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Older Workers, Retirement, and Macroeconomic Shocks

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February 2022

Prepared for presentation at the
Pension Research Council Symposium, April 28-29, 2022
'Real-World Shocks and Retirement System Resiliency'

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Abstract

Older workers are an increasing share of the US labor force, yet we know relatively little how their participation is impacted by macroeconomic conditions. In this paper, I use US administrative data to identify how recessions impact transitions between career employment, partial-retirement, and retirement. I find that transitions to either full or partial retirement increase during economic contractions. Retired workers are also less likely to return to the labor market in recessions, magnifying the impact on labor force participation of older workers. Flows into retirement were especially high at the start of the COVID-19 pandemic, with an excess flow into retirement of five percent of older workers. I find flows into retirement are generally more cyclically sensitive than returns to the labor market, suggesting many excess retirements are permanent.

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The US population is aging rapidly with individuals over age 45 becoming a larger share of working age population (US Census Bureau 2017). Over the last few decades, private-sector employer pensions have largely disappeared, and the retirement age for public pension benefits has increased. As the majority of individuals in the US do not have sufficient savings to fully support themselves in retirement, working longer has been widely proposed as the best way to boost retirement security. These factors make the labor force attachment of older workers a key question for policy makers.

In this paper, I examine how macroeconomic conditions impact US worker retirements. Using administrative data on millions of workers, I find that worker flows to retirement increase during economic contractions. The effect is small but economically significant, with a one percentage point increase in the unemployment rate increasing flows to retirement by 0.15 percentage points. Retirements spike early in recessions when the economy is contracting, suggesting the primary mechanism is late-career job loss. I also find that retired workers are less likely to reenter the labor market in contractions, magnifying the impact of recessions on older worker labor force participation.

While retirement decisions depend on individual factors such as health, savings, and pension eligibility, macroeconomic conditions also play an important role. Much of the literature on recessions and retirements is from the period immediately following the 2008 financial crisis. Coile and Levine (2009, 2011), using Current Population Survey (CPS) data, find that workers were more likely to leave the labor force and collect social security benefits sooner, if they experience a recession late in their careers. In another closely related paper, Gordnichenko, Song, and Stolyarov (2013) use Social Security Administration administrative data to look at macroeconomic determinants of retirement transitions. They find that flows into both full and partial retirement increase during times of high unemployment.

This paper expands on the existing literature by introducing a new source of data for studying retirement transitions, by examining the cyclicality of retiree flows back into the labor market, and by providing an initial look at how the COVID-19 pandemic impacted retirements. I estimate that the pandemic increased the retirement transition rate by an excess five percentage points, much larger than the impact of the Great Recession. If these older, experienced workers do not return to the workforce, it will cause further tightening in the labor markets following the pandemic. While it is too soon to know for sure whether these workers will return, I find that flows into retirement are generally more cyclically sensitive than re-entry of retired workers, suggesting many excess retirements are permanent.

Data and Methodology

A key focus of this paper is documenting how late-career macroeconomic shocks impact retirement transitions. To this end I use longitudinal administrative data on jobs, the US Census Bureau's Longitudinal Employer--Household Dynamics (LEHD) data, which consists of quarterly earnings records collected by state unemployment insurance (UI) programs (Abowd, et al. 2009). A key advantage of the LEHD data for identifying labor force transitions is that it is relatively high frequency, allowing me to identify the exact quarter a worker transitioned from one employment status to another. LEHD earnings histories go back to the early 1990s for several states, allowing me to construct 30-year earnings histories for many workers. While Social Security Administration earnings data go back even further, the LEHD is more widely available to researchers through the Federal Statistical Research Data Centers and is an underused resource for retirement research.

To the best of my knowledge, this is the first paper using the LEHD data to identify retirements. As there is no established method for doing so, part of the contribution of this paper is to outline a method for using LEHD data to identify older worker retirement flows and to provide some general descriptive statistics. I will first note some limitations of the LEHD data for studying retirements. First, the LEHD data contain no information on receipt of retirement benefits. So 'retirement' throughout this paper refers to 'retirement from the labor market' not whether or not a worker is receiving social security benefits. Second, while LEHD employment coverage is broad, there are notable exclusions (notably federal and self-employment jobs) so I some late career job transitions may be misclassified as retirement transitions. Lastly, the LEHD panel is relatively short for examining long-run trends. My cohort of older workers are fairly young during the 2001 recession, and the panel ages over the next 21 years. This issue will obviously be mitigated with time as the LEHD time-series is updated with more years of data, but presumably one reason LEHD data is not used extensively in retirement research is that the shortness of the panel was historically a serious limitation.

Identifying retirement transitions.

I identify different stages of retirement in the LEHD data using large changes in earnings from peak lifetime earnings. Maximum lifetime earnings are defined here as the average real quarterly earnings during the three peak earning years between ages 45 and 55. Although retirement is often thought of as a permanent withdrawal from the labor force, actual retirement transitions tend to be more complicated, a job-stopping process that involves bridge jobs and occasional returns to the labor market (Ruhm 1990). To reflect this, I define retirement flows such that workers can move back to full-time work from partial retirement, and back to some meaningful labor force participation after apparently withdrawing from the labor force.

Individuals are classified as being in one of three stages each quarter: a full-time career worker (F), partially retired (P), or retired (R). Every quarter a worker can flow from one state to another, either into retirement or back into the labor market. Each state is defined as follows:

- **Full-time worker (F)**: real quarterly earnings are at least 50 percent of maximum lifetime earnings, or worker was full-time last quarter and has not entered either type of retirement spell (this allows for temporary disruption in earnings).
- **Partial retirement or bridge retirement job (P)**: a worker enters a partial retirement spell in the first quarter of a three-quarter spell where real quarterly earnings are less than 50 percent of maximum lifetime earnings. They remain in a partial retirement spell unless their earnings return to that required for full-time employment or until they enter retirement.
- **Retired (R)**: a worker enters a retirement spell the first quarter of a three-quarter spell where real quarterly earnings are less than $1,200. This figure corresponds to working approximately 13 hours per week at the federal minimum wage. They remain in a retirement spell until earnings rise above that level.

This method for identifying retirements is most similar to Gordnichenko, Song, and Stolyarov (2013) with some key differences. The most important difference is that in my framework, retirement spells can be transitory, with both flows to retirement and back to either partial or full-time work. There are two reasons for this difference. First, I am interested in whether older workers who exit the labor market return to work, and whether their post-retirement labor supply is impacted by macroeconomic conditions. A second reason is that I want to compare retirement transitions during the Great Recession and the pandemic recession. At present, data for the pandemic recession is heavily right-censored. So, if I define retirements as permanent exits from the labor market, I will get a much larger retirement wave in the pandemic that is largely driven by the right-censoring of the earnings histories. Allowing retirement spells to be as short as three quarters allows me to compare pandemic retirement transitions to earlier recessions. As noted in the next section, although three quarters may seem a short window for identifying a retirement spell, the vast majority who enter such spells never return to the labor market.

A few more notes on my sample of older workers. First, to minimize selection issues, I restrict the sample to attached workers who have seven continuous years of observed employment with earnings greater than $15,000 (constant 2020 dollars) between ages 45 and 51. The $15,000 threshold was chosen as it is approximately what a minimum wage worker working full-time throughout the year would earn during our sample period. Workers do not need to work every quarter of the year as long as they meet that minimum earnings level for the calendar year. As LEHD state coverage expands during the 1990s, the number of workers for whom I observe seven years of earnings also increases, so my oldest cohorts of workers are smaller than later cohorts. I also drop workers with more than 100 lifetime jobs or whose average annual earnings for their highest earnings years exceed one million dollars. Worker records that match a very large number of lifetime jobs are typically due to miscoded or falsified social security numbers. Workers with very high earnings typically receive large and volatile bonuses, which make it difficult to identify partial retirement transitions.

My final sample is 3.2 million older workers born between 1945 and 1965, a largely baby-boom cohort. About 54 percent of workers in my sample are men, 74 percent are White, 10 percent Black, 10 percent Hispanic, and 4.5 percent are Asian. As noted earlier, this sample of workers is relatively young during the early 2000 recession, with the oldest workers being only 56 during the dot-com bust. During the Great Recession, they are mostly in their early retirement years. When the pandemic arrives in March of 2020, many workers in my sample are well beyond traditional retirement age although the average worker in the sample is in their early 60s.

Retirement Timing

The timing of retirement and partial retirement flows using the approach described in the last section is shown in Figure 1. Panel (a) shows transitions into retirement, which peak at age 62 with a second peak at age 65. This pattern is consistent with other papers using social security earnings records to identify retirement flows. I also confirm the Deshpande, Fadlon, and Gray (2020) finding that retirement behavior remains 'sticky' at age 65 despite the increase in the social security full retirement age (FRA) from age 65 in 1983. The social security FRA is 66 for most of this cohort (it is 67 for workers born 1960 or later) but there is no corresponding spike in retirements at those ages. Deshpande, Fadlon, and Gray investigate multiple sources for this stickiness and find evidence that it is driven by employer norms, with workers more likely to retire at the age their coworkers retire.

Figure 1 here

With respect partial retirement flows, Ruhm (1990) first noted that most workers leave their career jobs well before traditional retirement ages and begin a 'job-stopping' process that combines bridge jobs, partial retirement spells and occasional return to career earnings. Figure 1 shows that pattern also holds true in the LEHD data. Panel (a) shows that transitions to partial retirement from career employment are the most common type of retirement flow until workers reach age 62. After workers reach the social security minimum retirement age, the dominant flow becomes bridge retirement into full retirement. Panel (b) shows transitions back into the labor market from retirement. Early partial retirement spells for workers in their mid-50s are as likely to end with a return to career earnings as in retirement, but as workers age flows to retirement dominate. These patterns are consistent with Ruhm's characterization that 'traditional' retirement from career job to zero earnings is not the typical pattern for US workers.

Panel (c) of Figure 1 shows the share of workers who remain either full-time, partially retired, or retired in both quarters. Interestingly, what appear to be marked peaks and troughs in transitions to retirement in Panel (a) appears as a relatively steady reallocation of workers from career employment to retirement in Panel (c), with a group of partially retired workers who represent a small (less than 10 percent) share of the workforce. A key takeaway from Panel (c) is that despite increases in social security maximum benefit age, a plurality of workers enter retirement by age 62.

Table 1 here

One apparent puzzle from a comparison of the three panels of Figure 1 is why transition rates to bridge retirement jobs are high, but the share of workers in partial retirement remains relatively small, peaking at just under nine percent when workers are in their mid-60s. Table 1 looks into this, investigating initial transitions into retirement and partial retirement more closely. I find that while retirement spells are long, partial retirement spells tend to be quite short. The average initial partial retirement spell begins at age 60, lasts just over a year, and two-thirds of the time ends in a transition to retirement. Meanwhile, the overwhelming majority of retirement spells are permanent, with 70 percent of workers still in their initial retirement spell at the end of the time series. So, while bridge jobs appear to be a frequent part of the transition to full retirement, they do not appear to be spells of long duration. Meanwhile, retirement appears fairly sticky, with only a third of workers returning to some form of bridge or career employment during retirement.

Overall, Figure 1 and Table 1 provide reasonable reassurance that the method for identifying retirement flows in the LEHD data outlined in the previous section produces reasonable patterns of retirement flows, with patterns similar to those found in other papers in the literature. With this is established, I next examine how these flows are impacted by macroeconomic conditions.

Macroeconomic Shocks and Retirement Transitions

Figure 2 looks for visual evidence that recessions impact retirement flows in the US. Panel (a) shows quarterly flows into retirement for workers aged 55, 60, and 62, conditional on working full-time in the previous quarter. Inspection of this panel suggests that transitions into retirement spiked during all three economic downturns, with a particularly large rise during the COVID pandemic. While flows into retirement increase in contractions, they do not noticeably decline in expansions. There is downward trend – consistent with later cohorts delaying retirement - but it does not appear cyclical. Transition rates to partial retirement from full-time work, not shown here, have the same general pattern – rising sharply in contractions, otherwise evidencing a downward trend.

Figure 2 here

Panel (b) of Figure 2 shows returns to work at age 60, conditional on being in a retirement spell that began before age 60. The intent here is to see if there is any visual evidence that workers who retire early are more likely to return to the labor market when the economy improves. There is visual evidence here that flows to partial retirement from retirement are depressed during economic contractions, although flows to full-time work do not appear cyclical. In short, retired workers appear less likely to return to bridge employment during downturns.

Lastly, Figure 2 shows a pronounced spike in retirements at the start of the COVID-19 pandemic. While this finding is not surprising, it is actually at odds with flows in the CPS. Nie and Yang (2021) note that the rise in retired workers in the CPS during the COVID pandemic is not driven by flows from employment into retirement, but by a fall in retired workers returning to the labor market during COVID. While I too find a drop in retired workers returning to work during the pandemic, Figure 2 shows a very sharp rise in flows from employment to retirement at the onset of the pandemic.

To more formally examine the role of macroeconomic conditions on retirement, I estimate the following regression:

$$Prob_{it}\ (X \rightarrow Y) = \alpha + \beta cycle_t + \gamma X_{it} + \mu t_t + \varepsilon_{it} \tag{1}$$

where the left-hand side of equation (1) is the probability that a worker who is in status X in t-1 transitions to status Y in quarter t, *cycle* is a quarterly cyclical indicator, X is a matrix of worker characteristics including worker age, and t are seasonal fixed effects and a time trend. The key parameter of interest, β, tests whether retirement flows are sensitive to cyclical indicators. In most specifications shown the cyclical indicator is the change in unemployment rate. The change in the unemployment rate more precisely identifies economic contractions, which Figure 2 suggests primarily drive retirement flows. In unreported results, I find using the unemployment rate results in coefficients of the same sign but with effects much smaller in magnitude. In some specifications I also interact the cyclical indicator with worker characteristics to see if the cyclical sensitivity of retirement flows varies across workers.

Table 2 here

Table 2 reports the results of equation 1 for full-time workers aged 55 to 67, where the dependent variable is quarterly transitions into retirement ($Prob_{it}$ *(F ->R)*) or partial retirement ($Prob_{it}$ *(F ->P)*). Column (2) of Table 2 reports the results from a simple version of equation (1) with worker age controls, indicating that in 2000 Q4, about one percent of full-time workers age 55 transition to retirement, with a one percentage point increase in the unemployment rate increasing the probability of transitioning to retirement by 0.16 percentage points. This is approximately equivalent to the impact being an additional year older, which increases the probability of retiring during the quarter by 0.18 percentage points. Column (8) shows the results of the same regression with transitions to partial retirement as the dependent variable. Approximately 1.7 percent of full-time workers age 55 transition to partial retirement in 2000 Q4, with a one percentage point increase in the unemployment rate increasing that probability by an additional 0.22 percentage points. Again, this is approximately equal to the impact of being an additional year older, a small but economically significant effect.

Other specifications reported in Table 2 examine the impact of gender and income on retirement flows. Women are marginally more likely to transition to retirement and much less likely to enter partial retirement. However, there is no strong evidence here that women's transitions to retirement are more (or less) cyclically sensitive than men. This may be due to the inclusion of the pandemic recession in the data, where in a reverse of the usual pattern women's employment fell relative to men. With respect to earnings, similar to Coile and Levine (2009, 2011) I find that lower-wage workers retirement transitions are more cyclically sensitive, with a one percentage point increase in the unemployment rate increasing the probability of retirement by 0.25 percentage points. I also find that high wage workers are more likely to transition to partial retirement than full retirement.

Note that the estimates in Table 2 pool older workers aged 55-67, and that the age control assumes retirement propensity increases linearly with age. Given the spikes in retirement flows at age 62 and 65 shown in Figure 1, it seems likely that cyclical sensitivity is also non-linear in age. Gorodnickenko, Song, and Stolyarov (2013) find that workers around normal retirement age (63-67) are more sensitive to macroeconomic conditions. In unreported results, I also find that retirement flows are more cyclically sensitive at ages with higher propensity to retire generally.

I can use the coefficients in Table 2 to estimate the 'excess' retirement rate during the pandemic. The unemployment rate rose nine percentage points in the second quarter of 2020, implying a 1.5 percentage point increase in the retirement rate and an additional 2.25 percent of older workers entering partial retirement. Thus, almost five percent of workers over 55 may to have started retirement sooner than planned during the pandemic. If these older, experienced workers do not return to the workforce, it will cause further tightening in the labor markets following the pandemic.

Table 3 here

Will these older workers return to the labor market after the pandemic? While it is too soon to say for certain, we can look at returns from retirement in the time series generally and examine how responsive these returns are to macroeconomic conditions. Table 3 estimates a version of equation (1) where the dependent variable is the probability of returning to labor market after retirement. Generally speaking, the younger a worker is when they enter retirement the more likely they are to return to work, and retirement is 'stickier' than partial retirement. In 2000 Q4, 3.5 percent of retired workers aged 55 return to partial employment, compared to 12 percent of partially retired workers returning to full-time work. Higher-income workers are more likely to return to partial retirement from retirement, and the lowest quintile of workers are more likely to return to their full employment earnings. A plausible interpretation of the income effects in Table 3 is that both the lowest and highest income retirees that are most likely to return to the labor market, the first because they have relatively little savings and the later because they have more attractive opportunities for post-retirement work.

Compared to age and retirement status, Table 3 suggests the impact of macroeconomic conditions on older workers returning to work is relatively small; a one percentage point increase in the unemployment rate decreases the probability of returning to the partial retirement from retirement by 0.02 percentage points. As returns should plausibly be responsive to general labor market conditions, I also show results using the unemployment rate as the cyclical indicator, which also shows a relatively small cyclical effect. In other words, re-entry appears much less cyclically sensitive than flows into retirement. This relatively small cyclical effect, in addition to the fact that the baby-boom cohort is older now than they were during the Great Recession, does not offer optimism that many workers who retired early in the pandemic will return to the labor market when conditions improve.

Conclusion

Using earnings data on millions of US workers, I find that recessions cause many workers to retire earlier than they would otherwise. Retirements spike early in recessions when the economy is contracting, suggesting the primary mechanism driving increased retirement flows is late-career job loss.

Retired workers are also less likely to reenter the labor market in recessions, further depressing labor force participation of older workers. Generally, younger retirees are more likely return to the labor market, and retirement is a much sticker state than partial retirement. The highest income retirees are more likely to return to partial-employment, and the lowest income retirees most likely to return to the labor market at their pre-retirement earnings level.

The impact of the pandemic on retirement flows was especially pronounced; I estimate that an excess five percent of older workers entered retirement or partial retirement in early 2020. While some of these workers may latter return to the labor market, the historical evidence from previous recessions suggests excess flows into retirement in recessions are largely permanent, especially for older workers, with little cyclical impact on flows back into the labor market.

Lastly, this paper shows the utility of LEHD data for retirement research and demonstrates a method for identifying retirement flows in the administrative data that may prove useful for future researchers.

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Figures

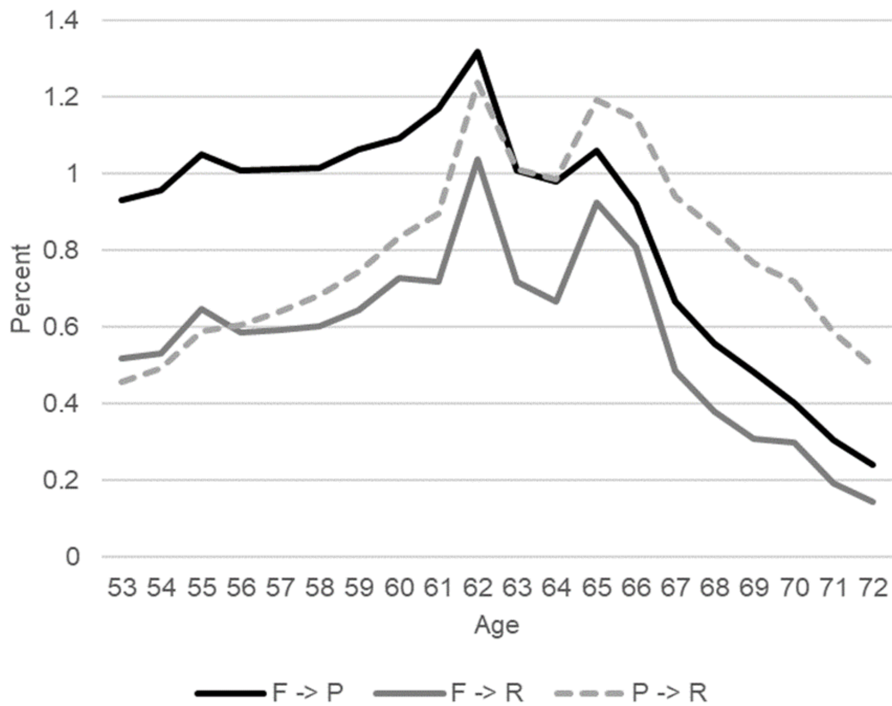

Figure 1(a): Flows into retirement

Source: Author's calculations from US Census Bureau LEHD confidential microdata.

Notes: Panel (a) shows quarterly transition rates by age from full-time work to partial retirement (F -> P), from full-time work to retirement (F -> R) and from partial retirement to retirement (P -> R).

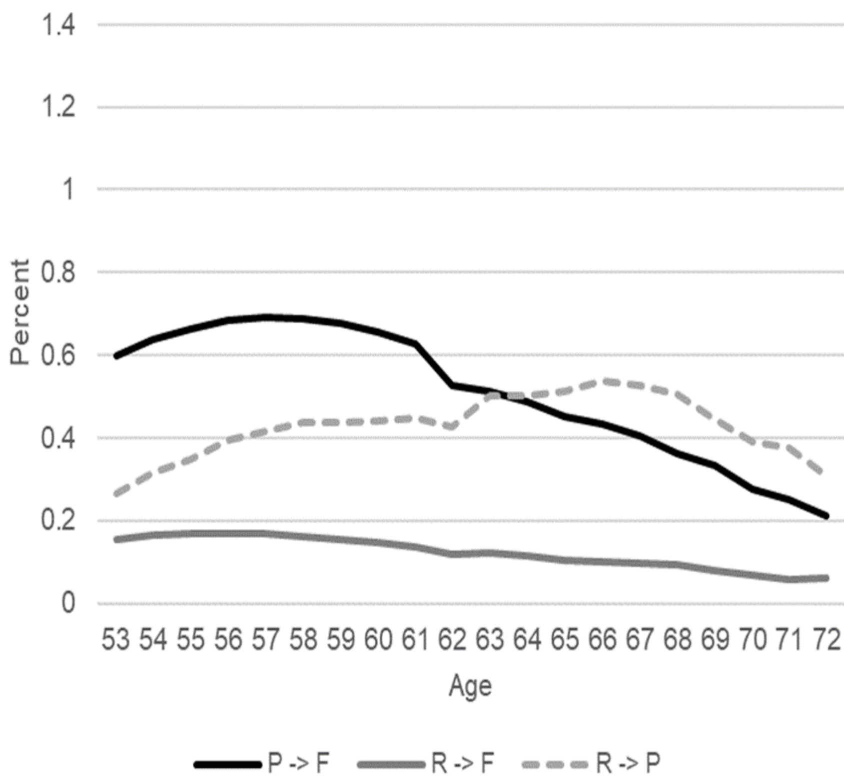

Figure 1(b): Flows out of retirement

Source: Author's calculations from US Census Bureau LEHD confidential microdata.

Notes: Panel (b) shows returns to the labor market after entering the job-stopping process, from retirement to partial retirement (R ->P), partial retirement or retirement to at least 50 percent career level earnings (P ->F and R ->F).

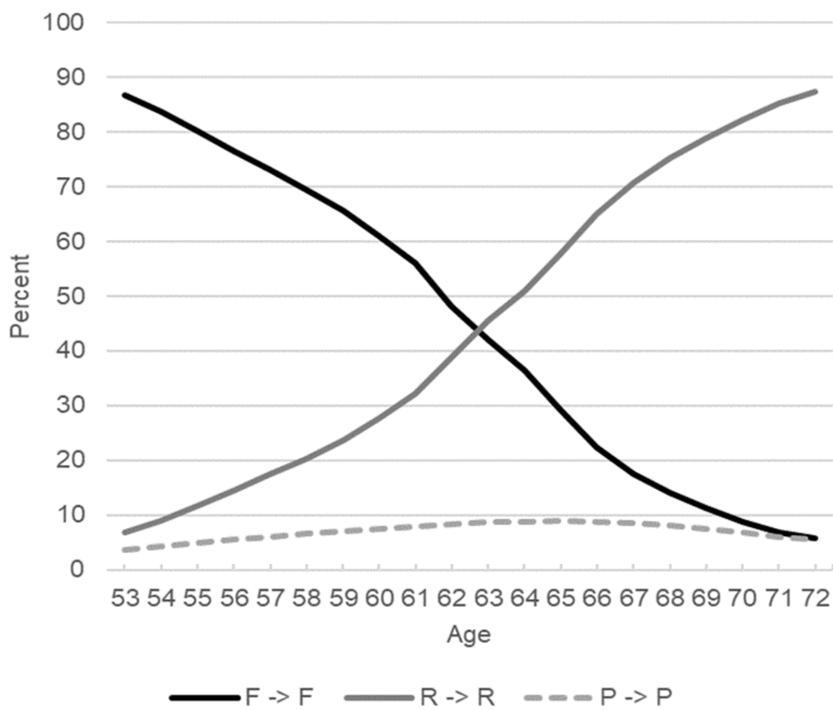

Figure 1(c): Retirement status static flows

Source: Author's calculations from US Census Bureau LEHD confidential microdata.

Notes: Panel (c) shows the share of workers each quarter whose status remains the same between q-1 and q (F ->F, R ->R, P->P).

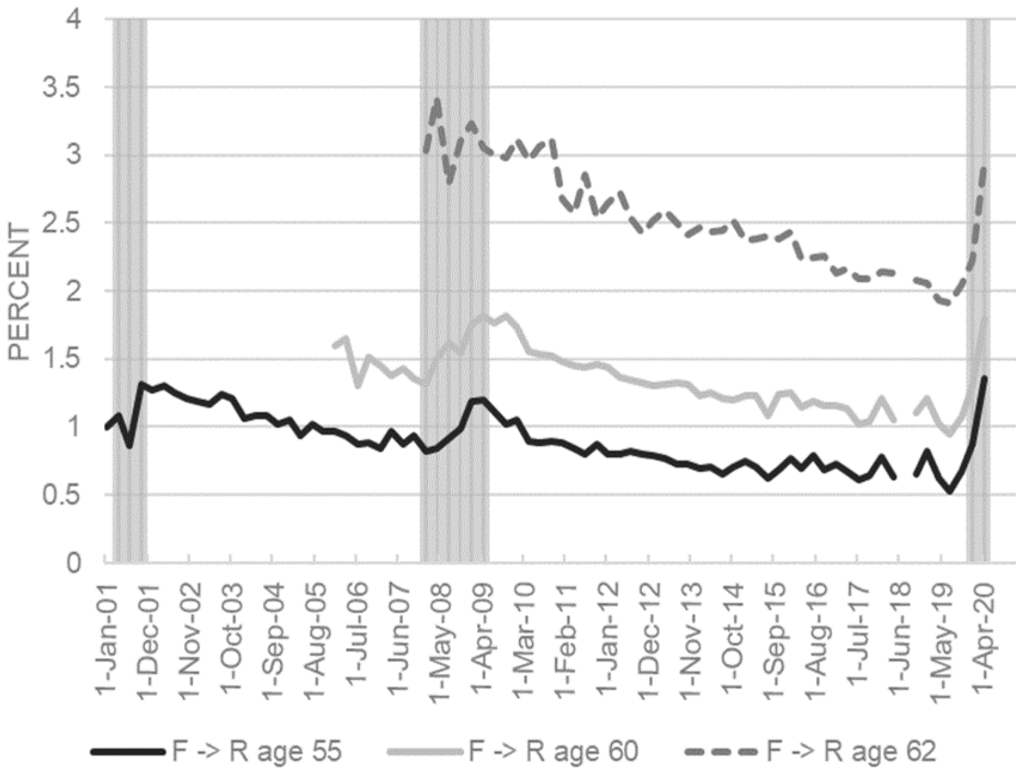

Figure 2(a): Recessions and flows into retirement at age 55, 60, and 62

Source: Author's calculations from US Census Bureau LEHD confidential microdata.

Notes: Panel (a) shows seasonally adjusted quarterly transition rates from full-time employment to retirement (F → R) for workers aged 55, 60, and 62. Grey bars note NBER recession quarters. Flows to retirement in 2018 Q2 are suppressed as they are biased upward due to Arkansas and Mississippi withdrawing from the LEHD partnership that quarter.

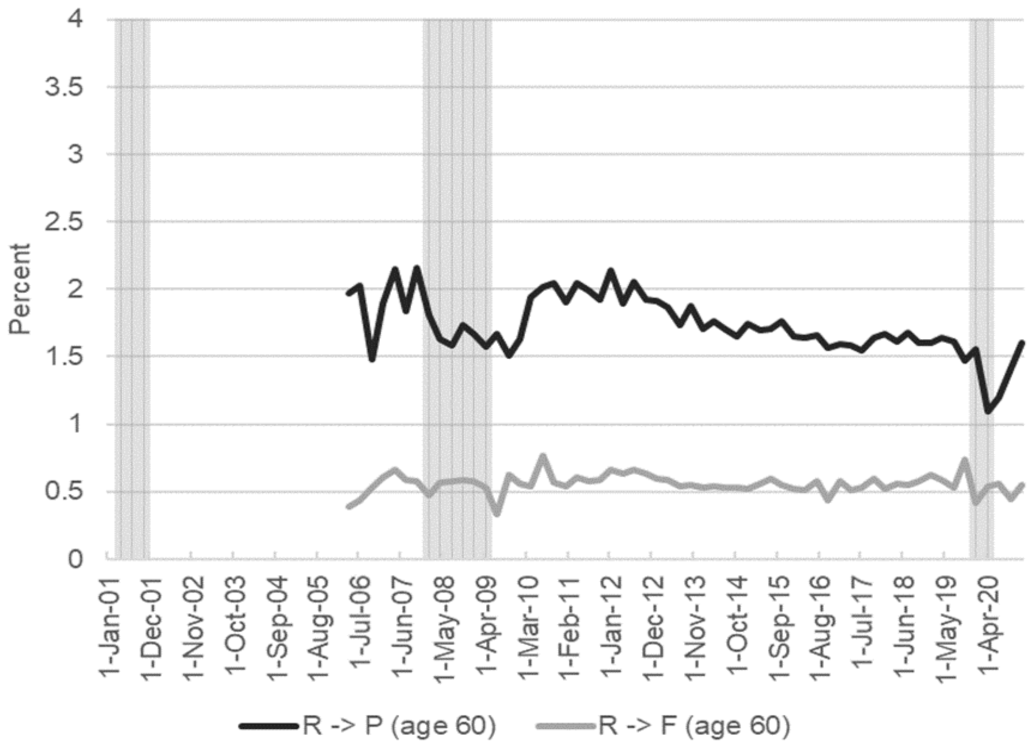

Figure 2(b): Recessions and returns to the labor market from retirement at age 60

Source: Author's calculations from US Census Bureau LEHD confidential microdata.

Notes: Panel (b) shows flows from retirement back to the labor market at age 60 for workers who retired before age 60. Grey bars note NBER recession quarters.

Tables

Table 1: Initial Retirement Spells

Initial retirement (R) spell	
Average age at entry	61.0 years
Average length of spell	5.5 years
Working full-time at entry into spell (F->R)	50.3%
Partially retired when entered spell (P->R)	49.7%
Still retired in 2021	70.3%
Returned to partial retirement earnings	23.2%
Returned to full-time career earnings	6.5%
Initial partial retirement (P) spell	
Average age at entry	60.2 years
Average length of spell	1.2 years
Still partially retired in 2021	6.9%
Transitioned to retirement (P->R)	65.3%
Returned to full-career earnings (P->F)	27.7%

Notes: Initial partial retirement spells are for workers who were full-time at entry only (F->P transitions). Workers can be either full-time or partially retired when entering initial retirement (R) spell.

Table 2: Cyclical Regressions: Retirements and Partial Retirement

	Prob (F -> R)						*Prob (F -> P)*					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	1.35	1.05	1.01	1.01	1.20	1.20	2.09	1.72	1.87	1.87	1.47	1.47
	(0.006)	*(0.006)*	*(0.006)*	*(0.006)*	*(0.007)*	*(0.007)*	*(0.008)*	*(0.008)*	*(0.009)*	*(0.009)*	*(0.010)*	*(0.010)*
Δ UI rate	0.15	0.16	0.16	0.16	0.16	0.25	0.21	0.22	0.22	0.23	0.22	0.24
	(0.001)	*(0.001)*	*(0.001)*	*(0.001)*	*(0.001)*	*(0.003)*	*(0.001)*	*(0.001)*	*(0.001)*	*(0.002)*	*(0.001)*	*(0.003)*
Age - 55		0.18	0.18	0.18	0.18	0.18		0.21	0.21	0.21	0.21	0.21
		(0.001)	*(0.001)*	*(0.001)*	*(0.001)*	*(0.001)*		*(0.001)*	*(0.001)*	*(0.001)*	*(0.001)*	*(0.001)*
Female			0.07	0.07					-0.31	-0.31		
			(0.003)	*(0.003)*					*(0.005)*	*(0.005)*		
*Female * Δ UI*				0.00						-0.03		
				(0.002)						*(0.002)*		
2nd earnings					-0.17	-0.17					0.11	0.11
quintile					*(0.005)*	*(0.005)*					*(0.006)*	*(0.006)*
3rd earnings					-0.16	-0.16					0.17	0.17
quintile					*(0.005)*	*(0.005)*					*(0.007)*	*(0.007)*
4th earnings					-0.18	-0.18					0.22	0.22
quintile					*(0.005*	*(0.005)*					*(0.007)*	*(0.007)*
5th earnings					-0.24	-0.24					0.83	0.83
quintile					*(0.005)*	*(0.005)*					*(0.009)*	*(0.009)*
*2nd quintile * Δ UI*						-0.09						-0.01
						(0.004)						*(0.004)*
*3rd quintile * Δ UI*						-0.11						-0.04
						(0.004)						*(0.004)*
*4th quintile * Δ UI*						-0.13						-0.05
						(0.003)						*(0.004)*
*5th quintile * Δ UI*						-0.12						0.00
						(0.003)						*(0.004)*

Notes: Numbers in parentheses are standard errors. Sample is individuals between age 55 and 67 working full-time in the previous quarter, quarterly observations for years 2000-2021. Earnings quintiles are calculated using the highest three earnings years between age 45 and 55. All regressions include quarter fixed effects (q4 is omitted quarter) and a time-trend (year-2000). Data for 2018 Q3 is omitted from regressions due to bias from Arkansas and Mississippi withdrawing from LEHD in that quarter.

Table 3: Cyclical Regressions: Labor Market Returns

	Prob (R->P)			*Prob (P->F)*			*Prob (R -> F)*		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept	3.47	3.60	3.02	12.05	12.31	14.80	1.48	1.48	1.55
	(0.016)	*(0.017)*	*(0.016)*	*(0.059)*	*(0.068)*	*(0.06)*	*(0.011)*	*(0.012)*	*(0.012)*
Δ UI rate	-0.021		-0.022	-0.046		-0.044	0.003		0.003
	(0.001)		*(0.001)*	*(0.005)*		*(0.005)*	*(0.001)*		*(0.000)*
UI rate		-0.015			-0.029			-0.000	
		(0.001)			*(0.005)*			*(0.000)*	
Age - 55	-0.163	-0.164	-0.167	-0.706	-0.706	-0.691	-0.096	-0.096	-0.094
	(0.001)	*(0.001)*	*(0.001)*	*(0.004)*	*(0.004)*	*(0.004)*	*(0.001)*	*(0.001)*	*(0.001)*
2nd quintile			0.330			-1.98			-0.118
			(0.009)			*(0.049)*			*(0.006)*
3rd quintile			0.462			-3.44			-0.166
			(0.009)			*(0.046)*			*(0.006)*
4th quintile			0.554			-4.15			-0.166
			(0.009)			*(0.046)*			*(0.006)*
5th quintile			0.929			-2.18			0.167
			(0.010)			*(0.049)*			*(0.008)*

Notes: Numbers in parentheses are standard errors. Sample is individuals between age 55 and 67 either retired (left panel) or partially retired (right-panel) in the previous quarter, 2000-2021.. All regressions include quarter fixed effects (q4 is omitted quarter) and a time-trend (year-2000). Data for 2018 Q3 is omitted from regressions due to bias from Arkansas and Mississippi withdrawing from LEHD in that quarter.