PGIM REAL ESTATE

TRENDS FOR 2020

Global Real Estate Trends Set to Shape the Next 12 Months

December 2019 | Investment Research

Executive Summary

With the year drawing to a close, we turn our attention to the outlook and identify the major occupier and investment trends that we expect to influence market conditions and investment performance in 2020 and beyond.

Global

We identify **four key global trends** that are set to have a significant aggregate impact:

1. **More Employment Growth to Come**: The current cycle continues to be driven by employment rather than productivity, while the stable outlook for global GDP growth points to another year of steady real estate returns.

2. **Low Supply Environment Persists**: The ongoing low supply environment continues to support prospects for rental growth, enhanced by a strong link with employment growth in the current cycle.

3. **Further Scope for Yield Compression**: Past interest rate increases have been weighing on real estate pricing, but the shift toward looser monetary policy paves the way for further yield compression in 2020.

4. **Cross-Border Flows Weakening**: Cross-border investment flows are weakening in the Americas and Europe, reflecting a wider slowdown in trade liberalization. Asia Pacific is bucking the trend.

Alongside the common global trends, there are also differences in the outlook across regions and sectors. We identify **ten region-specific trends** that reflect opportunities to benefit from diversification by strategy and geography.

Americas

1. **Office Demand to Slow as Key Drivers Moderate**: Office absorption is facing headwinds from the slowing pace of employment growth and uncertainty about flexible office demand.

2. **Office Tenant Expectations Continue to Rise**: Spending on tenant and building improvements is rising sharply as owners adapt to changing tenant requirements.

REF: 19YWHIT-BJLPBG

3. **Rising Debt Availability Across the Risk Spectrum**: Debt origination volume continues to rise, while debt funds are raising competition and pushing traditional lenders up the risk curve.

4. **Increasing Regulatory Burdens for Apartment Owners**: Regulation is increasing in response to societal need for affordable housing, impacting the pass-through from rental to income growth.

Asia Pacific

1. **Occupier Demand to Moderate**: Weaker economic growth points toward softer real estate demand in 2020, although net absorption of office and logistics space should remain positive.

2. **CBD Affordability Becoming Stretched**: Affordability is being stretched in the central business districts (CBD) of major cities, pushing occupiers toward cheaper submarkets and driving non-CBD rental growth.

3. **Logistics Demand Supported by Online Growth**: Logistics has become more closely aligned with the consumer cycle, while rising online spending points to significant growth in space requirements.

Europe

1. **More Rental Growth in Low Vacancy Office Markets**: Vacancy rates in major European office markets are below average and set to remain low enough to support further rental growth in 2020.

2. **Further Signs of Retail Distress to Emerge**: As online retail share continues to grow across Europe, recent experience in the United Kingdom suggests a challenging period ahead in other core countries.

3. **Apartment Volume Share Set to Level Off**: The apartment sector remains popular but recent growth may be curbed by headwinds including low yields and increased rent controls in major markets.

INTRODUCTION

From past real estate cycles we know that, eventually, expansion must give way to either a softer patch of returns or an outright downturn that features falling capital values. The challenge for real estate investors seeking to identify a turning point that leads to either of these outcomes is that conflicting signals abound.

On one hand, readings from major economic sentiment indicators, such as PMI surveys, are weak while ongoing trade tensions and concerns over faltering industrial production are weighing on the outlook. Global GDP growth is slowing to a cyclical low.

Yet on the other hand, in a historical context, the recorded deceleration in growth is fairly moderate, while the softness of leading indicators has already prompted central banks to reverse course and shift to an emphasis on policy easing. In aggregate, global economic growth is set to remain consistent with a reasonable level of real estate returns.

For real estate markets, it is not so much the pace of economic growth that is important, but its composition. Expansion continues to be driven by employment growth, rather than productivity gains, which is important as jobs are being added in a persistently low supply environment.

Even though shifting preference among real estate occupiers — notably higher density of space usage — are dampening the impact of sustained job growth, the overall picture is that demand is holding up and vacancy is falling in many major markets. With more employment growth to come, rental growth prospects remain bright regardless of softness in the wider economic outlook.

With policymakers starting to cut interest rates, the second half of 2019 was notable for a significant downward adjustment in both short- and long-term interest rate expectations. Looking forward to 2020, the implications of this shift in expectations are still feeding through, and renewed pricing momentum is set to represent the most significant shift in the real estate market outlook.

Given low interest rates and an abundance of capital looking at the sector — aided by conditions in which competing fixed income assets offer low or even negative yields — investors look set to override previous concerns about historic low yields in major markets, driving further yield compression.

While real estate performance looks set to remain resilient in 2020, the environment for investors remains challenging. Slower growth, shifting occupier preferences, an abundance of capital targeting the sector and competing for assets, and an ongoing transition to a lower return environment are hurdles that need to be overcome.

At the same time, 2020 is set to be a year in which there are opportunities to capitalize on favorable occupier and investment market momentum. Differences in the outlook and themes across regions and sectors point to increasing opportunities to benefit from diversification by strategy and geography.

Differences in the outlook and themes across regions and sectors point to increasing opportunities to benefit from diversification by strategy and geography.

GLOBAL

Looking ahead to 2020, we identify four key global trends that are set to have a significant aggregate impact. Although there are differences in the outlook across regions, these trends are set to provide a broadly consistent backdrop for performance in most major markets.

While the global economic growth story is slowing, the characteristics of the current cycle point to further employment growth at the same time as supply remains low. Even accounting for shifting use preferences, in aggregate, real estate should continue to deliver rental growth in these conditions.

At the same time, performance is also set to be boosted by further yield compression as pricing adjusts to a downward shift in long-term interest rate assumptions.

Broader trends matter too. Reflected in ongoing trade tensions, globalization is slowing. In real estate markets, this is showing up as a return to 'home bias' and a decline in cross-border investment activity — a phenomenon that implies both a threat and an opportunity for investors.

Global Trend 1: More Employment Growth to Come

The current cycle continues to be driven by employment rather than productivity, while the stable outlook for global GDP growth points to another year of steady real estate returns.

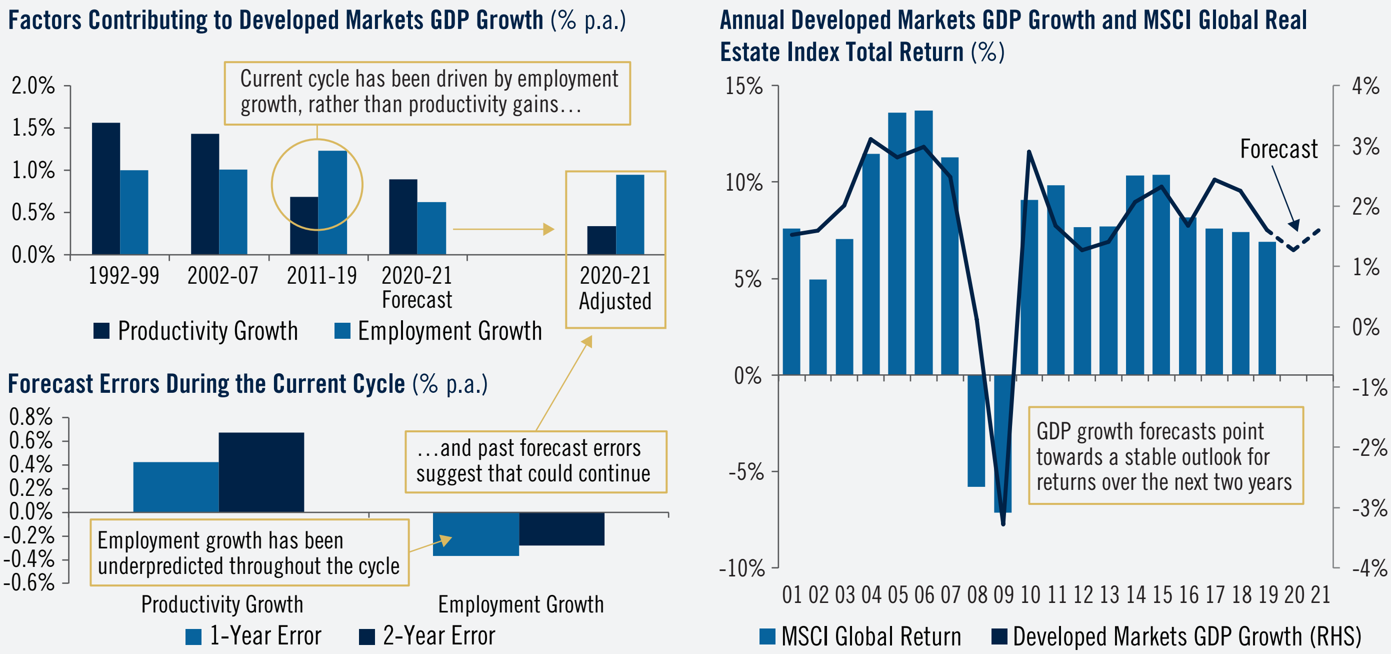
The current global economic cycle is an unusual one in that, unlike the previous two upswings, expansion has been driven more by employment growth than productivity growth (see exhibit 1).

The emphasis on employment as a driver of expansion has been consistently underestimated during the current cycle, largely as labor force participation rates have risen more quickly than anticipated.

So, while forecasts point toward weaker employment growth in the next two years compared to the average since 2011, past forecast errors suggest the outturn will be higher. For real estate investors, the upshot is that more employment growth is set to be recorded in the current cycle.

For real estate investors, the upshot is that more employment growth is set to be recorded in the current cycle.

Exhibit 1: Breakdown of Developed Markets GDP Growth and Global Real Estate Returns



Sources: OECD, Oxford Economics, MSCI, PGIM Real Estate. As of December 2019.

For real estate markets, employment matters not just because employees require workplaces, but also because they consume goods, services and housing, driving real estate demand across all sectors.

However, there are some headwinds too. The relative strength of employment growth is simultaneously detracting from productivity advances. To an extent, this reflects lower capital investment by firms, including into buildings they occupy.

A desire to keep outgoings contained is showing up most clearly in major office markets, where density — worker per floor space — continues to rise. Through the cycle, occupiers have tended toward consolidation or accommodating more workers into existing spaces, rather than expanding their floor space.

Overall, the picture for global real estate is one of steady returns continuing over the next two years. In aggregate, real estate returns typically follow the pattern of global GDP growth, and forecasts suggest little change in the pace of expansion in the near-term.

However, the composition of growth — which is expected to continue to favor employment over productivity — does matter. Even factoring in higher density, further employment growth means that more real estate space will be demanded even at what feels like a late stage in an already-long cycle.

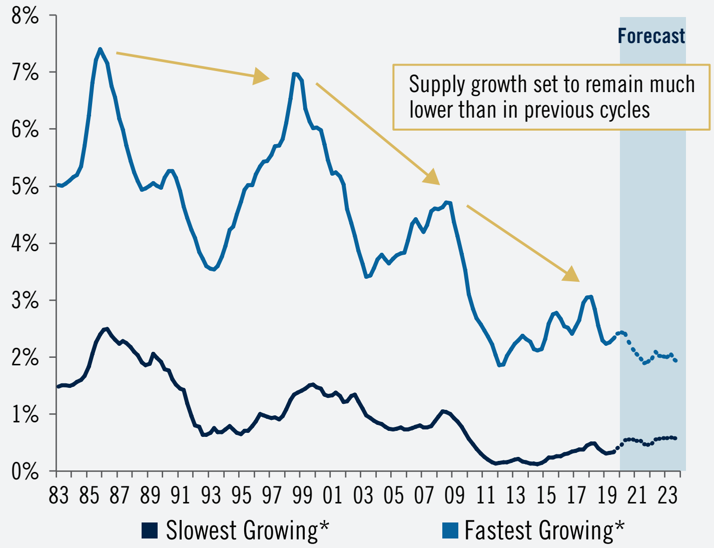
Global Trend 2: Low Supply Environment Persists

The ongoing low supply environment continues to support prospects for rental growth, enhanced by a strong link with employment growth in the current cycle.

In real estate terms, the current cycle continues to be characterized by low supply growth. While additions to space have edged up in the past few years, far less space is being added than in past cycles (see exhibit 2). A lack of available financing for development is still an issue in many markets, while capacity constraints in the construction industry and rising costs have been eating into profit margins and discouraging developers.

Exhibit 2: Global Supply Growth and Relationship Between Rental Growth and Employment

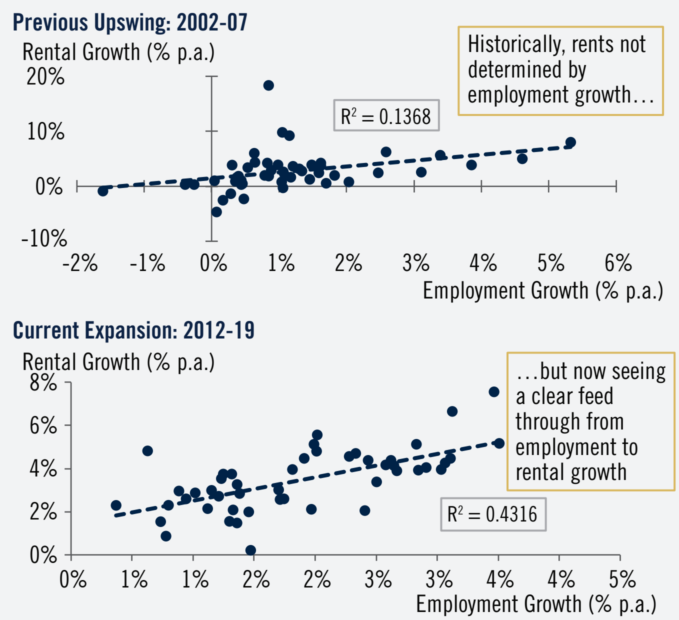
Supply Growth Range Across All Sectors & Markets (% p.a.)



* Fastest and Slowest Growing refer to upper and lower quartile among our sample of global office, retail, logistics and apartment markets.

Sources: CoStar, Cushman & Wakefield, JLL, PMA, PGIM Real Estate. As of December 2019.

All Property Prime Rental Growth & Employment Growth



During the current cycle, the persistent low supply environment has fostered a stronger link between employment growth and rental growth than in the previous upswing when stock additions were more pronounced. Prior to 2007, employment growth had very little explanatory power over rents across major cities, with rental growth driven by other factors such as swings in supply or productivity advances.

In contrast, since 2012, the labor market has been a key determinant of rental growth. In part, this relates to low supply growth, which implies a direct link between, for example, changes in office-using employment and occupancy.

The implications differ across sectors. In office markets, vacancy rates are generally falling, as modest supply is struggling to keep pace with growing tenant space demand, even once the dampening effect of rising density, that implies less space per additional job created, is accounted for.

For logistics markets, employment is an indirect indicator via its impact on consumer spending power — a key driver of demand, especially as online retail penetration is growing. Similarly, in apartment markets, people taking up employment in major markets such as the United States are more likely to form households, raising demand.

Looking ahead, while the supply pipeline is gradually picking up in some major markets — including Frankfurt, London and Tokyo office markets and in the U.S. apartment sector — there seems little prospect of completions accelerating materially across the board in the next few years.

Looking ahead, while the supply pipeline is gradually picking up in some major markets there seems little prospect of completions accelerating materially across the board in the next few years.

At the same time, employment growth is set to continue to be a feature of the cycle. Assuming the relationship continues to hold, there is room for further rental growth in 2020 and beyond.

Global Trend 3: Further Scope for Yield Compression

Past interest rate increases have been weighing on real estate pricing, but the shift toward looser monetary policy will pave the way for further yield compression in 2020.

For real estate markets, perhaps the most significant economic development of 2019 was the shift in policy stance by major global central banks. Softer than expected economic growth and contained inflation meant that monetary policy could be looser than previously anticipated. Most notably, the U.S. Federal Reserve started to cut its policy rate, the Fed Funds Rate, in July, reversing course after a period of tightening that had started at the end of 2015 (see exhibit 3).

This reversal has had a significant impact on how investors are thinking about pricing real estate assets. Forecasts for short- and medium-term interest rates have once again been revised down, reflecting a cyclical need for lower rates to combat slow economic growth, along with structural factors, such as aging populations, that are weighing on the long-term outlook for interest rate levels.

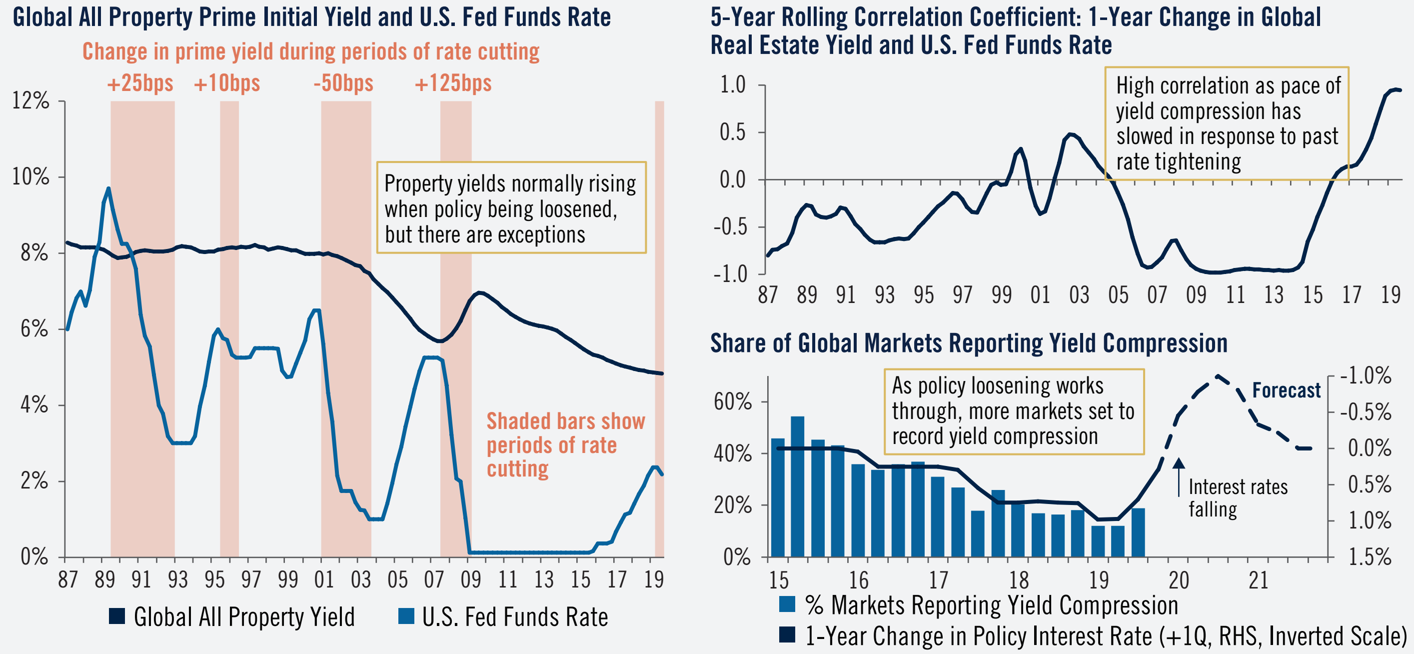
So far, the impact of the Fed starting to cut interest rates has been unusual. Typically, looser monetary policy corresponds with stable or rising property yields as policy is normally being eased in response to weaker economic conditions that affect the occupier side of real estate markets via lower demand, and the investor side via a higher risk premium that acts to push up yields.

One exception was in the early-2000s when the bursting of the dot-com bubble affected the wider U.S. and global economy, but had limited impact on either consumers or traditional real estate occupiers.

A notable feature of the past few years has been that movements in interest rates and property yields have become more closely aligned. This is a subtle point as property yields and interest rates are still moving in opposite directions, but rate increases have had a clear effect in dampening the pace of yield compression, although not reversing its direction.

To illustrate the effect more clearly, prior to the end of 2015, when Fed tightening began, global real estate yields were compressing at an annual rate of 30-35 basis points. As interest rates rose steadily until the second quarter of 2019, the pace of global yield compression decelerated to an annual rate of just 7 basis points.

Exhibit 3: Global Real Estate Yields and U.S. Fed Funds Rate



Sources: Oxford Economics, CoStar, Cushman & Wakefield, JLL, PGIM Real Estate. As of December 2019.

As such, there has been a direct link between the recent changes in interest rates and the number of global markets reporting yield compression (shown in exhibit 3). Demand for real estate continues to run high, but investors showed themselves less willing to bid up pricing when rates were going up.

Looking ahead, assuming the link between rate movements and yields holds for a while longer, 2020 is set to be a year in which more markets report yield compression, despite the historically low yields on offer in many major cities.

2020 is set to be a year in which more markets report yield compression, despite the historically low yields on offer in many major cities.

Global Trend 4: Cross-Border Flows Weakening

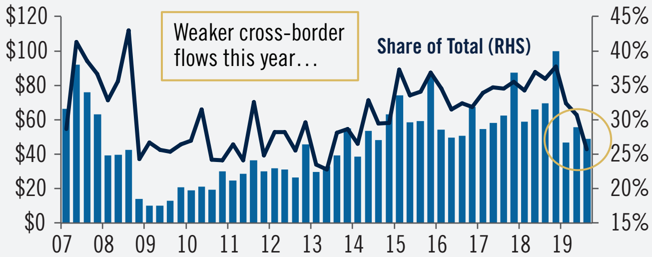
Cross-border investment flows are weakening in the Americas and Europe, reflecting a wider slowdown in trade liberalization. Asia Pacific is bucking the trend.

Global cross-border investing weakened sharply through 2019, with volume declining by 22% through the first three quarters of the year (see exhibit 4). Its share of overall global activity is also down, falling from 38% at the end of 2018 to just 26% in the third quarter of 2019. The implication is a return of 'home bias' — a tendency for investors to invest too heavily in domestic markets, ignoring the benefits of overseas diversification — in real estate investment activity.

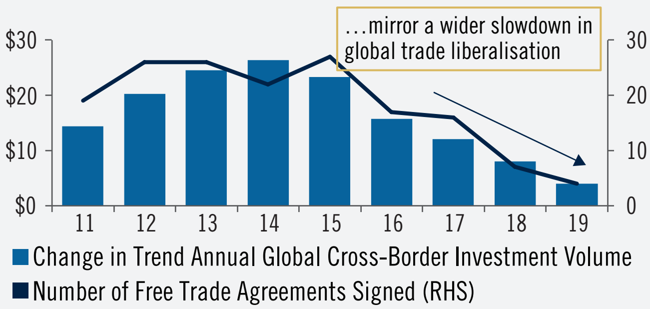
There are several factors behind this trend, including a return of wider uncertainty about the outlook for the global economy — and trade flows in particular — that is reinforcing a sense of caution among investors. In addition, the broader environment is one in which trade liberalization is slowing. The slowdown in the trend growth of cross-border real estate investment has mirrored the slowing pace at which free trade agreements have been signed globally since 2015.

Exhibit 4: Global Cross-Border Investment Activity

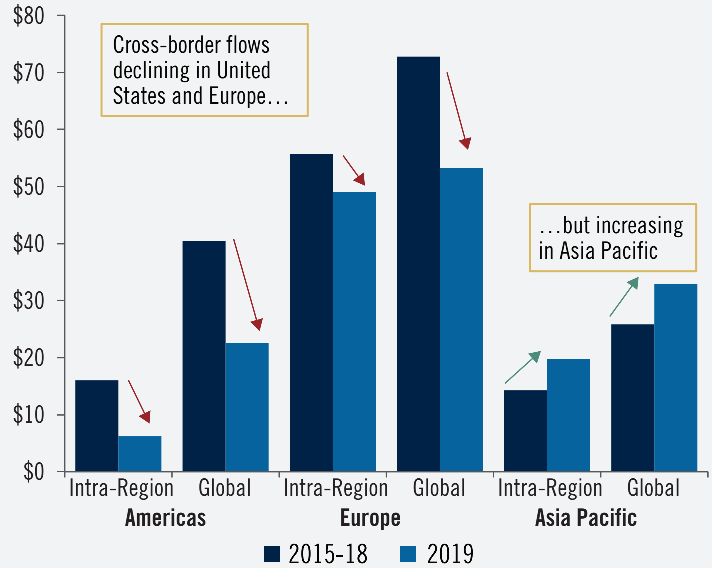
Global Cross-Border Investment Volume ($ Bil)



Cross Border Investment Volume ($ Bil) **and Trade Liberalization**



Cross-Border Volume by Region and Origin of Capital ($ Bil)



Note: "Global" refers to an aggregation of all capital originating from outside the region.

Sources: Real Capital Analytics, World Trade Organization, PGIM Real Estate. As of December 2019.

There are differences across regions. Both intra-region flows and global inflows are down sharply in the Americas, dampened by current trade policy uncertainty in the United States, and in Europe, where Brexit-related weakness in the UK — traditionally a strong cross-border market — is a contributing factor to the slowdown.

The broader environment is one in which trade liberalization is slowing.

In contrast, cross-border investment is holding up in Asia Pacific. Japanese investors are deploying more capital in south-east Asian markets, notably in Singapore, while Chinese investors remain active across the region in contrast to a marked slowdown in acquisitions in other parts of the world.

Current signals from policymakers in the world's major economies do not suggest there will be a reversal of declining liberalization — or "de-globalization" — any time soon. As such, the wider backdrop of trade flows and policy co-operation points toward further sluggishness in global cross-border activity.

Despite the benefits of global diversification in terms of reducing portfolio volatility and limiting exposure to market- and sector-specific risks, 2020 is set to be a year in which home bias remains a factor determining capital flows, and cross-border investment flows remain subdued.

AMERICAS

In the United States, employment growth is still feeding through into office demand but its impact is being dampened by rising density, while there are concerns about the outlook for flexible office providers which have been a key source of demand.

As in other parts of the world, supply is relatively modest in most sectors this cycle, supporting rental growth prospects, although landlords are having to work harder — and spend more in capex — to attract tenants in a fast-changing marketplace. In the apartment sector, a rising regulatory burden poses a threat to an otherwise favorable outlook.

Reflecting the global trend, pricing is set to be supported by low interest rates, and debt availability is rising. With capital still looking to get into the market and competition among debt providers rising, transaction volume should stay resilient in 2020.

Americas Trend 1: Office Demand to Slow as Key Drivers Moderate

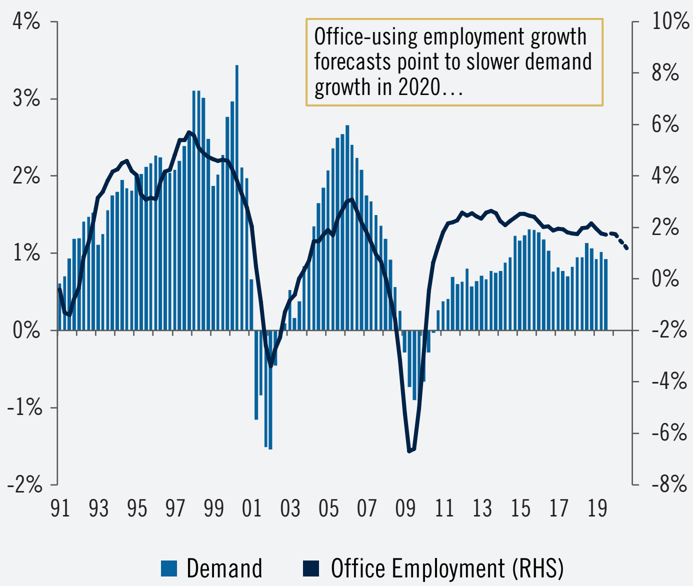
Office absorption is facing headwinds from the slowing pace of employment growth and uncertainty about flexible office demand.

One notable feature of the current office market cycle has been the relatively modest pace in office demand growth given the prolonged, steady gains in office employment (see exhibit AM1).

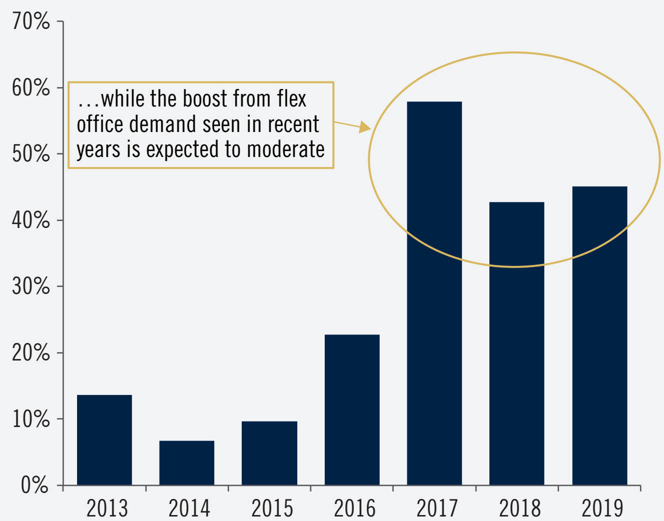
A variety of factors have been responsible. Initially, there was an overhang of under-occupied space coming out of the last recession that weighed on the pace of absorption. In addition, many occupiers are consolidating rather than expanding and, reflecting the global pattern, shifting tenant preferences are favoring higher density occupancy. These include the adoption of open-plan workspaces and a preference among workers to locate in denser CBD locations that offer better amenities.

Exhibit AM1: Office Demand and Flexible Office Share of Absorption

Annual U.S. Office Demand and Office-Using Employment Growth



U.S. Flexible Office Net Absorption (% Total)



Sources: Costar, Oxford Economics, CBRE, ISI, PGIM Real Estate. As of December 2019.

In the past few years, the emergence of flexible office providers has provided a boost to office demand. Often referred to as coworking, these tenants, along with technology firms, have been one of the few net sources of new office demand. Flexible office leasing has accounted for more than 40% of net absorption since 2016, and the sector's share of U.S. office occupancy has doubled.

Flexible office leasing has accounted for more than 40% of net absorption since 2016, and the sector's share of U.S. office occupancy has doubled.

Looking ahead to 2020, there are signs that office demand is set to ease. While employment growth remains positive, its pace is expected to slow as historically tight labor markets mean a decreasing pool of available workers — especially for office-using jobs.

At the same time, the durability of flexible office demand is now in question, owing to concerns about several high-profile coworking operators. A pause or retrenchment in space demand among major players in the sector would exacerbate the slowdown in absorption linked to employment growth.

The moderate picture at the national level masks some differences among markets. Those office markets with the strongest demographic and migration trends, including Sunbelt metro areas such as Dallas, Raleigh, Charlotte, and Atlanta, are likely to see the strongest rates of net absorption going forward.

Americas Trend 2: Office Tenant Expectations Continue to Rise

Spending on tenant and building improvements is rising sharply as owners adapt to changing tenant requirements.

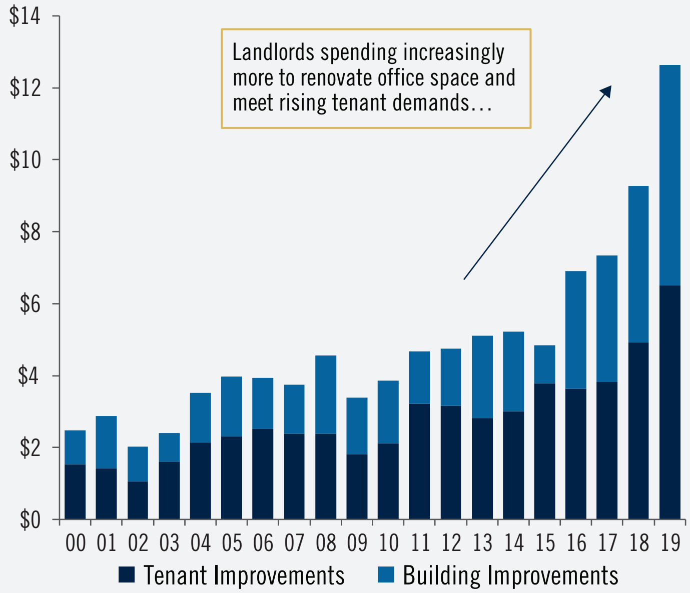
Office buildings have always been the most capital-intensive of the major property types, but U.S. owners are spending even more to meet the rising expectations of tenants.

Requirements for higher quality amenities — such as full-service cafeterias, fitness facilities and employee lounges — newer technologies, and non-traditional space configurations are forcing owners to upgrade space to compete for tenants.

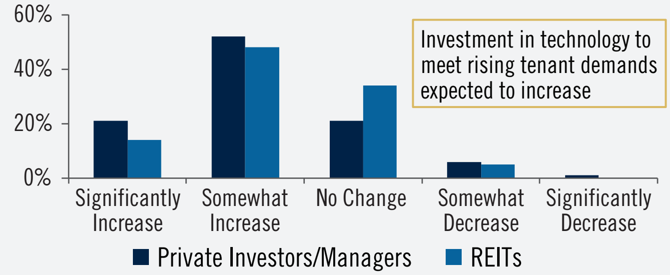
According to the NCREIF Property Index, spending on both tenant and building improvements in office properties has risen sharply in recent years (see exhibit AM2) as landlords seek to upgrade properties to accommodate the changing needs of office users.

Exhibit AM2: Analysis of Capex and Investment in Buildings

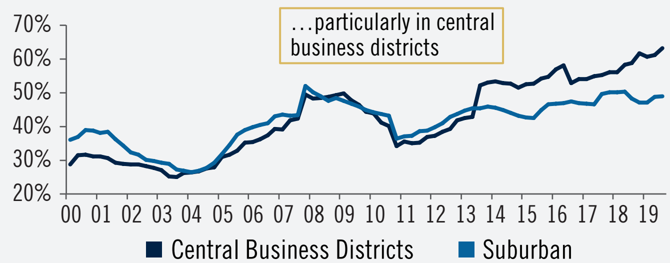
Annual NCREIF Office Tenant and Building Improvements ($ per sq ft)



Anticipated Change in Tenant-Related Technology Investment



Office Capex (% NOI, 3-Year Rolling Average)



Sources: NCREIF, Deloitte, PGIM Real Estate. As of December 2019.

This trend is set to continue, not least as office space is viewed as an important factor in talent recruitment. Linked to this, many occupiers continue to shift toward non-traditional office formats. In a recent CBRE survey, only 26% of occupiers expected to have a "traditional" office layout in 2020, down from 50% in 2018. For owners, converting from a traditional layout often requires capital-intensive space reconfigurations.

Landlords are also increasing investment in technology to meet tenant expectations. A recent Deloitte survey of private real estate managers and investors found that 73% of respondents anticipated increasing their spending on tenant experience-related technologies in 2020.

The upgrading trend is particularly prevalent in downtown office markets, with landlords spending a much higher percentage of NOI on improvements and upgrades than in suburban areas. New supply, which is higher in CBD areas, is playing a role, ensuring competition among owners of new and existing space to provide modern workplaces.

Requirements for higher quality amenities, newer technologies, and non-traditional space configurations are forcing owners to upgrade space to compete for tenants.

Americas Trend 3: Rising Debt Competition Across the Risk Spectrum

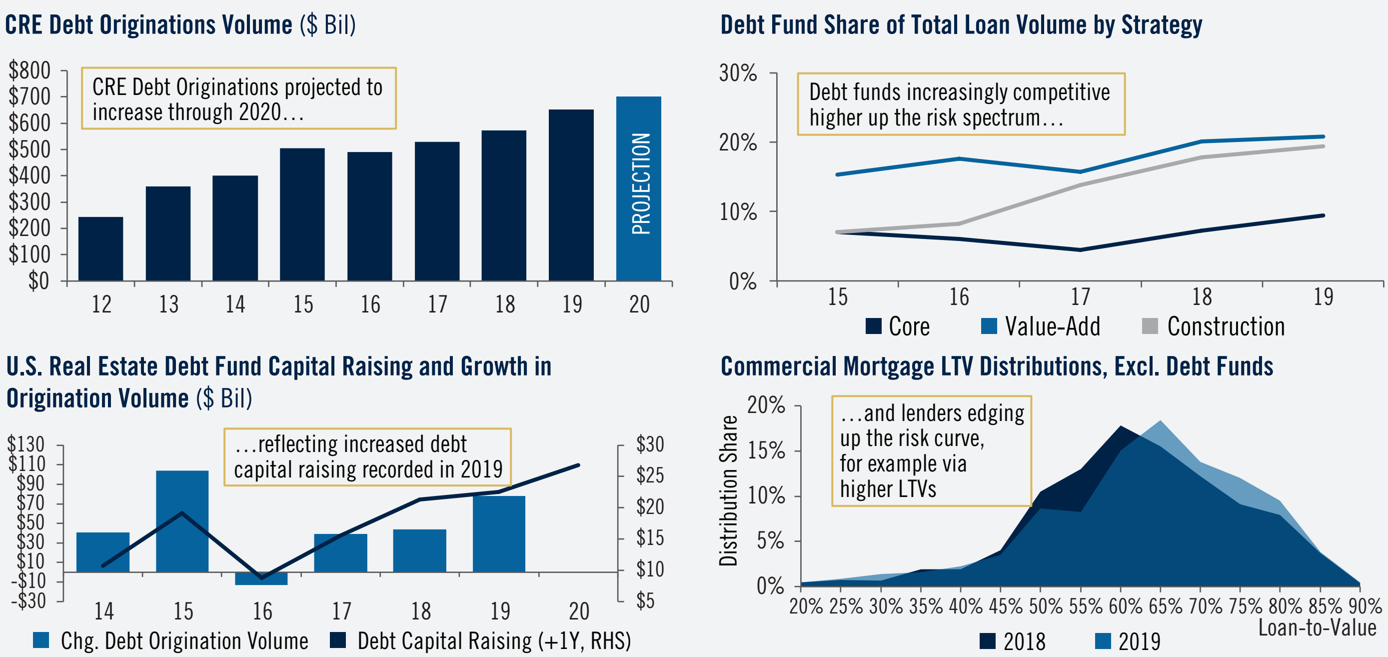
Debt origination volume continues to rise, while debt funds are raising competition and pushing traditional lenders up the risk curve.

In the commercial real estate debt space, there is no sign of a slowdown in the volume of new loan originations. Debt originations secured by commercial and multifamily properties have increased each year since 2016 and are estimated to reach $652 billion by year-end 2019 (see exhibit AM3).

Several factors suggest a further increase in loan origination volume in 2020. Low interest rates are supporting new originations, with real estate owners either choosing to refinance debt on existing properties, finance the purchase of new properties, or fund new construction.

In addition, strong fundraising among private debt funds is both an indicator of capital available for originations, and of sentiment toward lending in the wider market. Based on debt fundraising recorded in 2019, which points to an acceleration in lending activity next year, and trends in lending data from the Mortgage Bankers Association, origination volume is projected to increase to $700 billion in 2020.

Exhibit AM3: Debt Origination Volume and Composition of Lending



Sources: Mortgage Bankers Association, Real Capital Analytics, PGIM Real Estate. As of December 2019.

Private debt funds are set to remain competitive, particularly in the value-add and construction lending space in which their share of the overall lending market is increasing.

An increasingly crowded lender universe is set to put further pressure on lenders to accept lower returns for increased risk. During the course of 2019, traditional lenders have begun to move up the risk curve — for example by accepting higher loan-to-value (LTV) ratios as shown in the distribution plot in exhibit AM3 — to win deals, a pattern that is expected to continue in 2020 owing to the volume of capital available for lending.

Traditional lenders have begun to move up the risk curve to win deals, a pattern that is expected to continue in 2020 owing to the volume of capital available for lending.

Americas Trend 4: Increasing Regulatory Burdens for Apartment Owners

Regulation is increasing in response to societal need for affordable housing, impacting the pass-through from rental to income growth.

After a decade of rising apartment demand and rental growth that has outpaced income gains in many cities, rental housing affordability has become a more prominent political topic at both the national and local levels. While the challenge of providing affordable housing is recognized by state and local governments, the proposed solutions are nowhere close to uniform.

The challenge of providing affordable housing — defined as homes for which the occupants are paying no more than 30% of their income for gross housing costs, including utilities[1] — is not new.

[1] U.S. Department of Housing and Urban Development.

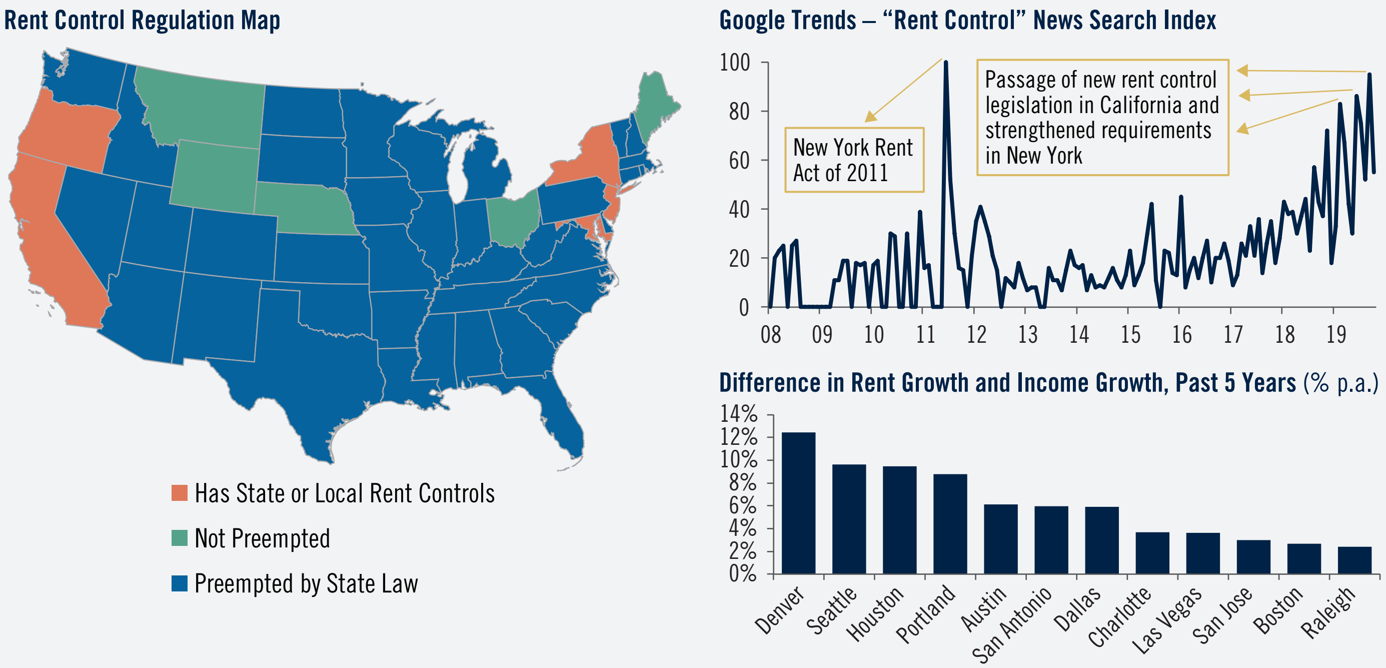
Over the past three decades, a growing number of cities have adopted “inclusionary zoning” policies, which either provide incentives for or require new developments to keep a portion of units affordable to moderate- or low-income residents, sometimes coupled with tax abatements to offset lower property incomes. Between 2000 and 2010, for example, 115 new inclusionary zoning laws were adopted in the United States, and the number of new ordinances adopted this decade is on track to match that.

Yet even after the adoption of inclusionary zoning policies over the past three decades, rental housing affordability is, on average, declining in the United States. The share of renters paying more than 30% of their incomes on rental housing costs is 49% at the national level, and above 50% in 11 large metro areas.

In response to declining affordability, some state and local governments have enacted or strengthened rent control legislation (see map in exhibit AM4). Rent control goes beyond other incentives to provide affordable housing by restricting rent increases in some or most existing units. In New York, existing regulations were tightened in mid-2019, with smaller permitted rent increases and limits on permitted pass-throughs of capital improvement expenses. In addition, new statewide rent control laws have recently been adopted in two states, Oregon and California.

After a decade of rising apartment demand and rental growth that has outpaced income gains in many cities, rental housing affordability has become a more prominent political topic at both the national and local levels.

Exhibit AM4: The Impact of Apartment Rent Controls on Income Growth



Sources: Google Trends, American Community Survey, PGIM Real Estate. As of December 2019.

A look at the map suggests that rent control legislation should remain the exception rather than the rule in the United States. There are still 36 states that have no statewide rent control and laws that preempt local jurisdictions from adopting their own ordinances.

However, Oregon and California were in that group of states until recently, when their legislatures changed course. These changes were preceded by periods where rental growth substantially outpaced income growth in their major cities.

Looking ahead, some cities with no rent control, such as Denver and Seattle, have experienced substantially faster rent than income growth over the past five years, which merits close monitoring for the introduction of new laws. The prospect of more states adopting or allowing new ordinances, raises the risk for investments in the apartment sector.

ASIA PACIFIC

Among the major regions, Asia Pacific is in the midst of the most substantial slowdown in demand, although pricing, as in other regions, continues to be supported by low interest rates. Asia Pacific is set to attract further capital flows in 2020, notably as cross-border investment activity is holding up.

But while overall rates of economic growth look attractive in a global context, concerns about the outlook for trade, manufacturing and exports are feeding into a sense of uncertainty.

Employment continues to grow but density is rising and space absorption is slowing. CBD affordability is looking stretched and cost-conscious occupiers are increasingly turning to less expensive submarkets to meet requirements.

However, there are still pockets of growth potential across the region. Notably, logistics demand is growing at pace, despite slowing demand from the manufacturing sector, owing to the ongoing expansion of online retail requirements.

Asia Pacific Trend 1: Occupier Demand to Moderate

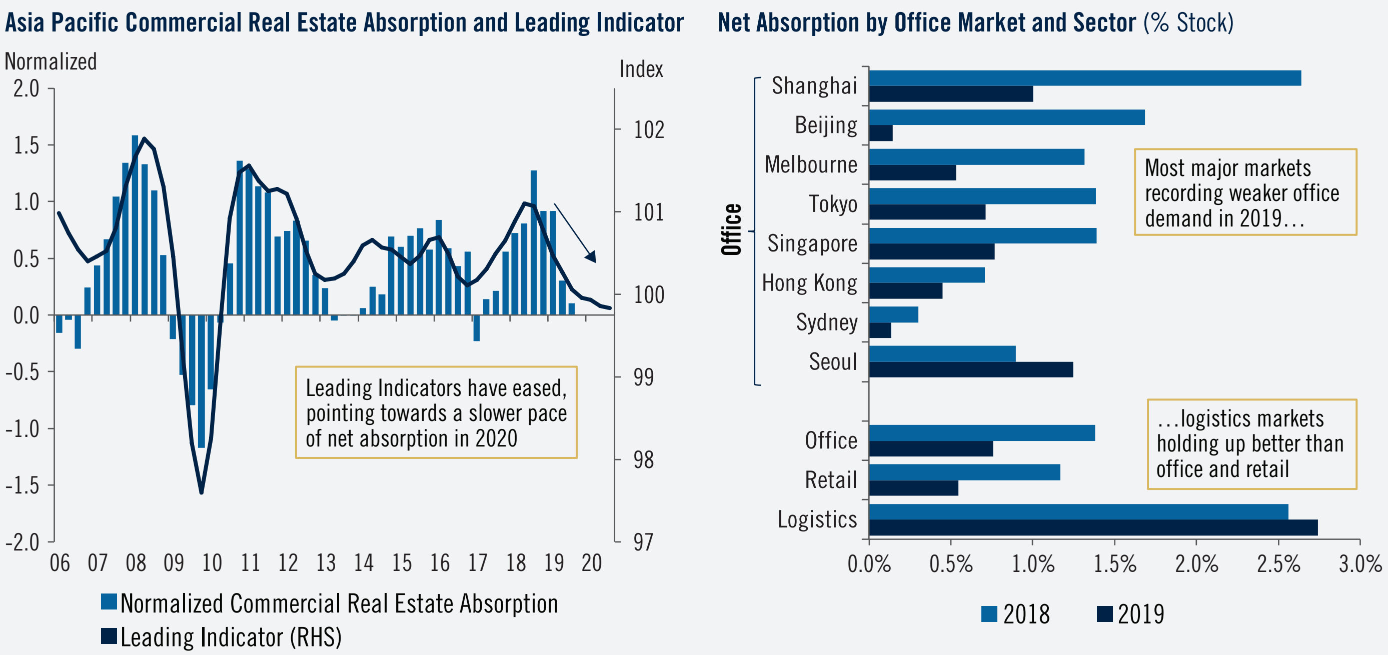
Weaker economic growth points toward softer real estate demand in 2020, although net absorption of office and logistics space should remain positive.

Economic growth momentum is softening across the Asia Pacific region, linked to weaker export demand, ongoing global trade tensions, and a global industrial production slowdown.

In an uncertain environment, firms are cutting back investment and delaying expansion decisions, actions that have a direct impact on real estate demand. The OECD's leading indicator of economic activity, which has demonstrated a strong correlation with commercial real estate absorption through the current cycle, has fallen back over the past year and is pointing toward softer demand in 2020 (see exhibit AP1).

In an uncertain environment, firms are cutting back investment and delaying expansion decisions, actions that have a direct impact on real estate demand.

Exhibit AP1: Real Estate Absorption and Leading Indicator



Sources: JLL, OECD, PGIM Real Estate. As of December 2019.

However, Asia Pacific is a diverse region and the story varies by sector and geography. In the office sector, absorption is moderating as leasing activity in major markets is being driven largely by renewals rather than expansions. New development projects are also reporting slower pre-leasing activity.

Changing occupier preferences are having an impact too. Markets that have been relying on flexible office demand in recent years, such as Singapore, Hong Kong and Seoul, are facing a risk of a sharp fall in absorption as operators turn more defensive.

In the retail sector, tenants are facing near term headwinds from the pressure of rising online sales and slowing consumer spending growth. Absorption of retail space is set to remain weak, with only a handful of tourist-driven submarkets — in cities such as Tokyo and Seoul — and suburban markets in Singapore, benefiting from retailer expansion. Cautious sentiment toward retail investment is set to persist in 2020.

While leasing demand is likely to moderate overall, net absorption is set to remain positive in the office and logistics sectors in the coming year. Brisbane is at an early stage of demand recovery in its cycle, while markets such as Tokyo, Osaka, and Melbourne have higher exposure to domestic demand — meaning less dependence on exports — and should continue to record resilient take-up.

Asia Pacific Trend 2: CBD Affordability Becoming Stretched

Affordability is being stretched in the central business districts (CBD) of major cities, pushing occupiers toward cheaper submarkets and driving non-CBD rental growth.

Many office markets have recorded significant rental growth through the current cycle. Vacancy rates remain at or close to historic lows, and landlords are able to increase rents. However, there are concerns that rental affordability is becoming stretched.

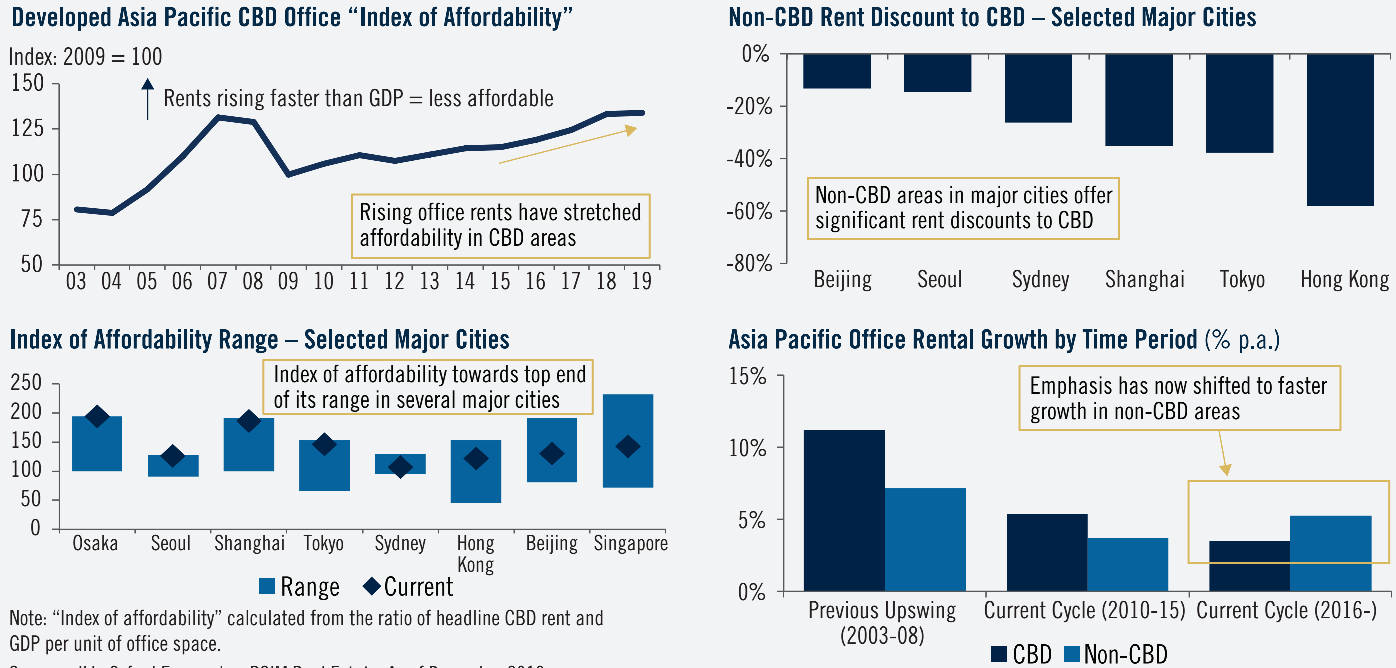
Our simple Index of Affordability tracks the ratio of rents to economic output produced per unit of space over time (see exhibit AP2). If rents are rising more quickly than GDP per unit of space, then affordability diminishes, and vice versa if the ratio is falling.

The index shows that office markets across Asia Pacific have become steadily less affordable through the cycle and the reading is now above peaks recorded in 2007 prior to the global financial crisis. In several major cities, including Osaka, Seoul, Shanghai, and Tokyo, the index is at record levels compared to history.

Rising cost pressures mean that tenants are either increasing the density of their occupation or looking to alternative, more affordable, options. In many markets, there are steep discounts for occupiers to relocate to less desirable submarkets. Rising demand for decentralized office in Sydney and Singapore, and grade B space in Tokyo, for example, demonstrate a shift in preferences away from more expensive central locations.

Rising cost pressures mean that tenants are either increasing the density of their occupation or looking to alternative, more affordable, options.

Exhibit AP2: Office Market Affordability and Rental Growth



Note: "Index of affordability" calculated from the ratio of headline CBD rent and GDP per unit of office space.

Sources: JLL, Oxford Economics, PGIM Real Estate. As of December 2019.

Rents are starting to adjust. In contrast to the earlier part of the cycle, non-CBD rents across Asia Pacific have grown more quickly than their CBD counterparts since 2016.

While leasing demand is set to slow in 2020, occupiers continue to face affordability constraints in central areas. Submarkets or assets that can offer affordable leasing options are set to attract further demand from occupiers.

Asia Pacific Trend 3: Logistics Demand Supported by Online Growth

Logistics has become more closely aligned with the consumer cycle, while rising online spending points to significant growth in space requirements.

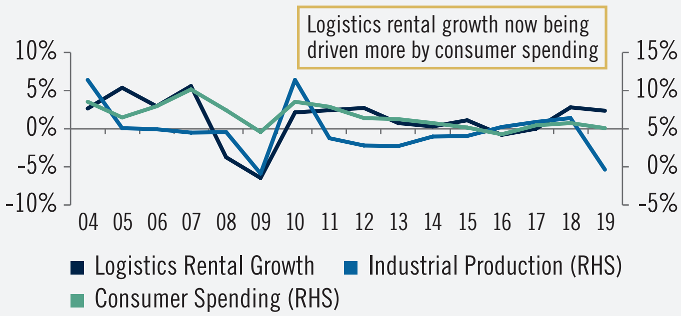
Benefiting from an ongoing structural rise in e-commerce penetration, the logistics sector continues to record rising occupier demand, largely driven by retailers that are looking to enhance their distribution networks, and third-party logistics operators.

As a result, logistics market performance is becoming less correlated with industrial production — its traditional driver of demand — and more closely aligned with the consumer cycle (see exhibit AP3). Given the expectation that headwinds impacting trade and manufacturing are set to persist in 2020, the shift toward consumer-driven performance bodes well for the sector.

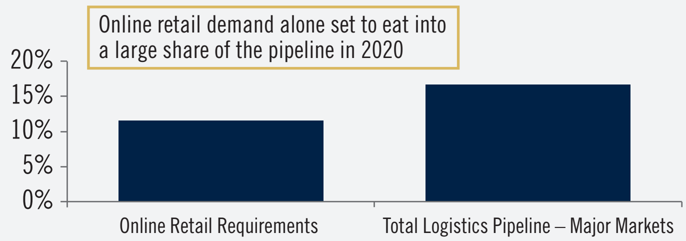
The logistics sector continues to record rising occupier demand, largely driven by retailers that are looking to enhance their distribution networks, and third-party logistics operators.

Exhibit AP3: Analysis of Logistics Performance and Impact of Online Retail

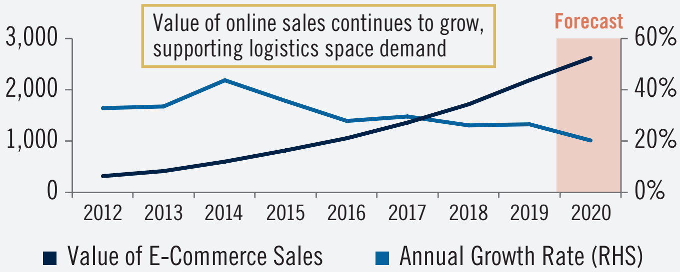
Annual Logistics Rental Growth – Major Cities



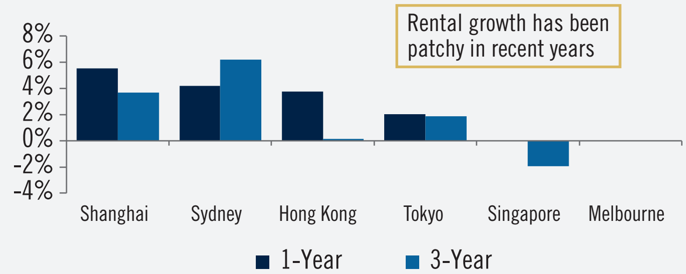
Estimated 2020 Logistics Requirement Based on 100,000 sqm per $1 Billion Online Sales vs 2020 Pipeline (% Existing Stock)



Value and Growth of E-Commerce Sales (US$ Bil)



Logistics Rental Growth (% p.a.)



Sources: JLL, Oxford Economics, PGIM Real Estate. As of December 2019.

E-commerce growth is slowing, but it is still growing at an annual rate of about 20% across the region. Based on our analysis of global operators, our estimate is that for each $1 billion of additional online sales generated, an additional 100,000 square meters of logistics space will be required.

In 2020, online retail spending is set to increase by $440 billion, which implies significant growth in the demand for logistics space. While the logistics supply pipeline equates to about 15% of existing stock across major markets such as Shanghai, Tokyo, and Singapore, rising online demand is set to eat into a large share of space being delivered.

Although rental growth remains patchy, held back by factors such as declining operating margins and weaker trade growth, the relative resilience of the consumer sector and the prospect of further online spending growth point to ongoing opportunities in the sector.

EUROPE

In Europe, 2020 looks set to be a year in which caution and optimism battle for supremacy. So, while there are concerns about the pace of economic expansion, the prospect of further employment growth in a low supply environment means that office vacancy rates are set to remain at levels consistent with ongoing rental growth.

Real estate should continue to attract capital in this environment, but there are some challenges too. If the UK example is anything to go by, the retail sector is set to face more distress across Europe in 2020 as online penetration reaches a level that starts to affect physical store requirements.

As in many parts of the world, regulation is becoming an issue. Along with logistics, the apartment sector has been attracting capital on the back of declining retail prospects, but the possibilities of rent controls being imposed are casting a shadow on the outlook. Opportunities and threats are set to go hand in hand in the months to come.

Europe Trend 1: More Rental Growth in Low Vacancy Office Markets

Vacancy rates in major European office markets are below average and set to remain low enough to support further rental growth in 2020.

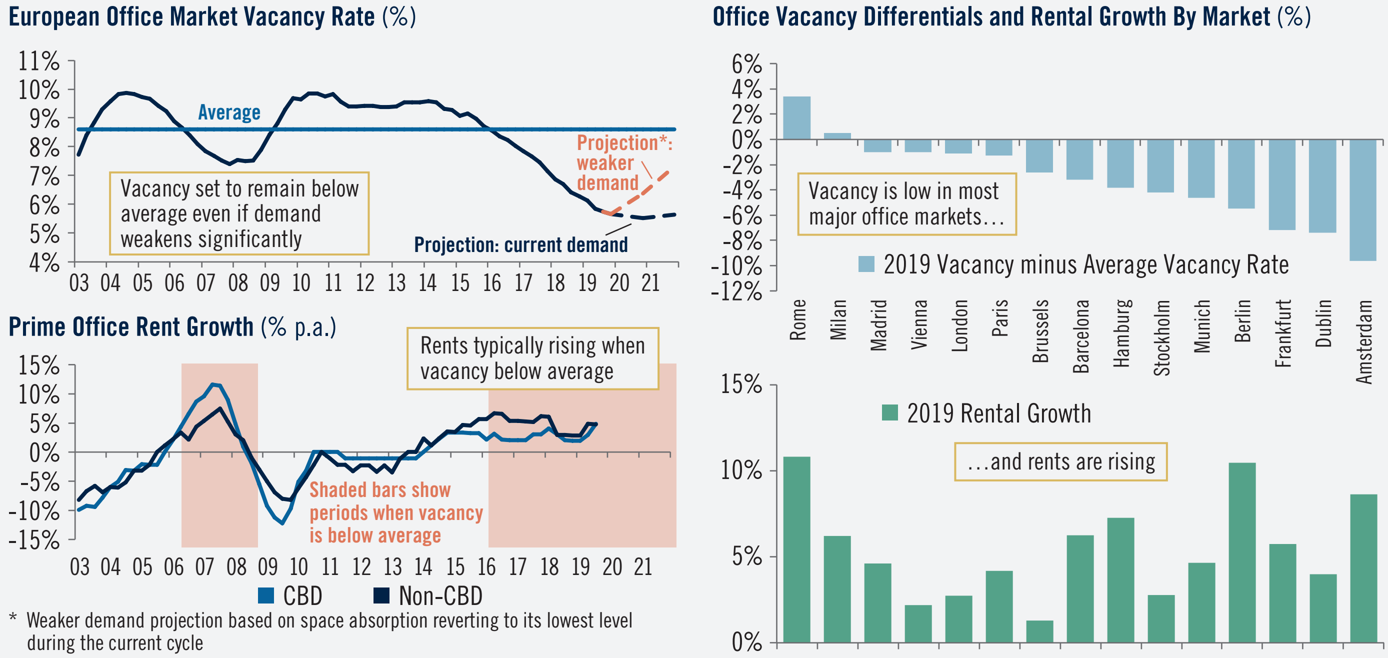
One of the most notable features of the current cycle is that vacancy rates across European office markets have fallen significantly below historic averages (see exhibit EUR1). Echoing global-level trends, employment growth has been elevated through the cycle, driving demand, while supply growth remains low, pushing down availability.

After averaging 9.5% in major office markets in the early part of the cycle between 2010 and 2014, vacancy has subsequently fallen to about 5% today. Meanwhile, a simple analysis demonstrates that periods of below-average vacancy rates are normally accompanied by sustained rental growth.

Even as economic growth is easing in major European countries, markets like Amsterdam, Berlin, and Frankfurt are reporting steep increases in headline office rents as tenants compete for scarce available space.

Even as economic growth is easing in major European countries, markets like Amsterdam, Berlin, and Frankfurt are reporting steep increases in headline office rents.

Exhibit EUR1: European Office Market Vacancy and Rental Growth



* Weaker demand projection based on space absorption reverting to its lowest level during the current cycle

Sources: Cushman & Wakefield, PMA, PGIM Real Estate. As of December 2019.

There are some differences in the current cycle. Employment growth has been more focused on lower value-added services and small businesses, rather than traditional CBD occupier groups such as finance or insurance. Flexible office providers have also been commanding a significant share of take-up. As a result, non-CBD markets have fared well, delivering stronger rental growth than their CBD counterparts since 2015.

Looking ahead, there is some supply growth coming through — notably in markets like Berlin and Paris — but the pace of construction remains modest compared to past cycles.

While there are some risks that availability may rise, on our simple projection even if demand fell back to a cyclical low, the overall vacancy rate would remain well below average, pointing to further rental growth potential in 2020 and beyond.

Europe Trend 2: Further Signs of Retail Distress to Emerge

As online retail share continues to grow across Europe, recent experience in the United Kingdom suggests a challenging period ahead in other core countries.

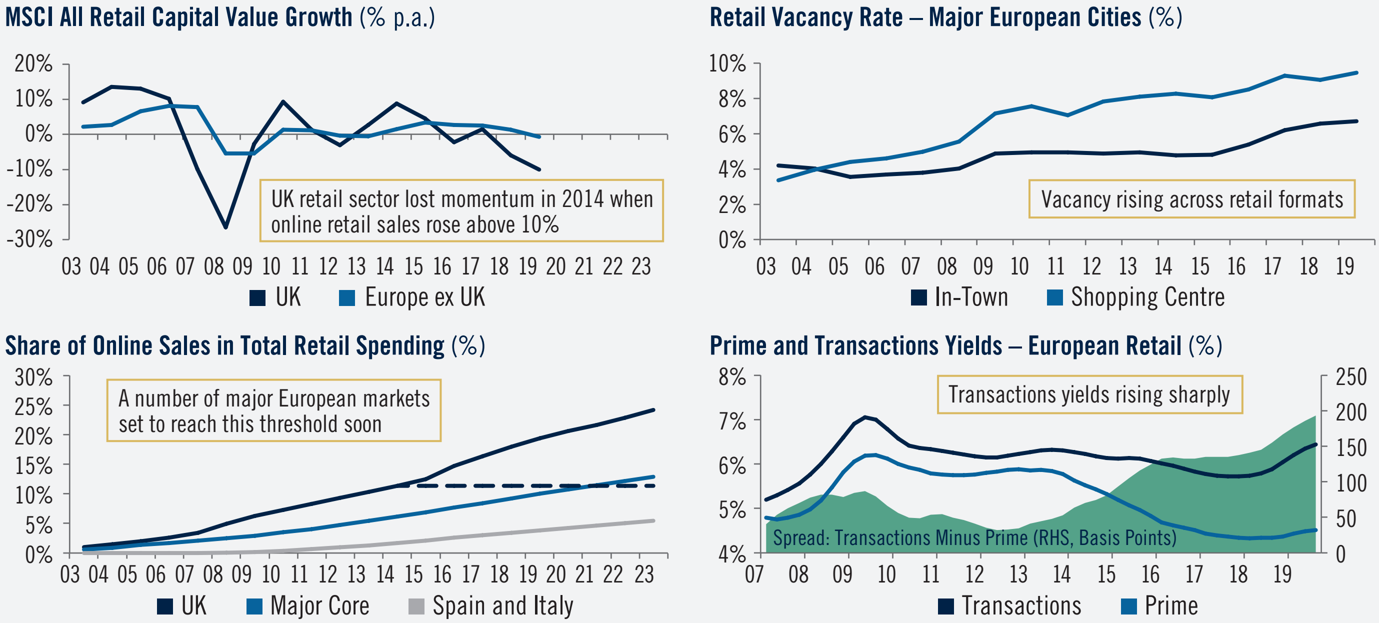
Among European markets, the UK is clearly the furthest ahead in terms of the development and influence of the online retail sector. The question is whether its recent experience can give us an insight into future performance in other markets.

While recent real estate market performance in the UK has been dampened by macro uncertainty — not least owing to an as yet unresolved Brexit process — consumer spending has held up reasonably well. However, the UK retail real estate sector is struggling.

Retail capital value growth began to lose momentum in 2014, well before Brexit was even on the radar, and values across all retail formats are now falling at an annual pace of -10% (see exhibit EUR2).

At the point momentum first started to falter in 2014, UK online sales were about 11% of the total retail market. While most other European countries are further behind, online penetration is now approaching this 11% “threshold” in major core European markets — including France, Germany, and Sweden — and 2020 is set to be the crossing point.

Exhibit EUR2: Retail Market Analysis



Note: "major core" markets refer to France, Germany, Netherlands and Sweden

Sources: Cushman & Wakefield, MSCI, PMA, Real Capital Analytics, PGIM Real Estate. As of December 2019.

There are already signs that momentum is slowing. Our estimates suggest that retail values in Europe, excluding the UK, fell by nearly 1% in 2019, compared to an average increase of 2% per year in the previous three years. On the occupier side, vacancy is edging upwards across all retail formats, including for units on previously sought-after prime in-town shopping streets.

Experience in the UK demonstrates that pricing is difficult in this environment. Uncertainty about what the physical retail market of the future will look like — and the durability of its cashflows — requires a higher risk premium today.

Uncertainty about what the physical retail market of the future will look like — and the durability of its cashflows — requires a higher risk premium today.

Across Europe, yields at the prime end are just about holding up, albeit based on much lower transaction volume, while average transaction yields are rising rapidly, up 75 basis points over the past year.

Opportunities will arise eventually. In the UK, retail vacancy has even started falling again, although this reflects a combination of stock withdrawals and sharp reductions in rents being charged to attract tenants, which are weighing heavily on NOI growth.

While countries like Italy and Spain have much lower online penetration and may offer some resilience in the near-term, the signs are that major European core markets will not be immune from the challenges facing the sector for too long.

Europe Trend 3: Apartment Volume Share Set to Level Off

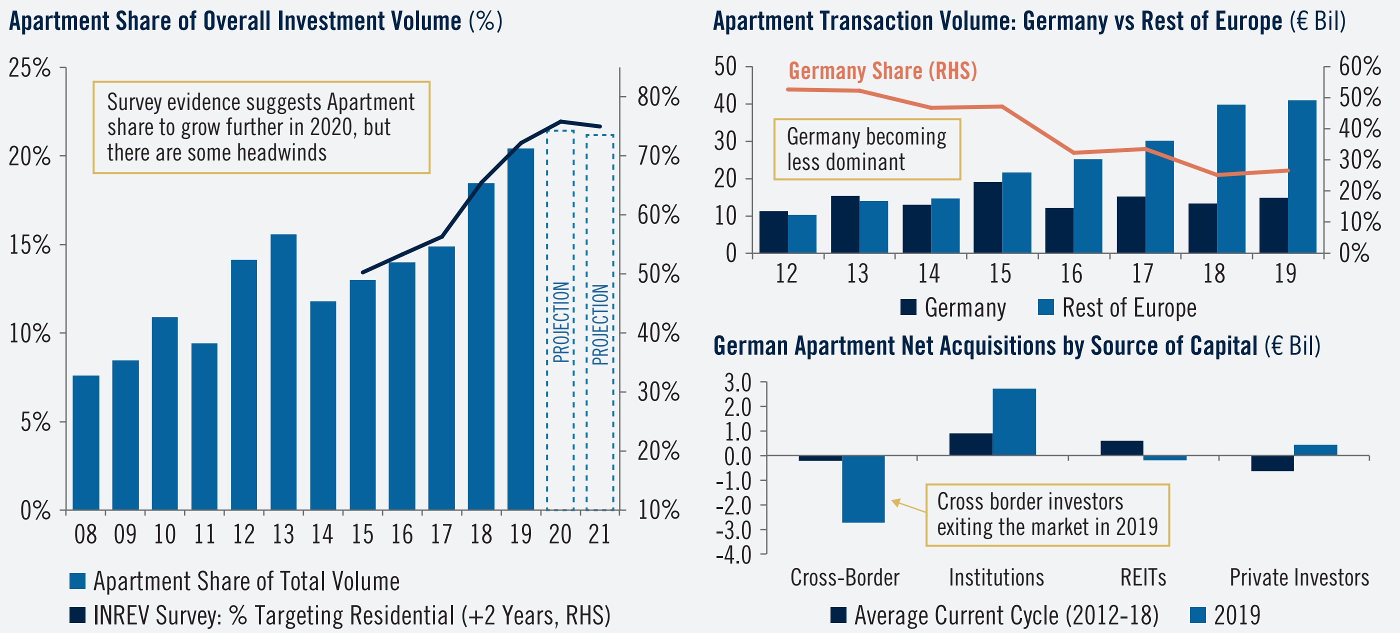
The apartment sector remains popular but recent growth may be curbed by headwinds including low yields and increased rent controls in major markets.

In recent years, interest in investing in apartments across Europe has grown significantly. The share of apartment demand in overall investment volume has risen from 12% in 2014 to 20% in 2019 (see exhibit EUR3).

INREV's survey of investor preferences has consistently shown that a significant share of investors is targeting the residential sector. Not only does the sector offer a defensive income stream and diversification against holdings in other sectors, but a combination of favorable demand growth and constrained supply in major cities means it has been recording rental growth.

Based on the results from the INREV survey, which have closely tracked investment activity two years ahead during the current cycle, the apartment sector should continue to grow its share of activity in 2020. However, some headwinds are appearing, and the most recent survey showed a slight drop in investors targeting the sector, which is set to weigh on deal volume further out.

Exhibit EUR3: European Apartment Investment Market



Sources: INREV, Real Capital Analytics, PGIM Real Estate. As of December 2019.

Investors are worried about low yields in the sector, a concern exacerbated by the prospect of rent controls being introduced in several markets. In such a scenario, overall returns would be dampened as investors would not be able to easily capture market-level rent movements, and there would be pressure on yields to adjust upwards to compensate for the prospect of lower future income receipts.

The push for increased rent controls is notable in Germany, Europe's largest apartment investment market, where rental growth has been elevated in major cities in recent years.

There are some signs that investors are responding. Germany is taking a lower share of the apartment market, while cross-border investors that have been broadly neutral on German residential through much of the cycle, became significant net sellers in 2019. However, pricing is holding up for now as domestic institutions, encouraged by negative yields on domestic government bonds, remain net buyers.

Elsewhere, other markets and segments are gaining share. Apartment investment volume outside Germany has doubled in the past five years, notably in Spain, where a number of large portfolio deals have occured. France and the UK offer significant potential for growth in the sector in the coming years, while investors are also deploying more capital into operational asset types in the living sector, such as student and senior housing.

The push for increased rent controls is notable in Germany, Europe's largest apartment investment market, where rental growth has been elevated in major cities in recent years.

CONCLUSION

At the global level, performance of real estate markets in 2020 is set to be supported by important drivers, despite ongoing concerns about the outlook for global economic growth and a weakness in cross-border capital flows.

The demand side continues to enjoy support from ongoing employment growth, which is coming up against still-low supply growth. Meanwhile, a reversal of course among major central banks toward looser monetary policy and lower interest rates is set to result in further yield compression.

In absence of a more pronounced economic downturn, real estate markets look set to deliver another year of decent, if not spectacular returns. Take a closer look, though, and the defining themes identified for 2020 vary quite significantly by geography.

One common theme is that even where there is set to be slowing demand for office space — and increased uncertainty owing to flexible office providers — space absorption is set to remain positive and vacancy rates are low enough to support further rental growth given limited supply pipelines.

There are going to be plenty of challenges for investors too. Changes in the way real estate spaces are used continue apace, resulting in rising density and shifting tenant expectations. In many Asian markets, following a sustained period of rental growth, affordability of office space is becoming stretched.

Elsewhere, retail markets are suffering, in Europe for example, and policy decisions have a role to play. In both Europe and the United States, an increased regulatory burden is dampening an otherwise bright outlook for the apartment sector.

Overall, 2020 is set to be a year in which aggregate performance remains steady, despite the ongoing threat that the current cycle — which cannot go on forever — simply comes to an end.

The key trends identified point toward an increasing divergence in outcomes across sector and geography. This implies both a threat, via exposure to segments of markets that are set to fare less well, and an opportunity, to capitalize on favorable momentum and make effective tactical allocation decisions that boost relative performance.

In absence of a more pronounced economic downturn, real estate markets look set to deliver another year of decent, if not spectacular returns.

PGIM REAL ESTATE

Important Information

INVESTMENT RESEARCH TEAM – KEY CONTACTS

Authors

Greg Kane
Executive Director
Head of European Investment Research
greg.kane@pgim.com

Dr. Cuong Nguyen
Executive Director
Head of Asia Pacific Investment Research
cuong.nguyen@pgim.com

Florian Richter
Assistant Vice President
florian.richter@pgim.com

Kelly Whitman
Vice President
kelly.whitman@pgim.com

Global

Dr. Peter Hayes
Managing Director
Global Head of Investment Research
peter.hayes@pgim.com

Americas

Lee Menifee
Managing Director
Head of Americas Investment Research
lee.menifee@pgim.com

Alison Jacobs, CFA
Executive Director
alison.jacobs@pgim.com

Frank Nitschke
Executive Director
frank.nitschke@pgim.com

Kelly Whitman
Vice President
kelly.whitman@pgim.com

Bradley Doremus, CFA
Assistant Vice President
bradley.doremus@pgim.com

Dean Joseph Deonaldo
Associate
dean.joseph.deonaldo@pgim.com

Phoebe Keegan
Associate
phoebe.keegan@pgim.com

Yvonne White
Research Assistant
yvonne.white@pgim.com

Kaia Henriksen
Analyst
kaia.henriksen@pgim.com

Europe

Greg Kane
Executive Director
Head of European Investment Research
greg.kane@pgim.com

Florian Richter
Assistant Vice President
florian.richter@pgim.com

Matthew Huen
Analyst
matthew.huen@pgim.com

Asia Pacific

Dr. Cuong Nguyen
Executive Director
Head of Asia Pacific Investment Research
cuong.nguyen@pgim.com

Kai Yip
Assistant Vice President
kai.yip@pgim.com