

How Persistent Low Returns Will Shape Saving and Retirement

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Chapter 7

Challenges and Opportunities of Living and Working Longer

Joseph F. Quinn and Kevin E. Cahill

Older persons contemplating retirement today are more exposed to market forces and financial insecurity than were their predecessors, due to demographic change, the trend to defined contribution plans, and macroeconomic volatility (Quinn and Cahill 2016). With public sector budgets also strained, many older individuals must either extend their working lives or reduce their standards of living in retirement. The financial well-being of older households now appears to be more cyclical than in the past, with the outlook for retirement income security being stable or improving in a strong macroeconomic climate, but becoming unstable and declining during and following economic downturns. This choice presents older workers and their employers with both challenges and opportunities.

In response to these changes, some Americans are adapting, although the adequacy of their preparations remains to be seen. A century-long trend toward earlier retirement came to a halt in the 1980s and now has reversed, although the rate of reversal may now be slowing down (Quinn et al. 2011; Munnell 2015a). The rise in labor force participation at older ages is all the more notable because it is occurring while labor force participation among male and female workers aged 25 to 54 has declined steadily since 2000 (Hipple 2016). Older Americans represent a flexible workforce that is willing to change employers, occupations, and work intensity late in life (Johnson et al. 2009; Cahill et al. 2015a). This flexibility may serve as an antidote to the retirement income security challenge lying ahead (Smyer et al. 2009; James et al. 2016).

For the foreseeable future, individuals are likely to play a more central role in determining their own financial security in old age. Policymakers need to focus on the incentives facing older individuals and evaluate how these incentives can encourage continued work later in life among those who can do so, while protecting those who cannot. In this chapter we discuss important changes in the retirement environment, how older workers have been responding to these changes, and the significant challenges still ahead.

Policy Concerns Regarding Retirement Security

Both long-term trends in demographic aging and the current macroeconomic environment challenge our ability to maintain living standards as we age. Moreover, there are legitimate concerns regarding the income sources on which retirees have to rely.

Nearly two-thirds of older persons' income comes from sources about which potential retirees might be concerned: social security, pension benefits (including annuities), and asset income (US Social Security Administration 2016a). For those age 65+ in the lowest three income quintiles, the reliance is even higher: 85, 91, and 83 percent of total income comes from these three sources, with social security by far the most important (see Figure 7.1 and Table 7.1).

Social Security. The progressive nature of social security's benefit calculation formula disproportionately rewards those with lower lifetime earnings, providing lower absolute benefits but higher replacement rates. Yet the system and its recipients face many concerns ahead. The permanent benefit reduction for claiming at the Earliest Age of Eligibility—still age 62—will

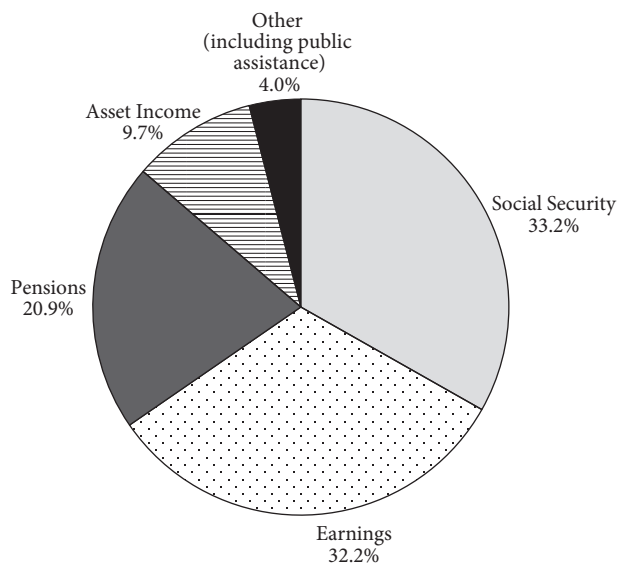


Figure 7.1. Shares of aggregate income for aged units 65+, by source (2014, %)

Note: Totals do not necessarily equal the sum of the rounded components. Aged units include married couples with a least one person aged 65 or older and non-married persons aged 65 or older.

Source: US Social Security Administration (2016a).

TABLE 7.1 Shares of aggregate income by source and quintile of total money income (2014)

Source	Bottom Quintile (%)	Second Quintile (%)	Middle Quintile (%)	Fourth Quintile (%)	Top Quintile (%)
Social Security	80.7	80.5	61.2	39.4	15.4
Earnings	3.0	5.3	12.6	23.7	45.2
Pensions	3.0	7.6	17.8	26.0	22.3
Asset income	1.8	2.4	4.1	5.7	14.0
Other	11.5	4.3	4.4	5.3	3.1

Source: US Social Security Administration (2016b).

increase from 20 to 30 percent, as the Full Retirement Age (FRA) rises from 65 to 67 for those born after 1959 (Board of Trustees of OASDI 2016).¹ This higher offset for those who claim benefits early disproportionately affects lower-income workers and those in physically-demanding occupations who may find it difficult to postpone benefit receipt until their FRA or beyond (Rutledge and Coe 2012).

Social security replacement rates (the ratio of benefits to prior earnings) for the average earner retiring at age 65 will decline from 42 percent in 1985 to a projected 36 percent in 2030.² In addition, the Medicare Part B premiums that are subtracted from social security benefits are rising faster than the cost of living, and more recipients will find part of their benefits subject to federal income taxation in the future.³ When these two additional factors are considered, according to Munnell (2015b), the average replacement rate will drop even further, to 31 percent.

These pessimistic calculations assume that future social security benefits will be paid according to the current scheduled benefit formula, an optimistic assessment. This may well not occur because Social Security faces substantial long-term funding issues. Annual expenditures already exceed (non-interest) revenues, and without reform on the revenue and/or the expenditure side, the Social Security (OASDI) Trust Fund will be depleted by 2034. At that point, Social Security will be able to pay less than 80 percent of promised benefits (Board of Trustees of OASDI 2016). While reforms may occur in the interim, many proposed options spell trouble for future retirees since they involve benefit reductions, either explicitly or implicitly, through additional delays in the FRA.⁴ The last major reform, in 1983, did just that, moving the FRA from 65 to 66, and then to 67, thereby lowering the benefits received at any given age.⁵

Employer pensions. About half of all employees in the private sector are covered by an employer pension on their current jobs and about 44 percent of those aged 65+ currently receive income from a pension other than Social

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Security (US Social Security Administration 2016b). Although pension coverage has remained steady over time, the type of pension coverage provided has changed significantly, from traditional defined benefit (DB) to defined contribution (DC) plans.⁶ DB pensions provide a defined monthly benefit at retirement (as does Social Security, a public DB plan), typically based on earnings and tenure with the firm.⁷ By contrast, in a DC plan, the employer's only obligation is to make specified contributions to an account designated by the employee. The size of the account at retirement depends on the amount of these contributions and how these investments perform over the years.

In the United States, the percentage of workers with DB plans has plummeted from 88 percent in the early 1980s (including 26 percent who had both a DB and a DC plan) to only 30 percent in 2013 (including 13 percent with both). Over the same time, DC coverage only has risen from 12 to 71 percent (or including those covered by both from 38 to 84 percent; Munnell 2014). Nevertheless, accumulations in DC accounts remain relatively small. In 2013, for example, workers aged 55–64 with a DC plan had median 401(k) and individual retirement account (IRA) accumulations of about \$110,000, enough to purchase a joint and survivor annuity of only about \$500/month (Munnell 2014; Dushi et al. 2015).⁸ Mean retirement account savings in 401(k)s, IRAs and Keogh plans do rise with age, as expected, averaging about \$125,000 for those aged 50–55, and \$164,000 for those 56–61 (see Figure 7.2). Because nearly half of American families

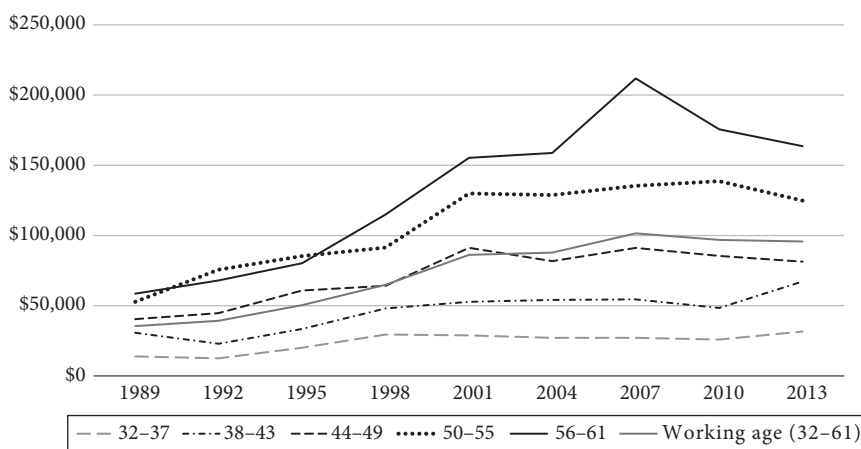


Figure 7.2. Mean retirement account savings of families by age (1989 to 2013)

Note: Figures in 2013 dollars. Retirement account savings include 401(k)s, IRAs, and Keogh plans.

Source: Morrissey (2016).

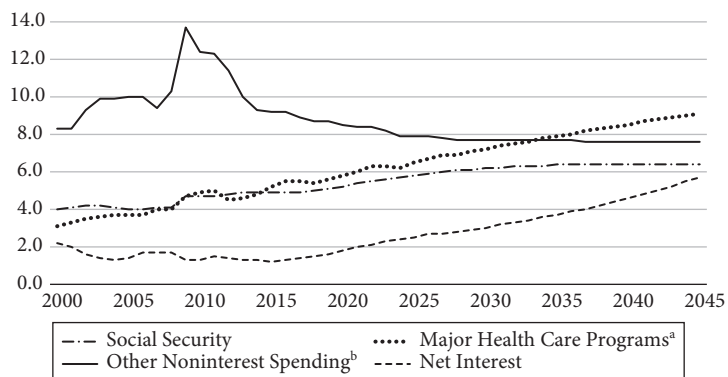


Figure 7.3. Federal spending as a percentage of GDP, by component (2000 to 2045)

Notes:

^a Consists of spending on Medicare (net of offsetting receipts), Medicaid, and the Children’s Health Insurance Program, as well as outlays to subsidize health insurance purchased through the marketplaces established under the Affordable Care Act and related spending.

^b Consists of all federal spending other than that for Social Security, the major health care programs, and net interest.

Source: Derived from Congressional Budget Office (2010).

have no retirement account savings at all, the median (50th percentile) value among those aged 32–61 is only \$5,000, and is under \$10,000 for all except the oldest age group (56–61), whose median was only \$17,000 (Morrissey 2016).⁹ These amounts are modest at best, especially considering the likelihood of financial shocks in retirement.

Medicare and Medicaid. The fiscal challenges facing Social Security are modest and manageable compared to those facing Medicare and Medicaid. Social Security (OASI) reforms confront political resistance since many politicians do not want to be on record supporting increases in social security taxes or decreases in benefits, especially when Social Security is likely to meet its full obligations for the next 15 years or so. By contrast, Medicare and Medicaid reforms are much more difficult, because they involve not just checks to recipients but rather the provision of healthcare to the elderly. Federal spending on healthcare is projected to rise to almost 8 percent of GDP by 2040, and then head still higher, while social security benefit payouts reach a maximum of about 6 percent of GDP (see Figure 7.3).

Medicare’s Hospital Insurance Trust Fund (Medicare Part A) is currently projected to be depleted by 2028, compared to 2034 for OASDI (Board of Trustees, Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds 2016).¹⁰ Moreover, Medicaid costs are already

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burdening state budgets. For those contemplating retirement, the pending insolvency of Medicare and Medicaid is additional cause for concern.

Savings. Few older Americans have saved much for retirement. Nearly 60 percent of American workers (and over 40 percent of those age 45+) own less than \$25,000 in financial assets, excluding the value of their primary residence and DB pension plans (Helman et al. 2016). Since life expectancy at 65 is currently about two decades, decades in which out-of-pocket medical expenses will increase for many, these modest assets provide very little financial cushion late in life.

Effects of the Current Low-Return Environment

The current low-return environment is exacerbating these challenges for older individuals. One downside of a low-return environment is lower returns on assets. Yet this has also been accompanied by lower rates of inflation (Federal Reserve Bank of St. Louis 2016; US Bureau of Labor Statistics 2016). Since social security retirement benefits are indexed for inflation, many older persons will not be affected. Nevertheless, timing issues can still be a concern. Retirees who lock in to annuities during a low-return period stand to lose if interest rates rise, while those who bought annuities during the earlier higher-return environment gain as the nominal returns on their assets are maintained when interest rates decline.¹¹

The low return environment could also impact some older workers' decisions about when to leave the labor force and claim benefits. Overall, asset income provides about 10 percent of income for Americans aged 65+. That percentage rises slightly with age and dramatically by income quintile, from less than 3 percent for those in the bottom two quintiles to 14 percent for those in the top quintile, many of whom are still working (US Social Security Administration 2016b). The persistence of the low-return environment could very well deter retirement for these workers. Other individuals might choose to take on more financial risk to achieve higher average returns, at the cost of higher variation in returns.

Another important consequence of low returns is the impact on incentives to save and to take on debt, especially for younger Americans. The Federal Reserve Bank has kept interest rates at historical lows since the Great Recession, in part to induce spending and spur economic growth (Board of Governors of the Federal Reserve System 2016; Conti-Brown, this volume). Yet increased spending implies lower savings, and low interest rates can encourage individuals to incur debt. In turn, such changes in behavior can alter the financial outlook for younger and older workers alike, at a time when household financial security is already a real concern.

Retirement Preparedness

Taking into account each of these threads, it is of interest to assess the retirement preparedness of older households. One approach is to estimate household replacement rates, the ratio of income post-versus pre-retirement, assuming retirement at age 65 (Munnell et al. 2014). Those who fall more than 10 percent below what is required to maintain their prior standard of living are judged to be at risk and inadequately prepared for retirement. Figure 7.4 shows the results across time. In 2010 and 2013, more than half of American households had accumulated less than 90 percent of what they needed to maintain their pre-retirement standard of living.¹² The index jumped by 20 percent from pre- (2007) to post- (2010) recession, but this continued a long-term trend, up from near 30 percent in the 1980s to the high 30s in the 1990s to the mid-40s just before the recession. The index showed little improvement between 2010 and 2013, and it will be interesting to see the extent of the recovery (a decline in the index) when new data become available.

An alternative and more optimistic view is presented by Schieber (2015), who argues that workers will have larger defined contribution balances at retirement than do current retirees. Yet even so, he concludes that ‘many low earners face retirement with inadequate resources to provide an income that will allow them to maintain either a socially acceptable standard of living or one that matches that achieved while they were working’ (Schieber 2015: 16).

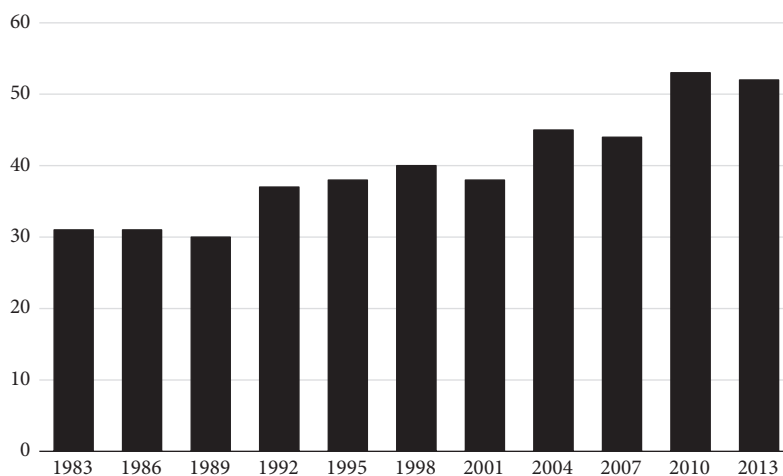


Figure 7.4. The national retirement risk index (1983 to 2013, %)

Source: Munnell (2015b).

What Might Concerned Potential Retirees Do?

Later in life, as people approach traditional retirement ages, the options are limited. An answer for many is simple—either consume less during retirement, or work longer before retirement. The latter can be either on a career job, or on one or more post-career bridge jobs, before complete labor force withdrawal.

Working longer provides additional lifetime earnings and the opportunity for incremental saving, augments the size of eventual pension and social security benefits (especially if receipt of social security benefits, which rise by about 8 percent per year of delay, are postponed while working), and also reduces the number of years of retirement during which these augmented assets will be consumed. The numerator (retirement resources) increases while the denominator (years of retirement) declines. This message has already hit home, since a trend toward delayed labor-force withdrawal has been underway for three decades.

Retirement trends: when do people retire? As seen in Table 7.2, the labor force participation rate of men aged 62 increased between 1985 and 2016 by nearly 20 percent (from 51 to 60 percent) after a century of decline. For men age 65, 68, and 70, the changes were even more dramatic, increasing by approximately 50, 60, and 70 percent over the past three decades.¹³ For older women, the increases are even larger. Since 1985, the labor force participation rate of women aged 62 has risen by over 60 percent (from 32 to 51 percent), and for those age 65, 68, and 70, the rates have approximately doubled. Older Americans are already working longer than they did a short time ago.

These increased participation rates of older Americans are all the more remarkable because they came at a time when participation labor market attachment of younger and middle-aged workers has declined (Hipple 2016). Among Americans aged 25–54, labor force participation rates declined about 4 percent between 2000 and 2015 (from 92 to 88 percent for men, and 77 to 74 percent for women), in stark contrast to the significant increases among older Americans. In part, the reversal of the early retirement trend could be due to the reductions in the social security earnings test, eliminated for those above their FRA, and increases in the delayed retirement credit from 3 to 8 percent per year of delay. On the employer pension side, the move from DB to DC plans removed strong retirement incentives, since DB pensions often paid lower expected discounted values after the earliest age of eligibility. This implicit pay cut does not occur in a DC plan.

Retirement patterns: How do people retire? Recent cohorts have redefined the meaning of the term ‘retirement.’ Three common pathways from career

TABLE 7.2 US labor force participation rates by age and sex (1985 to 2016, %)

Men							
	55	60	62	65	68	70	72
1985	83.7	71.0	50.9	30.5	20.5	15.9	14.9
1990	85.3	70.5	52.6	31.9	23.4	17.1	16.4
1995	81.1	68.9	51.3	33.5	22.4	20.6	16.0
2000	79.8	66.2	53.0	35.9	28.1	20.2	18.5
2005	80.6	67.7	57.7	39.7	32.2	23.8	21.6
2010	82.2	69.0	59.0	42.7	33.4	24.7	23.9
2015	80.6	70.3	60.5	44.8	32.6	27.3	22.7
2016	80.2	70.9	60.1	46.3	32.6	27.1	23.2
% Change							
1985–2016	-4	0	18	52	59	70	56
Women							
	55	60	62	65	68	70	72
1985	55.5	41.9	31.5	16.2	12.1	9.0	8.2
1990	59.8	44.8	34.9	20.6	15.2	11.7	8.0
1995	64.6	49.2	36.3	22.3	15.2	10.7	9.8
2000	65.2	51.5	38.7	23.2	16.6	10.9	10.8
2005	69.8	55.7	44.6	28.3	20.6	16.7	11.8
2010	72.8	61.0	49.7	33.7	23.7	17.3	14.6
2015	70.2	57.6	50.1	35.6	24.4	18.7	13.9
2016	68.0	58.6	50.7	35.0	24.3	18.1	14.5
% Change							
1985–2016	23	40	61	116	101	101	77

Source: US Bureau of Labor Statistics (2017).

employment to complete labor force withdrawal have been identified: phased retirement (a reduction in hours with one’s current employer), bridge employment (a job change following career employment, with or without a change in hours), and job re-entry (a subsequent return to the labor force following ‘retirement’—sometimes known as ‘unretirement’) (Kantarci and van Soest 2008; Maestas 2010; Cahill et al. 2015b; 2016). These retirement patterns are usually studied subsequent to career employment (full-time work for a significant duration), but job changes later in life are also common among those who have never had a career job (Cahill et al. 2012).

Bridge employment is the most prevalent form of gradual retirement among those with career jobs (Quinn 1999; Cahill et al. 2006, 2015b). An analysis of three cohorts of older Americans from the Health and Retirement Study (HRS) over a 20-year period showed that between 50 and 60 percent of older career workers moved to a bridge job following career employment. The majority of career workers did not follow a ‘traditional’ pathway directly

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from career employment to complete labor force withdrawal. Re-entry was the next most common form of gradual retirement. About 15 percent of career workers who were out of the labor force for at least two HRS survey waves years later returned to paid work (Cahill et al. 2011).

The least prevalent form of gradual departure was phased retirement, with only 10 percent of workers reducing their hours on a career job by 20 percent or more (Cahill et al. 2015b). Phased retirement would seem to be a preferable exit route since workers could continue to capitalize on accumulated specific human capital in a familiar environment. Factors on both the supply and demand sides of the labor market help explain its low prevalence. On the labor supply side, individuals might choose to change employers to alter the type or intensity of the work they do, or prefer to move to warmer climes or closer to grandchildren. Lower hours on a career job might decrease subsequent pension benefits if they are based on the last few years of earnings. The concept of ‘encore jobs’—those with a social impact—is also attractive to many (Johnson et al. 2009; Quinn 2010; Alboher 2012), and surveys show that older Americans care about the non-financial aspects of their work (AARP 2014).

On the demand side, legal and regulatory requirements can present obstacles for some employers. Regulations designed to restrict tax-deferred benefits for highly compensated individuals seem to have limited the possibility of phased retirement for older workers. Rules regarding pension distributions can also complicate phased retirement offerings (Johnson 2011). When faced with the choice between full-time work or changing employers, some workers might decide to leave the labor force entirely, and retain the option of labor market re-entry as a contingency plan.

Another important barrier to continued work later in life on a career job or elsewhere is physical or mental health. Increases in longevity and improvements in overall health have reduced the percentage of workers for whom physical health presents a barrier to continued work, while a shift away from physically demanding jobs over time has also expanded options for older workers (Steuerle et al. 1999; Penner et al. 2002; Munnell et al. 2004). Nonetheless, it is important to keep in mind that continued work later in life may be difficult for a portion of the labor force.

Future retirement trends. One might expect the retirement patterns of future retirees to differ from those of the past for at least three reasons in addition to those already mentioned: the impacts of the 2008–2009 Great Recession, the subsequent sluggish recovery (Desilver 2014), and the persistent low-return environment. Older Americans who had planned to live on investment asset returns may alter their retirement plans. While equity returns since 2010 have been strong (Wall Street Journal 2016), older Americans relying on investments are exposed to financial losses in the event of another market downturn.

A preview of future retirement trends is available from the HRS. We have compared the retirement patterns of the Early Boomers (aged 51–56 in 2004) and Mid-Boomers (aged 51–56 in 2010), to those of two older HRS cohorts, the HRS Core (aged 51–61 in 1992) and the War Babies (aged 51–56 in 1998). In each cohort we selected individuals working at a full-time career (FTC) job at the time of their first interview.¹⁴ We then followed these people over time and used each respondent's work history to identify his pathway to retirement (directly, or via phased retirement, bridge job, or job re-entry). We found that bridge employment continues to be the most common gradual retirement pathway for Early and Mid-Boomers, among those who left career employment (see Table 7.3). Few Early Boomers reduced hours in career employment by 20 percent or more.

In other words, the latest data available suggest that recent cohorts are following the same pathways to retirement as did their predecessors, despite their exposure to market fluctuations and the low return environment since 2008. The concept of retirement as a one-time, permanent event does not apply for most older Americans today and has not for decades.¹⁵ This observed flexibility of older workers is good news and offers opportunities to address the challenges of societal aging.

Conclusion

The persistent low-return environment appears to be influencing older individuals' decisions to hold and take on additional debt. The percentage of individuals aged 65 and older with debt increased from 30 percent in 1998 to 43 percent in 2010, with the average leverage ratio—total household debt divided by total household assets—doubling over the same period from 6 percent to 13 percent (Karamcheva 2013). Further, 11 percent of Middle Boomers are now in debt; i.e., have negative net worth (The Center for Retirement Research 2017). More research is needed to understand the degree to which older Americans with sizable debt are vulnerable to a rise in interest rates. Those relying on financial assets in a low-return environment may be tempted to increase asset returns by accepting more investment risk, as well as work longer to supplement their retirement savings. Lusardi and Mitchell (2017) also show that older American women have more debt today than did previous cohorts, and this is positively associated with older women being more likely to work currently, as well as plan to continue to work in the future. To the extent that workers are physically able to work longer, their additional labor supply can be beneficial to these individuals, to their employers, and to society as a whole, as more goods and services are produced to be distributed over an aging population.

TABLE 7.3 Prevalence and part-time status of bridge employment, phased retirement, and re-entry by sex and health and retirement study cohort

	n ^a	Still on or last observed on career job (%)	Moved to bridge job (%) ^b	Moved to no job (%)	Don't know (%)	Bridge job / (bridge job + no job) (%)	PT bridge job (%) ^c	SE bridge job (%) ^d	Reduced FTC job hours			
									On FTC (%)	Moved (%)	Reentered (%) ^e	
<i>Men</i>												
HRS Core	1,417	36	33	27	4	56	40	17	12	7	7	
War Babies Early	586	39	34	23	4	60	40	16	10	8	8	
Boomers	656	38	32	26	3	55	26	14	10	5	6	
Mid Boomers	759	77	7	9	8	46	60					
<i>Women</i>												
HRS Core	1,145	35	34	28	4	55	55	11	10	10	10	
War Babies Early	406	35	38	22	5	64	47	9	8	7	7	
Boomers	558	37	37	24	3	61	39	10	9	2	5	
Mid Boomers	718	71	12	10	8	55	83					

Notes:

^a Includes respondents aged 51–56 on a wage-and-salary full-time career (FTC) job at the time of the first interview. Transitions are measured within ten years of the first interview, with the exception of the Mid Boomers for whom transitions are measured within four years of the first interview (i.e., by 2014).

^b Does not include respondents who were not working for two consecutive waves following FTC employment and who later re-entered.

^c Percentage of respondents working part-time in bridge employment as a percentage of all individuals who transitioned to a bridge job; part-time employment is defined as working fewer than 1,600 hours per year.

^d Percentage of respondents who were self-employed in bridge employment as a percentage of all individuals who transitioned to a bridge job.

^e Percentage of respondents who returned to paid work after not having worked for at least two consecutive waves at some point following career employment.

Source: Authors' calculations.

Notes

1. Johnson et al. (2013) report that social security claiming rates at age 62 have declined over the past decade. Among men born in 1943 and 1944, 45 percent claimed benefits at age 62 compared with 55 percent of those born between 1935 and 1937. Approximately one half of women born in 1943 and 1944 claimed social security benefits at age 62, down from 60 percent among those born between 1935 and 1937.
2. The replacement rates reported by the Board of Trustees of OASDI, and referenced in Munnell (2015b), are based on social security benefit amounts as a percentage of career-average earnings, indexed for wage growth (Board of Trustees of OASDI 2013). Biggs and Springstead (2008) measure pre-retirement earnings in different ways (wage-indexed average earnings, inflation-adjusted average earnings, final earnings (based on a five-year average), and a present value of lifetime earnings), and do so on an individual basis and a shared basis for couples. The latter authors find that replacement rates vary depending on how pre-retirement income is measured. On a shared basis, for example, the median benefit replacement rate varies from 39 percent for wage-indexed average earnings to 55 percent for final earnings among individuals aged 64 to 66 in 2040 in the middle lifetime earnings quintile.
3. Couples with 'combined income' of over \$32,000 and individuals over \$25,000 pay income tax on 50 percent of their social security benefits. At combined incomes of \$44,000 and individual incomes of \$34,000, 85 percent of Social Security benefits are taxable. These thresholds are not indexed for inflation, so the percentage of recipients paying taxes on social security benefits will rise over time, from about 10 percent in 1985 to about 40 percent today, and an estimated half of recipient households by 2030 (Munnell 2015b).
4. Waiting longer for a given benefit implies getting a smaller benefit at any given age, which is an across-the-board benefit cut, although it is rarely described that way.
5. Many recent reform proposals do the same. For example, the 2010 Simpson-Bowles report, *The Moment of Truth*, proposed (among other changes) lowering benefits for higher-income recipients, increasing both the FRA and the Early Eligibility Age (which is still 62 for all) in step with future longevity increases, and lowering the annual cost-of-living adjustment, all three of which would lower future social security benefits relative to the current provisions (National Commission on Fiscal Responsibility and Reform 2010: 54). The Congressional Budget Office (2010) discussed five categories of Social Security reforms, three of which would lower future benefits, via formula changes to reduce initial benefits, additional increases in the FRA, and reductions in cost-of-living adjustments. In fact, a majority of the 30 proposals the CBO analyzed would lower future benefits (Congressional Budget Office 2010). While none of these have been implemented yet, they do suggest that reasonable reformers will include benefit cuts in their recommendations.

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6. Some analysts disagree with the assessment that coverage has been flat. Munnell (2014), using the 2013 Survey of Consumer Finances (SCF), argued that among prime-age private sector workers, the percent participating in an employer pension on the current job has drifted from 50 percent down to the low 40s. Morrissey (2016), also using the 2013 SCF, estimated that participation by respondents or their spouses declined from 60 percent in 2001 to 53 percent in 2013. In contrast, Dushi et al. (2015) estimated that participation rates increased slightly from 58 percent in 2006 to 61 percent in 2012. While these participation rate estimates differ, there is unanimous agreement about the precipitous decline in traditional DB plans in the private sector.
7. Schieber (2015: 13) pointed out that many DB plans no longer automatically pay monthly benefits, but rather ‘have restructured their plans so they also pay benefits at termination in the form of lump sums; most terminating workers . . . choose lump-sum payments over annuities.’ Those who do claim lump sums then face the longevity risk facing defined contribution recipients, living beyond one’s assets.
8. Ownership of DC assets is highly correlated with income. According to Munnell (2014), two thirds of those aged 55–64 in the fourth and fifth income quintiles had DC accounts, averaging \$132,000 and \$450,000 respectively. DC participation fell to 22 percent and 48 percent in the lowest two quintiles, and they averaged only \$13,000 and \$53,000 as they approached retirement (Munnell 2014: see Table 7.2). And many have no DC coverage at all.
9. Not surprisingly, retirement saving accounts are much more prevalent among high-income families. In 2013, only 8 and 30 percent of those in the lowest two quintiles had any such accounts, compared to about half of those in the middle quintile, and nearly 70 and 90 percent of those in the highest two quintiles. While over 60 percent of (non-Hispanic) white families had retirement accounts, only 26 and 40 percent of Hispanics and blacks did (Morrissey 2016, Charts 9 and 10). Schieber (2015) makes this same point, that utilization of retirement savings plans is highly correlated with income, and therefore that high-income workers are more likely to be well prepared to meet retirement needs.
10. Medicare Part A is the only component of Medicare that is funded by the FICA tax and that has a Trust Fund. Parts B (supplementary medical insurance) and D (prescription drug benefit) are funded annually from a variety of other sources.
11. The potential loss of retirement income due to low returns can be substantial. For example, the monthly payment on an annuity with a starting principal of \$250,000, an interest rate of 5 percent, and a 20-year period is \$1,632. At an interest rate of 2 percent the monthly payment is only \$1,263—nearly a quarter less.
12. The Survey of Consumer Finances is conducted every three years. Munnell et al. (2017) compares its estimates of preparedness with the self-assessments of preparedness by the individual households in the 2013 SCF. In aggregate, the news is about the same: the authors found that 52 percent were inadequately prepared

- compared to 57 percent of the household themselves. But they were not always the same households. A majority, 57 percent of the households, agreed with the authors' assessment. Others were confident when they should not have been (19 percent; often with a DC plan whose income generating potential they overestimated) or were concerned when the authors forecasted they could generate 90 percent of their pre-retirement income (24 percent; including some who underestimated the income-producing potential of owning a home).
13. The average age of retirement for men, as defined by Burtless and Quinn (2002) also reversed. It declined from 65 in 1976 to 63 in 1980, and then increased, in almost symmetric fashion, back to 65 by 2009.
 14. A full-time career job is defined as one with 1,600 or more hours per year and ten or more years of job tenure.
 15. Data from the old Retirement History Survey (RHS), conducted from 1969 to 1979, suggest that gradual retirement has been the norm since then (Ruhm 1990).

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