

Shocks and Transitions from Career Jobs to Bridge Jobs and Retirement: A New Approach

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Shocks and Transitions from Career Jobs to Bridge Jobs and Retirement: A New Approach

Abstract

How much of retirement decision is driven by health? Recovering this relationship is challenging, since for each retiree one typically observes the age at which they retired given the health path they actually experienced. Because one cannot directly observe at what age they would have retired had their health been different, inferences about potential changes in the trajectory of health must necessarily be model-based. This paper provides a novel strategy for assessing the effects of changing health. Older workers participating in the Vanguard Research Initiative (VRI) report the conditional likelihood (on a 0-100 percent chance scale) that they will be working to specified horizons under alternative health scenarios. They also report their unconditional likelihoods of working to those horizons and of experiencing those health states. Using these data this paper delivers novel, individual and aggregate level, estimates of the subjective ex ante treatment effects (SATE) of health on retirement age, given by the difference between respondents' likelihoods of working in low versus high health. The SATEs of health on labor supply at 2 and 4 years horizons equal 0 for almost 30% of the respondents. The remaining 70% reports subjective expectations which imply a strictly negative SATE (median = 40 percent and std. dev. = 24 percent for the 2 year horizon). A rich set of covariates and the unconditional expectations measures shed light on dimensions of heterogeneity in SATEs.

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New Evidence on Transitions to Post-Career Employment

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1 Introduction

Extending the length of working life can be much more effective in securing financial well-being in retirement than increasing saving rate while working (Bronshtein, Scott, Shoven and Slavov, 2018). An improved understanding of transition patterns into post-carer employment is important. When and why do Americans leave their career j ob, defined as the most important j ob they had in their working career?What j ob characteristics encourage them to stay longer in the career j ob? After leaving the career j ob, how many of them directly transition into retirement and how many have a post-career bridge job?What j ob characteristics do they look for when they search for a post-career employment opportunity?

This paper provides a rich set of empirical evidence on these questions that comes from a new survey implemented under the Vanguard Research Initiative. The survey focuses on measuring late-life labor market activities of American households. The questionnaire features following innovations:

- It measures detailed job characteristics not only of a career job but also of post-career bridge jobs.
- It examines reasons of leaving a career job and whether households would have changed their decisions under counterfactual situations.
- It examines post-career job search behavior of households.

The paper finds that, even though a direct transition from a career job to full retirement is still the most common pattern, a significant fraction of older Americans reveal interest for working beyond the career job. 38% of the sample had a post-career bridge job and another 7% of them looked for a post-career employment opportunity. Bad health or bad business conditions were the main reason for leaving the career job for a minority of those who left career jobs. But for this minority, had they counterfactually had better health or economic conditions, they likely would have decided to continue working. We also find that those who work longer on their career job or have a post-career bridge job tend to work fewer hours, have a flexible schedule, and receive lower hourly wages. This suggests that older Americans value having less work burden and more flexibility in their work, which is also supported by post-career job search behavior. By investigating the wage gap between career and bridge jobs, we find that fewer working hours, the length of gap between the two jobs, and changing occupation or industry in this transition all contribute to lower hourly wage on bridge jobs.

This paper contributes to growing empirical literature that examines late-in-life labor market activities. Ruhm (1990), Maestas (2010), and Rupert and Zanella (2015) document that having a post-career bridge job is becoming more common. Many of these jobs are part time or lower paid (Cassanova, 2013), even when these are self-employment (Ramnath, Shoven, and Slavov, 2017), suggesting that a post-career bridge job is used as a transition path to full retirement. We contribute to this literature by documenting characteristics of post-career bridge jobs, transitions from career to bridge jobs, and search behavior for post-career job opportunities in detail.

This paper also relates to the literature that uses survey questions to examine factors that affect late-in-life labor supply decisions. Factors studied in this literature include shares of older workers (Blau and Shvydko, 2011), career attachment and job satisfaction (Gobeski and Beehr, 2009), pension and hours arrangements (van Soest, Kapteyn and Zissimopoulos, 2007, van Soest and Vonkova, 2014, and Kantarci and van Soest, 2015), and disability (Kapteyne, Smith and van Soest, 2007). The survey used in our study not only directly asks for reasons of leaving jobs but also what workers would have done under counterfactual situations including health changes, business conditions and part-time options to understand importance of these factors in retirement decisions.

2 Sample and Survey

This paper uses the Vanguard Research Initiative (VRI), a linked survey-administrative data from a large sample of older account holders at a mutual fund company, the Vanguard Inc. Among the five internet surveys that have been implemented so far, the fourth survey (Survey 4) focuses on the late-in-life labor supply. Survey 4 asks detailed questions regarding job history, for both career and bridge jobs, reasons of quitting the jobs, as well as search behaviors on and after a career job. In this section we first describe the sample and then the survey we use in this paper.

2.1 Sample

The VRI is composed of a sample of account holders at Vanguard who are at least 55 years old. To be in the sample, we require that they have at least \$10,000 at their Vanguard accounts to ensure their non-trivial engagement with Vanguard and they have an access to internet since the surveys are implemented online. The entire sample size of the VRI is about 9,000, comparable to the size of each cross-section of the Health and Retirement Studies (HRS).

We use 2,772 respondents who completed Survey 4 that is the main source of data for this paper.¹ Table 1 shows the sample characteristics including age, marital status, and education level. The sample is roughly equally representing each 5-year age bin above age 55 up to 75 and then those who are older than 75. One third of them are female. Two thirds of them live with a spouse or a partner. More than 70 percent have a college degree and more than 40 percent had post-college education. On the 5-point scale {excellent, very good, good, fair, poor}, the vast majority report that their health is very good or better, while only a tiny fraction of respondents report that it is fair or worse. We refer to Amerika,

¹There are five internet surveys implemented so far. Each survey focused on different subject matters, including sample's financial situation, preferences about long-term care and bequest, intergenerational relationships, etc. Survey 4 focuses on labor history and preferences about labor supply in late life.

Caplin, Lee, Shapiro and Tonetti (2014) for more detailed descriptions of the sample including their financial wealth.

	Age and Wealth							
	10p	$25\mathrm{p}$	50p	$\overline{75p}$	<u>90p</u>	Mean		
Age:	60	64	69	75	79	70		
Financial wealth:	172.665	394.041	821.252	1.495.714	2.621.855	1.248.491		
	. ,)•		,	,,000	, -,		
	Mar	ried	-	Education				
	$\underline{\mathbf{Yes}}$	<u>No</u> 33%		$\frac{< \text{College}}{24\%}$	$\frac{\text{College}}{32\%}$	$\frac{\text{> College}}{44\%}$		
	0170	3370		21/0	02/0	11/0		
	Se	ex	-	Health				
				$\mathbf{Excellent}/$		Fair/		
	Female	Male		Verv Good	Good	Poor		
	34%	66%		73%	22%	5%		
	J 1 /0	0070		1370	22/0	J /0		

 Table 1: VRI sample characteristics

Notes: Survey 4 respondents. N=2.772. Financial wealth is from survey 1 and adjusted to 2015 \$.

By construction, the VRI is not a representative sample of older Americans. Compared to the HRS sample, the VRI sample is wealthier, healthier, and more educated. Ameriks, Caplin, Lee, Shapiro and Tonetti (2014), however, shows that a subset of the HRS sample that satisfy a similar set of sampling criteria (i.e., having at least \$10,000 in their non-transactional accounts and an internet access) have similar characteristics as the VRI sample. Table A1 in Appendix A indeed shows that the VRI-eligible HRS sample has similar demographics as the VRI sample, though the latter is still slightly more educated and healthier. In Section 3, we will also show that the job history of that subset of the HRS sample is similar to that from the VRI sample. So the VRI is essentially zooming into a subset of older American population who are wealthier, healthier, and more educated. This is a group of people whose job-related human capital may not depreciate quickly (because of them being relatively healthier in late life and types of jobs they typically have not being physically demanding as we show in the next section), so it is important to ask what is behind sudden withdrawals from labor force among this group.

2.2 Survey

Survey 4 is composed of two parts. In the first part, it asks detailed questions about job history and search behavior. In the second part, it asks hypothetical survey questions (SSQs) that are designed to measure preferences regarding labor supply late in life that are not fully reflected in the behavioral data. This paper focuses on the former. For the findings from the latter, see Ameriks, Briggs, Caplin, Lee, Shapiro and Tonetti (2017).

The aim of the behavioral part of the survey is to establish the common retirement patterns in the sample and to understand what job characteristics encourage Americans to stay longer in the labor force. To serve this purpose it collects a detailed set of data not only on the characteristics of the jobs but also on the transitions between the jobs and also between working-phase and retirement. It first records detailed job characteristics including hourly wage, number of working hours, types of industry and occupation, the length of tenure, and whether the work schedule was flexible. It first asks about these characteristics of the career job, that is defined as the most important or the longest job respondents had since age 40. It then asks about characteristics of a post-career job, which is labeled as a bridge job in the survey. In case respondents had multiple bridge jobs, it asks about the most recent one. The survey then asks why they quit the jobs. It further asks about their search behavior on and after the career job. By examining how long they worked on the career job, whether they had a bridge job after the career job, and whether they searched for a job opportunity after the career job, we can better understand how willing to work Americans are in late life. Also, by examining under which working environment workers stay longer at the career job, how bridge jobs are different than the career job, and what they looked for when they searched for a post-career job opportunity, we can shed light on to what job characteristics Americans are attracted to in late life.

Depending on whether respondents are currently working or not, and also on whether they had a bridge job after their career job, respondents take different paths in this part of the survey. Figure 1 overviews the flow of the survey in each case as well as the main questions asked in each module of this survey.

3 Labor Market Activity Late-in-Life: Career Jobs

In this section we document a detailed work history of the sample. The main motivation of this section is twofold. First, we want to understand what are the common patterns of retirement among



Figure 1: Flow of the work history part of Survey 4

older Americans. Second, analyses on behavioral data also hint on what job characteristics encourage workers to stay in the labor force longer. We first start with descriptions of the current labor force participation. Then we examine common characteristics of career jobs and the exit patterns from those jobs. Lastly we examine labor market activity after the separation from career jobs, including having a bridge job and searching for such an opportunity.²

3.1 Current Labor Force Participation

Table 2 shows the distribution of self-reported labor force participation status. Before age 60 the vast majority of the sample are working while many retire between age 60 and 65. Only about a quarter in the age range between 65 and 69 are working. The share of working respondents becomes very small

 $^{^{2}}$ Whenever corresponding variables are available in the HRS, we will present tabulations on the HRS sample (both entire and the VRI-eligible) in Appendix A. Many results in this Section, however, are based on survey questions that are first implemented in the VRI.

after age 70. Another important pattern to notice is that, once they retire, a vast majority consider themselves being completely retired. We find a similar pattern in the HRS (Table A2 in Appendix A), though a fraction of partial retirement is slightly higher in the HRS.

		Total				
	<u>55-59</u>	<u>60-64</u>	<u>65-69</u>	<u>70-74</u>	75-	
Retired, completely (%)	11.0	32.8	68.1	82.6	90.3	64.7
Retired, not completely $(\%)$	2.9	5.4	4.8	5.1	3.6	4.5
Not retired $(\%)$	86.1	61.9	27.1	12.3	6.2	30.8
N	273	522	646	632	699	2,772

 Table 2: Labor force participation status

A sudden dropout from the labor force between age 60 and 65 is a well established pattern in the literature. Incentives created by Social Security and Medicare rules might explain a significant part of this transition (French, 2005, French and Jones, 2011). It could also be driven by changes in households' preference about labor supply over age; by preference from firms' side, if the productivity of workers suddenly decreases (or is perceived to decrease) in that age range; or by mismatches between what job characteristics older Americans want and what firms want to offer to them. Examination on the job characteristics that become more common among older Americans and their job search behaviors on or after the career job shed more light on the factors behind these transitions as we show below.

3.2 Career Job Characteristics

Before we start analyzing transitions to retirement, we first examine what the sample was (is) doing in their career jobs. Table 3 presents key characteristics of career jobs of the sample, separately for those who retired from their career jobs and those who are still working on their career jobs. Most of the career jobs are full time jobs. The most common number of working hours is 2,080 per year, which is 40 hours per week for 52 weeks. They typically worked for fairly long in their career jobs. More than half of the sample worked for more than 20 years. The most common industry is professional, scientific, and technical services while the most common occupation is management. Self-employment is rare and also most of them did not have a flexible schedule. In short, we are examining labor market transitions of those who were mainly employed on a long, full time career job, that are typically more professional and less physically demanding, and typically had no flexibility in schedule. For the set of characteristics that are also measured in the HRS including the length of tenure, industries and occupations, the number of work hours and salary, we find them to be similar between the VRI sample and the VRI-eligible HRS sample (see Appendix Table A4).³

³The VRI sample tends to have a higher salary and is more likely to have an occupation in management compared to the entire HRS sample (see Appendix Table A3).

A. Retired from career job	Years worked, salary, hours worked							
	10p	$25\mathrm{p}$	50p	$75\mathrm{p}$	90p	<u>Mean</u>		
Years worked:	8	14	22	31	37	22		
Salary (in 2015\$):	30,866	$58,\!253$	$91,\!467$	$133,\!398$	$196,\!379$	$111,\!698$		
Hours worked (per year):	1,260	1,924	2,080	$2,\!184$	$2,\!600$	2,027		
Self-employed:	Yes					6.9%		
	No					93.1%		
Had a flexible schedule:	Yes					27.6%		
	No					72.4%		
Health insurance provision:	Yes					86.2%		
-	No					13.8%		
Most common industries:	Profes	sional, s	cientific	, and tech	nical services	17.8%		
	Manuf	acturing	g	,		14.5%		
	Educa	tional se	ervices			12.7%		
Most common occupations:	Manag	gement				25.6%		
-	Educa	tion, tra	ining, li	ibrary		10.6%		
	Busine	ess and t	financial	l operation	S	9.8%		

Table 3:	Career	Job	Characteristics
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B. Working on career job		Years worked, salary, hours worked						
	10p	$25\mathrm{p}$	50p	75p	90p	Mean		
Years worked:	8	14	21	30	38	22		
Salary (in 2015\$):	14,089	44,000	78,000	117,000	165,000	$92,\!428$		
Hours worked (per year):	480	$1,\!664$	$2,\!080$	2,080	$2,\!600$	$1,\!842$		
Self-employed:	Yes					15.9%		
	No					84.1%		
Had a flexible schedule:	Yes					47.7%		
	No					52.3%		
Health insurance provision:	Yes					72.0%		
F	No					28.0%		
Most common industries.	Profess	sional s	cientific	and tech	nical services	18.6%		
Wiest common muustries.	Manuf	acturing	y y	, and teen	inear services	10.0% 10.7%		
	Educat	tional se	ervices			10.5%		
Most common occupations:	Manag	ement				19.1%		
-	Busine	ss and f	inancial	operation	ıs	11.3%		
	Compu	iter and	l mathe	matical		9.0%		

Notes: N=2,149 for Panel A and N=601 for Panel B.

The career job characteristics are overall similar between those who have already quit it and those who are still working on it, though the latter group is more likely to be self-employed and more likely to have a flexible schedule. This may be mixing two effects. On the one hand, it is due to the selection, that these are characteristics that encourage to work longer, so those who had such job characteristics are more likely to stay in their career jobs. On the other hand, those who are still working are more likely to be in younger cohorts and those characteristics might be more common to them. As a first step to disentangle these two, we turn to examine the career job characteristics for those who are still working on their career jobs over different age groups.

3.2.1 Career Job Characteristics over Age Groups

Table 4 tabulates career job characteristics, among those who are still working on their career jobs, for three different age groups: not older than 62, between 63 and 65, and older than 65. The share of workers who are self-employed or have a flexible schedule increases with age, in particular after 65. Only 9 percent of workers were self-employed before age 63. It goes up to 34 after age 65. The share of having a flexible schedule changes from 36 percent to 71 percent between these two age groups. This finding suggests that having more control over own work schedule either through self-employment or obtaining flexibility in schedule is attractive for older workers, so either workers with those job characteristics tend to stay longer or employers start to offer those characteristics at older ages. Older workers' preferences for these characteristics is also consistent with the findings by Ramnath, Shoven, and Slavov (2017).

There are other patterns that are worthwhile to note. The number of hours worked decreases significantly, in particular on the left tail, after age 65. This explains why flexibility in work schedule is more valued in late life. Being able to reduce the work burden at the beginning of the pathway to retirement seems to be appreciated by older workers. There is no noticeable change in hourly wage. This might be a result of declining productivity over age and workers with higher wage selecting into working longer canceling out each other. The share of jobs with health insurance provision drops significantly at age 65. This may reflect that older workers become eligible for Medicare at this age.

There are also changes in the distribution of industries and occupations across age groups. Those who work in manufacturing or transportation and warehousing industries are less likely to stay longer while those work in professional, scientific, and technical services or educational services are more

A. Age ≤ 62		Salary, I	hours w	orked, ho	ourly wag	ge
Salary (in 2015\$):	$\frac{10\mathbf{p}}{30,000}$	$\frac{25p}{57,000}$	$\frac{50p}{85,000}$	75p 123,782	90p 177,964	<u>Mean</u> 101,169
Hours worked (per year):	1,440	2,080	2,080	2,340	2,600	2,062
Hourly wage (in 2015\$):	19	28	40	58	85	51
Self-employed:	Yes					8.8%
	No					91.2%
Had a flexible schedule:	Yes					36.3%
	No					63.7%
Health insurance provision:	Yes					83.0%
	No					17.0%
B. Age 63-65		Salary, I	hours w	orked, ho	ourly wag	ge
Salary (in 2015\$):	$\underbrace{\mathbf{10p}}_{3\overline{2,000}}$	$\underbrace{\frac{\mathbf{25p}}{52,000}}$	$\underbrace{\mathbf{50p}}_{8\overline{5},000}$	$\frac{\mathbf{75p}}{120,917}$	90p 200,000	<u>Mean</u> 107,770
Hours worked (per year):	884	1820	$2,\!080$	$2,\!250$	$2,\!600$	$1,\!944$
Hourly wage (in 2015\$):	19	28	42	58	120	62
Self-employed:	Yes					11.0%
	No					89.0%
Had a flexible schedule:	Yes					50.9%
	No					49.1%
Health insurance provision:	Yes					85.4%
	No					14.6%
C. Age ≥ 66		Salary, I	hours w	orked, ho	ourly wag	ge
	<u>10p</u>	$\frac{25\mathrm{p}}{2}$	50p	$\frac{75\mathrm{p}}{1000}$	<u>90p</u>	<u>Mean</u>
Salary (in 2015\$):	3,500	15,500	50,000	94,000	155,000	64,202
Hours worked (per year):	156	480	1,540	2,080	2,160	1,337
Hourly wage (in 2015):	14	23	44	64	99	61
Self-employed:	Yes					33.7%
	No					66.3%
Had a flexible schedule:	Yes					71.2%
	No					28.8%
Health insurance provision:	Yes					39.2%
	No					60.8%

Table 4: Career Job Characteristics: Workers, by Age Group

Notes: N=321 for group A, N=117 for group B, and N=163 for group C.

D. Share of selected industries	Α	.ge grou	ıp
	≤ 62	<u>63-65</u>	≥ 66
Professional, scientific, and technical services	17.7%	17.1%	21.5%
Manufacturing	12.8%	12.0%	5.5%
Transportation and Warehousing	11.8%	8.6%	3.1%
Health Care and Social Assistance	6.2%	12.8%	8.6%
Educational Services	7.5%	6.8%	12.9%
E. Share of selected occupations	Age group		
	≤ 62	<u>63-65</u>	≥ 66
Management	21.5%	22.2%	12.3%
Business and financial operations	9.4%	12.8%	14.1%
Computer and mathematical	9.0%	6.8%	10.4%
Office and administrative support	8.7%	10.3%	8.6%
Education, training, library	4.4%	3.4%	11.0%

 Table 4: Career Job Characteristics: Workers, by Age Group (Continued)

Notes: N=321 for group A, N=117 for group B, and N=163 for group C.

likely to stay longer. Those who have management positions tend to stay shorter while those who have education-related occupations tend to stay longer.

These findings hint what job characteristics encourage workers to stay in their career jobs, in particular after the normal retirement ages. Having control over own work schedule (either through self-employment or by having a flexible schedule) seems to be an important factor, and being able to reduce work burden at the beginning of the pathway to retirement turns out to be a key reason why they want to have it.

3.2.2 Career Job Exits

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We now turn to the reasons why respondents left their career job. For those who already quit the career job, the survey asks the reasons (and also about the main reason in case respondents give multiple reasons) for the separation. All the listed reasons as well as the share of respondents who selected each are in Table 5. Since the reason of the separation can be very different between the group who directly transitioned into retirement after quitting the career job and those who had a bridge job after the separation, we analyze these two groups separately.

For those who did not have a post-career bridge job, the vast majority (81%) reported retirement to be the main reason of quitting the career job. None of the other reasons is chosen to be the main reason of the separation for more than 5% of the sample.

Reason	$\mathbf{\underline{R}}$	$\underline{\mathbf{MR}}$	Reason	$\underline{\mathbf{R}}$	$\underline{\mathbf{MR}}$
Laid off	5.3	4.5	Retirement	84.8	81.0
Childcare	1.3	0.8	Famly-care/Personal obligation	2.5	1.7
Own Illness	2.0	1.5	Own Injury	0.1	0.1
School/training	0.0	0.0	Discharged/Fired	0.5	0.5
Closed business or bankrupt	1.4	1.4	Sold Business	2.2	1.7
Temporary job	0.6	0.5	Quit to other job	0.2	0.2
Business Conditions	1.2	0.8	Unsatisfactory arrangements (hours/pay)	1.5	1.0
Other	6.1	4.5			

A. Sample who had no bridge job

B. Sample who had a bridge job

Reason	$\underline{\mathbf{R}}$	$\underline{\mathbf{MR}}$	Reason	$\underline{\mathbf{R}}$	$\underline{\mathbf{MR}}$
Laid off	16.4	14.3	Retirement	41.1	36.3
Childcare	0.3	0.1	Famly-care/Personal obligation	2.1	1.7
Own Illness	0.5	0.4	Own Injury	0.5	0.3
School/training	0.6	0.5	Discharged/Fired	3.1	2.9
Closed business or bankrupt	6.3	5.3	Sold Business	5.9	5.0
Temporary job	0.6	0.4	Quit to other job	15.2	13.5
Business Conditions	3.5	2.1	Unsatisfactory arrangements (hours/pay)	4.6	3.2
Other	16.4	14.0			

Notes: N=1,337 for group A and N=805 for group B.

For those who had a post-career bridge job, the share of those who left the career job for retirement is much lower (36%) but still fairly high. This suggests that a significant fraction of those who end up having a post-career bridge job initially decide to retire and then change their mind to come back to the labor market. Another significant fraction of this group report that they lost their career job involuntarily. 22% of this sample had to leave the career job either because of being laid off, being discharged, or because the business was closed or went bankrupt.

To obtain a more complete picture of situation facing those who leave the career job, the survey also asks what were happening at the moment of the separation from the career job (regardless of whether they consider them to be reasons of their retirement or not). Table 6 reports the options provided and result, again separately for those who transitioned into retirement and those who had a post-career bridge job.

A. Sample who had no bridge job

What happened	Yes	What happened	Yes
Supervisor encouraged departure	5.1	Coworker encouraged departure	1.1
Wages reduced	1.9	Hours reduced	1.5
Would have been laid off	4.1	New job duties	6.1
New job location	2.9	Pension eligible	22.0
Employer changed health insurance	1.2	Early retirement incentive	18.7
Other	11.7		

B. Sample who had a bridge job

What happened	Yes	What happened	Yes
Supervisor encouraged departure	9.6	Coworker encouraged departure	1.2
Wages reduced	3.1	Hours reduced	1.5
Would have been laid off	12.1	New job duties	6.4
New job location	6.2	Pension eligible	15.2
Employer changed health insurance	0.8	Early retirement incentive	15.0
Other	16.3		

Notes: N=1,337 for group A and N=805 for group B.

For those who did not have a post-career bridge job, events reported in this table are consistent with retirement being the most important reason for the separation. One fifth said their pension became available at the moment of retirement and also one fifth said there was an incentive for early retirement. The share of respondents who reported events that can be considered as an exogenous shock causing the separation is not large, though some respondents were encouraged departure by a supervisor or a coworker (6 percent), did not like to adjust to a new working environment (9 percent) or could have been laid off if had chosen to stay (4 percent).

Those who had a post-career bridge job are more likely to have experienced pressure to leave the career job. 12% report that they would have been laid off while 10% report that the supervisor encouraged departure. Many of them also experienced being eligible for pensions (15%) and having incentives for early retirement (15%) but less so compared to those who retired without having a bridge job.

To understand the importance of health and business conditions and having a part-time option in

decisions on leaving the career job, the survey also asks the following counterfactual questions. For those respondents who report that their health was fair or poor, it asks how likely they would still have stopped working if their health had been better. For those who report that their health was either good, very good, or excellent, the question is asked with counterfactually worse health conditions. The survey also asks whether the business conditions was good or bad at the moment of leaving the career job and asks the same probability question with counterfactual business conditions. Lastly, the survey asks the probability question under a counterfactual option of working part-time.

Figure 2 demonstrates the role of health condition. There are not many respondents who report that they had either fair or poor health at the moment of retirement from the career job, but about 40% of them say there is no chance that they have stopped working if their health had been better. Less than 20% report that they would still have stopped working for sure regardless of their health conditions. The pattern is similar between those who did not have a bridge job and those who had one after the career job. On the other hand, a vast majority of those who report that their health was good or better say they would have stopped working for sure under a counterfactually worse health condition. In short, these responses reveal that for those who report that they had fair or poor health at the moment of retirement health was a major factor in their retirement decision making and a counterfactually better health condition could have changed their decision.





(b) Sample had a bridge job



Figure 3 summarizes the effect of business conditions on retirement decisions. It shows a similar pattern to the effect of health, though the magnitude of the effects is slightly smaller. For those who experienced a bad business condition at the moment of separation, the business condition appears to be an important factor in their decision making. Among those who did no have a bridge job, 20% of those who left their career job when the business condition was bad report that there is no chance that they still have stopped working if the business condition was better. The number goes up to 40% when we look at those who had a post-career bridge job. Only about 30% of them would still have stopped working for sure even if the business condition had been better. On the other hand, the vast majority of who left their career job when the business condition was good would still have stopped working for sure under a counterfactually worse business condition.

Figure 3: Probability of stop working under counterfactual business conditions



(a) Sample had no bridge job

Lastly, Figure 4 demonstrates the effect of a part-time option. The effect of this option does not appear to be sizable. About half of the respondents would not have changed their decision even if this option had been offered. For between 10 and 20 percent of the sample, however, this option would have changed their decision to leave their career job for sure. A limited effect of the part time option might be due to the fact that the respondents expect other characteristics of the job may also change when they work part time. For example, they might expect to have a lower salary or faster pace of work if work part time. To identify the effect of reducing the work hours on labor supply, one needs to carefully control for other characteristics, which is the objective of the Strategic Survey Questions asked in the second part of Survey 4. See Ameriks, Briggs, Caplin, Lee, Shapiro and Tonetti (2017) for more details on the SSQs.

(b) Sample had a bridge job



Figure 4: Probability of stop working under part-time option

(a) Sample had no bridge job

(b) Sample had a bridge job

4 Labor Market Activity after Career Job: Bridge Jobs

Though a direct transition from a career job to full retirement is the most common pattern in the sample, a significant fraction of the sample still reveal their interest for working beyond a career job by either taking a bridge job or at least searching for such an opportunity. In this subsection we examine how the characteristics of bridge jobs are compared to those of career jobs and what characteristics respondents were looking for when they searched, to obtain another piece of evidence on what job characteristics are preferred in late life.

4.1 Bridge Jobs

Among 2,146 respondents who have already separated from their career jobs, 811 (38 percent) found a bridge job, instead of transitioning directly to no work. About half (378) of those who got a bridge job are still working in their bridge jobs. Given that those who directly transited to full retirement might come back to the labor market later, the share of sample who ever had a bridge job in the VRI (38 percent) is roughly comparable to that from Maestas (2007) (52 percent).

Panel A of Table 7 shows the length of search for the first post-career bridge job, the gap between the end of the career job and the first bridge job, and the gap between the end of the career job and the most recent bridge job.⁴ The length of search for the first bridge job is remarkably short. At median, it took only about a month to find the first post-career bridge job. More than three quarters

 $^{^{4}39\%}$ of those who had a bridge job had multiple bridge jobs. The most recent bridge job is the first one if they had only one bridge job.

of sample spent less than one year in searching for the first bridge job. The actual gap between the end of the career job and the beginning of the first bridge job is shorter than the time spent on searching, reflecting that some workers start searching while they are still working on the career job. The median gap between the end of the career job and the beginning of the most recent bridge job is slightly longer than one year.

Table 7: Comparison: bridge jobs vs. career jobs

A. Length	ı of Sea	arch				
	10p	25p	50p	75p	90p	
How long searched for first bridge job (Yr)	$\overline{0}$	$\overline{0}$	$\frac{1}{0.2}$	$\overline{0.8}$	$\frac{1}{1.9}$	
Yr gap: b/w career and first bridge job	0	0	0.1	0.5	1.9	
Yr gap: b/w career and most recent bridge job	0	0.1	1.3	5.2	10.4	
B. Hours a	nd Ea	rning				
		Ratio c	of Bridge	/Care	er	
	10p	$25\mathrm{p}$	50p	75p	90p	
Hours	$\overline{0.06}$	$\overline{0.21}$	$\overline{0.74}$	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	
C. Job Characterist	ics, Ca	reer to B	ridge			
Self-		Fley	kible		Health 1	Insurance
Employed		Schedule			Provided	
Career Bridge		Career	Bridge		Career	Bridge
6.4% 23.3%		24.0%	53.5%		87.8%	41.0%
D. Changes in Inc	lustry/	Occupat	ion			
		Yes	No	<u>)</u>		
Changed Industry	4	3.6%	56.4	%		
Changed Occupation	3	5.1%	64.9	%		
Changed Occupation Category*	2	26.7%	73.3	%		

Notes: N=812. Characteristics of career versus bridge jobs for respondents with bridge jobs.

*We define three broad occupation categories based on the type of abilities most required per occupation: human capital, social capital, and physical strength. The classification is based on a principal component analysis on the list of required abilities from ONET.

Figure 5 visualizes the transition patterns between the career and the post-career bridge jobs.

Blue bars represent the tenure on the career jobs and the red bars represent that on the most recent bridge jobs.⁵ Several patterns deserve note. First, the gap between the blue and red bars are overall very short, confirming that the transition from the career to the post-career bridge jobs happen fairly quickly. Second, conditional on having a post-career bridge job, the separation from their career job happens mostly in their 50s. Third, there is a large variation in the length of the most recent bridge jobs.

The sample tend to work less number of hours for a lower hourly wage on a bridge job compared to their career job (Table 7, Panel B). At median, both the number of hours and hourly wage are reduced compared to career jobs (by 26% and 20%, respectively). As a result of both reductions, annual salary from bridge jobs is at median about half of that from career jobs. This again hints that what is desired in late life is less burden of work rather than more pecuniary compensation. The comparisons at median, however, mask a rich pattern of changes in the number of hours and hourly wage. Figure 6, the scatter plot of these two ratio variables, shows that distributions are all over the plane. The most common patterns are that both ratios are close to one (career-job-like bridge jobs) and both ratios are less than 0.5 (low-stress fun projects). Reducing number of hours a lot while maintaining relatively higher level of wage (part-time) and reducing hourly wage a lot while not changing the number of hours (volunteer work) are also not rare. Hence these result suggest not only the preference for less burden of work overall but also large heterogeneity in what older individuals want (and at the same time, in what they can find in the market).

Workers are more likely to have control over own work schedule on the bridge jobs (Table 7, Panel C). Bridge jobs are more likely to be self employed (23%, compared to 6% in career jobs) and more likely to have an adjustable work schedule (54%, compared to 24% in career jobs). With Medicare eligibility starting from age 65, health insurance provision does not seem to be an important factor that older workers look for in bridge jobs. The share of bridge jobs with health insurance provision indeed drops at age 65, from 54% to 35%.

It is fairly common to change industry or occupation during the transitions from career to postcareer jobs. 44% of the sample changed industry while 35% changed occupation. When we classify occupations into three categories based on which one among human capital, social capital, and physical

⁵Respondents are sorted by their current age (black circle). An empty circle between the blue and red bars indicates that the respondents had another bridge job between the career and the most recent bridge jobs. Panel (a) is for those who are still working on their most recent bridge jobs while Panel (b) is for those who are not currently working.



Figure 5: Transition patterns between career and bridge jobs

Note: Blue bars represent the career jobs and red bars represent the most recent bridge jobs. Black squares are the current ages and circles indicate that the respondents had another job between the career and the most recent bridge job. Respondents are sorted based on their current age.

Career Job

Age

Last Job 🔳 Current age 🜼 Other job

Figure 6: Hours reduction and hourly wage reduction



Note: Each ratio is calculated as the value from the bridge job divided by that from the career job. The figure exclude outliers with any ratio larger than 1.5.

strength is most required in each occupation⁶, about a quarter of the sample changed the occupation category, suggesting that a drastic change in the job characteristic is not rare.

4.2 Empirical Analysis on Bridge-Career Wage Gaps

The lower hourly wages for bridge jobs might reflect a penalty to working a reduced number or hours and/or a penalty to the lost human capital either due to changed occupation/industry or to the gap between the career and the bridge jobs. To disentangle the effects of these factors, we estimate the following regression:

$$log(W_{b,i}/W_{c,i}) = \beta_0 + \alpha log(H_{b,i}/H_{c,i}) + \beta_1 YearGap_i + \beta_2 \mathbb{1}_{CLi} + \beta_3 \mathbb{1}_{COi} + \beta_4 \mathbb{1}_{GEi} + \varepsilon_i,$$
(1)

where subscript *i* stands for each respondent, *b* for bridge jobs, and *c* for career jobs. *W* denotes for hourly wage, *H* for the number of hours, *YearGap* for the number of years between the end of the career job and the start of the bridge job, $\mathbb{1}_{CI}$ is an indicator function for changing industry, $\mathbb{1}_{CO}$ is an indicator function for changing occupation, and $\mathbb{1}_{GF}$ is an indicator function for gaining flexibility in schedule. Note that the function used to capture the penalty to reduced number of hours is based

⁶The categorization is based on a principal component analysis on the list of required abilities from ONET.

on French (2005) and French and Jones (2011). It means that when the number of hours is reduced by 1 percent, the hourly wage is reduced approximately by α percent.⁷ We drop observations with whose W_b/W_c or H_b/H_c is greater than 95 percentile or smaller than 5 percentile.

Table 8 shows the regression results. α , the penalty term for the part-time work, is estimated to be about 0.07, which is much smaller than 0.45 which is used in French (2005) and French and Jones (2011). Instead, we find that other factors that are often associated with transitions to bridge jobs involve significant penalties. Changing industry or occupation results in 18 and 27 percent reduction in hourly wage, respectively, reflecting potential loss in job-specific human capital. The length of gap between career and bridge jobs also reduces hourly wage. One year gap reduces hourly wage by 1.3 percent.

Variable Coeff. Std. error $log(H_b/H_c)$ 0.072(0.032)YearGap -0.013(0.005)Change in industry -0.181(0.062)Change in occupation -0.274(0.066)Gaining flexibility in schedule -0.061(0.054)Constant -0.100(0.041)

Table 8: Determinants of bridge-career wage gap

Notes: N=646. Dependent variable is the log of wage ratio between the bridge and the career jobs $(log(W_b/W_c))$. Dropped the observations whose W_b/W_c or H_b/H_c is greater than 95 percentile or smaller than 5 percentile.

Even though this is a reduced form regression that does not control for selection and is not meant to investigate causality, the results hint on what deter older Americans from having a post-career job. Changes in occupation and/or industry and a gap in career often occur during transitions into post-career employment and these are associated with a lower hourly wage. Reduction in the number of hours which seems to be preferred by older workers also result in a lower wage. All these factors may discourage older workers from having a post-career employment.

⁷We do not include the changes in the age as it is highly correlated with the years of gap. Including it only makes the coefficient on YearGap variable statistically insignificant, while not affecting the point estimate much. Also, to see whether they had another bridge job during the gap affects the estimation result, we tried including the interaction term between YearGap and the dummy variable of having a previous bridge job. Having a previous bridge job did not have any effect.

4.3 Job Search after Career Job

Whether older Americans have a bridge job or not and what types of jobs they have depend not only on what they looked for but also on what were available in the market. In that sense, their search behavior—whether they ever looked for a job opportunity after the career job and, if they did, what types of jobs they were searching for—can be a better signal on older workers' preference.

Among those who directly transitioned into full retirement after career jobs, some, though not many, did look for a new job opportunity. 11% (147 out of 1,336) did so. One the other hand, the vast majority of those who had a bridge job, but not all of them, actively looked for such an opportunity. 80% (657 out of 812) actively searched for a bridge job while for the remaining 20% a bridge job opportunity was rather passively given to them.

Table 9 summarizes what job characteristics older workers looked for conditional on having searched. 40% wanted flexibility in deciding the number of hours, while 31% want to be flexible in deciding how to allocate these hours over days and weeks. 33% wanted less responsibility while 30% wanted to be more of own boss. We also find strong heterogeneity in what older workers look for. There is no single characteristic that gets votes from more than half of the sample. Except for a better health insurance, all characteristics are pursued by more than 10% of older workers.

The findings from analyzing search behavior echo those from other behavioral data. Though a significant fraction of older Americans reveal their interest for working after a career job, but still a majority of them transition into full retirement without actively searching for a post-career job opportunity. Based on what they looked for in their search, we find that flexibility in work schedule, having less burden, and being more of own boss are the most desired job characteristics at the end of working life.

5 Discussion

From Survey 4 of the VRI, we find older Americans' significant interest for working longer, expressed by working on career jobs even after being eligible for Social Security benefits and Medicare, having a bridge job after quitting career jobs, and searching for a post-career employment opportunity. In particular, about half of those who left their career jobs either had a bridge job (38 percent) or at least looked for such an opportunity even if they did not end up with having one (62 percent \times 11 percent = 7 percent).

<u>Characteristic</u>	% 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

Table 9: Search behavior: what workers werelooking for

Notes: N=804. Respondents who searched after career job.

Still, the most common path of retirement is the direct transition from full time career job to full retirement. And the vast majority (89 percent) of those who did not have a bridge job even did not look for such an opportunity. By looking at this, one might jump into the conclusion that at least half of older Americans do not have any interest at all in working after leaving their career jobs. We have to stress, however, that all these behavioral data may underestimate their willingness to work longer. Not only the actual outcomes from the market but also respondents' search behavior reflect whether there are (and whether they expect to find) satisfactory job opportunities in the market.

From the behavioral data we also find hints on what job characteristics encourage workers to stay longer in the labor force. In particular, having more control over own work schedule, either by some flexibility in schedule being allowed by employers or by being self-employed, turn out to be the most desired features at the end of working life. But again, what job characteristics they find in bridge jobs and what they search for partially reflect what types of jobs are available (or expected to be available) in the market.

Transitions into post-career employments often involve changes in industry or occupation and gaps

in career. All of these turn out to be associated with a wage reduction in bridge jobs compared to career jobs. This, in addition to the wage reduction associate with part-time working, may be an important factor that limits pose-career employments among older Americans.

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A Appendix: Comparison with HRS Sample

A. Age eligible	Age and Wealth							
Age: Financial wealth:	10p 57 -935	$\frac{\mathbf{25p}}{60}$ 520	$\frac{50\mathbf{p}}{66}$ $62,358$	$\frac{\mathbf{75p}}{75}$ 311,790	<u>90p</u> 82 774,279	<u>Mean</u> 68 305,135		
	Mar	ried		Education				
	$\frac{\mathbf{Yes}}{51\%}$	$\frac{\mathbf{No}}{49\%}$	-	$\frac{<\text{College}}{71\%}$	$\frac{\textbf{College}}{17\%}$	$\frac{> \text{College}}{12\%}$		
	Sex							
	$\frac{\textbf{Female}}{52\%}$	$\frac{\mathbf{Male}}{48\%}$		$\frac{\text{Excellent}/}{42\%}$	<u>Good</u> 32%	Fair/ <u>Poor</u> 26%		
	Age and Wealth							
B. VRI eligible			Age	e and Wealth				
B. VRI eligible Age: Financial wealth:	$\frac{10\mathbf{p}}{56}$ 35,336	25p 59 101,889	Age <u>50p</u> <u>64</u> 283,690	e and Wealth 75p 70 685,939	90 p 77 1,296,840	<u>Mean</u> 65 600,788		
B. VRI eligible Age: Financial wealth:	10p 56 35,336 Mar	25p 59 101,889 ried	Age <u>50p</u> <u>64</u> 283,690	e and Wealth 75p 70 685,939	90p 77 1,296,840 Education	<u>Mean</u> 65 600,788		
B. VRI eligible Age: Financial wealth:	<u>10p</u> 56 35,336 <u>Mar</u> <u>Yes</u> 69%	25p 59 101,889 ried <u>No</u> 31%	Age <u>50p</u> <u>64</u> 283,690	e and Wealth 75p 70 685,939 29%	$ \frac{90p}{77} 1,296,840 Education \underline{College}{41\%} $	$\frac{\text{Mean}}{65}$ $600,788$ $\frac{\text{> College}}{22\%}$		
B. VRI eligible Age: Financial wealth:	10p 56 35,336 Mar <u>Yes</u> 69% Se	$ \frac{25p}{59} \\ 101,889 \\ ried \\ \frac{No}{31\%} \\ ex $	Age <u>50p</u> <u>64</u> 283,690	e and Wealth <u>75p</u> 70 685,939 <u>< College</u> 29%	90p 77 1,296,840 Education <u>College</u> 41% Health	$\frac{\text{Mean}}{65}$ $600,788$ $\frac{\text{College}}{22\%}$		

 Table A1: The HRS sample characteristics

Notes: The first panel uses all the financial respondents (the respondents who answered questions regarding household finance in case there are multiple respondents in one household) who are age 55 or above (N=12,492). For the second panel we impose additional criteria that they are internet eligible and have at least \$10,000 in non-transactional accounts (N=3,478). All the tabulations are weighted using the HRS sampling weights.

	By Age					Total
	<u>55-59</u>	<u>60-64</u>	<u>65-69</u>	<u>70-74</u>	75-	
A. Age eligible						
Retired, completely (%)	16.9	36.7	57.2	70.6	86.1	52.3
Retired, not completely (%)	4.9	9.0	15.2	13.9	5.9	8.9
Not retired (%)	78.2	54.3	27.6	15.5	8.0	38.8
Ν	2,502	$2,\!144$	$1,\!378$	$2,\!076$	4,392	12,492
B. VRI eligible						
Retired, completely (%)	10.3	26.6	47.8	63.0	81.7	38.2
Retired, not completely (%)	6.2	10.9	20.5	19.2	10.8	12.5
Not retired (%)	83.5	62.5	31.7	17.8	7.5	49.3
N	852	687	517	635	787	3.487

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 Table A2:
 Labor force participation status

Notes: See the notes for Table A1.

A. Retired from career job	Years worked						
	10p	$25\mathrm{p}$	50p	75p	90p	Mean	
Years worked:	5	10	18	$\frac{1}{27}$	35	19	
	٦ / (15 907				
Most common industries:	Manui		10.3%				
	Rotail	trado	iu socia	i assist		14.070	
	netan	traue				0.970	
Most common occupations:	Office	and adn	nin supp	oort		13.5%	
-	Produ	ction				9.8%	
	Sales a	and relat	ted			9.2%	
		_					
B. Working on career job	Years worked, salary, hours worked						
	10p	25p	50p	75p	90p	Mean	
Years worked:	$\overline{5}$	11	20	30	37	21	
Salary (in 2015\$):	$10,\!947$	$21,\!874$	40,523	$69,\!360$	$102,\!050$	$51,\!108$	
Hours worked (per year):	900	$1,\!664$	$2,\!080$	$2,\!236$	$2,\!600$	$1,\!953$	
	37					00.007	
Self-employed:	Yes					22.0%	
	INO					78.0%	
Most common industries:	: Manufacturing 17.4%						
	Health care and social assist 11 Retail trade 7.					11.6%	
						7.4%	
Most common occupations:	Office	and adm	nin supp	oort		11.9%	
	Management 11.1					11.1%	
	Sales a	and relat	ted			9.6%	

Table A3: Career Job Characteristics: Age-Eligible HRS

Notes: Career job is defined as the job with the longest tenure. This table uses all the financial respondents who are age 55 or above and reported the tenure on their longest job (N=8,831 for Panel A and N=1,844 for Panel B).

A. Retired from career job	Years worked						
	10p	$25\mathrm{p}$	50p	75p	90p	<u>Mean</u>	
Years worked:	8	13	20	29	35	21	
Most common industries:	Manuf	17.6%					
	Health		11.5%				
	Educa	tional se	ervices			9.0%	
Most common occupations:	Manag	gement				19.3%	
-	Office	and adr	nin supp	oort		14.2%	
	Sales a	and rela	ted			10.6%	
B. Working on career job	Years worked, salary, hours worked						
	10p	$25\mathrm{p}$	$50\mathrm{p}$	75p	<u>90p</u>	<u>Mean</u>	
Years worked:	10	15	23	32	37	23	
Salary (in 2015\$):	$19,\!992$	$37,\!572$	$61,\!200$	$92,\!820$	$134,\!640$	81,777	
Hours worked (per year):	1,040	1,820	2,080	2,392	2,750	2,033	
Self-employed:	Yes					24.1%	
	No					75.9%	
Most common industries:	Health care and social assist						
	Professional, scientific, tech. services Manufacturing						
Most common occupations:	Management					17.4%	
_	Office	and adr	nin supp	oort		11.9%	
	Busine	9.5%					

Table A4: Career Job Characteristics: VRI-Eligible HRS

Notes: Career job is defined as the job with the longest tenure. This table uses all the financial respondents who are VRI-eligible and reported the tenure on their longest job (N=2,693 for Panel A and N=930 for Panel B).