Marketing Material

December 2020 / Research Report

WORKING FROM HOME: WHICH EUROPEAN OFFICE MARKETS ARE MOST AT RISK?

Table of Contents

1 / Executive Summary

While working from home has been a common experience of office workers since the start of the Covid-19 pandemic, it is unclear what the future of office work could look like once the health crisis is resolved. It may be that we are on the cusp of a structural change in the way we use offices, with employees working from home in addition to the office on a regular basis. This is a crucial issue to understand for office investors, as there may be significant implications for rental and capital values.

In this paper we outline the potential vulnerability of ten key office markets across Europe to a rise in home working. Shedding light on which markets are likely to be most exposed to the trend, and which may prove more resilient.

Cities like London, with its high occupancy costs and long commute time, and Munich where we have witnessed a significant shift in working habits as a result of the pandemic as well as high occupancy costs, stand out as the most vulnerable, while the Spanish cities, Warsaw and Amsterdam look to be relatively resilient.

However, we should also remember that working from home is not the only determinant of office performance, and given the focus on changing working patterns over recent months, there is a risk that we forget the other fundamental drivers.

2 / Introduction

For most of the past year office workers across Europe have, to varying degrees, been required to work from home as national governments attempt to protect populations from the spread of Covid-19. Without a clear medical exit from the crisis at present, this situation is likely to continue.

For investors in office space, the key question is to what extent is working from home likely to feature in a post-Covid 19 world? Will we revert to pre-Covid 19 ways of working? Or will we see a fundamental shift towards a more hybrid approach where the office is the primary place of work for only a fraction of the working week?

This research furthers our understanding of vulnerability at a city level to a rise in home working. We examine and rank 10 of the largest cities in Europe by collecting a series of metrics which indicate the relative likelihood that a city will experience a longer term rise in working from home.

Building upon our previous analysis of the sector, we frame the question from both the employee and employer perspectives. We take into account factors such as the average length of time it takes an employee to travel to the office, as well as to the relative cost a business will face when leasing office space in different cities.

To what extent were we working from home pre-Covid 19?

Between 2009 and 2019, the prevalence of working from home for some part of the week has grown by 50%.[1] But this growth came from a small base. Even in 2019, less than 10% of the employed population worked from home on an occasional basis.[2]

Before the Covid-19 pandemic, there were wide variations in the pervasiveness of working from home. In the Netherlands, almost 40% of the workforce worked from home either sometimes or usually, compared to less than 5% in Italy.[3] These differences can be largely attributed to economic structure: economies with a high concentration of knowledge- and technology-intensive sectors such as finance, insurance, and ICT tend to be more able to allow employees to work outside of the office.

There were also significant variations within sectors. For example, IT services employees were more than twice as likely to work from home regularly in Sweden compared to Hungary. This suggests that workers in a particular occupation can have more flexible working arrangements in some countries than in others due to differences in management styles, the organisation of work, and country-specific policies regarding aspects such as work flexibility.

What has changed during the pandemic?

Despite the wide differences in the extent of working from home before the Covid-19 pandemic, all countries have witnessed a big jump during the pandemic as employers have sought to continue business functionality and protect employees. Countries where it was rare not to work from the office had to adjust quickly. In Belgium, over 50% of workers started working remotely during the pandemic, doubling the pre-pandemic figure.[4]

As a consequence, there are many countries where the ability to work from home was previously under-utilised pre-Covid-19. In setting up the technological infrastructure to allow greater flexibility in working locations, countries where working from home was previously uncommon could see a significant acceleration in the take-up of flexible working policies.

[1] Eurostat, 2020
[2] European Commission, 2019
[3] European Commission, 2019
[4] Eurofound, 2020; ONS, 2020

3 / What could happen post-Covid?

There has been much in the news on the topic of whether companies will retain flexible working policies post-Covid, but headlines give conflicting messages. While some companies such as Fujitsu have announced a halving of their office footprint as they increase their use of flexible working policies,[5] others such as Amazon have signed new leases on office space in New York and elsewhere.[6]

Despite the differing messages, there are some overall patterns. Companies which benefit from structural market changes have less of an incentive to cut cost, and are able to expand or invest in office space if this contributes to productivity. Not only has Amazon chosen to lease new office space, but Facebook recently leased enough new office space in Manhattan to increase its local work force nearly threefold.[7] Apple is also expanding into a new office building.[8] Office space is therefore considered a worthwhile investment for these companies.

The majority of office occupiers are holding off decision-making regarding office space until there is greater clarity on the trajectory of the pandemic, although many have announced a move towards allowing greater flexibility for employees to work remotely. The comments recently given by the Personnel Manager at Generali Group are a good example of the change in corporate attitudes: "we will never go back" to a workplace entirely based in the office, and while "the savings on rents may be there…it is not the decisive motivation [to increase flexible working]". [9]

For the remainder of office occupiers, which may be undergoing cyclical decline and a squeeze in margins, the move towards increased flexibility could present an opportunity to cut cost. This trend is difficult to disentangle from the broader recession as a result of Covid-19 across Europe, as companies tend to cut office space along with jobs during an economic downturn. This is already evident in the United Kingdom, where we are seeing a significant uptick in second hand space being returned to the market. In London, second hand space on the market increased by 21% in the third quarter of 2020 compared to the previous quarter.[10]

There are also local dynamics to consider. In France and Germany, the workforce is often unionised. In recent months, trade unions in France have been negotiating with employers to protect employees from incurring expenses as a result of working from home, such as in buying equipment, and from an erosion of wellbeing due to longer working hours and a loss of mental disconnect between home and the workplace.[11] Local views of the future of office work also differ globally. In the United States, there is greater consensus that offices will offer more, rather than less, floorspace per worker in the future.[12] It is therefore critical to understand local dynamics to predict how working from home will play a role in different locations.

Employee willingness and ability to work from home

Willingness: there have been a number of surveys conducted in recent months to answer the question as to whether working from home is really what employees want to do. The Global Workplace Analytics (GWA) survey of 3,000 employees globally found that a large majority of employees feel productive working from home, having gained time back from commuting and interruptions at work.[13]

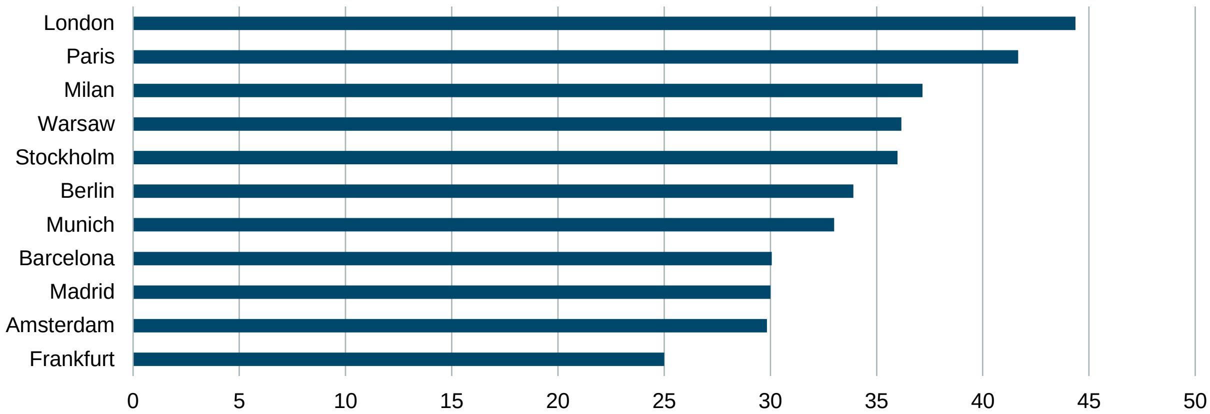
[5] BBC, July 2020
[6] New York Times, August 2020
[7] New York Times, October 2020
[8] New York Times, October 2020
[9] Corriere della Serra, October 2020
[10] CBRE, Q3 2020
[11] Le Figaro, September 2020
[12] DWS, September 2020; Gensler, May 2020
[13] Global Workplace Analytics, April 2020

When GWA's respondents were asked to what extent they would like to work from home, less than 20% responded that they would like to work from home every day of the week, falling to 16% in Europe. It appears that most would prefer a combination of the two, spending three days in the office and two at home. A survey conducted by Hibob in the spring of 2020 of 2,000 U.S.-based workers had similar findings. Only a minority would prefer to work from home full time, due to encountering issues including time management, distractions, and technology failures in this environment.[14] Internal studies at JP Morgan and Generali also found that benefits in productivity from working from home diminish after an extended period of working exclusively from home.

The most common reason why employees prefer to work from home for at least some of the week is the lack of commute.[15] The longer the commute, the more likely employees are to want to work from home for at least part of the week.[16] In addition, a long commute is likely to cost employees more, resulting in financial savings when working from home. A greater ability to spend time with family and friends is another key reason why employees prefer to work from home.

Compared across European cities, commute times vary significantly. At 44 minutes, London has on average the longest commute, followed by Paris. The Spanish cities tend to have a shorter commute, in common with Amsterdam and Frankfurt.

EXHIBIT 1: AVERAGE LENGTH OF COMMUTE (MINUTES)



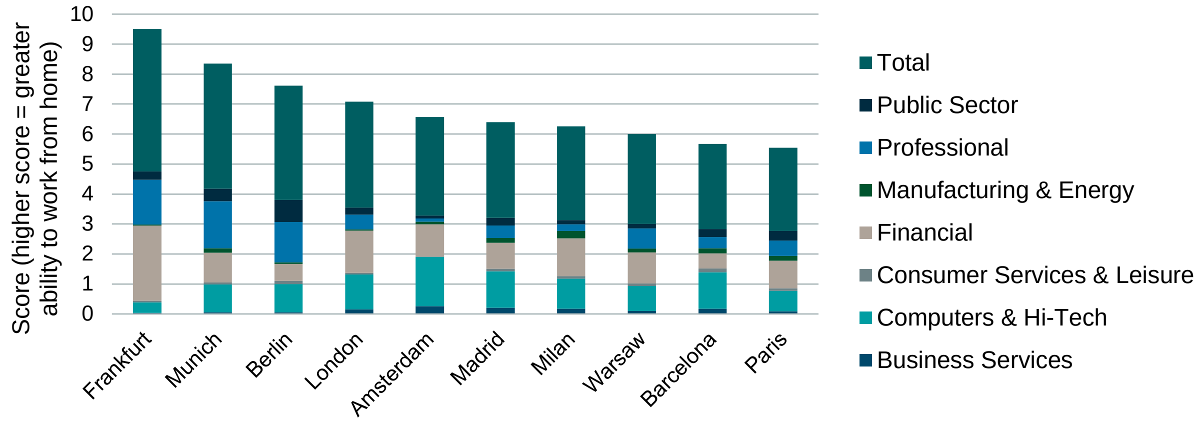
Source: Numbeo, September 2020

Ability: Even for Londoners who wish to avoid a long commute, working from home is not always an option. Jobs associated with "working standing up", "transporting, storing, shipping" and "nursing, caring, healing" tend to be less feasible to undertake from home. Those involving "using computers, the internet or e-mail processing" and "developing, researching, constructing" are more possible to move to the home office.[17]

In general, most of the major office markets in Europe are home to knowledge-intensive sectors where many jobs can be performed from home. Frankfurt and Munich stand out as having a particularly high proportion of finance and professional service sector jobs where working from home is possible. London also has a significant reliance on the financial services as well as computers and hi-tech. On the other hand, Paris, which has a highly diverse economic base, is less exposed to sectors where working from home is possible.

[14] HiBob.com; July 2020
[15] HubbleHQ, September 2020
[16] HubbleHQ, September 2020
[17] BIBB/BAuA Employment Survey, 2018; Employment Statistics of the Federal Employment Agency (BA) 2019.

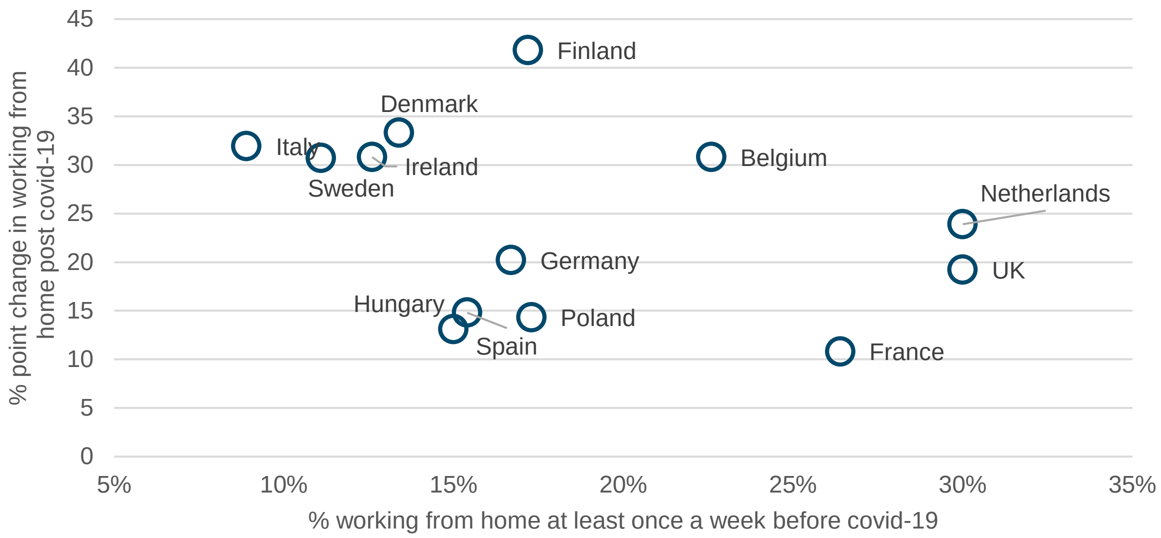
EXHIBIT 2: ABILITY TO WORK FROM HOME SCORE



Source: DWS, October 2020; CBRE, Q2 2020; BIBB/BAuA Employment Survey 2018, Employment Statistics of the Federal Employment Agency (BA) 2019. Score based off concentration of take-up by sector, and ability to work from home by sector. Sectors scored from 1-5. Score of 5=high ability to work from home. Score of 1=low ability to work from home.

As a result of the Covid-19 pandemic, the ability of many employees to work from home has increased, as companies put in place the policies and technologies to enable them to do so. In many countries, this has resulted in a 50% or more increase in working from home. The greater the increase in working from home, the greater the likelihood of a permanent increase because systems have been introduced to facilitate flexible working where they were not present pre-Covid.

EXHIBIT 3: WORKING FROM HOME



Sources: Eurofound (2020), Living, working and Covid-19 survey dataset. ONS, 2020

Taking all these elements into account, when we aggregate the employee-related factors, the major cities in Europe are ranked as follows from most vulnerable to least vulnerable:

TOP 10 CITIES IN EUROPE ***(most vulnerable to least vulnerable)***	
1	London
2	Milan
3	Berlin
4	Munich
5	Amsterdam
6	Frankfurt
7	Warsaw
8	Paris
9	Madrid
10	Barecelona

London features at the top of the table, mainly because of its long commute and high concentration of sectors where working from home is possible. Milan also features near the top of the list. Having experienced a jump in working from home as a result of the pandemic where previously this was rare, the extent of working from home in the future is likely to increase to a greater extent than in markets where working from home was common. At the bottom of the list are the Spanish cities, which have the advantages of short commutes and a smaller proportion of occupations which can be successfully carried out from home.

Do employers want to work from home?

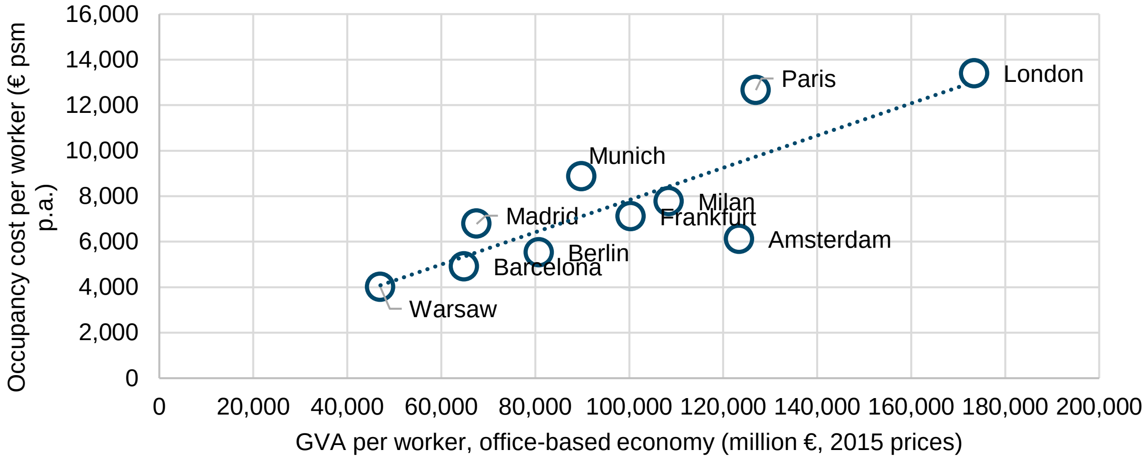
From an employer perspective, the cost-benefit analysis is more quantitative. Productivity gains or losses must be weighed against occupancy costs.

In many cities across Europe, the most expensive office space is also home to the most economically productive workers. For example, in the City of London, gross value added (GVA) per office worker is estimated to be around €173,000 per year, over three times that of Warsaw.

Sectors and employers who can generate high levels of output per worker are more likely to be able to compete for expensive office space. The relationship also runs in the opposite direction. To attract the most productive workers, employers seek appealing office space in areas which offer easy access to public transport and supporting infrastructure such as restaurants and gyms.

There is therefore a fairly close relationship between output and office occupancy costs.

EXHIBIT 4: OCCUPANCY COST AND OUTPUT



Sources: CBRE, Prime Office Occupancy Costs, 2019; Oxford Economics, 2020

In a bid to reduce occupancy costs without compromising on location, many occupiers have chosen to increase the number of employees sharing the same area of office space. The gradual increase in remote working over the past ten years has facilitated this trend. Overall, since the Global Financial Crisis in 2008/9, office floorspace per worker has fallen by 9%.

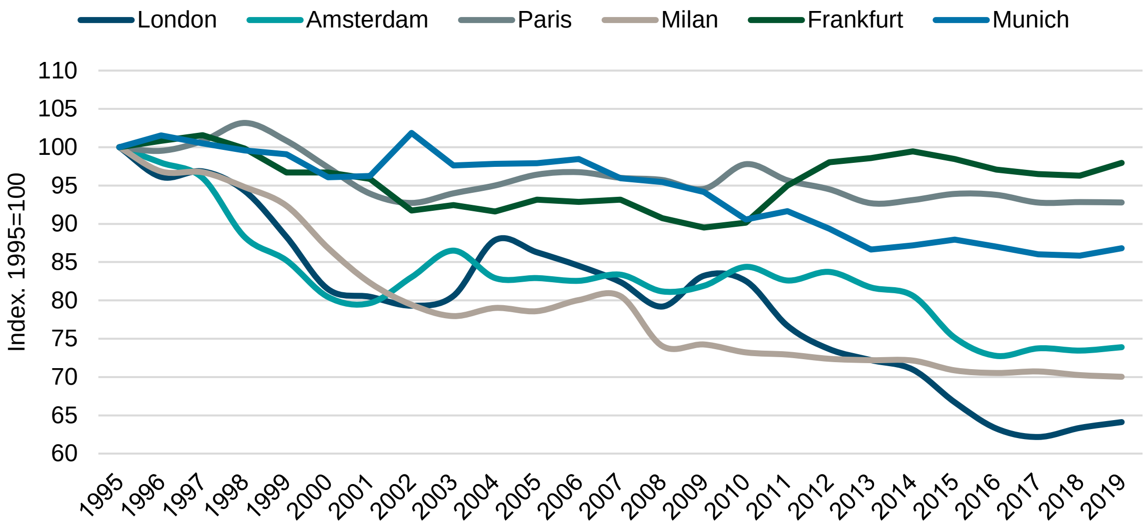
The trend of falling floorspace per worker has not been evenly experienced across Europe. London has led the trend, with floorspace per worker falling by almost 24% since 2009.[18] However, for the past four years in London, the rate of increase in office density has slowed. This suggests that the city may have reached a limit to density, as office workers demand more common areas and facilities, and fewer interruptions.[19]

At the same time, there are many markets across Europe where office density is well below the level at which London has now plateaued. Paris is one example. Office space per worker is just over 7% lower today than in 1995, despite high occupancy costs. Many of the German markets have also not followed the trend of increasing office density. In Frankfurt, floorspace per worker is now around 20% higher than in London.

While there is limited evidence in these markets of increasing office density in recent years, a cultural shift in favour of more remote working could prompt companies to start to trim their office footprint. As such, we believe that those markets where office density is already high are likely to be less at risk of further densification.

[18] PMA, August 2020. Own calculations.
[19] BCO, February 2018

EXHIBIT 5: FLOORSPACE PER WORKER



Sources: PMA, August 2020

When we combine occupancy cost relative to output and data on typical office densities, the cities which are most exposed to a rise in homeworking from an employer perspective are:

TOP 10 CITIES IN EUROPE *(most exposed to a rise in homeworking)*	
1	Paris
2	Munich
3	Madrid
4	London
5	Warsaw
6	Frankfurt
7	Milan
8	Barcelona
9	Amsterdam
10	Berlin

In the analysis, change in floorspace per worker is given less weight as this is also determined by other factors such as regulation, unionisation of the workforce, and cultural expectations. The result is that Paris and Munich come top of the list, due to having high occupancy costs relative to output. At the opposite end of the table, the ‘tech cities’ including Barcelona, Berlin, and Amsterdam perform well by this metric.

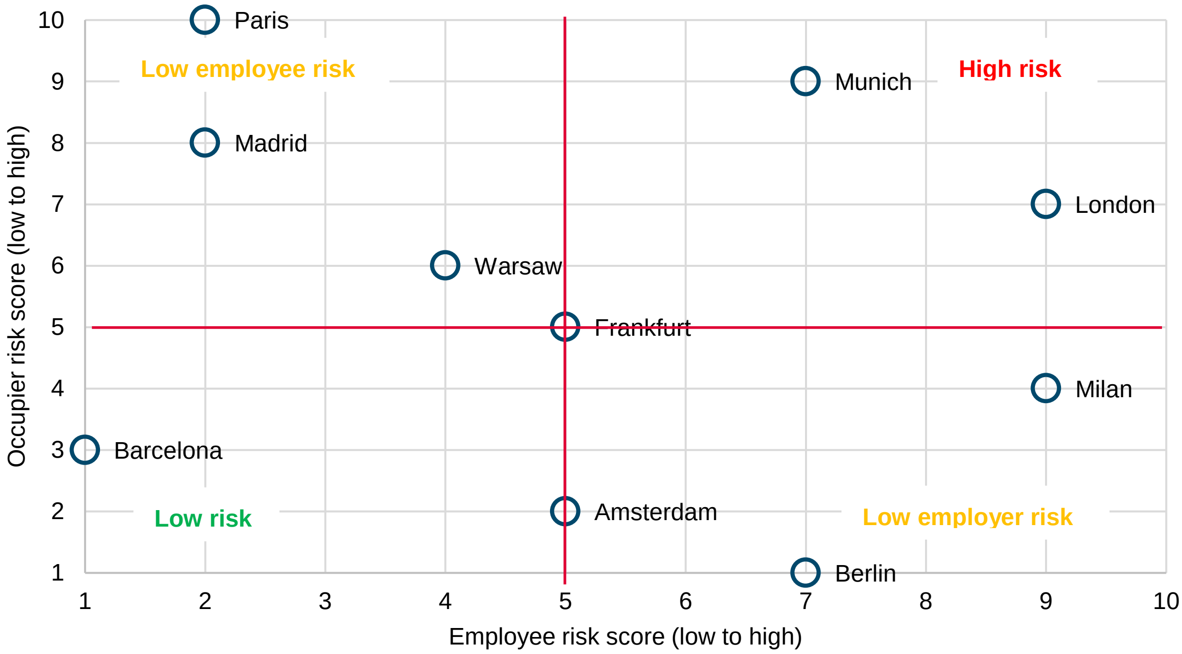
4 / Conclusion

The growth in working from home has been a shared trend across Europe during the Covid-19 pandemic. What is less clear is how vulnerable office markets are across Europe to an increase in working from home once the pandemic is over. Using a series of metrics to indicate employee and employer ability and willingness to work from home, we have identified some cities that we believe are more vulnerable to an increase in working from home than others.

Cities such as London and Munich have a high risk score both from an employee and employer perspective, but for slightly different reasons. London for its long commute and above-average occupancy costs relative to output, and Munich for having experienced a sharp increase in working from home during the pandemic, as well as high occupancy costs.

Barcelona and Amsterdam, on the other hand, benefit from short commute times and relatively inexpensive office space compared to productivity, so the incentive for employees and occupiers to reduce office space as a result of home working is lower.

EXHIBIT 6: OVERALL SCORES.
1=low risk. 10=high risk



Sources: DWS, October 2020

While this analysis gives an early indicator of vulnerability to a rise in home working, there are still many unknowns. One key “known unknown” is the extent to which (if at all) working from home can shift demand away from office space. Most offices are already designed to be less than 100% full, and desks are typically only in use for 48% of the day.[20]

We still need to rely on the traditional fundamentals of office demand in our forecasting, including economic growth, office employment, and supply. But in a post-Covid 19 world we could see some structural changes in the way the office is used. When picking outperforming cities for office investments, vulnerability to working from home should be a considered part of our thinking.

[20] Financial Times, January 2020

Research & Strategy—Alternatives

OFFICE LOCATIONS:

Chicago
222 South Riverside Plaza
34th Floor
Chicago
IL 60606-1901
United States
Tel: +1 312 537 7000

Frankfurt
Mainzer Landstrasse 11-17
60329 Frankfurt am Main
Germany
Tel: +49 69 71909 0

London
Winchester House
1 Great Winchester Street
London EC2N 2DB
United Kingdom
Tel: +44 20 754 58000

New York
875 Third Avenue
26th Floor
New York
NY 10022-6225
United States
Tel: +1 212 454 3414

San Francisco
101 California Street
24th Floor
San Francisco
CA 94111
United States
Tel: +1 415 781 3300

Singapore
One Raffles Quay
South Tower
20th Floor
Singapore 048583
Tel: +65 6538 7011

Tokyo
Sanno Park Tower
2-11-1 Nagata-cho
Chiyoda-Ku
18th Floor
Tokyo
Japan
Tel: +81 3 5156 6000

TEAM:

Global

Kevin White, CFA
Co-Head of Real Estate Research & Strategy
kevin.white@dws.com

Simon Wallace
Co-Head of Real Estate Research & Strategy
simon.wallace@dws.com

Gianluca Minella
Head of Infrastructure Research
gianluca.minella@dws.com

Americas

Brooks Wells
Head of Research, Americas
brooks.wells@dws.com

Liliana Diaconu, CFA
Office Research
liliana.diaconu@dws.com

Ross Adams
Industrial Research
ross.adams@dws.com

Ryan DeFeo
Property Market Research
ryan-c.defeo@dws.com

Ana Leon
Retail Research
ana.leon@dws.com

Joseph Pecora, CFA
Apartment Research
joseph.pecora@dws.com

Europe

Tom Francis
Property Market Research
tom.francis@dws.com

Siena Golan
Property Market Research
siena.golan@dws.com

Rosie Hunt
Property Market Research
rosie.hunt@dws.com

Martin Lippmann
Property Market Research
martin.lippmann@dws.com

Florian van-Kann
Property Market Research
florian.van-kann@dws.com

Aizhan Meldebek
Infrastructure Research
aizhan.meldebek@dws.com

Asia Pacific

Koichiro Obu
Head of Research & Strategy, Asia Pacific
koichiro-a.obu@dws.com

Natasha Lee
Property Market Research
natasha-j.lee@dws.com

Seng-Hong Teng
Property Market Research
seng-hong.teng@dws.com

Hyunwoo Kim
Property Market Research
hyunwoo.kim@dws.com

Important Information

The brand DWS represents DWS Group GmbH & Co. KGaA and any of its subsidiaries, such as DWS Distributors, Inc., which offers investment products, or DWS Investment Management Americas, Inc. and RREEF America L.L.C., which offer advisory services.

This material was prepared without regard to the specific objectives, financial situation or needs of any particular person who may receive it. It is intended for informational purposes only. It does not constitute investment advice, a recommendation, an offer, solicitation, the basis for any contract to purchase or sell any security or other instrument, or for DWS or its affiliates to enter into or arrange any type of transaction as a consequence of any information contained herein. Neither DWS nor any of its affiliates gives any warranty as to the accuracy, reliability or completeness of information which is contained in this document. Except insofar as liability under any statute cannot be excluded, no member of the DWS, the Issuer or any office, employee or associate of them accepts any liability (whether arising in contract, in tort or negligence or otherwise) for any error or omission in this document or for any resulting loss or damage whether direct, indirect, consequential or otherwise suffered by the recipient of this document or any other person.

The views expressed in this document constitute DWS Group's judgment at the time of issue and are subject to change. This document is only for professional investors. This document was prepared without regard to the specific objectives, financial situation or needs of any particular person who may receive it. No further distribution is allowed without prior written consent of the Issuer.

Investments are subject to risk, including market fluctuations, regulatory change, possible delays in repayment and loss of income and principal invested. The value of investments can fall as well as rise and you might not get back the amount originally invested at any point in time.

Investment in real estate may be or become nonperforming after acquisition for a wide variety of reasons. Non-performing real estate investment may require substantial workout negotiations and/ or restructuring. Environmental liabilities may pose a risk such that the owner or operator of real property may become liable for the costs of removal or remediation of certain hazardous substances released on, about, under, or in its property. Additionally, to the extent real estate investments are made in foreign countries, such countries may prove to be politically or economically unstable. Finally, exposure to fluctuations in currency exchange rates may affect the value of a real estate investment.

Investments in Real Estate are subject to various risks, including but not limited to the following:

- Adverse changes in economic conditions including changes in the financial conditions of tenants, buyer and sellers, changes in the availability of debt financing, changes in interest rates, real estate tax rates and other operating expenses;
- Adverse changes in law and regulation including environmental laws and regulations, zoning laws and other governmental rules and fiscal policies;
- Environmental claims arising in respect of real estate acquired with undisclosed or unknown environmental problems or as to which inadequate reserves have been established;
- Changes in the relative popularity of property types and locations;
- Risks and operating problems arising out of the presence of certain construction materials; and
- Currency / exchange rate risks where the investments are denominated in a currency other than the investor's home currency.

An investment in real estate involves a high degree of risk, including possible loss of principal amount invested, and is suitable only for sophisticated investors who can bear such losses. The value of shares/ units and their derived income may fall or rise.

Any forecasts provided herein are based upon DWS's opinion of the market at this date and are subject to change dependent on the market. Past performance or any prediction, projection or forecast on the economy or markets is not indicative of future performance.

War, terrorism, economic uncertainty, trade disputes, public health crises (including the recent pandemic spread of the novel coronavirus) and related geopolitical events could lead to increased market volatility, disruption to US and world economies and markets and may have significant adverse effects on the fund and its investments.

This marketing communication is intended for professional clients only.

DWS is the brand name of DWS Group GmbH & Co. KGaA and its subsidiaries under which they operate their business activities. The respective legal entities offering products or services under the DWS brand are specified in the respective contracts, sales materials and other product information documents. DWS, through DWS Group GmbH & Co. KGaA, its affiliated companies and its officers and employees (collectively "DWS") are communicating this document in good faith and on the following basis.

This document has been prepared without consideration of the investment needs, objectives or financial circumstances of any investor. Before making an investment decision, investors need to consider, with or without the assistance of an investment adviser, whether the investments and strategies described or provided by DWS Group, are appropriate, in light of their particular investment needs, objectives and financial circumstances. Furthermore, this document is for information/discussion purposes only and does not constitute an offer, recommendation or solicitation to conclude a transaction and should not be treated as giving investment advice.

The document was not produced, reviewed or edited by any research department within DWS and is not investment research. Therefore, laws and regulations relating to investment research do not apply to it. Any opinions expressed herein may differ from the opinions expressed by other legal entities of DWS or their departments including research departments.