

ANALYSIS

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Author

Victor Calanog PhD
Vivek Thadani

Contact Us

Americas
+1.212.901.1932
info@reis.com

COVID-19 Will Force the Office Sector to Evolve (Further)

Transformation and Impact Will Vary By Industry and Geography

On Thursday, April 16, Morgan Stanley CEO James Gorman told Bloomberg News that the firm "could operate with much less real estate." The firm had plans for its workforce to move back to their offices, pending place-specific policies for reopening. However, given that the investment bank has now had experience moving the majority of its 80,000 employees to a remote work model, it is preparing for a future in which its commercial leasing commitments (and associated expenses) are significantly reduced.¹

*"We've proven we can operate with no footprint," Gorman said.
"Can I see a future where part of every week, certainly part of every month,
a lot of our employees will be at home? Absolutely."*

On the same day, Andrew Cuomo echoed Gorman's sentiments by encouraging businesses to "reimagine their workplace" in an official statement. "How many people can continue to work from home and the business still works?"²

How will COVID-19 reshape the dynamics of office space as an income-generating asset class? In fact, the office sector has changed significantly over the last four decades. In this paper we will discuss why the COVID-19 crisis is likely to *accelerate* this evolutionary process. Where are the transformational effects likely to be felt with greater impact, and why?

A Short History of Evolutionary Change in the Office Sector

Demographic shifts. The early 1980s were marked by challenges for US cities: high crime rates and low-quality city services like poor schools forced many households to flee to suburbs.³ By the early 1990s, employers were following demographic shifts, setting up shop closer to where their employees preferred to live. The office sector adapted accordingly.

¹ <https://www.bloomberg.com/news/articles/2020-04-16/gorman-sees-morgan-stanley-future-with-much-less-real-estate>

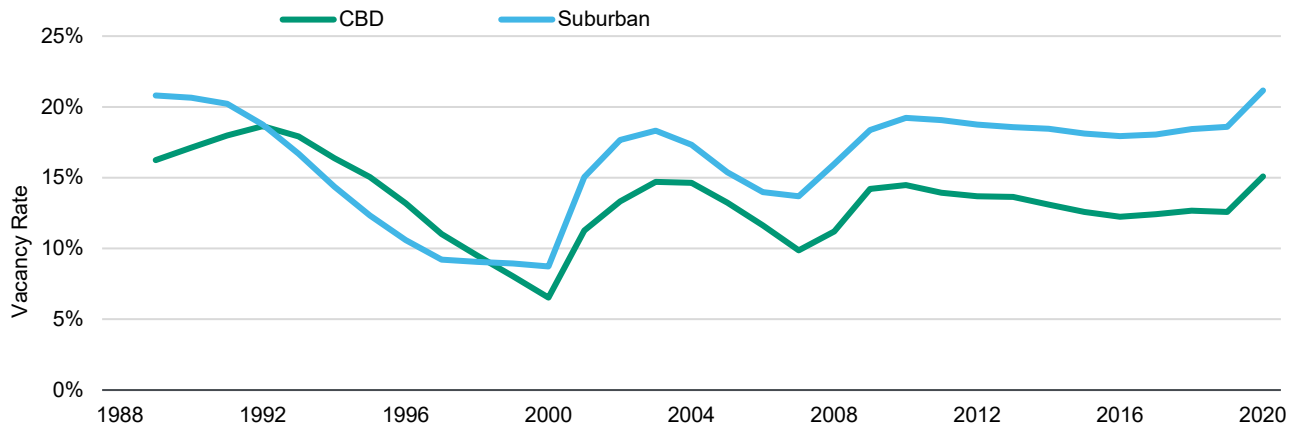
² <https://www.governor.ny.gov/news/video-audio-photos-rush-transcript-amid-ongoing-covid-19-pandemic-governor-cuomo-announces-ny-1>

³ A great summary of urban economics and history can be found in Pack, Janet Rothenberg, Growth and Convergence in Metropolitan America. Brookings Institution Press, 2002.

The vast majority of new construction occurred outside central business districts (CBDs), and the subsector called “Suburban Office Space” gained traction. Despite a large amount of supply growth (suburban market inventory expanded by 20% from 1989 to 1997, adding over 1.7 times the amount of new inventory versus CBDs), suburban office vacancies (9.2% in 1997) trended lower than CBD office vacancies (11.0%). In early 1998, the Building Owners and Managers Association (BOMA) pronounced that “suburban office will be the top-performing real estate investment product over the next five to 10 years.”⁴

But changes were afoot, and many cities across the US were about to experience an urban renaissance.

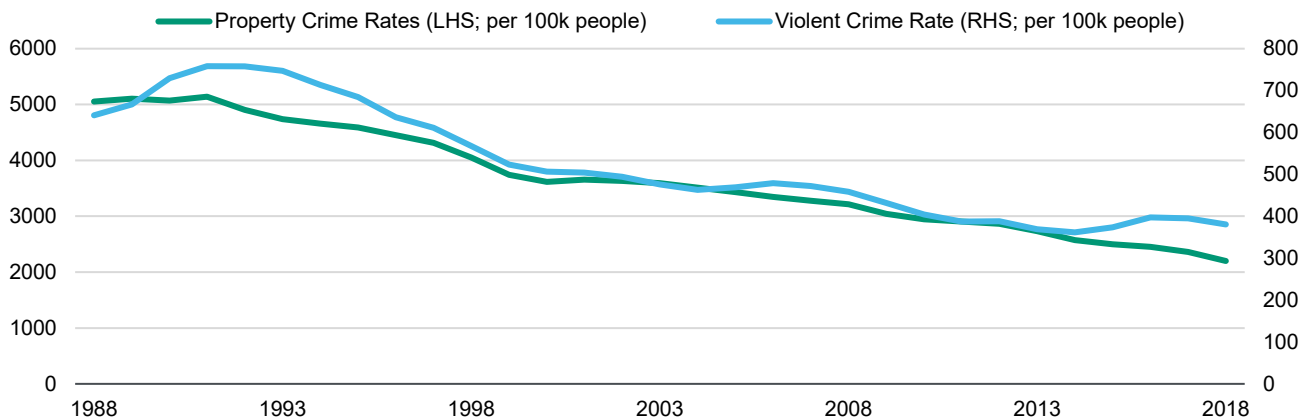
Figure 1 CBD versus Suburban Office Vacancies (1990 to 2020)



Source: Moody's Analytics REIS

Right around the time when BOMA expected suburban office space to outperform, CBDs began experiencing an urban renaissance. Crime rates began falling in the early to mid-1990s.⁵ The FBI annual report of crime categories that it labels “serious” has shown a marked decrease in both property and violent crime over the same time period, as shown in Figure 2.

Figure 2 Crime Rate (per FBI Annual Report 1988 - 2018)



Source: FBI Uniform Crime Statistics

⁴ <https://www.ccim.com/cire-magazine/articles/suburban-office-high/>

⁵ There are various reasons still debated in history, sociology, criminology, and economics journals as to why crime rates began to fall in the United States in the early- to mid-1990s. Wilson and Keller's “broken windows theory” (1982) inspired Rudy Giuliani's tough stance on crime when he was elected as Mayor of New York City in 1993, although formal papers question the ultimate impact of police tactics (see Corman, H. and Mocan, N. “Carrots, Sticks, and Broken Windows,” *The Journal of Law and Economics*, 48(1): April 2005, pp. 235-266). More controversially, economists John Donohue and Steven Levitt argue that the legalization of abortion via *Roe v. Wade* in the early 1970s paved the way for criminal elements to simply not be present by the mid-1990s. See Donohue, J. and Levitt, S. “The Impact of Legalized Abortion on Crime.” *Quarterly Journal of Economics*, 116(2): May 2001, pp. 379-420. Updated in May 2019 as a working paper via the University of Chicago: https://bfi.uchicago.edu/wp-content/uploads/BFI_WP_201975.pdf

City finances also recovered, allowing school quality to improve.⁶ CBD vacancies fell to a lower level versus suburban vacancies in 1999 (8.0% versus 8.9%). Figure 1 shows that CBD vacancies trended below suburban vacancies for the next two decades, as households and employers began moving back to US cities.

Changes in economics and technology. While large-scale demographic change was prompting a reallocation of demand from the cities to the suburbs (and back), the US economy was evolving and new technologies were emerging.

The rise of services. The US economy began transitioning from manufacturing to services right after World War II. By 1987, private industries that produced *goods* represented a mere 24.9% of US GDP (down from 39.8% in 1947) while private industries that produced *services* accounted for 61.8% of US GDP (up from 47.8% in 1947).⁷ By the end of 2019, services accounted for 70.4% of the US economy.⁸

New technologies and industries. Improvements in communication technology allowed an increasingly mobile workforce to do their work remotely. ARPANET adopted TCP/IP in 1983 and the network of networks that became the “world wide web” became publicly available in August 1991. A decade earlier, IBM had launched the first personal computer, ushering in the home computer revolution, which was accelerated by advances in semiconductor technology. IBM pioneered remote working by combining the advances in networks, hardware and software: they began offering remote terminals to some employees as early as the 1980s, giving access to remote telecommunication services in 1986. Over time, software capabilities improved dramatically, from relatively crude (in today’s world) word processing to seamless videoconferencing and collaboration tools.

These three developments—demographic shifts, economic change, and new technology—fundamentally altered not just the *geographic allocation* of office space preferences (suburbs back to CBDs). These trends also changed the *intensity of use* of office space. From an industry “rule of thumb” in the 1980s of 200 to 300 SF of office space per employee, *actual* office usage intensity fell to barely above 125 SF per employee by 2017.⁹ The figure for average SF per employee had shrunk to 126.5 in 2019. It remained relatively high for large urban markets like New York City (208.1), but tech markets like San Jose have markedly lower figures (172.3). Usage is even lower for “post-industrial” markets like Detroit and Cleveland (89.8 and 80.4, respectively) and port markets like San Bernardino/Riverside (41.2) which have a larger share of industrial buildings used for warehouse and distribution (versus office space).

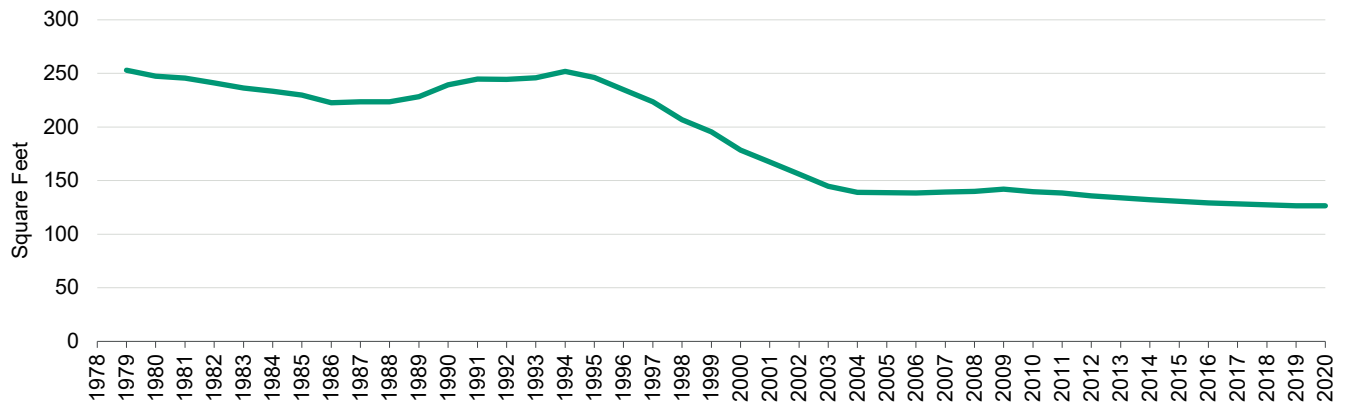
⁶ Quite a turnaround given the terrible state of finances in many cities. For the case of Philadelphia, see Buzz Bissinger’s engaging “A Prayer for the City” (1998) about the mayorship of Ed Rendell.

⁷ https://apps.bea.gov/scb/pdf/2005/12December/1205_GDP-NAICS.pdf

⁸ <https://fred.stlouisfed.org/series/VAPGDPSPI>

⁹ Trends in office space layouts, from cubicles in the 1960s to “open office plans,” were a result of broader demographic, economic, and technological trends, but also contributed to the decline in usage intensity over time. Some sources estimate that up to 70% of offices in the US use some form of open plan, but there has been a longstanding debate on whether it actually increases productivity and employee interaction/collaboration. See <https://www.shrm.org/hr-today/news/all-things-work/pages/open-offices.aspx> and this recent study by a couple of researchers from Harvard: “The Impact of the ‘Open’ Workspace on Human Collaboration.” Bernstein E.S, Turban S. (2018). “The impact of the ‘open’ workspace on human collaboration.” *Phil. Trans. R. Soc. B* 373: 20170239. <http://dx.doi.org/10.1098/rstb.2017.0239>

Figure 3 Office SF Usage per Office-Using Employee



Source: Moody's Analytics REIS

The recession of 2008-2009 reinforced this slowing demand for office space. Office space fundamentals did not recover in a robust fashion from 2011 to 2019. Vacancies peaked in 2010 at 17.6% and fell by only 130 basis points over six years, bottoming at 16.3% in 2016. With economic growth slowing, vacancies began to rise, ending 2019 at 16.8%. Effective rent growth averaged a paltry 2.6% over the nine years from 2011 to 2019 when rent growth was positive. By contrast, annual effective rent growth averaged more than twice that figure (5.7%) in the positive phase of the last business cycle for the sector from 2004 to 2008.

Subject to demographic, economic, and technological trends that had already prompted a decline in usage intensity, the office sector was not in a position of strength when the COVID-19 pandemic hit.

The Immediate Impact of COVID-19

With all of these instructive historical lessons in mind, we must recognize that the impact of COVID-19 on the US economy is unprecedented. Moody's Analytics expects US GDP to decline by 30% on an annualized basis in the second quarter of 2020—triple the severity of the previous record decline of 10% in the first quarter of 1958. Over the course of all of 2020, US GDP is expected to fall by 6.6%, a larger magnitude than the decline in economic activity in 2008-2009, concentrated mostly in the second quarter, prior to reopening the economy.

The near-term impact and the policy response. With businesses forced to close shop in mid-March (and many still closed as of this writing), economic distress came swiftly. According to a survey by NAREIM, more than half of office tenants had asked for some form of rent relief by the end of March.¹⁰ The policy response has been relatively swift, with the CARES Act approved on March 26 earmarking \$350 billion of support for small businesses (funds that could be used to pay rent). Another \$480 billion of support for small businesses was approved by the Senate on April 21, driven by the need to replenish the first tranche of relief to small businesses from the CARES act.

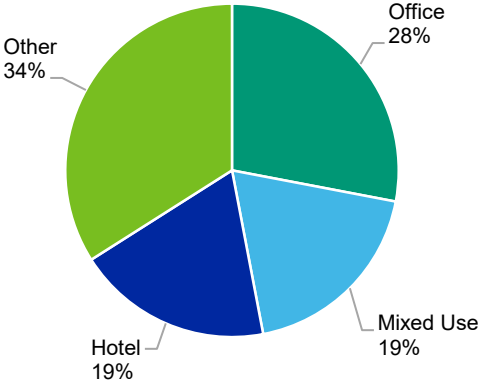
On April 9, the Federal Reserve included support for legacy commercial mortgage-backed securities in an amended Term Asset-Backed Loan Security Facility (TALF), providing an additional backstop propping up liquidity and credit for commercial real estate loans. The initial TALF program covers up to \$100 billion in loans to support credit markets. For Commercial Mortgage Backed Securities (CMBS),¹¹ the funds are geared towards providing relief by accepting legacy and conduit eligible securities as loan collateral.

¹⁰ Survey from the National Association of Real Estate Investment Managers: <https://www.nareim.org/final-content/Two-thirds-of-managers-are-providing-rent-relief-to-tenants-Retail-and-office-worst-affected>

¹¹ The details of the TALF 2.0 announcement can be found here: <https://www.federalreserve.gov/newsevents/pressreleases/monetary20200409a.htm>

Support across property types, however, has been uneven. For example, Single Asset-Single Borrower (SASB) deals are excluded from the TALF program. SASB outstanding balances sum up to approximately \$156.3 billion¹² and the largest proportion of properties underlying SASB securities (28%) are in the office sector, as per Moody's Analytics data.¹³

Figure 4 Outstanding Balance by Property Type, CMBS SASB Deals



Source: Moody's Analytics Structured Finance Portal

Because current policy efforts at supporting businesses have excluded large SASB loans, office property owners and operators are not provided with aid that would have helped them extend credit during these challenging times.

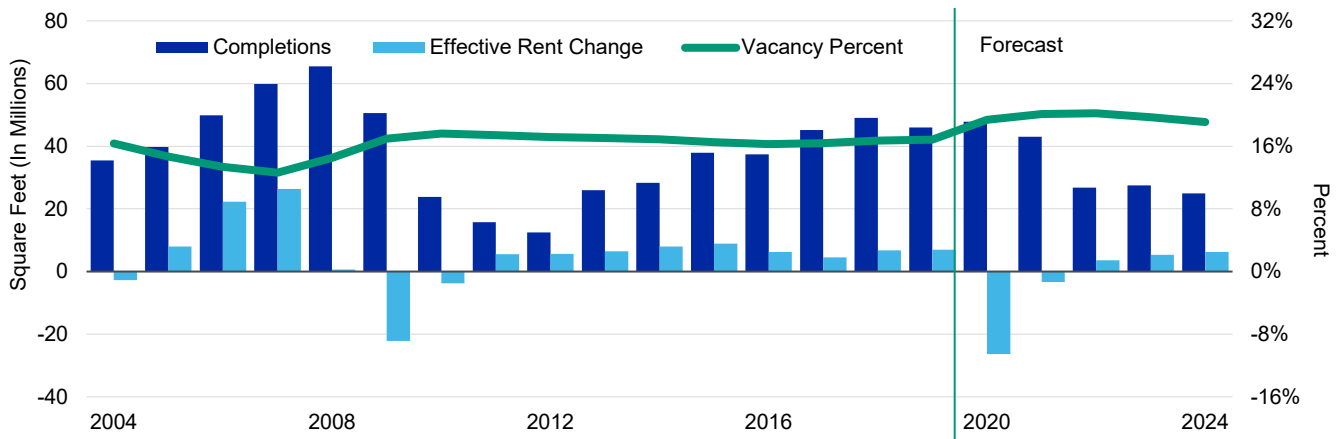
Furthermore, SASB securities tend to be owned by larger institutional investors such as pension funds and insurance companies. Subjecting relatively larger institutions to greater stresses may expose the financial system to bigger systemic risks, which could create unintended second order effects in the credit markets. Policymakers are caught in classic considerations of systemic risk: despite the large amount of funds pledged for support across various sectors of the economy, prioritization is still required. Should support be directed towards small businesses and the housing sector (as they currently are) or should more funds be allocated to larger institutions that may pose bigger systemic risks to the financial system?

Despite the vast amount of support from fiscal and monetary policy, if the severity of this economic downturn exceeds that of 2008-2009, then expect the office sector to suffer significantly. REIS's baseline forecasts have national vacancies spiking by 260 basis points to 19.4% by the end of 2020. That is an historic high: the previous record high at the national level was 19.3% in 1991 during the savings and loan crisis. Even if economic recovery ensues by later this year, reopening efforts might not go as smoothly—and office vacancies are likely to keep rising through 2022, topping out at 20.2%.

¹² As of March 2020, according to CREFC data.

¹³ Followed by Mixed Use properties at 19%, some of which include some office property component.

Figure 5 Figure 5. Completions, Vacancies, and Effective Rent Growth (2004-2024)



Source: Moody's Analytics REIS

Effective rents are expected to decline by 10.5% at the national level in 2020 alone, a larger magnitude of decline than 2009. For some markets like New York, effective rents may fall by over 20%. Table 1 below lists the office markets that are expected to incur the largest declines in effective rents for 2020. The decline in rents consider projected declines in employment by metro area, which are also significant. National employment is expected to decline by 2.6% given Moody's base case scenario, but employment declines for all of these markets are expected to be worse.

Table 1. Projected 2020 Changes: Effective Rents and Employment

MSA	2020 EFFECTIVE RENT CHANGE (FORECAST)	2020 EMPLOYMENT CHANGE (FORECAST)
New York	-20.3%	-3.01%
San Francisco	-17.0%	-3.80%
San Jose	-16.2%	-3.52%
Orange County	-14.0%	-3.24%
Boston	-12.6%	-2.81%

Source: Moody's Analytics REIS; Moody's Analytics

Relative impact across geographies. Because of how well CBDs have performed relative to suburban markets over the last two decades, CBD office rents per square foot have also reached levels that are almost twice that commanded by suburban office space (\$40.53 PSF versus \$23.29 PSF). As such, effective rents are likely to decline by a larger amount in CBDs versus suburban markets. Table 1 presents our baseline forecasts by how much CBD effective rents may decline versus suburban markets. For comparison, note that actual declines in 2009 were less severe, but the dynamics were similar, with CBD effective rents declining by almost twice as much as the suburban market segment.

Table 2. CBD versus Suburban Markets

GEOGRAPHY	2019 EFFECTIVE RENTS PSF	2020 EFFECTIVE RENT CHANGE (FORECAST)	2009 EFFECTIVE RENT CHANGE (ACTUAL)
Central Business Districts	\$40.53	-14.00%	-12.50%
Suburban Markets	\$23.29	-8.90%	-6.70%

Source: Moody's Analytics REIS

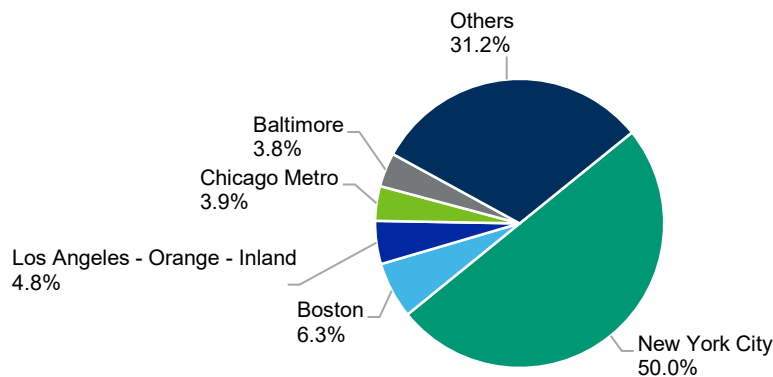
The Future of Office Space

Will the COVID-19 crisis and the quarantine experience represent a shock that will be relatively transitory, forgotten quickly once the economy reopens? Or will the effect be longer lasting, perhaps representing a permanent negative shock to demand for office space? “Business as usual” seems far-fetched at this point, given how firms have set a precedent for work-from-home policies. Karen Harris of Bain’s Macro Trends in New York opines that “once effective work-from-home policies are established, they are likely to stick.”¹⁴ The additional uncertainty of reinfection and concerns about exposure and health are likely to persist, until credible treatment and vaccination protocols are made widely available.

Individual preferences for working from home or working in formal office space are variable: the kind and extent of work that can be shifted to remote locations will also differ by industry. But the impact of a reduction in office footprint could be profound when we examine the world’s largest cities. For example, in New York, which is home to many large financial services and technology companies that occupy significant amounts of office space and prime headquarter space, a lot of companies are beginning to rethink their use of real estate. To illustrate the potential impact, we look at two large companies that have a significant presence, Morgan Stanley and Google, to demonstrate the impact of a shift in preferences.

Financial Services: Morgan Stanley as a Case Study. Morgan Stanley lists 17 offices around the United States,¹⁵ but the bulk (50%) is concentrated in New York City, where the firm leases close to 3 million SF of space.

Figure 6 Share of Space Leased by Morgan Stanley



Source: CompStak

New York City (and to a much lesser extent, Boston) therefore is at greatest risk for decisions by Morgan Stanley to shrink its office footprint. Optimists will argue that it is unlikely that the investment bank will not maintain some presence in New York City, given that its world headquarters are located at 1585 Broadway. But if it simply decides to occupy one-third less space given flexible remote/work-from-home policies, that translates to as much as 1 million SF of office space going vacant in New York.

Even the shock of 9/11 was not enough to induce a permanent outflow of employers and households away from New York City, but the shock of COVID-19 is arguably different. As terrible as the 9/11 terrorist attacks were, it was still a *local* shock, affecting mainly downtown Manhattan. COVID-19 is a *national* and *global* shock. New York City has become the *global* epicenter of COVID-19, with identified cases close to or exceeding figures for entire countries. The combination of technology enabling working from home, and potential flight from dense urban areas, given lingering concerns about COVID-19 and the next pandemic event, may well prompt a significant and persistent shock to office space demand that is not transitory.

Technology firms: If tech firms were well equipped to allow remote work arrangements, why does Google own and lease so much office space? Google owns and leases a total of close to 5 million square feet of office space in New York City, in expectation of increasing its economic presence in the area. It employs about 7,000 people in New York, and—prior to COVID-19—had expansion plans that included doubling this employment figure.¹⁶ For fifteen years, it has also devoted considerable resources to

¹⁴ <https://www.bloomberg.com/news/articles/2020-03-13/coronavirus-will-change-how-we-shop-travel-and-work-for-years>

¹⁵ <https://www.morganstanley.com/about-us/global-offices/americas/united-states>

¹⁶ <https://www.ny1.com/nyc/all-boroughs/news/2019/09/16/inside-google-s-massive-nyc-expansion>

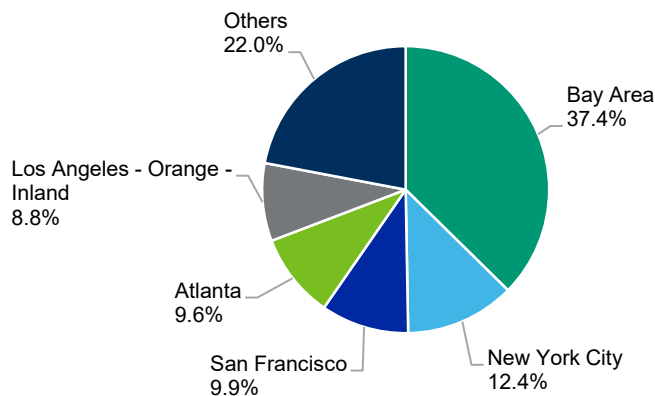
bussing its Silicon Valley employees who cannot afford to live near its San Francisco office and its headquarters in Mountain View.¹⁷ Google employs close to 5,000 people in the Seattle area, and as of late 2019 had expanded its office space presence there to around 2 million square feet (although it owns most of the space it occupies in Seattle).¹⁸

Why does Google occupy so much office space to begin with, given its presumably greater ability to equip its workers with work-from-home infrastructure? Reasons range from using innovative office design as a competitive edge for attracting and retaining workers, to keeping a closer eye on its engineers so that they are not inadvertently (or deliberately) sharing company secrets.¹⁹

Regardless of the reasons for Google's current office space usage, the ultimate question is whether Google will continue to expand its office footprint in the post-COVID-19 future. Will it shrink its office footprint instead, as a result of the current crisis? One year ago, in April 2019, the firm completed a study that provided evidence that productivity was, in fact, the same whether or not teams worked from home or at the office. "We were happy to find no difference in the effectiveness, performance ratings, or promotions for individuals and teams whose work requires collaboration with colleagues around the world versus Googlers who spend most of their day to day working with colleagues in the same office," wrote Veronica Gilrane, manager of Google's People Innovation Lab. "Well-being standards were uniform across the board as well; Googlers or teams who work virtually find ways to prioritize a steady work-life balance by prioritizing important rituals like a healthy night's sleep and exercise just as non-distributed team members do."²⁰

Fast forward to April 2020 and all Google employees in the US are working from home. If Google decided to shrink its office footprint in the future, distress in specific office markets will be concentrated in markets like the Bay Area and San Francisco proper, New York, Atlanta, and Los Angeles.

Figure 7 Share of Space Leased by Google



Source: CompStak

These figures do not count space *owned* by Google that it might choose to give up. Google owns 111 Eighth Avenue, which houses its New York office headquarters: the building has 2.8 million square feet of office space, roughly equivalent to all of the space that Morgan Stanley leases in New York City. If it chooses to cut back on its office presence, leasing out even part of the space in its headquarters will add hundreds of thousands of vacant square footage to the New York market at a time with very little certainty as to the shape of economic recovery post-COVID-19.

¹⁷ Two early accounts of the spending and logistics required for shuttles managed by tech companies can be found here: <https://www.nytimes.com/2007/03/10/technology/10google.html> and here: <https://nymag.com/intelligencer/2012/12/silicon-valleys-exclusive-shuttles.html>

¹⁸ <https://www.seattletimes.com/business/real-estate/google-unveils-first-of-five-south-lake-union-offices-cheek-by-jowl-with-amazon/>

¹⁹ <http://www.workspacedesign.co.uk/what-can-we-learn-from-googles-offices-about-workplace-design/>

²⁰ Providing certain conditions were present. Details here: <https://blog.google/inside-google/working-google/working-together-when-were-not-together/>

Summary and Conclusions

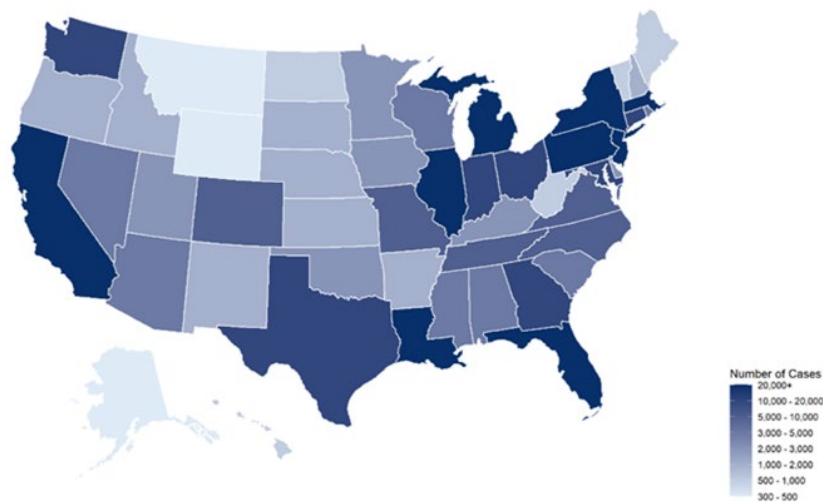
The cost of leasing office space must be weighed against its advantages. One of the central tenets of urban economics is that cities themselves exist because of the benefits of co-location. Agglomeration economies minimize transportation and communication costs required for economic activity to occur.²¹

Offices are a microcosm of urban environments: workers are gathered into a central location to spur collaboration and productivity. But with communications infrastructure now proven to accommodate large-scale work-from-home arrangements *and* persistent concerns about COVID-19 and future pandemics, firms might finally be pushed into thinking seriously about two important factors that will affect future demand for office space:

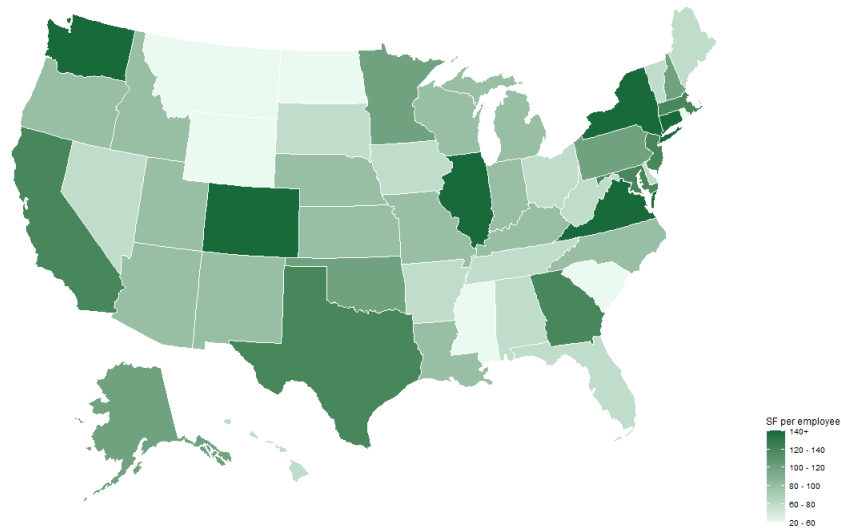
1. *Geographic reallocation: Will the pendulum swing back from CBDs to suburbs?* Will dense urban areas represent greater risk, given the chance of future pandemics? It is no coincidence that COVID-19 outbreaks tend to cluster around cities like New York, Seattle, and Los Angeles. The very same attributes that make these places such desirable places to live and work—the spatial clustering of businesses, cultural centers, households, and service establishments—are predisposing them to the spread of the virus.

Cities by coastal areas tend to have larger office markets, and therefore occupy more space per square feet. With the exception of a handful of states, note how closely COVID-19 intensity corresponds with states with relatively higher values for office space occupied per employee.

Figure 8 COVID-19 Intensity and Office SF per Employee



²¹ If the internet lowers the cost of communication, is it therefore a substitute for cities? It depends on the activity. In the paper cited below, economists Todd Sinai and Joel Waldfogel find that in larger markets, the internet's ability to process large amounts of data and deliver targeted marketing content prompted individuals to connect at a greater rate—suggesting that the internet was a complement to cities and delivered a “local feel” to individuals living in what could be large, impersonal cities. But for retail shopping, the authors find that the internet was a substitute for cities: people who are connected spend more on online shopping, relative to their offline spending, if they are far from offline stores. See Sinai, T. and Waldfogel, J. (2004). “Geography and the Internet: Is the Internet a Substitute, or a Complement for Cities?” *Journal of Urban Economics*, 56:1, pp. 1-24.



Source: US Centers for Disease Control and Prevention; Moody's Analytics REIS

It is unlikely that many businesses currently located in New York state (175.39 SF per employee) will suddenly and quickly move to North Dakota (28.6 SF per employee). There are of course many other factors that determine business location decisions aside from considerations about future pandemics. However, businesses may choose to lease space in nearby suburbs, not too far from their original CBD base. This minimizes disruptions like having to deal with employee relocation costs (if the choice of suburban space, for example, is less than 25 miles away from the original CBD location), and may translate to savings in rental costs given that suburban office space tends to be cheaper than CBD options.

“For many years, suburban office space fell out of favor because of the resurgence of US cities,” said Ryan Severino, Chief Economist at Jones Lang LaSalle. “Is this COVID-19 crisis going to spur renewed interest in suburban markets, as households and employers move out of cities? Time will tell.”

If there is a shift from CBD office space to suburban space, there may be countervailing effects in some areas: for example, if firms that shift activities from CBDs to suburban office space end up leasing *more* space per employee—taking precautions to assure employees of relative safety, ensuring that they are not packed so closely together—then net occupied space across a large metropolitan area might not shift as much. Firms can afford to do this given that suburban office space is much cheaper on a per square foot basis than office space in CBDs.

Paradoxically, depending on how market boundaries are defined, occupied space might even *increase* if firms end up allocating more space per employee in suburban areas. These general trends, however, likely also imply that office layouts will need to be rethought: cubicles and open office plans will now be perceived as less desirable.

Even in the immediate term when offices reopen, before credible treatment and vaccination protocols are made widely available, firms are already thinking about what the “new normal” might mean: Will there be a limit on the number of people riding elevators or attending meetings in enclosed areas? Will there be a staggered workforce schedule where teams A, B, and C take turns heading to the office? Why even bother with all this if lingering uncertainty remains? Why not simply continue working from home?

And this leads us to the bigger risk for the office sector, the longer the COVID-19 situation persists.

2. *The bigger long-term risk: A drop in space usage intensity.* Will employers simply choose to use *less* office space, shifting activities to remote or work from home arrangements? A survey by Gartner of 317 CFOs completed on March 31, 2020 notes

that 74% intend to shift some employees to remote work *permanently*.²² If this comes to pass, then the office sector may have to struggle with a permanent shock to demand. There may be ancillary *positive* effects to multifamily complexes that offer amenities, or warehouse and distribution complexes that cater to online retailers given a larger number of orders offsetting the advantages of co-location. But this kind of change will be a net *negative* for the office property sector. The magnitude of distress may be comparable to how the retail sector has been forced to deal with the threat represented by the shift of consumer spending towards internet sales.²³

The evolutionary processes prompting change in the office sector—demographic shifts, economic development, and technological change—will be kicked into high gear by the COVID-19 pandemic. One trend may reverse (suburban office may come back into favor, versus CBDs) but the decline in the intensity of office space usage may accelerate significantly.

²² <https://www.gartner.com/en/newsroom/press-releases/2020-04-03-gartner-cfo-surey-reveals-74-percent-of-organizations-to-shift-some-employees-to-remote-work-permanently2>

²³ We discuss the increased pressure on brick and mortar retail brought about by the COVID-19 crisis in this paper: “The COVID-19 Pandemic and the Retail Debacle” (published April 3, 2020). Available upon request.

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