The Future of WFH

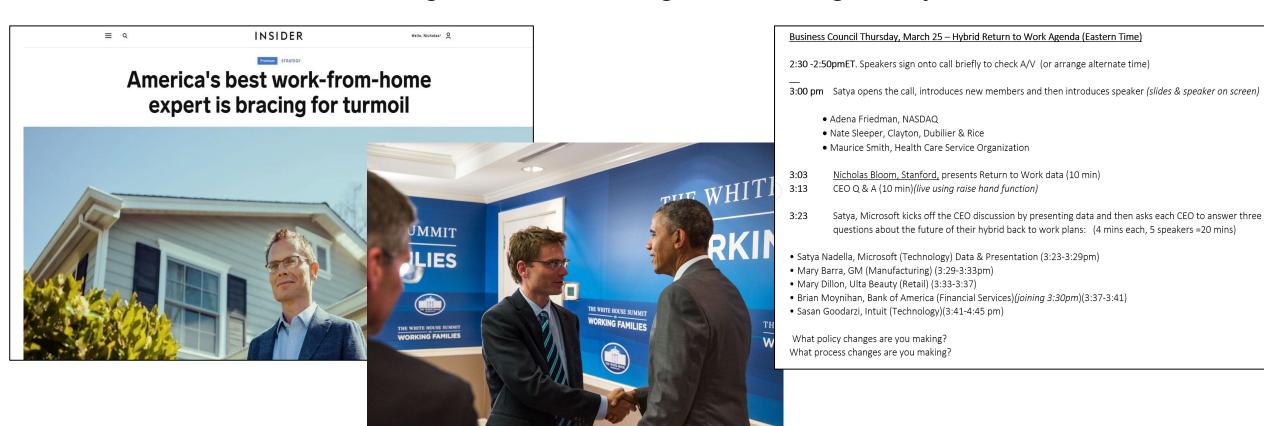
Nick Bloom (Stanford)

July 2022



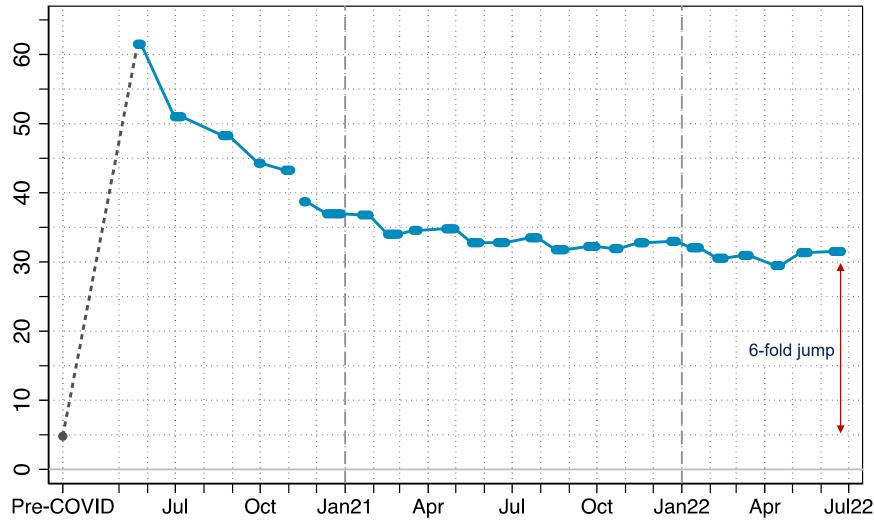
Background and Data on Working From Home

- Research on WFH starting in 2004
- Currently monthly surveys of 5,000 US working age adults and 1,000 US firms
- Quarterly surveys of 20,000 working age adults across 22 countries
- Discussions and consulting with 100s of organizations globally



WFH is sticking: from 5% (pre-COVID) to ≈30% (post-COVID) of days





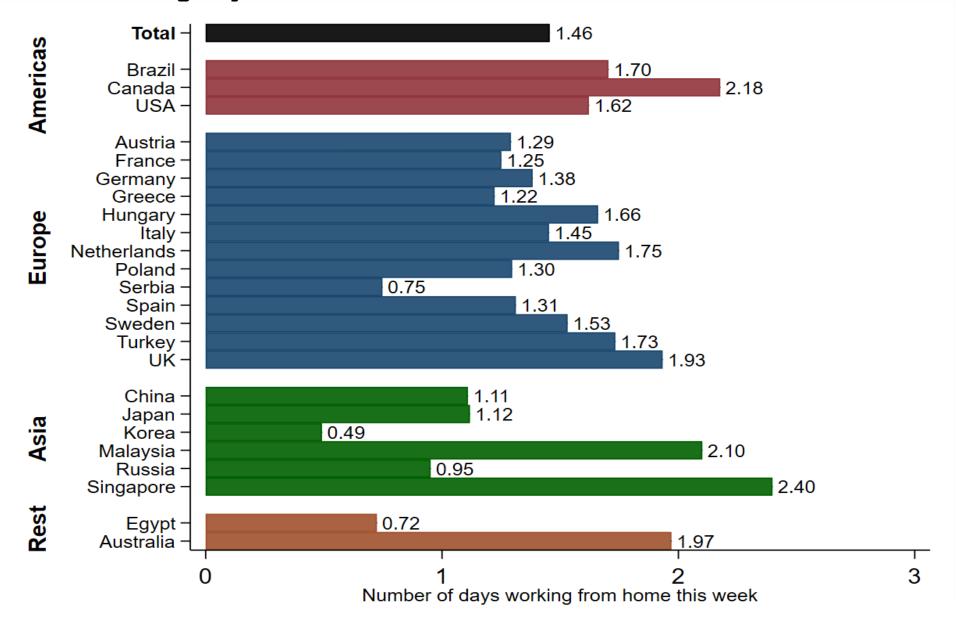
WFH days doubling every 12 years pre-pandemic

The 6-fold increase over the pandemic equal to 30 years of pre-pandemic growth

Source: Data from 75,345 survey responses May 20 to Feb 22 weighted to match the US population. Pre-covid data from the American Time Use Survey. Post-COVID from 4,759 Feb 2022 responses. Details on https://wfhresearch.com/

Global data shows WFH occurring typically 1+ day per week

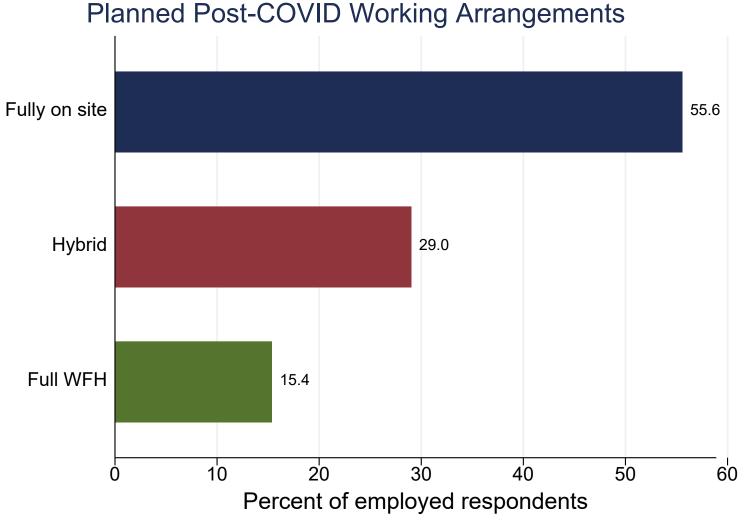
Paid working days worked from home each week



Source: Responses to the question "How many full paid days are you working from home this week?". Only for high-school of above educated respondents that have worked for pay in the week of the interview. Controls for gender, age groups, education, industry and wave fixed effects.

Sample of N=30,169 Global WFH respondents, surveyed in August 2021 and February 2022.

Post COVID employees will split into three groups



Front-line employees, mostly non-graduates, lower paid,

Professionals and managers, mostly graduates, higher paid

Specialized roles - IT support, payroll etc, often contractors

Source: Data from 16,575 US responses in August through December 2021, reweighted to match the US population. Details on https://wfhresearch.com/

Hybrid (e.g. 3-2) Combines the Benefits of Office and Home

Working In the Office

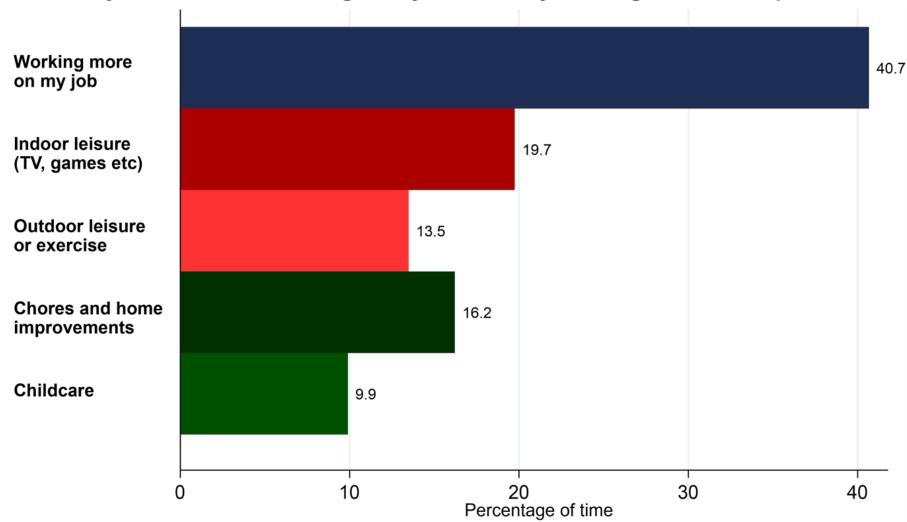
- 1. Good for creativity
- 2. Good for culture

Working From Home

- 1. Quiet
- 2. Saves on Commute

Saved commute time WFH averages about 70 minutes a day, of which about 40% (30 minutes) goes into extra work

How did you use the commuting time you saved by working from home, percent



Source: Data from 32,461 respondees who can work from home, reweighted to match the US population. Details on https://wfhresearch.com/

Research finds hybrid-WFH increases average productivity ≈5%, and this is growing as firms and employees improve on this

Survey Data

Efficiency of Working From Home Relative to Working on Business Premises (%) 10 ∞ 9 4 α 0 Sep20 Nov20 Jan21 Mar21 May21 Jul21 Sep21 Nov21 Linear trend coef (SE) = .3 (.02). N = 42240

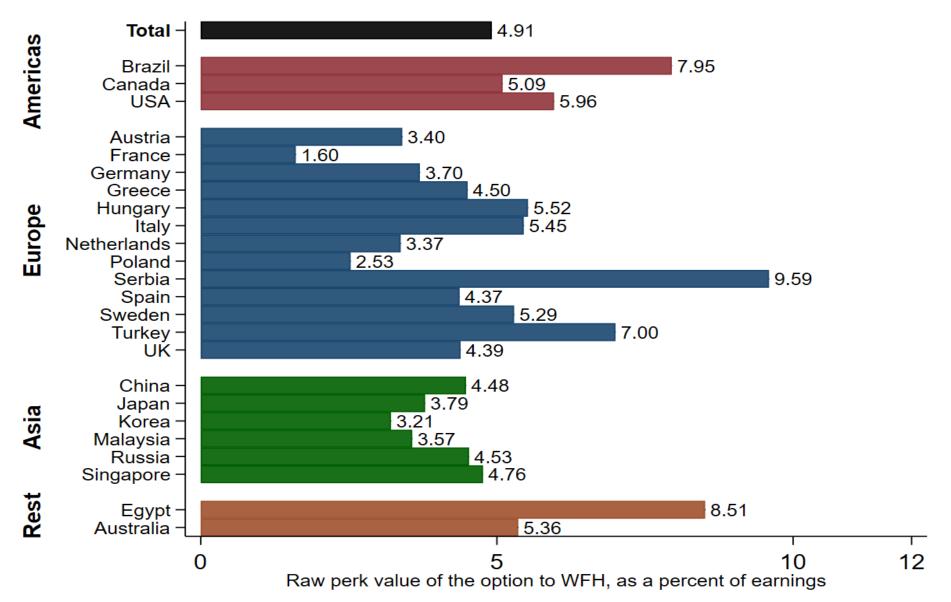
Source: Data from 42,240 US responses in through 2021, reweighted to match the US population. Details on https://wfhresearch.com/

Research Data

DOES WORKING FROM HOME WORK? EVIDENCE FROM A CHINESE EXPERIMENT NICHOLAS BLOOM JAMES LIANG "WORKING" REMOTELY? A rising share SELECTION, TREATMENT, AND THE MARKET FOR REMOTE WORK the results of a WFF Chinese travel age Natalia Emanuel · Emma Harrington randomly assigned Home working led to ing more minutes p per minute (attribu Iome workers also r halved, but their p Abstract: How do success of the experi and allowed the es workers who choose Work-From-Anywhere: The Productivity Effects of Geographic Flexibility the call-centers of a office. Interestingly and on-site worker from WFH almost and selection effects JEL Codes: D24, L5 down. In a differe Prithwirai (Rai) Choudhury, 1 Cirrus Foroughi, 2 and Barbara Larson merly on-site work to already-remote inally chose remote An emerging form of remote work allows employees to work-from-anyther, so that the worker can gest that adverse sele Working fro in call-center jobs pr choose to live in a preferred geographic location. While traditional work-from-home (WFH) programs ework) is become lockdown for adver offer the worker temporal flexibility, work-from-anywhere (WFA) programs offer both temporal and United States, th geographic flexibility. WFA should be viewed as a nonpecuniary benefit likely to be preferred by workers who would derive greater utility by moving from their current geographic location to their preferred location. We study the effects of WFA on productivity at the United States Patent and *We thank Je Trademark Office (USPTO) and exploit a natural experiment in which the implementation of WFA and logistical support Michelle Rowan for t was driven by negotiations between managers and the patent examiners' union, leading to exogeneity in the timing of individual examiners' transition from a work-from-home to a work-from-anywhere dustries. We thank o program. This transition resulted in a 4.4 percent increase in output without affecting the incidence Sabrina Pabilonia, S and our four anony of rework. We also report results related to a plausible mechanism: an increase in observable effort as helpful comments. V the worker transitions from a WFH to a WFA program. We employ illustrative field interviews, micro Network for Informa data on locations, and machine learning analysis to shed further light on geographic flexibility, and funding for this pr summarize worker, firm, and economy-wide implications of provisioning WFA the co-founder of Ct ¹Contact: Prin emma.k.harrington4@ tive chairman of Ctri CEO. No other coa Katz. Edward Glaeser. Running Head: Work-From-Anywhere: Productivity Effects at Harvard's Public F results nor the artic Stanford University Keywords: geographic flexibility; work-from-anywhere; remote work; telecommuting; worker mobilit to our colleagues. Lisa imental design. Dev Patel, Ashesh Ra have been possible wi firms who shared data: © The Author(s) 201 and Fellows of Ha Science Foundation [N Acknowledgements: The authors are thankful to Iain Cockburn, Srikanth Kannan, Jirs Meuris, Chris Rider, Tim Simcoe, and participants and reviewers at Boston University, Harvard Business School, INSEAD Mobility Conference, Stanford GSB OB Department, Temple University, University of Wisconsin-Madison, and Wharton People and Organizations Conference for comments on a prior ¹ Corresponding author – Raj Choudhury, Lumry Family Associate Professor of Business Administration, Harvard Business School, Boston, MA 02163 (email – pchoudhury@hbs.edu). ² Cirrus Foroughi, doctoral candidate, Harvard Business School, Boston, MA 02163 (email – cforoughi@hbs.edu ³ Barbara Larson, Executive Professor of Management, D'Amore-McKim School of Business, Northeastern Unive 360 Huntington Avenue, Boston, MA 02115 (email – blarson@northeastern.edu).

Employees value hybrid WFH about the same as an 5% pay rise

Raw perk value of the option to WFH



Source: Responses to the question: "After COVID-19, in 2022 and later, how would you feel about working from home 2 or 3 days a week?" and "How much of a pay raise [cut] (as a percent of your current pay) would you value as much as the option to work from home 2 or 3 days a week?". Controls for gender, age groups, education, industry and wave fixed effects.

Sample of N=32,909 Global WFH respondents, surveyed in August 2021 and February 2022.

Results for a recent RCT in China on 1612 engineers, marketing and finance professionals found WFH reduced quit rates



Nick Bloom @I Am NickBloom · Apr 8

New randomized control trial on 3-2 hybrid #WFH vs 5-days in office

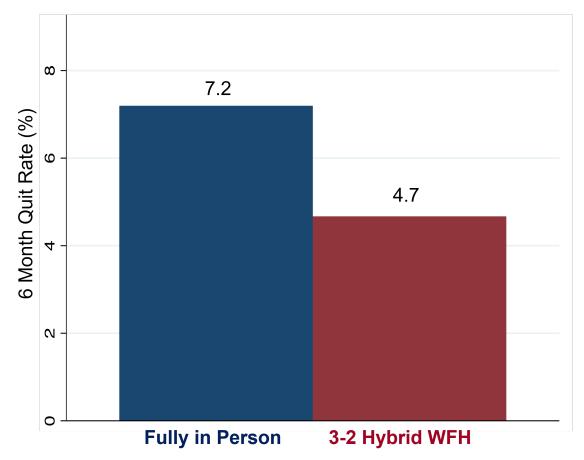
Finds hybrid WFH

- 1) Lowers quits by 35%
- 2) Raises employee satisfaction
- 3) Has no negative effect on performance or promotions

Results so good the firm allowed WFH in all divisions

See stanford.io/3je2FVS

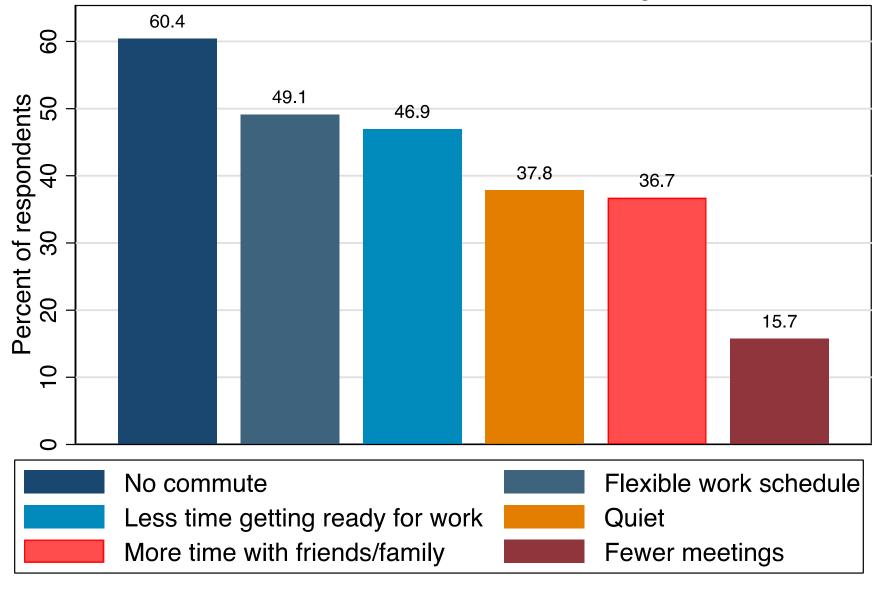
Hybrid WFH lowered employee quit rates by 35%



Source: Attrition rates for 1612 engineers, marketing and finance professionals of Trip.com who were randomized between September 2021 and February 2022 by even and odd birthdays into control (5-days a week in the office) and treatment (Mon, Tue and Thur in the office; Weds and Fri working from home). Difference statistically significant at the 5% level. Details in Bloom, Han and Liang (2022) "How Hybrid Work from Home Works Out".

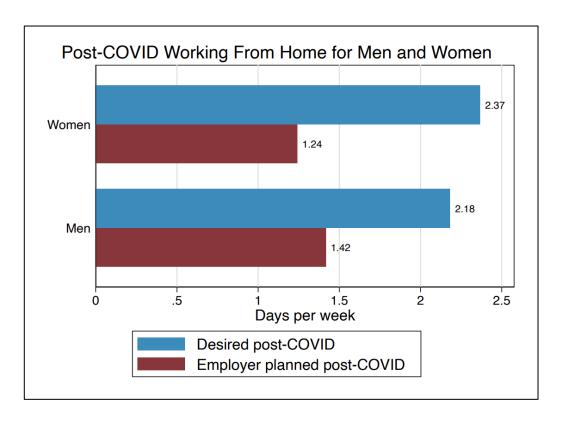
Saved time, flexibility and quiet key benefits employees like with WFH

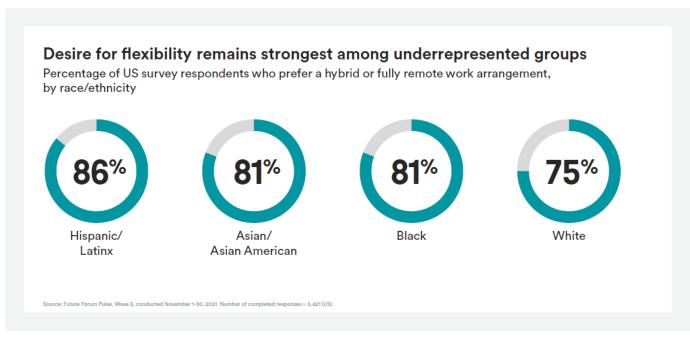
What are the top 3 benefits of working from home?



Notes: The sample includes respondents to the February 2022 SWAA who passed the attention check questions and worked from home at some point since the start of the COVID-19 pandemic. The SWAA samples US residents aged 20 to 64 who earned \$10,000 or more in 2019. **N** = **2,973**.

Offering Hybrid-WFH is also important for supporting diversity



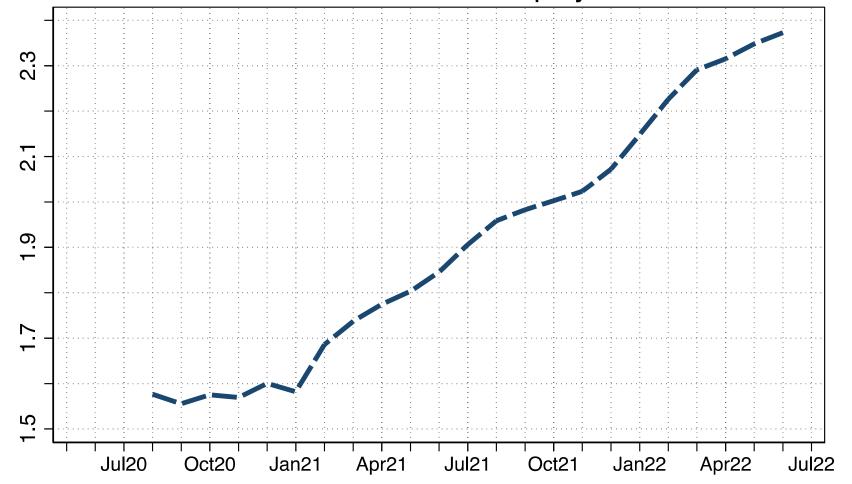


Source: Data from 10,000 US responses in through 2021, reweighted to match the US population. Details on https://wfhresearch.com/

Source: Survey of 10737 knowledge workers in US, Australia, France, Germany, Japan and the US conducted November 1-30, 2021. Details on https://futureforum.com/

So not surprisingly employers are increasing shifting to hybrid

Average Days per Week Working From Home After the Pandemic Ends: Employer Plans



Sample: Workers able to work from home

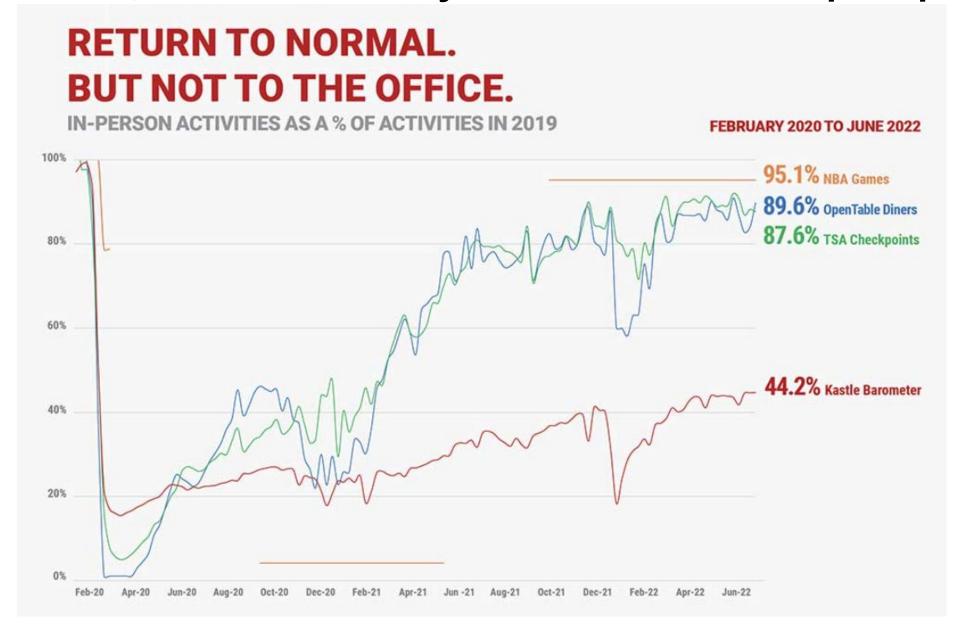
Responses to the question:

- After COVID, in 2022 and later, how often is your employer planning for you to work full days at home?

Sample: Data are from all SWAA waves, covering July 2020 to 2022. The February sample all respondents includes who reported their employer's plans for post-COVID WFH and who have work-from-home experience during the pandemic (thus able to work We from home). exclude respondents who report having no employer.

N = 54,231 (able to work from home)

Indeed, in the US we may now be close to the post-pandemic norm



The Big Challenge of Hybrid WFH for Management

Choice of:

- How many days
- Which days

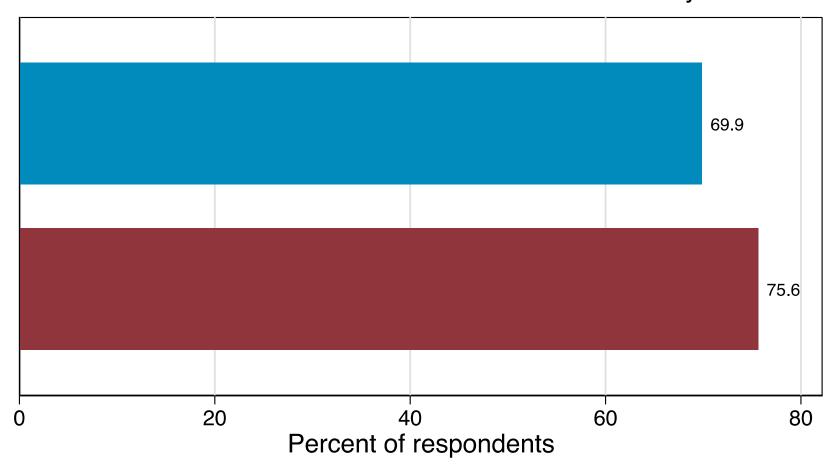


Choice vs coordination issue is tricky – employees want both!

Share of workers who would like to:

Choose their own WFH days

Coordinate with coworkers on worksite days



Responses to the questions:

- Which of the following would you prefer?
 - Being able to choose which days you work from home (if any)
 - Your employer sets a policy that determines who works from home on which days
- Would you like your co-workers to come into work on the same days as you?

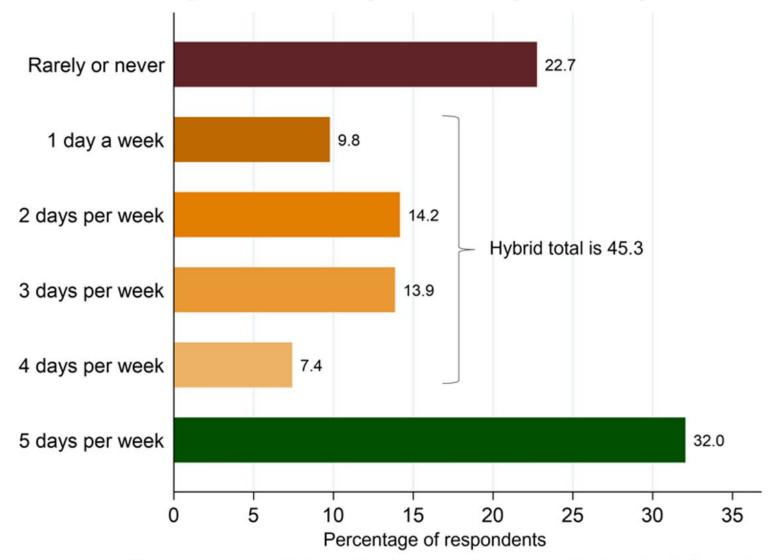
Notes: The sample for the blue bar includes employed respondents from the July and December 2021 SWAA waves who passed the attention check questions (for December respondents) and worked from home at some point since the start of the COVID-19 pandemic. The SWAA samples US residents aged 20 to 64 who earned \$10,000 or more in 2019. N = 3,949 (blue bar).

The sample for the red bar includes employed respondents from the February 2022 SWAA who reported their employer is planning them to work from home 1 or more days per week after the end of the pandemic.

N = 1810 (red bar).

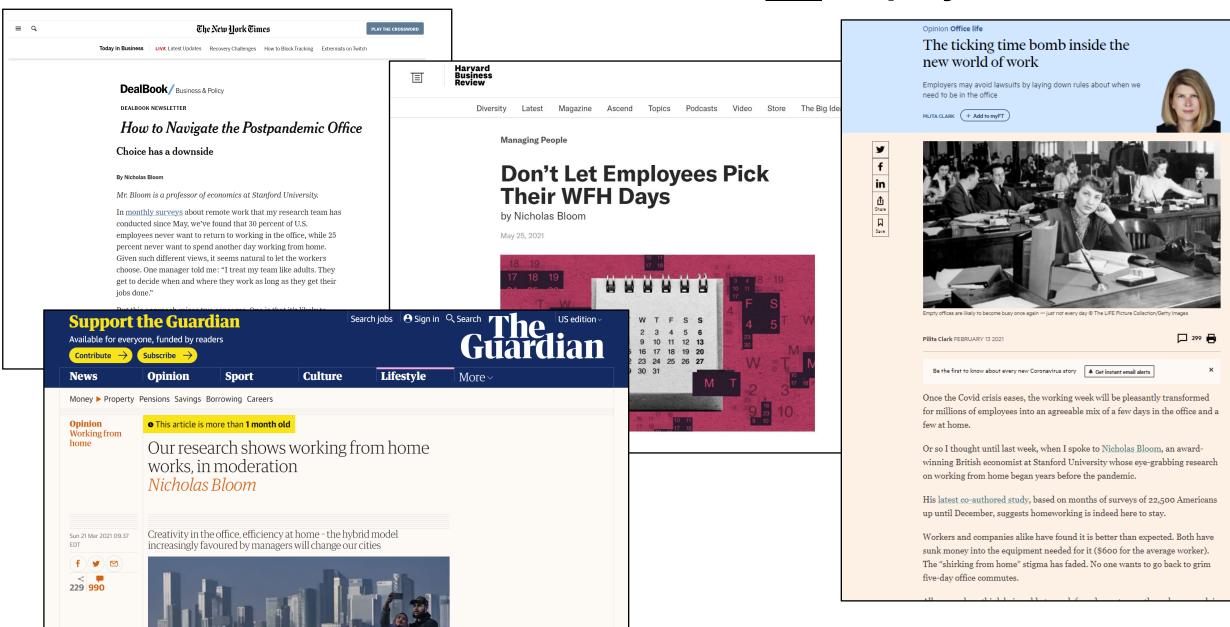
There is huge variation in what employees want, so let them choose?

"How often would you like to have paid work-days at home post-COVID?"



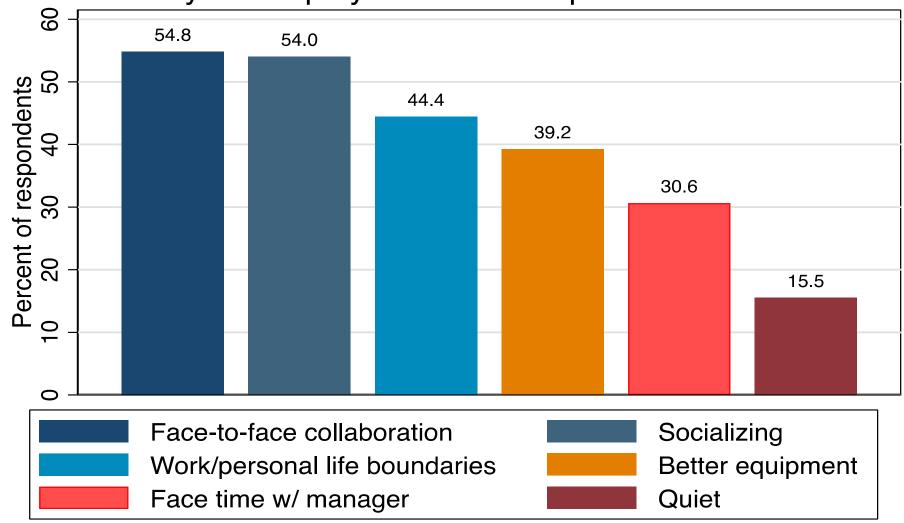
Source: Data from 55,179 respondees who can WFH, reweighted to match the US population. Details on https://wfhresearch.com/

I have become concerned with the risks of <u>full</u> employee choice



The reason is the key benefit of office is time is being with colleagues

What are the top 3 benefits of working on your employer's business premises?

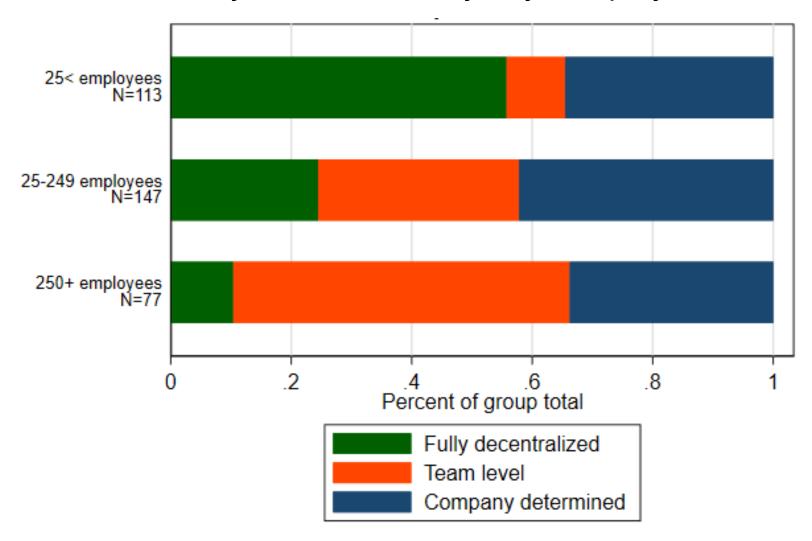


Employees commute for 1 hour to work to be with colleagues – not for the free bagels

Notes: The sample includes respondents to the February 2022 SWAA who passed the attention check questions and worked from home at some point since the start of the COVID-19 pandemic. The SWAA samples US residents aged 20 to 64 who earned \$10,000 or more in 2019. **N** = **2,973**.

Large US firms mostly planning team or company organized hybrid

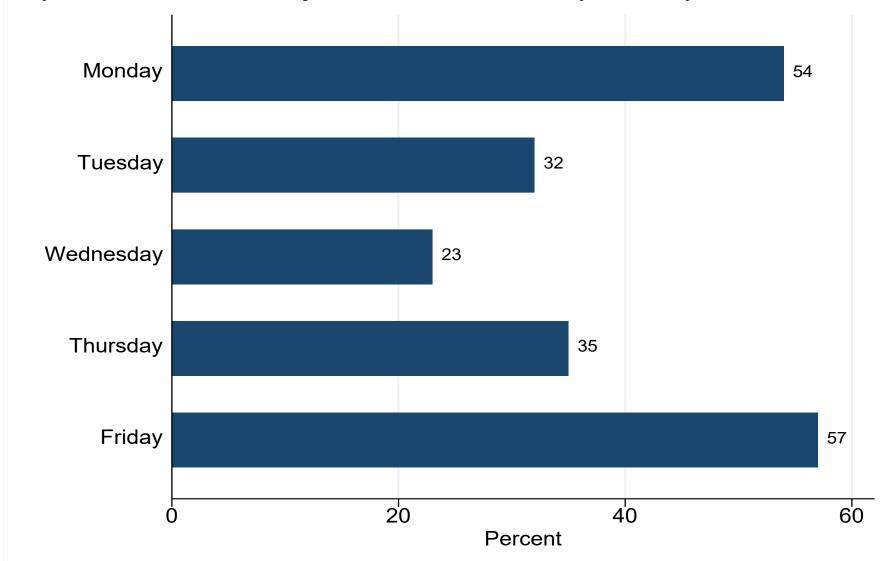
Qu: "Who decides which days and how many days employees work remotely?"



Source: Survey of Business Uncertainty conducted by the Federal Reserve Bank of Atlanta, Stanford University, and the University of Chicago Booth School of Business.

If you pick WFH days I would suggest Monday and Friday

"If you could WFH two days a week, which two days would you choose?"



Source: 3,604 US survey responses in 2021. https://wfhresearch.com/

How Leaders Can Make the Most of Hybrid WFH

- 1) Coordinate your team to come in on the same 2 or 3 days every week (e.g T and Th)
- 2) Promote in person meetings, events, coffee, training, lunches on those office days
- 3) Suggest cross-office zoom meetings and reading, writing, data etc on home days
- 4) For new hires (<1 year) add an extra day in the office

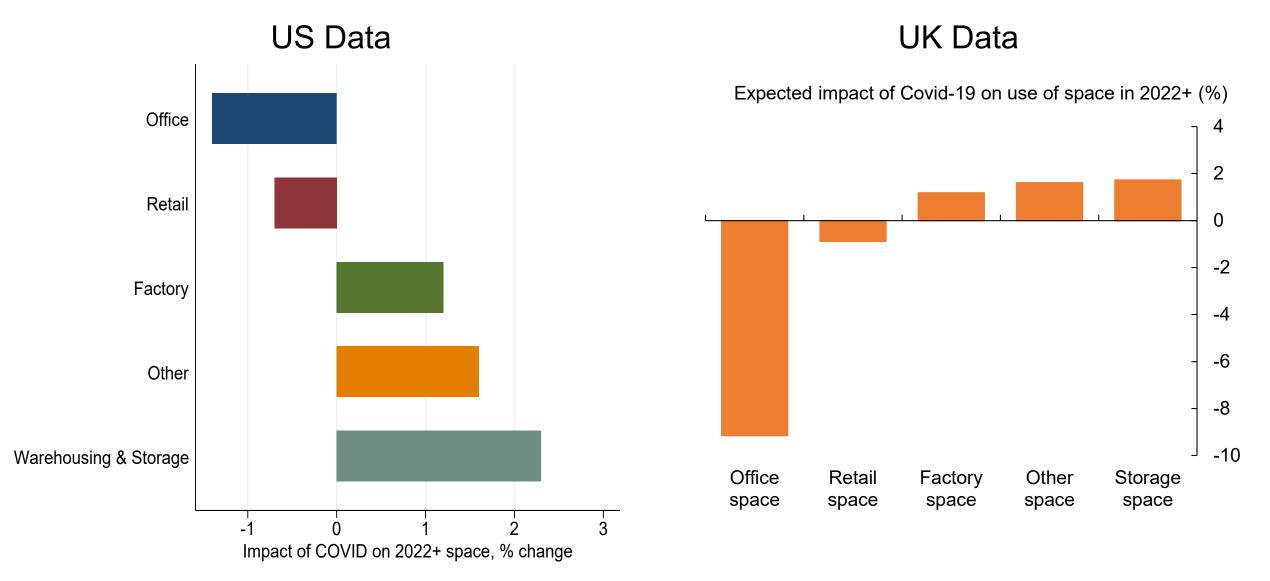
In short, set a culture and organize to achieve this of office time = group social time

Four Implications of hybrid WFH for the Office

- 1) Size
- 2) Location
- 3) Design
- 4) Retail



1) Firms are *currently* not planning to cut office space too much....



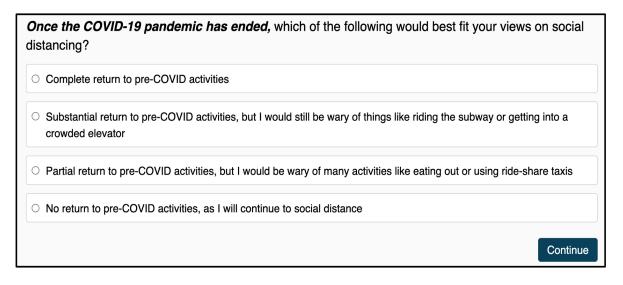
Source: 445 US firms in October 2021 from the Atlanta Fed, Chicago and Stanford Survey of Business Uncertainty, weighted to match the US Economy https://www.atlantafed.org/research/surveys/business-uncertainty

Source: 3,000 UK firms in September 2021 from the Bank of England, Nottingham and Stanford Decision Maker Panel, weighted to the UK Economy https://voxeu.org/article/covid-19-and-structural-change

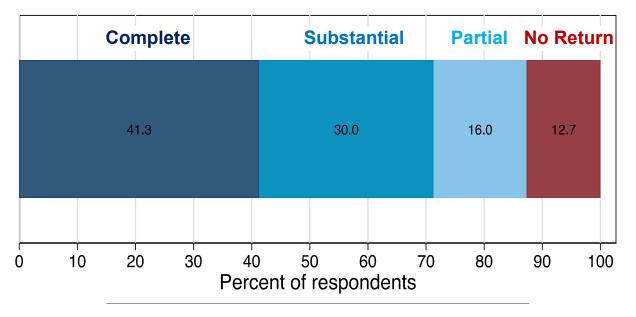
.....and give three reasons for holding office space Scheduling – firms want employees in on the same days. 2) Complexity – managers are struggling to deal with WFH now and see office scheduling as a step too far ("it is hard enough getting people back to work") 3) Density – there are continuing fears over social distancing (see next slide)

Density - long social distancing is a consideration for firms

We have been asking this question since May 2020



This is the latest breakdown from 2022



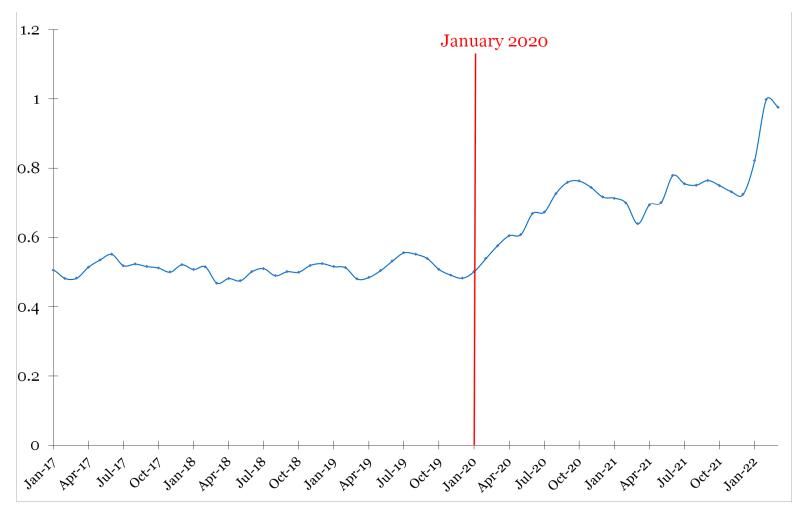
We have been calling this "Long social distancing"

Many people (maybe 10% to 20%) are nervous of density even post COVID.

This makes it hard for offices to have density, at desks, elevators, entrance ways, toilets, kitchens etc

Longer run technology will make it easier to reduce space

Share of New Patent Applications Supporting WFH

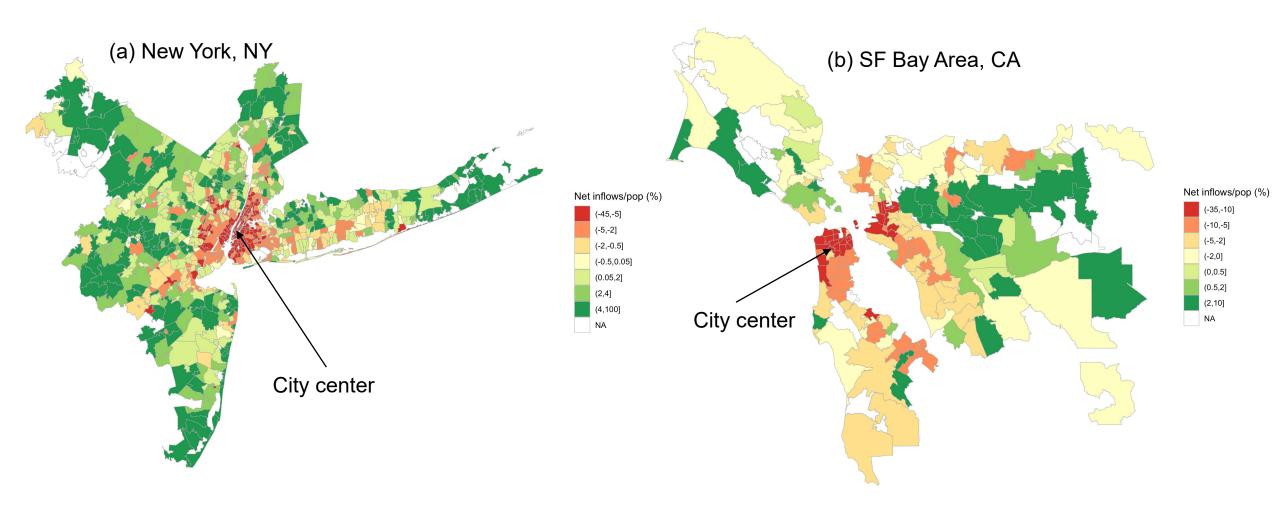


- New WFH technologies are being rapidly developed as the market for WFH products has increased 5x
- For example, scheduling software, better AV, virtual reality and holograms
- Should make WFH more appealing and space scheduling easier

Source: US Patent and Trademark Office new patent application files. Details in Bloom, Nicholas, Steven J. Davis, and Yulia Zhestkova. 2021. "COVID-19 Shifted Patent Applications toward Technologies that Support Working from Home."

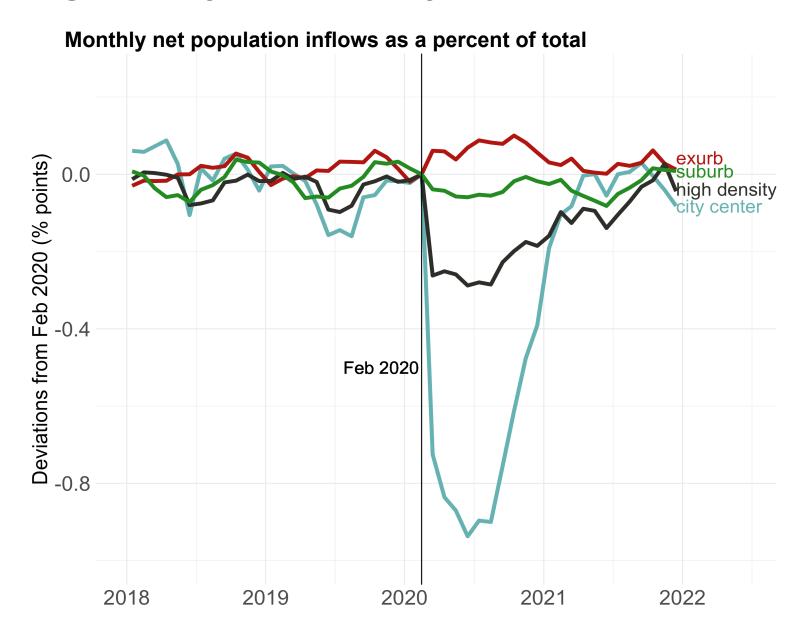
2) Location: some people have left city centers (e.g. NY and SF)

Cumulative net flows (moves in – moves out) from Feb 2020-Jul 2021 as a % of the zipcode population



Source: Arjun Ramani and Nicholas Bloom "The Donut Effect", NBER Working Paper 2021 using US Postal Service Change of Address Data https://nbloom.people.stanford.edu/sites/g/files/sbiybj4746/f/w28876.pdf

Long-run city centers may lose 5% to 10% of population from WFH



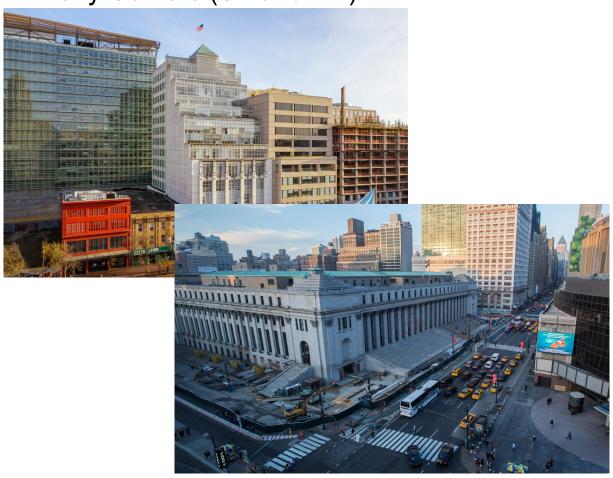
Source: Arjun Ramani and Nicholas Bloom "The Donut Effect", NBER Working Paper 2021 using US Postal Service Change of Address Data. Note the data has not had seasonal fluctuations removed. https://nbloom.people.stanford.edu/sites/g/files/sbiybj4746/f/w28876.pdf

Data until December 2021

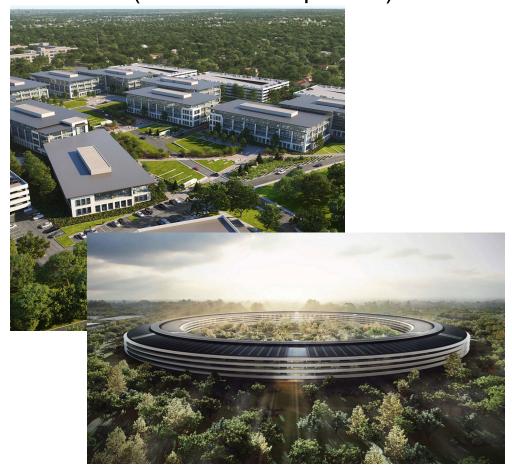
But offices are mostly not moving: firms are focusing on quality space

Under hybrid-WFH the idea is to have employees come in the same two or three days each week. To do this offices need to be convenient and high quality

City Centers (SF and NY)



Office Parks (Texas and Cupertino)

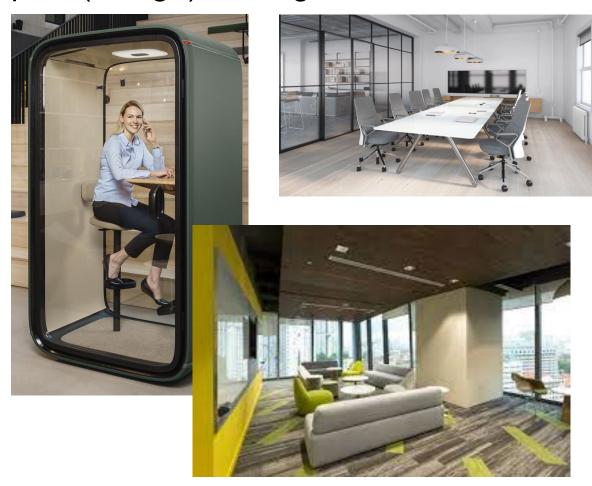


3) Design - firms say they are putting in zoom rooms, more meeting rooms and lounge seating, plus safety (air-filtration, cleaning etc)

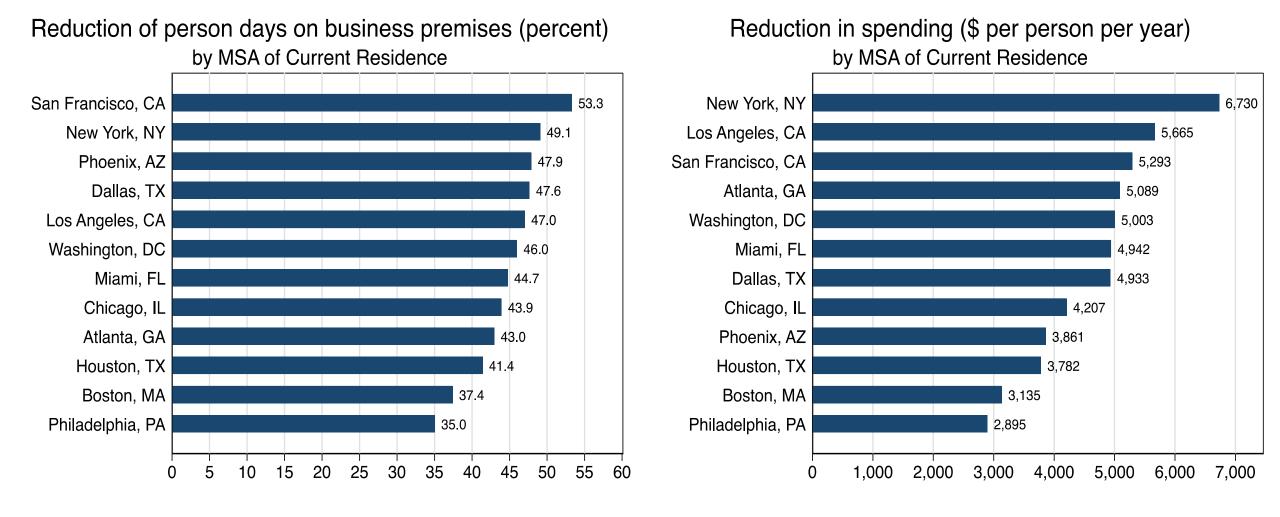
Individual office corridors are out



Cubicles, meeting rooms and open plan (lounge) seating are in

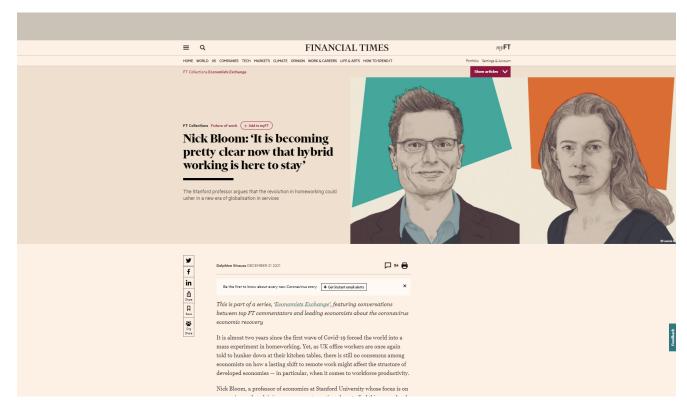


4) Less office workers in the city center, spending less



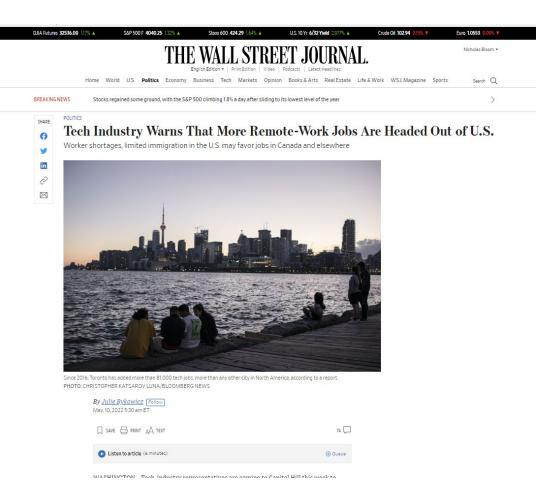
Source: January to March 2022 SWAA data for working plans (N=7,787) and July 2020 to January 2021 for pre-pandemic spending data (N=14,527). Only respondees who have WFH at some point during the pandemic. Reduction in spending estimated from proportional reduction in office days (vs baseline of 5% of WFH days pre-pandemic). Details in www.wfhresearch.com

Finally, WFH will increase outsourcing and offshoring

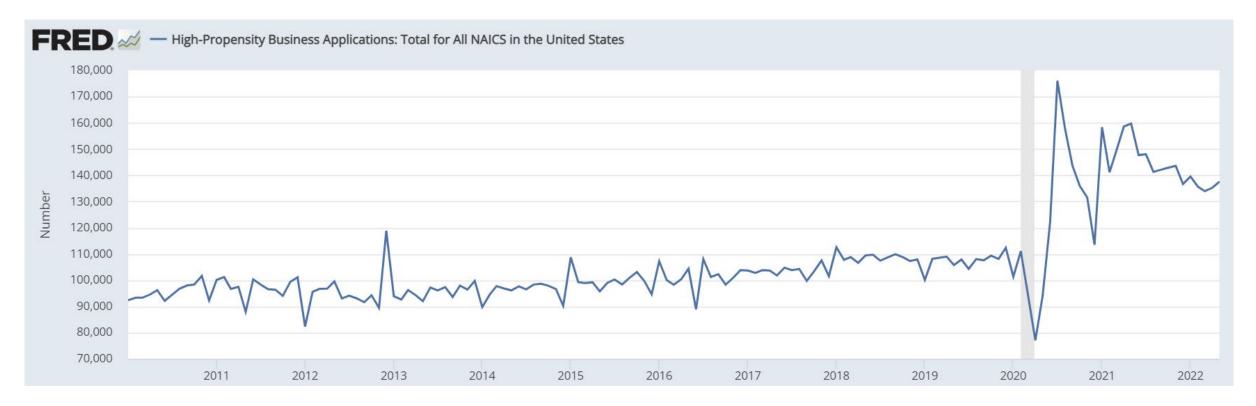


China joining the WTO in 2001 led to a surge of manufacturing globalization in 2000s & 2010s

The Pandemic spike in WFH will lead to a surge of service sector globalization in 2020s & 2030s



WFH also Offering Tremendous Opportunities for Start-Ups



Source: US Census Bureau. Business Applications (BA) that have a high-propensity of turning into businesses with payroll. The identification of high-propensity applications is based on the characteristics of applications revealed on the IRS Form SS-4 that are associated with a high rate of business formation. High-propensity applications include applications: (a) from a corporate entity, (b) that indicate they are hiring employees, purchasing a business or changing organizational type, (c) that provide a first wages-paid date (planned wages); or (d) that have a NAICS industry code in manufacturing (31-33), retail stores (44), health care (62), or restaurants/food service (72).

https://fred.stlouisfed.org/series/BAHBATOTALSAUS

As an example, two start-ups I am an equity advisor to



A B2B marketplace for residential workspaces.

We are an enterprise SaaS and proptech solution for the remote and hybrid workforce.

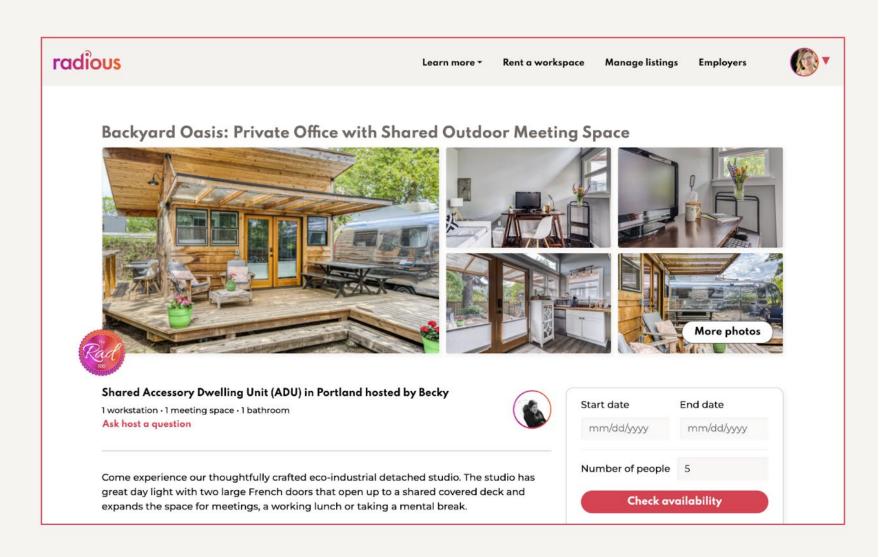
We offer close-to-home, collaborative spaces.

Work together in person;

And get some work-life separation;

With no/low commute;

In unique spaces, distributed across town.





A B2B SaaS model for on-demand workspaces

- 1. **Companies** prepay via subscription;
- 2. **Employees** book spaces for free;
- 3. **Homeowners** earn cash;
- 4. Radious keeps 25%.



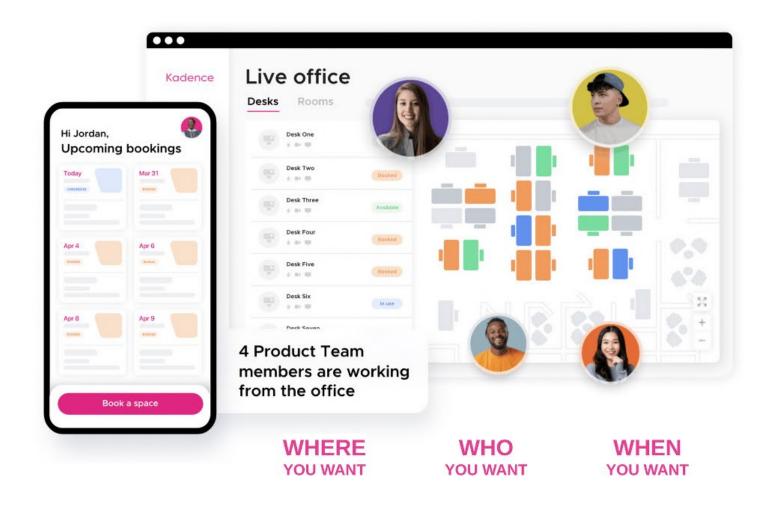
=Kadence

"Hybrid work represents the biggest shift to how we work in our generation - it will require a new operating model, spanning people, places, and processes."

- Satya Nadella, CEO - Microsoft

Supercharging employee's hybrid experience

Coordinate with colleagues, reserve flexible spaces, organize events and discover the perfect hybrid rhythm





Aaron Levie Box

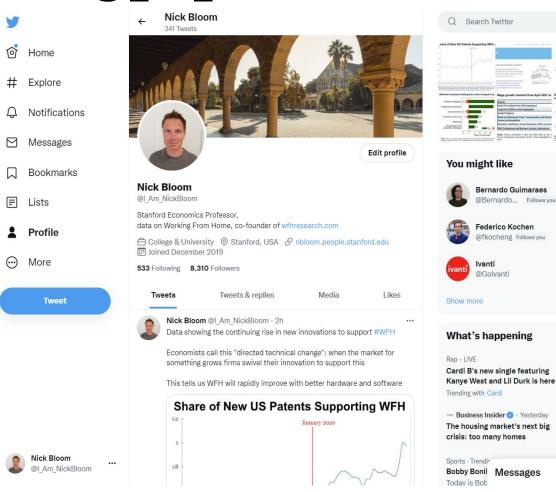
"I'm confident that quantum mechanics is far easier to understand than trying to figure out how teams will manage their schedules in a hybrid workplace."

Conclusions

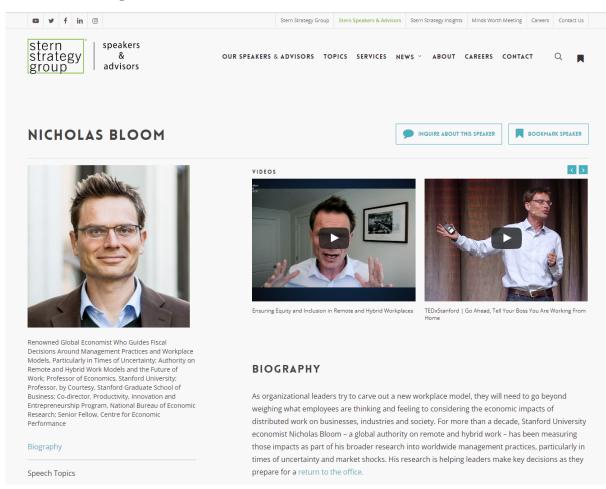
- WFH is here to stay typically 2.5 days a week for the average office worker
- Major benefits of well-organized hybrid to:
 - 1. Keep employees happy
 - 2. Increase productivity
 - 3. Support diversity
 - 4. Save on space costs
- WFH also yielding a bonanza of opportunities for new business lines and start-ups

Further information:

Twitter @I_am_nickbloom

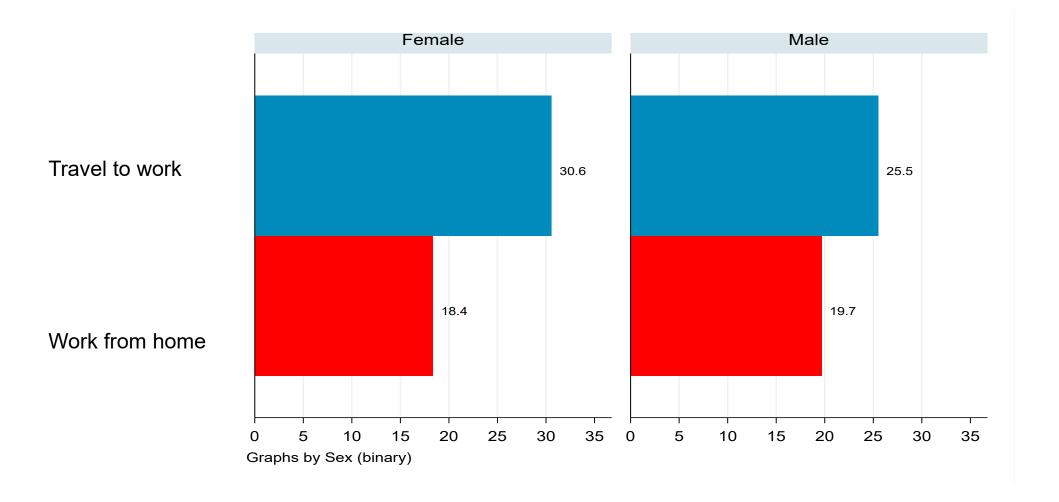


Stern Speakers

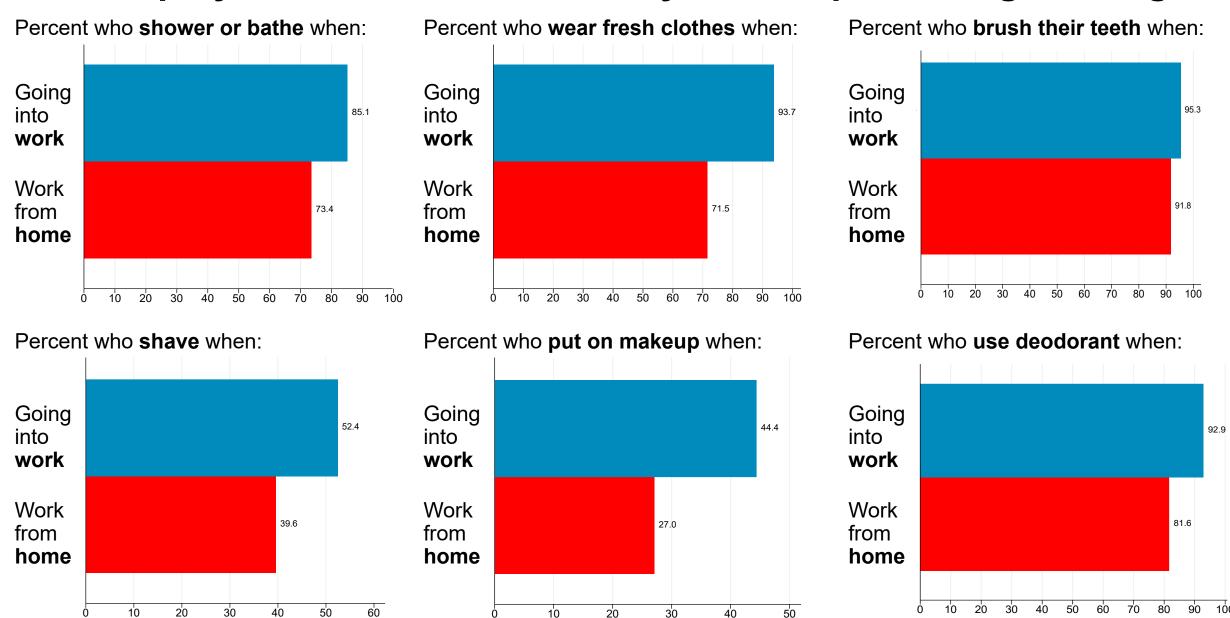


Back-Up

Personal grooming is 28 minutes average when commuting to work, 19 minutes for WFH (with this split out by genders below)



WFH employees save 9 minutes a day on less personal grooming



Source: Data from 3,997 respondees who can work from home in January 2022, reweighted to match the US population. Details on https://wfhresearch.com/