Working from Home: Will it Persist?

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03. December 2020
Poll Results

1. Before COVID (in 2019) how often did you work a full paid day from home:
   a. Never or rarely
   b. 1 to 2 days per week
   c. 3 to 4 days per week
   d. Full time (5+ days a week)

2. After COVID (2021+) how often will you work a full paid day from home:
   a. Never or rarely
   b. 1 to 2 days per week
   c. 3 to 4 days per week
   d. Full time (5+ days a week)

3. After COVID (2021+) your views on social distancing
   a. Complete return to pre-COVID activities
   b. Substantial return to pre-COVID activities, but wary of subway, elevator, ...
   c. Partial return to pre-COVID activities, but wary of eating out, taxis, ...
   d. No return to pre-COVID activities, as I will continue to social distance
Working from home: A QWERTY Problem

- Trade-offs
  - Less commute
  - Less small talk/info sharing
Working from home: A QWERTY Problem

- Trade-offs
  - Less commute
  - Less small talk/info sharing
Dynamic view: Trend accelerator or “QWERTY jump”?

- Economy = self-organizing dynamical system with local basins of attraction
- Path dependency

COVID shock as
- Trend accelerator
Dynamic view: Trend accelerator or “QWERTY jump”?

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Dynamic view: Trend accelerator or “QWERTY jump”?

- **Economy** = self-organizing dynamical system with local basins of attraction
- **Path dependency**

COVID shock as
- Trend accelerator
- QUERTY jump

*Policy should not prevent QWERTY jump!*
Impact on Traffic Patterns and Urbanization

- Redesigning traffic, physical transport & telecommuting
- Impact on climate change
  - 1-2 year window to make it stick
  - Elasticity to change will be high only for a while
- Impact on real estate prices
  - Higher prices in suburbia?
  - Higher office vacancy rate
  - Change in office design
- Impact on couples/marriages
  - Fewer long-distance relationships
  - Better gender equality?
  - More children?
Working from home – fraction

US: 23% of full-time workers are working from home because of covid

Share of total employed teleworking due to the pandemic (% by employment type)

- Full time
- Total
- Part time

Slok (2020)
Mobility index
<table>
<thead>
<tr>
<th>Sector</th>
<th>Effective potential (no productivity loss)</th>
<th>Theoretical maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance and insurance</td>
<td>76–86</td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td>68–78</td>
<td></td>
</tr>
<tr>
<td>Professional, scientific, and technical services</td>
<td>62–75</td>
<td></td>
</tr>
<tr>
<td>IT and telecommunications</td>
<td>58–69</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>33–69</td>
<td></td>
</tr>
<tr>
<td>Wholesale trade</td>
<td>41–52</td>
<td></td>
</tr>
<tr>
<td>Real estate</td>
<td>32–44</td>
<td></td>
</tr>
<tr>
<td>Government and administrative support</td>
<td>31–42</td>
<td></td>
</tr>
<tr>
<td>Utilities</td>
<td>31–37</td>
<td></td>
</tr>
<tr>
<td>Arts, entertainment, and recreation</td>
<td>19–32</td>
<td></td>
</tr>
<tr>
<td>Healthcare and social assistance</td>
<td>20–29</td>
<td></td>
</tr>
<tr>
<td>Retail trade</td>
<td>18–28</td>
<td></td>
</tr>
<tr>
<td>Mining</td>
<td>19–25</td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td>19–23</td>
<td></td>
</tr>
<tr>
<td>Transportation and warehousing</td>
<td>18–22</td>
<td></td>
</tr>
<tr>
<td>Construction</td>
<td>15–20</td>
<td></td>
</tr>
<tr>
<td>Accommodation and food services</td>
<td>8–9</td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>7–8</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>29–39</strong></td>
<td></td>
</tr>
</tbody>
</table>
While the majority of the workforce cannot work remotely, up to one quarter in advanced economies can do so three to five days a week.

**Workforce with remote-work potential by number of days per week, % of 2018 workforce**

Number of days per week of potential remote work without productivity loss (effective potential)¹

<table>
<thead>
<tr>
<th></th>
<th>Germany</th>
<th>UK</th>
<th>US</th>
<th>Japan</th>
<th>France</th>
<th>Spain</th>
<th>Mexico</th>
<th>China</th>
<th>India</th>
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</thead>
<tbody>
<tr>
<td>3 to 5 days</td>
<td>27</td>
<td>26</td>
<td>22</td>
<td>22</td>
<td>21</td>
<td>18</td>
<td>15</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>1 to 2 days</td>
<td>15</td>
<td>22</td>
<td>17</td>
<td>17</td>
<td>19</td>
<td>18</td>
<td>11</td>
<td>10</td>
<td>5</td>
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<tr>
<td>&lt;1 day</td>
<td>57</td>
<td>52</td>
<td>61</td>
<td>61</td>
<td>59</td>
<td>63</td>
<td>74</td>
<td>79</td>
<td>79</td>
</tr>
</tbody>
</table>

Example occupations:
- Financial managers, market research analysts, statisticians
- Civil engineers, physicists, psychologists
- Barbers, firefighters, aircraft cargo handlers

McKinsey (2020)
Working From Home: Will It Persist?

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Princeton Bendheim Markus Academy

Full Paper Link: https://nbloom.people.stanford.edu/sites/g/files/sbiybj4746/f/why_wfh_stick_0.pdf
Over the last 20 years news on WFH was rising by 5% a year

Source: Newsbank Access World News collection of approximately 2000 national and local daily US newspapers. Shows the % of articles mentioning “working from home” or “WFH”. Daily data plotted as a weekly average. Data until January 2020

Marissa Mayer at Yahoo recalls a working-from-home team to the office, Feb 22nd 2013

Mitch McConnell and Rand Paul working from home due to injuries
After COVID this increased by another 12000%.

March 10th = start of COVID lockdown

Before COVID only 2% of Americans WFH full time

During COVID this surged to over 40% of Americans WFH

Notes: Source Barrero, Bloom and Davis (2020). Shows responses to the question “Currently (this week) what is your work status?”. Data are from two surveys of US residents each aged 20 to 64 who earned more than $20,000 per year in 2019. The May and November surveys covered 2,500 respondees. Carried out by QuestionPro for Stanford University. Sample reweighted to match the US Current Population Survey.
This has left commercial buildings semi-deserted

Notes: Kastle security index of swipe card access relative to pre-COVID average

https://www.kastle.com
COVID WFH has generated various challenges
Someone said their husband zoomed from the crawl-space.
Little consensus on how WFH worked or if it will stick

“I don’t see any positives. Not being able to get together in person, particularly internationally, is a pure negative.”

– Reed Hastings, CEO of Netflix*
Little consensus on how WFH worked or if it will stick

“We have adapted to work-from-home unbelievably well… We’ve learned that we can work remote, and we can now hire and manage a company remotely.”

– Heyward Donigan, CEO of Rite Aid*
Survey and methodology

Current state of WFH

The future of WFH

Why WFH will Stick

Implications
Surveying 17,500 US Workers

Six waves so far (repeated cross sections) via commercial survey provider

- May: 2,500
- July: 2,500
- August: 5,000
- September: 2,500
- October: 2,500
- November: 2,500

Randomly sample US residents aged 20-64, earning $20K+ in 2019
- Re-weight to match 2010-2019 CPS by \{earnings \times industry \times state\} cell

Ask 40 questions on:
- Demographics
- Extent of WFH during COVID and desires/plans after COVID
- Experience, perspectives on WFH etc
6. **After COVID, in 2022 and later**, how often *is your employer planning* for you to work full days at home?

- Never
- About once or twice per month
- 1 day per week
- 2 days per week
- 3 days per week
- 4 days per week
- 5+ days per week
- My employer has not discussed this matter with me or announced a policy about it
- I have no employer

31. Compared to your expectations *before COVID (in 2019)* how has working from home turned out for you?

- Hugely better -- I am 20%+ more productive than I expected
- Substantially better -- I am to 10% to 19% more productive than I expected
- Better -- I am 1% to 9% more productive than I expected
- About the same
- Worse -- I am 1% to 9% less productive than I expected
- Substantially worse -- I am to 10% to 19% less productive than I expected
- Hugely worse -- I am 20%+ less productive than I expected
Survey and methodology

Current state of WFH

The future of WFH

Why WFH will Stick

Implications
Huge increase in WFH: about 10x above pre-COVID

Notes: Data are from four survey waves carried out by QuestionPro and IncQuery in May, July, August, September/October and November 2020 with 2,500 responses in the first two and the last, plus 5,000 in August. We re-weight raw responses to match the share of working age respondents in the 2010-2019 CPS in each \{industry x state x earnings\} cell.

*Pre-COVID estimate taken from the 2017-2018 American Time Use Survey
WFH during COVID higher in more educated

Notes: Data are from four survey waves carried out by QuestionPro and IncQuery in May, July, August, and September/October 2020 with 2,500 responses in the first two and the last, plus 5,000 in August. We reweight raw responses to match the share of working age respondents in the 2010-2019 CPS in each {industry x state x earnings} cell. Table by demographics.
WFH higher in “Blue” states early on, “Red” states later on

May 2020

- Working from home: Blue (Democrat) States 36.7%, Red (Republican) States 33.1%
- Not working: Blue (Democrat) States 32.1%, Red (Republican) States 33.1%
- Working on my business premises: Blue (Democrat) States 22.4%, Red (Republican) States 30.2%

November 2020

- Working from home: Blue (Democrat) States 35.0%, Red (Republican) States 32.8%
- Not working: Blue (Democrat) States 29.2%, Red (Republican) States 32.8%
- Working on my business premises: Blue (Democrat) States 37.8%, Red (Republican) States 32.3%

Notes: Source Barrero, Bloom and Davis (2020). Shows responses to the question “Currently (this week) what is your work status?”. Data are from six surveys of US residents each aged 20 to 64 who earned more than $20,000 per year in 2019, collected between May and November 2020. Carried out by QuestionPro for Stanford University. Sample reweighted to match the US Current Population Survey.
Survey and methodology

Current state of WFH

The future of WFH

Why WFH will Stick

Implications
Average employee wants about 2 days WFH a week

Source: Response to the questions: “In 2021+ (after COVID) how often would you like to have paid work days at home?”

Data from a survey of 2,500 US residents aged 20 to 64, earning more than $20,000 per year in 2019 carried out between May 21-25, by QuestionPro on behalf of Stanford University. Sample reweighted to match the US CPS.

*Sample: Respondents who report being able to WFH or did at some point during COVID
Firms are planning ≈2 days a week WFH for those who can

Notes: Data are from four survey waves carried out by QuestionPro and IncQuery in May, July, August, September/October and November 2020 with 2,500 responses in the first two and the last, plus 5,000 in August. We re-weight raw responses to match the share of working age respondents in the 2010-2019 CPS in each {industry x state x earnings} cell.

*Pre-COVID estimate taken from the 2017-2018 American Time Use Survey
“In all candor, it’s not like being together physically…. [But] I don’t believe that we’ll return to the way we were because we’ve found that there are some things that actually work really well virtually.”

– Tim Cook, CEO of Apple*
Survey and methodology

Current state of working from home

The future of WFH

Why WFH will Stick

Implications
1. WFH pre-COVID negative stigma (“shirking from home”)
1. Under COVID, WFH stigma has diminished

Before COVID-19, "working from home" was sometimes seen as "shirking from home."

Since the COVID pandemic began, how have perceptions about working from home (WFH) changed among people you know?

Notes: Data are from four survey waves carried out by QuestionPro and IncQuery in May, July, August, and September/October 2020 with 2,500 responses in the first two and the last, plus 5,000 in August. We re-weight raw responses to match the share of working age respondents in the 2010-2019 CPS in each {industry x state x earnings} cell.
2. Forced Experimentation: WFH exceeded expectations

Relative to expectations, how has WFH turned out?

- Hugely better, 20%+ 19.0%
- Substantially better -- 10 to 20 21.2%
- Better -- up to 10% 20.8%
- About the same 26.2%
- Worse - up to 10% 6.9%
- Substantially worse - 10 to 20% 3.1%
- Hugely worse, 20%+ 2.7%

Compared to your expectations before COVID (in 2019) how has working from home turned out for you?

Table by demographics

Notes: Data are from four survey waves carried out by QuestionPro and IncQuery in May, July, August, and September/October 2020 with 2,500 responses in the first two and the last, plus 5,000 in August. We re-weight raw responses to match the share of working age respondents in the 2010-2019 CPS in each {industry x state x earnings} cell.
3. Investments (mostly sunk) enabling WFH

Investment in WFH adds to about 1.2% of GDP

How many hours have you invested in learning how to work from home effectively (e.g., learning how to use video-conferencing software) and creating a suitable space to work? **Mean hours:** 13.0 (SE = 0.3)

How much money have you and your employer invested in equipment or infrastructure to help you work from home effectively -- computers, internet connection, furniture, etc.? **Mean:** $580 (SE = 18)
3. Investments (mostly sunk) enabling WFH
4. Residual Fear of Proximity to Other People

4. Residual Fear of Proximity to Other People

After a vaccine arrives, I would return to pre-COVID activities

If a COVID vaccine is discovered and made widely available, which of the following would best fit your views on social distancing?

Notes: Data are from four survey waves carried out by QuestionPro and IncQuery in May, July, August, and September/October 2020 with 2,500 responses in the first two and the last, plus 5,000 in August. We re-weight raw responses to match the share of working age respondents in the 2010-2019 CPS in each {industry x state x earnings} cell.
5. Re-Directed Technical Change

One example – patenting of WFH technologies rapidly rising

Survey and methodology

Current state of working from home

The future of WFH

Why WFH will Stick

Implications
(A) Uneven effects across workers: WFH is a valuable perk

Value of the option to WFH 2 - 3 days/wk, % of current pay?

- Incredibly positive, >30% raise: 10.0%
- Strongly positive, 15-25% raise: 13.0%
- Positive, <15% raise: 41.0%
- Neutral: 27.3%
- Negative, <15% pay cut: 5.6%
- Strongly negative, 15-25% pay cut: 1.0%
- Incredibly negative, >35% pay cut: 2.0%

Matches 8% matches Mas and Pallais (2017, AER)

Notes: Response to a two-part question.

Part 1: “After COVID, in 2022 and later, how would you feel about working from home 2 or 3 days a week?”
- Positive: I would view it as a benefit or extra pay
- Neutral
- Negative: I would view it as a cost or a pay cut

Part 2: “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?”

Data are from four survey waves carried out by QuestionPro and IncQuery in May, July, August, and September/October 2020 with 2,500 responses in the first two and the last, plus 5,000 in August. We re-weight raw responses to match the share of working age respondents in the 2010-2019 CPS in each {industry x state x earnings} cell.
(A) Uneven effects: higher earners will get to WFH more

Notes: Data are from four survey waves carried out by QuestionPro and IncQuery in May, July, August, and September/October 2020 with 2,500 responses in the first two and the last, plus 5,000 in August. We re-weight raw responses to match the share of working age respondents in the 2010-2019 CPS in each \{industry x state x earnings\} cell.

Note: Marker size is proportional to the number of respondents per income level.
(B) Cities: WFH highest amongst employees from city offices

Source: Data from a survey of 2,500 US residents aged 20 to 64, earning more than $20,000 per year in 2019 carried out between May 21-25 2020, by QuestionPro on behalf of Stanford University. Sample reweighted to match the US CPS.
(B) Cities: for example, 10% spending drop in Manhattan

- Manhattan workers plan to WFH **30.7%** working day post-COVID

- Pre-COVID average weekly expenditure near work by these workers **$283**

- Pre-COVID **2.3M** people commuted into Manhattan for work per day

- Implies **$10Bn** less spending per year

- Fall of about **10%** of total spending

Similar calculation for San Francisco
(B) Cities – office rents also falling in high-rise buildings

Survey evidence shows post-COVID office space demand about flat*

But shift from Skyscrapers to Office Parks

* [https://www.frbatlanta.org/blogs/macroblog](https://www.frbatlanta.org/blogs/macroblog)
(B) The donut effect: bad for city centers good for suburbs

• Looks like employees WFH 2 or 3 days a week still want to live *near* city centers

• Generating a Donut-Effect – City Centers struggling but suburbs booming
Productivity – Bloom, Liang, Roberts and Ying (2014) ran a WFH RCT on a Chinese multinational finding a 13% rise in productivity.

Note: Data from 17,806 daily observations on 249 treatment and control employees from January 4th 2010 until August 14th 2011. Number of phone calls made for order-takers (the group for whom number of phone calls taken is a performance metric) calculated separately for treatment (even-numbered birthdays) and control (odd-numbered birthdays). Once employees quit they are dropped from the data. Source: “Does Working from Home Work? Evidence From a Chinese Experiment”, Quarterly Journal of Economics, November 2014.
How does your efficiency working from home *during the COVID-19 pandemic* compare to your efficiency working on business premises *before the pandemic*?
(D) Time – WFH saves Americans about 60 million hours a day

During the COVID-19 pandemic, while you have been working from home, how are you now spending the time you have saved by not commuting?

Please assign a percentage to each activity (the total should add to 100%).

Notes: Data are from four survey waves carried out by QuestionPro and IncQuery in May, July, August, and September/October 2020 with 2,500 responses in the first two and the last, plus 5,000 in August. We re-weight raw responses to match the share of working age respondents in the 2010-2019 CPS in each {industry x state x earnings} cell.
Conclusion

WFH days 5% pre-COVID, 60% during COVID, predicting 25% post-COVID

Mechanisms behind a persistent WFH shift
1. Diminished stigma
2. Positive productivity experiences
3. Investments enabling WFH
4. Lingering concerns over density
5. Re-directed innovation

Implications for
• Rising inequality
• Cheaper Cities
• Higher Productivity
• Freed Commute Time