industry-wide standards can facilitate the integration of new technologies, streamline reporting and support compliance with regulatory requirements.

Modernizing legacy systems: Many real estate assets operate on legacy systems that are not equipped to support modern digital solutions. Upgrading or integrating these systems with new technologies can be complex and costly. However, prioritizing modernization efforts can reduce long-term risks and enable more effective use of technology.

Building capacity: The successful adoption of technology requires more than just investment in digital tools. It involves cultivating a digital mindset across the organization, upskilling staff and cultivating collaboration between real estate and technology teams. Leadership commitment and a willingness to embrace change are critical for driving digital transformation in real estate.

Artificial intelligence:

At the forefront of new technologies, AI holds the potential to significantly reshape aspects of the industry by enabling data-driven decision-making, streamlining operations and enhancing sustainable practices. Still in its formative stages, capabilities such as generative AI, machine learning and predictive analytics are being used to process complex datasets and uncover insights that were previously unattainable. This transformation is not just limited to automating routine tasks; it extends to reshaping how properties are managed and how value is derived from real estate assets. However, it is important to recognize that advances in generative AI may not continue at their current rapid pace. As the technology matures, there is already evidence that improvements are becoming more incremental, suggesting a natural slowdown in breakthrough developments as AI reaches certain technical thresholds.

At the asset level, AI-powered systems – such as energy management, security and tenant services – can help create more efficient and responsive environments. This is leading to the emergence of “real intelligent buildings”, which will set new benchmarks for sustainability and operational efficiency in the industry. Efficient building operations can improve the tenant experience, help reduce emissions and ultimately increase net operating income. Advancements in AI-assisted robotics may streamline construction processes by automating repetitive tasks, reducing labour costs and improving build quality.

There are numerous potential applications at the enterprise level, for both real estate companies and investors, to use AI to drive efficiencies and improve decision-making. AI holds the potential to improve the speed and accuracy of property underwriting, forecasting market behaviours and identifying opportunities aligned with investor goals. This makes AI a key enabler for faster transactions and data-driven portfolio management, ultimately unlocking new revenue streams for commercial real estate stakeholders.

AI is also starting to influence demand for space in specific markets proximal to established technology hubs. As the need for high-powered computing and AI talent grows, cities with strong technology ecosystems are becoming focal points for new investments. In the investment landscape, demand for data centres and supporting energy infrastructure has been especially notable.

As AI continues to mature, its impact on real estate will likely expand significantly, transforming traditional business models and enhancing value creation across various functions. While AI applications in real estate are still in their early stages, the next few years will reveal more about the true scale and scope of AI’s influence on the industry.

5 Calls to action

Collaboration between the public and private sectors is essential to advance liveability, sustainability, resilience and affordability in real estate.

By working together, the public and private sectors can bridge funding gaps, streamline project delivery and align on long-term objectives.

Taken together, the calls to action outlined in this final section of the framework, which have long been recognized as essential, provide a strategy for advancing both private and public interests. This strategy assumes that goals can only be achieved at scale when they are shared and interests are aligned. Cooperation between the public and private sectors is essential for achieving meaningful progress. However, the gap between aspiration and achievement remains significant. Public agencies provide essential regulatory frameworks, incentives and funding, while private sector entities bring innovation, capital and operational expertise in support of execution. In housing, public-private partnerships can increase the supply of affordable homes by making use of incentives and zoning policies alongside private investment. Similarly, for resilience and sustainability, collaboration is vital for building infrastructure that can withstand climate impacts, reduce emissions and support greener urban living. This is work neither the public nor private sector can do effectively in isolation. By working together, the public and private sectors can bridge funding gaps, streamline project delivery and align on long-term objectives.

Public sector actions:

The public sector has an outsized role in shoring up the necessary conditions for private investment. The rule of law, including well-defined property rights, is foundational to investment in real estate and the supporting capital markets. Yet, a strong property rights regime alone will prove insufficient for measurable progress. The public sector will play an essential role in encouraging private real estate investment through the following actions:

Clear and standardized regulatory frameworks: Governments must create and enforce transparent laws and regulations that protect property rights, streamline zoning and permitting processes, and reduce bureaucratic hurdles. This will lower the cost and risk of investment, making the market more attractive to private investors and a diverse range of capital providers. Legislation that varies widely from city to city and region to region, increases the compliance and reporting burden companies face. Moving towards standardization and simplification will ease these burdens and reduce the complexity in meeting requirements.

Encouraging an information-rich market: Governments play a pivotal role in ensuring transparency and reducing information asymmetries across real estate markets. By supporting data accessibility, encouraging standardized reporting practices, and mandating disclosures, public agencies help create a more level playing field for investors, developers, and lenders alike. Such measures improve market efficiency, enabling all participants to make well-informed decisions and ultimately fostering a healthier, more competitive investment environment.

Infrastructure development: By facilitating public infrastructure such as transport, utilities and public spaces, the public sector enhances the return on investment in collocated real estate. Well-developed, well-run infrastructure attracts private developers by improving accessibility and the overall quality of the locations it supports.

Financial market stability and access to capital: Governments play a crucial role in facilitating financial market stability and ensuring broad access to capital. By implementing policies that encourage a diverse array of capital market participants – including banks, private lenders and institutional investors – governments help create a resilient financial ecosystem that can support real estate investment through economic cycles.

Financial incentives: The strategic deployment of subsidies such as tax incentives, grants and discounted credit instruments can stimulate private real estate investment by improving the risk-return profile of projects, especially in underdeveloped areas or for projects aligned with public goals like affordable housing. These incentives lower the cost of entry for private investors and promote long-term investment.

Economic stability and growth: A stable macroeconomic environment, including low inflation and sustainable growth, creates favourable conditions for capital inflows and real estate investment. Government policies, both at the local and national levels, that promote job creation, income growth, and overall economic health help increase demand for both residential and commercial properties, thereby attracting private capital into the real estate market. Regulation can also help stoke occupant and investor demand for more sustainable buildings, which is necessary to move the market and create a viable business case for decarbonization.

Private sector actions:

The task set to private market participants in this framework may seem daunting in scope and scale. In an environment characterized by evolving demand patterns and shifting capital markets, investors must devise and execute strategies where this framework's pillars are integral drivers of returns rather than drags:

Leadership and accountability: Leadership must clearly communicate the pillars as a priority and ensure they are embedded across different teams and within specific performance metrics. Aligning interests and incentives within organizations will help focus efforts across teams and drive internal collaboration.

Information, measurement and disclosure: Compared to even a decade ago, commercial real estate market participants now have access to an unprecedented wealth of information. While governments play a key role in promoting transparency, the private sector can also take the lead in advancing data quality and accessibility to its own advantage. By leveraging advanced data analytics, property tech platforms, and AI-driven insights, private firms can support better internal decision-making and enhance transparency through wider external disclosures. Comprehensive reporting on property performance, sustainability metrics and market trends strengthens investor confidence and enables more efficient allocation of resources and capital. Additionally, when private-sector participants actively share information and establish industry-wide standards, they contribute to a more transparent market environment, ultimately improving market outcomes and reducing risks for all participants.

Technology: The industry should actively explore and integrate technology applications over the next several years to support decarbonization and operational efficiency, both at the asset and enterprise levels. Technological solutions like smart building systems, AI-driven energy management and predictive analytics have the potential to significantly improve the occupant experience, optimize energy use and cut operational costs. Investing in property technology (proptech) not only enables the monitoring and automation of resource consumption but also positions assets to meet future regulatory standards and increase demand for sustainable spaces. Through judicious applications of new technologies, some yet unproven, investors can better hope to future-proof their portfolios, capture long-term value and contribute to global sustainability goals.

Capital markets: As inflationary pressures have subsided and central banks around the world shift to more accommodative monetary policy stances, the cost and availability of both equity and debt capital for real estate investment is improving. Nonetheless, the dislocations in capital flows that characterized the pandemic and post-pandemic periods – and the global financial crisis more than a decade earlier – underscore the importance of resilience in these areas, given the critical role of both equity and debt in facilitating development, investment and renewal. A robust capital stack, balancing traditional and non-traditional debt and equity, is essential to withstand both transitory and sustained disruptions in cash flows and valuations. On the debt side, both lenders and borrowers can take steps to ensure the appropriate use of leverage. Higher reserve requirements, conservative LTVs and debt yields, stringent documentation reporting requirements, and hedging tools like interest rate caps, can manage risks, reduce defaults, and limit strains on financial stability. Both lenders and investors should prioritize diversification, whether in terms of varying loan exposure across the debt stack or ensuring asset type and sub-market diversification in portfolios.

Resilience and sustainability criteria: The private sector has a powerful role in advancing resilience and sustainability through its investment decisions, even in environments where the political environment may not be supportive. By prioritizing assets that meet high environmental standards and exhibit adaptability to evolving market needs, investors can create portfolios that are not only more sustainable but also more attractive and liquid in the long term. Properties that incorporate green technologies, energy efficiency and climate-resilient designs tend to retain value better and offer more stable returns, especially as tenant and regulatory demands increasingly favour sustainable buildings. In this way, resilience and sustainability are not only good for the environment but also sound business strategies that enhance the investment appeal of real estate assets.

Conclusion

In cities and towns across the world, real estate's role in the economy and society is changing. As industry stakeholders work to reimagine spaces and undertake investments in support of a flourishing built environment, progress towards the goals described in this framework will define success or failure. While individual investors' priorities and strategies will necessarily differ, communities and cities that move decisively and collaboratively in support of liveability, sustainability, resilience and affordability will see the greatest returns on their public and private investments.

Ultimately, a broad recognition that the goals outlined in the framework are only achievable if the related investments can attract capital and offer competitive market returns must underpin a pragmatic approach to strategies for individual market participants and the communities they serve. While policy and regulation play a foundational role in determining the structure of capital markets and other facilitators of real estate investment, the private sector must be positioned and willing to execute on the vision.

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Endnotes

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