A Framework for Considering Office Demand in a Post-pandemic World

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Table of Contents

Executive Summary

- We explore two potential scenarios for the office market. The base case anticipates that current trends in hybrid work stick, with most workers coming into the office for only a few days each week. In the alternate case, a looser labor market means that the longer-term, less tangible benefits of being in the office will outweigh the shorter-term, more tangible benefits of being remote for workers and we will see a greater return to in-office work. The likely outcome is a mix of the two, with different geographic markets, industries, individual firms and workers settling on arrangements that suit them best and responding to the changing market signals in terms of lease structures, property values, financing terms, and employment conditions. In either path, it is unlikely that we will see the office market return to its former shape, size, and dimensions.

- The pandemic caused a shift in workplace practice and expectations that could not have happened without the accumulated and near perfectly timed advances in technology that have supported greater collaboration between remote parties. Now, a key question is: if the workplace can thrive with everyone in the office, and it can thrive with everyone remote, can it thrive with 44.2% of employees in the office?

- During the pandemic, workers and employers were able to experience the short-term, tangible costs and benefits of remote versus in-person work. Importantly, the longer-term, intangible costs and benefits have — thus far — remained largely notional to both workers and employers. As we think about companies' return-to-office practices, we need to consider the impacts of a) workers' views of their costs and benefits of being in the office versus remote, b) employers' views of their costs and benefits of employees being in the office versus remote and c) whether labor market conditions at a given point in time weight workers' or employers' views more.

- When speaking with senior business leaders about remote/hybrid work, one tends to hear an eagerness to get workers back into the office and words like culture, collaboration, teamwork and professional development — longer-term, largely intangible benefits of in-person work. But just because the costs/benefits of a particular work arrangement are less immediately tangible does not mean they are any less important or impactful.

- While built up over time — largely through in-person interactions — workplace capital later manifests itself in greater efficiencies and growth for the employer and greater compensation and promotional opportunities for the employee. Workplace capital makes us more likely to give a co-worker the benefit of the doubt, to feel comfortable asking questions and to pick up knowledge and insights that may be of value further down the road. In-person work builds workplace capital while fully remote work stalls the development and hastens the drawing down of that workplace capital.

- Taking all of the above into account leaves two fundamental questions about the coming use of office space:

  + How will the ways we use space change?

  + How will the amount of space we use change?

- Three-in-four (76 percent) companies expect to use less dedicated seating in their offices in the future, while almost two-thirds expect to use more activity-based work (64 percent) and hot-desking (63 percent).

- In the base case, using the dot.com crash as a parallel, one might expect a slow 10–20 percent decline in demand for office, with that decline impacting leases that are rolling over the coming decade and varying across geographies. Price declines to reflect this lower demand could happen initially, and then stabilize, while the impact on NOIs would be spread over a decade.

- In our alternate case, some firms may downsize and others expand. In the aggregate, and after an initial period of volatility, any overall drop in demand would be marginal. Higher quality properties will continue to attract premium tenants, rents and values but lower quality properties will not be as negatively affected as in the base case.

- In the base case, a reduction in office values would lead to a similar decline in originations. In the alternative case, a relatively sudden return to normal would lead to a jump in office demand as employers scrambled to find seats for all employees, potentially fueling a surge in origination volume.

- In reality, different employers will pursue different paths. Some will be fully remote, some fully in the office and some on the spectrum between. Demand for office will be determined by the mix and how many — and what types and sizes of firms — pursue which. There will likely be concentrations in approaches by industry, geography, firm size and more.

I. Introduction

Work-from-home has brought an existential question to the office market. Two-and-a-half-years into the pandemic, with office properties currently at 40 percent of their pre-pandemic occupancy, what's ahead for the sector? To answer that question, we dig into the relative benefits and costs of remote and office work to understand what the pandemic has and has not changed. With that understanding, we then assess two alternative cases — one in which we follow the current path of hybrid/remote work and another in which the fear-of-missing-out and a looser labor market drive more employees back to the workplace. We then look at the two paths and their impacts on design of space, use of space and the likely demand for different types of space and related financing.

Many workers have experienced short-term benefits from work-from-home that outweigh their costs. Employers may also see potential benefits from extending remote work, but some of those benefits are delayed because of the long-term nature of lease and other contracts. We also find that both workers and employers may see workplace capital depreciate over time with extended work-from-home arrangements. Workplace capital, an intangible asset that results from interpersonal connections and communications that accumulate or depreciate over time, appears less motivational in the near-term and given current labor market conditions but could become a more significant consideration as the labor market changes.

We explore two potential scenarios for the office market. The base case anticipates that current trends in hybrid work stick, with most workers coming into the office for only a few days each week. Using the 2001 dot.com office market crash as an example, this case could see occupancy rates, property net incomes and values all fall by 20 percent (all else being equal) or more as leases roll over the coming decade.

In an alternative case, we could see workers returning to the office in greater numbers to avoid missing out on promotional and other opportunities. This case would see little long-term change in office market conditions compared to pre-pandemic but would see a period of uncertainty and volatility as the market adjusts.

The likely outcome is a mix of the two, with different geographic, markets, industries, individual firms and workers settling on arrangements that suit them best and responding to the changing market signals in terms of lease structures, property values, financing terms, and employment conditions. The result will be a blended market, but in either path, it is unlikely that we will see the office market return to its former shape, size, and dimensions.

BACKGROUND

For centuries, workers have congregated in offices. From the first rise of cities in the late Middle Ages through the Industrial Revolution, world wars, and multiple instances of pestilence and famine, there was a steady movement of people from rural to urban areas, and workers from the fields to factories and offices. Centralizing manufacturing in factories resulted in visible gains in productivity as all of the factors of production were brought together. While the work product of offices may be less tangible, the collaboration and communication and innovation that occurs when people gather together had been recognized by employers as a key benefit of investing in office space to get maximum productivity out of a workforce.

At least that was the case until the onset of the COVID-19 pandemic hastened an immediate and dramatic reshaping of where Americans work.

The arrival of the pandemic brought with it an unprecedented shuttering of gathering places — from churches and synagogues to shopping malls and restaurants to factories and offices. The closings came about from decisions that were made by governments, such as the March 24, 2020 order by Washington D.C. Mayor Bowser that "Requires Temporary Closure of Non-Essential Businesses and Prohibits Gatherings of Ten or More People;"[1] by property owners, such as the March 18, 2020 announcement by shopping mall owner Simon Property Group that "after extensive discussions with federal, state and local officials and in recognition of the need to address the spread of COVID-19, Simon will close all of its retail properties, including Malls, Premium Outlets and Mills in the U.S.;"[2] and by business owners, such as Google's announcement on July 1, 2020 that it would push back its planned re-opening of US offices to (at that point) at least September 2020.[3]

1 https://coronavirus.dc.gov/release/mayor-bowser-orders-closure-non-essential-businesses

2 https://investors.simon.com/news-releases/news-release-details/simon-property-group-temporarily-closes-all-domestic-properties

3 https://www.bloomberg.com/news/articles/2020-07-01/google-pushes-back-u-s-office-reopening-plan-after-virus-surge

According to the Pew Research Center, of employed adults who said that, for the most part, the responsibilities of their job could be done from home, 71 percent reported working from home all or most of the time in September 2020. Only 17 percent said they worked from home rarely or never. Of those working at home all or most of the time, almost two-thirds (64 percent) said they did so because their workplace was closed or unavailable.[4]

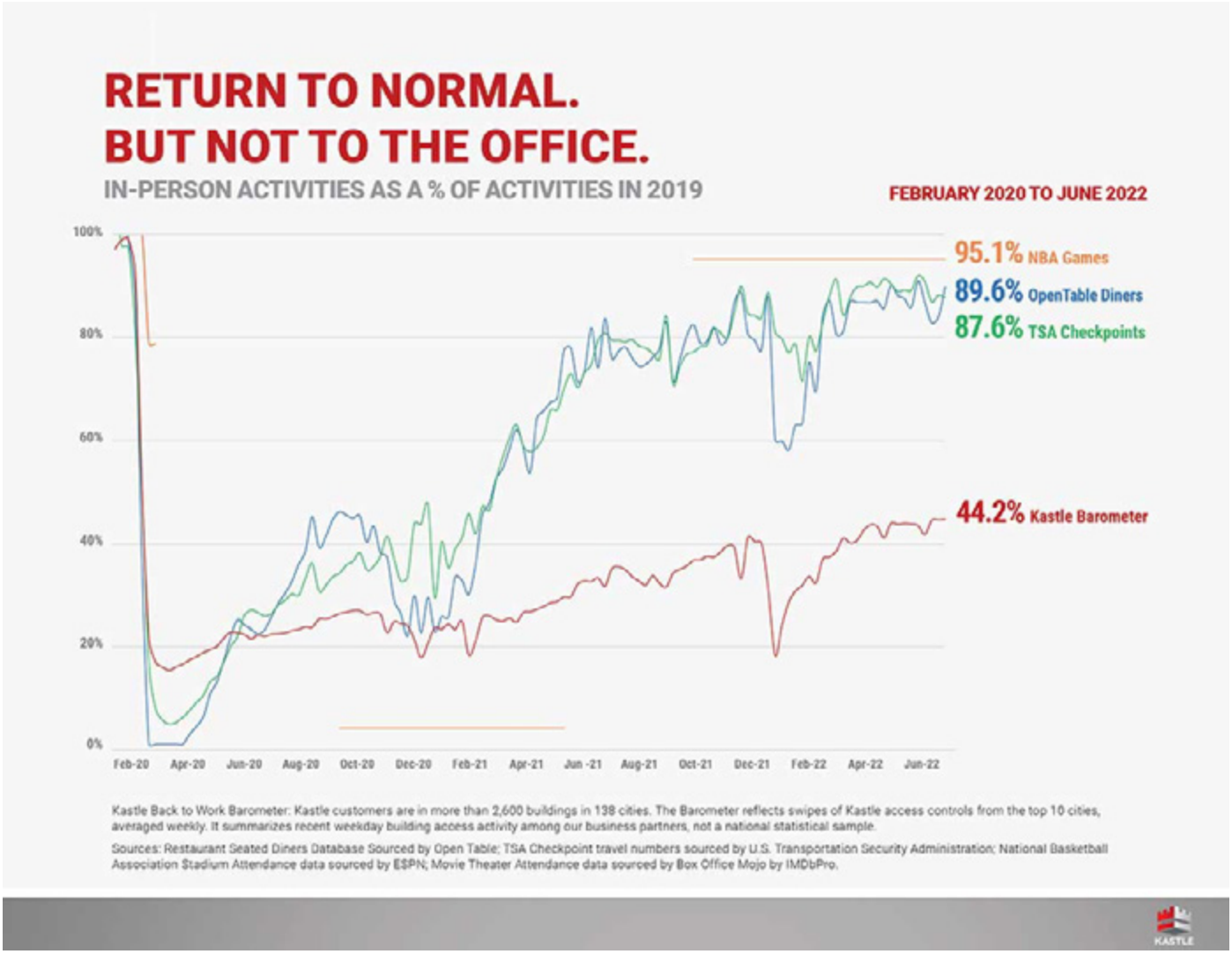
The tangible benefits that accrued to workers in what was largely viewed as a work-from-home "experiment" meant that even as the health concerns and impacts of the pandemic waned, remote work largely did not.

Pew found that in January of 2022, of employed adults who said that for the most part the responsibilities of their job could be done from home, 59 percent still reported working from home all or most of the time and only 22 percent said they worked from home rarely or never. Of those working at home all or most of the time, only 38 percent said they did so because their workplace was closed or unavailable, with almost two-thirds (61 percent) saying they chose not to work from the workplace.[5]

Kastle Security Management, which provides systems to manage access to more than 41,000 businesses in 2,600 buildings in 138 cities reported that as of June 2022 office usage was

4 https://www.pewresearch.org/social-trends/2022/02/16/covid-19-pandemic-continues-to-reshape-work-in-america

5 https://www.pewresearch.org/social-trends/2022/02/16/covid-19-pandemic-continues-to-reshape-work-in-america



only 44 percent of its pre-pandemic level. They note that at the same time, NBA game attendance was at 95 percent of pre-pandemic levels, OpenTable reservations were at 90 percent and TSA check-points were at 88 percent.[6]

If sports, dining and travel still draw people to attend in-person, what's the difference with the office environment? The answer is that during the pandemic, employees and employers, for the first time in many cases, got a taste of the trade-offs of in-person work. They also discovered that going to the office was no longer a "have-to-do" but rather a "get-to-do."

Telecommuting/work-from home was not unheard of prior to the pandemic. Many large companies and other organizations, including the federal government, offered compressed work schedules, telecommuting options, and other flexibilities to provide more work/life balance to employees and to reduce commuting costs and times, particularly in large metro areas.

However, there was a perception by some pre-pandemic, employers and employees, that availing oneself of these flexibilities was a signal to the employer of a lesser commitment to the organization. Whether "face time" with the boss was a prerequisite for getting the choice assignments and hence opportunities for promotion, or whether being in the office resulted in other opportunities to shine, or whether some workers benefitted from having a supervisor and peers monitoring their work effort, many companies saw limited take-up of these workplace flexibilities. And some research indicates that employers' concerns had merit, in that employees who opted to work remote were less productive.[7]

The pandemic experience was a wholly different experiment. Rather than asking workers if they wanted to work remotely, and then guarding against the possibility that only low productivity workers would select into remote work, all employees went remote. With all employees remote, it was a level playing field. High productivity employees in the office, perhaps not surprisingly, were generally high productivity employees at home, and the reverse. Supervisors and peers had to adjust how they monitored work, but once the adjustments were made, the focus could return to results.

As we will return to later, this does beg the question: if the workplace can thrive with everyone in the office, and it can thrive with everyone remote, can it thrive with 44.2% of employees in the office?

This shift in workplace practice and expectations could not have happened without the accumulated and near perfectly timed advances in technology that have supported greater collaboration between remote parties.

The technology required to support remote work has been developing over recent decades. Introduced in 2007, more than 2 billion iPhones have now been sold.[8] The video communications company Zoom was founded in 2011 and launched its software in 2013. In 2007, 70 percent of US homes had a computer, by 2019 that number had risen to 93 percent.[9]

But absent the push of the pandemic, the widespread adoption of technology associated with remote work would have been far less likely. In February 2019 — six years after its initial software release — Zoom hosted an annualized 60 billion meeting minutes. By their 2021 fiscal year Q3 — some two-and-a-half years and the onset of one pandemic later — that number was 3.3 trillion.[10] Microsoft Teams had a similar growth story, with the number of users increasing from 20 million in 2019 to 270 million in 2022.[11]

And all of this relies on users' abilities to access and use the technology. By one estimate, downloading speeds in California have grown from 880 kilobytes per second in 2002 to 9.8 megabytes per second in 2012 to 106 megabytes per second in 2020.[12]

The important take-away here is that prior to the pandemic there was not a viable, comparable alternative to much of our "in-office" work. The pandemic-driven adoption of the technological developments of the last several decades — and the new office dynamics that accompanied that adoption — changed that.

But it is important to note that the existence of an alternative to in-person work does not necessarily make that alternative an equal.

6 https://www.kastle.com/safety-wellness/getting-america-back-to-work

7 Emanuel, Natalia and Emma Harrington. 2021 "'Working' Remotely? Selection, Treatment, and the Market for Remote Work." Working Paper. Authors find that hiring remote workers was costly for companies even though doing so increased the workers productivity, due to low productivity workers selecting into remote work.

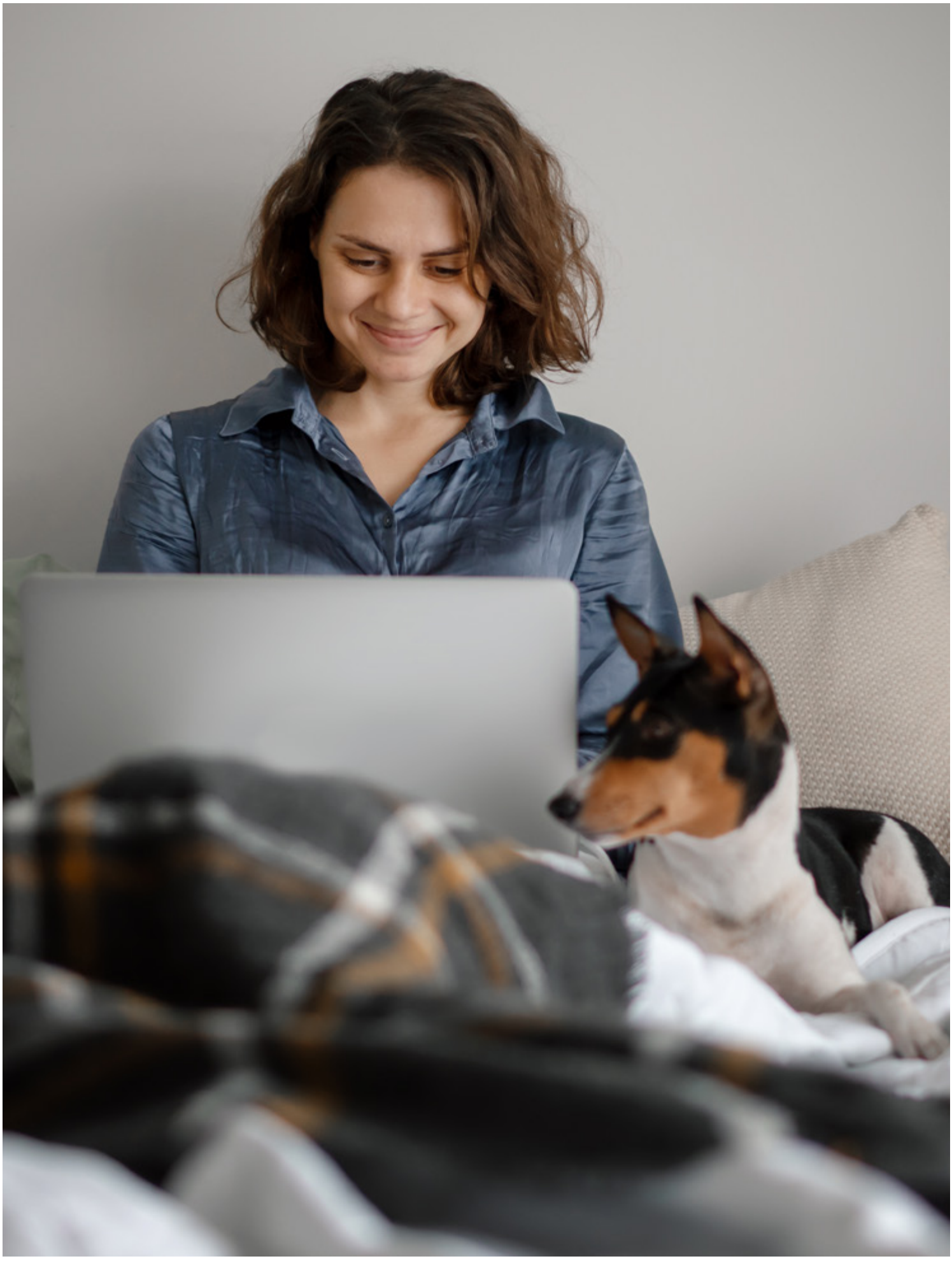
8 https://appleinsider.com/articles/21/09/22/at-2-billion-iphones-sold-apple-continues-to-redefine-what-customers-want

9 https://www.ibisworld.com/us/bed/percentage-of-households-with-at-least-one-computer/4068

10 https://backlinko.com/zoom-users

11 https://www.businessofapps.com/data/microsoft-teams-statistics

12 http://xahlee.info/comp/bandwidth.html



II. Costs and Benefits of Work-from-Home

There are trade-offs between working in an office and working remotely, which vary by industry, company, location and person and whose magnitude and distribution will be key to determining the future of the U.S. office market. To understand these trade-offs, it is best to consider the costs and benefits of remote (or hybrid) work versus in-person work from the points of view of employees and employers and across both short-term, tangible impacts and longer-term, intangible impacts.

During the pandemic, workers and employers were able to experience the short-term, tangible costs and benefits of remote versus in-person work. Importantly, the longer-term, intangible costs and benefits have — thus far — remained largely notional to both workers and employers.

As we think about companies' return-to-office practices, we need to consider the impacts of a) workers' views of their costs & benefits of being in the office versus remote, b) employers' views of their costs & benefits of employees being in the office versus remote and c) whether labor market conditions at a given point in time weight workers' or employers' views more.

SHORTER-TERM, TANGIBLE IMPACTS

Employee Benefits

The abrupt shift to remote work for millions of American workers brought with it a series of tangible changes that employees and employers were able to experience and value (either implicitly or explicitly).

For employees whose work could shift fully, the changes brought about by remote-work are humorously presented in pictures of a worker wearing business-casual on their top-half and pajamas and slippers on the bottom. Humor aside, those lifestyle impacts have been real and are partnered with savings of time and money related to shorter or non-existent commutes, flexibility in home location, reduced clothing and food costs and more.[13]

Employees have faced some new expenses related to remote work, for example heating and cooling their homes during the day when they might have previously adjusted thermostats, as well as costs for computers, webcams, internet services and unreimbursed home-office expenses. There are also the benefits (costs) of getting to (having to) share one's home office with a partner, child, other family members or a pet.

Looking at the ways workers, particularly younger workers, are "voting with their feet," it is clear that a large percentage of employees have seen greater short-term benefits than cost in remote/hybrid work.

But what is it about hybrid work that employees value? Is a hybrid work schedule just the latest version of the foosball table, free breakfast burritos, and dog-friendly office spaces common in hipper companies? Or does a willingness to stick with a hybrid schedule identify a company as being

13 It is important to note that not all jobs can be remote. Health care and other essential workers did not have an option to do their work from home. This disparity has/had the potential to further inflame social divisions in this country, as those working in these positions tend to earn less under more physically demanding conditions.

more concerned with employee morale and engagement? Are employees rebelling against coming to the office or are they just against TPS reports and other aspects of office bureaucracy?[14]

It appears that the pull of remote work has less to do with workers' relationships with their office or employer and more to do with their desires and relationships outside of work.

According to The Deloitte Global 2022 Gen Z and Millennial Survey, 75 percent of Gen Z respondents and 76 percent of Millennials would prefer a hybrid or remote working pattern. A full 12% of Gen Z and 14% and Millennials want to work fully remotely compared to 19% and 20% (respectively) who would prefer full-time in-office work. Among the benefits Deloitte sees driving the preferences for remote work are:

- Helps me save money
- Frees me up to do other things I care about
- Allows me to see family more often
- Positively impacts my mental health
- Makes getting work done easier[15]

Employer Benefits

Even if remote work may be a net tangible benefit for most employees, how does it stack up for employers?

When looking from the perspective of employers, the short-term, tangible impacts of remote/hybrid work would seem to also skew to the positive, although employers' abilities to capture some of the hard cost savings is circumscribed by longer-term lease structures and other business arrangements.

The most important short-term, tangible impact of remote/hybrid work for employers is around productivity and actually "getting the work done." Many business leaders were pleasantly surprised during the onset of the pandemic by both how easily their teams were able to transition to remote work and by how productive they were working from home. It perhaps should not have come as such a surprise.

A 2015 experimental study in China found a significant pick-up in productivity when workers were sent home.

> A rising share of employees now regularly engage in working from home, but there are concerns this can lead to "shirking from home." We report the results of a WFH experiment at Ctrip, a 16,000-employee, NASDAQ-listed Chinese travel agency. Call center employees who volunteered to WFH were randomly assigned either to work from home or in the office for nine months. Home working led to a 13% performance increase, of which 9% was from working more minutes per shift (fewer breaks and sick days) and 4% from more calls per minute (attributed to a quieter and more convenient working environment). Home workers also reported improved work satisfaction, and their attrition rate halved, but their promotion rate conditional on performance fell. Due to the success of the experiment, Ctrip rolled out the option to WFH to the whole firm and allowed the experimental employees to reselect between the home and office. Interestingly, over half of them switched, which led to the gains from WFH almost doubling to 22%. This highlights the benefits of learning and selection effects when adopting modern management practices like WFH.[16]

These findings were reinforced in a more recent study in the United States,

> Hybrid working from home (WFH), whereby employees work a mix of days at home and at work each week, has become dominant for graduate employees in the US. This paper evaluates a randomized control trial on 1612 engineers, marketing and finance employees of a large technology firm that allowed odd birthday employees to WFH on Wednesday and Friday and kept even birthday employees full time in the office. There are four key results. First, WFH reduced attrition rates by 35% and improved self-reported work satisfaction scores, highlighting how employees place a considerable value on this amenity. Second, WFH reduced hours worked on home days but increased it on other workdays and the weekend, highlighting how homeworking

14 tps forms office space — Search (bing.com). "Yeah...."

15 https://www2.deloitte.com/global/en/pages/about-deloitte/articles/genzmillennialsurvey.html

16 "Does Working from Home Work? Evidence from a Chinese Experiment," By Nicholas A. Bloom, James Liang, John Roberts Zhichun, Jenny Ying, *The Quarterly Journal of Economics,* February 2015, Vol. 130 Issue 1, Pages 165–218. https://www.gsb.stanford.edu/faculty-research/publications/does-working-home-work-evidence-chinese-experiment

alters the structure of the working week. Third, WFH employees increased individual messaging and group video call communication, even when in the office, reflecting the impact of remote work on working patterns. Finally, while there was no significant impact of WFH on performance ratings or promotions, lines of code written increased by 8%, and employees' self-assessed productivity was up 1.8%, suggesting a small positive impact. Given these benefits for retention, job satisfaction, and productivity, after the experiment ended the firm extended hybrid WFH to the entire company.[17]

Moreover, there is also some evidence that employers were able to reduce their compensation costs by offering greater remote work flexibility. Barrero et al (2022) note, "We find empirical support for this mechanism in the wage-setting behavior of US employers, and we develop novel survey data to quantify its force. Our data imply a cumulative wage-growth moderation of 2.0 percentage points over two years… The amenity-values gains associated with the recent rise of remote work also lower labor's share of national income by 1.1 percentage points." Needless to say, a 2-percentage point reduction in a company's wage bill will go a long way towards covering lease payments.

17 https://www.nber.org/system/files/working_papers/w30292/w30292.pdf?mod=djemRTE_h

During the pandemic, this trend was seen at a macro scale as well, according to an article from Bloomberg,

> U.S. economic productivity during the pandemic was driven entirely by firms with remote work capacity, according to a new study co-authored by Robert Gordon of Northwestern University. Productivity in work-from-home services businesses, which includes information and finance, grew 3.3% between the beginning of 2020 and early 2022. Meantime, growth in the goods sector, in jobs like construction and mining, was unchanged and services industries that required in-person contact contracted by 2.6%, according to a working paper by Gordon and Princeton University's Hassan Sayed.[18]

18 https://www.advisorperspectives.com/articles/2022/07/18/remote-work-fueled-us-productivity-growth-during-pandemic-study-says

Employer Costs

But these gains weren't all free. The transition to remote/hybrid work brought a new set of expenses for many businesses. In addition to technology costs of Zoom, Teams or other new licenses related to collaboration and remote work, many companies provided stipends to employees to help them establish a "home office." There were also new and consequential increases in information security expenditures necessary as employees moved to less secure locations, networks, and devices. Direct oversight is also less direct when remote — while it may have been theoretically possible for employees to work simultaneously for two different companies at in-person jobs, employee double-dipping became a much bigger risk through the pandemic, particularly given the very tight job market.

On the other side of the ledger, some business costs — particularly around office operations — could be reduced somewhat while others — heating and cooling, for example — are

tied to overall space use and can't be reduced independently. Office lease structures (and various other expenses) tend to be longer-term in nature, meaning companies were not able to immediately capture the benefits of using less space. Firms that made a commitment to remote/hybrid did have an opportunity to sublease out their existing space or not renew an upcoming lease, but market conditions were such that even these savings would be marginal.

So, in terms of the short-term, tangible impacts, remote/hybrid work has proven to be seen as a strong net benefit to the majority of employees. It also appears to be, to a far lesser extent, a net short-term gain for employers, with some of the potential additional benefits to employers delayed until they can change lease structures and/or other longer-term arrangements.

But while maximizing the benefits of the here-and-now is important, it can also be of less consequence than preparing for the future.

LONGER-TERM, INTANGIBLE IMPACTS

When speaking with senior business leaders about remote/hybrid work, one tends to hear an eagerness to get workers back into the office and words like culture, collaboration, teamwork and professional development — longer-term, largely intangible benefits of in-person work.

But just because the costs/benefits of a particular work arrangement are less immediately tangible does not mean they are any less important or impactful.

In conversations about what is lost in work-from-home settings, one often hears about the importance of impromptu discussions. Another experimental study in China points to the often intangible benefits such interactions can have.

> We organized business associations for the owner-managers of young Chinese firms to study the effect of business networks on firm performance. We randomized 2,820 firms into small groups whose managers held monthly meetings for one year, and into a "no-meetings" control group. We find the following. (i) The meetings increased firm revenue by 8.1%, and also significantly increased profit, factors, inputs, the number of partners, borrowing, and a management score. (ii) These effects persisted one year after the conclusion of the meetings. (iii) Firms randomized to have better peers exhibited higher growth. We exploit additional interventions to document concrete channels. (iv) Managers shared exogenous business-relevant information, particularly when they were not competitors, showing that the meetings facilitated learning from peers. (v) Managers created more business partnerships in the regular than in other one-time meetings, showing that the meetings improved supplier-client matching.[19]

From an employee perspective, the benefits of being in the office may be less immediately tangible than some of the benefits of being remote, but for one's career development they are clearly significant. A Harvard Business School study assessed the impact of having a cigarette break with one's boss and concluded,

> Offices are social places. Employees and managers take coffee breaks together, go to lunch, hang out over drinks, and talk about family and hobbies. In this study, we show that employees' social interactions with their managers are advantageous for their careers and that this phenomenon contributes to the gender pay gap. We use administrative and survey data from a large financial institution. We estimate the impact of social interactions on career progression using quasi-random variation induced by the rotation of managers, along with the smoking status of managers and employees. When male employees who smoke transition to male managers who smoke, they take breaks with their managers more often and are subsequently promoted at higher rates. The smoker-to-smoker advantage is not accompanied by any differences in effort or performance.[20]

The BBC noted, "The problem of inequity in promotion between remote and in-person workers has existed since well before the pandemic forced many people into home-work situations. In a 2015 study conducted in China, researchers from the Stanford Graduate School of Business found that while people working from home were more productive — 13%

19 "Interfirm Relationships and Business Performance, *The Quarterly Journal of Economics,* Volume 133, Issue 3, August 2018, Pages 1229–1282, https://doi.org/10.1093/qje/qjx049, https://academic.oup.com/qje/article/133/3/1229/4768295

20 "The Old Boys' Club: Schmoozing and the Gender Gap — DRAFT," Harvard Business School, June 2021 https://www.hbs.edu/ris/Publication%20Files/Cullen%20Perez-Truglia%20Old%20Boys%20Club%202021%20(Body)_75d5cb2b-4042-44f2-adf5-d97b0dea4045.pdf?campaign_id=118&emc=edit_ptg_20220302&instance_id=54600&nl=jessica-grose-on-parenting&regi_id=73391367&segment_id=84366&te=1&user_id=0e9fb0947070e981996eede29c688044

more, to be exact — they weren't rewarded with promotions at nearly the same rate as their in-office colleagues."[21]

Looking further ahead, as the pandemic and forced remote work hung on, so too did a sense of isolation among many workers. And while teams within companies may have been able to maintain strong communication and collaboration, orchestrating across groups may have become more difficult. According to the Deloitte report, one in five Gen Zs and millennials who have worked remotely say it has made forming connections with colleagues more difficult, and just under 14% say it made opportunities for mentorship or sponsorship harder to find.[22]

Prior to the advent and adoption of remote collaboration technology, it would have been nearly impossible to conduct much of our work remotely. But coming together in-person brings with it other advantages beyond simply "getting the work done." Those other advantages can be thought of as building "workplace capital," that is the relationships, knowledge transfer and corporate culture that make a company's workforce more than a collection of gig workers.

While built up over time — largely through in-person interactions — workplace capital later manifests itself in greater efficiencies and growth for the employer and greater compensation and promotional opportunities for the employee. Workplace capital makes us more likely to give a co-worker the benefit of the doubt, to feel comfortable asking questions and to pick-up knowledge and insights that may be of value further down the road. In-person work builds workplace capital while fully remote work stalls the development and hastens the drawing down of that workplace capital.

How does workplace capital depreciate over time? We are running this experiment right now. But it is reasonable to echo F. Scott Fitzgerald's comment on bankruptcy, it likely will occur gradually… and then suddenly. Companies may not realize it is slipping away until it is gone. Think about the loss of institutional memory when a seasoned employee retires. What if that employee never has an opportunity to pass on knowledge over a lunch or coffee with a rising star?

In terms of costs and benefits, then, remote work appears to be equal to or perhaps even better for both workers and employers in terms of getting things done today but in-person work sets both workers and employers up much better for the future. Many workers appear to have been prioritizing the short-term, tangible benefits of remote work over the development of workplace capital gained through in-the-office interactions. In a tight labor market, many employers have had little alternative but to go along.

WHAT'S NEXT

As employees and employers segue to the net chapter of work arrangements, they will naturally be driven by the costs and benefits of the different alternatives.

At present, the balance is being driven by the short-term, tangible impacts on workers. A key reason is the tight labor market, which gives employees greater bargaining power on the one hand and discounts the value of building workplace capital on the other. With an unemployment rate at 3.5 percent, employers have been bending over backwards to keep employees. And with relatively few people in the office full-time, one's workplace capital is generally not declining relative to others if one works remotely or hybrid. In the current climate, a worker can harness the benefits of remote work with relatively little personal downside, and employers have little leverage to protect the benefits/interests they receive through in-person work.

According to CBRE's Spring 2022 U.S. Office Occupier Sentiment Survey, only 19 percent of companies currently expect their work arrangements to be fully office-based in the future, down from 30 percent a year earlier. A full 73 percent expect to have a hybrid system (61 percent with "guided flexibility" and 14 percent with "full flexibility"), 4 percent expect virtual first and 4 percent fully remote.[23]

But markets change. When labor markets eventually loosen, employers will again have the ability to push for more in-person work and to rebuild the employee/employer capital that has been lost.

21 "Why in-person workers may be more likely to get promoted," BBC, March 7, 2021, https://www.bbc.com/worklife/article/20210305-why-in-person-workers-may-be-more-likely-to-get-promoted

22 https://www2.deloitte.com/global/en/pages/about-deloitte/articles/genzmillennialsurvey.html

23 https://www.cbre.com/insights/reports/us-office-occupier-sentiment-survey-h1-2022

As one CBRE client noted, "Fundamentally, there has to be a 'why'. Only when the C-Suite agrees on why employees should be in the office [e.g., collaboration, teamwork, connectivity, culture, compliance, mentorship] can the company best strategize on the 'how'."[24]

BASE CASE

Given all this, the base case that is developing is that it is likely that for many companies, the five-day in-person work week will not return. Instead, companies and their workers will negotiate a balance in which each can retain some portion of the tangible benefits they have discovered through remote/hybrid work while also having enough in-person interaction to begin to rebuild the workplace capital that has been drawn down.

As mentioned above, almost three-out-of-four firms anticipate a hybrid schedules, most with "guided flexibility" that actively coordinates schedules to manage interactions as well as space usage. Many companies' current hybrid schedules are a first step in the negotiations between employer and worker.

24 https://www.cbre.com/insights/reports/us-office-occupier-sentiment-survey-h1-2022

ALTERNATE CASE

But there is an alternative. Offices worked for a long period of time with most employees present five days per week. They then worked through the pandemic with most employees working remote. All-in or all-out works, but how should one expect a model with only a portion of workers in the office only a portion of the time to work? Meetings that are fully in-person or fully remote have tended to work well, but those with some attendees in-person and some remote seem less unified. Is hybrid work the equivalent of the Judgement of Solomon?

In an article for Forbes, Joe Du Bey describes "proximity bias" as, "the phenomenon in which those who are physically closer to company leaders enjoy outsized influence and advancement opportunities relative to those who are hybrid or fully remote."[25] Proximity bias is the fact that side conversations happen after a meeting has ended and people are shuffling back to their desks, or that managers often assign tasks by looking around the table and seeing who is there, or that a worker is far more likely to have a chance encounter with a higher-up in the office than through Teams.

As labor markets loosen and employers, rather than workers, begin to hold an advantage in negotiations, the realities of proximity bias will create an outsized incentive for workers to once again return to the office. Some firms are working hard to support remote workers by reducing proximity bias but human nature is difficult to change.

In the alternate case, a looser labor market means that the longer-term, less tangible benefits of being in the office will outweigh the shorter-term, more tangible benefits of being remote for workers and we will see a greater return to in-office work.

25 https://www.forbes.com/sites/forbestechcouncil/2022/04/04/how-to-mitigate-proximity-bias-and-create-a-more-inclusive-workplace-culture/?sh=dc39673727fa

III. Implications for Usage of Offices

Taking all of the above into account leaves two fundamental questions about the coming use of office space:

- How will the ways we use space change?
- How will the amount of space we use change?

HOW WE USE SPACE

Even before the onset of the pandemic we saw the design and uses of office properties change. New properties were emphasizing collaborative space and amenities designed to attract and retain employees. "Hoteling" recognized that not every desk was being used every day and that having established heads-down work areas was perhaps not the highest and best approach to office design and usage.

In 2019, real estate services firm CBRE moved into a new headquarters in Amsterdam called The Core.

> We see The Core not so much as an office, but rather as a meeting place. Our aim is to combine expertise and to facilitate our employees and clients to come up with creative and relevant solutions for real estate and housing issues. Innovation will support all these objectives. Within the walls of this great new space, it's all about people power.[26]

In 2013, Vanity Fair profiled the design plans for Google's new headquarters in Mountain View California,

> The layout of bent rectangles, then, emerged out of the company's insistence on a floor plan that would maximize what Radcliffe called "casual collisions of the work force." No employee in the 1.1-million-square-foot complex will be more than a two-and-a-half-minute walk from any other, according to Radcliffe. "You can't schedule innovation," he said. "We want to create opportunities for people to have ideas and be able to turn to others right there and say, 'What do you think of this?'"
>
> And
>
> What may be most significant is that the company's research led to a design that isn't substantially different from the existing Google buildings, just more so. The older buildings have a mix of private, quiet workspaces (though no private offices) and social and communal workspaces; so will the new one. The older buildings are full of cafés; the new complex will be, too. Radcliffe said that "the cafés were validated" in Google's studies, as if anyone were surprised. The existing buildings have a relaxed and casual, even whimsical, quality to their interiors, as if to say that pleasure is a part of efficiency.[27]

To the degree companies and workers use work-from-home time for heads-down, more individual and more task-oriented activities and in-the-office time for more collaborative and workplace-capital-building activities, the demand for space will increasingly be more for tables and couches and less for desks. Three-in-four (76 percent) companies expect to use less dedicated seating in their offices in the future, while almost two-thirds expect to use more activity-based work (64 percent) and hot-desking (63 percent). Space will need to

26 https://www.officelovin.com/2019/08/a-tour-of-cbres-biophilic-amsterdam-hq

27 https://www.vanityfair.com/news/tech/2013/02/exclusive-preview-googleplex

draw employees together and promote interaction. As Lenny Beaudoin, Executive Managing Director of CBRE Workplace Strategy notes, "The most important employee amenity in the return to the office…is other employees."[28]

But under the alternative case, workers will be in the office more and will need space both for collaboration and for heads-down work. In such a situation, too heavy a move toward hoteling and hot-desking could backfire — with employees feeling more like cattle and less like knowledge workers.

In the alternate case we anticipate some move toward the types of workspace described above but the emphasis will need to be desk-centric, with quality workspaces for employees to accomplish heads-down work. Collaboration space will be needed as well, but if workers are in the office most days, they will also need an environment in which they can comfortably concentrate.

THE AMOUNT OF SPACE WE USE

As companies get their arms around the changing dynamics of the workforce, they are moving from status quo to making a plan.

In 2021, one-in-four (26 percent) companies reported they expected their space needs to remain the same over the long term. In 2022, the share had fallen to one-in-ten (9 percent). Companies that moved from the status quo split in whether to contract (44 percent in 2021 to 52 percent in 2022) or expand (29 percent in 2021 to 39 percent in 2022).[29]

There are those who see in a remote/hybrid work future a one-for-one reduction in the need for office space. There are also those who see a situation in which — driven by the desire for collaboration — companies maintain space to allow the full employee-base to be in at the same time. As is often the case, the results are likely to be somewhere in the middle and driven both by changes in the number of employees in the office at any given time and by the types of space those employees need.

In the base case, a traditional office structure with one desk for each employee will be found largely empty at times (e.g., work-from-home Fridays) and only partially used for significant stretches. For example, if a company has a hybrid schedule in which employees are expected in the office three-days-a-week, the space will average 60 percent occupancy. That being said, if all employees come in on a particular day to maximize collaboration, the space would be at capacity.

A July 27, 2022 presentation by Robert Paratte, Executive Vice President, Leasing and Business Development at Kilroy Realty made the case that this "new normal" of office design would mean an increase in the amount of space required per employee from 160 to 205 square feet per person — a roughly 25 percent increase.[30]

Some companies are publicly announcing that they are re-allocating some of their real estate expense into spending on their employees. "Credit-ratings and risk-assessment firm Moody's Corp. last week launched a new restructuring program that would reduce its real-estate footprint and expand lower-cost operational hubs. The company, which had 35 U.S. and 107 international office locations at the end of 2021, said it expects the program to result in $40 million to $60 million in annualized savings, the majority of which would be invested toward promotions, hiring and workplace improvements."[31]

On the other hand, some companies in the tech sector are heading in the opposite direction: "Companies from Google parent Alphabet Inc to General Motors Co. to PepsiCo Inc. are among those that have increased spending on big-ticket items, such as real estate, equipment or technology, to fuel growth. The investments are generally intended to expand the companies' fast-growing operations or even optimize their inventory in the midst of a challenging business environment, according to executives." [32]

We are already seeing evidence of significant differences across different types of workplaces. Perhaps not surprisingly, in-person work at law firms is running much higher than that for other industries. Is this due to the nature of legal work, the requirements for client contact, the culture of law firms, or other differences? Or do law firms just tend to locate in higher quality offices with more individual space that their employees are more comfortable returning to? These kinds of industry and sectoral trends may wind up being even more important determinants of office property values than was the case prior to the pandemic.

Geographical differences are going to be important as well. Hutson and Orlando (2022) compare the real estate dynamics through the pandemic of Austin and Los Angeles. They find

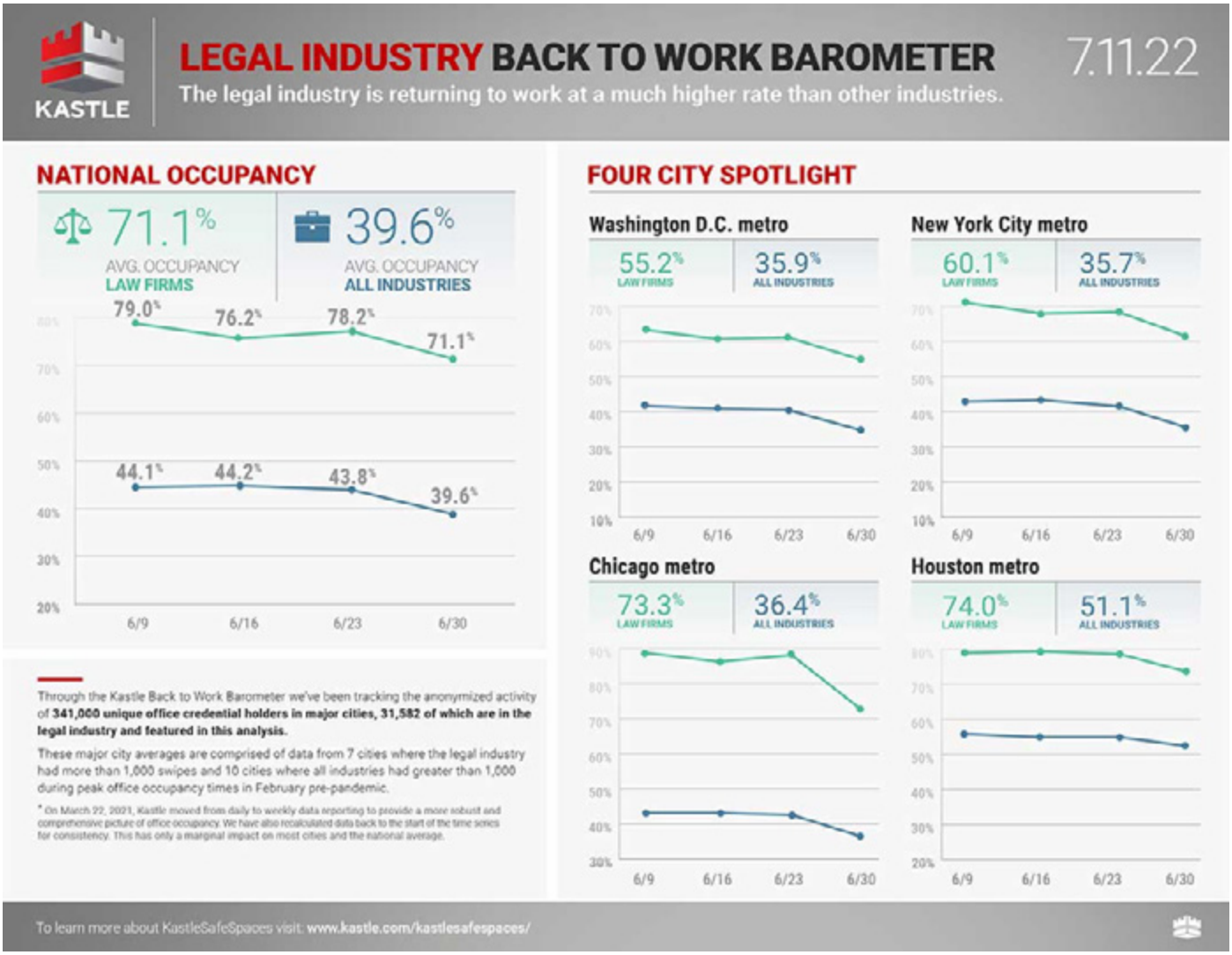
28 https://www.cbre.com/insights/reports/us-office-occupier-sentiment-survey-h1-2022

29 https://www.cbre.com/insights/reports/us-office-occupier-sentiment-survey-h1-2022

30 https://ma.moodys.com/rs/961-KCJ-308/images/Moodys%20CRE%20Panel%207.27.22%20Final_CoverSlide.pdf

31 Companies Weigh Fresh Cuts as Operating Costs Go Up — WSJ

32 Companies From Google to Pepsi Are Boosting Capital Spending — WSJ



that while the housing market in Austin is strong throughout, in LA, some of the housing demand has shifted from the CBD to the periphery. With respect to office demand, vacancies are up and rents are down in Austin, but developers have continued to add office space, given expectations of a return to work. Meanwhile, in LA, there appear to be more serious efforts to convert some CBD office properties into housing stock.[33]

Perhaps the most impacted market will be New York City. Gupta et al (2022) estimate that NYC office properties declined by 32% in value in 2020 and are anticipating this decline to moderate only to 28% over the longer run as a result of the sharp and persistent reduction in occupancy.[34]

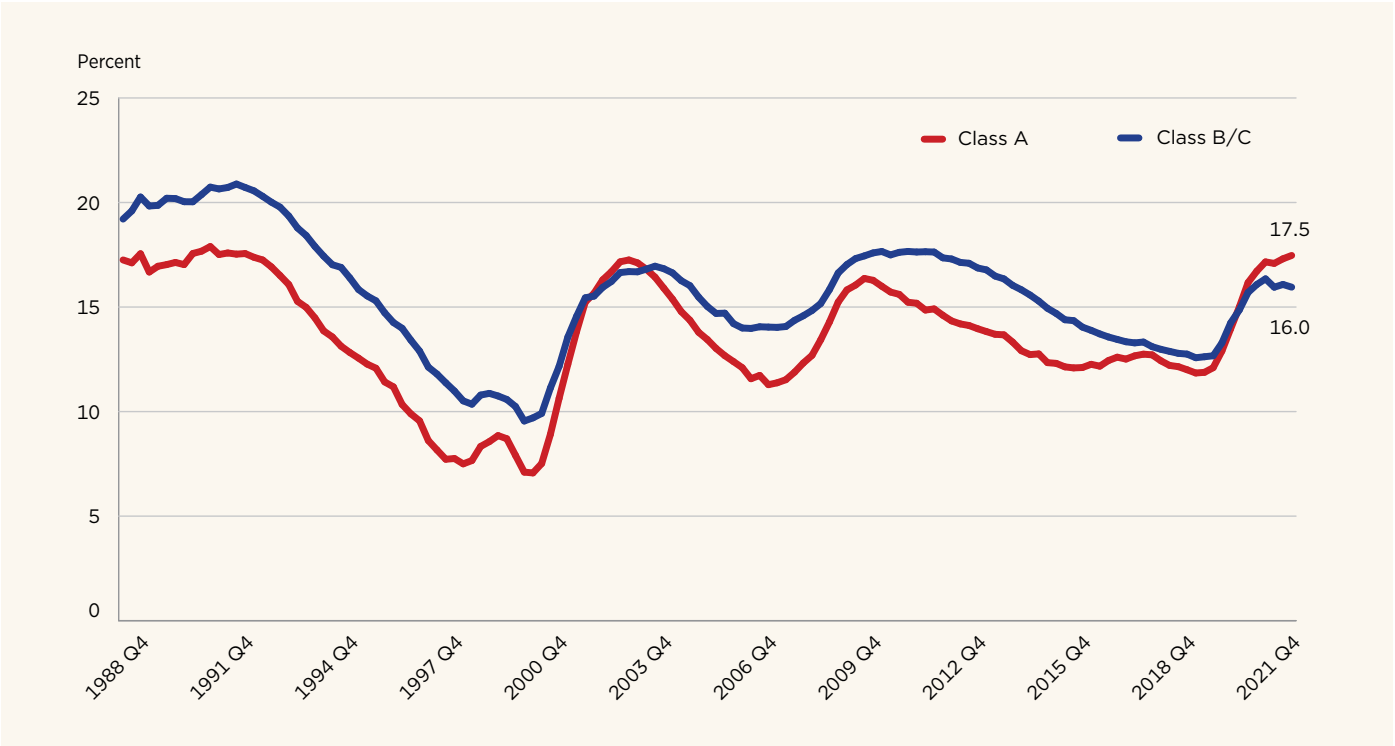
As reported in the *New York Times*,

> In small cities — those with populations under 300,000 — the share of paid, full days worked from home dropped to 27 percent this spring from around 42 percent in October 2020. In the 10 largest U.S. cities, days worked from home shifted to roughly 38 percent from 50 percent in that same period, according to a team of

33 Hutson, Nathan and Anthony Orlando. 2022. "The Effects of COVID-19 on Downtown Land Use: Evidence from Austin and Los Angeles." Working paper.

34 Gupta, Arpit, Vrinda Mittal, and Stijn Van Nieuwerburgh. 2022. "Work form Home and the Office Real Estate Apocalypse."

FIGURE 1. U.S. OFFICE TOTAL VACANCY RATES, BY YEAR



Source: Morgan Stanley.

FIGURE 2. SAN FRANCISCO OFFICE VACANCY RATES, BY YEAR

Source: Morgan Stanley.

> researchers at Stanford and other institutions led by the economists Steven Davis, Nick Bloom and Jose Maria Barrero. The regional gap in return-to-office patterns is discernible in the share of online job postings that permit remote work. In San Francisco, 26 percent of job postings now allow for remote work, and, in New York, 19 percent do. In Columbus, just 13 percent of job postings permit remote work; in Houston, the number is 12.6 percent, and in Birmingham, Ala., it is just 10.4 percent, according to another team of researchers led by Mr. Davis, Mr. Bloom and Raffaella Sadun of Harvard Business School.[35]

To assess the magnitude of potential impact, we look to the dot.com bust of 2001. According to an October 2001 paper from the Federal Reserve Board of San Francisco,

> With the slowing economy, vacancy rates in commercial real estate markets have risen sharply over the last two quarters. Nowhere is this more evident than in the Twelfth District, where vacancy rates in the key high-tech markets (San Francisco, San Jose, and Seattle) have increased four-fold since the fourth quarter of 2000. The sharpest increase in the country over this period was in San Francisco, where vacancy rates rose from 1.7% in 2000 Q4 to 10.3% in 2001 Q2; this also was one of the sharpest two-quarter increases observed at any time over the past twenty years.[36]

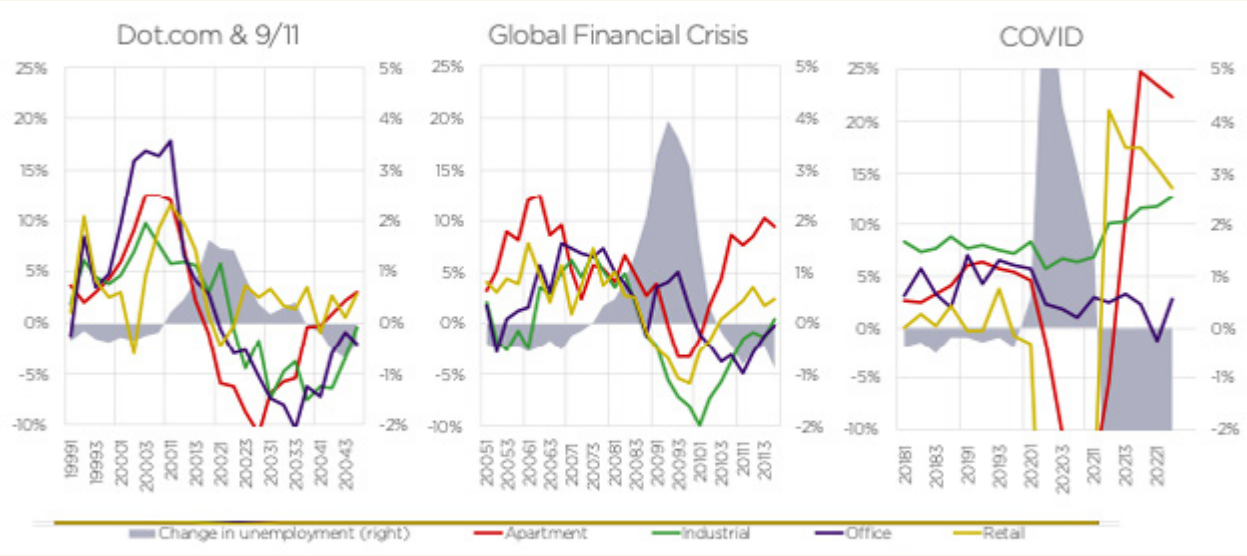
According to data from NCREIF, the national occupancy rate for office properties dropped from 94 percent in the fourth quarter of 2000 to 84 percent in the first quarter of 2004. Data from Morgan Stanley and CBRE shows the occupancy rate for Class A space falling from 92.9 percent in the second quarter of 2000 to 83.7 percent in the second quarter of 2003; In San Francisco, occupancy fell from 98.2 percent to 79.1 percent during the same period.

It is important to note that what made the dot.com crash so impactful for the office market was that not only were there large job losses; there were also a large number of firms declaring bankruptcy and thereby nullifying their leases.

35 What Remote Work Debate? They've Been Back at the Office for a While. — *The New York Times* (nytimes.com)

36 https://www.frbsf.org/economic-research/publications/economic-letter/2001/october/natural-vacancy-rates-in-commercial-real-estate-markets

FIGURE 3. YEAR OVER YEAR CHANGES IN PROPERTY INCOMES (NOIs) AND UNEMPLOYMENT RATE



Source: NCREIF.

	BASE CASE	ALTERNATIVE
Case	Remote/Hybrid, 2–3 days in-office per week	3+ days per week of universal in-office
Configuration	Tables and couches	Desk and meeting places
Amount of Space	80ish percent of previous	Close to previous, after period of volatility
Incomes & Values	Down 10–20 percent, Heavily dependent on location and property	Close to previous, after period of volatilty
Elasticity	Elastic demand — Companies pay for collaboration value	Inelastic demand — More similar to pre-pandemic
Quality Differential	High quality receives significant premium; Low quality receives significant discount	Quality prices similar to pre-pandemic

During the Global Financial Crisis and the Pandemic, this was much less the case, meaning that firms continued to meet their lease obligations and the vacancy rate (on a lease basis) remained grounded. Because of the long lease structures of office leases, any re-adjustment of office leases resulting from changes in work-from-home or other demand will be strung out over a decade, as opposed to the three years seen in San Francisco in 2001.

So in the base case one might expect a slow 10–20 percent decline in demand for office, with that decline impacting leases that are rolling over the coming decade and varying across geographies. In terms of occupancies, San Francisco has already seen a 19 percent Pandemic-induced decline, with Class A occupancies falling from 96 percent in early 2019 to 85 percent in the second quarter of 2022. For the nation as a whole, occupancies have fallen 6 percent.

ALTERNATE CASE

In our alternate case, one would expect to see a "race to the top," in which employees' fear-of-missing-out drives greater attendance, particularly when others are in the office, resulting in a requirement for office capacity that can accommodate nearly every employee on a regular basis. Some firms may downsize and others expand. It is expected that those that downsize may find a need to size-back-up in coming years. In the aggregate, and after an initial period of volatility, any drop in demand would be marginal.

It is important to remember that while office leases can be one of the larger expenses for most businesses, they are generally small when compared to a company's compensation costs. Based on FDIC call report data, for every dollar depositories paid in salaries and employee benefits, they paid 18 cents for bank premises and fixed assets (an expense category far more expansive than just their office usage).

As mentioned above, different companies will come to different decisions on how they want to approach the use of space. In the aggregate, it is highly likely that overall demand for space will be a) reconfigured (in terms of the types of space needed) and b) reduced (in terms of the number of seats needed) but the degree of both will depend on the mix in firms and employees across the base and alternative cases.

IV. Implications for Values of Offices

Prior to the widespread adoption of remote/hybrid work, being in the office was largely a necessity to accomplish work tasks. As such, office space was largely a utility. As we enter a period in which being in the office is not a necessity but is a force multiplier, office space becomes a strategic investment.

In our base case, overall demand for office space is likely to decline but not to the degree many have assumed. A shift in demand from a "have to have" to a "want to have" will transform much of the market from a relatively inelastic good to an elastic one. Price increases/decreases in office space will lead to outsized shifts in demand from employers, and vice versa. Likewise, quality differences between properties will lead to greater differentials in lease rates than before the pandemic. Higher quality properties may see benefits from the changing conditions while lower quality properties are more likely to suffer. This will flow through to properties' incomes (NOIs) and property values. One sees this increased differentiation already in San Francisco where vacancy rates for Class A buildings are 14.9 percent while those for Class B/C buildings are 19.8 percent — the largest differential since at least the late-1980s.

Looking again at the 2001 experience we see that net operating incomes for office properties fell 12 percent between Q2 2000 and Q4 2004. In the short term, cap rates would adjust to anticipate the shift in income expectations, but once those incomes are in-place, cap rates should return to "normal," meaning the long-term impact to value in the base case would be roughly in-line with NOI declines. In other words, the price declines would happen immediately but then stabilize while the impact on NOIs would be spread over a decade.

In our alternative case, there may be little change in aggregate demand for office space. Office space will remain a "have-to-have" and the market will remain relatively inelastic — with differences in demand and pricing for properties of different quality roughly the same as they were pre-pandemic. Higher quality properties will continue to attract premium tenants, rents and values but lower quality properties will not be as negatively affected as in the base case.

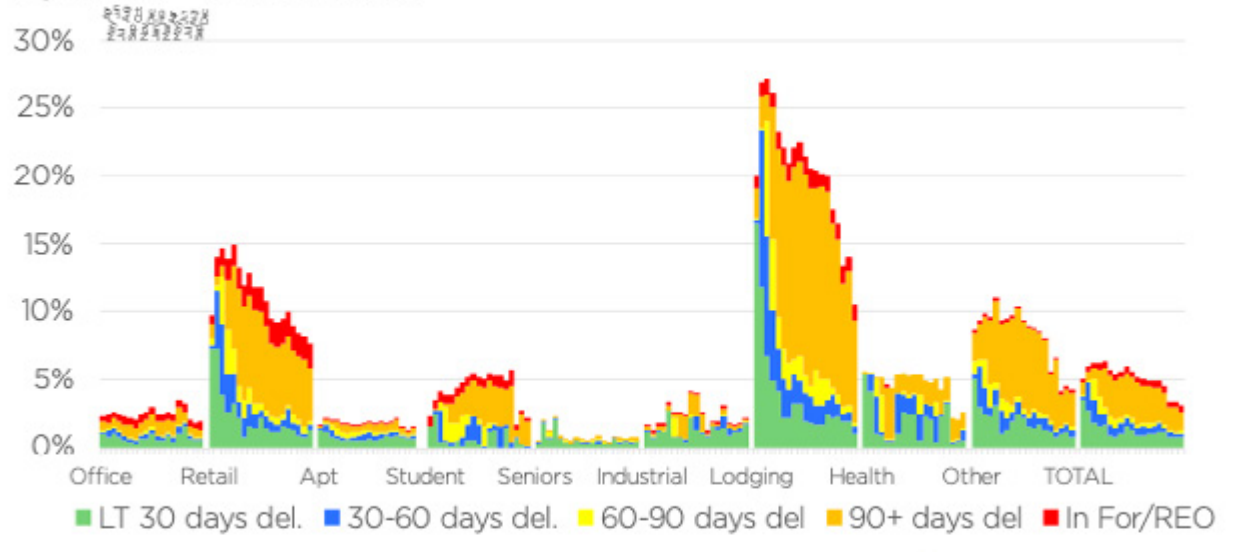
IMPLICATIONS FOR COMMERCIAL MORTGAGE VOLUME

In 2019, mortgage bankers originated $113 billion of mortgages backed by office properties (roughly 19 percent of mortgage bankers originations). In 2021, that had fallen to $95 billion (14 percent). The commercial mortgage backed securities market was responsible for approximately $51 billion of office loans in 2021 (36 percent of loans included in CMBS conduit issues), life insurance companies for roughly $15 billion (14 percent of loan balances going into life insurance company portfolios) and banks and investor-driven lenders for the vast majority of the remainder.[37] Some of this is a result of rapid growth in multifamily and industrial property values and lending volume, but some also reflected the pause in office lending given the ongoing uncertainty.

Given their long lease terms, as well as loan underwriting approaches and the growth in incomes and values during most of their lease terms, delinquency rates for office properties have remained subdued, despite the economic upheaval that accompanied the pandemic — remaining well below those of lodging and retail properties and relatively steady over the last two-plus years.

37 Note that the totals here include essentially all the loans made by the life companies, CMBS and investor-driven lenders and the larger depositories. Loans made by the vast majority of smaller and mid-sized banks are not included.

FIGURE 4. DELINQUENCY STATUS BY PROPERTY TYPE, SHARE OF TOTAL UNPAID PRINCIPAL BALANCE APRIL 2020–DECEMBER 2021



Source: MBA.

In the base case, a reduction in office values would lead to a similar decline in originations. Over time, assuming that new construction for office slows in the face of persistently weaker demand, values would equilibrate. Loan performance would likely deteriorate slightly, with key differentiation by property location and quality, but any loan losses — in the aggregate — would be moderate.

In the alternative case, a relatively sudden return to normal would lead to a jump in office demand as employers scrambled to find seats for all employees. After years of relatively low levels of construction, values would likely jump in response to this surge, as the supply response would take time. Delinquency rates and loan losses would remain subdued — especially as "rescue capital" looks to find value in mispriced assets.

V. Conclusion

In reality, different employers will pursue different paths. Some will be fully remote, some fully in the office and some on the spectrum between. Demand for office will be determined by the mix and how many — and what types and sizes of firms — pursue which. There will likely be concentrations in approaches by industry, geography, firm size and more.

One's outlook for office should therefore depend on the degree to which one feels, on the one hand, that the pandemic harnessed the waiting technology and unleashed a change that was coiled up, ready to go and likely to stick around or on the other hand, that the tight labor market has given employees a temporary window to experience the short-term benefits of remote work but that the longer-term need to develop workplace capital will bring people back to the office.

Like most interesting questions, it's not really one or the other. But if one case is more dominant than the other, it will have significant implications for where the office market goes from here.

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