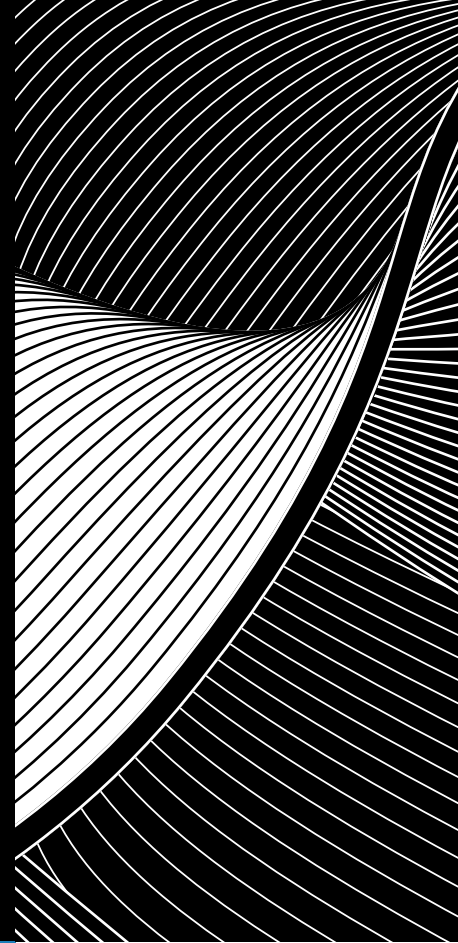


MACQUARIE ASSET MANAGEMENT

Pathways

The KITE™ property investment tool
and its application to markets

January 2022



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Introduction





Our main investment thematic in global real estate is “beds, sheds, and bytes,” by which we mean investments focused on multifamily, logistics, and data centers. But prime offices have long been at the heart of our core real estate portfolios, given the sector’s relative transparency, ease of access, and liquidity for cross-border investors.

As a cyclical asset class, office demand drivers are highly linked to the global economy and jobs growth. The COVID-19 pandemic has brought major changes and accelerated many trends, and while the rental cycle may have temporarily ended, pricing in many markets remained firm. To track these and other cyclical movements in the office sector, our Real Estate Strategy team has developed and uses a proprietary investment and market selection tool called KITE™.¹

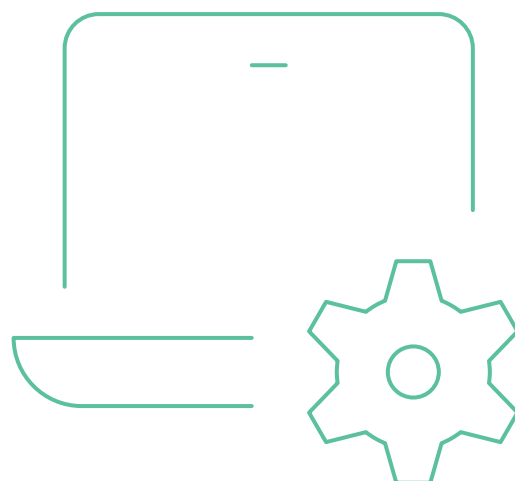
Since its introduction in 2012, the KITE™ has been updated biannually with the latest macro, financial, and real estate data from external, independent data providers. It aims to deliver an intuitive and transparent rating of different markets and by so doing enable a consistent comparison of markets of different sizes and in different geographies. Currently, the tool covers 96 global markets across the US, Europe, and Australia.

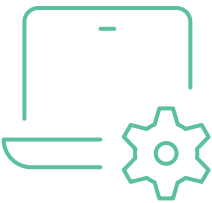
Our real estate team uses the ratings to supplement market selection, deal screening, and investment decision making. It also provides a simple and effective way for clients to track the latest real estate trends as well as their respective investment markets.

In this Pathways paper we provide an introduction to the KITE™ and its different metrics, including a brief overview of current market trends in the office sector. We also apply it to select markets to illustrate its usefulness for market selection and investment decision making.

1. Please contact the MAM Real Estate Strategy team for more detailed insights on the latest KITE™ rankings, including a full ranking of the latest US and European office markets. We are always willing to present our KITE™ output to clients in the context of broader views on global office and commercial real estate markets.

The KITE™ tool and its five key metrics





The KITE™ tool monitors market movements across five key metrics: market liquidity, leasing potential, economic stability, stability of returns, and price attractiveness. Overall, approximately 100 data points are used in constructing a KITE™ score for each market, which ranges between 1 and 5, with 5 being the most attractive. As markets achieve higher scores on different metrics, the KITE™’s surface area increases – a bigger surface reflecting a relatively more attractive market. An attractive and well-balanced market will take the name-giving shape of a kite, while a deviation from the classic pentagon indicates strengths or weaknesses in specific areas.

Figure 1
Kite example

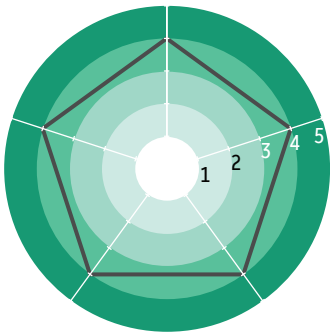
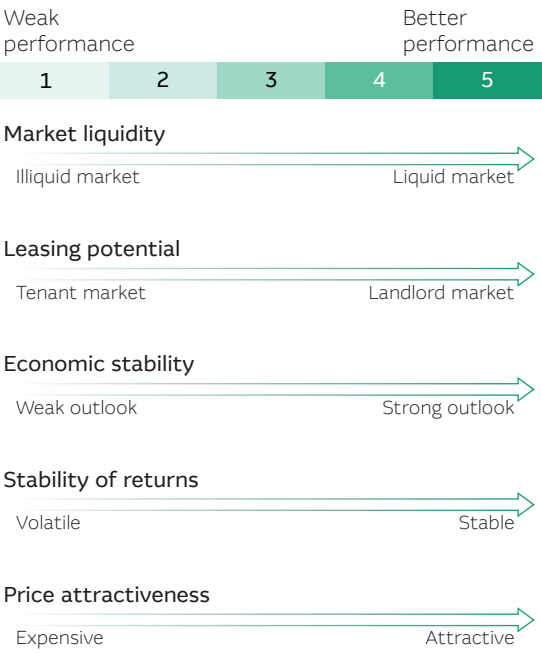


Figure 2
Metrics



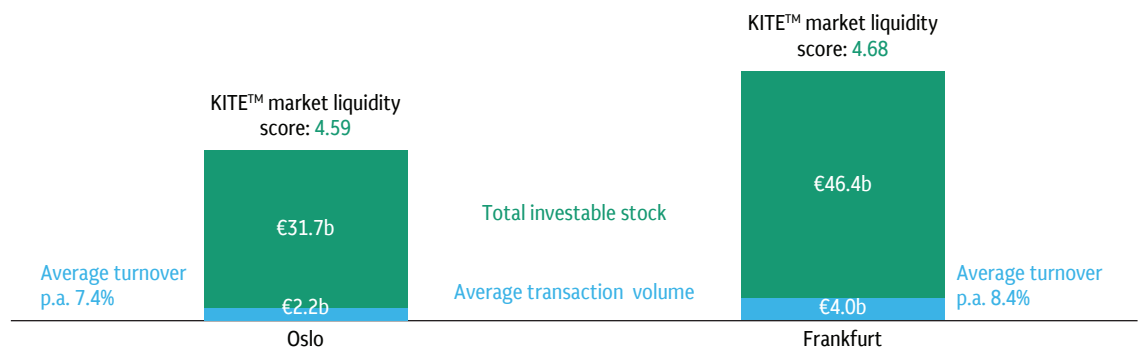
The five key metrics

Each metric aims to make the different markets easily comparable, regardless of size and geography. While all scores are very much data driven, some metrics allow for small adjustments based on the opinions of our local experts. Adjustments are made in a few selected markets where data availability is limited or the data are less reliable due to liquidity constraints, limited occupier movements, or low transparency levels.

1. **Market liquidity.** The market liquidity score monitors transactional or investment activity, an important metric to keep track of for investment decisions as it is relevant for sourcing suitable opportunities and being able to enter and exit markets quickly. A high market liquidity score indicates that immediate market entry and exit is possible, whereas a low score indicates a relatively illiquid market, which could be more difficult to exit, especially in a downturn. The metric takes several aspects into account including:
 - absolute level of investment volumes, both historically over the past 10 years and recent levels
 - investment transactions as a percentage of total investable stock, which ensures that smaller markets can receive relatively high market liquidity scores if the level of transactions is high relative to their total stock.

Figure 3 shows the liquidity levels of the Oslo and Frankfurt office markets. Average yearly volumes in Frankfurt (€4.0 billion) are almost double that of Oslo (€2.2 billion) over the last 10 years. The cities rank very similarly on the KITE's market liquidity metric, however, with Oslo scoring 4.59 and Frankfurt 4.68 (Frankfurt) respectively. Average investment turnover rates (annual investment volume as % of total investable stock) are at a similar level in both cities (8% per year) and recent volumes in both markets have been high by historical standards. This is an example of how the KITE™ makes markets of different sizes comparable.

Figure 3
Comparison of Oslo and Frankfurt office investment markets
(average p.a. last 10 years)

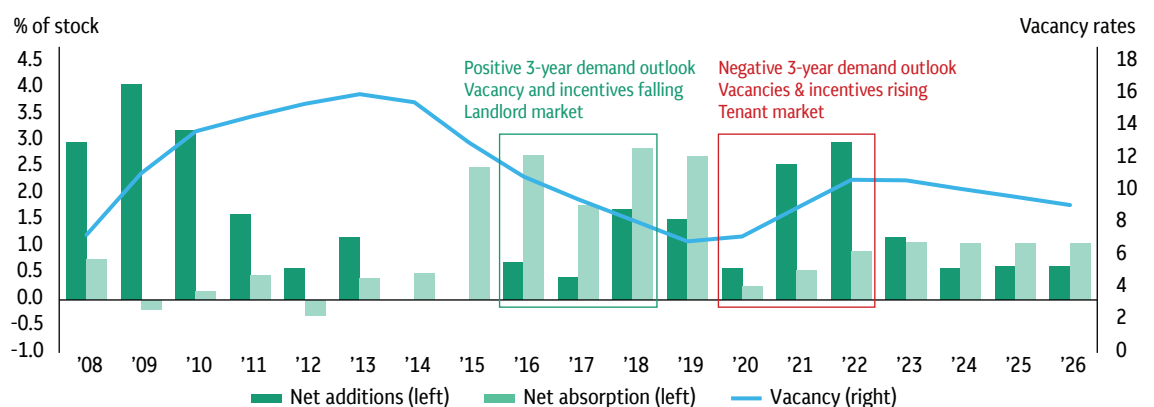


Source: Property Market Analysis (PMA), LLC (October 2021).

2. **Leasing potential.** This metric gives an indication of potential leasing risks or the likelihood of leasing vacant or new space in a market. It is composed of current availability, recent leasing turnover (both total and in relation to market size), and a future demand and supply outlook.
- A lower score indicates a market favoring tenants, with associated leasing risks for landlords. Often these markets require higher incentives or rental discounts to agree on new leases, while it may be difficult to fill vacancies especially for older or poorly located space.
 - A high score in turn indicates a landlord's leasing market, with overall low availability and a sustained demand overhang for office space which often spills over to older stock and secondary locations, with occupiers being forced to take space in less-than-ideal locations.

Figure 4, which examines Barcelona, provides a good illustration of the leasing potential metric. In 2015-2017 net absorption was strong, while there were few net additions to the office stock. Vacancy rates fell over the period as new supply couldn't keep pace with the growth in demand. This was a classic landlord's market, where leasing risk is low and leasing terms are likely to be favorable. In 2021-2023 it is anticipated there will be sizeable additions to the stock of office buildings (more than at any time since 2010) while demand, as measured by net absorption, is likely to be relatively subdued. Vacancy rates are projected to rise over this period, and this is likely to be a tenant's market, where they should have a good selection of available options and relatively good leasing terms.

Figure 4
Example of leasing outlook: Barcelona



Source: PMA (October 2021).

3. **Economic stability.** On a macro level, economic stability tracks the overall performance and outlook of national economies. In addition to traditional office drivers such as gross domestic product (GDP) growth and consumer price inflation (CPI), it also factors in more qualitative metrics such as market transparency, national credit ratings, and economic competitiveness. Given the office sector's strong linkages with GDP and employment growth, the forward-looking nature of the economic stability score makes it a useful proxy for future market developments, including total return performance.

Figure 5
Strong linkages between global GDP and office total returns



Sources: PMA, CoStar, JLL, Oxford Economics (October 2021).

4. **Stability of returns.** This metric shows the variability of returns for a given market relative to its historical average, which is estimated over a period of 30 years. A low score does not equal poor performance, however; it just indicates that these markets behaved more cyclically, with returns moving in line with GDP growth and financial drivers, which tended to make these markets more volatile. Depending on the nature of an investment and the risk profile of the investor, buyers might favor one market over another, with highly cyclical markets potentially offering the chance of outsized returns if market entry and exit are well timed. More stable markets offer a different return profile and can anchor a portfolio by delivering more predictable cash flows and valuations throughout the holding period.

5. **Price attractiveness.** Finally, the price attractiveness metric compares current pricing across markets and against historical averages. Ideally an investment takes place where the price attractiveness is high (indicating a good value market, at least relative to alternatives) and the score subsequently compresses during the holding period (which indicates rising capital values), with the asset potentially being sold at a higher price. The metric captures relative attractiveness by comparing current yields against:
- historical yields – to benchmark current pricing against pricing levels achieved over the economic and property cycle
 - local bond rates – which are compared against historical spreads over the past cycle
 - income growth potential – in the form of market growth rates.

Figures 6 and 7 provide a snapshot of this metric for some key office markets in Europe and the US. Figure 6 shows current yields relative to their 15-year historic range. While yields are compressed everywhere, the US cities in the bottom half of the chart have both a higher absolute yield and a yield that is slightly higher relative to history. Figure 7 shows that cap rate spreads (cap rates minus 10-year bond yields) are generally quite high relative to history, with spreads in the US a little higher than in Europe.

Figure 6
Prime central business district (CBD)
office cap rates

Sorted by latest cap rate

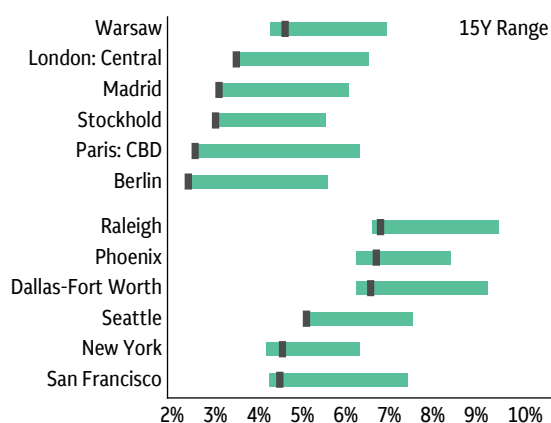
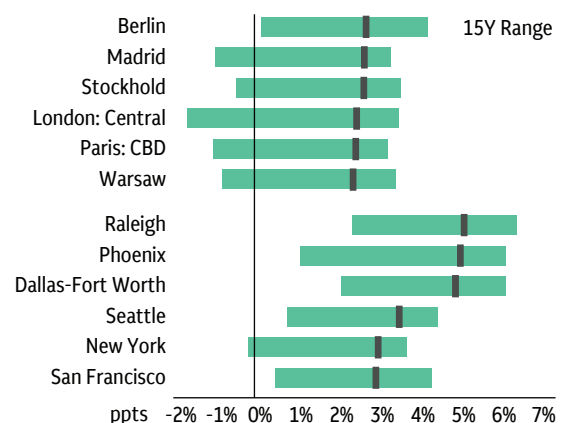


Figure 7
Prime CBD office cap rate spreads
to local 10-year bonds

Sorted by latest cap rate spread,
percentage points



Sources: CoStar, PMA, Bloomberg Finance LP (October 2021).

Current KITE™ metrics: Identifying trends in global office markets





Within the context of the five key metrics that are used to construct the KITE™, key trends shaping the global office markets can be easily identified. Figure 8 indicates the latest aggregated scores for US and Europe office market exposure.

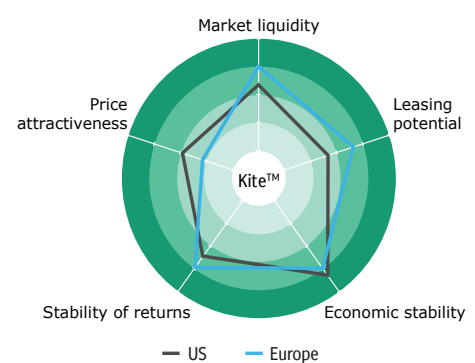
Unsurprisingly, **liquidity** declined sharply during the depths of COVID-19 in the first half of 2020 with the travel restrictions and uncertain nature of the global health pandemic causing liquidity scores to decrease across the board. The US was more heavily affected than Europe thanks to a record quarter for the latter in the first quarter of 2020. But as outlined previously, the KITE™ considers longer-term turnover and trends in investment activity, which grew steadily throughout the last cycle. In this context, the overall scores for the US and Europe remain in favorable territory.

Leasing potential also decreased, reflecting the sharp decline in office-based employment across the market. The good news is that the leasing potential metric is now starting to recover, supported by improving office demand, although there is variation by region. Thanks to record low vacancies going into COVID-19, a more subdued pipeline going forward, and stronger projected tenant demand, the leasing outlook is better in Europe than it is in the US.

The **economic outlook** is looking strong across both regions, thanks to a swift post-COVID-19 rebound in economic activity. A more flexible labor market and stronger demographics have pushed the US ahead in this category. Little has changed in terms of **stability of returns**, as this metric takes a very long period of time into account. Overall, though, the US office market tends to behave more cyclically, while the heterogeneous nature of European markets has a stabilizing effect on overall return performance.

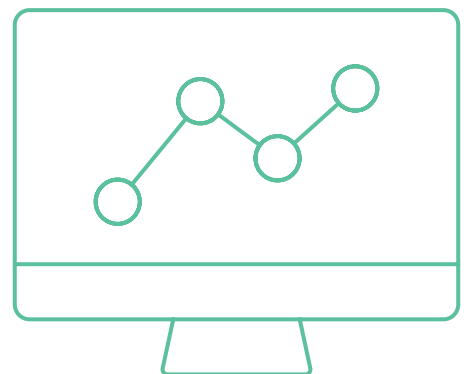
Lastly, **price attractiveness** has improved from a year ago, but aggregate scores remain relatively low by historical standards due to a mix of low entry yields and uncertainty around rental growth in the post-COVID-19 environment. This is particularly the case in Europe, where net initial yields in some core markets have fallen below 3.0%. On the flip side, improving rental growth projections and elevated yield-to-bond spreads in a low interest rate environment are providing some offsetting support for the price attractiveness metric.

Figure 8
Aggregated US and EU KITES™ as of Q3 2021



Source: MAM Real Estate Strategy team.

KITE™ in action: Analysis of select markets





While the KITE™ is useful to quickly grasp current overarching trends, its true strength lies in comparing markets of different sizes and economic structures, as well as monitoring cyclical movements through time.

Comparing different markets: San Francisco vs. Raleigh

An analysis of a large US gateway city such as San Francisco on the West Coast and a highly specialized secondary market such as Raleigh, North Carolina on the East Coast can illustrate the KITE™'s capabilities to compare two very different market types and sizes. Figure 9 on page 15 shows the KITE™ for both of these markets.

As indicated by the low stability of returns score, San Francisco is a highly cyclical office market reflecting its exposure to the technology sector. Between the global financial crisis (GFC) in 2008-2009 up until COVID-19, San Francisco enjoyed a robust demand cycle driven by the strong performance of large tech occupiers. Vacancies have fallen from 14% to around 6%, while rental levels have more than doubled and yields have compressed sharply.

In contrast, demand and supply drivers in Raleigh have been more balanced over the same period, with the market characterized by less speculative development given the absence of large and rapidly expanding industries such as the tech sector. Reflecting the balanced demand and supply environment, Raleigh's vacancies were more stable, rents increased more modestly (by around 45%) and yield compression lagged San Francisco's office market.

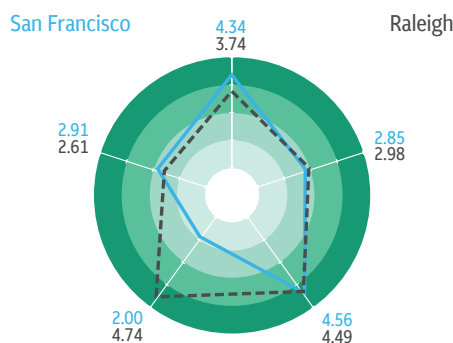
The cycle in both markets ended abruptly when the COVID-19 pandemic hit, but both markets reacted very differently. San Francisco, as a large and densely populated market, was hit particularly hard despite its high exposure to the resilient tech sector, which quickly pivoted to a remote working environment. Prime rents registered double-digit declines in 2020, with further projected losses in 2021-2022 while vacancies and sublease availability are on the rise.

Raleigh, on the other hand, experienced a less dramatic increase in vacancies, while rental levels remained firm and even registered an increase in 2020 and 2021. Looking ahead, the market once again benefits from a more subdued pipeline, leading to a slightly better leasing potential outlook as captured in the KITE™ in Figure 9.

On the investment side, San Francisco currently shows a higher price attractiveness despite lower yields, but this must be seen in context. Yields are near historic lows in both markets, while spreads are high, a situation that leaves rental growth as the determining factor. San Francisco has the stronger outlook, but mainly due to an expected rebound from the steep declines experienced during the COVID-19 crisis.

In summary, San Francisco is projected to deliver higher but more volatile returns (based on its scores for price attractiveness and stability of returns), while Raleigh offers greater stability, better downside protection, and slightly stronger leasing opportunities (leasing potential).

Figure 9
San Francisco vs. Raleigh's KITE™
as of Q3 2021



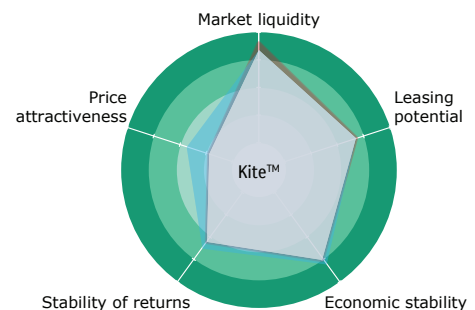
Source: MAM Real Estate Strategy team.

Cyclical movements through time: London vs. Madrid

The second major benefit of the KITE™ is its ability to track different markets through cycles. Here we analyze the European markets of London and Madrid to demonstrate.

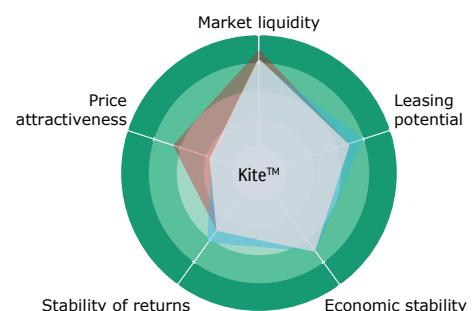
Both London and Madrid fall towards the cyclical end of the spectrum with lower return stability scores. Their cycles are not aligned, however, and to illustrate this in Figures 10 and 11 we show the KITE™ movements of both cities from the third quarter of 2016 to the third quarter of 2021. Blue indicates a score that improved over this time frame, while red marks a deterioration.

Figure 10
London KITE™ 2021 Q3 vs. 2016 Q3



Source: MAM Real Estate Strategy team.

Figure 11
Madrid KITE™ 2021 Q3 vs. 2016 Q3



Source: MAM Real Estate Strategy team.

In mid-2016, the UK's Brexit referendum to leave the European Union negatively affected London's commercial real estate markets and heralded an extended period of elevated uncertainty for investors and occupiers. Defying broader trends, initial yields began to soften, with UK market returns lagging those of their continental counterparts. On the leasing side, the London office market at that time moved from a position of strength after multiple years of strong rental growth to one of much softer conditions as demand weakened.

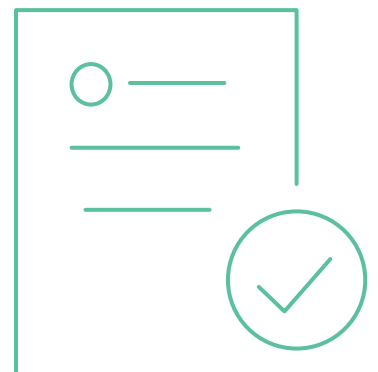
On the other hand, the Madrid office market's cyclical upswing only began at the tail end of London's, with lingering high unemployment and the subsequent euro crisis delaying the city's recovery. In 2015 these effects started to subside, and the market started to gather momentum. Over the subsequent five years Madrid enjoyed robust rental growth as well as a steep yield compression, with the cap rate falling to a record low of 3.1%.

Market conditions in the two cities couldn't, then, have been more different going into the COVID-19 pandemic. But while both markets have been severely affected, London is poised for a strong and imminent rebound. It offers comparably attractive entry yields and has one of the most favorable supply-demand outlooks not only in the UK and Europe but also globally. After a prolonged period of weaker growth, rents also seemingly have some catching up to do. London's office market currently ranks in the top group of the European KITE™ ranking in terms of price attractiveness.

By contrast, pricing in Madrid (as in many other markets) did not adjust during the COVID-19 downturn, something which affects its price attractiveness score. Simultaneously, the market's high exposure to hard-hit sectors such as tourism has dampened the outlook for demand and rental growth – both are not projected to pick up until 2022-2023, considerably later than in the UK.

From an investment standpoint then, these rankings point to an opportunity in London, which benefits from still elevated yield levels in a European context and a swift economic recovery post-COVID-19. In contrast, Madrid is currently expensive both in absolute and relative terms, while the KITE™ indicates a delay in cyclical recovery. A market entry here will become more feasible once the rental growth outlook improves and KITE™ price attractiveness picks up.

Conclusion: A holistic approach to office investing





In a world where investors are likely to continue to face low or negative real bond yields and low initial yields across property markets and sectors, market selection will likely become increasingly important in driving real estate returns for cross-border investments. As such, we believe the KITE™ tool can play a valuable role in helping investors with their office market positioning.

Whether the aim is to increase exposure to more stable markets or to take advantage of attractively priced markets coming out of the downswing, the KITE™ tool provides the necessary comparative information in a clear and easily digestible form. We will continue to monitor the inputs that go into the KITE™, particularly as environmental, social and governance (ESG) considerations and technology become ever more important drivers of global real estate returns. We will also look to roll out the KITE™ tool across global markets and sectors, including in the logistics sector and across Asian markets.

While the KITE™ is all about tracking cyclical movements and real estate fundamentals, it makes up only one aspect of our holistic office investment approach. It is complemented by the 6Ts – six indicators we deem essential for the long-term, sustained success of a market. These include aspects such as access to talent, transportation infrastructure, and good quality of life, and will be introduced in a separate paper. Future work will examine office markets based on these tools to highlight emerging trends and relative value propositions that we believe are interesting for investors.

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