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Pensions and the Financial Crisis

Recessions and Retirement: How Stock and Labor Market Fluctuations Affect Older Workers

Courtney Coile[1]

The sharp drop in equity values that occurred at the beginning of the recent financial and economic crisis led to widespread concern about the effect of the crisis on retirement security. Between July 2007 and March 2009, the S&P 500 Index monthly average value fell by 50 percent.[2] With defined contribution (DC) pension plans largely having replaced defined benefit (DB) plans for US workers (Poterba, Venti and Wise 2007), millions of workers experienced deep declines in the value of their retirement savings as a result of the crisis. It was widely predicted that workers would need to delay retirement in order to make up for these losses, with many newspaper headlines such as "Economic Crisis Scrambles Retirement Math" and "Will You Retire? New Economic Realities Keep More Americans in the Workforce Longer."[3]

At the same time, a lesser-noticed element of the crisis, in terms of its potential effect on retirement, was the rise in the unemployment rate. Between May 2007 and October 2009, the US national unemployment rate rose from 4.4 to 10.0 percent.[4] Moreover, compared to earlier periods, workers who lost a job during the recent crisis experienced longer spells of unemployment and a lower probability of finding a new job (Farber 2011). Many older workers who experienced a job loss and subsequent difficulty in finding new work may have decided to retire earlier than they had planned. Indeed, the Social Security Administration reported in 2009 that new retired worker benefit claims had risen by ten percent more than expected during the previous year and surmised that the weak economy was the cause (Goss 2009), suggesting a potential increase in retirement. Thus the potential effects of the recent crisis on retirement are more complex than suggested by the headlines.

In this article, which is based on research conducted with my colleague Phillip Levine (Coile and Levine 2006, 2007, 2010, 2011a, 2011b; Coile, Levine and McKnight 2014), I discuss the evidence regarding the effect of stock and labor market fluctuations on retirement decisions and retiree well-being in the US. While the recent financial and economic crisis motivates this article, the evidence discussed below draws on 30 years of data, essentially asking whether retirement rates are higher or lower in times and places (in the case of the labor market) when the stock or labor market is stronger or weaker. I also explore whether recessions have long-term impacts on the income and health of retirees.

Does the stock market affect retirement?

In order for stock market fluctuations to affect retirement decisions, several conditions must be met. Firstly, since investors presumably expect to earn a positive rate of return on equity investments and understand that there is a certain amount of daily volatility in prices, there must be asset price movements that represent larger- or smaller-than-expected equity returns. Secondly, workers must have enough stock assets that these price changes constitute a meaningful wealth shock for them. Thirdly, workers must respond to market movements as economic theory would predict. Economists generally expect leisure to be a normal good, so individuals who experience a positive wealth shock would be expected to take some of that wealth in the form of leisure and retire earlier, and conversely to retire later if they experience a negative wealth shock.

The condition of unusually large or small equity returns has been met over the past two decades, as equity markets experienced two boom-bust cycles that culminated with the "dot com" crash of 2000–2002 and the recent financial crisis. Whether workers have substantial equi-

[1] Wellesley College.
[2] Data accessed from the Federal Reserve Bank of St. Louis (2015).
[3] These articles appeared in the Christian Science Monitor (Trumbull 2009) and in the Washington Post (Trejos 2008).
[4] Data from the United States Bureau of Labor Statistics (2015).

ty investments is a different question. Coile and Levine (2010) report that 58 percent of US households with a head aged 55 to 64 held stock assets in 2007, just prior to the recent crisis. The most common form of stock ownership is through retirement accounts (50 percent of households), although some households also own stocks directly (21 percent) or in mutual funds outside of retirement accounts (14 percent). Median stock assets are 78,000 USD among stockholders. Both asset ownership and values are strongly correlated with education – 78 percent of households headed by a college graduate own stocks and median holdings of stockholders are 125,000 USD, versus 21 percent and 10,000 USD for high school dropouts. Overall, nearly six in ten of these near retirement age households have less than 25,000 USD in stock assets and only one in eight have assets over 250,000 USD.

To estimate the impact of stock market returns on retirement, we would ideally like to run a controlled experiment in which some individuals are randomly assigned to experience unusually strong or weak stock market conditions near the time of retirement (the "treatment group"), while others are assigned to experience normal conditions (the "control group"). In reality, a controlled experiment is not possible, but the two recent boom-bust cycles provide a natural experiment that mimics the desired set-up. If we compare the average retirement rate among those who experienced different market conditions, controlling for individual-specific factors such as age and education that could also influence retirement decisions and for any long-run trends in retirement behavior over time, the difference should reflect the effect of the unusual market conditions.

Furthermore, we can construct a stronger test of the effect of the stock market on retirement by noting that individuals with greater stockholdings should be more responsive to market fluctuations. While many data sets lack detailed information on stock holdings, the fact that stock holdings vary strongly with education level, as noted above, enables us to treat education as a proxy for stock ownership. Thus, the question is whether more highly educated households are more sensitive to stock market fluctuations than less educated households when making retirement decisions.

Focusing only on the boom period of the mid-to-late 1990s, several early papers in this literature find a relationship between unexpected capital gains and retirement (Sevak 2001; Coronado and Perozek 2003). One potential concern, however, is that unexpected gains are strongly correlated with stock ownership, which may itself be correlated with unobservable characteristics that affect retirement, such as preferences for leisure or the ability to plan for retirement. Coile and Levine (2006) note that a stronger test is whether individuals with greater stock holdings are both more likely to retire during the boom and less likely to retire during the bust. Using data from the Current Population Survey (CPS, 1980–2002) and the Health and Retirement Study (HRS, 1992–2002), they find no evidence to support this hypothesis. These findings are consistent with those of Hurd, Reti and Rohwedder (2009), who fail to find that individuals with large financial gains retired earlier than anticipated or revised their retirement expectations relative to individuals without such gains.[5] Disney, Radcliffe and Smith (2013) also find little effect of market fluctuations on retirement in the UK.

There are two possible explanations for the lack of a discernible effect. The first, suggested by Coile and Levine (2006), is that the number of people who experience large unexpected wealth gains (or losses) from market fluctuations is relatively small, and thus wealth effects are difficult to detect in the data. The second is that wealth effects are relatively small in magnitude. Hurd et al. (2009) are sympathetic to this argument, citing evidence from lotteries. Revisiting the question with additional years of data, Coile and Levine (2011a) are able to identify a group that is responsive to stock market fluctuations. Specifically, they find that long-term market fluctuations (as measured by the percentage change in the S&P 500 Index over a five-year or ten-year period) affect the retirement decisions of workers aged 62 to 69 with a college degree, while there is no statistically significant effect of short-term fluctuations on retirement behavior, nor any effect of market fluctuations on younger workers or workers with less education. The magnitude of the response is economically meaningful – a one-standard-deviation (or 77 percentage point) increase in the ten-year return increases the retirement rate of college graduates by 1.5 points, or 12 percent relative to the mean.

Overall, the empirical findings suggest that while there are almost certainly workers who do retire earlier (later) than expected upon experiencing larger (smaller) than expected stock market returns, the number of workers

[5] These findings are similar to those of Goda, Shoven and Slavov (2010), who also use a long time horizon, but dissimilar from Goda et al. (2011), who focus on the recent crisis and find that stock market returns do affect retirement expectations. Goda et al. (2011) suggest that their findings may reflect factors that were unique to the Great Recession, such as a higher level of pessimism about the economy.

who experience substantial wealth shocks is relatively small and the magnitude of the retirement response is likely to be modest. Therefore, it is unlikely that any change in labor force participation for the population as a whole that coincides with a stock market upswing or downturn is driven by a retirement response to the stock market.

Does the labor market affect retirement?

The Great Recession has equaled or surpassed recessions of the 1970s and 1980s in terms of the steep rise in unemployment and slow pace of recovery. While it seems logical that such an event could affect retirement behavior, the rich retirement literature offers surprisingly little guidance on this point, as it has focused almost exclusively on labor supply questions such as the effect of Social Security and pensions, health and health insurance, and wealth on retirement. Over the past decade, however, there has been a new emphasis on labor demand.[6]

Some of the early work in this area explored the effect of job loss on older workers' employment outcomes. Chan and Stevens (1999, 2001) estimate that the employment rate of displaced older workers two years after a job loss is 25 percentage points lower than that of similar non-displaced workers and that the median reemployed worker earns 20 percent less at his new job. In such analyses, however, it can be challenging to identify an appropriate comparison group, since displaced workers may differ from non-displaced workers in unobservable ways that predispose them to worse employment outcomes even in the absence of a job loss.[7]

Whether retirement is cyclically sensitive is a related but distinct question, potentially less subject to endogeneity concerns. Coile and Levine (2007) explore this question using twenty-five years of CPS data. Unlike an analysis of the stock market, a study of the labor market can take advantage of differences in market conditions across geographic locations. The authors include state fixed effects to account for differences that may lead workers to retire earlier in some states than others at any point in the business cycle, year fixed effects to account for factors that affect retirement nationwide in some years relative to others, and individual characteristics (including age and education) that increase the propensity of some workers to retire sooner than others. Having done so, the analysis essentially asks whether workers retire earlier when the labor market is weaker in their geographic area after all the other differences are taken into account.

The paper's central finding is that retirement is cyclically sensitive – a five-point increase in the unemployment rate raises the probability of retirement by about one percentage point, or eight percent relative to the mean annual retirement rate of 13 percent. Moreover, the labor supply response to unemployment emerges at age 61, as workers approach the Social Security early retirement age of 62; retirement is not cyclical for workers age 55 to 60. Munnell, Soto, Triest and Zhivan (2008) similarly find that differences in older men's labor force participation are related to labor market conditions, while Hallberg (2011) finds that the probability of a worker retiring early in Sweden is related to deviations from typical employment levels in his or her industry.

In Coile and Levine (2011a), the authors explore how the cyclicality of retirement varies with education. They find that workers with only a high school degree experience the largest effect – for them, a five-point increase in the unemployment rate raises the probability of retirement by 1.8 percentage points, or nearly 20 percent relative to the mean. The effects for other education groups are positive but not statistically significant. In explaining these results, Coile and Levine (2010) surmise that high school dropouts may be most likely to lose a job during a recession, but also likely to retire at early ages regardless of market conditions due to poor health and the inability to continue working at physically demanding jobs, while more skilled workers may have a relatively low risk of unemployment during a recession. "High school graduates may have the right combination of desire to continue working along with a higher risk of unemployment and difficulty in finding new work, so a recession may lead many of them to retire involuntarily." In short, the results suggest that retirement is cyclically sensitive, particularly for less-educated workers.

Do stock and labor markets affect retiree well-being?

Finally, we turn to the question of whether market fluctuations have long-term effects on retiree well-being.

[6] In addition to the literature discussed subsequently, Lahey (2008) explores age discrimination in hiring, while Neumark (2003) provides a summary of the research on age discrimination legislation.

[7] Von Wachter, Song and Manchester (2007) address this in their study of the long-term earning losses of workers who lost jobs during the 1982 recession, by including worker fixed effects to account for unobservable characteristics. They find that job loss is associated with large and persistent earnings reductions that last 15 to 20 years. Relative to that paper, our focus here is on job loss that occurs closer to the traditional age of retirement.

The focus here is on labor market conditions, as the rebound in the stock market from its 2009 low to values now 25 percent above pre-crash levels have diminished the importance of this part of the story.[8] By contrast, the weakness in the labor market has been extensive and persistent. Moreover, a spell of late-career unemployment can have long-term consequences for an individual even once the market rebounds. If an individual fails to find new employment, he or she may take up Social Security benefits when they are first available at age 62, potentially years earlier than planned. As benefits are subject to an actuarial adjustment, earlier claiming results in a permanently lower monthly benefit amount.[9]

In Coile and Levine (2011b), the authors use data from the American Community Survey (ACS), an annual survey similar to the Census, to look at the relationship between the labor market conditions that existed around the time of retirement (age 62) and an individual's income in his 70s. As in their earlier work, the authors essentially treat labor market conditions at retirement as a random draw, asking whether individuals who are unlucky enough to approach retirement during a recession have lower retiree income than other individuals, after controlling for state, year, and age fixed effects. They find that experiencing a recession in the years leading up to retirement lowers subsequent retiree income. The finding is particularly evident for Social Security income, for less educated workers, and for labor market conditions experienced at or after age 62.

Of course, income is not the only important measure of well-being. Coile et al. (2014) explore the impact of labor market conditions around the time of retirement on health – more specifically, on longevity. Individuals who experience a late-career layoff may face several years of reduced employment and lower earnings before retiring when they reach Social Security eligibility age. They may also experience lost health insurance and reduced access to health care until reaching age 65, when Medicare becomes available. The authors explore the link between labor market conditions around retirement age and subsequent mortality using 30 years of Vital Statistics data. They find that experiencing a recession in one's late 50s leads to a reduction in longevity. They also establish that reduced employment, insurance coverage, and health care access are plausible mechanisms for this finding.

[8] There are also important differences in what part of the population is affected by labor market vs. stock market fluctuations. Coile and Levine (2010) estimate that a 25 percent reduction in investment income (which might occur if there was a permanent 50 percent drop in the value of the stock market and an individual had half their portfolio invested in stocks) would reduce income by less than one percent for those in the bottom third of the income distribution, vs. by eight percent for those in the top third. The estimated effect of unemployment on income, in percentage terms, is largest for the bottom third.

[9] In theory, a worker could subsequently re-enter the labor force and suspend benefits (this in fact happens automatically once earnings exceed the earnings test limit); in practice, benefit claiming tends to be an absorbing state.

Conclusion

Market fluctuations affect retirement, but the story is nuanced – weaker long-term stock returns lead more-skilled workers to delay retirement, while higher unemployment rates lead the less-skilled to retire earlier. Coile and Levine (2011a) estimate that if the unusual stock and labor market conditions experienced during the recent crisis were to gradually return to normal over a five-year period, there would be a net increase in retirements of about 120,000, or 1.2 percent relative to the estimated ten million workers retiring during this period. In fact, the stock market has rebounded more quickly and the labor market more slowly, so the actual net increase in retirements is likely larger than this estimate suggests. Moreover, it is less-skilled workers who bear the brunt of the labor market effects of the crisis, and research suggests that there are negative long-term effects of late-career unemployment on both income and health. While the recent crisis focused public attention on retirement security in an age of DC pension plans, it seems clear that the difficulties facing individuals who approach retirement at a time when the labor market is weak are real and merit greater public attention.

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