The Remote-Work Phenomenon

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Preview

1. **The big shift to remote work**

2. **Why the shift will stick**
   - And why it did not happen sooner

3. **Benefits of remote work**
   - Time savings, workday flexibility, autonomy, …
   - Better productivity in some tasks, lower turnover, …

4. **Some consequences**
   - Productivity, labor force participation, lessening of wage-growth pressures (a transition effect), …

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.

Topical Coverage: Working arrangements, work-related attitudes and perceptions, productivity, commute time, demographics, education, earnings, industry,…

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 to date:

- Wave 1: July 2021, 15 countries, N= 12,229 (after drops)
- Wave 2: 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 (next slide).

More on the G-SWA and How We Use It

Attention-Check Question: "In how many big cities with more than 500,000 inhabitants have you lived? … [T]his question only serves the purpose to check your attention. Irrespective of your answer, please insert the number 33 …"

Median Response Times: 7.3 to 9.5 minutes, after drops, for the 10 countries in Wave 2 that had no extra modules. The main module always comes first.

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) Respondents are compensated (not necessarily in cash) to participate on an opt-in basis. (3) 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 in making …

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 gender, age (20-29, 30-39, 40-49, 50-59), education (Secondary, Tertiary, Graduate), 18 industry sectors, and survey wave (or time period).

U.S. Survey of Working Arrangements and Attitudes (SWAA)

- Monthly since May 2020, >100,000 observations to date.

- We design the survey instrument.

- Target population: U.S. residents, 20-64, who earned ≥ $10K in 2019 (≥$20K in early survey waves). From January to March 2022, we transitioned to earned ≥ $10K in prior year.

- The SWAA is fielded online by market research firms that rely on wholesale aggregators (e.g., Lucid) for lists of potential survey participants.

- After dropping "speeders" (~16% of sample), we re-weight to match 2010-2019 CPS worker shares in age-sex-education-earnings cells. Dropping those who fail attention checks (~12%) sharpens some results.

- Median response time: 7 to 12 minutes, after dropping speeders

- Results, micro data, survey instruments, and more are freely available at www.WFHresearch.com.

Working from Home Is a Global Phenomenon

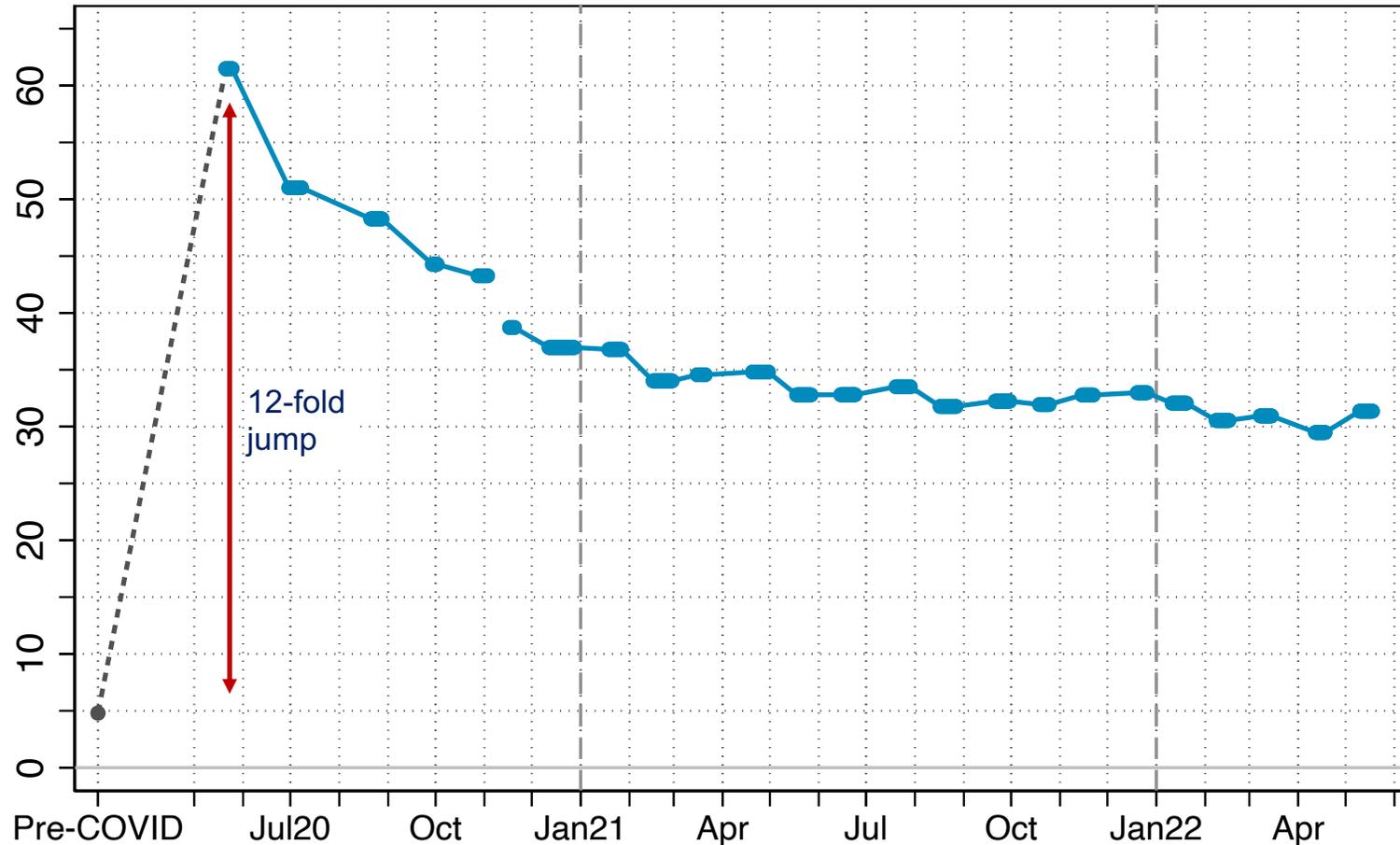Paid Full Days Working from Home in the Survey Week, Country Means and Cross-Country Average
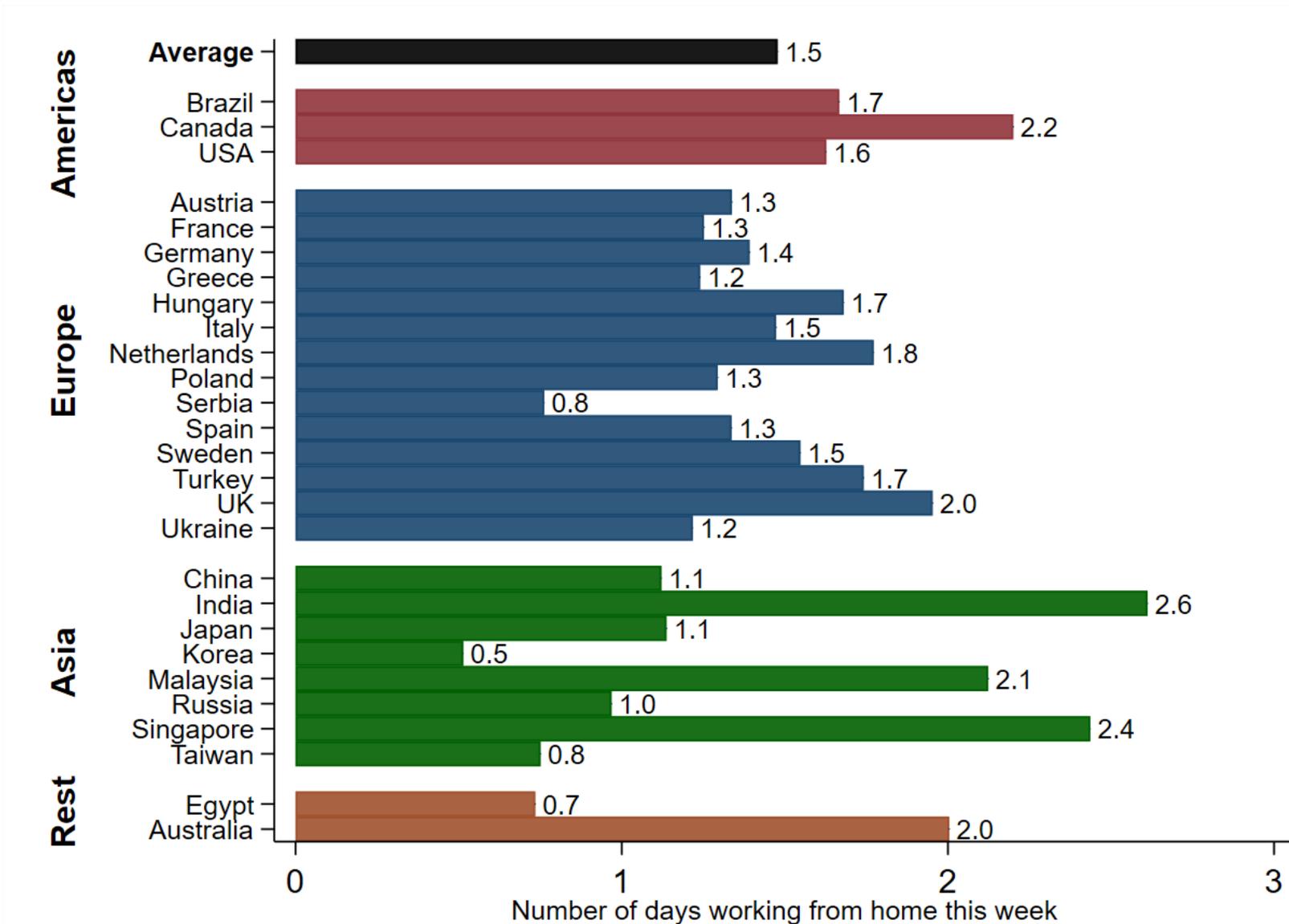
Question: "How many full paid days are you working from home this week?" The reported country-level values are conditional means, as explained on Slide 3. The "Average" value is the unweighted average of the the country-level conditional means.

Sample of 33,091 G-SWA respondents, surveyed in August 2021 and February 2022.

U.S.: WFH was growing before 2020 – but slowly. Then COVID struck.

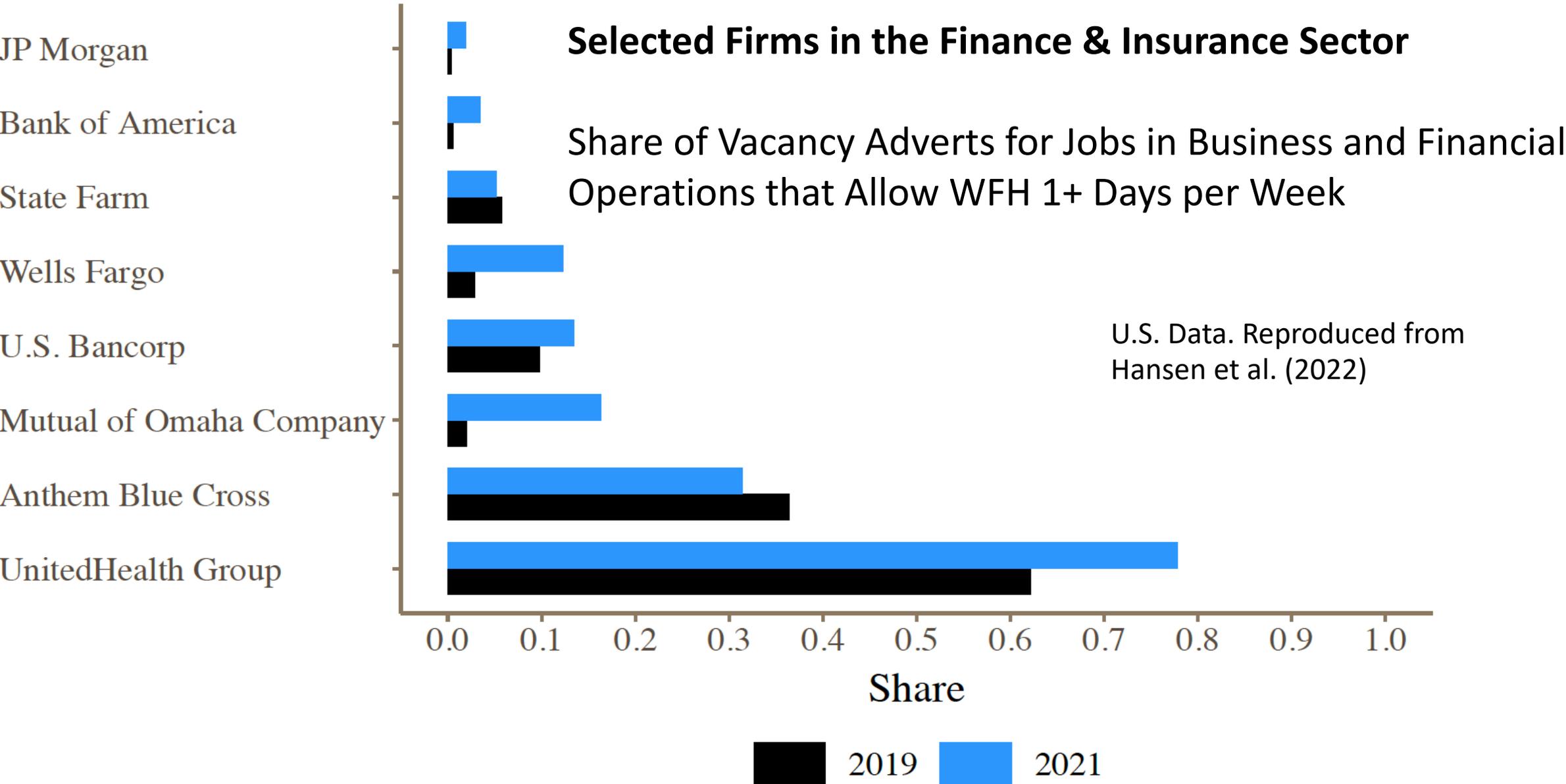**Full days worked from home, %, US Data**

Looking across the entire U.S. workforce, the incidence of full-paid days WFH roughly doubled in the 12 years leading up to 2020, reaching about 5%.

In March 2020, the incidence of full-paid days rose 12-fold.

It has since dropped backed, reaching levels around 30% in recent months. The latest data point is for May 2022.

*Pre-COVID estimate taken from the 2017-2018 American Time Use Survey

*The break in the series in November 2020 reflects a change in the survey question.

The Shift Is Highly Non-Uniform, Even Across Firms in the Same Sector and Recruiting in the Same Occupational Category

Selected Firms in the Finance & Insurance Sector

Share of Vacancy Adverts for Jobs in Business and Financial Operations that Allow WFH 1+ Days per Week

U.S. Data. Reproduced from Hansen et al. (2022)

Forward-Looking Survey Question (2021 version)

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

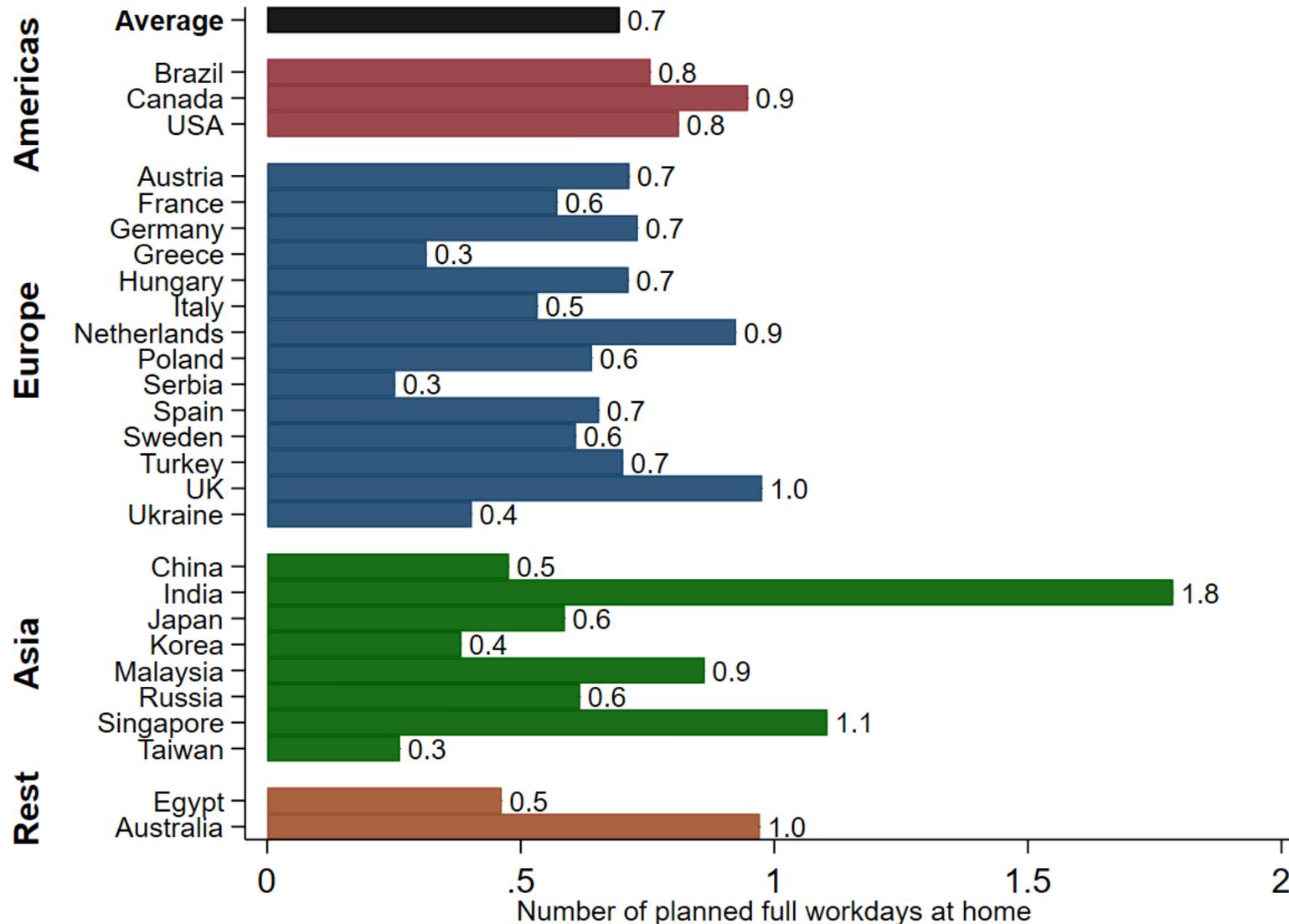○ I have no employer

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Employers plan 0.7 WFH days per week after the pandemic, ranging from 0.3 days in Taiwan and Serbia to 1.8 in India
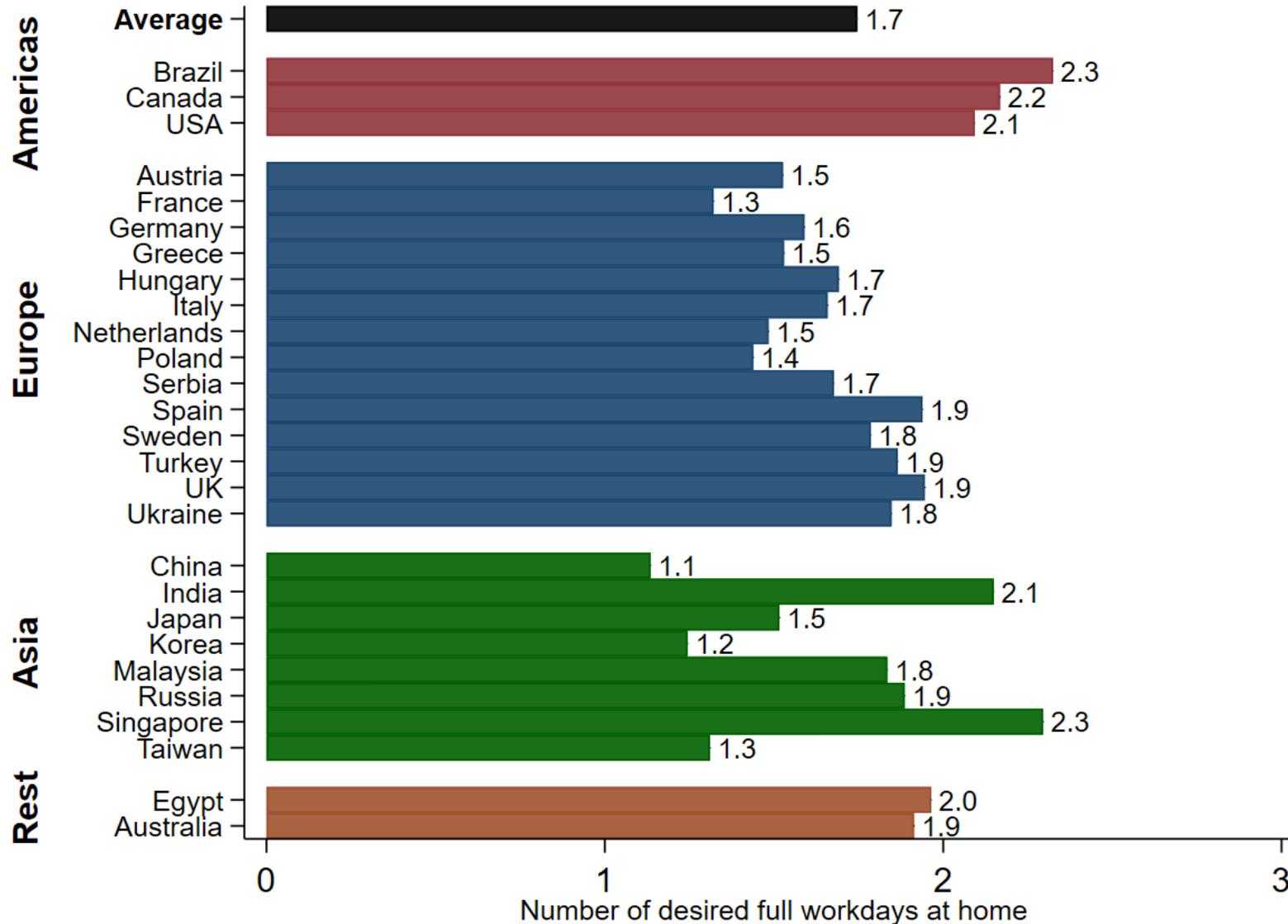

Question: '"After COVID, in 2022 and later, how often is your employer planning for you to work full days at home?'' Country-level values are conditional means, as explained on Slide 3. The "Average" value is the unweighted average of the the country-level conditional means.

Sample of 34,875 G-SWA respondents, surveyed in August 2021 and February 2022, limited to persons who have an employer.

But employees want 1.7 WFH days per week

Average number of WFH days per week that employees desire

Question: "After COVID, in 2022 and later, how often would you like to work from home?" Country-level values are conditional means, as explained on Slide 3. The "Average" value is the unweighted average of the the country-level conditional means.

Sample of N=36,078 G-SWA respondents, surveyed in August 2021 and February 2022.

Based on what they tell workers, U.S. companies increasingly plan for employees to work from home <u>after</u> the pandemic

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

- - - All workers
.... Workers able to work from home
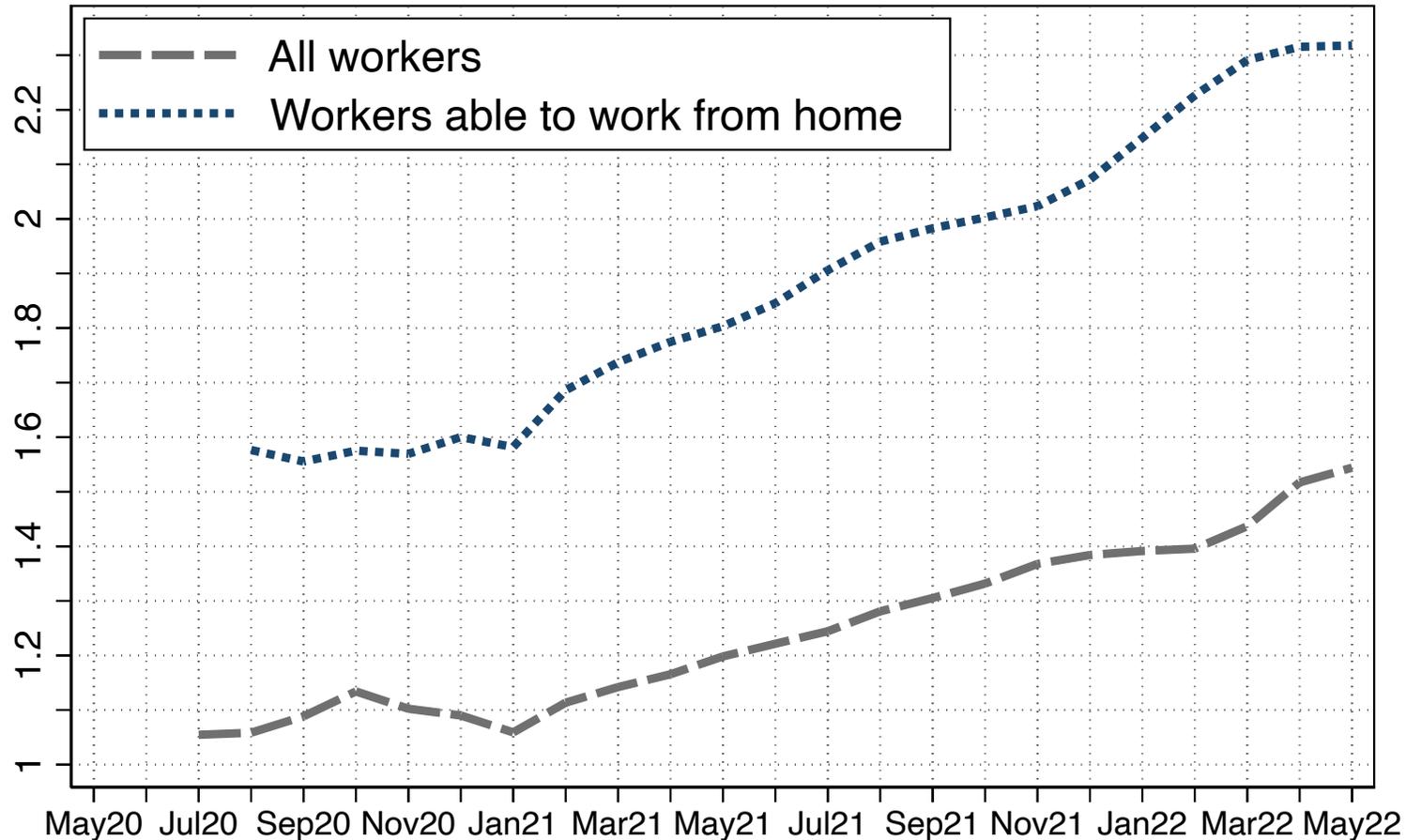
Responses to the question:
- ***After the pandemic ends,*** *how often **is your employer planning** for you to work full days at home?*

Sample: SWAA waves from July 2020 to May 2022, excluding respondents who report having no employer. "Workers able to WFH" are those who report any WFH experience during the pandemic.
N = 77,449 (all respondents) and 54,231 (able to work from home)

Methodological Note: If the employer has not discussed post-COVID WFH plans with the employee, we impute 0 days for plan before January 2002 wave. From January 2022 onwards, we impute: 0 days if the employee is not currently WFH; the mean value of planned WFH days in the same survey wave among workers who are currently WFH 1+ days per week, otherwise.

Before the pandemic, WFH averaged about 0.25 days per week in ATUS data.

Why the big shift to WFH will stick

1. **Mass experimentation and learning → re-optimization of working arrangements**
2. Investments (in time, equipment, systems, processes) by workers and firms that enable WFH
3. Attitudinal shifts:
   - Stigma around WFH has plummeted
   - Long-lingering fears of infection risks
4. A surge in innovation that supports remote work
5. **WFH has big benefits for workers**
   - Shared with employers in equilibrium
6. Long pandemic entrenches the shift to WFH

COVID-19 [Compelled](#) Firms and Workers to [Experiment at Scale](#) with Working from Home

"If you'd said three months ago that 90% of our employees will be working from home and the firm would be functioning fine, I'd say that is a test I'm not prepared to take because the downside of being wrong on that is massive."

– James Gorman, CEO of Morgan Stanley*
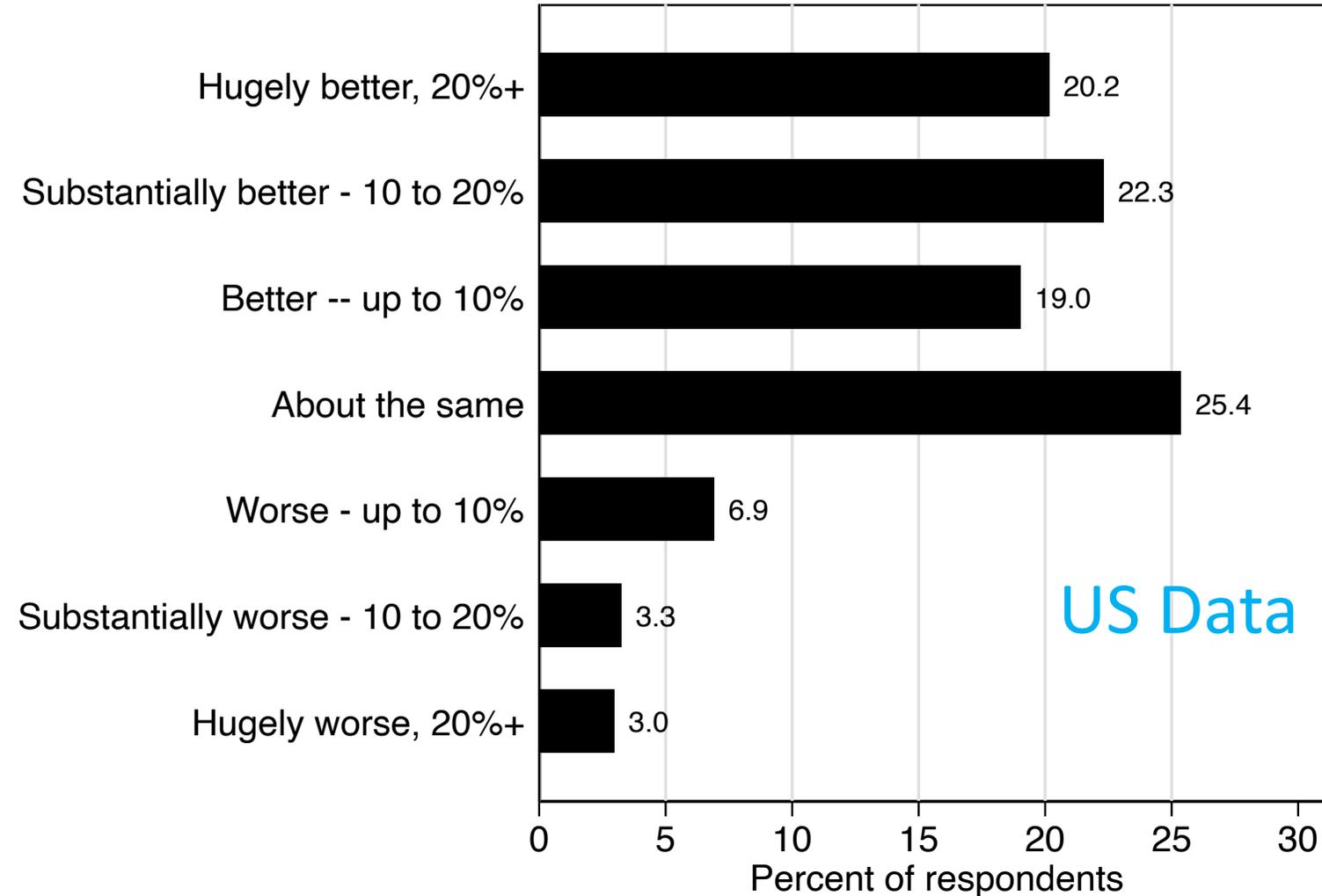
Quotation from Cutter (WSJ, 2020)

James Gorman
PHOTO: AL DRAGO/BLOOMBERG NEWS

Forced Experimentation: WFH productivity during the pandemic exceeded expectations
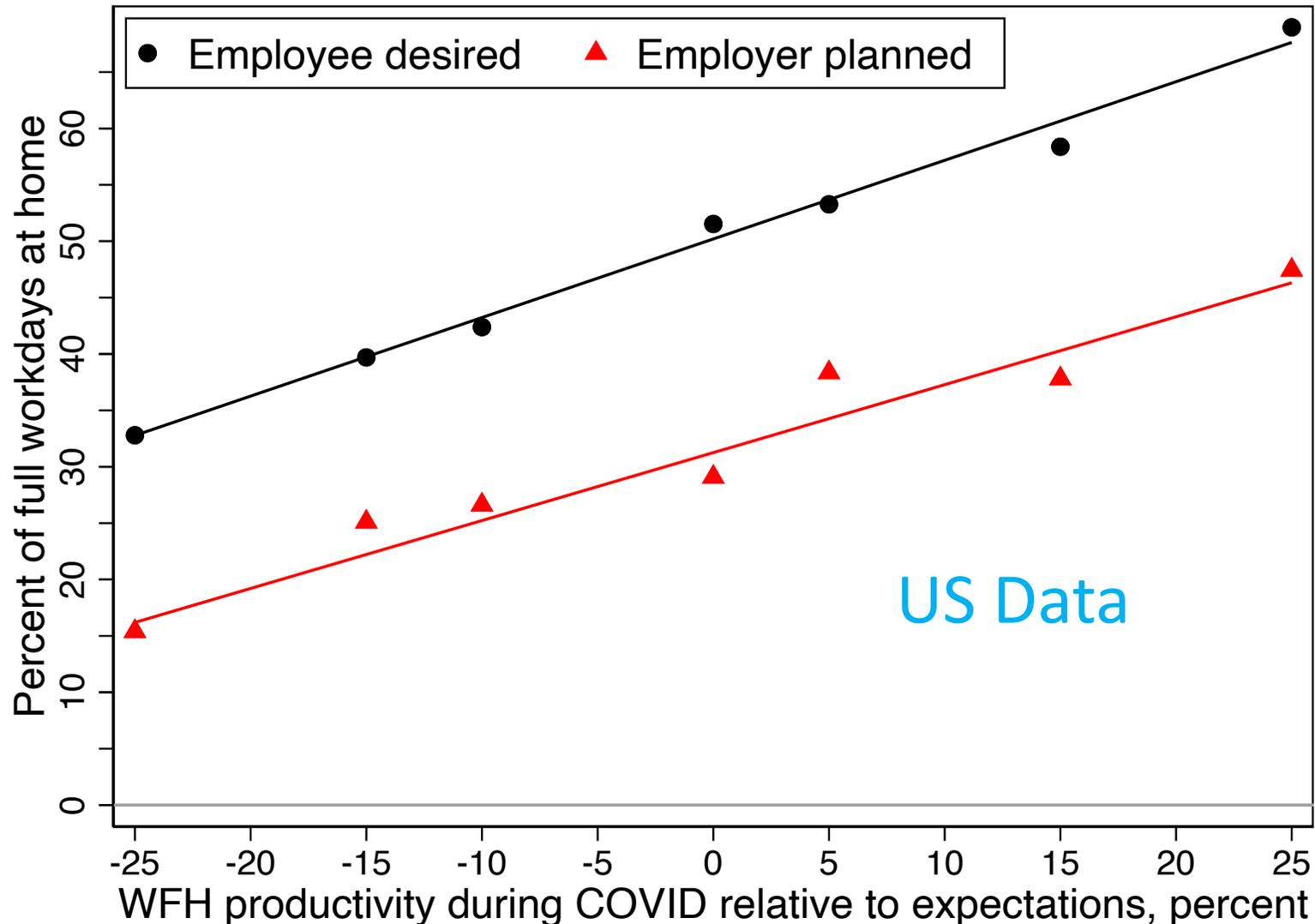
Relative to expectations, how has WFH turned out?

*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*

Desired and planned levels of WFH __after__ the pandemic increase with WFH productivity surprises __during__ the pandemic

Source: Response to the questions:

__After COVID, in 2022 and later,__ how often would you like to have paid workdays at home?

__After COVID, in 2022 and later,__ how often is your employer planning for you to work full days at home?
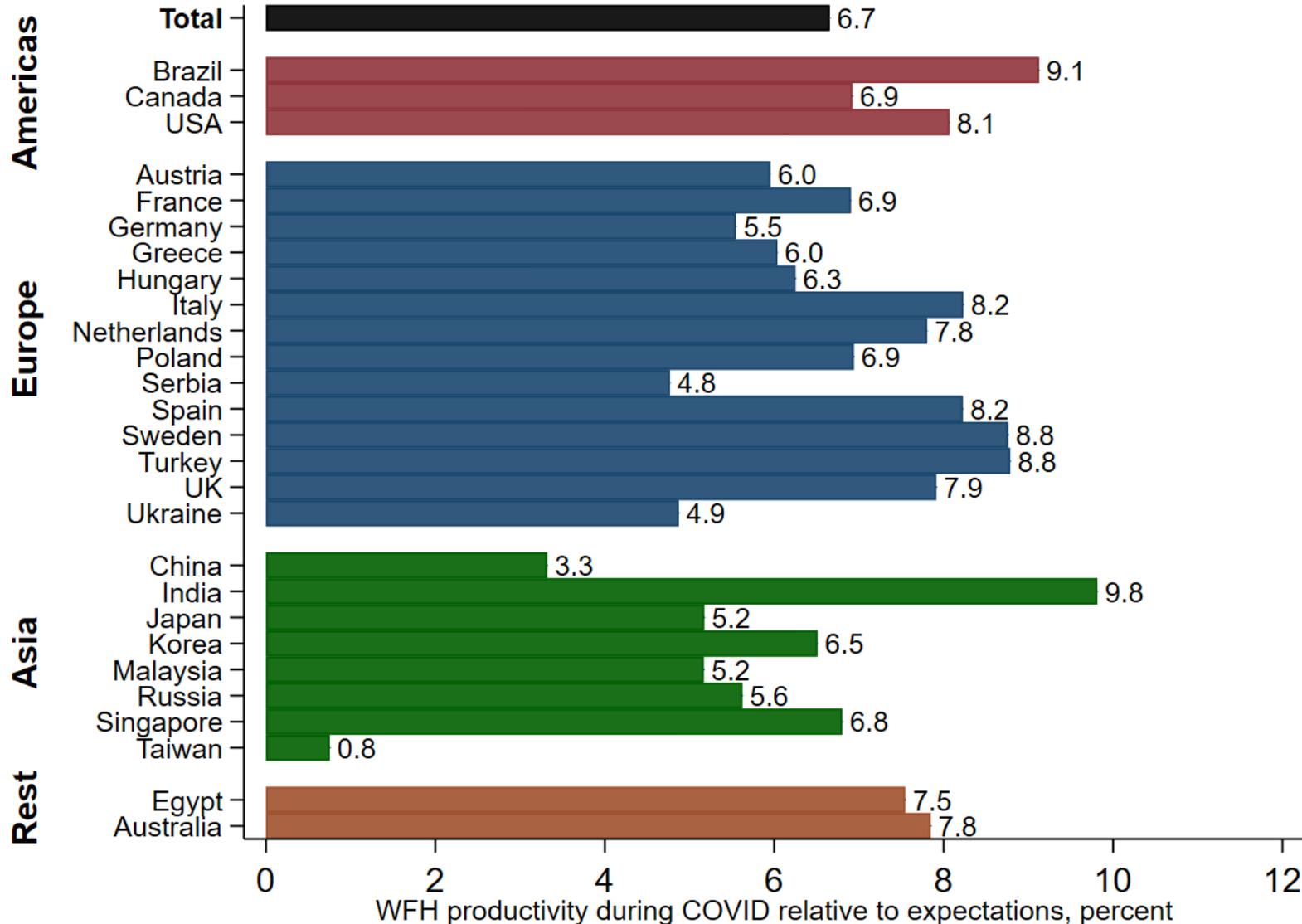
Compared to your expectations __before COVID (in 2019)__ how has working from home turned out for you?

Notes: This figure shows bin scatters of worker desires and employer plans for WFH after the pandemic against WFH productivity surprises during the pandemic.

Data are from 30,750 survey responses collected from July 2020 to March 2021 and reweighted to match the share of working age respondents in the 2010-2019 CPS in a given {age x sex x education x earnings} cell. We did not ask about productivity relative to expectations in May 2020.

WFH productivity surprises were 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?'' See previous slides for response options. Country-level values are conditional means, as explained on Slide 3. The "Total" value is the unweighted average of the the country-level conditional means.

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

Planned levels of WFH <u>after</u> the pandemic increase with WFH productivity surprises <u>during</u> the pandemic
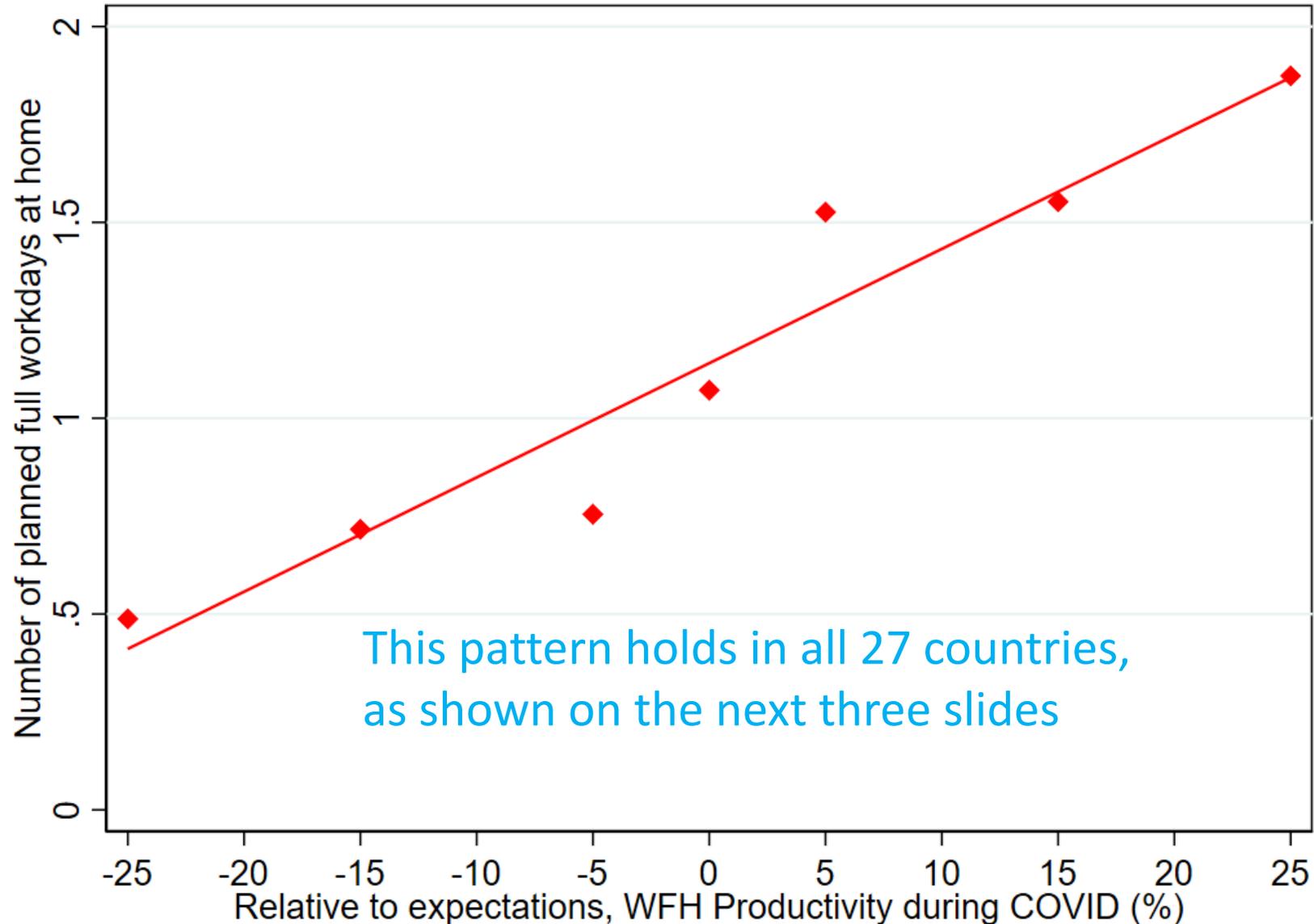
Questions:
-- Compared to your expectations **before COVID,** how has working from home turned out for you?'
-- After COVID, in 2022 and later, how often is your employer planning for you to work full days at home?

Sample of 19,027 G-SWA respondents in August 2021 and February 2022 who worked mainly from home at some point during the COVID-19 pandemic.
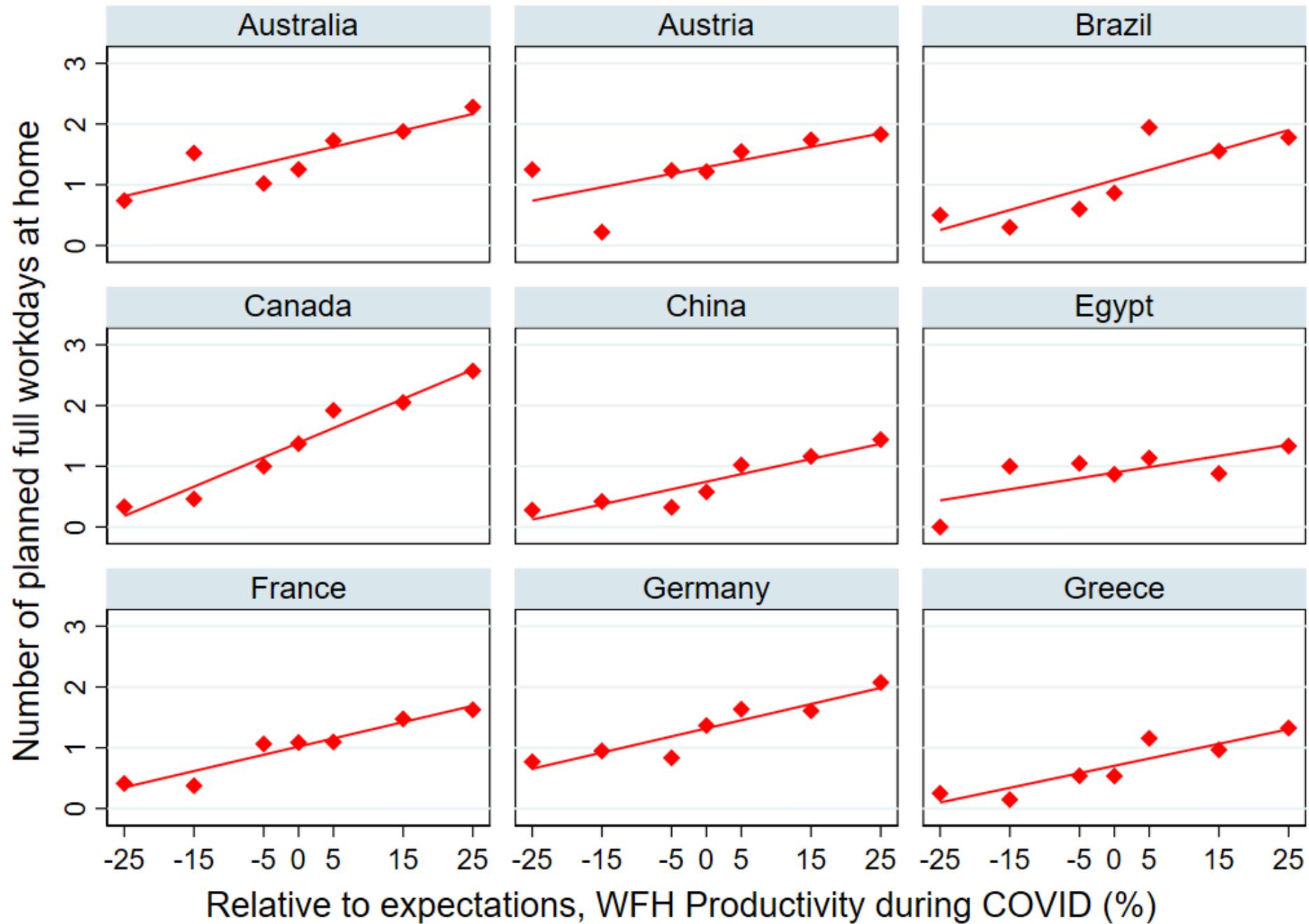
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Number of planned full workdays at home vs. Relative to expectations, WFH Productivity during COVID (%), shown by country: Australia, Austria, Brazil, Canada, China, Egypt, France, Germany, Greece

Number of planned full workdays at home vs. Relative to expectations, WFH Productivity during COVID (%), by country: Hungary, India, Italy, Japan, Korea, Malaysia, Netherlands, Poland, Russia.

Figure: Number of planned full workdays at home vs. Relative to expectations, WFH Productivity during COVID (%). Panels: Serbia, Singapore, Spain, Sweden, Taiwan, Turkey, UK, USA, Ukraine.

Most Workers Highly Value the Option to Work from Home Part of the Week
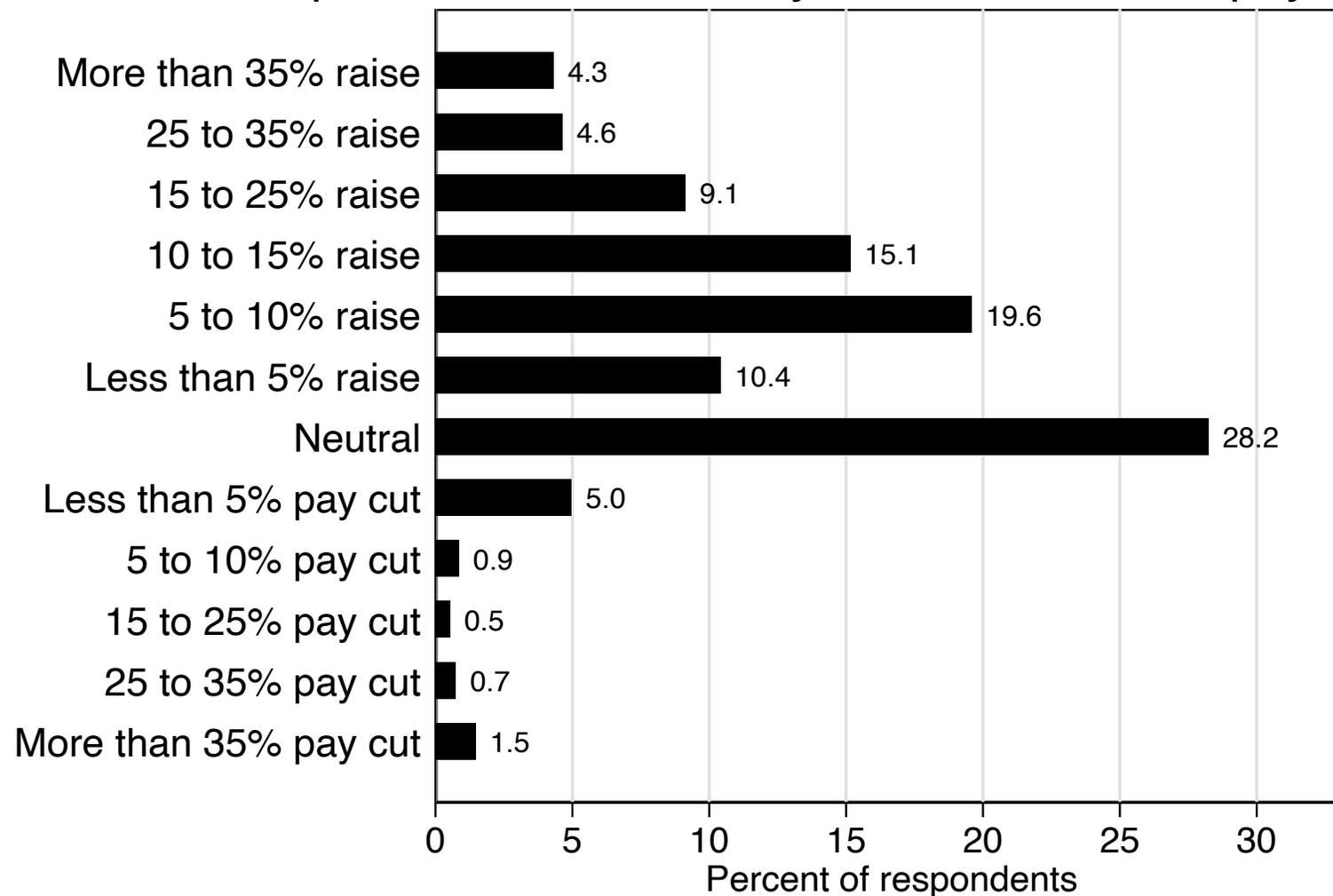
Americans Highly Value the Option to Work from Home ....

Average valuation of 8% matches Mas and Pallais (2017 AER)

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

Category	Percent
More than 35% raise	4.3
25 to 35% raise	4.6
15 to 25% raise	9.1
10 to 15% raise	15.1
5 to 10% raise	19.6
Less than 5% raise	10.4
Neutral	28.2
Less than 5% pay cut	5.0
5 to 10% pay cut	0.9
15 to 25% pay cut	0.5
25 to 35% pay cut	0.7
More than 35% pay cut	1.5

Percent of respondents

Source: Responses 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 20,750 survey responses collected from September 2020 to February 2021 by Inc-Query and QuestionPro. We asked a similar question in earlier and subsequent waves, but we focus on the above waves, which use identical questions and response options. We re-weight raw responses to match the share of working age respondents in the 2010-2019 CPS in a given {age x sex x education x earnings} cell.

…. But the Benefits of WFH Will Be Realized Mainly by the Well Paid and the Highly Educated

	As a Percent of Earnings			
	Value of Planned Post-COVID WFH		Value of Option to WFH 2-3 Days a Week	
Ann. Earnings of $20 to $50K	1.5	(0.1)	6.8	(0.2)
Ann. Earnings of $50 to $100K	3.0	(0.1)	8.2	(0.2)
Ann. Earnings of $100 to $150K	4.8	(0.2)	9.6	(0.2)
Ann. Earnings over $150K	7.3	(0.2)	12.2	(0.3)
Goods-producing sectors	2.6	(0.2)	7.1	(0.3)
Service sectors	2.4	(0.1)	7.8	(0.1)
No children	1.8	(0.1)	6.6	(0.2)
Living with children under 18	3.2	(0.1)	8.8	(0.1)

To obtain the "Value of Planned Post-COVID WFH" for a given person, we multiply "Value of Option to WFH" by ½ if their employer plans for one WFH day per week after the pandemic, by 1 if the plan is for multiple WFH days per week, and 0 otherwise. We then average over persons in the indicated group.

Similar patterns hold in almost every country we sample. On average, workers value the WFH option as much as a 5% pay hike.

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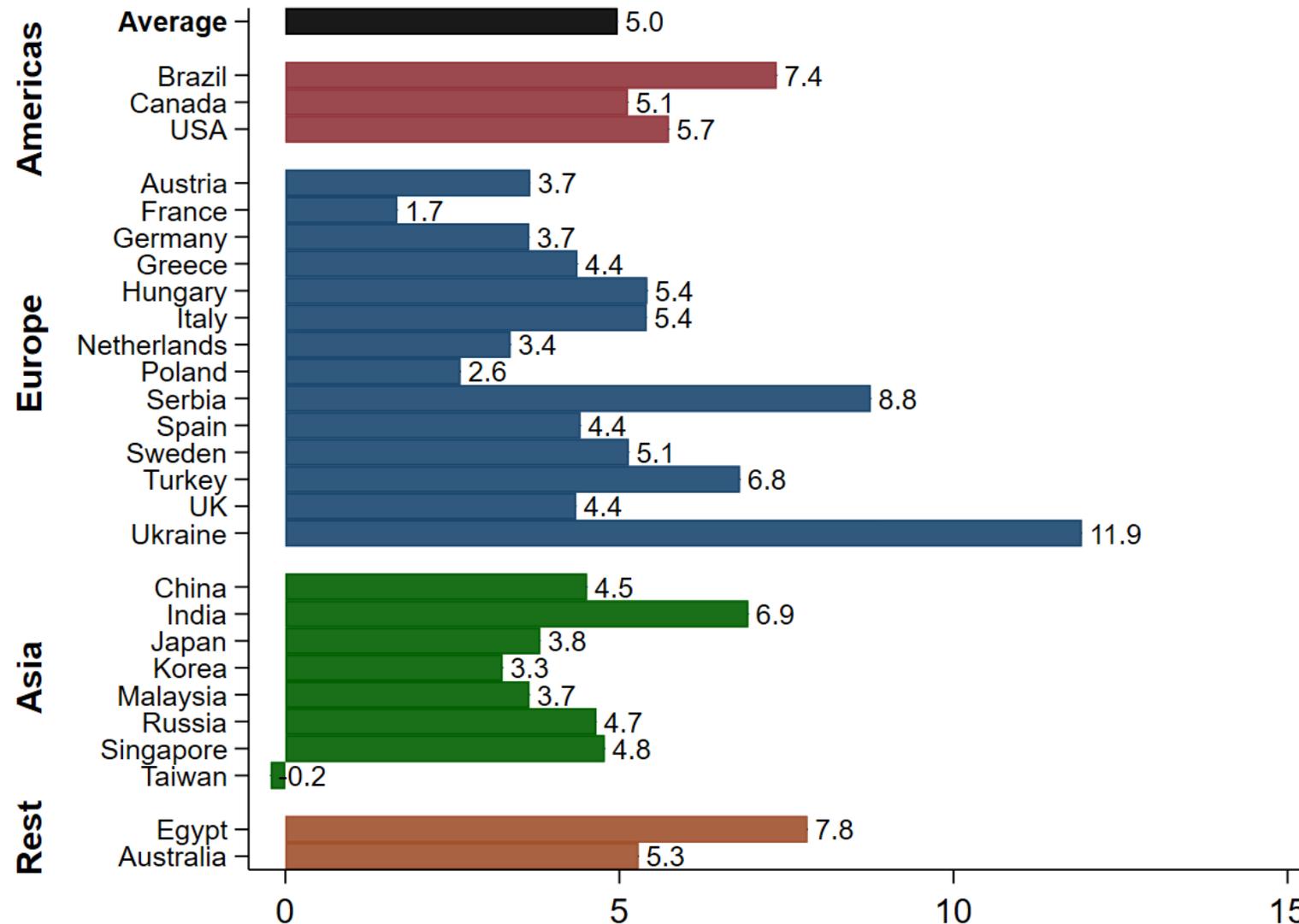

Questions: "After COVID-19, in 2022 and later, how would you feel about working from home 2 or 3 days a week?" and "How much of a pay raise [cut] (as a percent of your current pay) would you value as much as the option to work from home 2 or 3 days a week?" Country-level values are conditional means, as explained on Slide 3. The "Average" value is the unweighted average of the the country-level conditional means.

Sample of N=36,078 G-SWA respondents, surveyed in August 2021 and February 2022.

Women more highly value the option to WFH in most countries

Average amenity value of the option to WFH 2-3 days per week
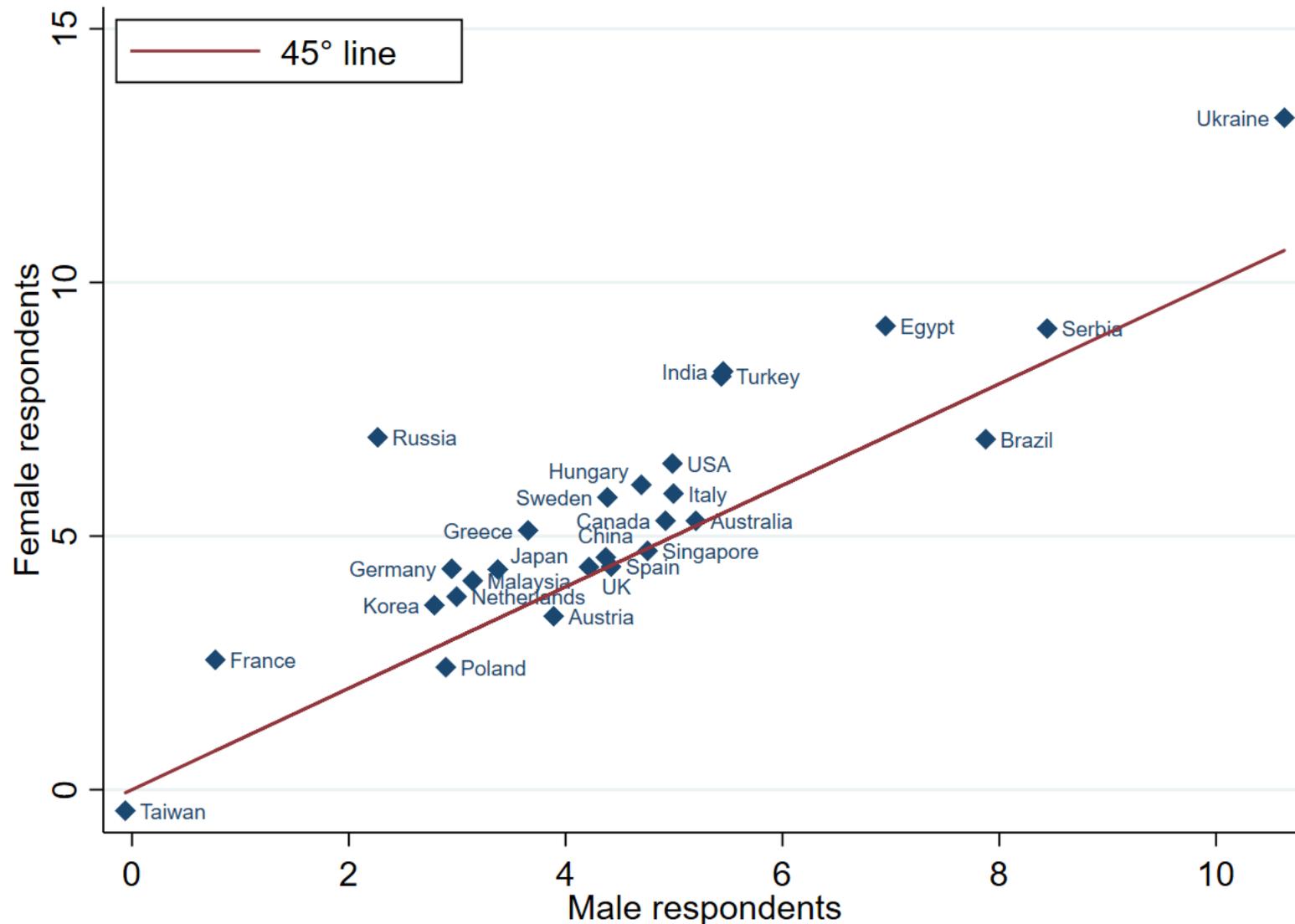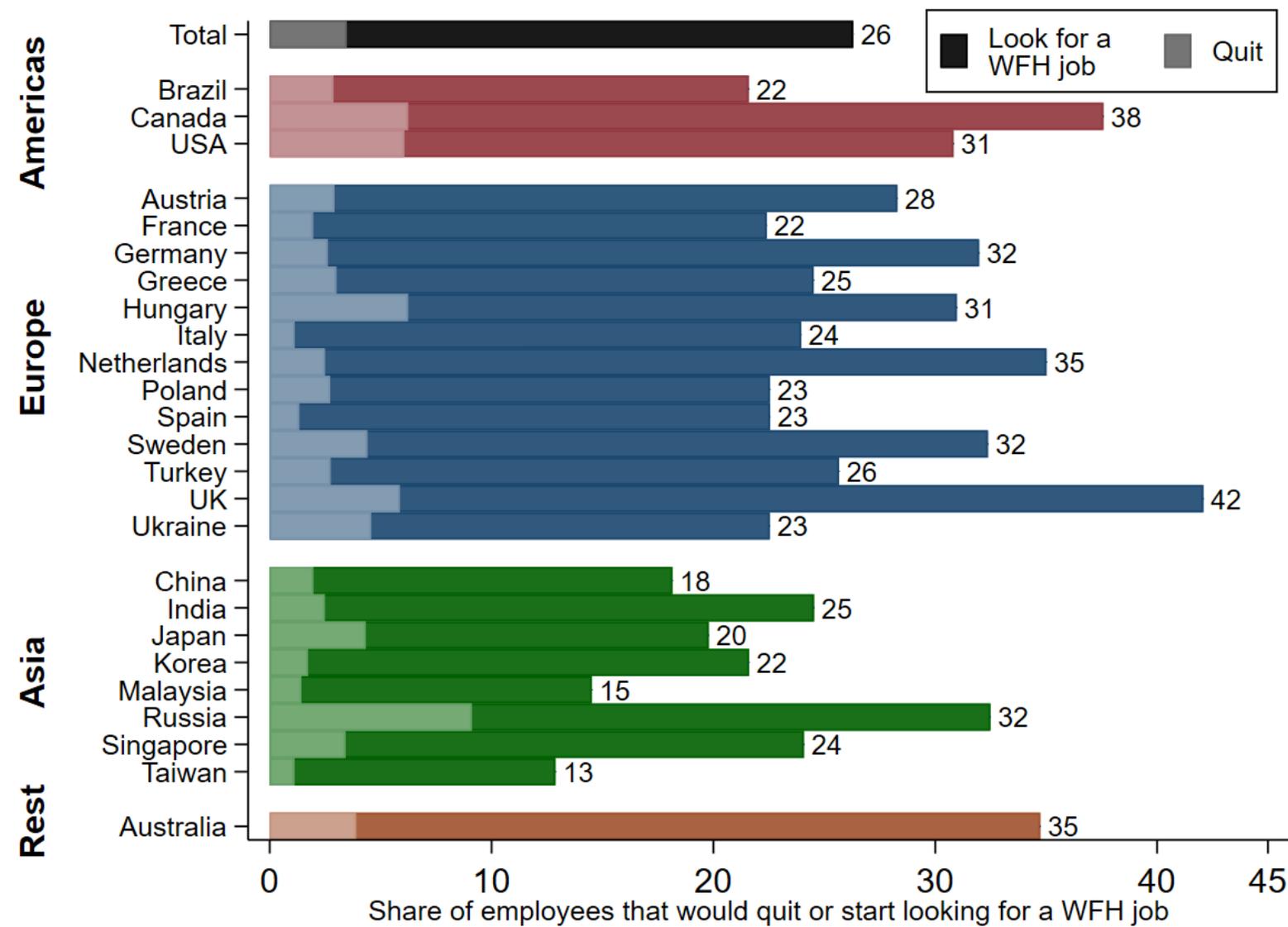

Questions: Same as previous slide. Country-level values are conditional means, as explained on Slide 3. The "Total" value is the unweighted average of the the country-level conditional means.

Sample of N=36,078 G-SWA respondents, surveyed in August 2021 and February 2022.

One-quarter of employees would quit or seek a job that allows WFH, if their employer requires a return to 5+ days per week onsite

Percent of employees that would quit immediately or seek a job

Question: "How would you respond if your employer announced that all employees must return to the worksite 5+ days a week, starting on February 1, 2022?". Options:
- Comply and return.
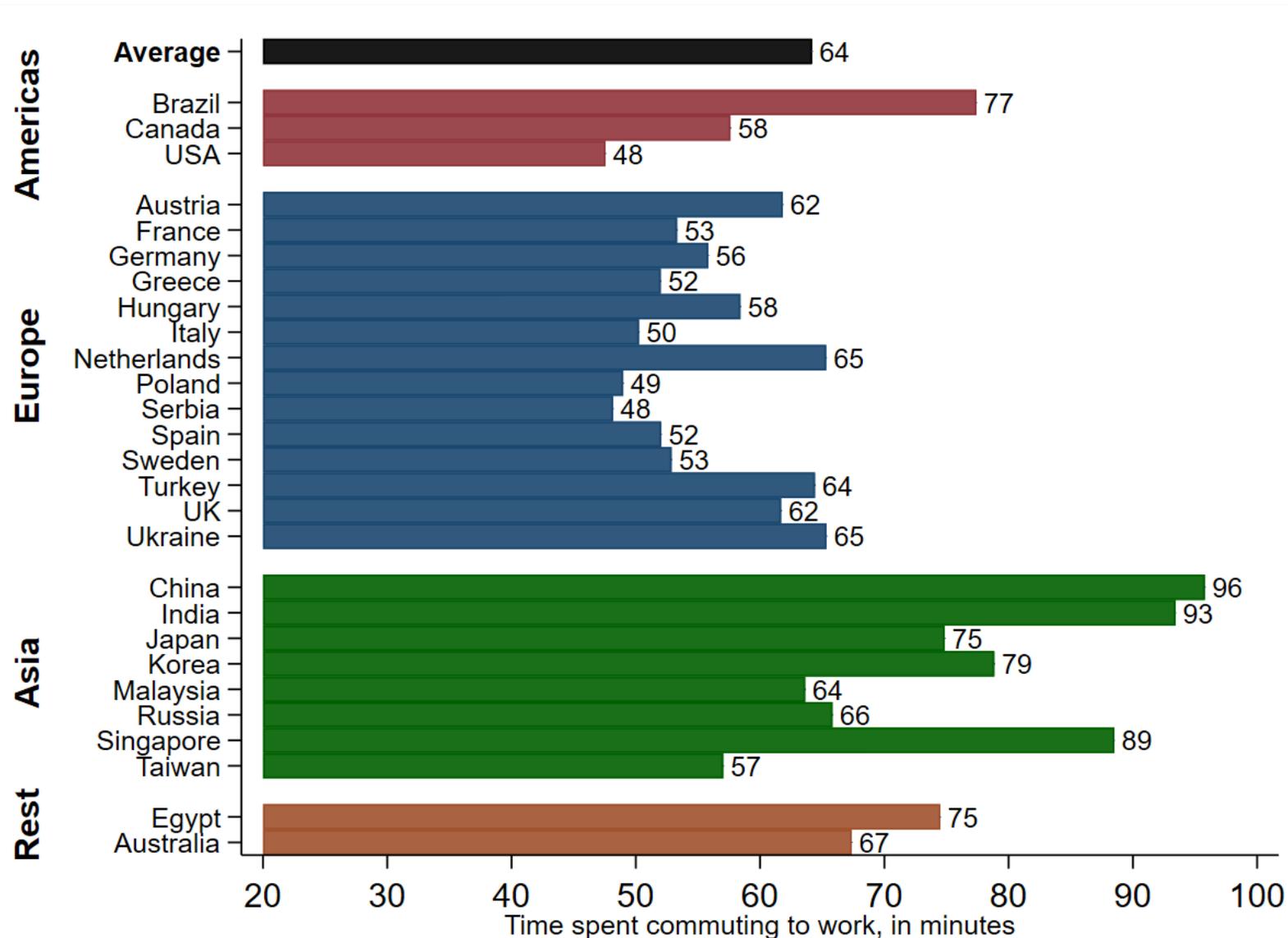- Seek job that lets me WFH 1-2 days
- I would quit the job
Country-level values are conditional means, as explained on Slide 3. The "Total" value is the unweighted average of the the country-level conditional means.

Sample 9,975 G-SWA respondents in February 2022 who WFH at least one day in the survey week.

On the Benefits of Remote Work

Daily Commute Time Averages More than One Hour Per Day

Daily Commute Time, Minutes

Americas
- Average: 64
- Brazil: 77
- Canada: 58
- USA: 48

Europe
- Austria: 62
- France: 53
- Germany: 56
- Greece: 52
- Hungary: 58
- Italy: 50
- Netherlands: 65
- Poland: 49
- Serbia: 48
- Spain: 52
- Sweden: 53
- Turkey: 64
- UK: 62
- Ukraine: 65

Asia
- China: 96
- India: 93
- Japan: 75
- Korea: 79
- Malaysia: 64
- Russia: 66
- Singapore: 89
- Taiwan: 57

Rest
- Egypt: 75
- Australia: 67

Time spent commuting to work, in 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)". Country-level values are conditional means, as explained on Slide 3. The "Average" value is the unweighted average of the the country-level conditional means.

Sample of N=36,078 G-SWA respondents, surveyed in August 2021 and February 2022.

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Average Daily Time Savings When Working from home, Breakdown by Schooling Age of Youngest Child, U.S. Data
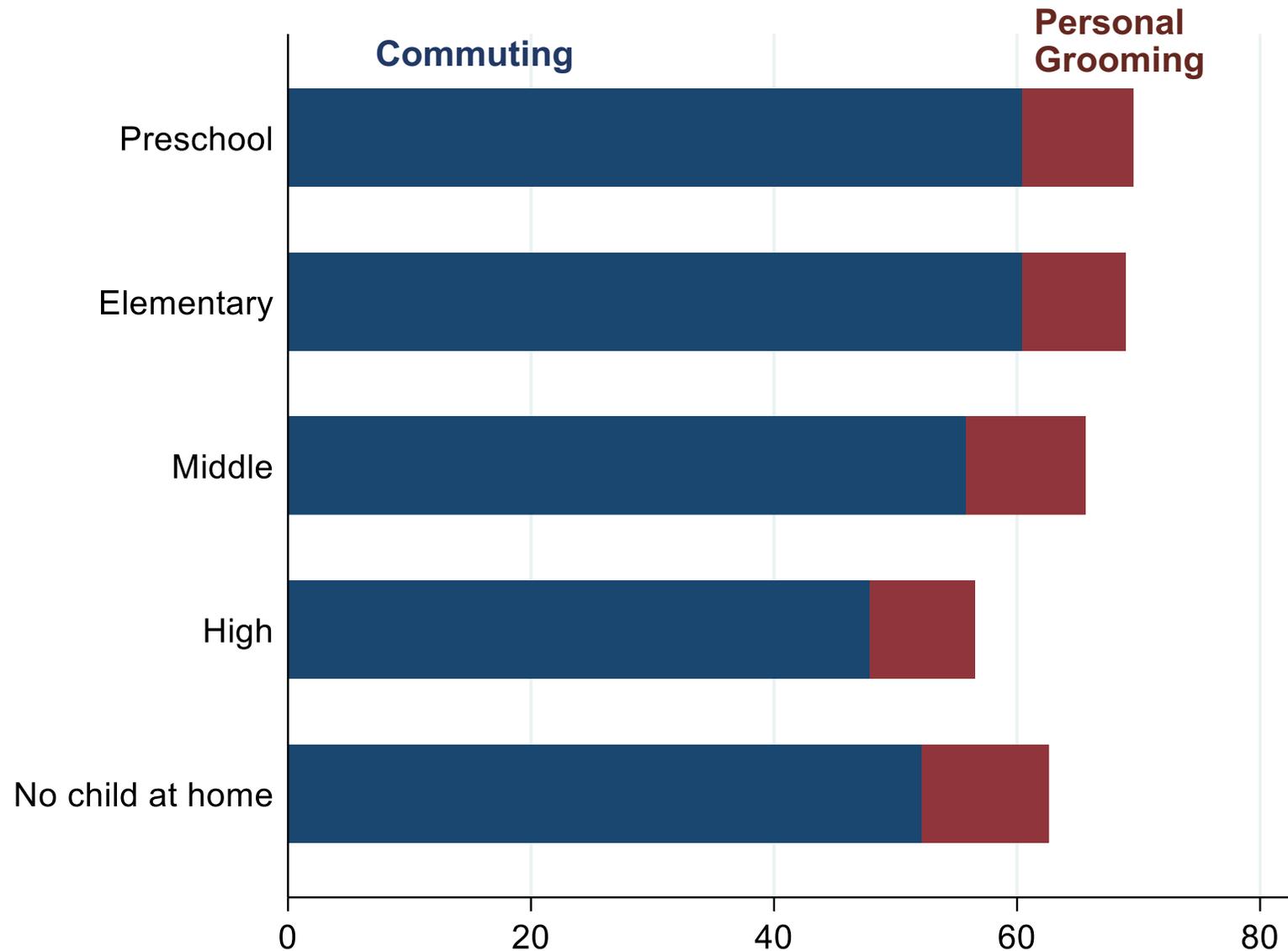
When employees work from home, they save an average **65 minutes per day** by not commuting and taking less time to get ready for work. The chart shows time saved by age of youngest child.

Source: Data from 8,313 SWAA respondents who can work from home. Reweighted to match the US population. See https://wfhresearch.com/.

Quantifying Aggregate Time Savings: U.S.

Employer plans re WFH imply the following savings in time devoted to paid work for person i (% of pre-pandemic hours):

$$(1) \quad TS_i = \frac{100\left(WFH_i^{Plan} - WFH_i^{Pre}\right)(1-f_i)C_i}{H_i + C_i\left(Days_i^{Pre} - WFH_i^{Pre}\right)}, \quad \text{where}$$

C_i = daily round-trip commute time expressed in hours

f_i = fraction of commute time devoted to work-related activities.

H_i = conventional measure of weekly work hours (pre-pandemic)

$Days_i^{Pre}$ = number of full workdays per week (pre-pandemic)

Implementing (1): 1.3% time savings on an equal-weighted basis, 1.7% on an earnings-weighted basis (N=31,361). Accounting for grooming time bumps up these values by 12-15 percent.

How Americans Say They Use their Time Savings

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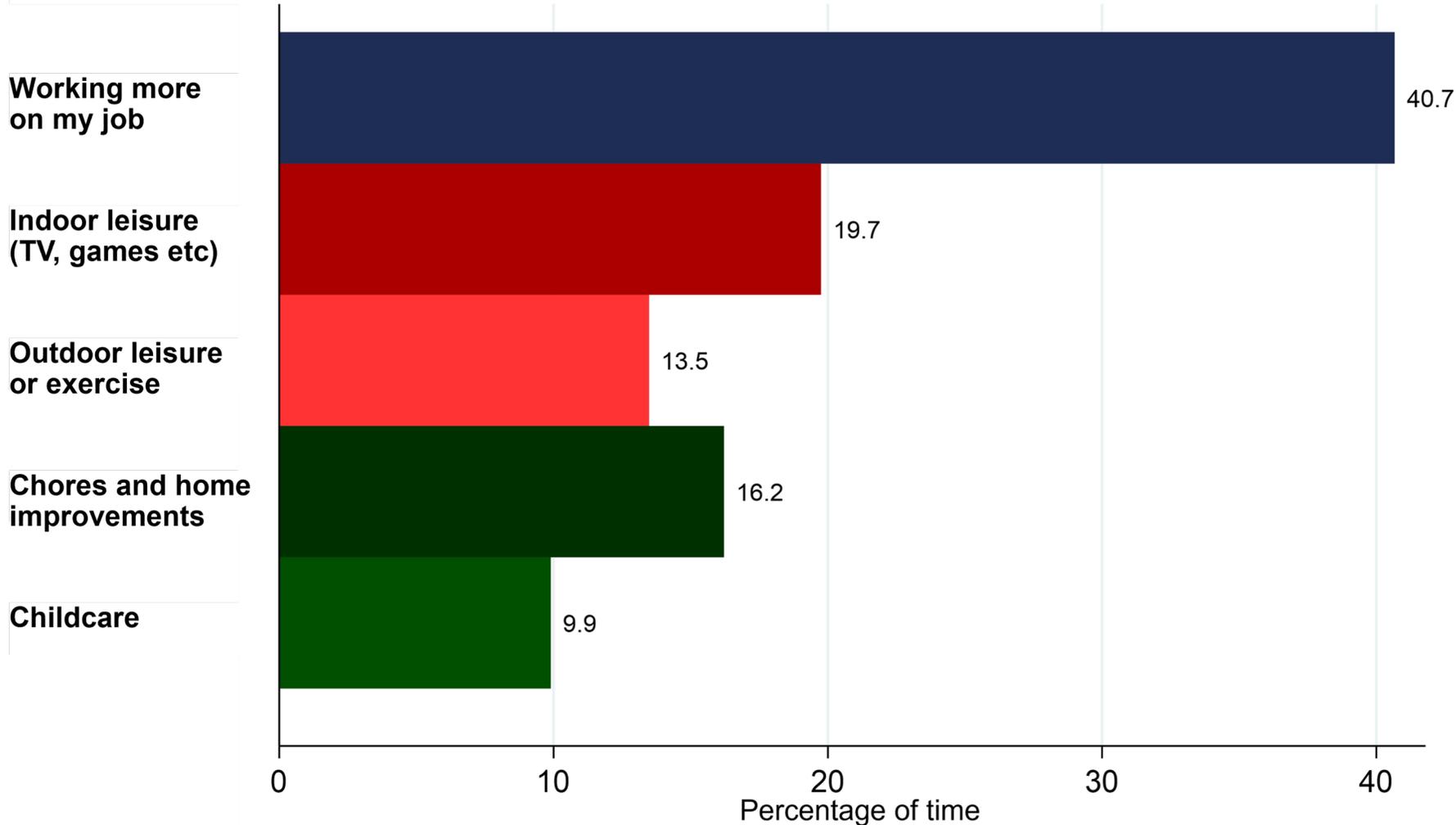
During the COVID-19 pandemic, while you have been working from home, how are you now spending the *time you have saved by not commuting?*

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

Notes: The sample is 32,641 respondents who are able to work from home.

Some Consequences

1. Big worker benefits, mainly for well educated & highly paid
2. Time savings = 2% of work hours (U.S., earnings weighted)
3. Direct effect on measured U.S. labor productivity: 1% boost
   - Up to 0.8% more, if statistical agencies miss time reallocated from commuting & grooming to work.
4. WFH can raise labor force participation and potential output, but infection fears cut the other way.

   - See "Long Social Distancing" by Barrero, Bloom, Davis
   - Beneficial effects require good internet access. See "Internet Access and its Implications for …" by BBD.
4. The shift to WFH lessens wage-growth pressures and compresses wages (small effects in most EMEs)

42% of workers say they are more efficient when working from home

US Data
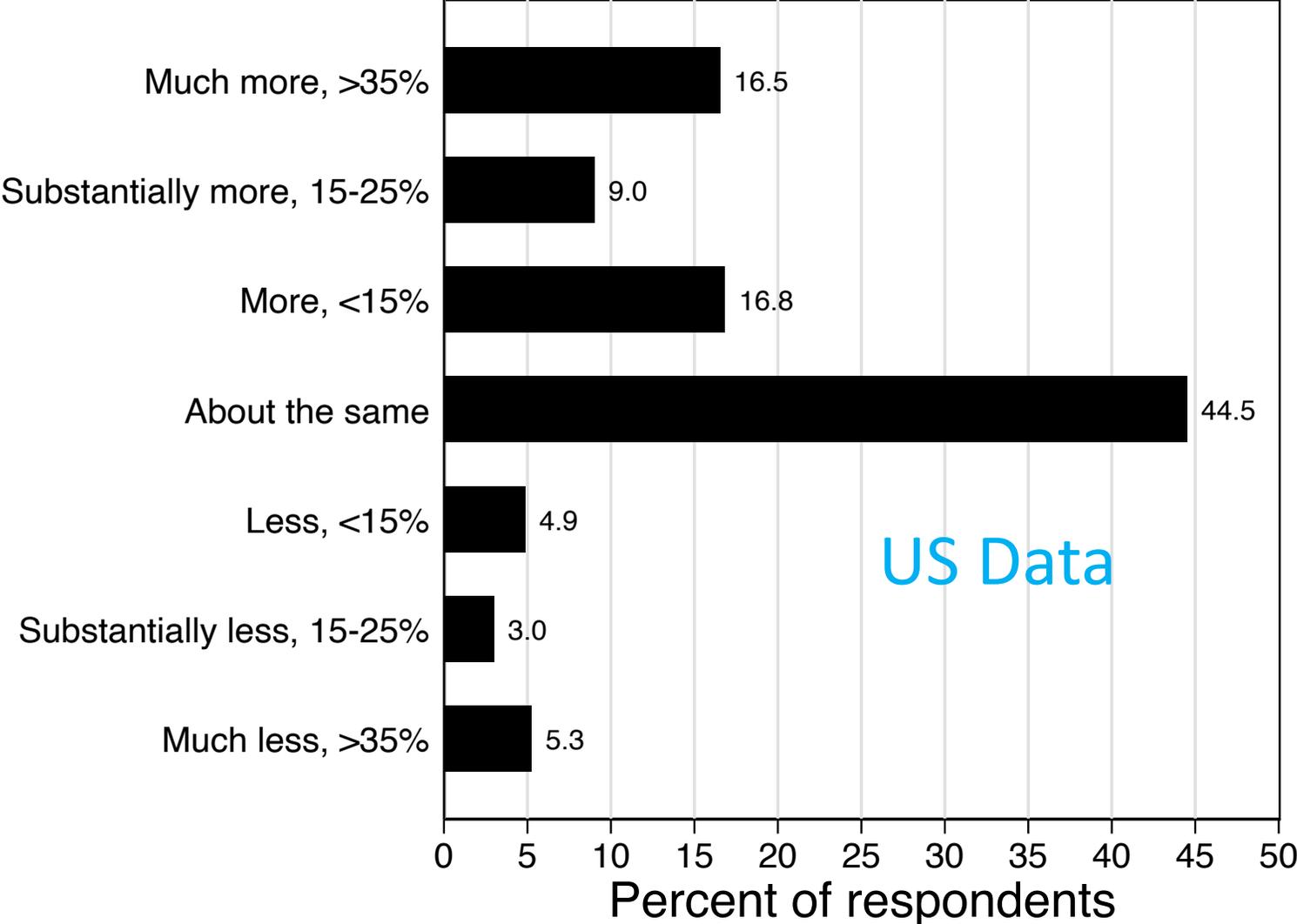
Responses to the question: *"How does your efficiency working from home **during the COVID-19 pandemic** compare to your efficiency working on business premises **before the pandemic?"***

In follow-up questions, workers attribute most of the WFH efficiency advantage to the savings in commuting time.

Notes: 49,964 SWAA responses from August 2020 to February 2022.

Quantifying WFH Effect on Measured Labor Productivity

$$(2) \quad Gain_i = (1 - \delta_i) PrDiff_i \left(\frac{WFH_i^{Plan} - WFH_i^{Pre}}{Days_i^{Pre}} \right),$$

$PrDiff_i$ = self-assessed relative efficiency gain when WFH.

δ_i = fraction of the self-assessed efficiency advantage of WFH that respondent attributes to reduced commuting time.

Implementing (2):

- 0.8% average boost in labor productivity (N=29,158).

- 1.0% on an earnings-weighted basis (N=29,158).

With respect to output per hour worked, this calculation presumes the shift to WFH has no effect on the extent of hours mismeasurement by statistical agencies.

How Americans Say They Use their Time Savings

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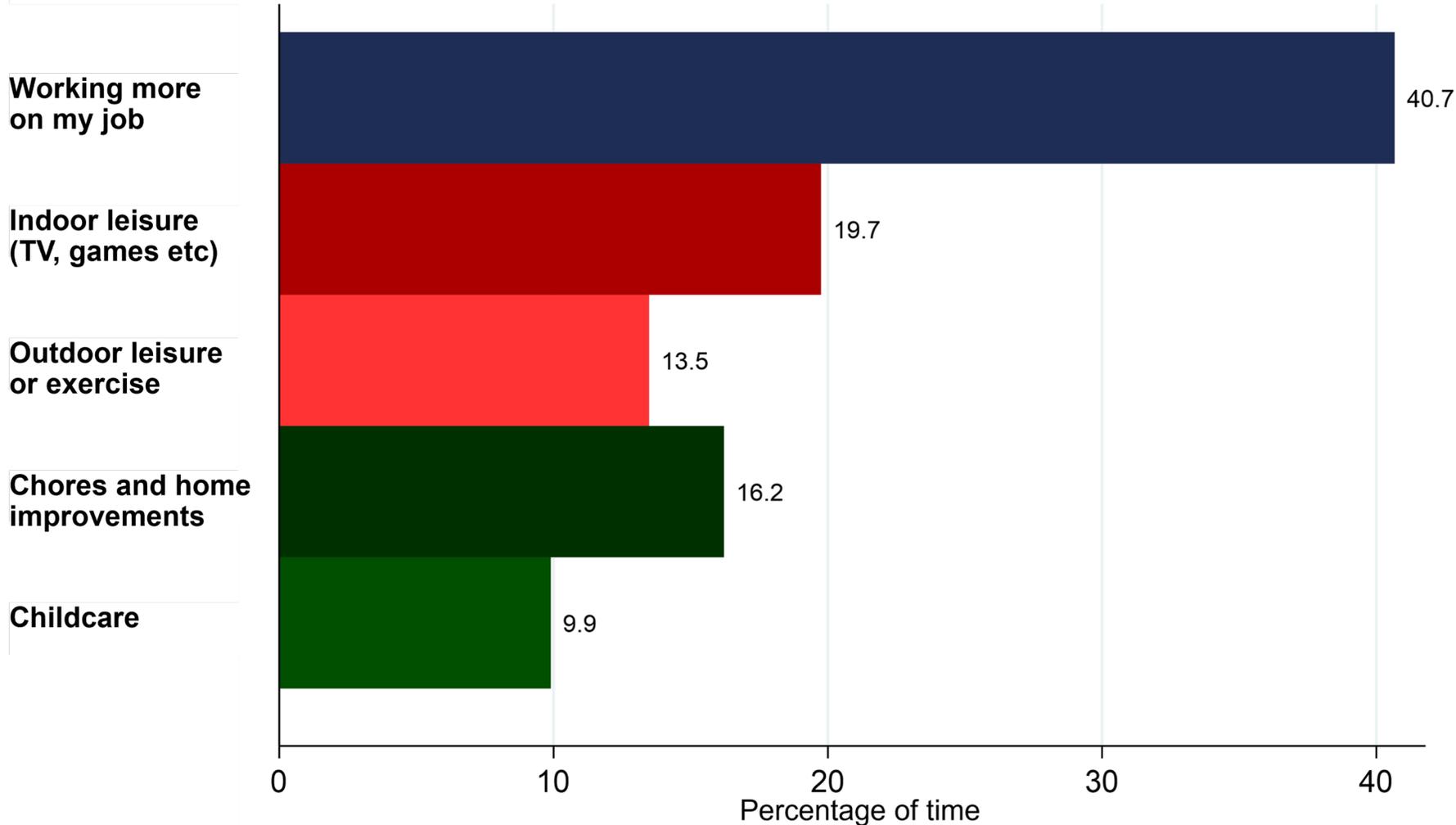
During the COVID-19 pandemic, while you have been working from home, how are you now spending the *time you have saved by not commuting?*

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

Notes: The sample is 32,641 respondents who are able to work from home.

What If Statistical Authorities Miss a Reallocation of Time from Commuting and Personal Grooming to Work Activity?

To assess the potential impact on measured productivity, suppose that all of the reallocated time goes unmeasured by the statistical agencies – e.g., suppose that a full-time worker records 8 hours per day regardless of actual work time.

1. 40% (previous slide) of the 2 percentage point time savings estimated above equals 0.8 percentage points.

2. So if all of the reallocated time goes unmeasured, it would boost measured labor productivity by another 0.8%.

More broadly, the shift to remote work and flexible work schedules makes it harder to accurately measure labor time inputs and, hence, to accurately measure labor productivity.

Other WFH Productivity Considerations

1. (**+**) Ongoing improvements in the technology of remote work (Bloom, Davis, & Zhestkova, 2021) will raise relative efficiency of WFH over time.

2. (**+**) Ongoing managerial and organizational adaptation to remote work.

3. (**−**?) Less transmission of human capital in the workplace.

4. (**+**) Better labor market matching (by relaxing locational constraints)

5. (**−**) Many structures will remain underutilized for some time, undercutting capital productivity.

6. **(+/−?)** Agglomeration and congestion effects.
   - The shift to WFH may bring a loss of agglomeration benefits.
   - But do external agglomeration benefits exceed congestion costs on the margin?
   - Advances in remote work technologies expand scope for agglomeration in virtual space.

More WFH also raises the productivity payoff to improvements in residential access to reliable, high-speed internet service. See Barrero, Bloom and Davis (2021) for evidence and quantification.

Over the past 12 months, has your firm expanded the opportunities to work from home (or other remote location) as a way to keep employees happy and to moderate wage-growth pressures?
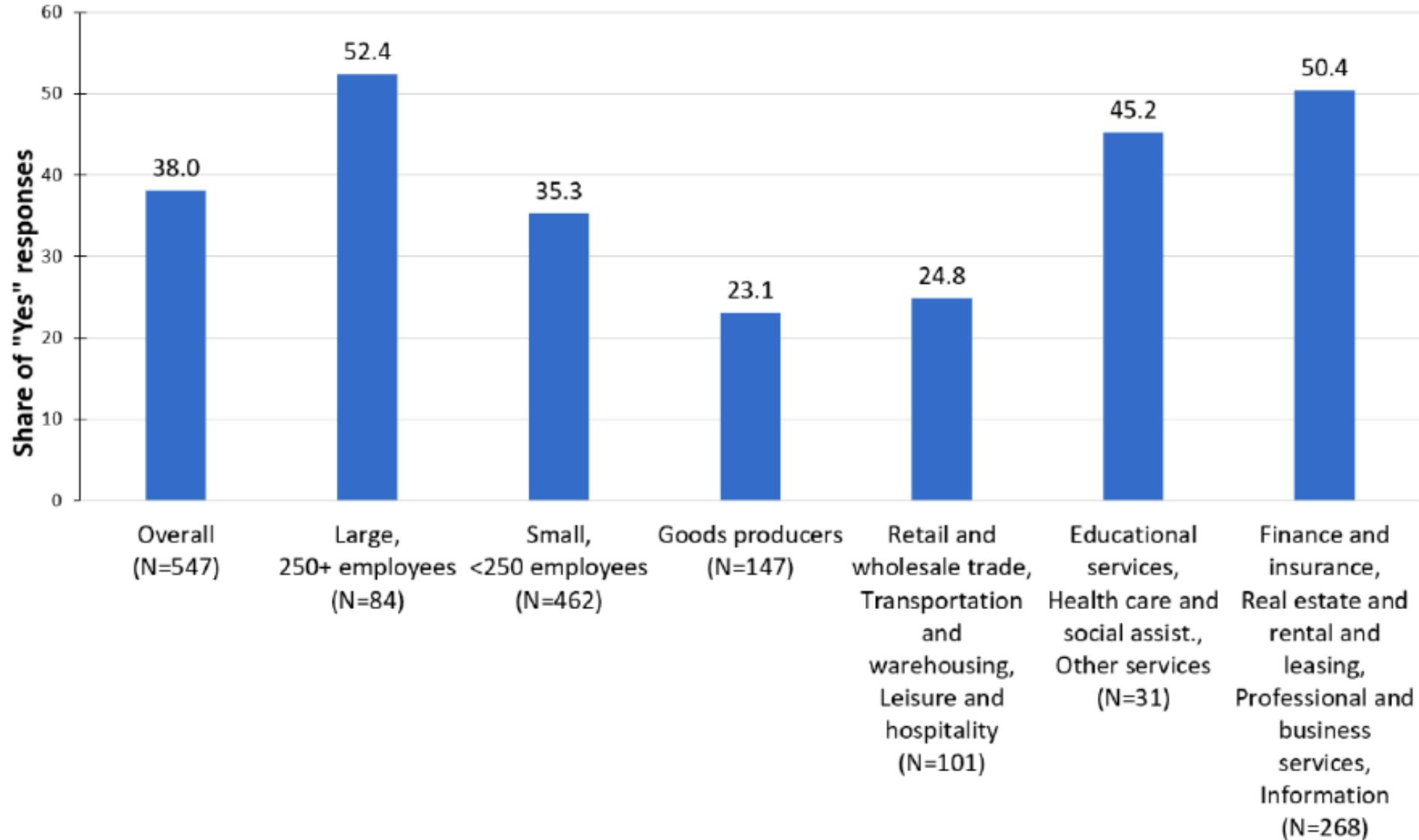
Reproduced from Altig et al. (2022), based on special questions fielded to hundreds of U.S. firms in the April and May 2022 waves of the Survey of Business Uncertainty.

Wage-Growth Restraint Due to the Rise of Remote Work Over the Two-Year Period Centered on April/May 2022 (Percentage points)

	Mean Cumulative Wage-Growth Moderation Over Two Years	
	Unweighted	Weighted by Firm Size
Overall	**2.2**	**2.0**
Small Firms (fewer than 250 employees)	2.2	2.0
Large Firms (250 or more employees)	2.1	2.0
Goods Producers	1.3	1.3
Retail and Wholesale Trade, Transportation and Warehousing, Leisure and Hospitality	1.4	1.8
Education, Healthcare, Social Assistance, Other services	2.7	3.8
FIRE, Professional and Business Services, Information	3.0	2.3

This table reports size-weighted means tabulated from special SBU questions fielded from 11-22 April and 9-20 May 2022.
Source: Altig et al. (20220, who draw on the responses to special questions in the April and May 2022 waves the SBU.
Survey of Business Uncertainty conducted by the Federal Reserve Bank of Atlanta, Stanford University, and the University of Chicago Booth School of Business.

Concluding Remarks

1. The pandemic drove society-wide experiments in how we work. → Much learning → A re-optimization of working arrangements, including a large and enduring shift to WFH.
2. The shift brings large worker benefits – concentrated among the well-educated and highly paid, perhaps especially so in EMEs.
3. It also offers the potential to expand job opportunities among (a) people who live in remote and left-behind places, (b) the physically challenged, and (c) women in societies that discourage their activities outside the home.
4. Employers share in gains from the shift to remote work → a temporary lessening of wage-growth pressures and a persistent compression of wages. Small effects of this sort in EMEs.
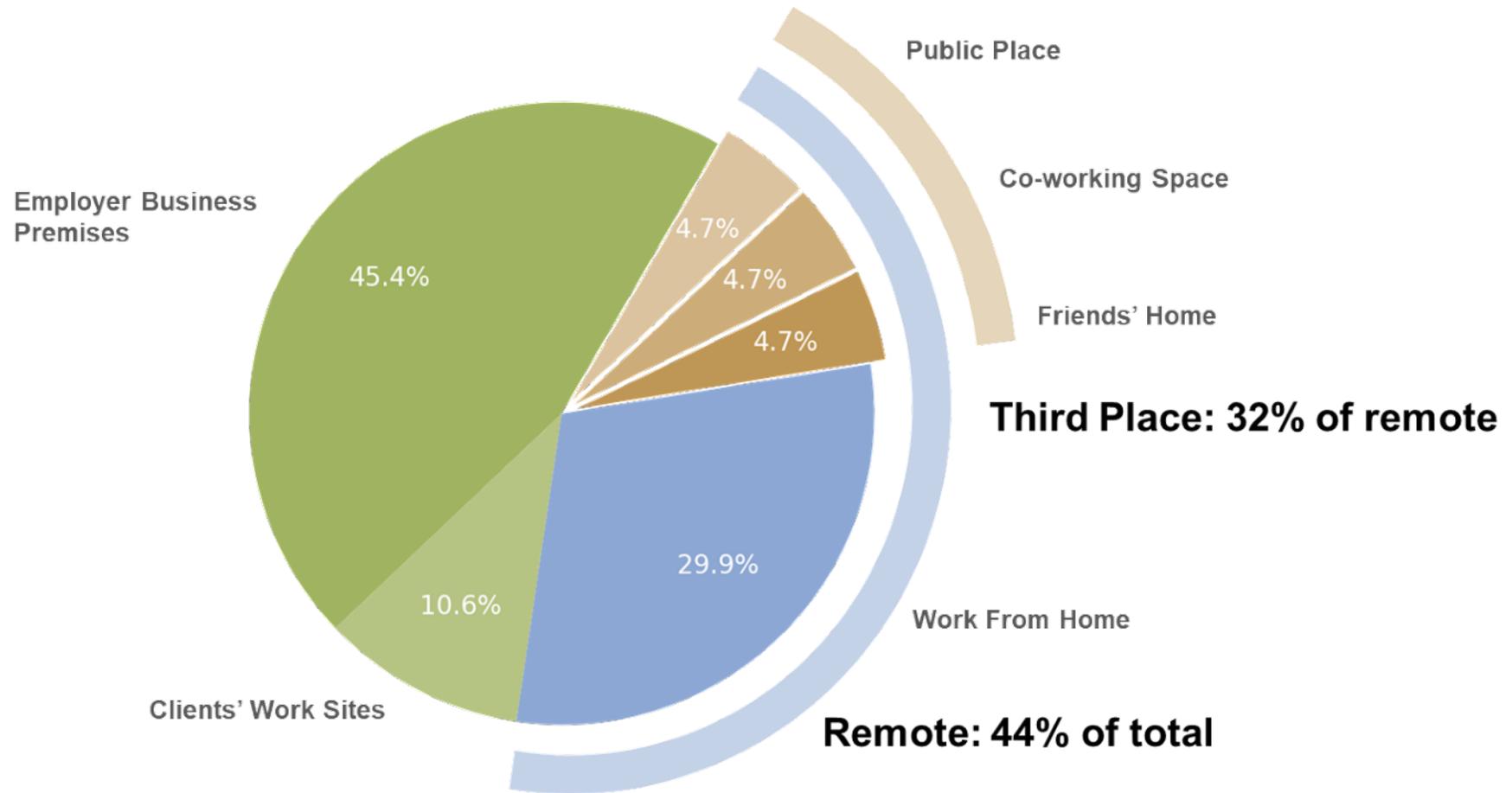
Extra Slides

Where Work Happens Now in the U.S.: 30% Is WFH, 44% Is Remote

"What percentage of your total working time *last week* did you spend at the following locations?"

- Your home
- Your employer's work site
- Client or customer's work site
- Friend or family member's home
- Co-working space
- Public space (cafe, library, etc.)

Reproduced from Caros, Guo And Zhao (2022).

Employer Business Premises — 45.4%

Public Place — 4.7%

Co-working Space — 4.7%

Friends' Home — 4.7%

Third Place: 32% of remote

Work From Home — 29.9%

Remote: 44% of total

Clients' Work Sites — 10.6%

SWAA waves: November 2021 to February 2022. N = 17,664

Social acceptance of WFH has increased sharply in all countries

Change Index for Social Acceptance of WFH
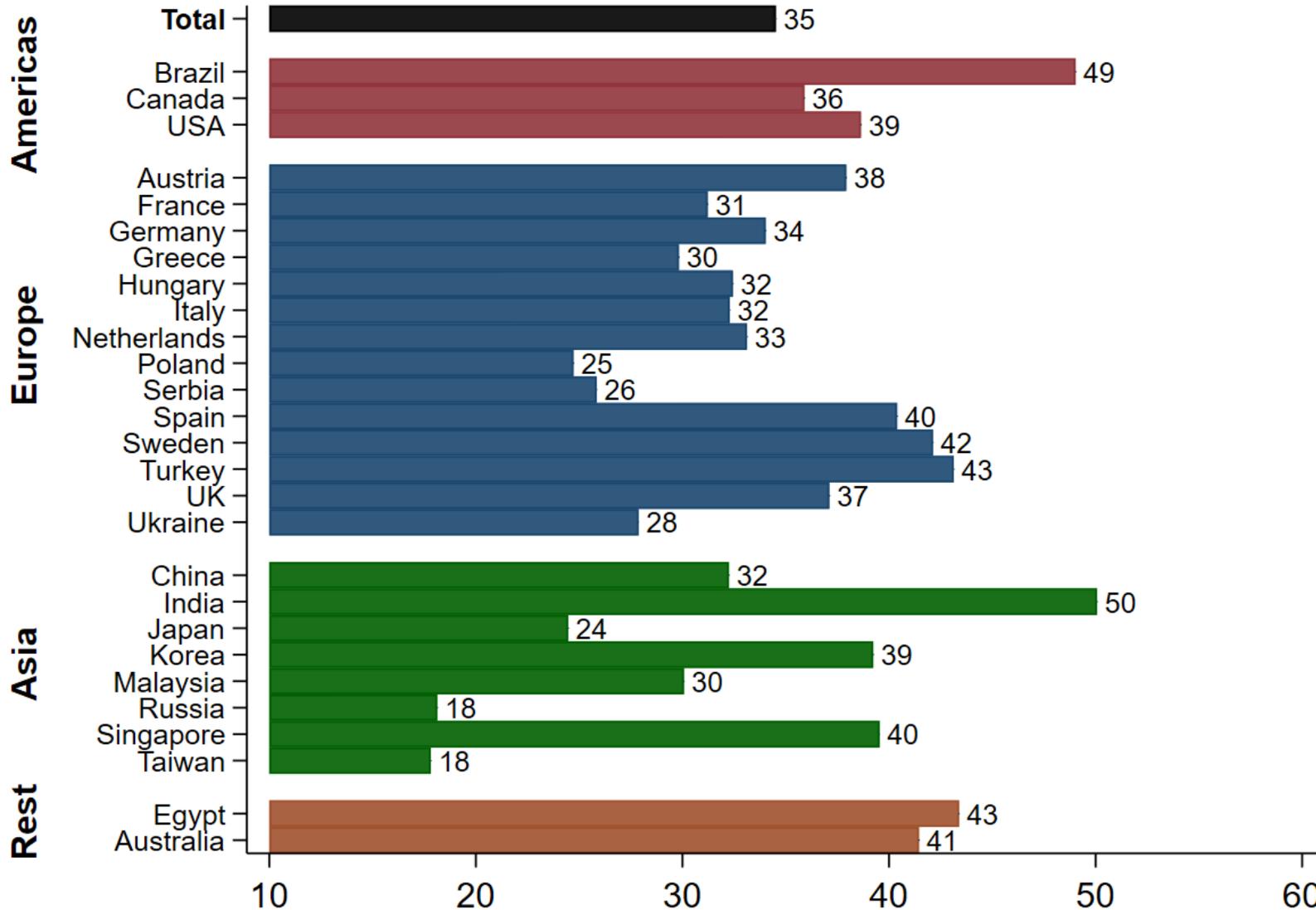
Question: "Since the COVID pandemic began, how have perceptions about WFH changed among people you know?" Response options and assigned index values: Improved among almost all (95%), most (70%) or some (25%), No change (0%), and Worsened among almost all (-95%), most (-70%) or some (-25%). Country-level values are conditional means, as explained on Slide 3. The "Total" value is the unweighted average of the the country-level conditional means.

Sample of N=36,078 G-SWA respondents, surveyed in August 2021 and February 2022.

44

Measuring Remote Work In Job Vacancy Adverts

- In Hansen et al. (2022), we use a state-of-the-art NLP approach to classify job vacancy adverts as to whether the job does or does not allow 1+ days per week of remote work. We start from a "DistilBERT" model (Sanh et al., 2020), pre-train it on a portion of the Burning Glass corpus, then train it on human-classified text sequences extracted from 60,000 job adverts. We audit the model-based classifications to check performance and refine the model.

- We apply our model to 350+ million job vacancy adverts posted online and collected by Burning Glass Technologies from 2014 to the present. Slides in this deck use a 5% sample of the 350 million adverts.

- Currently, our dataset covers the United States, United Kingdom, Canada, Australia, and New Zealand. We plan to extend our measurement and analysis to other countries as well.

More Remarks on Forced (and Coordinated) Experimentation, Learning, and Re-optimization
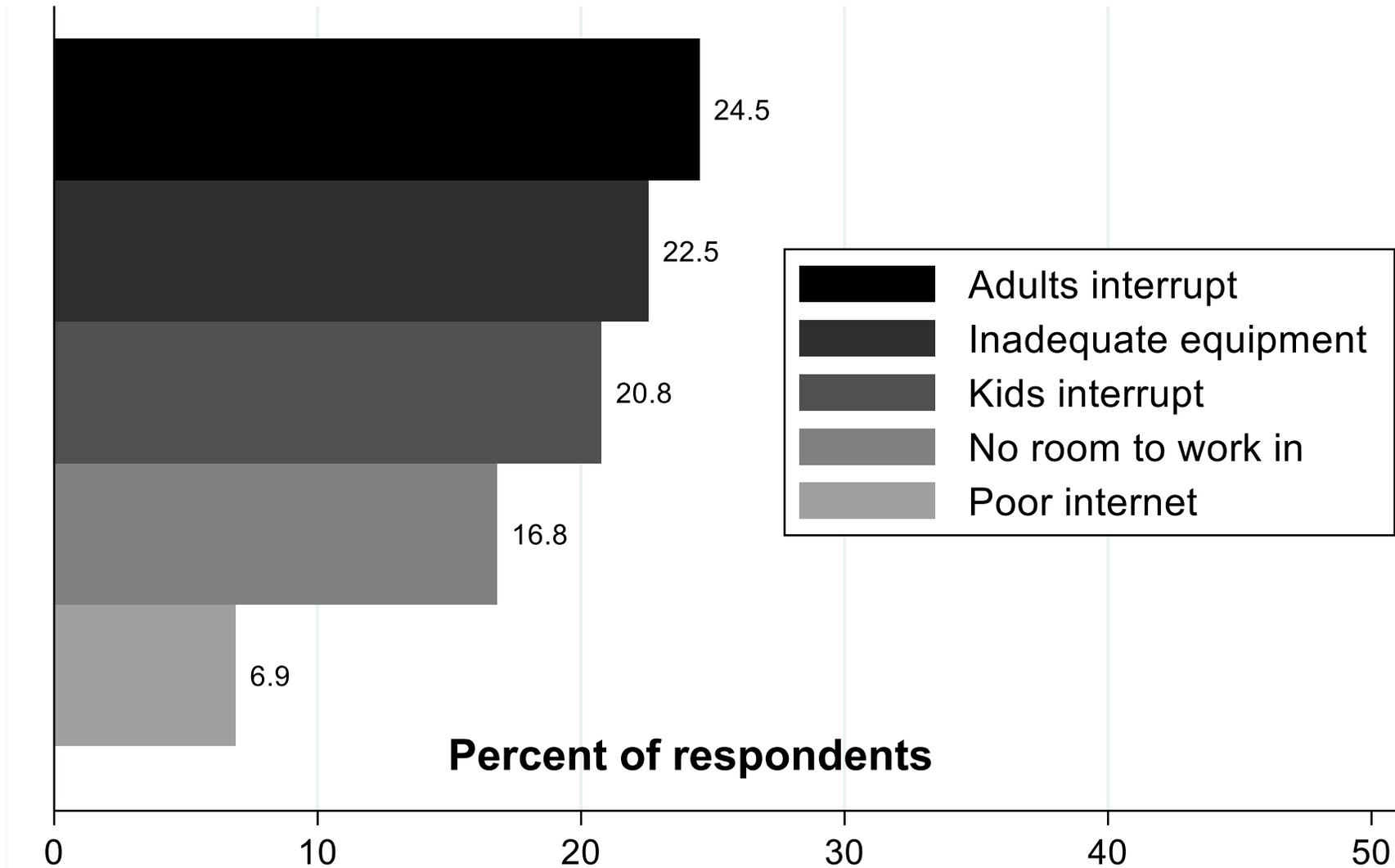
1. Experimentation revealed information that alters optimal working arrangements through a tail effect and a bias-removal effect.

2. Strategic complementarities across firms in the choice of working arrangements amplify the direct impact of the pandemic experience on WFH – e.g., it's easier for law firm staff to WFH when clients WFH.

3. There are also strategic complementarities across firms in experimentation with WFH and remote work.

4. COVID (permanently?) knocked down regulations that blocked virtual service delivery, especially in the healthcare sector

   - Before COVID, Medicare and Medicaid rules allowed payments for remotely supplied healthcare services only in very limited circumstances.

   - Pandemic led to relaxation of occupational licensing rules that inhibited the provision of healthcare services by out-of-state healthcare providers.

# Why are you more efficient working from home?
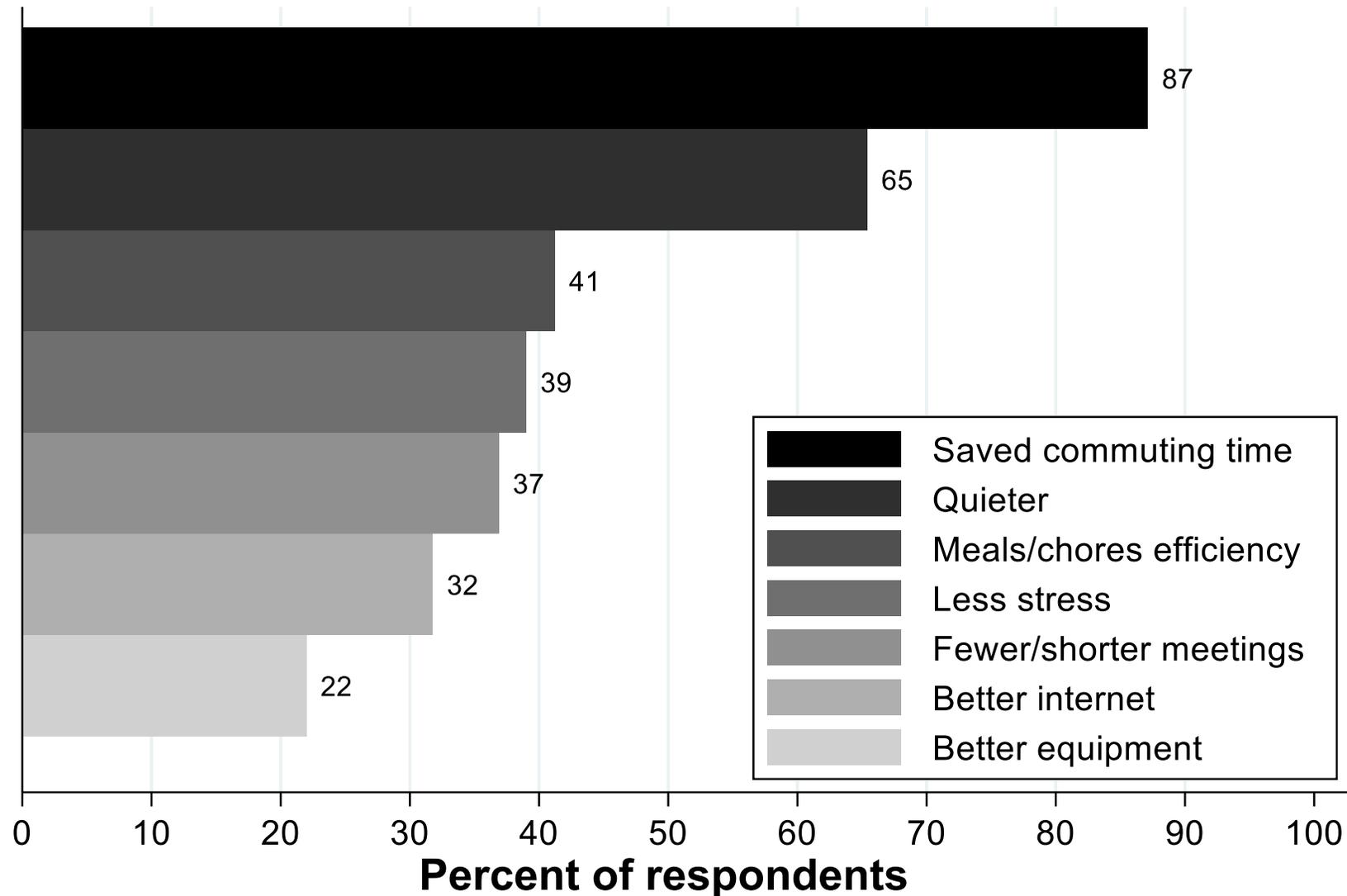
Source: Data from 7,902 respondees who can work from home in 2021, reweighted to match the US population. Details on https://wfhresearch.com/

Why are you less efficient working from home?

24.5

22.5

20.8

16.8

6.9

Adults interrupt
Inadequate equipment
Kids interrupt
No room to work in
Poor internet

Percent of respondents

0   10   20   30   40   50

Source: Data from 7,902 respondees who can work from home in 2021, reweighted to match the US population. Details on https://wfhresearch.com/

COVID-19 Shifted Patent Applications to Technologies that Support WFH
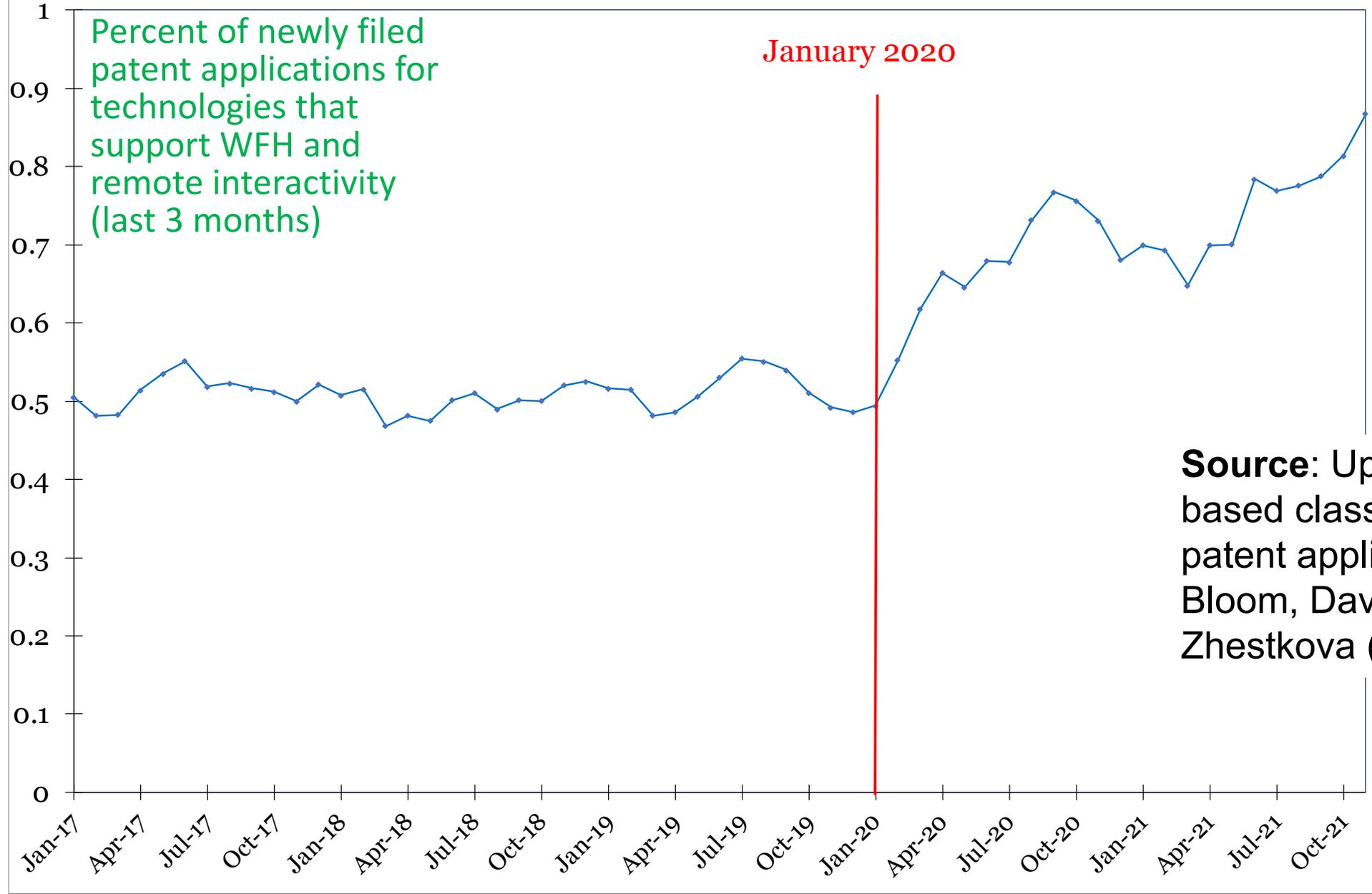
Percent of newly filed patent applications for technologies that support WFH and remote interactivity (last 3 months)

January 2020

Source: Update to the text-based classification of U.S. patent applications in Bloom, Davis and Zhestkova (2021).

For more on working from home and related topics,
see www.stevenjdavis.com and www.WFHresearch.com.

SWAA April 2022 Updates

Jose Maria Barrero, Nicholas Bloom, and Steven J. Davis

11 April 2022

Latest survey wave included: March 2022

To sign up for regular results updates, please sign up here.

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