

# Working From Home Around the World

Cevat Giray Aksoy (European Bank for Reconstruction and Development)

Jose Maria Barrero (Instituto Tecnológico Autónomo de Mexico)

Nicholas Bloom (Stanford University)

Steven J. Davis (University of Chicago and Hoover Institution)

Mathias Dolls (ifo Institute)

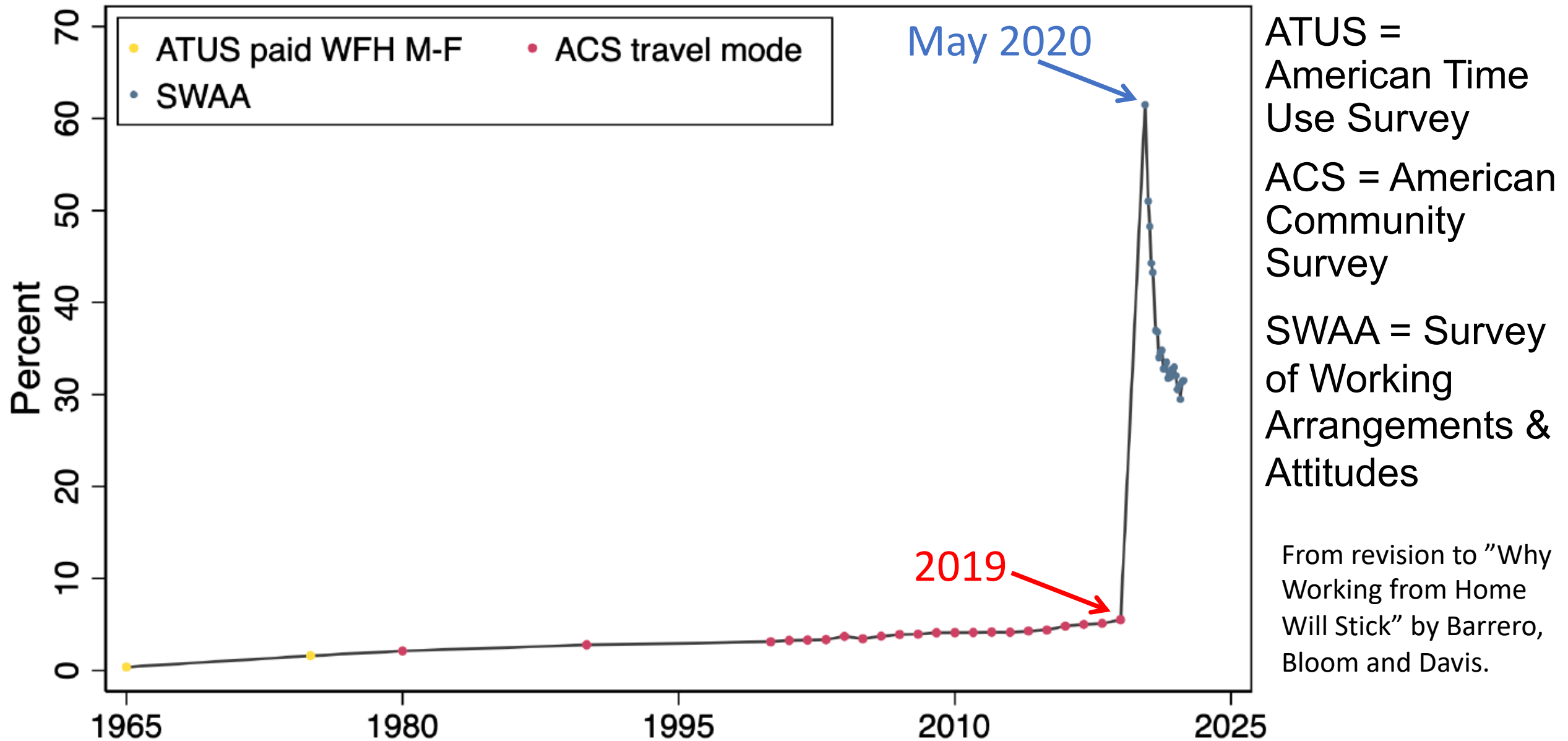
Pablo Zarate (Universidad de San Andrés and Princeton University)

Brookings Papers on Economic Activity

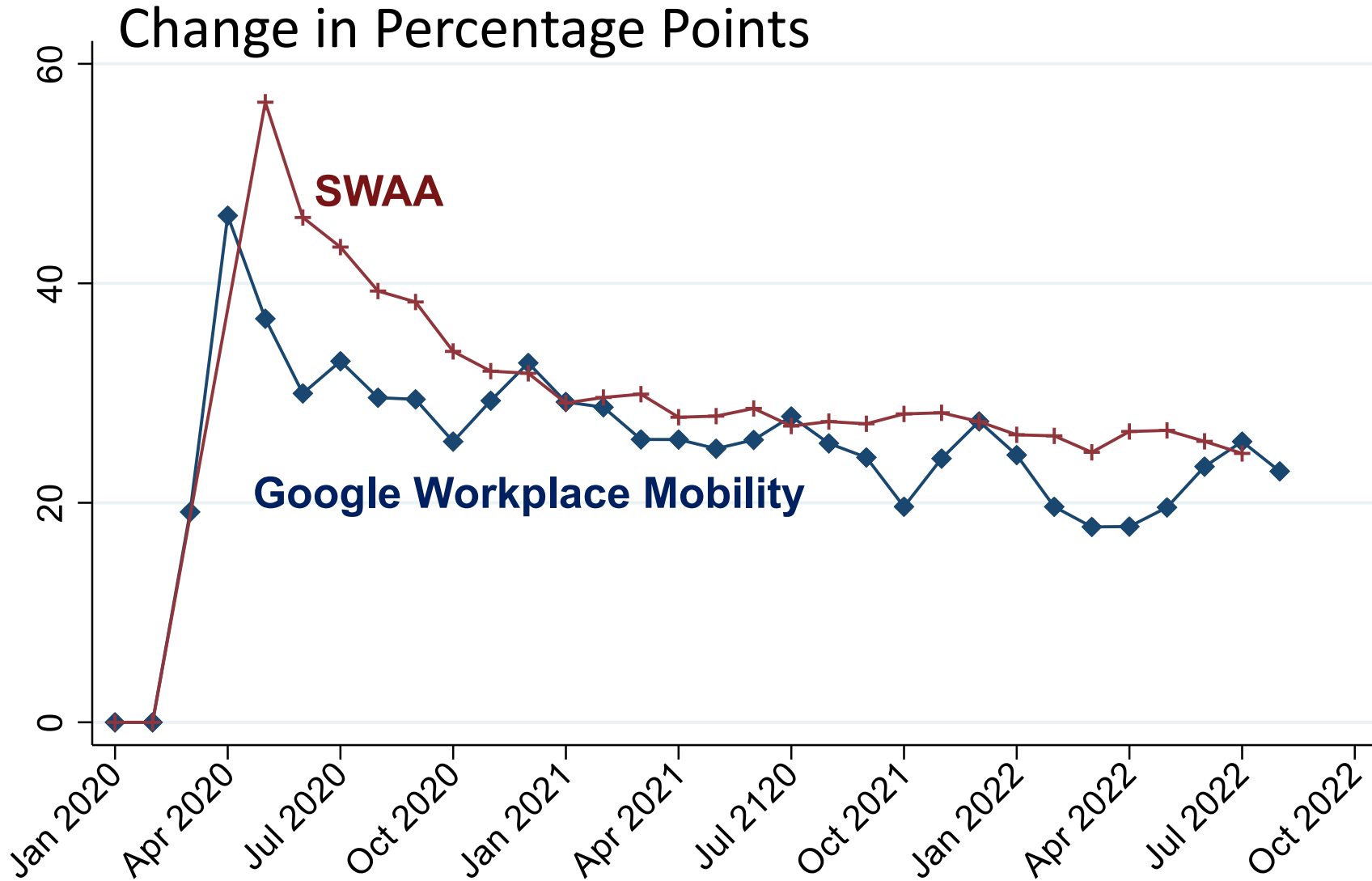
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# Share of Full Paid Workdays Performed at Home in the United States, Workers 20-64, 1965 to July 2022



# Change in Full Paid WFH Days Since Pandemic's Onset Compared to Google Workplace Mobility Drop



Red = Change in WFH Share computed as SWAA measure of WFH Days as percent of all workdays minus 5 pts

Blue = Percentage point drop in Google Workplace Mobility Index from before the pandemic

From revision to "Why Working from Home Will Stick" by Barrero, Bloom and Davis.

# Prompting Some Questions

1. What explains the pandemic's role as catalyst for a lasting uptake in WFH?
2. How have societal experiences during the pandemic (deaths, lockdowns) influenced future WFH levels?
3. What does the big shift to WFH portend for workers?
4. How might the big shift to remote work affect the pace of innovation and the fortunes of cities?

# Global Survey of Working Arrangements (G-SWA)

**Target Population:** Full-time employees, aged 20-59, who finished primary school in 27 countries around the world.

**Survey Design:** We design the G-SWA instrument, adapting many questions from the US-focused SWAA developed by Barrero, Bloom and Davis (2021).

**Implementation:** [Respondi](#), a professional survey firm, fields the G-SWA as an online survey in cooperation with its external partners. Two waves:

- Wave 1: July-August 2021, 15 countries, N= 12,229 (after drops)
- Wave 2: January-February 2022, 25 countries, N=23,849 (after drops)

**Quality Control:** We drop “speeders,” defined as the bottom 5% of the completion-time distribution in each country. In addition, we drop the roughly 15% of respondents who fail an attention-check question.

# More on the G-SWA and How We Use It

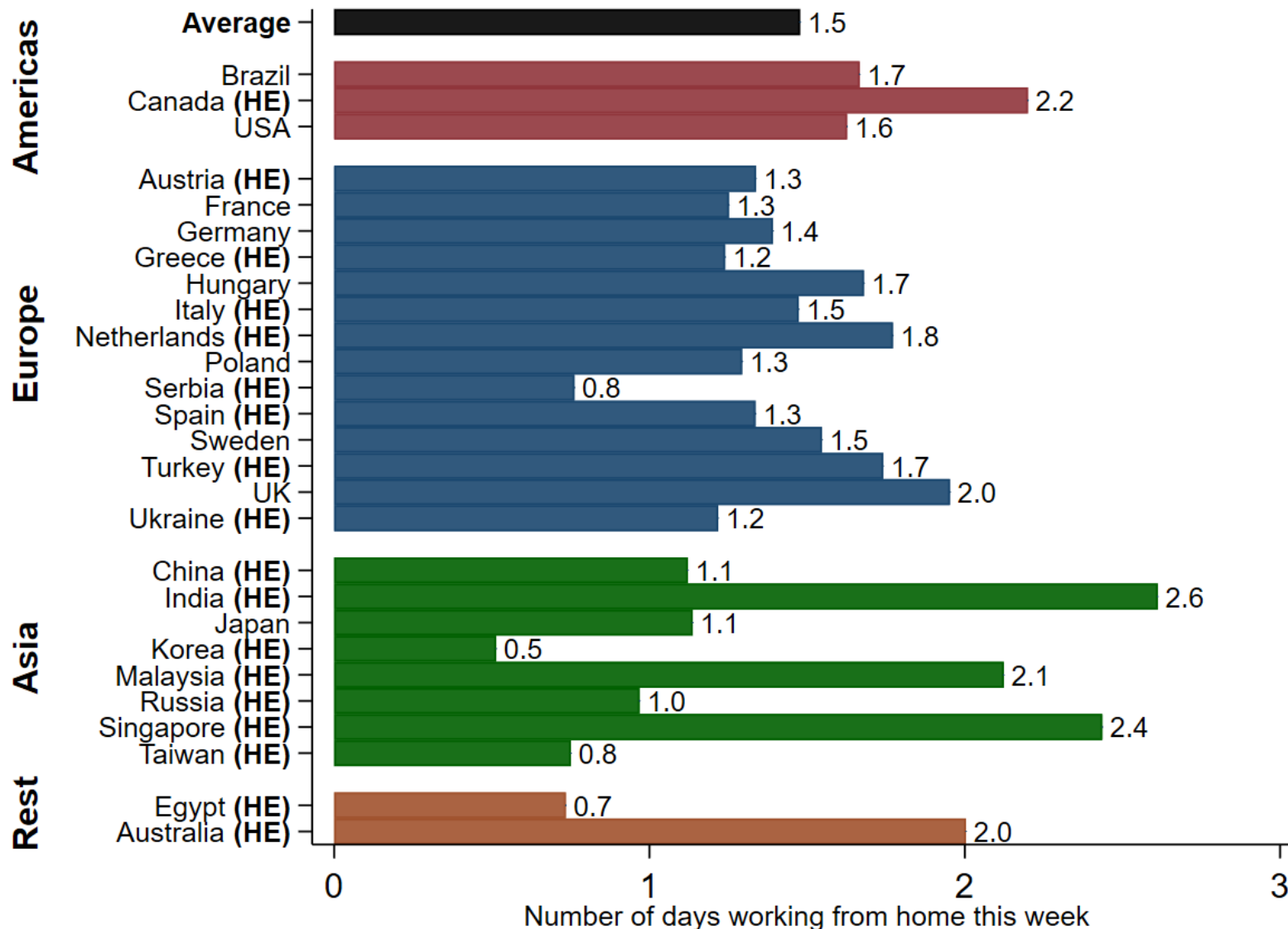
**Median Response Times:** 7.3 to 9.5 minutes, after drops.

**Representativeness:** (1) Respondents take the survey on a computer, smart-phone, iPad or like device, so we miss persons who don't use such devices. (2) ***Our samples have too few less-educated persons, more so in less-developed economies.*** We do not try to create representative samples by country. Instead, we estimate conditional mean outcomes at the country level in making our ...

**Cross-Country Comparisons:** We use coefficients on country-level dummies in OLS regressions, treating the raw U.S. mean as the baseline. These regressions control for age (20-29, 30-39, 40-49, 50-59), sex, education (Secondary, Tertiary, Graduate), 18 industry sectors, and survey wave (or time period).

# Working from Home Is Now a Global Phenomenon among Well-Educated Workers

Paid Full Days Working from Home in the Survey Week, Country-Level Conditional Means

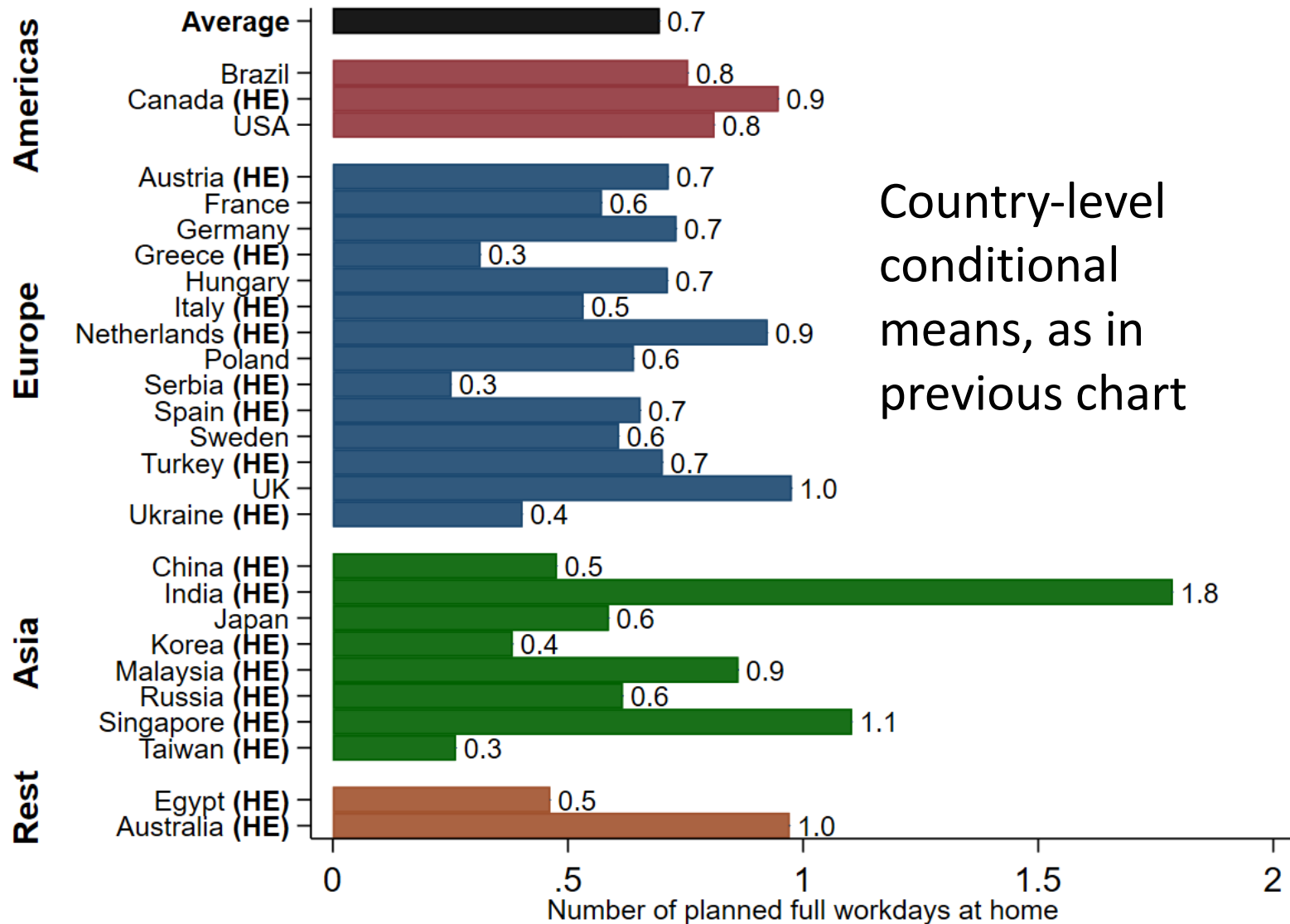


**Question:** “How many full paid days are you working from home this week?”

The chart reflects country dummies in OLS regressions that control for age (20-29, 30-39, 40-49, 50-59), sex, education (Secondary, Tertiary, Graduate), 18 industry sectors and survey wave, treating the raw U.S. mean as the baseline value. We fit the regression to data for 33,091 G-SWA respondents surveyed in mid 2021 and early 2022. The “Average” value is the simple mean of the country-level conditional means.

# Planned Levels of Working from Home after the Pandemic

Average number of WFH days per week that employers plan



**Question:** “After COVID, in 2022 and later, how often is your employer planning for you to work full days at home?”

## Response Options:

- Never
- About once or twice a 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



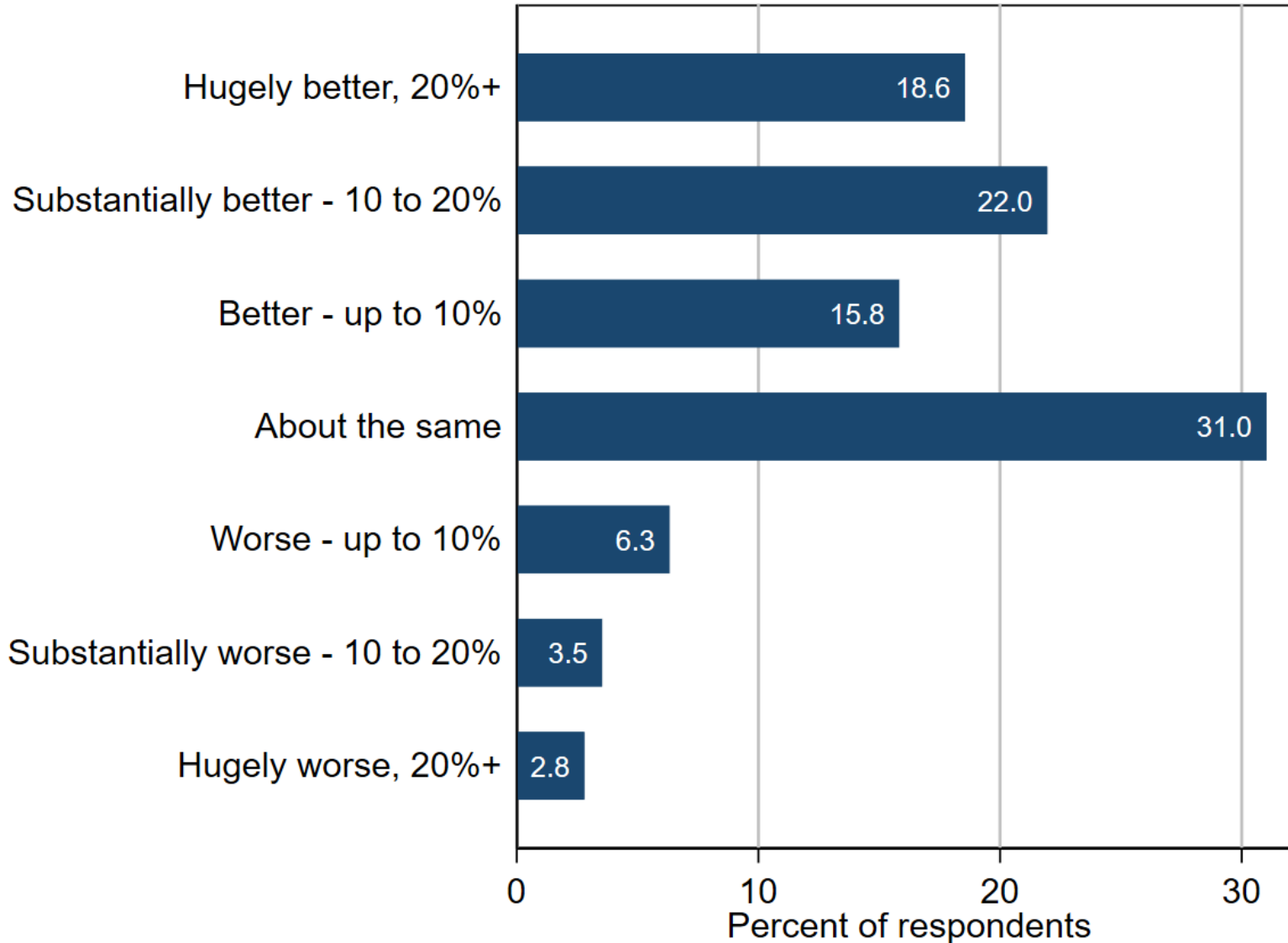
# How the pandemic catalyzed a lasting shift to WFH

1. **Mass experimentation → learning and revision of priors → re-optimization of working arrangements**
2. Investments in time, equipment, systems, processes, and management practices that enable WFH
3. Attitudinal shifts:
  - **Stigma around WFH has plummeted**
  - Greater salience of infection risks lead some to prefer WFH
4. A surge in innovation that supports WFH
5. **Stricter, longer lockdowns during the pandemic → higher levels of planned WFH after the pandemic**

The rise of the internet, emergence of the cloud, and advances in two-way video technologies before the pandemic created the conditions that made possible an abrupt big shift to remote work.

# The Distribution of WFH Productivity Relative to Expectations

WFH productivity, relative to expectations



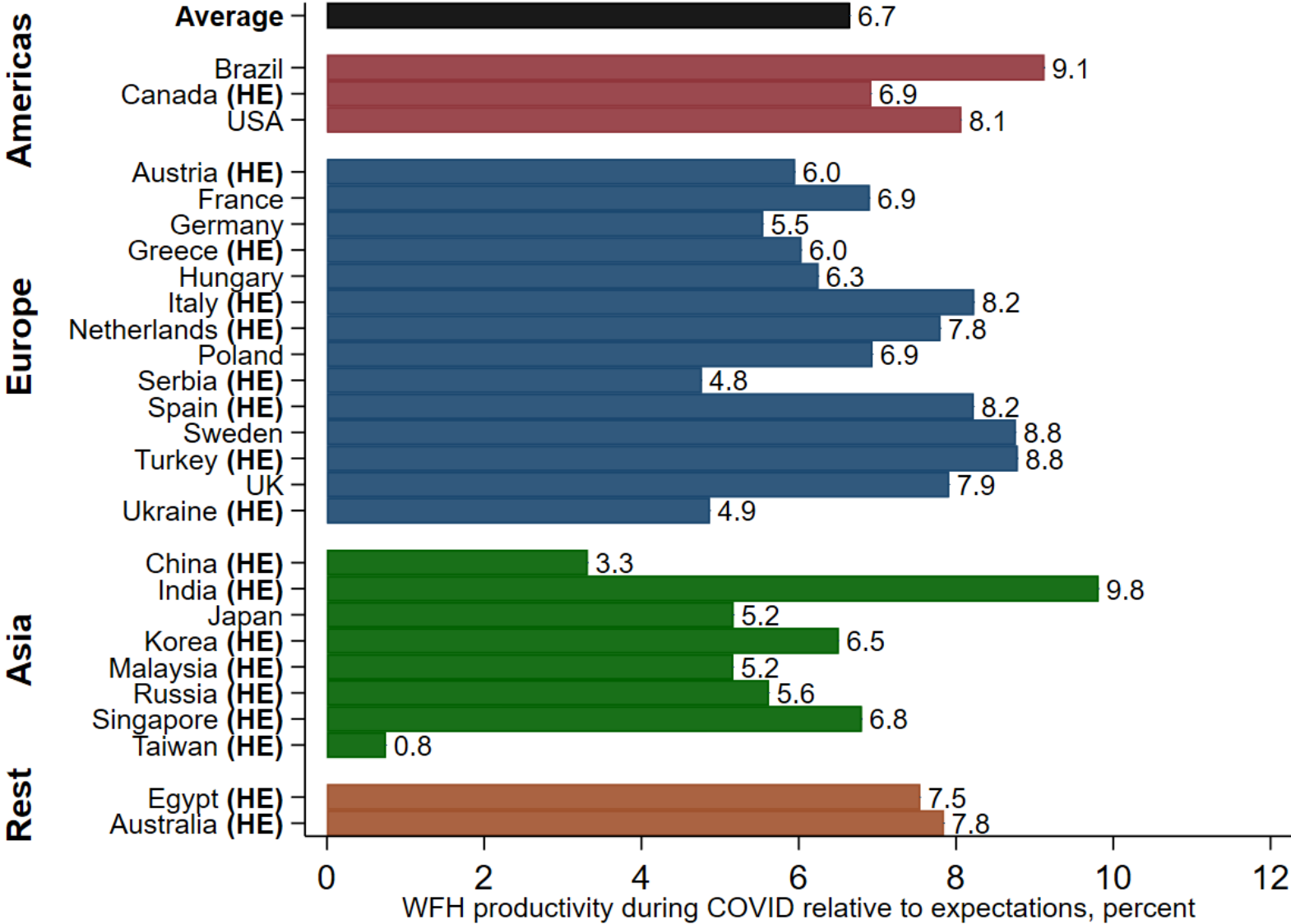
**Question:** Compared to your expectations **before COVID (in 2019)** how has working from home turned out for you?

- 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

Sample of 19,027 G-SWA respondents in mid 2021 and early 2022 who worked mainly from home at some point during the COVID-19 pandemic.

# WFH Productivity Surprises Are Positive, on Average, in All Countries

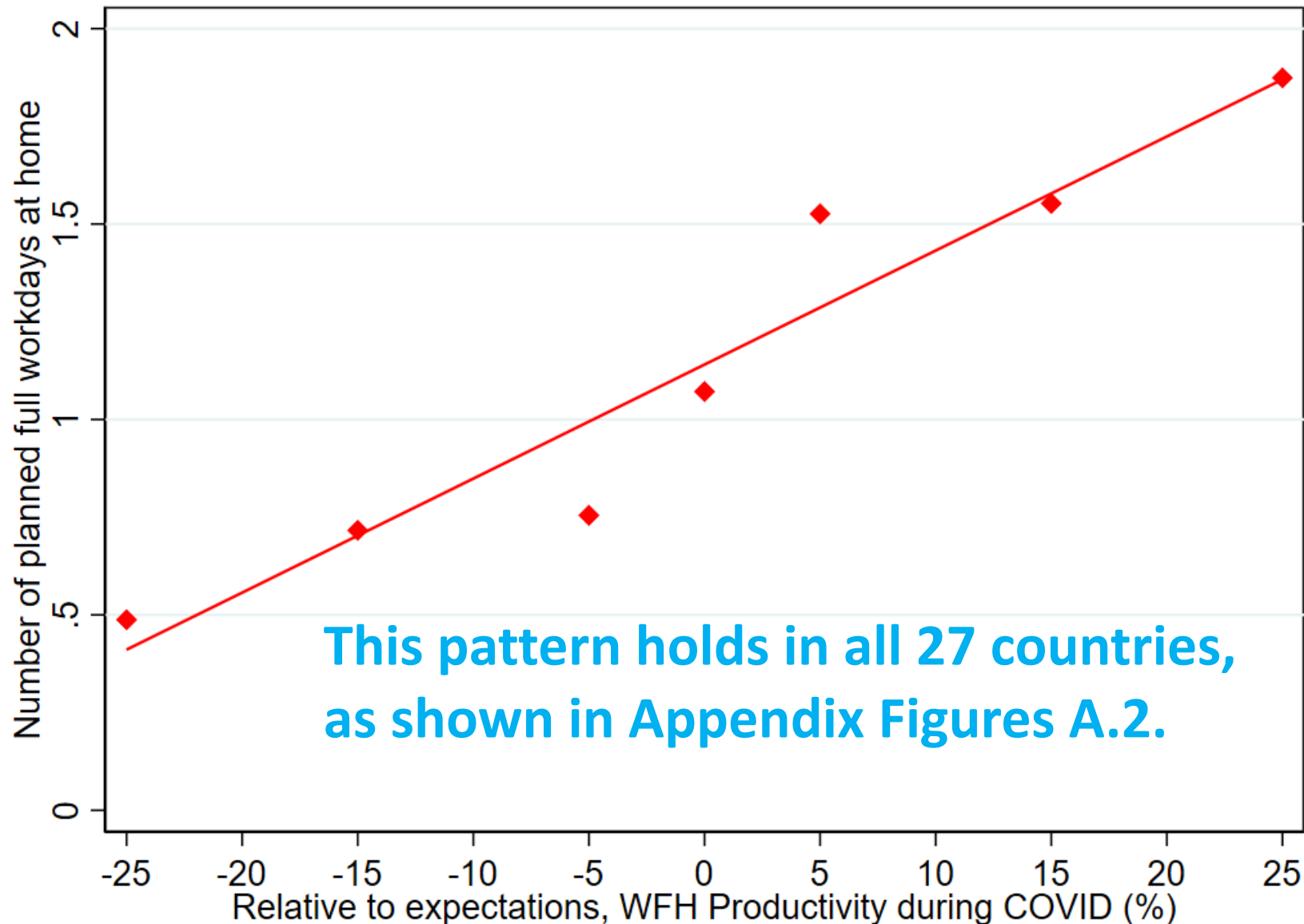
WFH productivity, relative to expectations



**Question:** “Compared to your expectations before COVID how has working from home turned out for you?”

Country-level values are conditional means. The “Average” value is the simple mean of the country-level conditional means.

# Planned levels of WFH after the pandemic rise with WFH productivity surprises during the pandemic



## Questions:

-- Compared to your expectations **before COVID**, how has working from home turned out for you?

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

**Table 2. Current and planned levels of WFH rise with the cumulative stringency of government-mandated lockdowns**

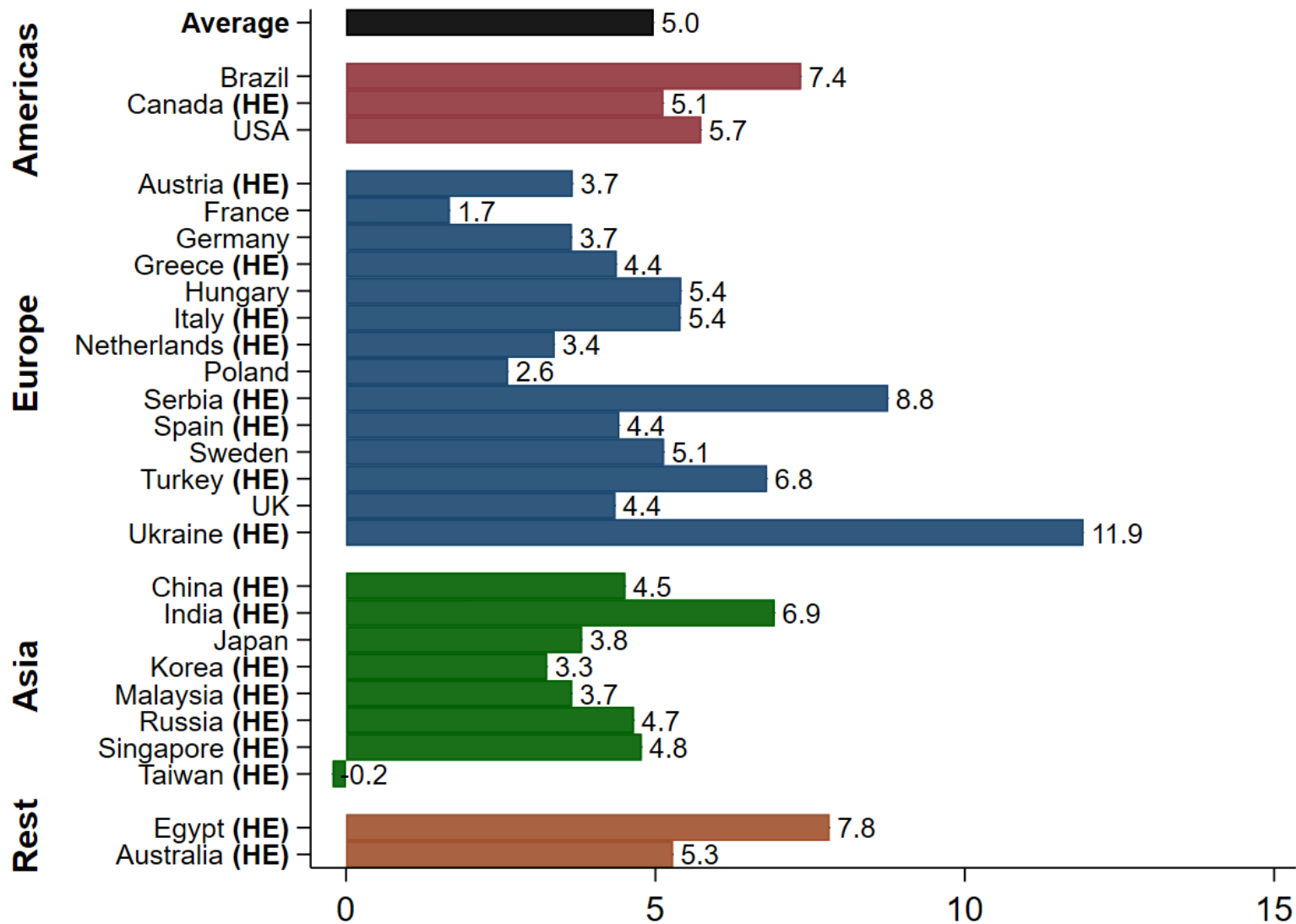
<b>Outcome →</b>	(1) Current WFH days per week	(2) Desired WFH days per Week	(3) Planned WFH days per Week	(4) Amenity value of option to WFH 2-3 days a week
Cumulative Lockdown Stringency	0.204** (0.078)	0.085 (0.057)	0.136*** (0.047)	0.363 (0.418)
Cumulative COVID-19 deaths per capita	-0.005 (0.086)	0.044 (0.059)	-0.039 (0.056)	0.263 (0.299)
Observations	33091	36078	34875	36078
$R^2$	0.098	0.069	0.086	0.057

Column (3): Two standard deviation increase in CLS is associated with 0.27 more planned WFH days after the pandemic, which equals 38% of the average planned WFH days.

**Note:** All regressions control for log real GDP per capita, gender, 4 age groups, 3 education groups, 18 industry sectors, and wave effects. COVID deaths and lockdown stringency measures are standardized to zero mean and unit standard deviation across countries. Errors clustered at the country level.

# Willingness to Pay for the Option to Work from Home

Average amenity value of the option to WFH 2-3 days per week, as a percent of pay



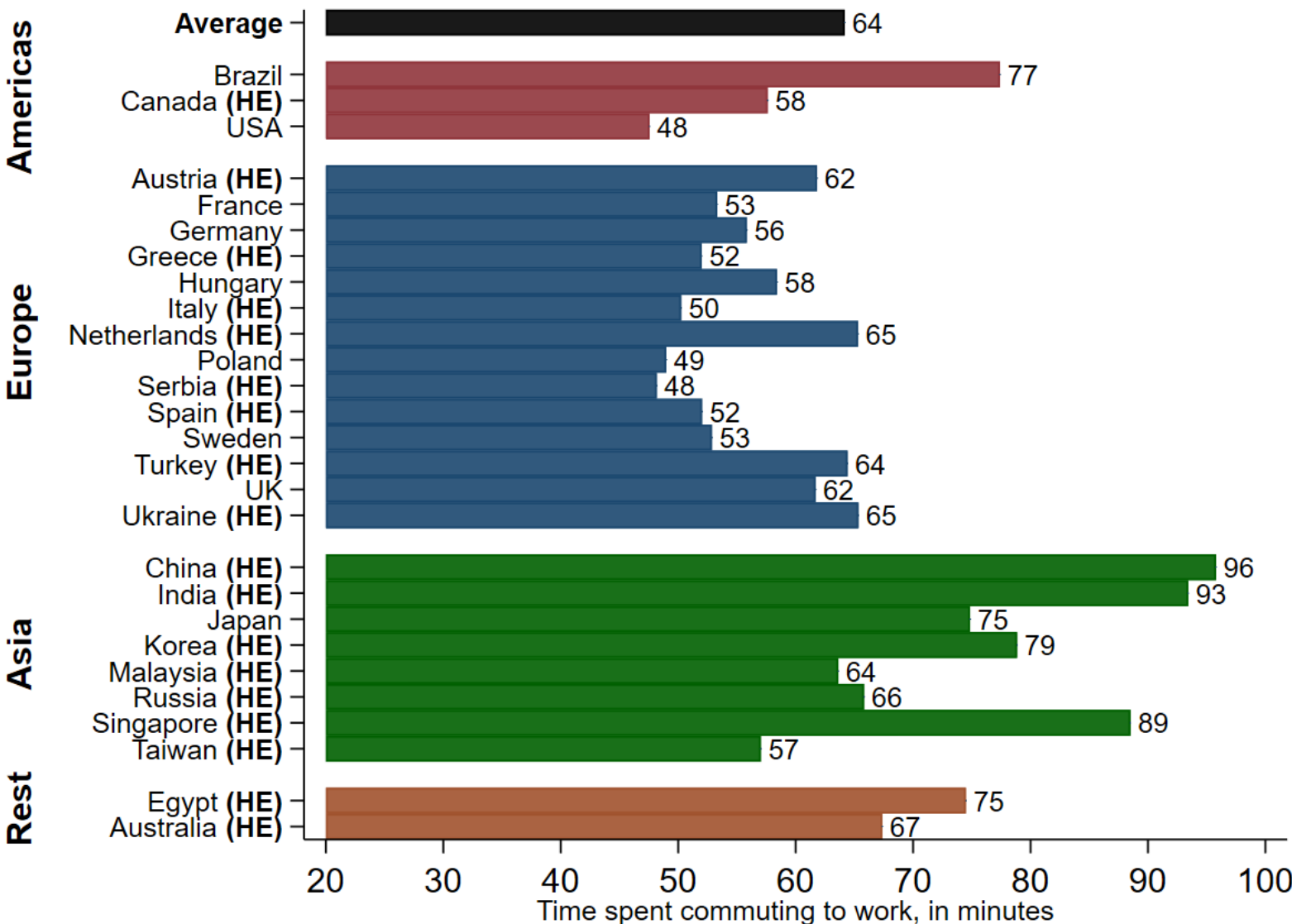
**Questions:** “After COVID-19, in 2022 and later, how would you feel about working from home 2 or 3 days a week?” If response is “neutral,” set WTP = 0.

Otherwise, ask:  
 “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?”

The chart reports country-level conditional means. The “Average” value is the simple mean of the the country-level values.

# Daily Commute Times Average More than One Hour Per Day

Daily Round-Trip Commute Time, Minutes



## Questions:

Wave 1: “In 2019 (before COVID) how long was your typical commute to work in minutes (one-way)?”

Wave 2: “How long do you usually spend commuting to and from work (in minutes). If you are not currently commuting to work, please answer based on your commute time in 2019 (before COVID)”.

The chart reports country-level conditional means/

# The Structure of Preferences Around WFH

**Average willingness to pay for WFH option = 5% of pay**

WFH option is more highly valued by:

- Women than otherwise similar men: differential = 1% of pay
- People with children under 14: 1% of pay for both men and women
- More educated: Advanced degree holder vs. HS = 2.5% of pay
- Those with longer commutes: Differential exceeds 2% of pay for RT commute > 1 hour compared to < 20 minutes

As an illustration, compare (a) married woman with graduate degree, children under 14, and a 45-minute one-way commute to (b) single, college-educated man who lives five minutes from the office → Differential WTP for option to WFH 2-3 days per week = 5.8% of pay.

**People will sort by desired working arrangements & across employers**



# Implications of the Big Shift to WFH

1. Large direct benefits, on average, for workers and families:
  - Savings in time and money costs of commuting and grooming
  - More flexibility in managing time and the household
  - Greater personal autonomy and more comfortable surroundings
2. Direct benefits flow mainly to the college-educated, who are a larger share in richer countries.
3. Not everyone benefits: Persons who highly value daily in-person encounters with colleagues, or who lose out on learning and networking may be worse off. Others (e.g., immobile urban poor) may be hurt by equilibrium effects on jobs and local public goods.
4. Pace of innovation: Countervailing effects. Hard to draw firm conclusions, but we are optimistic for reasons set forth in the paper.

# Implications

## 5. Challenges for Cities: The rise of remote work ...

- Reduces the local tax base in cities that had organized themselves to support a large volume of inward commuters and a high density of commercial activity.
- Raises the elasticity of the local tax base with respect to the quality of local governance – more so in cities like San Francisco where so many well-paying jobs are amenable to remote work.
  - Creates sharper incentives for sensible, efficient local governance, which could well yield better management and outcomes in many cities.
  - Creates more scope for a downward spiral in city fortunes, whereby poor governance amplifies outmigration and the loss of inward commuters, eroding the local tax base and undercutting the fiscal capacity to supply local public goods, which then leads to more outmigration and less inward commuting, ...