A Twenty-First Century of Solitude? Time Alone and Together in the United States

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[1]The views expressed in this presentation are solely those of the authors and do not necessarily reflect the views of the Federal Reserve Bank of Philadelphia or the Federal Reserve System.

Motivation

Background: Social connections are a key determinant of

1. individual health, mortality, and economic well-being
2. social capital development, economic mobility

$\implies$ **How has the nature of social connections changed over the first two decades of the 21st century?**

This Paper

What I do:

1. Measure trends in alone time using the 2003-2021 ATUS.
   - ▶ Assess heterogeneity in alone time across demographic groups.
   - ▶ Examine types of activities and interactions that account for the increase in alone time.
2. Gauge significance of these trends on average well-being and well-being inequality.

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Main results

1. Individuals spend less free time with others, especially others from outside of their household.
   - ▶ These trends are more pronounced for lower-income, less educated individuals
   - ▶ Increase in alone time is approximately 4 percentage points between 2003 and 2019
     - ▶ 2 percentage points for individuals with a college degree
     - ▶ 7 percentage points for those with high school education.

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2. ... and signify that well-being inequality is increasing faster than previously thought.

Contribution to the Literature

1. Time use measures expand our notion of economic well-being: Aguiar and Hurst (2007), Boerma and Karabarbounis (2021)
   This paper's contribution: "Well-being is a function not only *on what activities* but also *with whom* time is spent."

2. Social isolation has deleterious impacts on individual well-being and the development of social capital: Umberson and Karas Montez (2010), Case and Deaton (2017, 2021), Putnam (1995, 2020)...

3. ... and differs considerably across demographic groups and time: McPherson, Smith-Lovin, Brashears (2006), Drotning (2020), Twenge, Spitzberg, and Campbell (2021)
   This paper's contribution: New measurement of social isolation across time and demographic groups.

Outline

1. Alone time has increased
   - ... especially for those with less education, lower income,
   - ... primarily reflects at-home leisure (tends to be conducted alone) replacing out-of-the-home leisure,
   - ... and has replaced time spent with individuals from other households

2. Trends in alone time represent a meaningful increase in well-being inequality.

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Dataset and Measures

American Time Use Survey (2003-2021)

- ▶ Approx. 10 thousand individuals per year surveyed via diary reconstruction method
- ▶ Asked "who did you perform activity with" for non-personal, non-work activities
  - ▶ "alone," "indivs. from the same household", "indivs. from other households,"
- ▶ Asked, also, activities that were performed and where they were performed.
  - ▶ "work," "eating," "leisure at home," "leisure outside of the home." "childcare," "miscellaneous"

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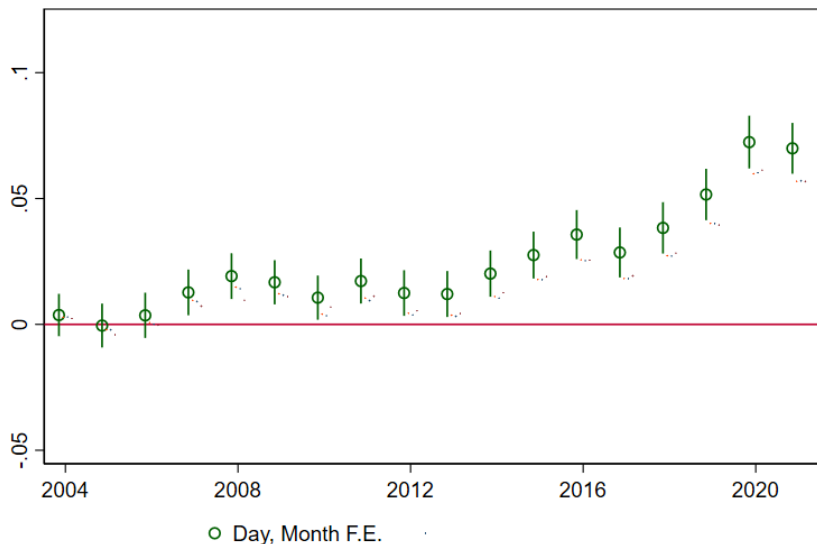 - ▶ "work," "eating", "leisure at home," "leisure outside of the home." "childcare," "miscellaneous"

Compute $x_{a,it}$: share of individual i's time that is spent "alone". Regress:

$$x_{a,it} \;\; = \;\; \beta_{a,t} + \beta'_a \mathbf{X_{i,t}} + \varepsilon_{a,it}$$

Variables included in $\mathbf{X_{i,t}}$:

- ▶ Day of week, month of year fixed effects
- ▶ Sex, age group, race category
- ▶ Metropolitan status, education
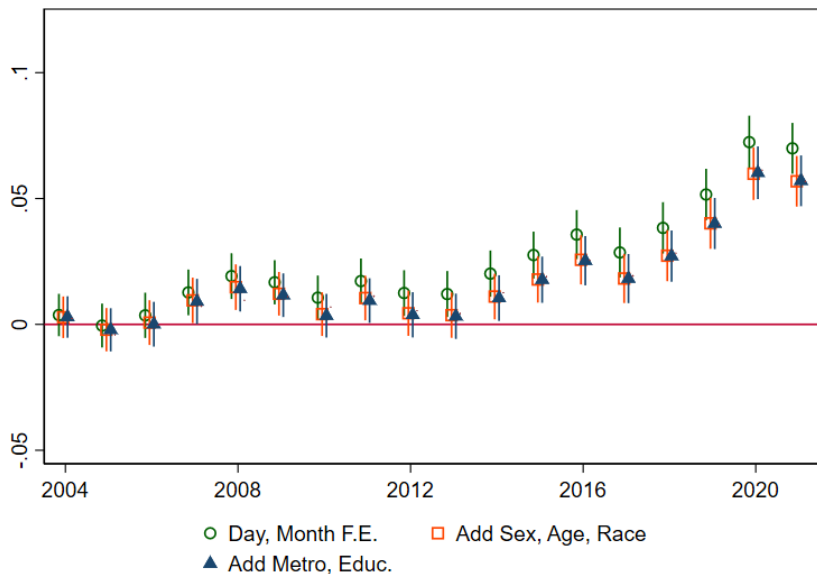- ▶ Employment, log(household size)
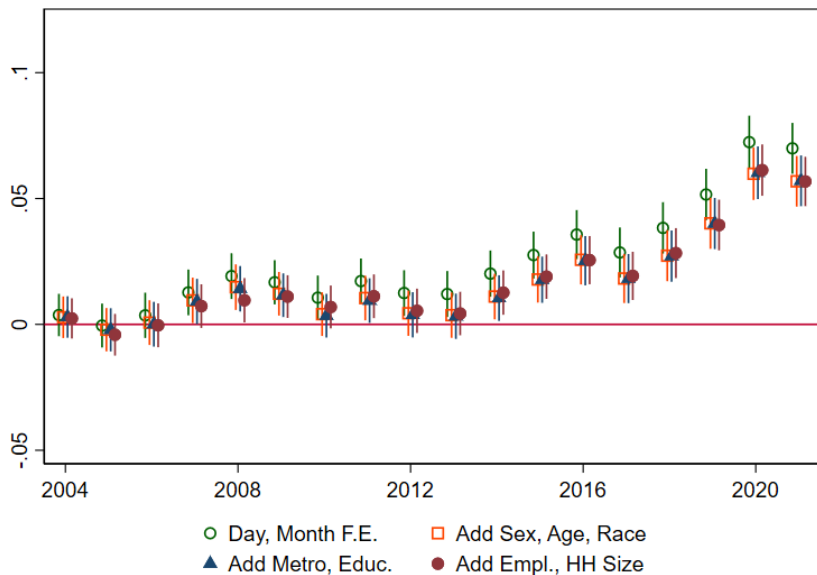
Time alone up 5.2 pp to 2019, 7.0 pp to 2021

Time alone up 4.0 pp to 2019, 5.7 pp to 2021

○ Day, Month F.E.   □ Add Sex, Age, Race

Time alone up 4.0 pp to 2019, 5.7 pp to 2021

Legend:
- ○ Day, Month F.E.
- □ Add Sex, Age, Race
- ▲ Add Metro, Educ.

Time alone up 3.9 pp to 2019, 5.7 pp to 2021

O Day, Month F.E.   □ Add Sex, Age, Race

▲ Add Metro, Educ.   ● Add Empl., HH Size

Heterogeneity in Time Alone

Regress:

$$x_{a,it} = \beta_{a,t} + \beta'_a \mathbf{X_{i,t}} + \varepsilon_{a,it}$$

for separate subsamples of the population:

▶ by race and ethnicity: non-Hispanic White vs. Hispanic White, vs non-White;

▶ by household income: low vs. middle vs. high;

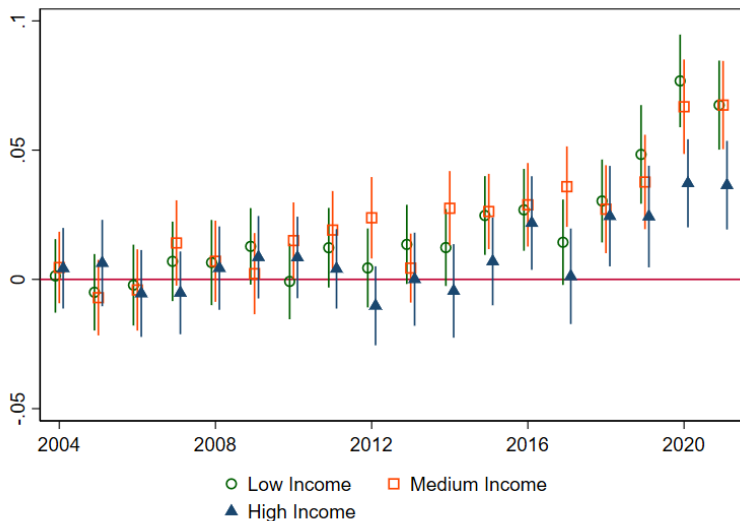▶ by education: HS or less vs. Some College vs. College graduate

Time alone has increased less for White individuals...

Legend: ○ White Non-Hispanic   □ Non-White   ▲ White Hispanic
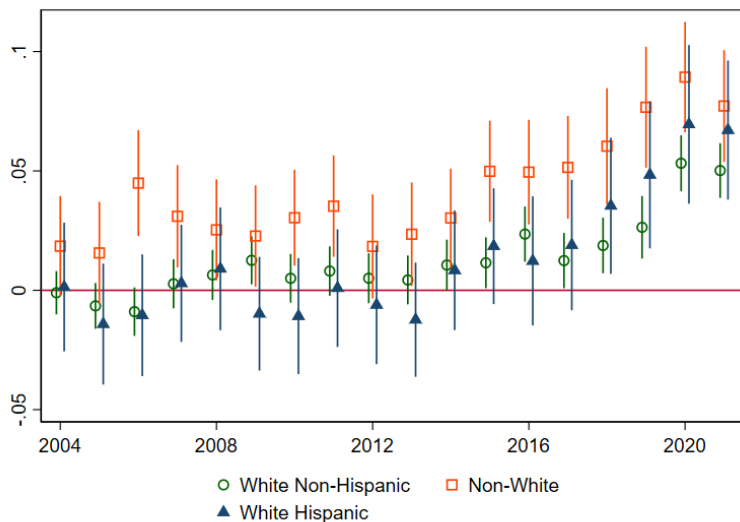
Between 2003 and 2019, alone time increased 4.6 p.p. more for non-white relative to non-Hispanic White individuals
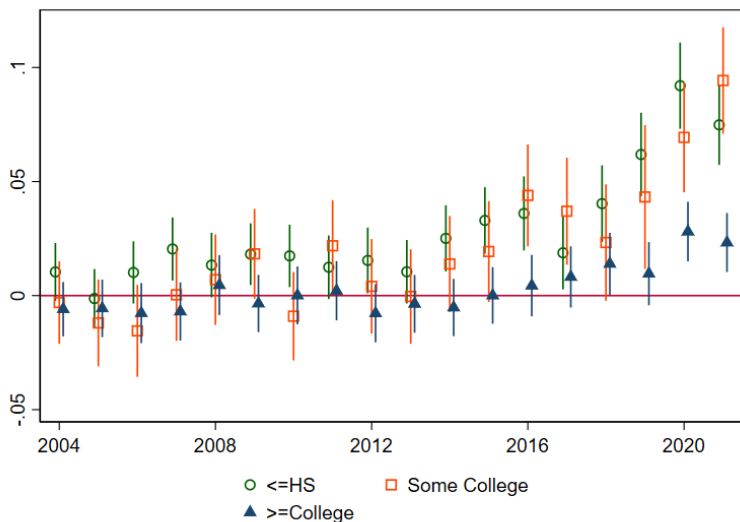
... and also for those in high-income households

Between 2003 and 2019, alone time increased 2.8 p.p. more for low-income relative to high income individuals

... and also for those with a college degree

Legend: ○ <=HS   □ Some College   ▲ >=College

Between 2003 and 2019, alone time increased 4.6 p.p. more for high school educated relative to college grads.
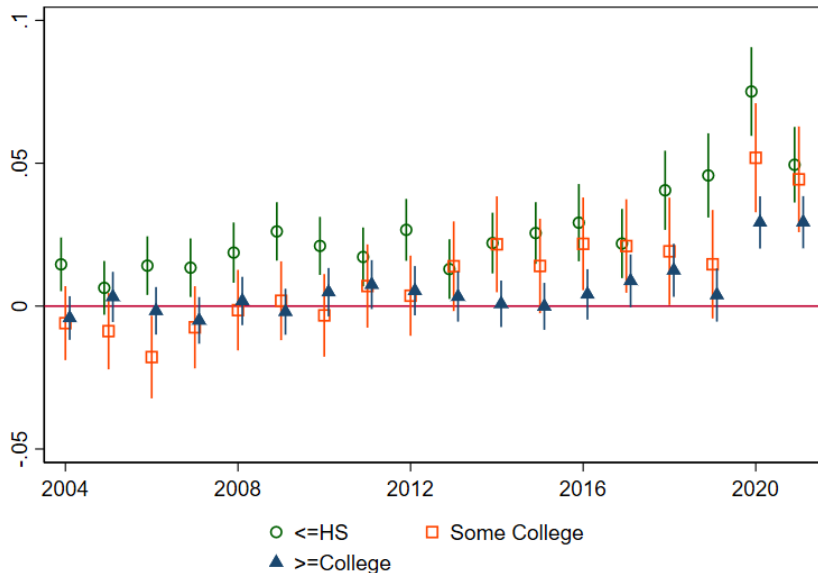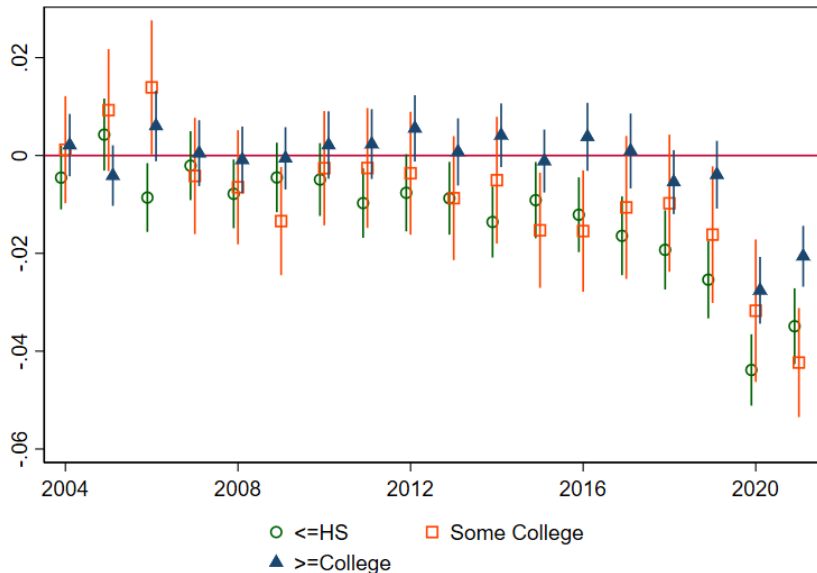
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   - ▶ ... and has replaced time spent with individuals from other households

2. Trends in alone time represent a meaningful increase in well-being inequality.

Time alone increases mirror trends in time spent alone, at home, on leisure

... contrast this with trends in leisure time: with others and out of the house

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Time spent with people from other households decreased for all

Time spent with people from the same household varies more across groups
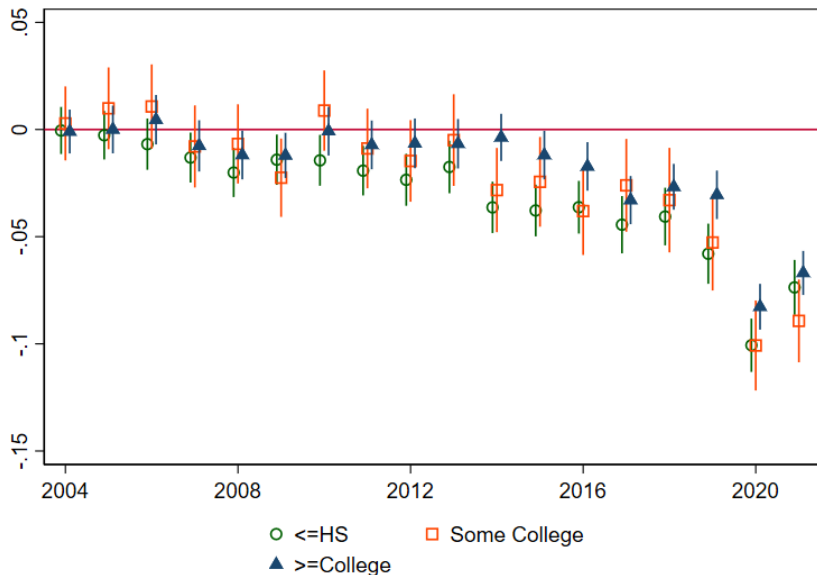

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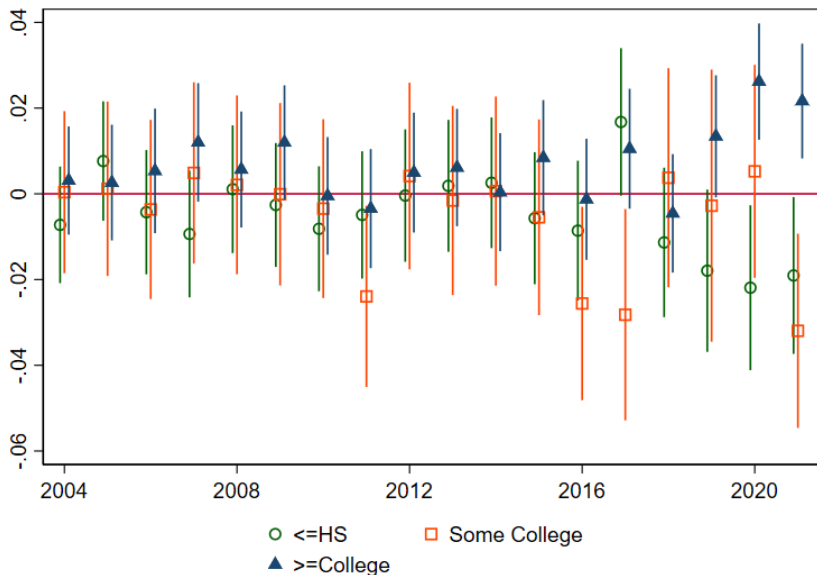
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2. **Trends in alone time represent a meaningful increase in well-being inequality.**

How to assess importance of the trends in alone time?

- ▶ Well-being measures in the 2012, 2013 ATUS
  - ▶ Life satisfaction (Cantril 1965): "Think about your life in general, not just in terms of the specific activities..."
  - ▶ Emotional well-being: "Now I want to go back and ask you some questions about how you felt yesterday..." On a scale of 0 to 6 did you feel:
    - ▶ happy, tired, stressed, sad, pain, meaningful
    - ▶ U-index (Kahneman et al, 2006; Krueger and Schkade, 2008): Fraction of time spent when unpleasant emotion has a score greater than the happiness score

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▶ Strategy:
  ▶ Consider well-being, log(household income), alone time that is... unexplained by race, education, age, metro status, household size, etc...
  ▶ Compare well-being measures to log(household income)
  ▶ Compare well-being measures to time alone
  ▶ Link the two comparisons.

Interrogating well-being measures

1. Bond and Lang (2019), Bloem (2021): Responses given are ordinal variables

2. Interpersonal comparisons are difficult to interpret.

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   Conclusions below are robust to monotonic transformations of the well-being measures.

2. Interpersonal comparisons are difficult to interpret.

   Being alone is associated with lower well-being, comparing activities for the *same* individual.

$$U_{ia} = \quad + \text{alone}_a \cdot \beta_{c(a)} + \varepsilon_{ia},$$

$a = \text{activity}; i = \text{individual}; c = \text{activity category}$

	Alone	Not Alone
Leisure at Home	0.036	-0.039
	(0.005)	(0.005)
Leisure Out of Home	-0.036	-0.116
	(0.010)	(0.006)
Eating	-0.006	-0.110
	(0.009)	(0.006)
Home Production	-0.003	-0.005
	(0.006)	(0.007)
Childcare	-0.044	-0.083
	(0.032)	(0.008)
Other Non-Work Time	0.089	
	(0.006)	
Person Fixed Effects	No	
Adjusted R^2	0.022	

U-index higher by approximately 6 percentage points when alone

$$U_{ia} = \beta_i + \text{alone}_a \cdot \beta_{c(a)} + \varepsilon_{ia},$$

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	Alone	Not Alone	Alone	Not Alone
Leisure at Home	0.036	-0.039	0.029	-0.017
	(0.005)	(0.005)	(0.006)	(0.006)
Leisure Out of Home	-0.036	-0.116	0.016	-0.050
	(0.010)	(0.006)	(0.010)	(0.006)
Eating	-0.006	-0.110	-0.007	-0.058
	(0.009)	(0.006)	(0.008)	(0.006)
Home Production	-0.003	-0.005	0.032	0.016
	(0.006)	(0.007)	(0.006)	(0.007)
Childcare	-0.044	-0.083	-0.027	-0.053
	(0.032)	(0.008)	(0.027)	(0.009)
Other Non-Work Time	0.089		0.052	
	(0.006)		(0.006)	
Person Fixed Effects	No		Yes	
Adjusted R^2	0.022		0.591	

U-index higher by approximately 6 percentage points when alone, of which 4 p.p. reflects within-person differences.

Interrogating well-being measures

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2. Interpersonal comparisons are difficult to interpret.

   Being alone is associated with lower well-being, comparing activities for the *same* individual.

3. Kahneman et al. (2008): Reported life satisfaction susceptible to cognitive biases.
4. Krueger and Schkade (2006): Emotional well-being measures are reliable, but less so than other economic variables.
5. Frazis and Stewart (2012): ATUS provides a daily snapshot of time alone, well-being (especially life satisfaction) may depend on long-run time use.

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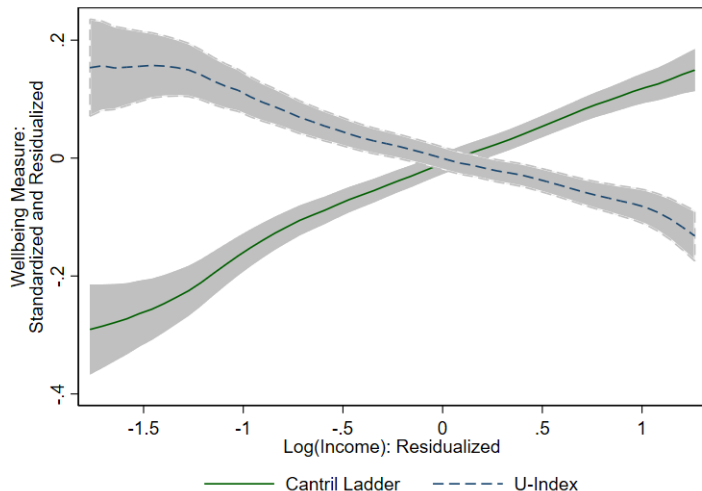# Well-being decreases in alone time
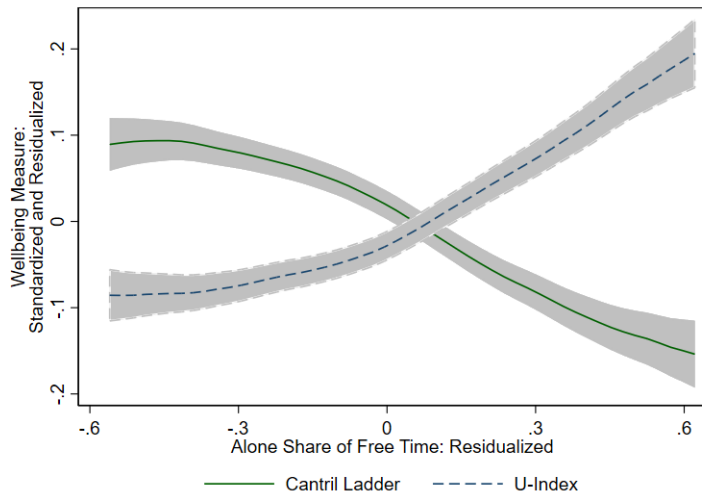
5 percentage point increase in alone time ⟺
0.017 SD decrease in Cantril latter score; 0.018 SD increase in U-index

Well-being increases in household income

10 log point increase in household income $\iff$
0.017 SD decrease in Cantril latter score; 0.010 SD increase in U-index

How salient was the increase in alone time?

- A 10 log point increase in household income corresponds to a:
  - 0.017 standard deviation increase in the Cantril ladder score

- A 5 percentage point increase in "alone time" corresponds to a:
  - 0.017 standard deviation decrease in the Cantril ladder score

- $\implies$ A 10 log point increase in household income has same association with life satisfaction as a 5 percent decrease in alone time.

- Similar calculations: A 18 log point increase in household income has same association with emotional well-being as a 5 percent decrease in alone time.

Conclusion

A recap of the results:

- ▶ Time alone increased between 2003 and 2021
- ▶ ... faster for those with less education, lower-income, and for non-White individuals
- ▶ ... reflects leisure at home and alone replacing leisure with individuals from other households.
- ▶ 5 percentage point increase in the share of time spent alone represents well-being losses similar to a 10-18 percent decline in income

Open questions

- ▶ Will time with others rebound following the pandemic?
- ▶ Similar patterns of increasing inequality in other countries?