Work from Home Before and After the Covid-19 Outbreak

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  - Measured WFH: workdays without a commute
  - Micro data publicly available at openICPSR

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  - Measured WFH: workdays without a commute
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- Aggregate changes in WFH
  - Pre-covid: 15% workdays at home $\rightarrow$ May '20: 40% $\rightarrow$ June '21: 29%
- Who drove the increase in WFH during the pandemic?
  - Job-stayers, pre-pandemic daily commuters, in a few skilled industries

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  - Substitution: Pandemic increased costs of working on-site
  - Adoption: Pandemic led to greater access to WFH work arrangements
- Quantitative model analysis
  - 3/4 of WFH increase in June 21 reflects adoption of new WFH arrangements
  - Full-time WFH share doubles to 14.6 percent in the longer term
  - One in 5 workdays WFH (up from 1 in 7 before the pandemic)
  - Consistent with WFH survey expectations and follow-up surveys

Outline

The Real-Time Population Survey (RPS)

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- Extra information relative to CPS
  - Retrospective questions on February 2020 $\implies$ quasi-panel data
  - New survey questions, including on commuting behavior

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- Do-it-yourself CPS: Bick and Blandin (RED 2022)

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How the RPS Measures Work from Home (WFH)

- Ask each worker about their main job:
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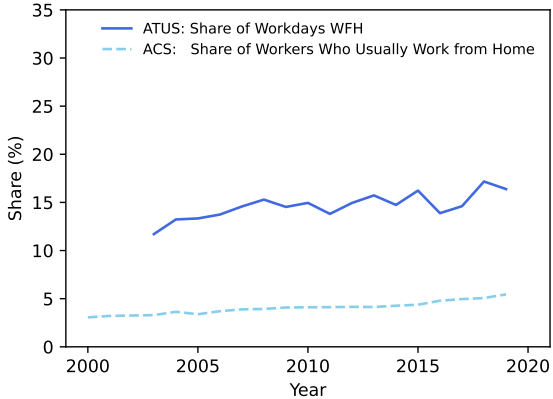
- Note: WFH excludes days partly WFH, secondary jobs, home production

WFH Before COVID-19



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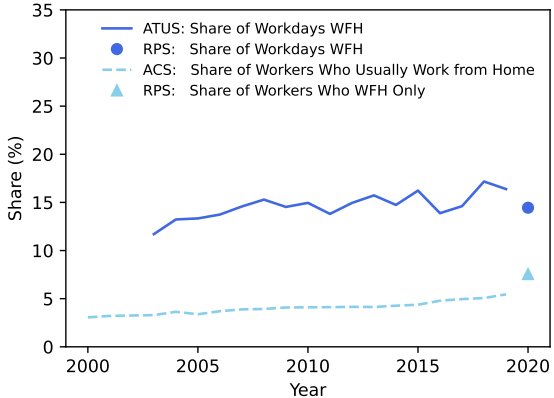

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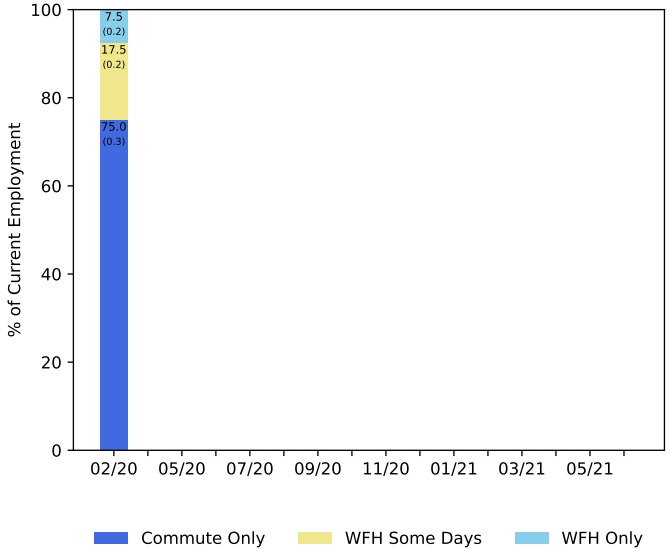
- Feb. 2020 RPS aligns closely w/ 2019 ATUS, ACS

WFH Before and After the COVID-19 Outbreak



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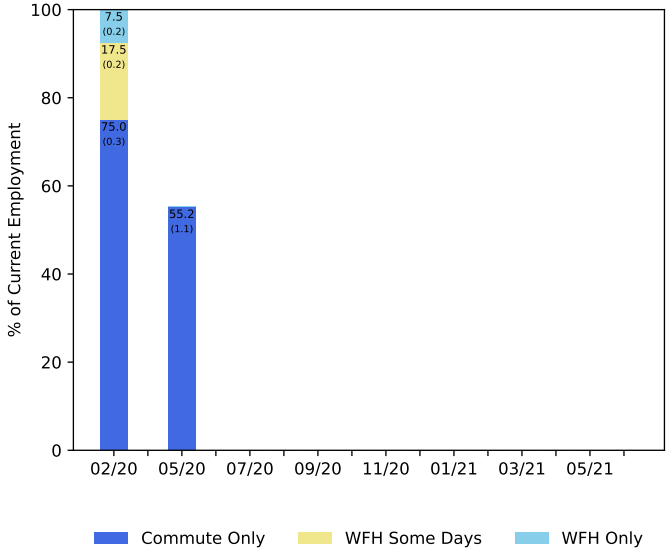

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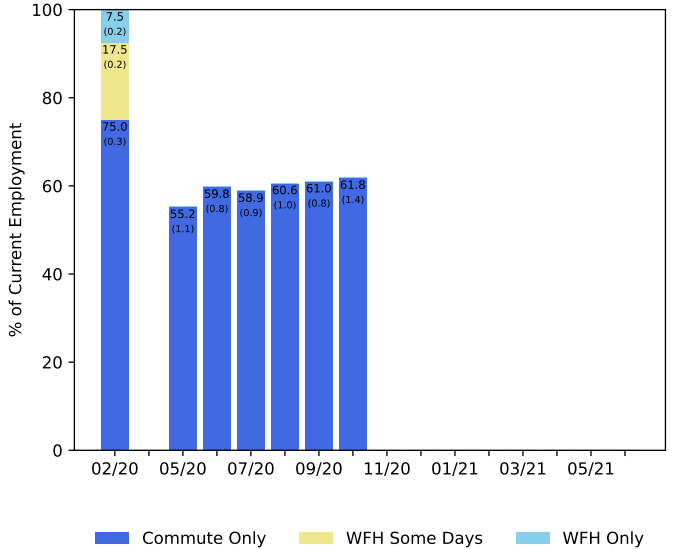

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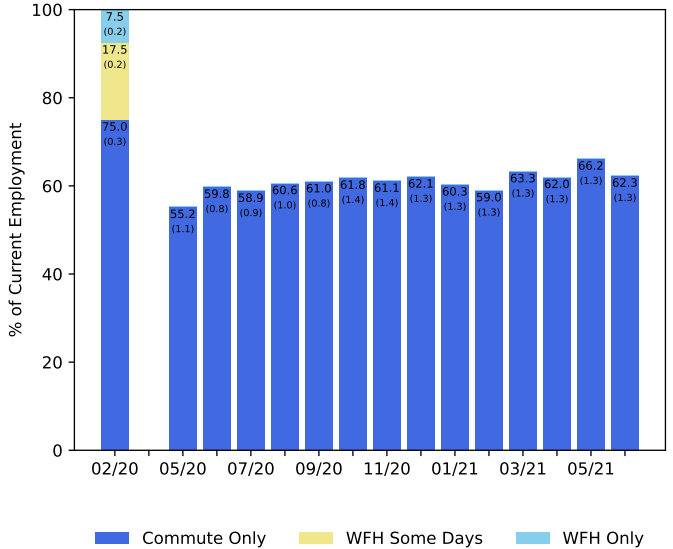

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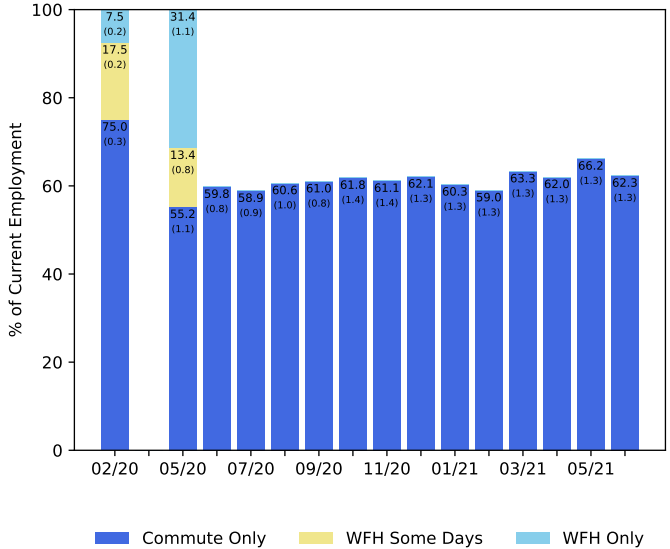

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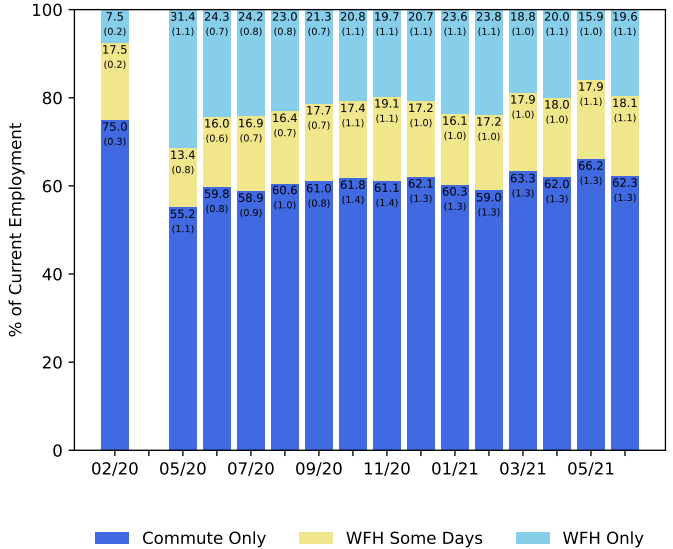
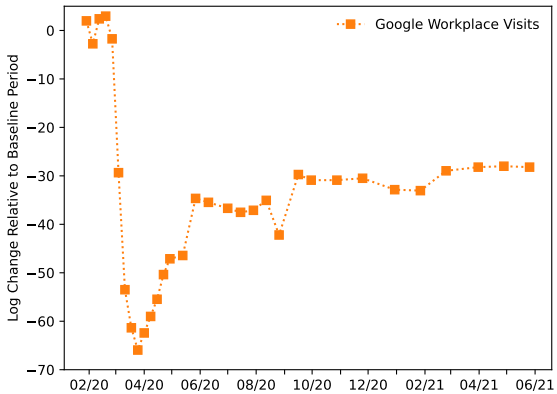


Comparisons to Other WFH Measures



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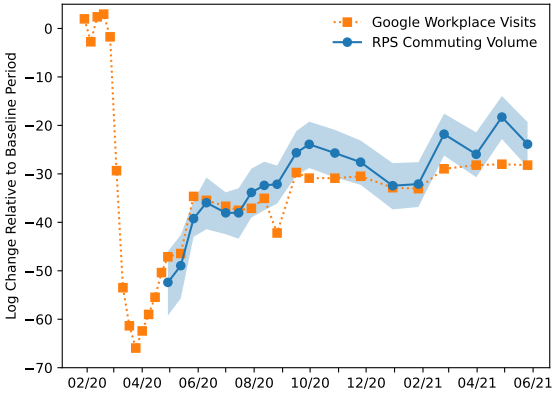
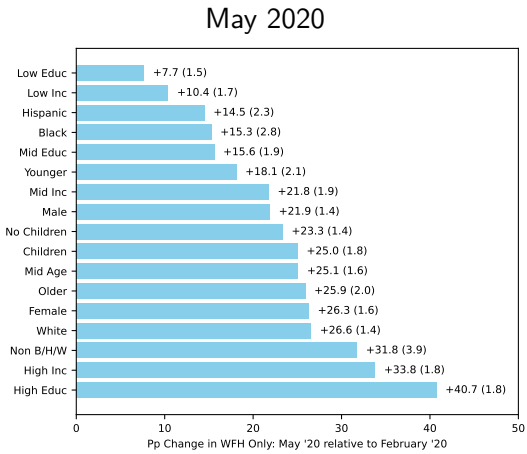
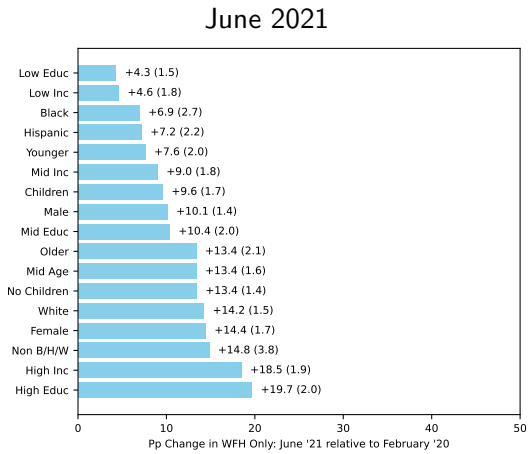


- RPS and Google commuting volume closely align in level and trend
- Feb 20 - June 21 shortfall: more WFH (74.4%), lower employment (21.5%) , shorter workweek (4.1%)

Demographics





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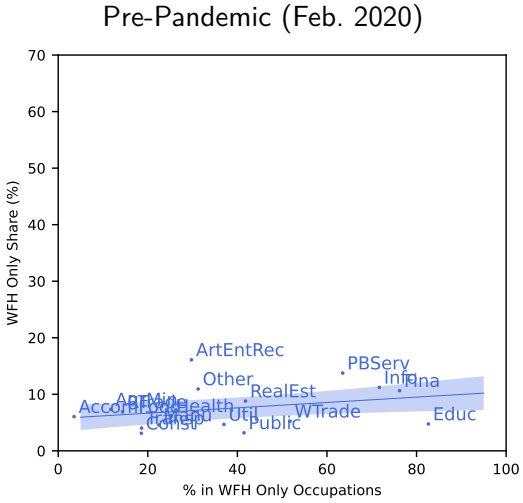

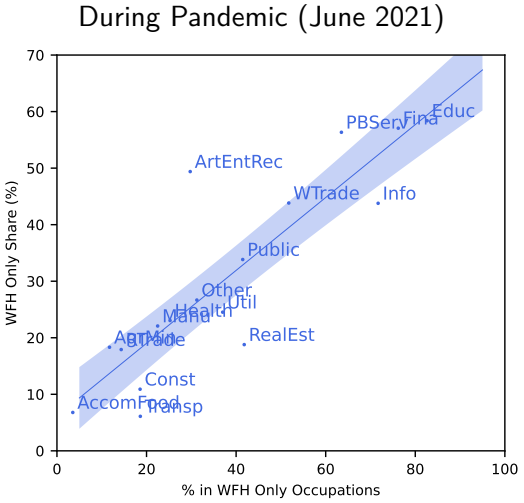

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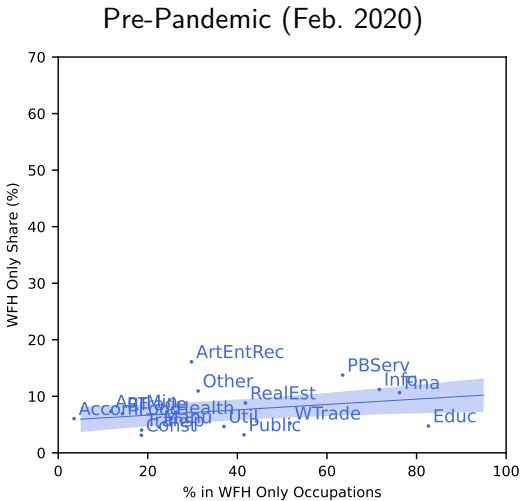
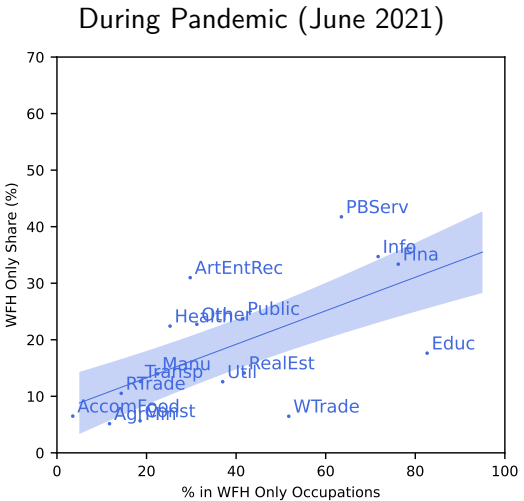
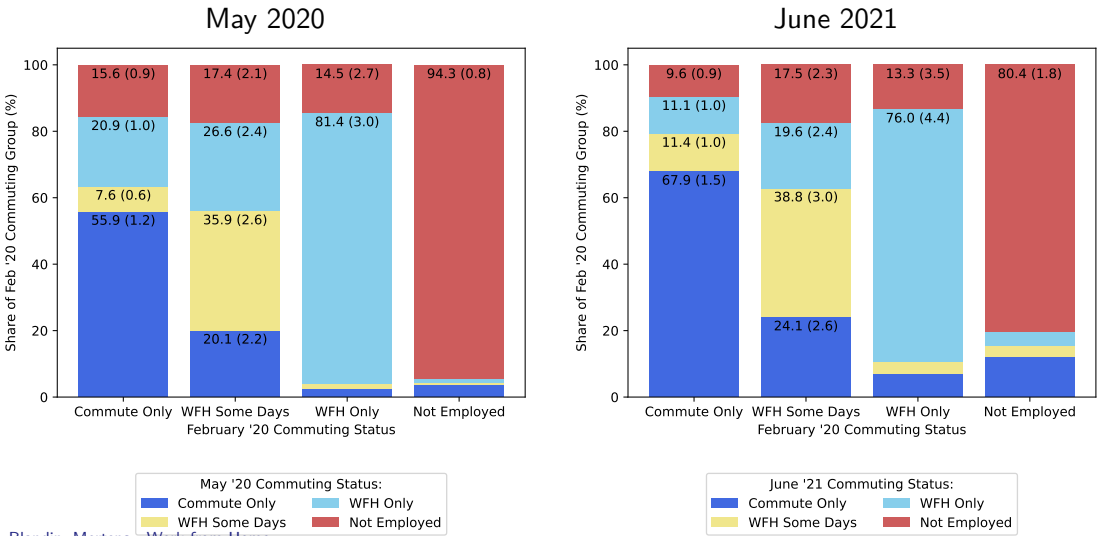
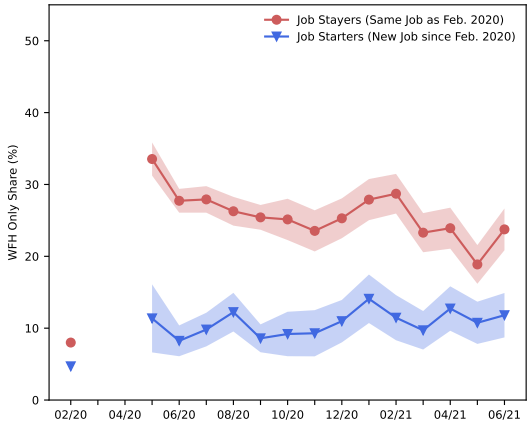




Most WFH Workers Used to Be Full-Time Commuters

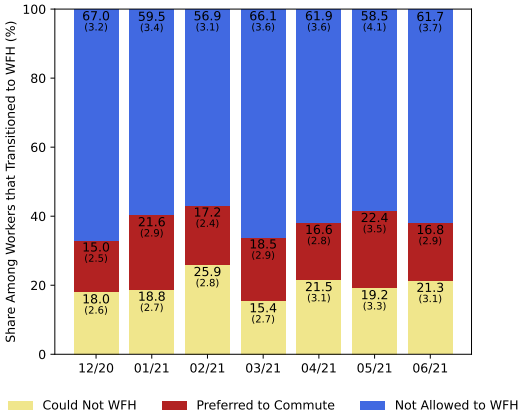


Mostly On-the-Job Transitions

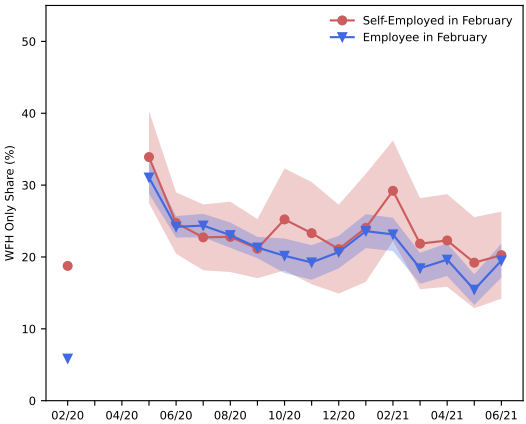


Survey Evidence for WFH Adoption

Job Stayers
Reasons for Commuting in Feb. 2020



Employees vs Self-Employed



Outline

Sketch of Model Environment (1/2): Workers

- Workers have linear preferences $u(w, l, h) = w - h - (1 + \chi)l$
  - w, wage
  - work at home h or on-site l
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- Choices
  - Individual works if: $w_l \geq 1 + \chi$ or $w_h \geq 1/z$
  - Workers commute if: $w_l - (1 + \chi) \geq w_h - 1/z$

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  - Commuter wage: $w_l = 1+\chi$
- Fraction θ of firms hires commuters and remote workers
  - WFH labor supply: $E_h = \gamma(w_h)^{\lambda}$
  - Remote wage: $w_h = \left(\frac{\lambda}{1+\lambda}\right)(1+\chi)$

WFH Substitution and Adoption in a Pandemic

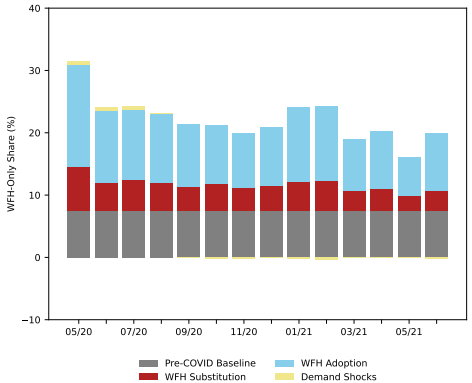
1. WFH substitution: pandemic increases on-site costs χ
   - After pandemic, WFH likely subsides
2. WFH adoption: pandemic increases WFH access θ
   - Pandemic removes constraint on work arrangements
   - WFH may outlast pandemic since everyone weakly better off

Overview of Quantitative Exercise

- Use model to quantify role of substitution, χ, vs. adoption, θ
- Treat industries, i as separate labor markets
- Two phases
  - Pre-pandemic (February 2020), $t = 0$
  - Pandemic (May 2020 - June 2021), $t = 1, ..., 15$
- Set $\lambda, \gamma_i, \theta_i^{pre}$ using RPS data, evidence on relative WFH wages and pre-pandemic (WFH) employment levels.
- Set $\chi_{i,t}$, $\theta_{i,t}$, $\delta_{i,t}$ to match monthly employment, WFH employment, wages

Model Based Decomposition

Rise in full-time WFH



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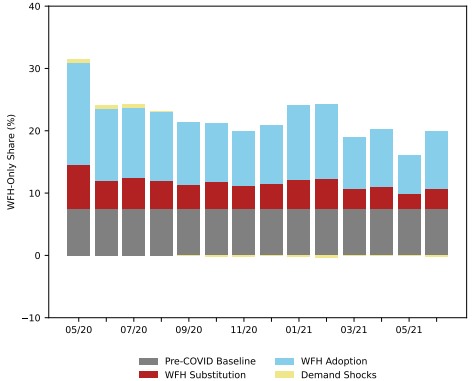
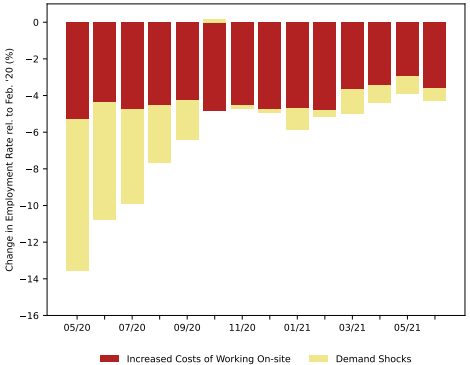


Employment



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- 51.3 percent has option for at least some WFH, up from 33.4 percent
- Share of WFH workdays rises to 21.3 percent from 14.4 percent

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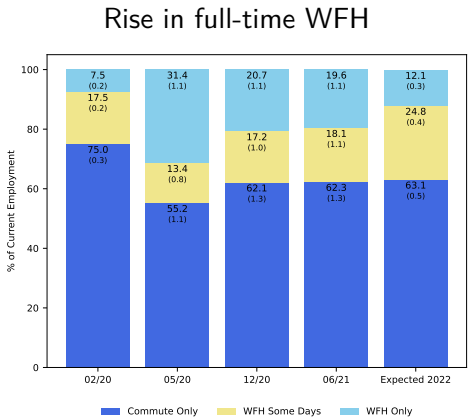
Expectations for WFH One Year Ahead



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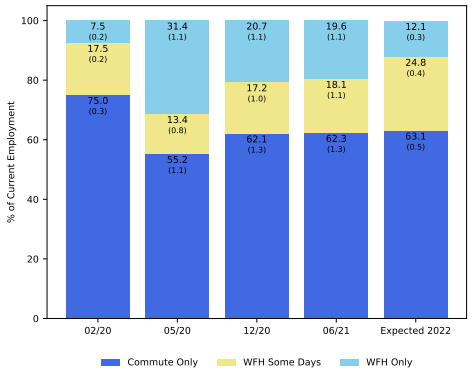

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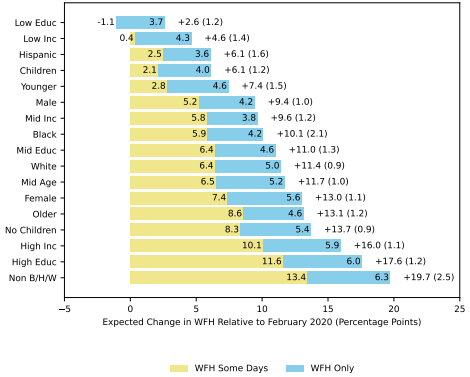

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Follow-Up Surveys: February and June 2022

WFH Status						
	Feb '22			Jun '22		
	Actual	Forecast	Exp.	Actual	Forecast	Exp.
Commute Only	67%	63%	69%	66%	64%	68%
WFH Some Days	20%	25%	21%	19%	24%	20%
WFH Only	14%	12%	10%	14%	12%	11%

- Forecast are the expectations from the Feb '21 and Jun '21 survey, respectively
- Expectations are the one year ahead expectations for Feb '23 and Jun '23, respectively

Conclusion

- Beyond initial months of the pandemic, rise in WFH is mostly due to adoption of WFH arrangements
- Likely upward shift in pre-existing secular trend towards more WFH
- Benefits highly unequally distributed