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The Impact of Working from Home on the German Office Real Estate Market*

KEY MESSAGES

- **A quarter of the workforce regularly works from home, oftentimes blending office and remote work**
- **The office market is undergoing a stress test, with challenging conditions expected to persist**
- **The permanent shift toward working from home (WFH) is expected to decrease long-term office space demand by around 12 percent**
- **In industries with high WFH rates, new office leases show a flight to quality with higher rents**
- **An office building's ability to meet the growing "new work" demands is now a key leasing factor**

"Return to the office!" – This call from major companies like Amazon, Google, and Zoom has sparked widespread attention. In Germany, corporations such as SAP and VW are also placing renewed emphasis on in-person collaboration among employees. Since the pandemic, working from home (WFH) seems to have become deeply ingrained in the modern work culture. Indeed, survey data from the ifo Institute reveals that over the past two years, a quarter of all employees have regularly worked remotely. This tension between the stabilization and the rollback of WFH practices calls for careful examination and context.

As work models evolve, many desks in corporate offices remain empty, at least on certain weekdays. The trend toward WFH is driving plans to downsize office space, leading to price corrections, more subletting, and rising vacancy rates. Recently, The Economist (2024) even cautioned about the potential risk of a new financial crisis stemming from the impact of remote work on US commercial real estate. There are thus many indications that WFH could present a long-term headwind for the office market.

The surge of hybrid work models raises key questions about the future of corporate offices. Where is the working world headed regarding WFH, what size office spaces will be required in the future, and how does the purpose of the office change? The answers to these questions are of particular importance for the current discussions about WFH and the challenges on the real estate market.

In this study, we examine WFH trends and their impact on the office real estate market across Germany's top seven cities: Berlin, Hamburg, Munich, Cologne, Frankfurt am Main, Stuttgart, and Düsseldorf. For the first time, we integrate data from the ifo Institute's WFH surveys with the office market database of the real estate consultancy Colliers. This unique combination enables us not only to track the aggregate development of WFH and the office market, but also to capture the effects of WFH on office real estate at the industry level.

In the first part of our study, we assess the current state of the German office real estate market, which is facing an unprecedented stress test in a challenging economic environment. Rental market activity has plummeted to levels seen during the Covid crisis, coupled with rising vacancy rates, and there is little indication of a swift recovery on the horizon.

The second part of the study focuses on the impact of WFH. Amid the push and pull between establishing WFH and returning to the office, the trend is moving toward better coordination between in-person work and remote work. In most office-based industries, this shift leads to structured hybrid working models with designated in-office days but not a return to the pre-Covid norm of five-day in-office workweeks. Regular remote work has thus become a fundamental aspect of the new work environment.

As WFH becomes more prevalent, office occupancy rates are dropping, leading many companies to plan for reduced office space. Our conceptual forecasting model estimates an approximately 12 percent long-term demand reduction by 2030, equivalent to 11.5

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million m² of office space across the top seven cities, assuming office employment remains steady.

The WFH impact is already evident in the short term through increased subletting, which has now quadrupled to over 8 percent. The full effect will only be seen in the long term through a structural decline in demand for space. Importantly, industries with higher levels of WFH adoption show decreased office space needs but increasing rents. This rise in rents is driven by a preference for newer, centrally located offices, coupled with inflation and construction costs.

Hybrid work is transforming offices into hubs for collaboration and creativity. Based on structured expert interviews, we find that the "new work" capability of office buildings is increasingly becoming a critical factor in firms' leasing decisions. Our analyses do not indicate significant changes in location preferences, with central locations remaining in high demand.

SAMPLE, DATA AND METHODOLOGY

Our study analyzes the office real estate market in major German cities. In addition to the general market development, we pay particular attention to the effects of the rapidly changing economic and working world on the office market. The sample includes the seven largest office centers – Berlin, Hamburg, Munich, Cologne, Frankfurt am Main, Stuttgart, and Düsseldorf – between 2013 and 2023. In some cities, we also look at the wider metropolitan region with the immediate vicinity of the cities. In Munich, this includes the districts of Munich, Dachau, Ebersberg, Erding, Freising, Fürstenfeldbruck, and Starnberg. In Frankfurt am Main, we also include Eschborn and Offenbach; in the Stuttgart metropolitan region, the district of Esslingen in addition to Leinfelden-Echterdingen; and around Düsseldorf, the district of Mettmann and the Rhine district of Neuss.[1] For the empirical studies, we combine an extensive database on WFH and office properties in these cities.

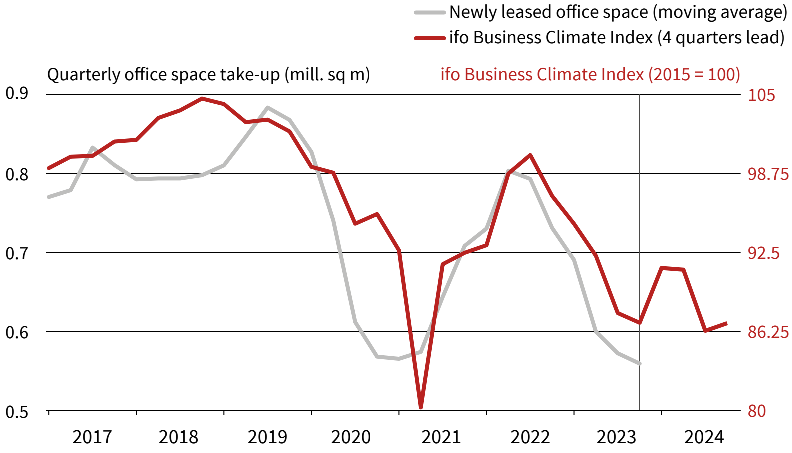
The first data set used is the office market database of the real estate consultancy Colliers, which records more than 35,000 leases of office space for the period under review. This transaction data provides a very comprehensive picture of market activity in the top seven cities, as the data includes not only the office leases supported by Colliers itself, but also all lease agreements known on the market.[2] The entries in the database provide detailed information about each rental deal, including size, rent, quality, location, and industry. Compared to the listing data used in other analyses, the two major advantages of transactional data are that it captures actual lease data and provides information about the industry of tenant companies. For the empirical investigations, the raw data from Colliers is processed so that only observations with existing entries for rent and space are included in the analysis sample. In addition to transaction data, Colliers' office market database includes location-based data on office space inventory and vacancy.

Second, our study is based on extensive and representative survey data from the ifo Institute on the use of WFH in companies. As part of the survey waves, various special questions were asked in April, August, and October 2023 on the topic of WFH and office use.

Third, in addition to the quantitative analysis, a qualitative survey was conducted at the real estate consultancy firm Colliers. The aim of this qualitative survey was to understand the changing user requirements for office space based on selected reference objects. The results were collected in November 2023 through 44 in-house expert interviews in all seven cities. The consultants from the office leasing sector were interviewed in a structured manner about leases they had supported, if they took place between 2018

Figure 1

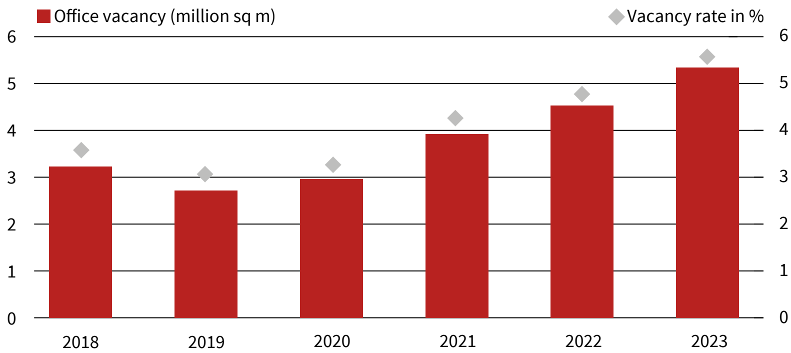
Development of Office Leasing Volume and ifo Business Climate Index



Source: Colliers; authors' calculations. © ifo Institute

Figure 2

Development of Office Vacancy and Vacancy Rates in Germany's Top 7 Cities (Annual Average)

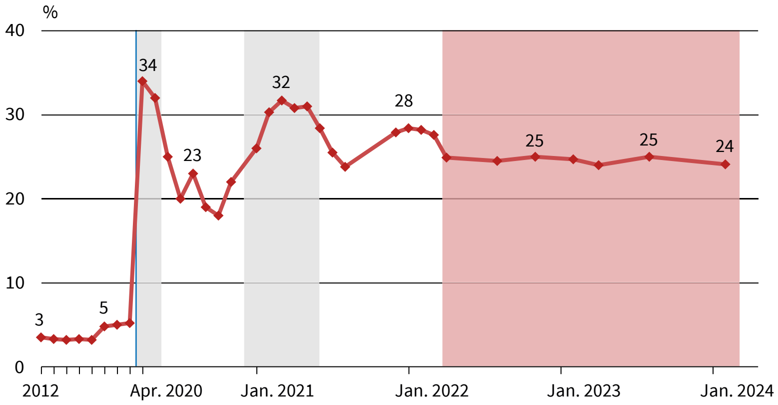


Source: Colliers; authors' calculations. © ifo Institute

[1] The market areas covered deviate from the typical definition in Colliers market reports, because in some cities, they also include the wider metropolitan area with the surrounding counties.

[2] In the years 2013 to 2017, there were individual gaps in the market coverage of Hamburg and Cologne, while in the later years the market activity there was monitored just as comprehensively as in the other cities.

Figure 3
Work-from-home Rate of Employees in Germany 2012–2024



Note: The blue line marks the outbreak of the Covid-19 pandemic in March 2020, the shaded gray areas highlight lockdown periods, and the shaded pink area marks the post-pandemic period since April 2022.
Source: Eurostat (2012–2019); infas360 (2020–2021); ifo Business Surveys; calculations by the ifo Institute (2021–2024).

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and 2023, had a minimum size of 2,000 square meters of office space, and were in a modern office building.

DEVELOPMENT OF THE OFFICE REAL ESTATE MARKET

In the first section, this study offers a comprehensive overview of the current state of the German office real estate market, focusing on two key indicators: demand for space and vacancy rates.

The office property market in Germany's major cities has enjoyed years of steady growth. The gray line in Figure 1 shows the development of office leasing in the top seven cities from 2017 to 2023. In each of the years from 2017 to 2019, a quarterly take-up of more than 0.8 million m^2 was achieved.[3] This pre-pandemic period was characterized by robust economic development, low inflation rates, and low interest rates. The outbreak of the Covid pandemic in 2020 led to an abrupt slump in demand for space. After the pandemic-related decline, take-up of office space recovered in 2021 and 2022, but without returning to pre-crisis levels. Data from the year 2023 indicates a substantial market cooling. Leasing volumes in the top seven cities have fallen back to levels seen during the height of the Covid crisis in 2020. The reasons for this downturn are multifaceted, involving macroeconomic factors like the recession and rising interest rates, alongside regional issues such as structural shifts within cities. A key structural factor is the rapidly evolving work environment, which will be explored in detail in the second part of this analysis.

In the past, the development of the office property market was strongly correlated with the ifo Business Climate Index, as depicted by the red line in Figure 1. While historical trends are not always predictive of the future, the current index values provide a useful outlook. According to the ifo Business Climate Index, which is aggregated quarterly and adjusted with a one-year lag, a swift recovery in the office market seems unlikely.

The decreasing demand for office space is accompanied by rising vacancies in the top seven cities from 2018 to 2023. The analysis in Figure 2 reveals that vacancies increased from an annual average of around 2.7 million m^2 in 2019 to over 5.8 million m^2 in the last quarter of 2023. During this period, the vacancy rate doubled from an annual average of less than 3 percent in 2019 to around 6.1 percent in the last quarter of 2023. The largest increases in vacancy rates were observed in Berlin and Munich, although starting from a low level. Older office buildings are particularly affected by vacancies, indicating a market segmentation. While demand for high-quality, modern office spaces has driven prime rents higher, conventional office properties are experiencing higher vacancy rates as demand for them declines. This suggests that the broader market faces significant challenges, while the premium office market remains strong.

IMPACT OF HYBRID WORKING ON THE OFFICE MARKET

In the second part of our analysis, we explore the impact of the evolving work landscape on the office real estate market. The rise of WFH, a key aspect of the "new work" trend, has sparked debates about the future of office spaces. Enabled by digitalization and accelerated by the pandemic, this shift allows for more flexible work locations, alters office requirements, and likely reduces the demand for space. Our analysis breaks down these developments and their implications for the office market.

[3] The negative deviation of the take-up volume in our analysis compared to the Colliers market reports is a result of extensive data cleansing and our different market area layout.

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Work from Home or Return to the Office – Where Are We Headed?

Remote work in Germany has increased significantly and permanently since the pandemic. Figure 3 shows the development of the WFH rate in Germany from 2012 to the present, i. e., the proportion of employees who work at least partially from home.[4] The pandemic forced many organizations to experiment with WFH at short notice. While the WFH rate was only about 5 percent before Covid, up to 34 percent of employees worked from home during the pandemic lockdowns. Since April 2022, the WFH rate has remained constant at around 25 percent – a remarkable stabilization over a two-year period. WFH encompasses two different working models. The most common model, with 17 percent of employees, is hybrid working, which blends face-to-face and remote work. Only about 7 percent work exclusively from home (Federal Statistical Office 2023). Although most employees are still working entirely on-site, these figures show how established the new working models with the option to WFH have become. The ifo Business Survey (Aug. 2023) provides additional insights: Currently, 69 percent of companies offer WFH and have established agreements. Among large companies, which account for most occupied office space, the figure is as high as 87 percent. The WFH rules include company agreements (34 percent), divisional or team-level arrangements (15 percent), and individual agreements (29 percent). The remaining 31 percent of companies have no regulation or no WFH.

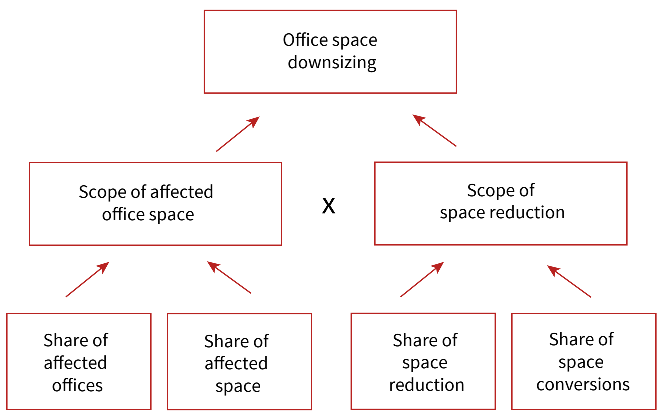
Whether or not one can work remotely varies based on job requirements, organizational needs, and personal preferences. WFH is most prevalent in computer-based office roles, and its likelihood increases with higher education, income, and urbanization (Alipour et al. 2023). This means that highly skilled office workers in service industries, such as IT, management consulting, finance, and public administration, are the primary drivers of WFH and its impact on the office market. Peak WFH rates in these industries reach up to 70 percent. Conversely, WFH is less common in manufacturing, hospitality, logistics, and construction (ifo Institute 2023; Federal Statistical Office 2023).

Employees favor WFH for its flexibility and reduced commuting, valuing it as much as an 8 percent pay raise, which boosts satisfaction and lowers turnover (Bloom et al. 2015 and 2024; Mas and Pallais 2017; Nagler et al. 2024). However, many employers worry that long-term WFH could hinder productivity and innovation. A survey of German CEOs found that 68 percent prefer a full return to the office, while only 5 percent of employees wish to return daily, and 35 percent want permanent WFH (KPMG 2023; PwC 2022).

Currently, there's a tension between WFH becoming established and the push to limit it. The ifo Business Survey (Aug. 2023) reveals that 84 percent of companies plan to maintain their WFH policies, while only 8 percent seek to limit them. The media coverage of companies recalling employees to the office doesn't signal a full return to pre-pandemic norms. For instance, Zoom now requires two days in-office for nearby employees, SAP three days, and Volkswagen four. These examples show that firms are refining hybrid work models, not eliminating WFH. The future of WFH is more about "how" than "if."

The trend is towards structured hybrid work, which blends set in-office days with WFH flexibility on the remaining days. Research supports this model as it balances company and employee needs (Bloom et al. 2022; Choudhury et al. 2024; Krause 2023). Creative collaboration and meetings occur during joint office days, while WFH days are reserved for focused work. In the structured hybrid work model, employees still enjoy flexibility and reduced commutes, while companies benefit from stable productivity and improved retention. The ifo Business Survey (Dec. 2023) shows Friday as the most popular WFH day (55 per-

Figure 4
Model of the Long-term WFH Effect on Demand for Office Space



Source: Authors' presentation. © ifo Institute

Figure 5
Forecast Scenarios of the Long-term WFH Effect on Demand for Office Space

	Scenario 1: Minor office downsizing	Scenario 2: Likely office downsizing	Scenario 3: Major office downsizing
Scope of affected office space	40 %	60 %	80 %
Scope of space reduction	10 %	20 %	30 %
Total office space downsizing	= 4 %	= 12 %	= 24 %

Source: Authors' calculations. © ifo Institute

[4] To determine the development of the home office rate in Germany, we combine data from Eurostat (2012–2019) as well as monthly surveys from infas360 (2020–2021), and the ifo Institute (2021–2023). A uniform time series from an administrative source with information on the development during the year up to the current margin is not available. The Federal Statistical Office (2023) calculates a higher home office rate of around 10 percent for the years before the pandemic, while the figures for 2021 and 2022 are congruent with the results of the ifo Business Survey at around 24 percent.

cent), followed by Monday (35 percent), with in-office attendance peaking mid-week, which is consistent with the adoption of structured hybrid work in many organizations.

Reduced Office Occupancy and Plans to Downsize

The increasing flexibility in the world of work is directly impacting the office market. In Germany, around a third of the 45 million employees work in offices, with this figure rising to over 40 percent in the top seven cities (Hammermann and Voigtländer 2020). The adoption of hybrid working models has significantly lowered office occupancy. According to the ifo Business Survey in April 2023, there are now three times more empty desks on-site due to WFH than before the pandemic. In sectors like IT, advertising, management consulting, and pharmaceuticals, this affects up to 40 percent of jobs. This indicates that German offices are now permanently less occupied post-pandemic.

Additionally, reduced occupancy is leading companies, particularly larger ones with hybrid models, to downsize their office spaces to cut costs. The ifo Business Survey (Aug. 2023) reveals that one in eleven companies, and one in four large companies, plan to reduce their office space. In some industries, such as automotive (38 percent), broadcasting (40 percent), IT (21 percent), and advertising (35 percent), these figures are even higher. Since these numbers don't fully account for ongoing and future adjustments, the overall impact on office space demand will likely be greater.

When examining the link between unoccupied desks and plans to downsize offices due to WFH, we find that industries with more underutilized on-site workspaces have a higher proportion of companies planning to reduce their office space. The order of magnitude seems plausible: with 20 percent of unoccupied on-site workplaces, about 15 percent of companies plan to downsize.

How Much Less Office Space Is Required Because of Hybrid Working?

Analyzing the impact of WFH on the office market requires a look at both short- and long-term factors. Initially, there was uncertainty about the future of office work after the pandemic, complicated by the long-term nature of office leases, which typically last about seven years. With around 15 percent of contracts renewed annually, the effect of work models will only materialize over time. Affected companies are expected to adjust their office space needs during lease renegotiations, with some opting for immediate changes through subleasing unused space.

To estimate the long-term effect of WFH, we present a conceptual forecasting model, acknowledging the inherent uncertainties. Our model assumes that most companies and public organizations will adopt structured hybrid work models while maintaining their current number of office employees. The reduction in office space will depend on the degree to which companies adopt hybrid models and the corresponding decrease in space requirements. The overall impact is calculated by multiplying the proportion of companies offering WFH by the percentage of office space they no longer need, accounting for both savings and potential repurposing of current office space.

Figures 4 and 5 illustrate our scenarios, providing a simplified yet valuable insight into how hybrid work could reshape office space demand over time. The forecast estimates that approximately 60 percent of total office space will be impacted by hybrid work models, with an average reduction of 20 percent in space usage. The 60 percent impact reflects the share of corporate office occupiers adopting hybrid work multiplied with the extent of their office spaces that are affected by this shift. We anticipate that 80 percent of occupied office space is affected, which are primarily large companies with a high prevalence of WFH. In their offices, about 75 percent of the space will be affected by hybrid work, considering that areas like receptions or restrooms won't change. The 20 percent average space reduction constitutes the net effect of savings and conversion. Savings of 20–30 percent can be achieved by introducing desk sharing, although the downsizing is limited by the peak office occupancy on coordinated attendance days. Simultaneously, up to 10 percent of office space might be repurposed into new common areas or meeting rooms, slightly offsetting the overall reduction. Beyond this most likely scenario, we also model a minimal reduction of 4 percent, assuming a 40 percent impact on office space and a 10 percent reduction. Conversely, a significant downsizing of 24 percent is possible if 80 percent of office space is affected and reduced by 30 percent.

Our model projects a long-term reduction in office space due to WFH ranging from 4 percent to 24 percent, with a likely average of around 12 percent. This translates to a reduction of approximately 11.5 million m^2 out of the 96 million m^2 of office space in the top seven cities. Compared to Pink and Wecke's (2023) estimate of a 2 percent to 15 percent reduction, our forecast is slightly on the higher end. The reduction will manifest both in the short term through increased subletting and in the long term through sustained lower demand. With only 15 percent of leases renewed annually, this implies an average annual decline of about 1.8 percent over seven years. This gradual decrease signals a "rolling" crisis for the rental market, while the investment market will likely adjust more swiftly to the anticipated lower demand. Overall, the office market is facing a significant stress test.

WFH Effect on Subletting, Demand for Space and Rents

The empirical analysis of office leasing data reveals that the share of subleases in the total rental volume, measured as a moving average over the last four quarters, has increased significantly. This share has almost quadrupled, from less than 2 percent before the pandemic to 8 percent today. It should be noted, however, that there was already a slight increase before Covid. This suggests that sublease space has different economic backgrounds, including but not solely the trend towards hybrid working. In addition, the latest increase has occurred at a time when the leasing volume declined. Still, the surge in subleasing since the pandemic can largely be attributed to the impact of WFH.

In our analysis, we combined ifo survey data on WFH with Colliers office rental data, allowing us to explore statistical relationships at the industry level between increased WFH, office space demand, and rents for the first time. While these correlations don't establish causality, they offer valuable insights. We examined changes across industries from 2019 to 2023, revealing key trends.

Figure 6 shows a significant negative correlation between the rise in WFH rates and the average demand for office space: industries with higher WFH adoption saw a greater decline in office space demand. This pattern remains consistent even when considering the increase in unoccupied local jobs or the total demand for office space instead of the average area.

Figure 7 depicts a positive correlation between WFH growth and rising average rents per square meter across industries. This suggests a potential "flight to quality," where companies are opting for smaller but higher-quality and more expensive office spaces. Alternatively, it may reflect companies reducing their overall space but willing to pay more per square meter, thereby still saving on total rental costs.

Changing Requirements for Offices

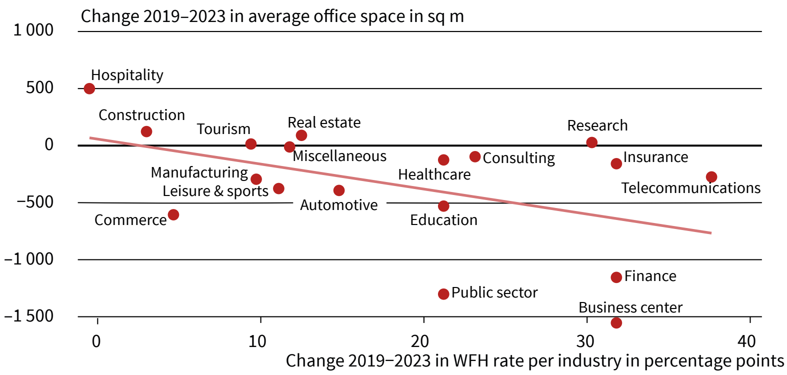
The transformation of work is reshaping the role of the office, shifting it from a purely functional workspace to a hub for personal interaction. This "new work" trend is evident in the move away from traditional individual offices toward more flexible group and open-plan spaces, with enhanced communication zones, dedicated meeting rooms, and breakout areas. While desk sharing reduces the number of desks, it is often accompanied by extending the areas designed for informal exchanges.

A qualitative analysis of rental criteria in Figure 8 highlights the growing significance of "new work" capabilities in office buildings, especially in the context of hybrid work models. The data show that the importance of office space supporting these new communication and work structures has surged from 6 percent to 33 percent, making it a critical factor in firms' decision-making about office spaces.

Flexible usage concepts and office layouts with expanded communication zones have gained importance since the Covid pandemic. However, more flexibility doesn't always lead to space savings: 16 percent of surveyed properties maintain a 100 percent occupancy rate despite offering WFH options. The preference for open-plan offices and shared workspaces now surpasses that for group or smaller offices, emphasizing the need for collaboration zones in hybrid work environments. At the same time, the importance of quiet zones has doubled, reflecting a growing demand for diverse spaces in modern offices.

Figure 6

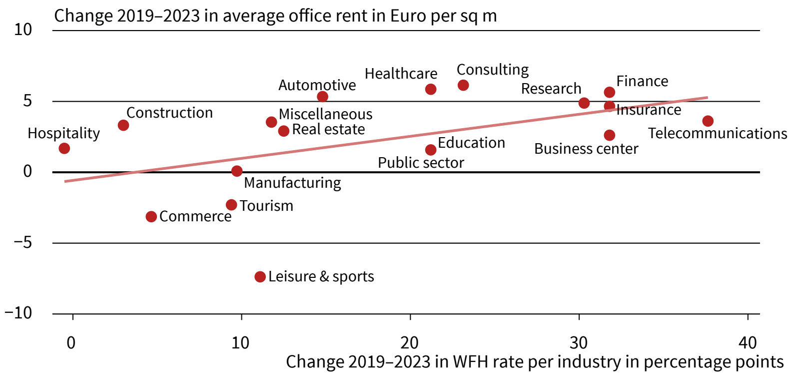
Development of Demand for Office Space and WFH in Sectors



Source: Colliers; calculations by the ifo Institute. © ifo Institute

Figure 7

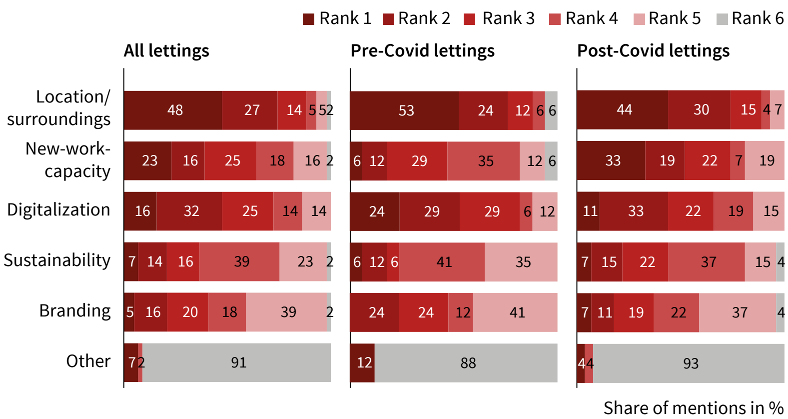
Development of Office Rents and WFH in Sectors



Source: Colliers; calculations by the ifo Institute. © ifo Institute

Figure 8

Change in the Leasing Criteria of Office Buildings



Note: Rank 1 = Criterion with the highest relevance for leasing decision. Rank 6 = Criterion with the lowest relevance fo leasing decision.
Source: Colliers; calculations by Colliers. © ifo Institute

How Are Location Preferences Changing?

Another possible impact of the new working models on the office market is changing location preferences. On the one hand, one could assume that the decline in office use is particularly burdensome in city centers, which have a high density of offices and suffer from lower retail sales due to working from home (Alipour et al. 2022). On the other hand, the importance of central locations for the reduced office days may have increased.

The analysis reveals that office rents since the pandemic have increased across city centers, convenient locations, and surrounding areas. Unlike residential real estate, there is no "donut" effect; instead, central locations remain in high demand despite higher rents. This suggests that centrally located offices might constitute an incentive for employees to work on-site. Anecdotal evidence from expert interviews further support this, showing a growing preference for central, well-located offices that cater to employee needs.

POLICY CONCLUSIONS

What implications does our study have for the future of WFH and the office real estate market?

First, the evolving dynamic between the stabilization and rollback of WFH shows a trend towards structured hybrid work models. These models feature coordinated in-office days blended with flexible days at home, contrasting with the pre-Covid standard of five days per week in the office. This work arrangement facilitates a balance between face-to-face collaboration and location-independent working.

Second, the function of the office transitions to a hub for interaction, maintaining its role as a central space for collaboration, creativity, and corporate culture. The increasing importance of "new work" capabilities in office buildings highlights growing demands on the office environment, significantly influencing leasing decisions.

Third, WFH has profoundly impacted the office market, presenting long-term challenges for both the rental and investment market. We anticipate a rise in vacancy rates and subletting as immediate responses, with re-leasing challenges and refinancing pressures manifesting over several years due to the lengthy terms of many leases. This "rolling" crisis suggests a need for office property owners and project developers to adapt to evolving market demands. The recent insolvencies of 48 office project developments in the top seven cities with a total area of almost one million m2 and an investment volume of over EUR 6 billion illustrate the scope of this stress test (Colliers 2024a).

Fourth, the decline in demand exacerbated by WFH is likely to widen the segmentation in the office market. Modern offices that accommodate new work styles are in demand, while older buildings face numerous challenges, including the adaptability to new work models and increasing ESG standards. About two-thirds of all office properties risk becoming obsolete or "stranded assets" without necessary modernizations (Colliers 2023). In comparison, the WFH effect seems small, but it exacerbates this problem.

Fifth, the financial stability of investors and banks with significant stakes in commercial real estate is at risk due to increased refinancing costs and demand declines from WFH. This risk is compounded in the US, where the commercial real estate market is acutely affected by WFH, raising concerns of a potential financial crisis (The Economist 2024). Although the losses may lead to individual forced sales and insolvencies, office properties account for only a small single-digit share of total real estate assets in Germany and the loan-to-value ratios in Germany are typically lower than in the US. Nevertheless, there is a high debt refinancing gap in the coming years, especially for office properties, which can be estimated at up to EUR 18 billion (Colliers 2024b).

Sixth, converting obsolete office space into residential units is a popular proposal to alleviate housing shortages. However, practical challenges make this solution complex and costly, with conversions often resulting in luxury rather than affordable housing. A study from the United States shows that only about 10 percent of office buildings could be converted considering technical, economic, and regulatory factors (Gupta et al. 2023). If a conversion takes place, the new residential spaces tend to be luxury apartments rather than affordable housing due to high construction costs.

Finally, despite the shift towards WFH, central urban locations continue to attract office tenants. The inherent advantages of city centers, such as agglomeration effects that are crucial for innovation and productivity, ensure their continued desirability and provide compelling reasons for employees to work in the office.

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