



PENN IUR POLICY BRIEF

Policy Brief: How Remote Work is Affecting Real Estate Markets

Published in The World Financial Review

By Susan Wachter

DECEMBER 2022

Photo by Kornél Máhl via Unsplash



How Remote Work Is Affecting Real Estate Markets

WORK FROM HOME (WFH) DISRUPTED REAL ESTATE MARKETS GLOBALLY DURING THE PANDEMIC AND CONTINUES TO DO SO. GEOGRAPHIC SHIFTS IN THE USE OF SPACE ARE ALREADY CAUSING A REPRICING OF COMMERCIAL AND RESIDENTIAL REAL ESTATE. LONG-TERM, THE INCREASING PREVALENCE OF REMOTE WORK IS LIKELY TO RESULT IN MORE DISPERSED URBAN SETTLEMENT PATTERNS.

In the aftermath of the pandemic, the transition to work from home (WFH) is disrupting real estate markets across the globe. Surveys project that long-term, 20 percent of full workdays will be supplied from home, compared to 5 percent pre-pandemic.¹ WFH is currently averaging 1.5 full workdays per week, with variation observed by geography, ranging from 0.5 days in South Korea to 1.6 in the US, 2.0 in the UK, and by industry.² Employer expectations for hybrid employees' workdays in the US, which started to increase in 2021, are stabilizing at about 2.5 days per week, with WFH more prevalent in cities with longer commutes.³ Remote work, optimized for productivity, has the potential to reshape urban settlement patterns, slowing or reversing the decades-long trend of increasing urban centralization and density.⁴ For those whose jobs allow, WFH makes it possible to move within and across metros to capture cheaper housing, lower tax rates, and better amenities. Firms can also relocate jobs away from high-rent urban centers to a "hub and spoke" location model, using technology to bring workers together.

Cities differ in productivity and amenities and, consequently, in real estate prices. Without WFH technology, a strict trade-off prevails when working in a high-productivity location: either pay the price or endure a long commute. The introduction of WFH allows workers (who can work from home) to relocate their residence from high-productivity to low-productivity cities (or suburbs) while keeping high-productivity jobs.⁵ The moves flatten rent-distance functions (in which historically, rents and prices per square foot peak in the urban centre and decline moving outward) by bidding up the prices of cheaper outlying housing prices. Recent data show this is happening. In the US, in the immediate aftermath of the pandemic, house prices appreciated rapidly in remote counties,⁶ in part because of COVID contagion fears, but also because WFH tech made such moves possible. In the UK, after the COVID lockdown ended, house prices fell in London but increased in outlying areas. Li and Su (2021) show that net migration towards suburban neighborhoods and less densely populated Metropolitan Statistical Areas (MSAs) in the US is driven disproportionately by the movement of the high-income population, which provides an additional impetus for housing costs to rise more in outlying locations.⁷

WFH has also decreased the demand for office space, with vacancies up, and rents and values down, with a 28 percent value decline predicted for New York office buildings.⁸ Simulations using US metro data indicate that the expected long-term shift to 20 percent of workdays supplied from home is consistent with an average falloff in office rents and values of 8 to 10 percent. A decline in this range is already evident in rents in newly

1 Barrero, J.M., Bloom, N. and Davis, S.J. (2021). Why Working From Home Will Stick. NBER Working Paper.

2 Aksoy, C.G. et al. (2022). Working from Home around the World. Brookings Papers on Economic Activity.

3 "Work Shift." Bloomberg. October 25, 2022. <https://www.bloomberg.com/work-shift>.

4 Lall, S. et al. (2021). World Bank, Group Pancakes to Pyramids: City Form to Promote Sustainable Growth. World Bank.

5 Brueckner, J.K., Kahn, M.E. and Lin, G.C. (2022). A New Spatial Hedonic Equilibrium in the Emerging Work- From-Home Economy? American Economic Journal: Applied Economics.

6 Graham, J., Gamber, W. and Yadav, A. (2023). Stuck at Home: Housing Demand During the COVID-19 Pandemic. Journal of Housing Economics.

7 Li, W. and Su, Y. (2021). The Great Reshuffle: Residential Sorting During the COVID-19 Pandemic and Its Welfare Implications. Federal Reserve Bank of Philadelphia. Also Gupta, A., Mittal, V., Peeters, J. and Van Nieuwerburgh, S. (forthcoming). Flattening the Curve: Pandemic-Induced Revaluation of Urban Real Estate. Journal of Financial Economics; Ramani, A. and Bloom, N. (2021). The Donut Effect of COVID-19 on Cities. National Bureau of Economic Research; and Althoff, L. et al. (2022). The Geography of Remote Work. National Bureau of Economic Research.

8 Gupta, A., Mittal, V., Peeters, J. and Van Nieuwerburgh, S. (forthcoming). Flattening the Curve: Pandemic-Induced Revaluation of Urban Real Estate. Journal of Financial Economics.



executed office leases and in Real Estate Investment Trust (REIT) pricing.⁹ Across and even within markets, the variation in outcomes is substantial. For example, per CoStar, while Manhattan's Grand Central office submarket exhibits 18 percent vacancy (including sublease space), the submarket's prime property, One Vanderbilt—a 2020-vintage 1.7 million square foot tower—is only 3 percent vacant (while boasting top-of-market rents). Class A office properties are performing well even in high-vacancy markets like San Francisco. Central city office markets in Europe, like London, Milan, Paris, and Amsterdam, are stronger than US peers with lower vacancy, higher year-on-year (YoY) rental growth and lower cap rates, due to the difficulty of developing new supply and the power of existing strong markets with few competing alternatives.

An increase in demand for workspace at home accompanies the declining demand for office space. With supply fixed in the short run, house prices soared 45 percent nominally (and 30 percent on a real basis) in the US from December 2019 at the pandemic's onset to July 2022, when prices peaked. House prices are now falling due to the rise in mortgage rates and recession fears. While pandemic-induced low-interest rates and fiscal stimulus contributed to the surge, estimates are that one third to one half of the historic house price gains are attributable to a WFH-induced fundamental shift in demand.¹⁰ These fundamental shifts in demand and price rises were particularly strong in locations with amenities, including easy access to the countryside, to sunny days, but also to downtowns with vibrant street life, and low taxes. Regions and localities must now increasingly compete for footloose employees and firms. Cities such as Lisbon, which are inherently attractive, have taken to marketing to “non-habitual residents”, that is, digital nomads, through local tax benefits and speedy internet as well as traditional travel connectivity. While downtown retail has been impacted by office market declines, with retail expenditure collapsing in the centers of New York, San Francisco, and other big cities with population declines, vibrant city and town centers are part of the draw in growing outlying areas and will be important for future urban growth.

Pre-pandemic, the “bright lights” of 24/7 cities drew young college graduates, particularly in tech and finance, to urban hubs, with firms following to access that talent.¹¹ The rise of the knowledge economy spurred the growth of superstar cities,¹² such as London and Tokyo, due to agglomeration economies in production and consumption, that is, the advantages of density. This resulted in concentrations of talent growth in urban hubs with vibrant centers, accompanied by a lack of affordable housing, exemplified by San Francisco.¹³ With rises in rents and house prices that locked out the young in these markets, some expressed concerns that tech growth itself could be threatened by the lack of workers who could afford to live in the high-tech-producing regions.¹⁴ Even pre-pandemic, growth in more affordable second-tier cities in the US, such as Nashville, began to outpace first-tier metro growth.

A new more dispersed urbanism is likely to boost the trend of second and third-tier urban growth. But the extent this growth is sustainable depends on productivity growth in these cities, which itself depends on the productivity outcomes of the shift to remote work. The evidence is mixed.¹⁵ One study of the UK shows that on average, workers adopting WFH report little difference in productivity relative to productivity before the pandemic.¹⁶ While, in the US, Barrero et al. (2021) indicate that most respondents who adopted WFH report

9 Davis, M.A., Ghent, A.C. and Gregory, J.M. (2022). The Work-from-Home Technology Boon and its Consequences. National Bureau of Economic Research; and Rosenthal, S.S., Strange, W.C. and Urrego, J.A. (2022). JUE Insight: Are City Centers Losing Their Appeal? Commercial Real Estate, Urban Spatial Structure, and COVID-19. *Journal of Urban Economics*.

10 Kmetz, A., Mondragon, J. and Wieland, J. (2022). Remote Work and Housing Demand. Federal Reserve Bank of San Francisco Economic Letter. Also see Graham, J., Gamber, W. and Yadav, A. (2023). Stuck at Home: Housing Demand During the COVID-19 Pandemic. *Journal of Housing Economics*.

11 Couture, V. and Handbury, J. (2020). Urban Revival in America. *Journal of Urban Economics*.

12 Gyourko, J., Mayer, C. and Sinari, T. (2013). Superstar Cities. *American Economic Journal: Economic Policy*.

13 Lin, D. and Wachter (2023). Remote Work: Real Estate Price Effects During and After Covid. Penn IUR Working paper.

14 Autor, D., Mindell, D., and Reynolds, E. (2022). The Work of the Future: Building Better Jobs in the Age of Intelligent Machines. MIT Press. This motivated the proposal for the US government to jump start additional tech centers.

15 Bloom, N, Davis, S., and Zhestkova, Y. (2021). COVID-19 Shifted Patent Applications toward Technologies that Support Working from Home. Becker Friedman Institute, University of Chicago.

16 Etheridge, B., Wang, Y., and Tang, L. (2020). Worker Productivity During Lockdown and Working From Home: Evidence from Self Reports. Institute for Social and Economic Research.



equal or higher WFH productivity.¹⁷ On the other hand, Morikawa (2020), based on a 2020 survey of workers in Japan, documents that the mean WFH productivity was approximately 60 to 70 percent relative to working at the usual workplace.¹⁸ The 5 to 10 percent real income gains¹⁹ resulting from shorter (or no) commutes and more flexibility will incentivize the development and adoption of new technology. Nonetheless, the difficulty in collaborating creatively over Zoom may take its toll; such concerns have led Wall Street firms to require a return to the office.²⁰

Consumption agglomeration economies offered by dense and vibrant downtowns will still draw talent, limiting centrifugal forces. Global cities, in countries without competitive alternatives will remain strong. Moreover, even with the growth of hybrid work, central cities can draw upon more workers, as the physical extent of their regional (tele) commuting shed widens, flattening but not downshifting rent-distance functions.

Finally, dispersing urban populations across many centers might appear to have the advantage of bringing more affordable locations into play, allowing relief for tech talent to work for highly productive companies while living in affordable and attractive dispersed locations, and solving for affordability more generally. In theory, there could even be a return to a regime of expansive supply of new housing in edge cities which enabled post-World War II (post-WWII) urban growth without house price appreciation in many countries.²¹ However, by their very nature, amenity-rich locations are likely to be supply-constrained and fast-growing localities tend to tighten growth controls. While more dispersed urban locations are initially more affordable for out-of-towners it is unlikely that this trend will noticeably increase the supply of housing. Despite price declines with the oncoming market turbulence, the long run global affordable housing supply challenge is likely to persist.

17 Barrero, J.M. et al. (2021). Why Working from Home Will Stick. National Bureau of Economic Research.

18 Morikawa, M. (2020). COVID-19, Teleworking, and Productivity. Productivity was lowest for employees who were forced to start WFH only after the spread of the COVID-19 pandemic.

19 Kahn, M. (2022). Going Remote: How the Flexible Work Economy Can Improve Our Lives and Our Cities. University of California Press.

20 Glaeser, E. and Cutler, D. (2021). Survival of the City: Living and Thriving in an Age of Isolation. Penguin Press. See also "Wall Street Banks Lead Return-to-Office with Labor Day Push." Bloomberg. September 7, 2022. <https://www.bloomberg.com/news/articles/2022-09-06/wall-streetbanks-lead-renewed-return-to-office-push-after-labor-day>.

21 Knoll, K., Schularick, M. and Steger, T. (2017). No Price Like Home: Global House Prices, 1870-2012. American Economic Review.