How Much Work from Home Is There in the United States?

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

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Executive Summary

We estimate and compare work-from-home (WFH) rates across five U.S. sources: the Census Household Pulse Survey (HPS), Survey of Working Arrangements and Attitudes (SWAA), Current Population Survey (CPS), American Time Use Survey (ATUS), and American Community Survey (ACS). Among persons 20-64 years of age with annual earnings greater than $10,000 (or annual household income > $25K):

1. WFH averages 29% of full workdays in 2023 in the HPS and the SWAA.
2. WFH averages 23% of workhours in the ATUS (2022) and 14% in the CPS (2023).
3. One-third of persons engage in some "telework" on a typical day according to the ATUS, while only one-fifth do so in a typical week according to the CPS.
4. As of 2022, 15% of workers worked in a fully remote capacity in a typical week in the ACS, 14% in the SWAA, and 10% in the CPS.

At least in part, low WFH rates in the CPS reflect a problematic question design. Small improvements to the CPS design raise the estimated WFH share of hours by 3 ppts and the incidence of WFH across persons by 8 ppts. Question design matters more for women and young workers. Finally, we show that the estimated gap in WFH rates between men and women differs materially across survey sources.

Work-from-Home Rates, Persons 20-64 Years Old

	Full Days Worked from Home, Percent of Workdays			WFH Hours, Percent of Workhours	
	(1)	(2)	(3)	(4)	(5)
Data source	**HPS**	**SWAA**	**ATUS**	**ATUS**	**CPS**
Sample period	Jan to Oct 23	Jan to Oct 23	Jan to Dec 22	Jan to Dec 22	Jan to Oct 23
Income threshold	Household income>$25k	Prior-year earnings>$10k	Annualized earnings>$10k	Annualized earnings>$10k	Annualized Earnings > $10K
Work requirement	Worked last week	Worked last week, days with >6 hours	Worked >6 hours on diary day	Worked on diary day	Worked last week
Overall	28.8	28.6	21.5	23.2	14.2
Men	29.0	27.3	17.3	18.3	12.7
Women	28.5	30.4	26.8	29.3	15.8
Difference	+0.5	-3.1	-9.5	-11.0	-3.1
N	426,305	61,966	1,651	2,089	88,195

Note: The statistics are cross-sectional means, adjusted for sample weights. See Appendix A for more information and for a time-series chart that shows the evolution of WFH rates for men and women over time in the SWAA data.

Percent Working in a Fully Remote Capacity, 20-64 Years Old

	(1)	(2)	(3)	(4)	(5)
Data source	**ACS**	**SWAA**	**Census HPS**	**CPS**	**CPS**
Sample period	Jan to Dec 22	Jan to Dec 22	Jan 23 to Oct 23	Jan 23 to Oct 23	Oct to Dec 22
Income threshold	Prior-year earnings>$10k	Prior-year earnings>$10k	Household income>$25k	Annualized earnings>$10k	Annualized earnings>$10k
Work requirement	Worked last week	Worked 5+ days last week, days with >6 hours	Worked last week	Worked last week	Worked last week
Overall	15.3	14.2	19.9	10.0	9.9
Men	13.9	11.7	19.9	8.9	8.6
Women	17.0	17.4	19.9	11.3	11.4
Difference	+3.1	+5.7	-0.01	+2.4	+2.8
N	1,181,161	73,840	426,305	88,195	26,768

Note: The statistics are cross-sectional means, adjusted for sample weights. See Appendix A for more information.

Percent of Workers, 20-64, with Any Work from Home

	Percent Who Engaged in Any Work from Home on a Typical Day	Percent Who Engaged in Any Work from Home in a Typical Week	
	(1)	(2)	(3)
Data Source	**ATUS**	**CPS**	**CPS**
Sample period	Jan to Dec 22	Oct to Dec 22	Jan to Oct 2023
Income threshold	Annualized earnings>$10k	Annualized earnings>$10k	Annualized earnings>$10k
Work requirement	Worked on diary day	Worked last week	Worked last week
Overall	32.7	17.9	19.2
Men	26.7	16.3	17.5
Women	39.8	19.7	21.0
Difference	+13.1	+3.4	+3.5
N	2,089	26,768	88,195

Note: The statistics are cross-sectional means, adjusted for sample weights. See Appendix A for more information.

Why Does the CPS Yield Lower WFH Rates than Other Surveys?

The CPS yields much lower WFH rates than the other surveys. The WFH gap between the CPS and the ATUS is especially noteworthy, because both surveys rely on the same sample frame. Part of the CPS-ATUS WFH gap may arise from non-random response patterns that differ between the two surveys. In 2022, the household-level response rate averages 73% in the CPS and 36% in the ATUS. See the statistics at www.bls.gov/osmr/response-rates/household-survey-response-rates.htm.

Aside from matters of sample representativeness, we think the CPS question design yields data that understate the extent of remote work. See Appendix A for a reproduction of the CPS questions.

Concerns about the CPS Question Design

1. The preamble to the CPS questions on remote work is problematic. It reads as follows: “We have some questions related to how the COVID-19 pandemic affected where people work.” That preamble encourages respondents to focus on remote work that is a consequence of the pandemic. Presumably, however, the survey goal is to elicit information about the extent of remote work – regardless of whether the pandemic played a role in determining the extent of such work. In any event, that is how users interpret the data.
2. Respondents who say yes to “At any time last week did you telework or work at home for pay?” get this follow up: “Last week, you worked N hours. [N is filled in from a prior response.] How many of these hours did you telework or work at home for pay?”
    - If someone works a full day in the office and spends some extra time in the evening (or on off days) responding to emails, reading reports, etc., will he/she interpret that extra work time as “for pay.” It’s unclear.
    - If the respondent works from a coffee shop, library, friend’s home or the like, will he or she interpret that as “telework or work from home”? Again, it’s unclear.

How We Investigate the Effects of the CPS Question Design

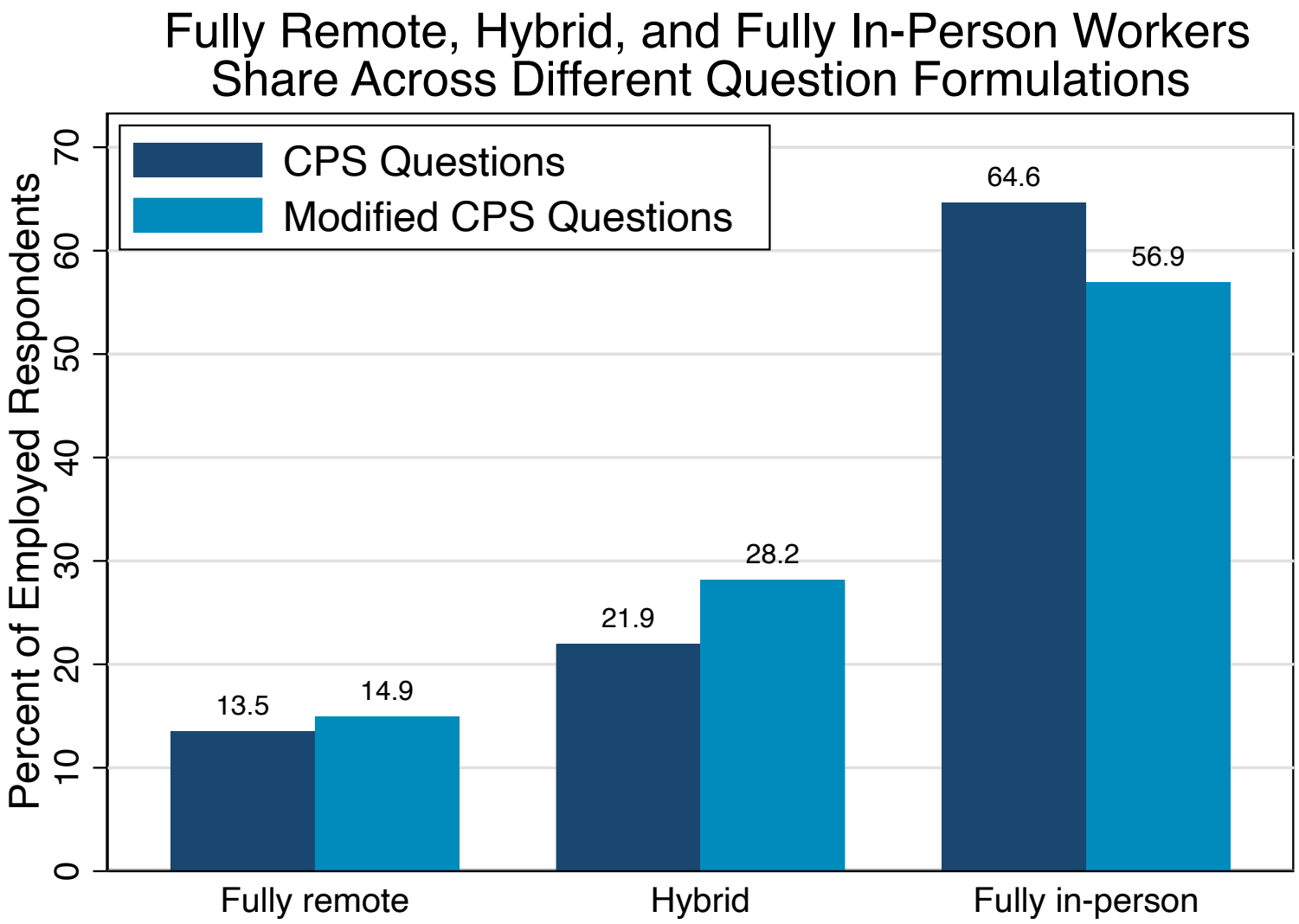
To investigate these concerns, we fielded the CPS questions on remote work to one quarter of the sample in the October 2023 wave of the SWAA. Another one quarter received modified versions of the CPS questions that address the design concerns stated on the previous slide. (The remaining one half of the October 2023 sample received standard SWAA questions about remote work intensity.) We report the results on the next four slides.

We find that small improvements to the CPS question design raise the estimated WFH share of workhours by 3 percentage points (i.e., by about 15%). Our improvements to the CPS question design raise the estimated incidence of WFH across persons by 8 percentage points. Question design matters more for women and for young workers.

In short, our evidence says the CPS question design yields data that understate the average WFH rate and misstate the cross-sectional pattern of WFH.

Using the SWAA to Assess the CPS Question Design

Hours WFH by question: 23% (CPS questions), 26% (Modified CPS)



Current Population Survey (CPS) Questions:

- We have some questions related to how the COVID-19 pandemic affected where people work. At any time LAST WEEK did you telework or work at home for pay?

- Last week, you worked N hours. How many of these hours did you telework or work at home for pay?

Modified CPS Questions:

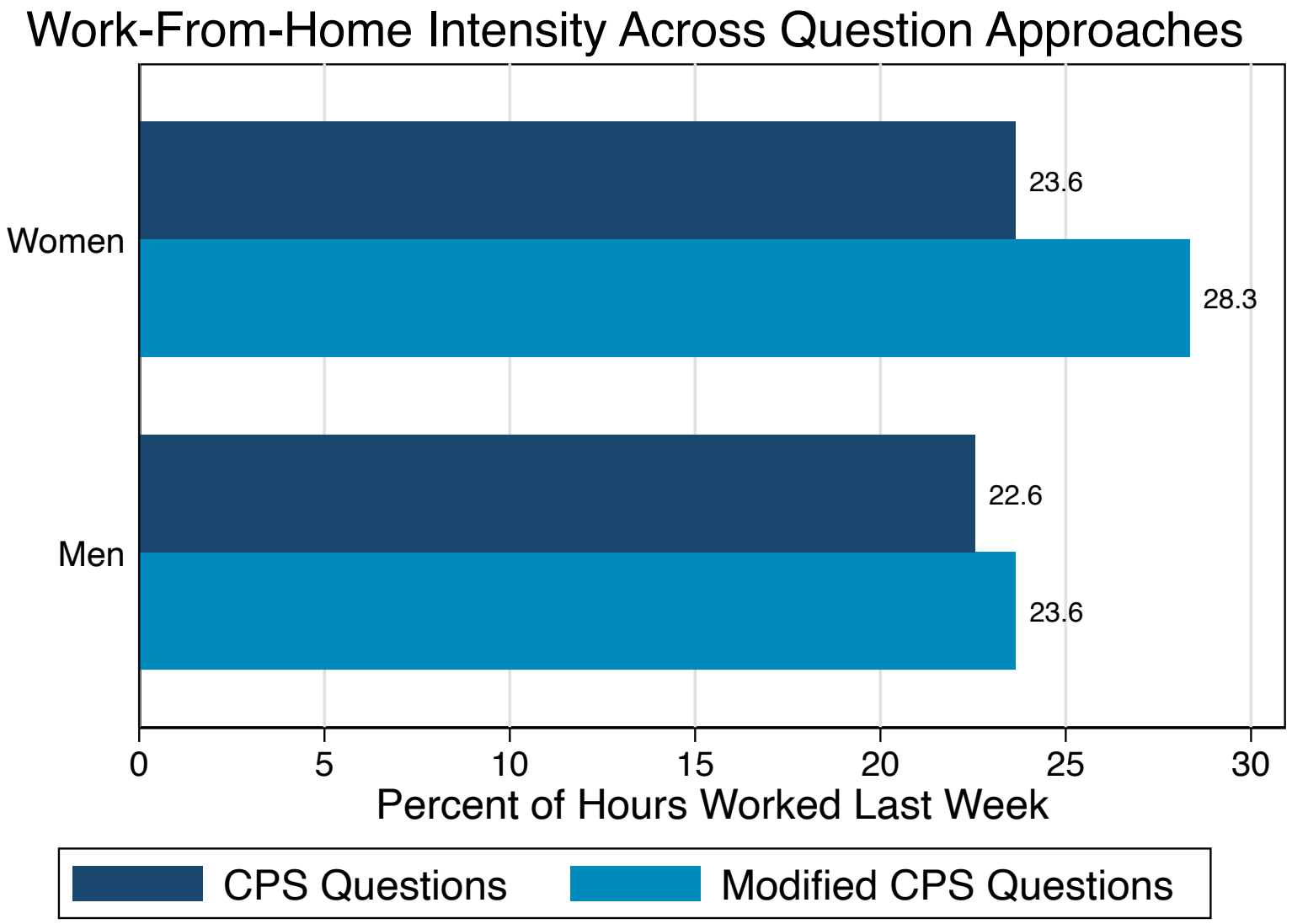
- Did you spend any time LAST WEEK working at home for your job?

- Last week, you worked N hours. How many of these hours did you work at home (or at a friend's place, coffee shop, or the like)?

Notes: Data are from the October 2023 SWAA wave. We randomly assigned each respondent to one set of questions (including a third set not shown). We focus on workers who earned $10,000 or more in the prior year, and who worked for pay in the week prior to the survey. We reweight the raw responses to match the Current Population Survey by age-sex-education-earnings cells.

N = 1,453 (CPS Questions) N = 1,443 (Modified CPS Questions).

Question Design and WFH Estimates by Sex



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Notes: Data are from the October 2023 SWAA wave. We randomly assigned each respondent to one set of questions (including a third set not shown). We focus on workers who earned $10,000 or more in the prior year, and who worked for pay in the week prior to the survey. We reweight the raw responses to match the Current Population Survey by age-sex-education-earnings cells.

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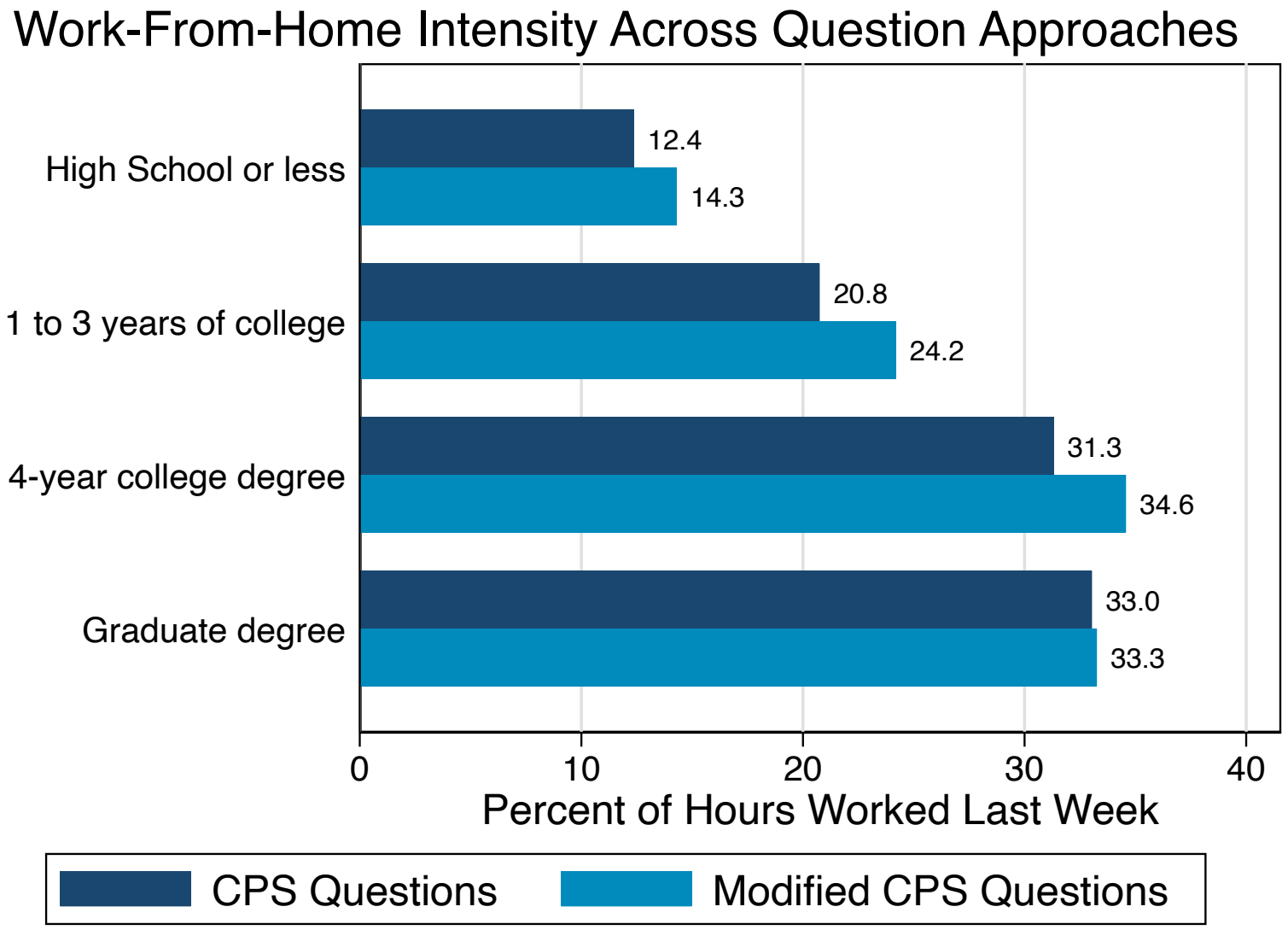
Question Design and WFH Estimates by Education



Current Population Survey (CPS) Questions:

- We have some questions related to how the COVID-19 pandemic affected where people work. At any time LAST WEEK did you telework or work at home for pay?

- Last week, you worked N hours. How many of these hours did you telework or work at home for pay?

Modified CPS Questions:

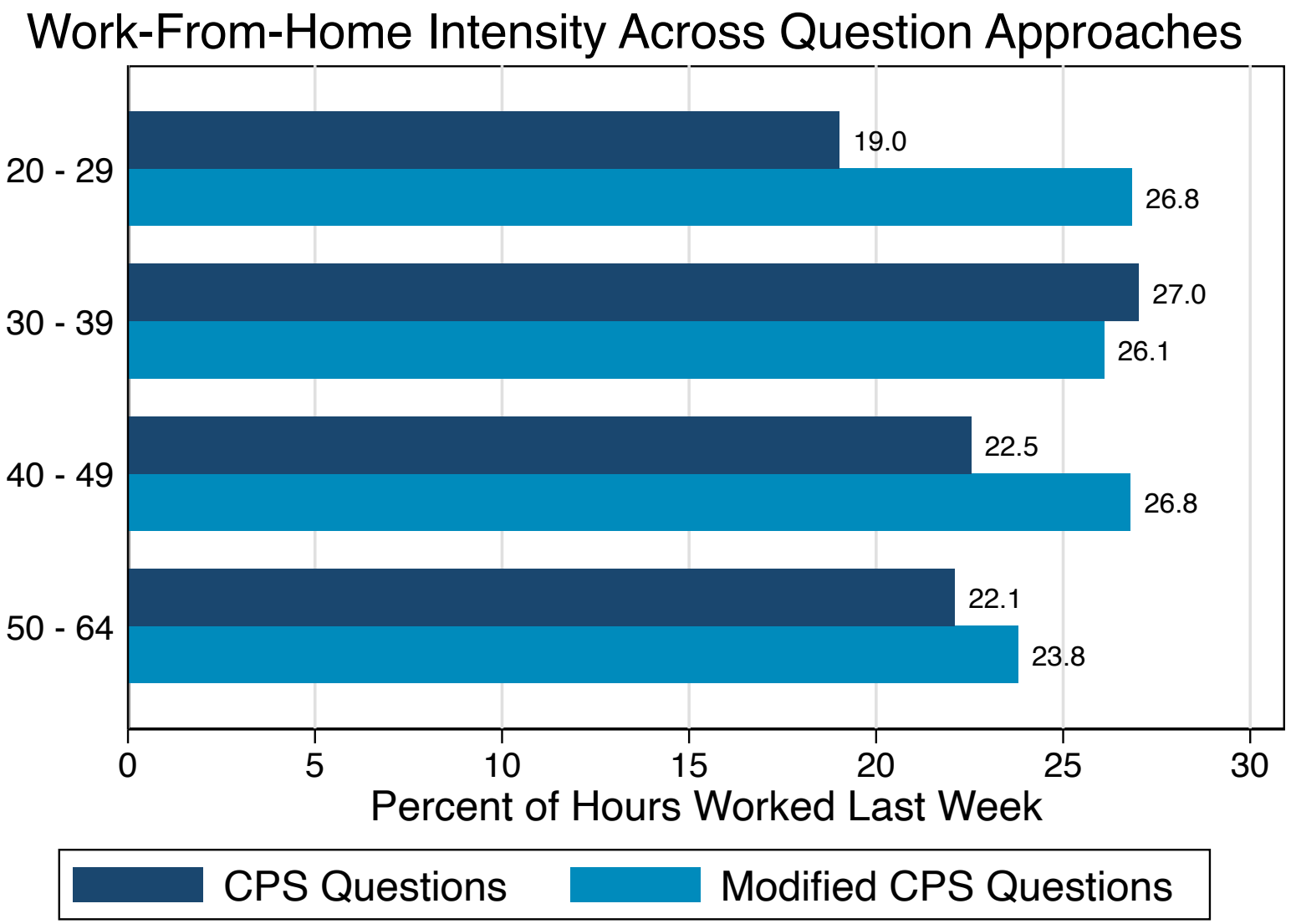
- Did you spend any time LAST WEEK working at home for your job?

- Last week, you worked N hours. How many of these hours did you work at home (or at a friend's place, coffee shop, or the like)?

Notes: Data are from the October 2023 SWAA wave. We randomly assigned each respondent to one set of questions (including a third set not shown). We focus on workers who earned $10,000 or more in the prior year, and who worked for pay in the week prior to the survey. We reweight the raw responses to match the Current Population Survey by age-sex-education-earnings cells.

N = 1,453 (CPS Questions) N = 1,443 (Modified CPS Questions).

Question Design and WFH Estimates by Age Group



Current Population Survey (CPS) Questions:

- We have some questions related to how the COVID-19 pandemic affected where people work. At any time LAST WEEK did you telework or work at home for pay?

- Last week, you worked N hours. How many of these hours did you telework or work at home for pay?

Modified CPS Questions:

- Did you spend any time LAST WEEK working at home for your job?

- Last week, you worked N hours. How many of these hours did you work at home (or at a friend's place, coffee shop, or the like)?

Notes: Data are from the October 2023 SWAA wave. We randomly assigned each respondent to one set of questions (including a third set not shown). We focus on workers who earned $10,000 or more in the prior year, and who worked for pay in the week prior to the survey. We reweight the raw responses to match the Current Population Survey by age-sex-education-earnings cells.

N = 1,453 (CPS Questions) N = 1,443 (Modified CPS Questions).

Other Sensitivity Checks

In addition to issues related to the CPS question design, we investigated the sensitivity of WFH intensity estimates in three other respects.

1. **Relaxing the Hours Criterion for "Workdays":** The SWAA question specifies "full" workdays as those that entail at least six hours of paid work. Relaxing this criterion for a full workday in ATUS data yields a larger value for the remote share of workdays.
2. **Changing the Earnings Requirement for Sample Inclusion**: Our benchmark samples restrict attention to persons 20-64 years of age with prior-year or annualized earnings greater than $10K. Raising the earnings requirement to $20K or eliminating it altogether has little impact on the remote share of full workdays.
3. **Using a More Expansive Concept of Remote Work**: The granular nature of the response options to the ATUS question about where work happens lets us consider more expansive concepts of remote work. When we include work at "Someone else's home" and "School" (in addition to the "DP's home or yard"), the remote-work share of workhours increase from 23.2% to 25.1%.

The next few slides report these results in more detail:

Relaxing the Hours Criterion for "Workdays" Yields a Higher WFH Share of Workdays

	SWAA	ATUS		
	(1)	(2)	(3)	(4)
Sample period	Jan to Dec 22	Jan to Dec 22	Jan to Dec 22	Jan to Dec 22
Age range	20 to 64	20 to 64	20 to 64	20 to 64
Income threshold	Prior-year earnings>$10k	Annualized earnings>$10k	Annualized earnings>$10k	Annualized earnings>$10k
Work requirement	Worked last week, days with >6 hours	Worked last week, days with >6 hours	Worked last week, days with >4 hours	Worked last week, days with >2 hours
Overall	30.2	21.5	22.8	25.7
Men	29.4	17.3	18.4	20.6
Women	31.3	26.8	28.2	32.0
Difference	+1.9	+9.5	+9.8	+11.4
N	73,840	1,651	1,826	1,940

Short workdays are more likely to be performed entirely at home or other remote location. Thus, as we relax the hours criterion for "workdays," we obtain higher values for the estimated share of workdays performed remotely.

Note: The statistics are cross-sectional means, adjusted for sample weights. See Appendix A for more information.

Modest Changes in the Earnings Requirement Have Little Impact on the Estimated WFH Rate

	WFH Percent of Workdays, SWAA			WFH Percent of Workhours ATUS		
	(1)	(2)	(3)	(4)	(5)	(6)
Earnings requirement	None	Prior-year earnings>$10k	Prior-year earnings>$20k	None	Annualized earnings>$10k	Annualized earnings>$20k
Work requirement	Worked last week, days with >6 hours	Worked last week, days with >6 hours	Worked last week, days with >6 hours	Worked last week, days with >6 hours	Worked last week, days with >6 hours	Worked last week, days with >6 hours
Overall	30.7	30.2	30.6	21.9	21.5	22.1
Men	32.0	29.4	29.4	17.7	17.3	17.7
Women	29.5	31.3	32.1	27.3	26.8	27.8
Difference	-2.5	+1.9	+2.7	+9.6	+9.5	+10.1
N	67,231	73,840	70,578	1,833	1,651	1,602

Note: The statistics are cross-sectional means, adjusted for sample weights, among persons 20-64 in 2022.
See Appendix A for more information.

Detailed Tabulation of Where Work Happens in the ATUS

Where	Share	Where	Share
DP's home or yard	23.20	Outdoors – not at home	0.51
DP's workplace	71.58	Gym/health club	0.01
Someone else's home	1.35	Other place	1.30
Restaurant or bar	0.18	Driver of car, truck, or motorcycle	1.05
Place of worship	0.04	Passenger of car, truck, or motorcycle	0.01
Grocery store	0.05	Walking	0.03
Other store/mall	0.01	Airplane	0.04
School	0.55	Other mode of transportation	0.09

Notes: The sample runs from January to December 2022. It covers persons 20-64 years old with annualized earnings greater than $10K who worked on the "diary day." "DP" refers to designated person in the ATUS.

Appendix A. Survey Questions on the Extent of Work from Home

Recall that we tap five survey sources to estimate the extent of work from home in the United States. In this appendix, we reproduce the key questions from each survey that yield data on the extent of work from home or other remote location. We also provide more information about how we use each data source to construct the statistics reported in the main text.

Survey of Working Arrangements and Attitudes (SWAA)

For each day **last week**, *did you* **work a full day (6 or more hours)**, *and if so* **where?**

Day of the week	Did not work 6 or more hours	Worked ***from home***	Worked at ***employer or client site***
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			
Sunday			

Note: We weight the individual-level SWAA data to match the corresponding CPS shares by age-sex-education-earnings cells. See “Why Working from Home Will Stick” by Barrero, Bloom and Davis for details on how we construct the weights.

Current Population Survey (CPS)

- *I now have some questions related to how the COVID-19 pandemic affected where people work.*
- *At any time* **last week**, *did you telework or* ***work at home*** *for pay?*
- *Last week, you worked [x] hours How many of these hours did you telework or work at home for pay?*

Notes:

1. We use CPS sample weights when computing our tabulations.
2. The CPS uses the above question design from October 2022 to November 2023. As of December 2023, the CPS modified the introductory sentence to read “I now have some questions about where people worked.” See www.bls.gov/cps/telework.htm#q1. As of this writing (January 2024), the BLS has yet to release the CPS data for December 2023.

Census Household Pulse Survey (HPS)

- *In the **last 7 days**, have any of the people in your household teleworked or **worked from home**?*

  - ○ Yes, for 1-2 days
  - ○ Yes, for 3-4 days
  - ○ Yes, for 5 or more days
  - ○ No

Notes:

1. We use the individual-level HPS sample weights in computing our tabulations.
2. We treat “Yes, for 1-2 days” as 30% of days worked from home, “3-4” as 70% of days, “5 or more” as 100%, and “No” as 0%.

American Time Use Survey (ATUS)

The ATUS elicits time-use diaries that cover a 24-hour period for each “designated person” (DP). The diary records each activity of the DP over the course of the 24 hours, the duration of the activity (or start and stop times), where the activity took place, and with whom (if relevant). The next slide reproduces the response options for the ATUS question about where activities took place.

The granular nature of the time-use data lets us estimate the percent of full workdays performed at home or other remote location, the percent of workhours performed remotely, and the percent of workers who engaged in any remote work in a typical day. The ATUS data also let us investigate how the estimated percent of full workdays performed remotely varies with the definition of “full.

Notes:

1. We use ATUS sample weights in computing our tabulations.
2. We treat “working at main job” and “working at other job” as work.
3. We treat work at the “DP’s home or yard” as work from home, which yields a conservative estimate for the extent of remote work.

ATUS Questionnaire Extract on the "Where Universe"

WHERE

Universe: Personal activity reported OR ACTIVITY ≠ Precodes 1, 2, 30, 31

Where were you while you were [ACTIVITY]?

PLACE

1. DP's home or yard
2. DP's workplace
3. Someone else's home
4. Restaurant/Bar
5. Place of worship
6. Grocery store
7. Other store/Mall
8. School
9. Outdoors away from home
10. Library
11. Other place (specify)
30. Bank*
31. Gym/ Health Club*
32. Post Office*

MODE OF TRANSPORTATION

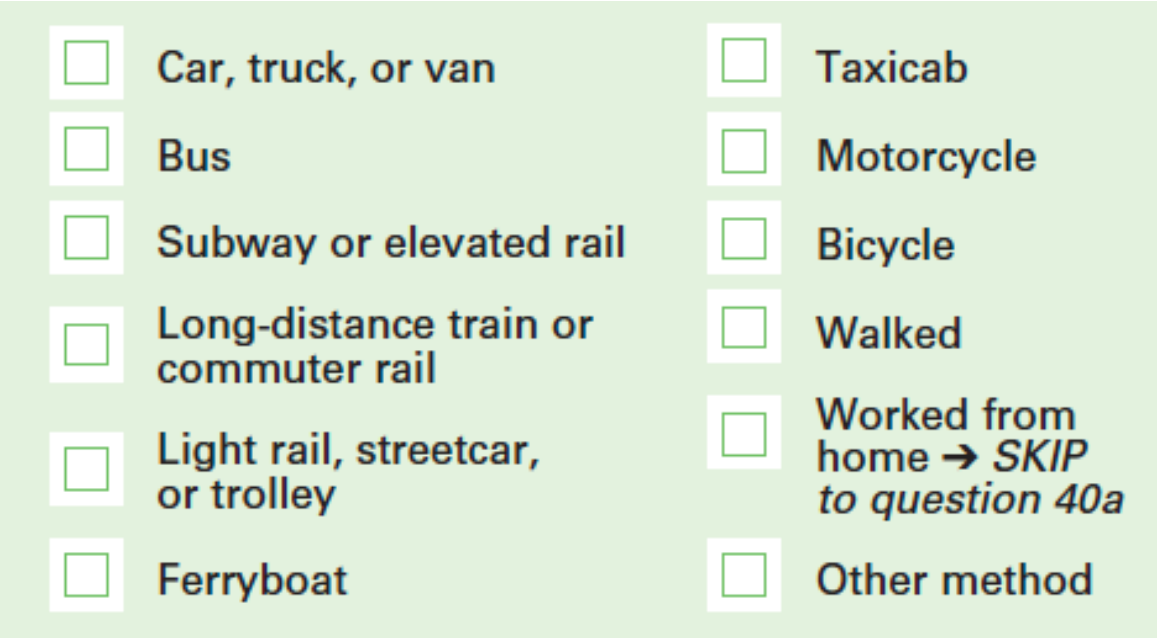
12. Car, truck, or motorcycle (driver)
13. Car, truck, or motorcycle (passenger)
14. Walking
15. Bus
16. Subway/Train
17. Bicycle
18. Boat/Ferry
19. Taxi/Limousine Service
20. Airplane
21. Other (specify)

[If STOPTIME > 4 AM, go to S5: (Summary questions)]
[Else continue to next row]

Source: ATUS Current Questionnaire at https://www.bls.gov/tus/questionnaires.htm.

American Community Survey (ACS)

How did this person usually get to work LAST WEEK? *Mark (X) ONE box for the method of transportation used for most of the distance.*

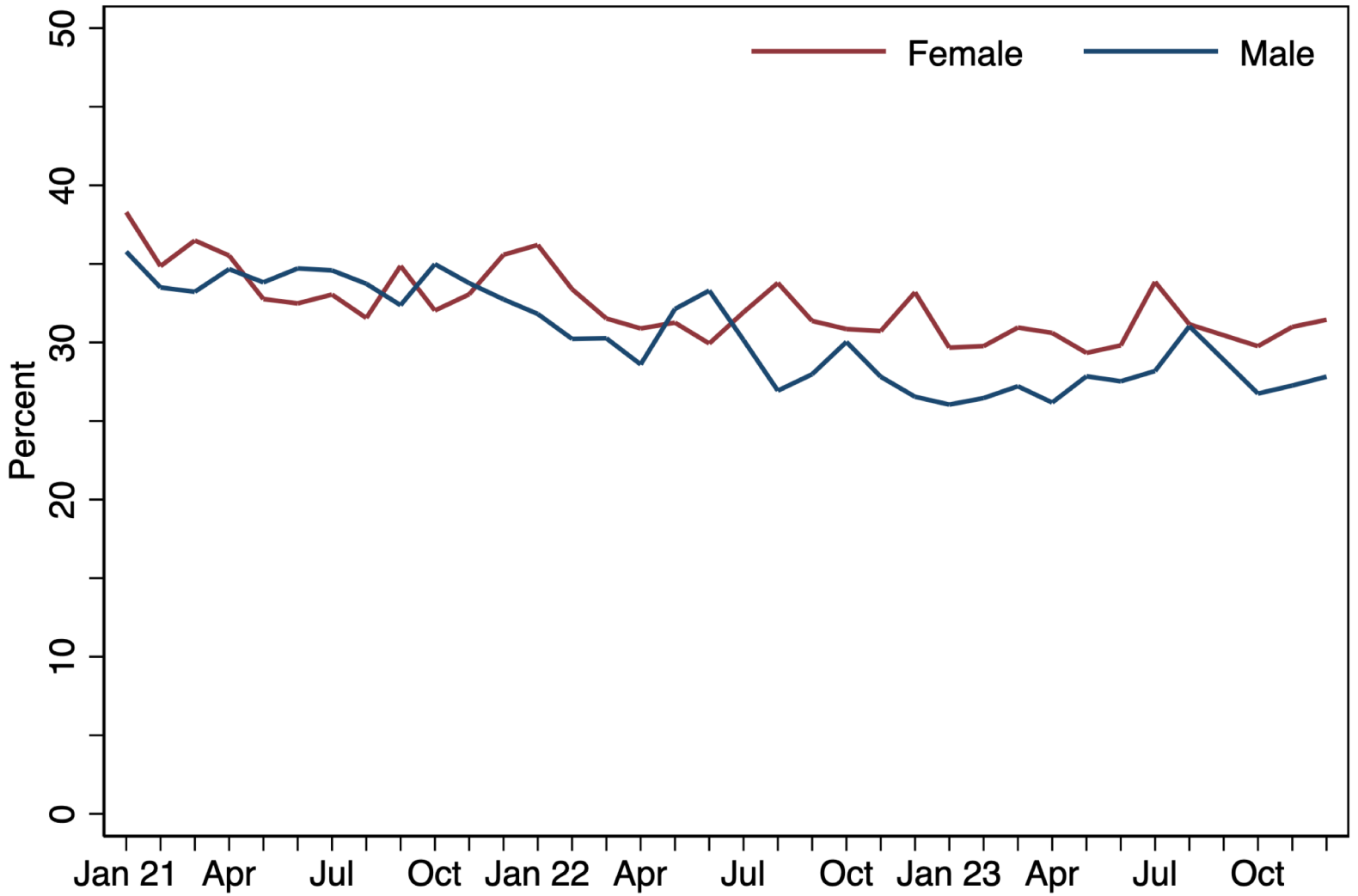


Given these instructions and response options, someone who mostly (but not entirely) worked from home last week should check the box corresponding to the form of commuting that accounted for "most of the distance." Hence, this ACS question yields data on the incidence of fully remote work, but it does not yield data on the extent of hybrid working arrangements.

Notes:

1. We use ACS sample weights in computing our tabulations.
2. We treat someone as working in a fully remote capacity if the response to this question is "Worked from home."

Work-from-Home Days as a Percent of Full Workdays, Men and Women over Time in the SWAA



Note: The chart reports monthly values of cross-sectional means, adjusted for sample weights, for men and women who are 20-64 years old in the SWAA.