AEW RESEARCH | EUROPE

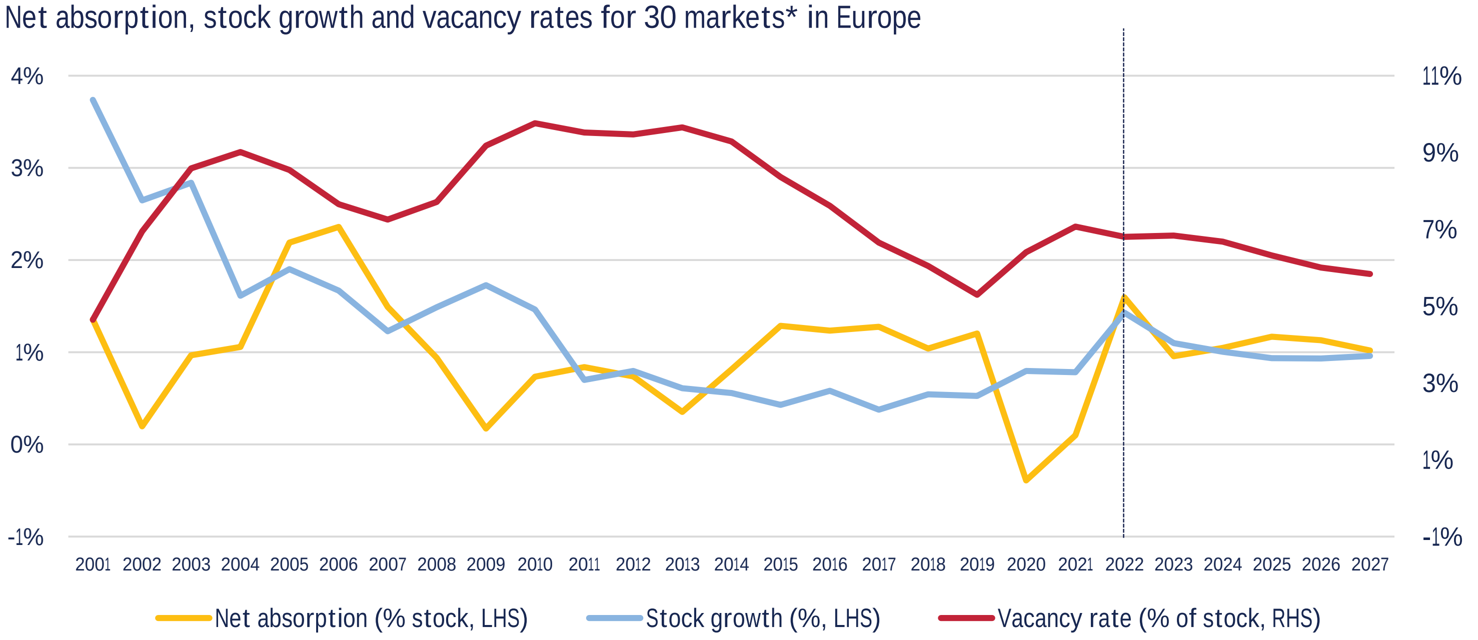
Monthly Research Report

OCTOBER 2022

EUROPEAN OFFICE MARKETS STARTING TO RE-BALANCE

- This report provides an update on European office markets, which have been impacted by the concerns over the long term impact from working from home (WFH) or hybrid work practices, which is reflected in the discounts to NAV for European office REITs.
- Despite this negative investor sentiment, occupier market indicators show solid post-Covid recovery. Take-up is up nearly 50% since its Q3 2020 low point, prime rental growth is positive since Q4 2020 and the vacancy rate has stabilized at just below 7%.
- It is still too early to conclude at what level office demand will finally stabilise as companies define their new hybrid working practices. The available data confirms that office usage rates are improving, but still remain below their pre-pandemic levels. Also downward trending desk usage and desk per employees statistics highlight the challenges for a return to the old normal.
- On a positive note, our estimated growth of WFH-adjusted office employment has increased from 0.5% to 0.8% pa across our 32 European office markets based on the new occupier survey data from Urbanite. The net effect on WFH from a deeper than expected recession in the next few years highlights the lack of stability in the demand outlook.
- Office employment growth adjusted for WFH for 2022-2026 shows strongest improvements in London, Amsterdam and The Hague, compared to last year's estimates. Conversely, most German markets score below the average and Barcelona and Paris show a deterioration of office employment growth prospects. This is driven by changing growth and WFH prospects for local industry sectors in each city.
- With most concerns focused on the demand side, supply remains relevant and new office space development will remain limited. CBRE projects office stock to grow by 1.1% pa over the next five years. However, this is likely to come down due to declining developer profitability, increased costs and lower availability of debt as well as an increasing focus on retrofitting existing buildings (instead of new buildings).
- As the impact from Covid subsides, European office markets are starting to rebalance with demand being less impacted by WFH than previously expected and the modest supply pipeline likely to erode further. CBRE projections show net absorptions to be ahead of new additions to office stock pushing vacancy rates back down to below 6% by 2027 from their peak as of end of 2021.
- Finally, we update and expand our resilience ranking of 32 European office markets. Brussels, The Hague, London and Amsterdam moved up most in our ranking, while Barcelona, Munich, Hamburg and Berlin show the largest declines in the ranking. The newly added UK regional markets are not collectively achieving higher or lower rankings than other European markets.

Net absorption, stock growth and vacancy rates for 30 markets* in Europe



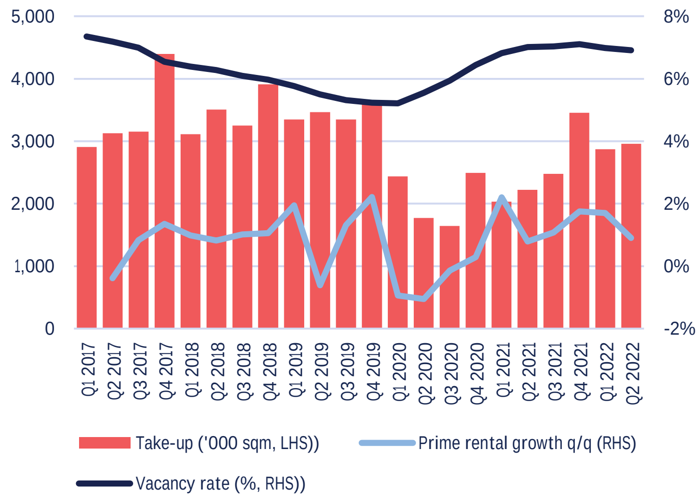
Sources: CBRE, AEW Research & Strategy
* 30 markets for stock and excluding UK regional cities and Stockholm for vacancy rates and net absorption

NEGATIVE REIT INVESTOR ASSESSMENT OF OFFICE TRENDS REMAINS

OFFICE OCCUPIER INDICATORS SHOWED RESILIENCE POST-COVID

- The key indicators of take-up, vacancy and rents are showing resilience across the board in the post-Covid period.
- Prime headline office rents rebounded in 2021 and have recorded solid 1.3% quarterly average growth for the last six quarters after experiencing declines during the height of the pandemic in 2020.
- The limited new supply in central office areas combined with a rebound in post-pandemic demand take-up are driving these prime rent increases.
- While many occupiers have downsized their office space requirement recently, their space reductions have mostly affected peripheral areas.
- In central business districts, the demand dynamics remains positive, additionally driven by an increase in take-up from co-working operators.
- Vacancy rate in Europe increased by 190 bps from its lowest level of 5.2% at the start of the pandemic to 7.1% in Q4 2021.
- Vacancy across our sample of 32 European office markets has stabilised at just below 7% as take up has picked up and new development deliveries slowed during the lockdowns.

Quarterly occupier market indicators for 32 European office markets*

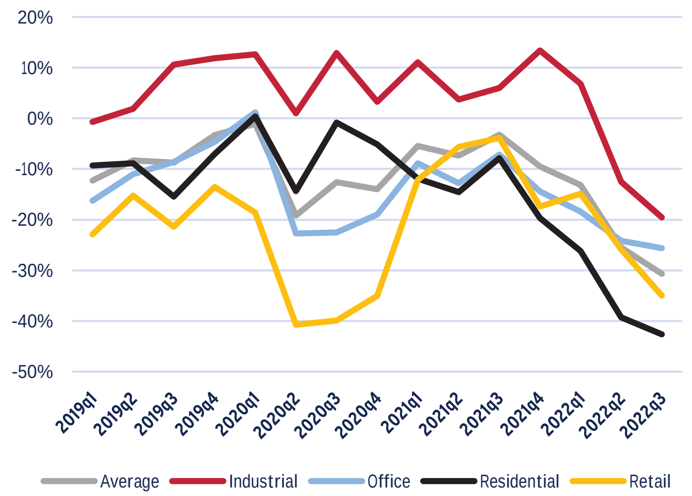


Sources: CBRE, AEW Research & Strategy;
* 32 markets for take-up and rental growth, excluding UK regional cities for vacancy rate

REIT INVESTORS STILL PRICE OFFICES AT +25% DISCOUNT

- Despite the resilience in occupier markets, European REIT investors continue to price the office sector at a significant discount. This negative sentiment is reflective of some of the challenging news headlines.
- Retail REITs showed the strongest discount during the pandemic, but the office sector also followed the same trend, while industrial and residential were perceived as more resilient.
- As of Q3 2022, the office sector is trading at an average discount of 26%, which is below the 31% overall average (office, retail, Industrial and residential) while retail traded at a 35% discount and residential at 43%.
- The NAV discount for office is not isolated, but remains at its highest level since 2019, despite the above key occupier indicators.
- Clearly, REIT investors are not yet convinced that the resilience in offices will last, but they are now seeing bigger issues in residential and retail.

Observed discount/premium to NAV by sectors

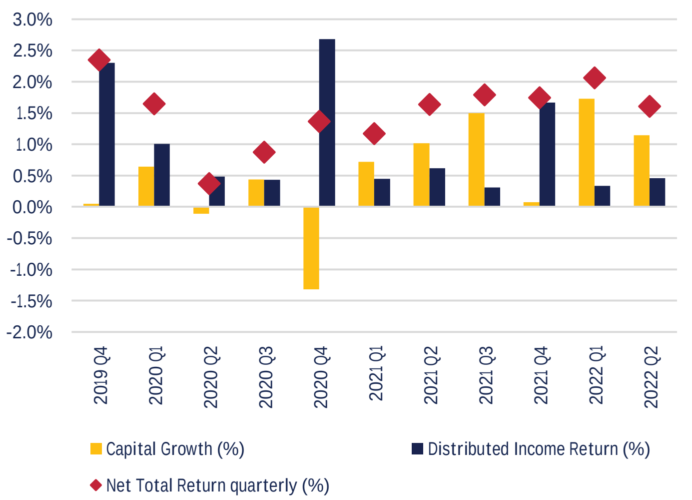


Sources: Green Street, AEW Research & Strategy

FUND INVESTORS STILL BENEFIT FROM CAPITAL GROWTH

- On the private funds side, quarterly total returns in the European office sector remain positive according to the latest INREV data.
- After some very low and negative quarters in 2020, quarterly capital value growth has accelerated since 2021.
- However, distributed income, which is seasonally higher in Q4, has been lower in 2021 compared to 2019 and 2020.
- Although not in the chart, it should be noted that compared to other property sectors, office total returns are behind those for industrial/logistics as well as residential and retail funds.

Net total office quarterly return , distributed income & capital growth (in %)



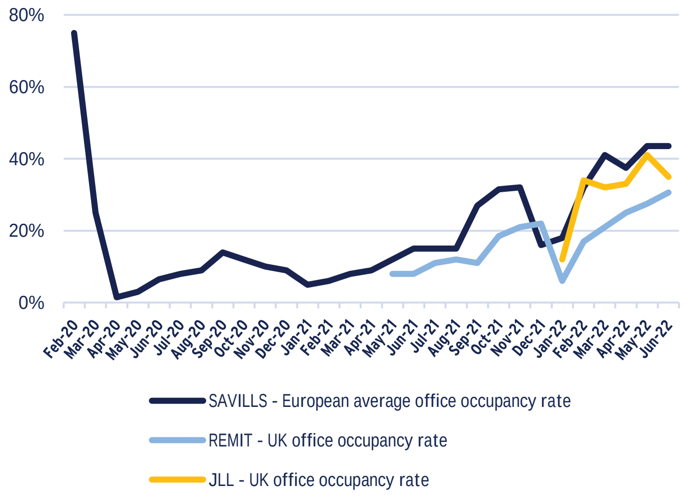
Sources: INREV, AEW Research & Strategy

SOME OFFICE DEMAND INDICATORS STILL UNDER PRESSURE

USE TRENDS UP, BUT NOT BACK TO PRE-PANDEMIC LEVELS

- Despite official vacancy rates stabilising at below 7%, data on actual office use shows a different trend. Savills data shows that less than 44% of office workers access their offices.
- This current level of 44% is over half the pre-pandemic (Feb-20) 75% average share of office workers using the space over the course of a working week for their sample of European multi-let CBD office buildings.
- Despite many businesses remaining in transition with their return to the office following the pandemic, office usage rates have continued on an upward trend from the end of the last lockdown in Jan-22.
- The Savills data is consistent with other office usage data recorded by JLL and Remit Consulting. Both cover a more limited number of UK markets and do not offer a pre-Covid normal level.
- It might still be too early to conclude at what level office usage will stabilise as companies define their flexible working practices.
- Also, it will be interesting to see if office workers or employers will change their preferences if unemployment levels go back up.

European and UK office average usage rate (%)

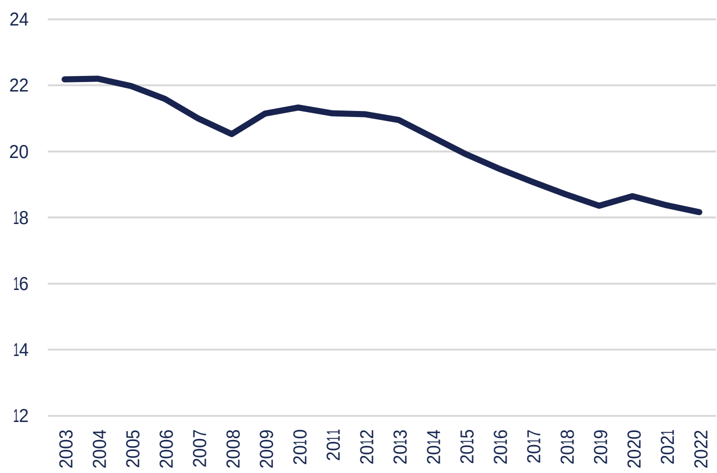


Sources: Savills, Remit, JLL, AEW Research & Strategy

REDUCED SPACE PER OFFICE EMPLOYEE CONFIRMS WFH TRENDS

- As highlighted before, the long term trend of reduced office space per office employee since the early 2000's can be seen as a confirmation of the long term viability of WFH.
- This lower space per worker has also supported the increased conversion from traditional offices to more flexible and serviced office.
- Based on historical data across our European office markets, the average space per employee has declined from 22 sqm in 2003 to 18 sqm in 2022.
- This clear downward trend is only interrupted when a recession triggers a sudden decline in the number of workers while the office stock remains stable, as in the immediate post GFC years.
- Similarly, during the pandemic, office employment also stalled, while supply momentum increased the office stock, resulting in a small increase in the space per worker.
- It is worth noting significant differences across markets with London being traditionally the densest office market due to higher occupancy costs.

Office space per employee in sqm over time (sqm, 25 market average)

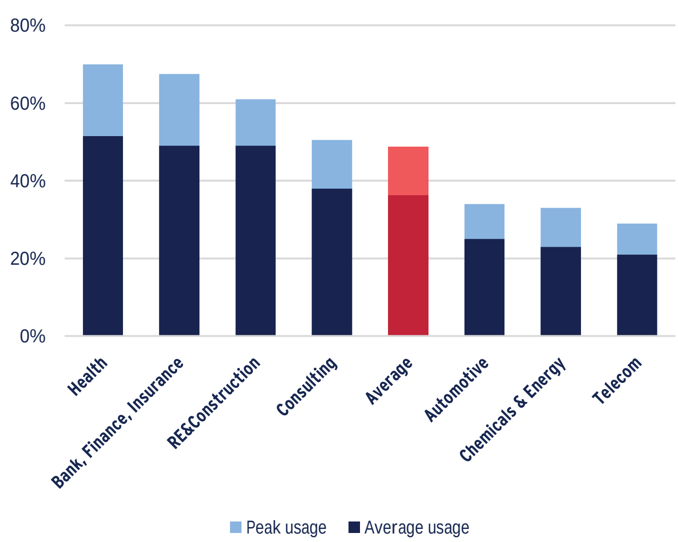


Sources: CBRE, Oxford Economics, AEW Research & Strategy

DESK USE DATA INDICATES ROOM FOR COST EFFICIENCIES

- Despite the long term decline of space per worker, two thirds of desks in offices are still left unused daily. Even on peak days, only half of desks are used.
- Desk usage varies widely by industry and is highest in the health, banking and real estate sectors with telecoms at the lowest level.
- According to a world-wide survey by AWA, there is a 25% difference between desk use during peaks (generally in the middle of the week) and the daily average desk use.
- This desk use data seems to indicate that office space is underutilised. We can expect desks to employees ratios to keep shrinking, with companies increasingly switching to hotdesking to provide greater office space flexibility and employee interaction.
- Excess space will be re-purposed or sub-let and ultimately occupiers will reduce their space requirements for lease renewals.
- Underused desks are unlikely to translate directly in space reduction, however, as the need for more communal space increases.
- Ultimately, there will be room for occupiers to realise further cost efficiencies, which might be sped up in an economic slowdown.

Desk use by sectors (in %), Aug. 2022



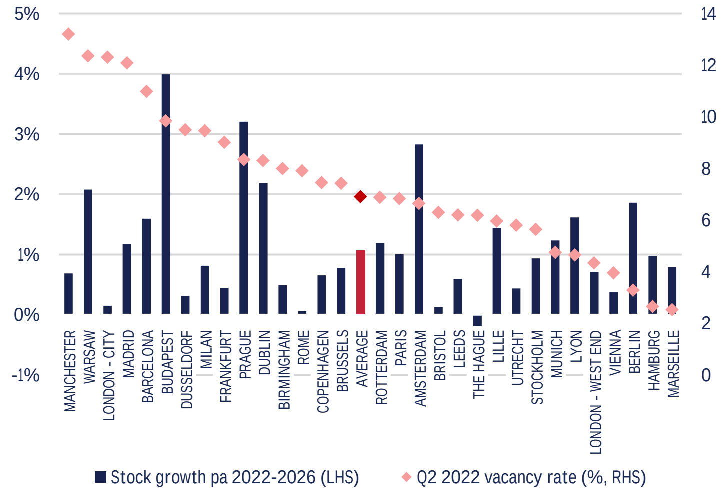
Sources: AWA August 2022, AEW Research & Strategy

LIMITED SUPPLY OFFSETS POTENTIAL DEMAND DOWNSIDE

MODEST NEW SUPPLY FORECASTS LIKELY TO BE SCALED BACK

- Most concerns surrounding offices have focused on the demand side of the market but it is important to also consider new office supply.
- Based on current announced developments, CBRE expects office stock to grow 1.1% pa over the next five years across the 30 markets for which data is available, compared to a historical average of 1.3% (2001-2019).
- CEE markets with high current vacancy rate might be vulnerable as they are projected to have a strong increase in office stock as well. While markets as in the UK and Germany with low stock growth are well positioned.
- Future office stock growth should be lower than projected because:
  - ✓ Higher construction costs (materials and wages) will further erode the profitability for many developers' planned projects
  - ✓ With recent rate hikes, there will be less availability of new development debt finance as well as higher interest rates
  - ✓ Upcoming EPC regulatory deadlines will force a greater focus on retrofits of existing buildings and less on creating new ones

Future stock growth pa 2022-26 & Q2 2022 vacancy rates (30 markets)

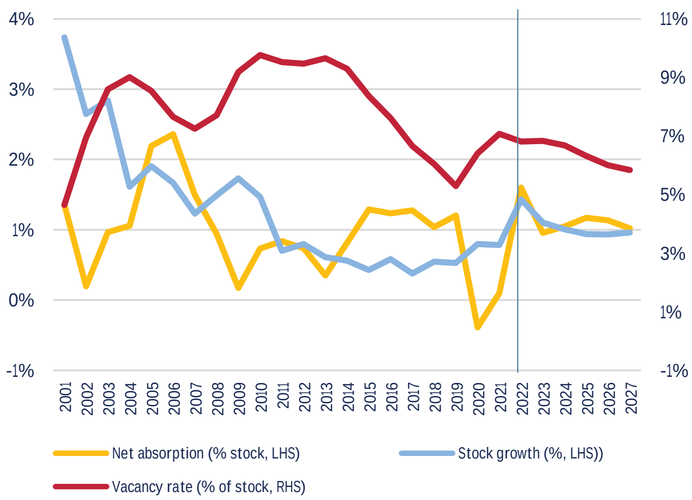


Sources: CBRE, AEW Research & Strategy

VACANCY RATES TO COME DOWN IN BALANCED MARKET

- Based on the latest CBRE projections, net absorptions will be ahead of new additions to office stock.
- This means that average vacancy rate across 32 office markets is expected to peak in 2022 at 7.1% in 2022 and come down to below 6% by 2027.
- Occupiers' ability to downsize will depend to a large extent on whether they can manage their workers' usage peaks between working days as well as implement hotdesking.
- Since more occupiers will focus on securing high-quality office space in the best locations, prime rents should prove resilient amid undersupplied core office markets and Covid-related construction delays.
- However, the CBRE net absorption projections might not be fully reflective of the WFH impact yet. This warrants some deeper analysis.

Net absorption, stock growth and vacancy rates for 30 markets* in Europe

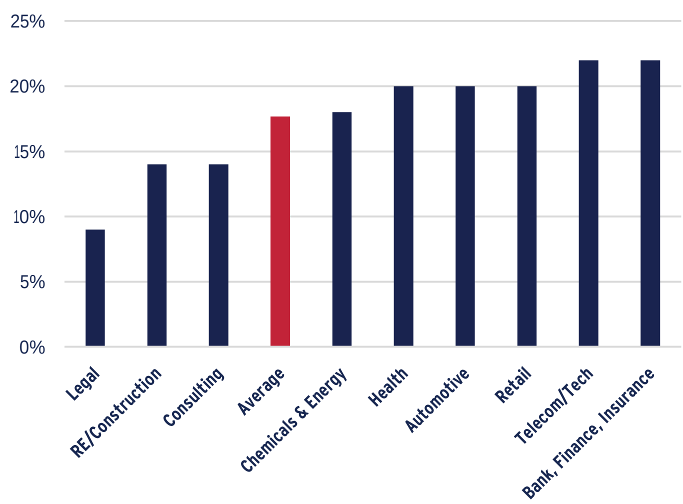


Sources: CBRE, AEW Research & Strategy
* 30 markets for stock and excluding UK regional cities and Stockholm for vacancy rates and net absorption

NEW SURVEY DATA CONFIRMS REDUCTION IN OFFICE SPACE NEEDS

- An 18% reduction in space demand is projected over the next five years based on a recent Urbanite survey of office occupiers in 16 European countries, covering 15 million sqm of occupied office space.
- On average, the 18% projected reduction in office space from the Urbanite survey is more severe than the forecasted 8% decrease in gross take-up forecasted by CBRE for the next five years.
- But the decline varies per industry, with banking, manufacturing (automotive), retail and telecom/technology sectors showing more significant decreases in space.
- To fit this new survey data into our existing analytical framework, we have used the industry sector specific survey results to adjust our original assumptions from 2021.

Projected reduction in office space from current occupied stock for the next 5 years per sectors



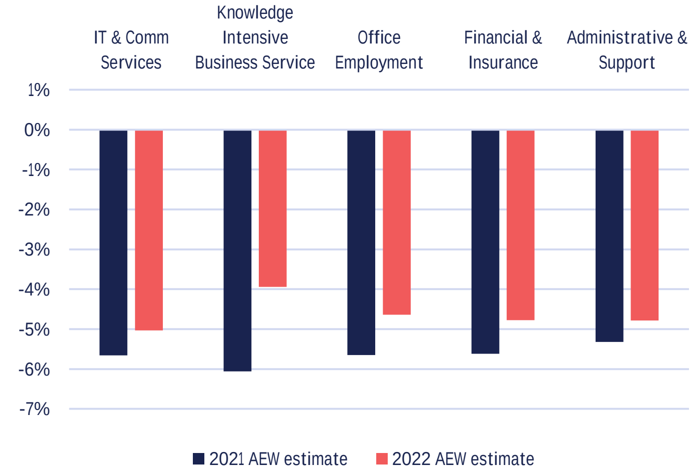
Sources: Urbanite, AEW Research & Strategy

OFFICE EMPLOYMENT GROWTH DRIVES CHANGES IN OUR RESILIENCE RANKING

IMPACT OF WFH LESS THAN PREVIOUSLY ESTIMATED

- Based on the Urbanite survey data, we have updated our estimation of the impact from WFH on the office employment growth forecasted by Oxford Economics.
- As a first step we updated our analysis of the WFH impact on demand for office space. Overall, our estimates changed from -5,7% pa in our 2021 results to -4.6% pa on average in the EU-27 in our updated analysis.
- According to our new projections, 35.5% of employees working in an office-based sector in Europe would work from home by 2026. this is lower than our previous 2021 estimate of 37.3% by 2024.
- These ratios compare to 27.5% pre-Covid and 66.4% of office-based employees working from home during the peak of the pandemic in July 2020.
- Overall, the isolated impact from WFH seems less severe than previously expected.

WFH impact on annual demand for office space 2022-2026*

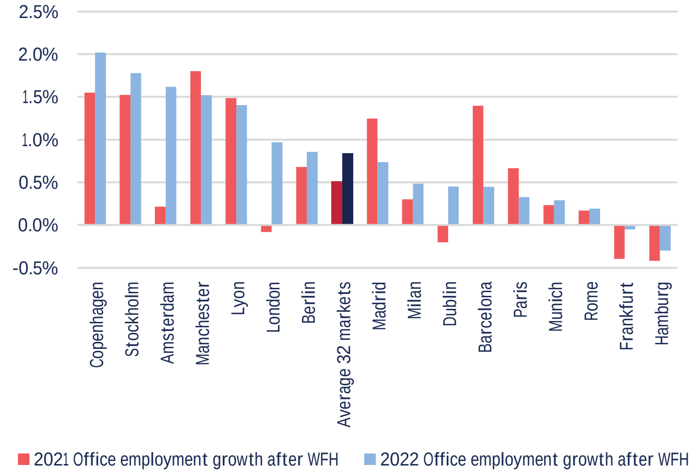


Sources: Oxford Economics, Urbanite 2021, AEW Research & Strategy
* Please note that the 2021 estimates pertains to 2021-2025

OFFICE EMPLOYMENT GROWTH FORECASTS IMPROVE

- In our second step, we adjusted upward our estimated growth of office employment from 0.5% to a still modest 0.8% pa across 32 markets, based on Oxford Economics projections for the 2022-2026 period.
- Across all the EU-27 markets, our improved estimated impact of WFH moved from -1% pa in 2021 to -0.6% pa.
- Similar to last year, we used city level traffic congestion levels from the 2016 IRIX congestion impact factor as a basis to adjust the overall EU-27 WFH impact for each individual city.
- Traffic congestion is seen as a key driver for both employers and employees who can save more time and money by WFH in more congested cities.
- Annualised office employment growth for 2022-2026, adjusted with WFH impact, shows strongest improvements in London, Amsterdam and The Hague, compared to our 2021-2025 forecasts.
- Conversely, German markets score below the average and Barcelona and Paris show a deterioration of office employment growth prospects.

Selected office employment growth after WFH impact (% pa) 2022-2026*



Sources: Oxford Economics, Urbanite, Eurostat, AEW Research & Strategy
* Please note that the 2021 estimates pertains to 2021-2025

OFFICE EMPLOYMENT GROWTH MOVES THE RANKING

- Consequently, evolution in our overall resilience ranking are mostly driven by the changes in WFH adjusted office employment growth, as illustrated by the table.
- Cities in Northern Europe such as Brussels, The Hague, London, Amsterdam saw the most dramatic gains in rank while Barcelona moved down, as well as some German cities.
- Vacancy rates and office stock growth changes from last year also impacted the ranking but not to the same magnitude.
- As office demand elasticity is considered using long historical series (2002-2022), annual changes were relatively moderate.

Cities with largest moves across the ranking (2022 vs 2021)

City	Overall ranking changes	Office employment growth after WFH	Vacancy rate	Office stock growth	Office worker cost efficiency	Office demand elasticity
Brussels	+14	+8	+1	+8	+2	+0
The Hague	+11	+13	+9	+0	-2	+3
London	+9	+15	+0	+0	+10	-1
Amsterdam	+8	+17	-6	-2	-2	+4
Barcelona	-19	-21	-8	-1	+0	-3
Munich	-9	-8	-2	-3	-2	-2
Hamburg	-5	+0	+0	-5	+1	-1
Berlin	-4	-4	-2	+0	+1	-4

Sources: CBRE, IRIX, Oxford Economics, AEW Research & Strategy

EUROPEAN OFFICE MARKET RESILIENCE RANKING

Our resilience ranking for European office markets is based on a data-driven assessment of property trends, including the possible impact from working from home (WFH) by weighting five key related demand and supply variables for each of the 32 markets highlighted below.

2022 : 32 Cities ranking	Office employment growth after WFH 2022-26	2Q22 Vacancy rate (%) rank	Office stock growth, % pa 2022-26	Office worker cost efficiency	Office demand elasticity 2002-2022	Overall resilience ranking
Stockholm	3	7	17	13	6	1
Utrecht	10	8	8	5	9	2
The Hague	14	10	2	4	18	3
Copenhagen	1	17	12	3	26	4
Bristol	8	12	4	28	1	5
Marseille	17	1	15	11	10	6
Vienna	22	4	7	9	14	7
Rotterdam	9	15	21	6	5	8
Edinburgh	16	20	1	29	20	9
Lyon	6	5	26	19	24	10
Leeds	20	11	11	27	7	11
Berlin	15	3	27	16	16	12
Brussels	21	16	14	7	22	13
Manchester	5	32	13	23	4	14
Amsterdam	4	13	30	8	21	15
London	11	30	5	21	3	16
Birmingham	24	19	10	30	2	17
Rome	29	18	3	14	15	18
Lille	18	9	23	1	30	19
Munich	28	6	22	17	17	20
Hamburg	32	2	18	12	19	21
Dusseldorf	30	25	6	10	8	22
Milan	23	24	16	18	12	23
Madrid	19	29	20	26	11	24
Frankfurt	31	23	9	15	23	25
Paris	27	14	19	32	25	26
Dublin	25	21	29	2	26	27
Barcelona	26	28	25	22	13	28
Glasgow	12	27	24	24	29	29
Budapest	2	26	32	31	28	30
Warsaw	7	31	28	25	31	31
Prague	13	22	31	20	32	32

Variable	Weight	Methodology
1. Office employment growth after WFH	25%	Estimated by subtracting the WFH impact from the base case office employment growth pa to arrive at annual post-WFH office employment growth as such for the period 2022-26.
2. Vacancy Rate in Q2 2022	20%	Office market vacancy rate as at 2nd quarter of 2022 of the office stock excl. sublease space.
3. Office stock growth	25%	Projected annualised office stock growth for the period 2022-26.
4. Office worker cost efficiency	10%	Calculated by taking the GVA of an office employee (in €) and divide it by the occupational costs (€/pa) assuming average space (in sqm) used by an office employee.
5. Office demand elasticity	20%	The elasticity is the ratio between change in office employment and occupied stock on a historical basis (2002 - 2022).

Sources: CBRE, IRIX, Oxford Economics, AEW Research & Strategy

ABOUT AEW

AEW is one of the world's largest real estate asset managers, with €87.7bn of assets under management as at 30 June 2022. AEW has over 800 employees, with its main offices located in Boston, London, Paris and Hong Kong and offers a wide range of real estate investment products including comingled funds, separate accounts and securities mandates across the full spectrum of investment strategies. AEW represents the real estate asset management platform of Natixis Investment Managers, one of the largest asset managers in the world.

As at 30 June 2022, AEW managed €39.7bn of real estate assets in Europe on behalf of a number of funds and separate accounts. AEW has over 450 employees based in 10 offices across Europe and has a long track record of successfully implementing Core, Value-Add and Opportunistic investment strategies on behalf of its clients. In the last five years, AEW has invested and divested a total volume of €21bn of real estate across European markets.

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