Older Americans Would Work Longer If Jobs Were Flexible

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Acknowledgements

Motivation

- ▶ Working longer as a solution to aging population.
- ▶ Policy depends on relative importance of demand- and supply-side factors.
- ▶ Separation hard with standard behavioral data.
- ▶ We enrich data to aid separation.

Existing approaches

- ▶ Use variations in retirement incentives from pensions and insurance
  - ▶ E.g., Blundell, Meghir and Smith (2002), Gruber and Wise (2002), Euwals, van Vuuren, and Wolthoff (2012), and Gustman, Steinmeier and Tabatabai (2016).
- ▶ Use structural models to predict effects of policy changes
  - ▶ E.g., Gustmanand and Steinmeier, (1984, 1994), Rust and Phelan (1997), French (2005), Blau and Gilleskie (2006), Van der Klaauw and Wolpin (2008), French and Jones (2011).

What we do: strategic survey questions (SSQs)

- Propose hypothetical survey questions that are purpose-designed to:
    - control opportunity sets to identify supply side factors.
    - quantitatively measure preferences for characteristics of jobs.
- Builds on the approach pioneered by:
    - Barsky, Juster, Kimball and Shapiro (1997), Ameriks, Caplin, Laufer and van Nieuwerburgh (2011), Brown, Goda and McGarry (2015), Wiswall and Zafar (2017) among others.

SSQ: Example

- ‘Reference employment situation’ constructed based on the characteristics of the most recent job.

  - Option A is a new employment situation that involves a **fixed work schedule**. Other than this possible difference, the new employment situation matches **your reference employment situation** in terms of occupation, annual earnings, and all other characteristics.

  - Option B is instead to pursue other possibilities including searching for another employment situation or not working.

- Would you choose Option A or Option B?

SSQ: Example

- If Option A (Option B) is chosen,

  > - Starting at the **reference salary**, imagine that earnings for Option A were to decline (increase). What earnings level for Option A would be just low (high) enough that you would switch to Option B (Option A)?

Finding: Strong willingness to work

- Acceptance rate among current non-workers is large even under a fixed schedule.
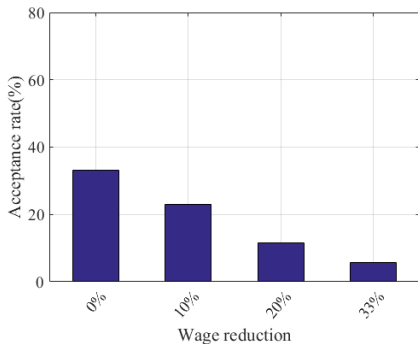
(a) Had no bridge job
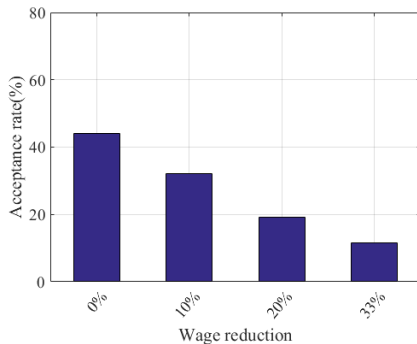
(b) Had a bridge job

Flexibility possibly important in late-life

- Interest in reduced hours evident in bridge jobs, self employment patterns.
  - Maestas (2010), Rupert and Zanella (2017), and Ramnath, Shoven, and Slavov (2017)
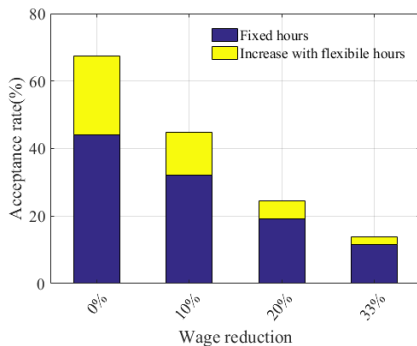
Flexibility in SSQ

- Free to choose regular work schedule (hours per week and weeks per year).
- Can set the schedule only at the beginning of each year.

Finding: Strong willingness to work

- ▶ Even more so when allowed to choose the number of hours (flexible schedule).
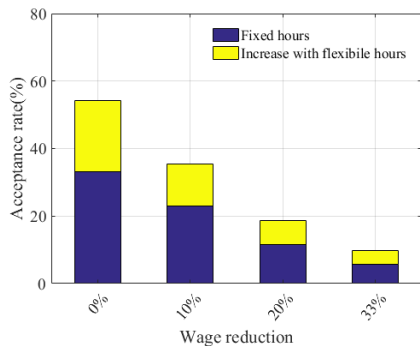
(a) Had no bridge job

(b) Had a bridge job

Key implications

- ▶ Importance of demand-side factors (actual or perceived) in explaining the observed labor market outcome
- ▶ Why many transition from full-time work to no work?
  - ▶ Rogerson and Wallenius (2013, RW)
    - ▶ High IES: sensitive to wage reduction
    - ▶ Strong nonconvexity in production: larger penalty for part-time work
  - ▶ IES estimated from our data suggest relatively strong nonconvexity in production.

Outline

- Sample
- Labor market activity after career job
- SSQs
  - Identification of supply-side factors
  - Credibility of responses
- IES estimation

Vanguard Research Initiative

- A linked survey-administrative dataset on a large sample of Vanguard account holders, who are...
  - at least 55 years old
  - internet eligible
  - have at least $10,000 at Vanguard.
- Implemented six internet surveys so far.
- This paper uses 2,772 respondents who completed the fourth survey on labor supply.

Sample characteristics

- ▶ Wealthier, healthier, and more educated than the representative sample.
- ▶ With same sample selection similar to HRS (Ameriks et al, 2014).
    - ▶ In particular, current working status and career job characteristics.
- ▶ Health less of an issue and likely to remain productive longer.
    - ▶ Important to understand why these individuals stop working.

Employment Status

Overview of findings from behavioral data

- About half of sample reveal interest in working longer after leaving the career job.
  - 38% have (had) a post-career bridge job.
  - Another 7% searched for a post-career employment opportunity.
- But this might be an underestimate of older Americans' willingness to work longer.
- Also suggest that flexibility in work schedule encourage them to work longer.

Bridge job

- Among those who left career jobs, 38% have (had) a bridge job.

Hours and Earning					
	Ratio of Bridge/Career				
	10p	**25p**	**50p**	**75p**	**90p**
Hours	0.06	0.21	0.74	1	1
Hourly wage	0.19	0.44	0.80	1.14	1.7
Annual salary	0.03	0.10	0.44	0.87	1.18

Job Characteristics, Career to Bridge

Self-Employed		Flexible Schedule		Health Insurance Provided	
Career	**Bridge**	**Career**	**Bridge**	**Career**	**Bridge**
6.4%	23.3%	24.0%	53.5%	87.8%	41.0%

Notes: N=812.

Search behavior

- What workers looked for after career job

Characteristic	% looking for
Change life:	
Different industry	23.5
Different occupation	27.4
Move to a better location	20.8
Flexibility:	
More flexible hours	39.9
More flexible schedule	31.0
Autonomy:	
Less responsibility	32.5
More of my own boss	29.7
Other job characteristics:	
More pay	19.9
Less commuting time	25.1
More job security	15.3
Better health insurance	7.8

Notes: N=804.

Time of offer	Considered job characteristics
Survey	Fixed schedule, Flexible schedule
Retirement	Fixed schedule, Flexible schedule

▶ Focus on non-workers: Had a career job and not currently working.

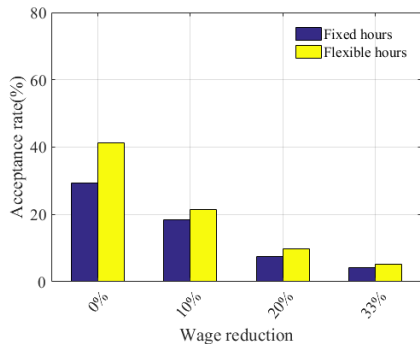# Would current non-workers return to work?
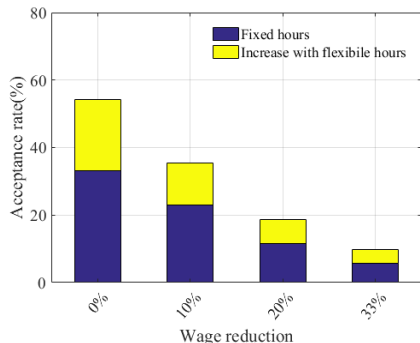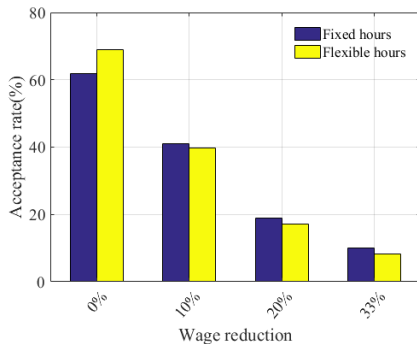

(a) Had no bridge job
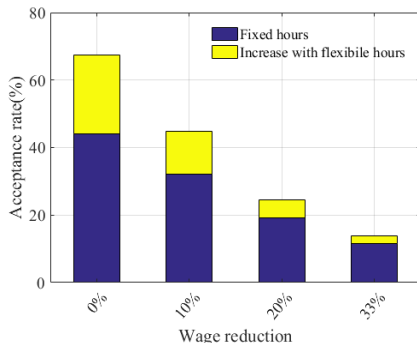
(b) Had a bridge job

Reservation wage

Would current non-workers have continued to work?

(a) Had no bridge job

(b) Had a bridge job

Reservation wage   Desired time reduction

Credibility checks

IES, nonconvexity in production, and retirement

- Given strong preferences for working longer under a flexible schedule, why transitions to full retirement still common?

- Rogerson and Wallenius (2013, AER): high IES or strong nonconvexity in production.

- But hard to separately identify the IES and nonconvexity from retirement behavior.

IES and nonconvexity in RW

▶ Household maximizes:
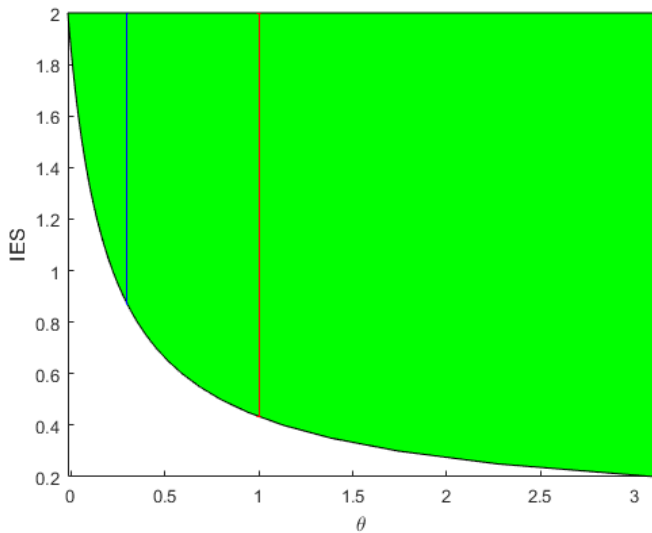
$$\max \int_{t=0}^{T} \left[U(c_t) + \alpha_t \frac{(1 - e\bar{h} - h_t)^{1-1/\gamma}}{1 - 1/\gamma} \right] dt \qquad (1)$$

$$\text{s.t.} \int_{t=0}^{T} (c_t + e\bar{c}) dt = \int_{t=0}^{T} (w_{0,t} h_t^{\theta}) h_t dt + Y, \qquad (2)$$

  ▶ γ: governs IES (IES is $\gamma \frac{1-h_t}{h_t}$).
  ▶ θ: non-convexity in production

▶ 1-0 retirement occurs when:

$$\theta \geq (1 - \hat{c}) h_r (1 - 1/\gamma) \frac{1}{(1 - \bar{h} - h_r)^{1/\gamma} (1 - (1 - \bar{h} - h_r)^{1-1/\gamma})} - 1.$$

# IES and nonconvexity in production: identification issue

IES estimated by reservations wages for fewer hours of work

- Fixed schedule scenario
    - Hours given from reference job (h_{fixed})
    - At reservation wage (ω_{fixed}), indifferent between working h_{fixed} and 0.
- Flexible schedule scenario
    - Hours chosen (h_{flex})
    - At reservation wage (ω_{flex}), indifferent between working h_{flex} and 0.
- Indifference condition:

$$\frac{\omega_{flex}}{\omega_{fixed}} = \frac{h_{fixed}}{h_{flex}} \left(1 - \frac{(1 - \hat{c})((1 - \bar{h} - h_{flex})^{1 - 1/\gamma} - (1 - \bar{h} - h_{fixed})^{1 - 1/\gamma})}{1 - (1 - \bar{h} - h_{fixed})^{1 - 1/\gamma}} \right)$$

    - Larger reduction of reservation wages when working less hours implies lower the IES.
    - Independent of production technology.
- The condition is robust to:
    - Non-separability in consumption and leisure,
    - Burn out,
    - Loss of firm-specific human capital,
    - Social Security and pension benefit accrual.

IES identified by reservation wage reduction for fewer hours of work
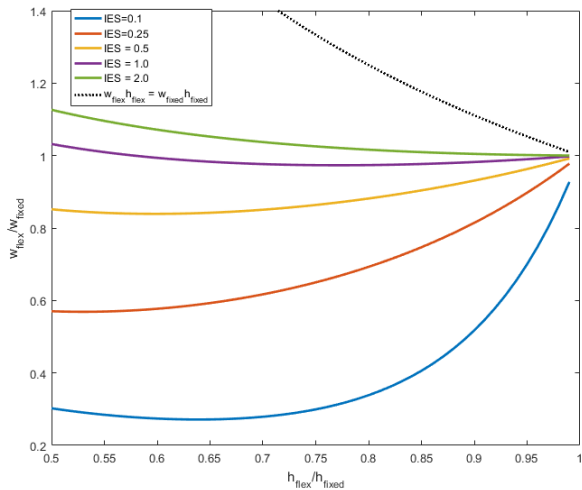
IES estimates and implications

- ► Median IES estimates: 0.45 (at the moment of survey) and 0.83 (at the moment of retirement).
- ► Suggest nonconvexity parameter to be at least 0.85 (at the moment of survey) and 0.35 (at the moment of retirement) for 1-0 retirement.
 - ► C.f. Aaronson and French (2004): 0.4.

Conclusion

- ▶ SSQs allow measurement of supply-side factors independent of demand-side factors.
- ▶ Many older Americans who are not currently working are willing to work, some at significantly lower wages than they used to have, if jobs are flexible.
- ▶ Suggest demand-side factors are likely to be important in explaining current late-in-life labor market behavior.
  - ▶ IES estimated from SSQ suggests importance of nonconvexity in production to explain retirement.
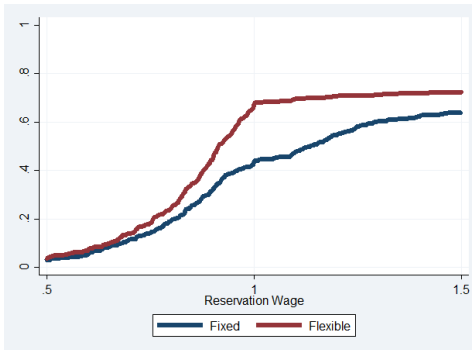
Employment status

	By Age					Total
	55-59	**60-64**	**65-69**	**70-74**	**75+**	
Employed (%)	83.5	64.5	32.9	19.8	10.8	35.3
In a career job (%)	64.1	44.8	17.3	7.8	4.4	21.7
In a bridge job (%)	19.4	19.7	15.6	12.0	6.4	13.6
Not employed (%)	16.5	35.4	67.0	80.3	89.2	64.7
Retired (%)	11.7	33.3	65.8	79.3	88.3	63.1
Not retired (%)	4.8	2.1	1.2	1.0	0.9	1.6
N	273	522	646	632	699	2,772

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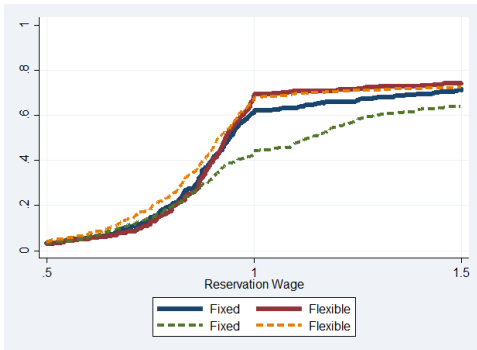# Reservation wage at the time of the survey
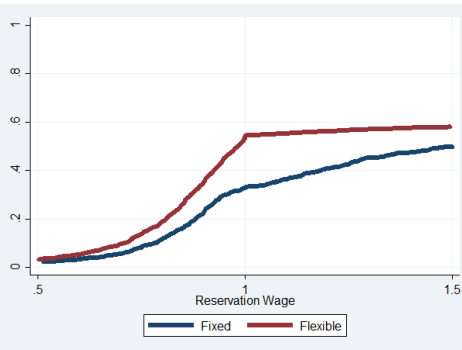
(a) Had no bridge job

(b) Had a bridge job

Reservation wage at the time of retirement

(a) Had no bridge job

(b) Had a bridge job

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Desired reductions in hours

A. Time of survey (SSQ1A)

	10p	25p	50p	75p	90p	N
Had no bridge job	-15.4	0	11.4	44.6	69.6	710
Had a bridge job	-11.8	0	9.4	39.7	62.5	291

B. Time of retirement (SSQ1B)

	10p	25p	50p	75p	90p	N
Had no bridge job	-2.9	0	19.2	50.0	71.2	545
Had a bridge job	0	0	7.7	27.3	50.0	294

Notes: Unit is percentage.

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Table: Comprehension test results

	10p	25p	50p	75p	90p	<u>N</u>
Fixed schedule (Best score: 7 for married and 6 for singles)						
First trial (married)	3	4	6	6	7	1,835
Second trial (married)	5	6	7	7	7	1,835
First trial (singles)	3	4	5	6	6	923
Second trial (singles)	5	5	6	6	6	923
Flexible schedule					(Best score: 4)	
First trial	2	3	4	4	4	2,757
Second trial	3	4	4	4	4	2,757

SSQ credibility: reasons for separation and SSQ responses

Group	Separation reason	Fixed	Flexible	N
Retired, no bridge job	**involuntary**	50.4	57.0	130
	voluntary	29.9	43.1	1,105
Retired, had a bridge job	**involuntary**	67.0	73.0	100
	voluntary	60.5	66.6	334

SSQ credibility: search behavior and SSQ responses

	N	Acceptance rate	
Searched for		**Fixed**	**Flexible**
Did not search	1,188	33.7	51.5
Flexibility	63	34.9	71.4
Other than flexibility	84	33.3	64.3

SSQ credibility: consistency and reasonableness

- Consistency
  - Accepting an offer at the time of survey means more likely to accept it at the time of retirement.
  - Correlation is 0.42 for a fixed schedule and 0.45 for a flexible schedule.
- Reasonableness
  - Switching from not accepting to accepting when the offer becomes more attractive is rare.
  - Less than 4 percent of responses under any comparison.

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