Improving Retirement: The Role of Education and Innovation

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iOME Challenge Question

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Do We Have a Retirement Problem?

Many Americans are unprepared for retirement. The retirement system is critical for millions of retirees and hundreds of millions of future retirees. The average retirement age in the United States is sixty-one years old and the average lifespan is seventy-eight years old. From the time individuals stop working they rely on sources of retirement income. The annual Retirement Confidence Survey of 2,000+ participants found that 68% of them had saved for retirement and 63% are currently saving for retirement (EBRI, 2020). Despite these seemingly strong numbers, 32% of the sample had not saved anything. The replacement rate is the ratio of retirement income that replaces working income. If one's retirement income is one-half of recent working income the replacement rate is 0.50. This number differs among retirees depending on their financial situation. Purcell (2012) found that the replacement rate was 1.01 for the 75th percentile of retirees and 0.48 for the 25th percentile. People with replacement rates that fall substantially are the most concerning group. A lack of retirement savings is apparent through public sentiment towards retirement. The 2018 National Financial Capability Study (Lin et al., 2019), found that only 58% of those surveyed had retirement accounts and 51% were worried about running out of money in retirement.

Americans are generally not financially savvy. This has been shown to cause poor financial decisions such as planning for retirement (Lusardi & Mitchell, 2014). Retirement readiness is disproportionate among members of different income and education levels. Figures 1 and 2 show that members of the top fifth income bracket and those with college degrees have a significantly higher defined contribution retirement plan participation rate than people of the bottom fifth income bracket and those with no high school diploma/GED (Morrissey, 2019).

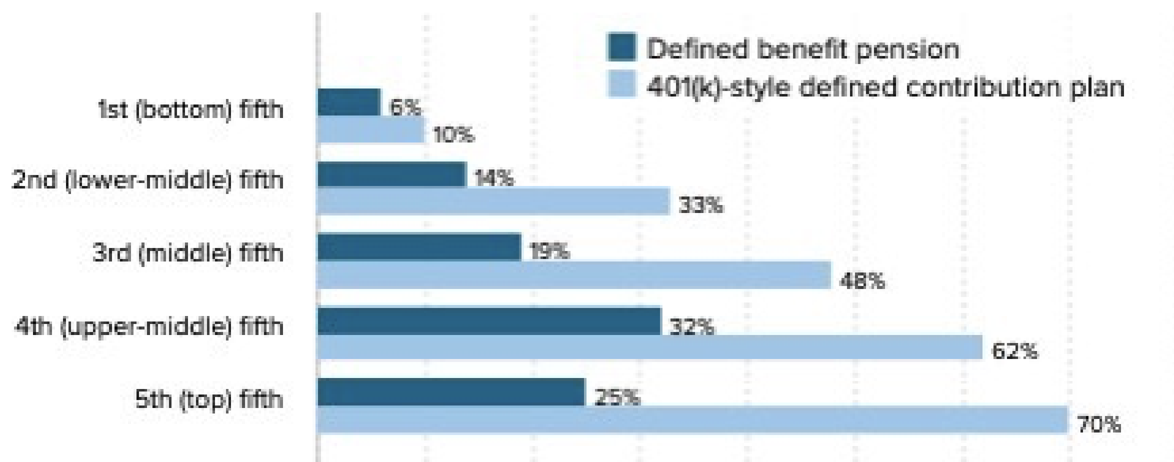

Figure 1: Participation rates based on income. Source (Morrissey, 2019)

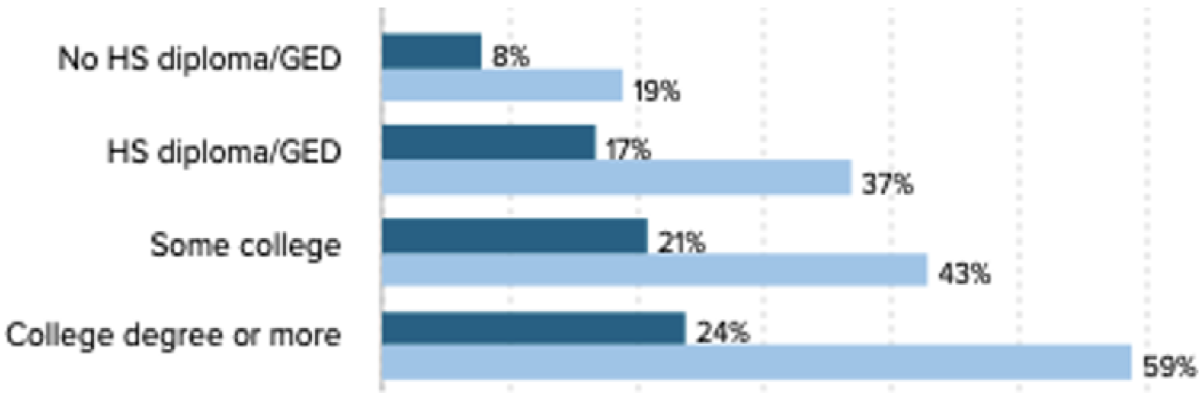

Figure 2: Participation rates based on education. Source (Morrissey, 2019)

Lower-income and lower education groups are at the largest risk of retirement unpreparedness. Historically, defined benefit (DB) and defined contribution (DC) plan wealth holdings of the lower-income households are low. In 1992, the bottom quartile of households by education owned only 11% of total defined benefit wealth; in 2010, the bottom quartile held 11% of all 401(k)/IRA assets (Munnell et al., 2016). The National Retirement Risk Index shows that the least educated households are at the greatest risk of not maintaining their current standard of living in retirement. (U.S. Board of Governors of the Federal Reserve System, 2016). Poterba (2015) states that some estimates are that between 15 and 20 percent of households are not prepared for retirement, but this number could be much larger using replacement rates as the measure.

Replacement rates for low- and median-income households are largely dependent on Social Security. The bottom third of households received nearly 90% of their retirement income and the middle third received about 70% from Social Security (U.S. Census Bureau, 2016).

The Pillars

The three traditional pillars of retirement are Social Security, Employer-Sponsored Plans, and Individual Savings. Each can be improved. In addition to the traditional pillars, we introduce a fourth pillar: health. Health status influences decisions about how many years to work (when to retire) and health expenses incurred during retirement. Negative health conditions can cause a forced early retirement due to a debilitating condition, increased health care costs, and reduced enjoyment of retirement years. The three pillars are enhanced by maintaining good health.

As will be detailed, education can be useful to improve the use of the pillars. This could include greater awareness of the importance of when to begin to receive Social Security or increased knowledge of reverse mortgages. Education can be enhanced by or substituted with innovations in retirement products and policies. For example, target-date funds or Robo-advisors can improve and simplify portfolio asset allocation decisions.

The retirement preparation process can be viewed as an application of the life-cycle model used by economists. This model shows the optimal income and consumption and savings throughout one's life (Schooley & Worden, 2013). Within this model, replacement rates need to be sufficient for a successful retirement. The typical person is unfamiliar with the life-cycle model, let alone how to apply it. However, financial planning tools, mnemonics, and heuristics can have people move closer to what optimal life cycle model behavior would be. Bi et al. (2020) provide a thorough review of the life cycle model and explain its relevance for financial planning software.

One's current age determines where in the life cycle one is and the decisions they are making. Those in Generation Z who are under twenty-four years old have their financial life ahead of them. Millennials are beginning their careers. Those in Generation X are in their prime working years but are approaching retirement. Baby boomers are nearing or well into retirement.

The paper addresses the challenges of the pillars, with possible solutions to some of these. The solutions are practical and integrate education and innovation. The goal is that the proposed solutions result in increased retirement preparedness and satisfaction across the generations.

Pillar 1: Social Security

Social Security is a Depression Era program designed to supplement retirement savings. The pertinent issue today is that this model is not financially sustainable and people lack understanding of some important aspects of the way it works.

In 2020, The Center on Budget Policy Priorities estimated that over 64 million people collected Social Security benefits (Policy, 2020). Social Security is not clearly understood. In a survey, 19% reported to be "very knowledgeable" and 57% reported to be "somewhat knowledgeable" about Social Security. However, in the literacy quiz about Social Security, 4% received an A and 57% received a D or F (Greenwald et al., 2010).

Social Security is projected to be unsustainable in the future. With an increasingly older generation and smaller generation of taxpayers, the Old-Age and Survivors Insurance Trust Fund can only pay full Social Security benefits through 2034 (Social Security Administration, 2021). Since payroll tax income will cover about 76% of Social Security payments, Americans may face an increase in taxes, a reduction in benefits, or a mix of the two.

Social Security benefits have changed. With the 1983 legislation, some benefits were taxed depending on the recipient's income level. The 1983 legislation incrementally increased the full retirement age from sixty-five to sixty-seven. The percentage of two-earner couples has risen with more female employees. Two-earner couples receive lower replacement rates than one-earner couples or single households. Workers would be expected to respond to these changes in part by consuming less while working, in part by consuming less in retirement, and in part by working longer (Munnell, 2019). Economist Martin Feldstein in the 1970s set forth the plausible hypothesis that Social Security causes people to save less for their retirement (Wassell, 2018). Although his hypothesis is not accepted by all as evident in the data, perceptions of diminished Social Security benefits might induce more private saving by some.

Adjustments to the current Social Security program are politically difficult considering the large demographic group of people who are currently receiving Social Security or about to receive it soon. With 90% of the bottom third of households dependent on Social Security for retirement income, it is critical that they maximize their benefits (U.S. Census Bureau, 2016). The best policy option is to emphasize to incoming retirees that if they claim their Social Security at sixty-two years old, they decrease their maximum monthly benefit by 76% as opposed to waiting to claim at seventy years old (Munnell, 2019). Also, it should be made clear that the level of benefits is determined by how much a worker contributes to the system. Longer working years, especially at higher incomes that occur late in one's work life, is another way to increase benefits that are within the control of the worker. This presumes that the work-life is not shortened due to health-related reasons. Solutions to restoring Social Security's long-term financial viability (higher taxes, reduced benefits, extended ages for eligibility) warrant examination, but do not seem likely in the near future.

Pillar 2: Employer-Sponsored Programs

The second pillar of retirement is Employer-Sponsored Programs (ESP). These are either defined benefit plans (DB) or defined contribution (DC) plans. In the former, the employer provides a guaranteed income stream (benefit) in retirement. The employee does not need to actively manage a retirement portfolio. Conversely, in a DC plan, the employer provides a flow of funds (contribution) that the employee invests. The DC retirement income is based on the accumulated value of the portfolio and its returns during retirement. In the 20th century, the majority of ESPs were DB plans. After the 2000s, companies shifted to DC plans (Munnell & Sundén, 2004). Between 1988 and 2013, the percentage of large firms offering DB plans dropped sharply from 66% to 28% (Ellis, Munnell, & Eschtruth, 2016). The transition from DB to DC increased employee autonomy about whether to participate, how much to contribute, and how to allocate the funds to investment products. It is important to analyze ESPs in terms of availability, participation rates, and investment product selection.

Participation in ESPs can be improved. The National Compensation Survey reports that about 70% of all U.S. workers have access to pensions, but only 55% of U.S. workers participate in pensions (Congressional Research Service, 2020). Employer-sponsored plans are disproportionately offered by larger companies. An analysis by the ADP Research Institute found that 33% of companies with less than 20 employees offered retirement benefits compared to 98% of companies with more than 5,000 employees (ADP, 2014). It is striking that only 33% of companies offer retirement plans since 36% of the American workforce are small business employees, or about 43 million workers (U.S. Bureau of Labor Statistics, 2017). Educating small business owners about plan adoption and encouraging plan adoption is imperative to the success of the US retirement system. There are no financial drawbacks for small business employers to open a SIMPLE IRA for their employees. One method of encouraging small business employers is sending them a pamphlet about when they report quarterly earnings or file taxes. If more small business owners opened a retirement plan, millions of small business employees would benefit.

Small business ESP participation rates that are low are just one factor of concern. In T. Rowe Price's 2017 Parent, Kids & Money Survey, the majority of 65% of participants responded that they save for retirement using a 401(k) plan (T. Rowe Price, 2017). The high percentage of participants is positive news. However, 35% of that sample do not use a 401(k) plan. Incentives, such as the 401(k)-employer match, need to be emphasized more since the company is essentially giving employees free money for contributing. An increase in awareness about the different types of plans for small businesses can improve participation rates. A 2014 analysis of 401(k) and Roth 401(k) participation rates found employees' enrollment rates for the Roth 401(k) increased after employers introduced the plan (Geisler & Hulse, 2014).

Another method of increasing participation in employer-sponsored plans is automatic enrollment. In this situation, employees are immediately enrolled in the ESP. They must choose to opt-out. Participation rate differences between opting in versus automatic enrollment are striking. In one study, prior to automatic enrollment, participation rates were 20%. After the opt-out method, participation rates increased to 65% after three months (Benartzi & Thaler, 2007). Another example is found in the federal government Thrift Savings Plan (TSP). Members of the military must actively choose to enroll in a TSP whereas civilian federal employees are automatically enrolled. Military service members have a 43% contribution rate as opposed to the 87% contribution rate of civilian federal employees (Goldin et al., 2017). These two studies demonstrate the effectiveness of automatic enrollments.

Defined contribution plans differ from defined benefit plans by allowing for participants to choose what to invest in. Economist Robert Merton states that the primary concern of those with a DC plan should be: "Will I have sufficient income in retirement to live comfortably?" (Merton, 2014). Participants who choose low-interest fixed income assets (bonds) are at a higher risk of their principal invested not growing to meet their retirement income needs. Equity (stock) products, such as an S&P 500 index fund, are a better option than fixed income (bond) assets, especially in the years well before retirement because of the higher interest compared to fixed income products. The equities market has superior historical performance than the bond market as shown in Figure 3.

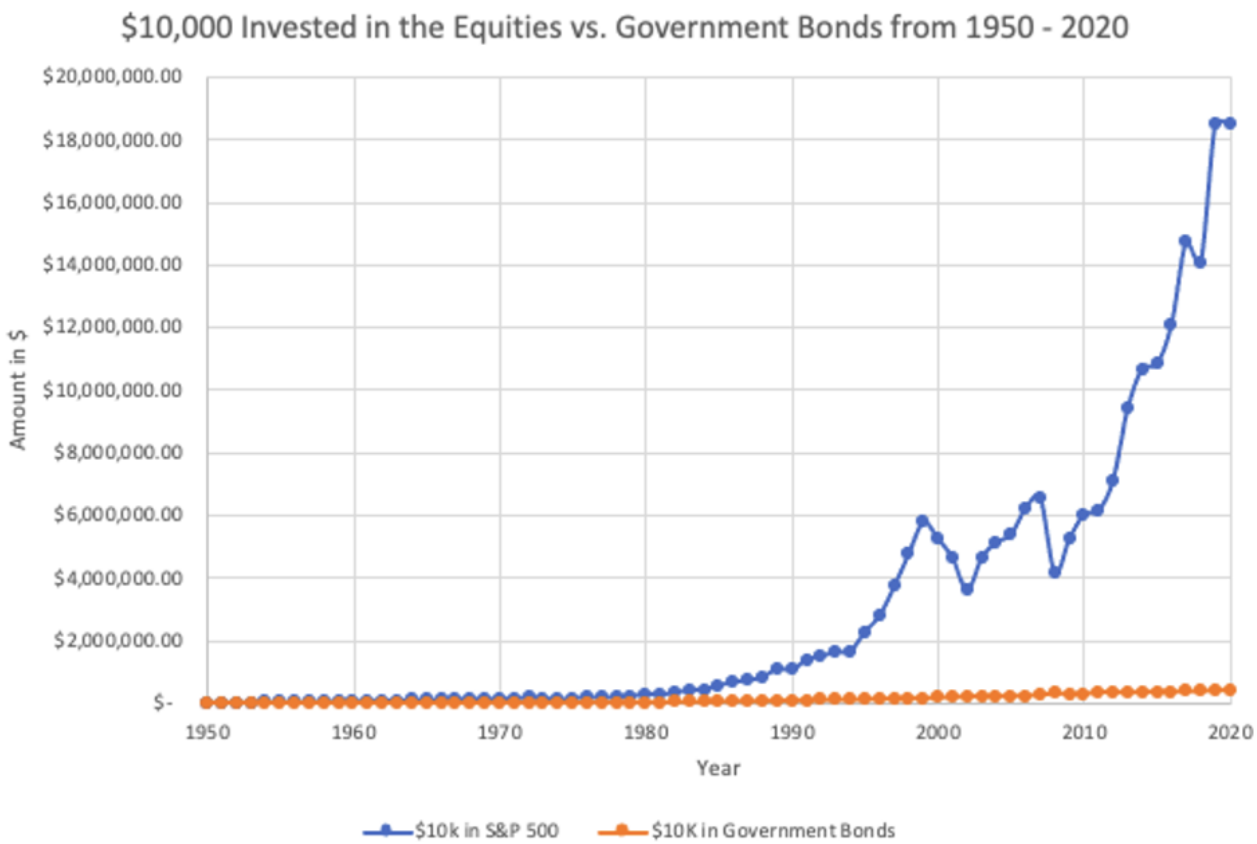

Figure 3. Author's calculations. Data from:
http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/histretSP.html

Some employers use financial technology in the form of Robo-advisors to combat poor investment asset allocations (Dennis & Rappaport, 2020). If more employers switched to these technologies, employees could have greater growth in their retirement accounts. Similarly, target-date funds (TDFs) provide appropriate asset allocations that individuals might not choose on their own.

Gig workers and self-employed workers need to be examined. The gig economy is rising. The number of gig workers increased by 56% from 2005 to 2015 (Katz & Krueger, 2016). The U.S. Bureau of Labor Statistics (2018) estimated approximately 5.9 million gig economy workers. Three-quarters of gig workers in America do not have a retirement savings account (Gillis & Kallenbach, 2019). Self-employed workers have access to most of the same retirement plans which business owners have including the Solo 401(k) and a SIMPLE IRA. Gig workers also have access to individual retirement accounts such as a traditional or Roth IRA and personal savings accounts. Gig workers face an issue similar to new business owners, which is learning that these options exist. This problem could be reduced by reaching gig workers directly or through employers. While employers are not providing retirement plans to gig workers, they can increase retirement option awareness of gig workers.

Pillar 3: Private Savings

There are various options for private savings. The annual T. Rowe Price survey found that 50% use a regular savings account, 29% use a Traditional IRA, 29% use an annuity or life insurance policy, 26% use a Certificate of Deposit, 23% use a Roth IRA, 17% use a taxable investment account and 2% use some other method (T. Rowe Price, 2017).

The accumulation of home equity is a form of savings. In Australia, home equity is considered a separate pillar of retirement (Evans & Razeed, 2019). Older homeowners can sell their houses and downsize into rental housing or a less expensive house to provide income. An alternative that does not require moving is a reverse mortgage. Reverse mortgages allow households access to their home equity for retirement income (Roten & Johnston, 2019). Only 2% of those eligible for a reverse mortgage select the option (Moulton, Haurin, & Shi, 2016). Information about reverse mortgages should be more widely available.

Pillar 4: Good Health

We believe that good health should be considered a fourth pillar. Health status influences how long people work as well as their health care costs. In a study by the National Institute of Aging, "Poor health was a very important factor for 35% of retirees in the 55 to 59 age category" (2017). Sudden health shocks like a heart attack or a worsening of a chronic condition are a critical reason why people decide to retire earlier than expected (Munnell, Sanzenbacher, & Rutledge, 2018). Early retirement due to health problems implies fewer years to accumulate retirement savings in all its forms, and lower total contributions into Social Security. If the health problems do not reduce the lifespan (although they likely do) more years of retirement must be funded with fewer years of retirement contributions. Those with health problems will likely have higher medical expenses, a problem exacerbated as the percentage of firms that offer retiree health insurance fell from 66% in 1988 to 18% in 2018 (Munnell, 2019).

One concern is that a healthier person may exhaust the retirement savings of those with exceptionally long lives (Munnell, 2019). To account for longer lifetimes, individuals who believe they will live a long time can buy longevity insurance. Longevity insurance is deferred annuities that start paying at later ages such as at eighty-two years old (Kintzel & Turner, 2020).

The Importance of Education and Innovation

At each pillar of retirement, financial education can be implemented to increase awareness and the effectiveness of each pillar. Moreover, innovation in products, processes, and education delivery is critical. The specific examples will depend on the pillars and where people are in the life cycle.
Generation Z

Those who are under twenty-four years old have their financial life ahead of them. An overall increases awareness of financial matters through the K-12 education system is called for. Numerous surveys demonstrate a general lack of financial literacy (Lusardi and Mitchell, 2014). Those who are more financially savvy are more likely to participate in retirement planning. Figure 4 shows for states from 1998-2020 and the way personal finance is included in the curriculum.

While 45 states have included personal finance in their standards in 2020, only six states require personal finance to be taken in high school (Survey of the States, 2020). Stoddard & Urban (2019) found that high school financial education has a positive impact on students' financial decisions. The number of states with a personal finance requirement has substantial room for improvement.

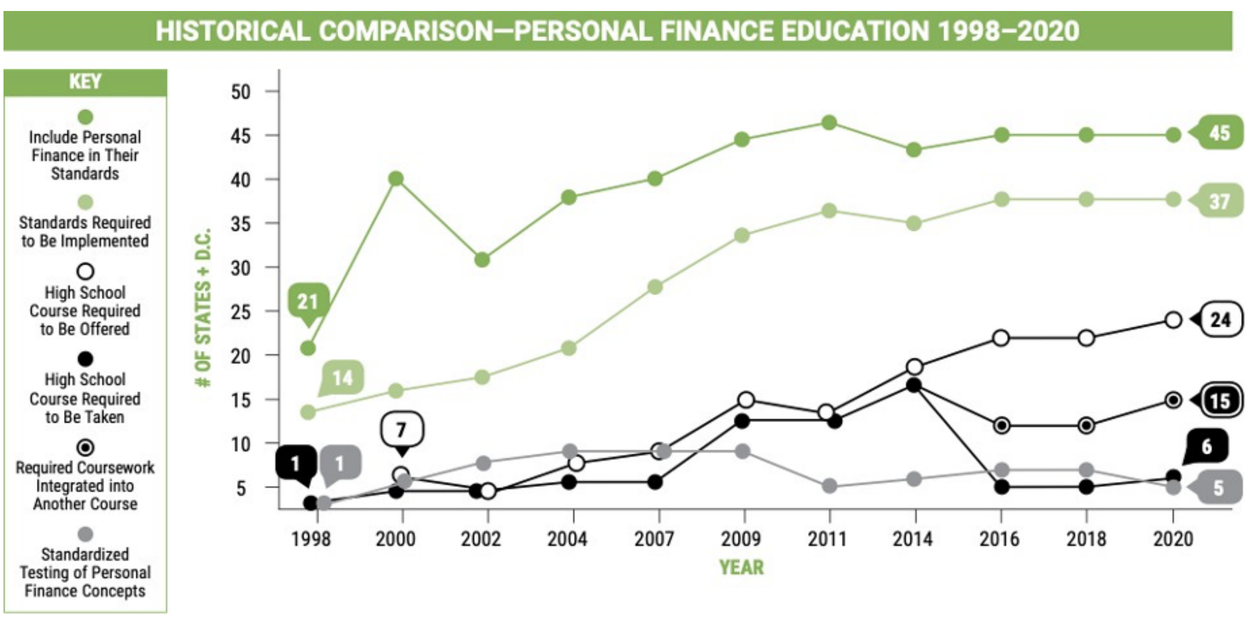

Figure 4: A Comparison of State Education Requirements Bi-Annually. (Survey of the States, 2020)

A traditional approach of hiring teachers to teach a mandatory personal finance course may not work. A survey of teachers demonstrated that nearly all respondents recognized the importance of financial education, but fewer than one-fifth responded that they were capable of teaching personal finance concepts (Way & Holden, 2009). The use of an online course could reduce the problem of the lack of qualified teachers. This course, or a traditional in-person course, should be engaging and use interactive graphics and calculators. Lusardi et. al. (2015) reports that teaching financial literacy with a video was more effective than reading a narrative. Heuristics and mnemonic devices are useful to emphasize important ideas (Stalder & Olson, 2011). A common heuristic in finance is the Rule of 72. This calculation estimates how many years it takes for your principal investment to double by dividing 72 by the rate of return. A stock portfolio earning 10% per year doubles every seven years. A savings account earning 1% will take 100 years to double. This illustrates the power of compounding and the importance of rates of return.

Millennials and Generation X

These groups are in their working years. For them, the important education is related to the effective use of employer-sponsored programs and personal savings. In the case of the former, participation rates should be as large as possible. Similarly, contribution rates that are as large as possible are to be encouraged. Simple heuristics such as saving 15% of your income are simple rules that everyone can understand. Individuals should be aware that over long periods stocks provide superior returns compared to bonds. Retirement portfolios should take this into account. As mentioned earlier, Robo-advisors and target-date funds are financial innovations that improve asset allocation decisions for retirement portfolios.

Baby Boomers

For this group, many of the decisions that were important to retirement preparedness have already been made. But not all of them. For those below sixty-two years old, the value of not beginning to receive Social Security until the full retirement age or later should be made known by employers and financial planners, and counselors. The options for those already retired who find replacement income too low should be aware of reverse mortgages and a possible return to the workforce as a part-time worker or a gig worker.

Conclusion

Various studies have concluded that financial education by itself is not sufficient to cause meaningful change in behavior (Lusardi & Mitchell, 2007). For this reason, education should leverage innovative policies and products for a more effective shift in retirement behavior. The

Covid-19 pandemic has caused the world to embrace technology for interaction. The transition to online platforms provides access for financial advisors and planners to reach more people. Financial advisors and planners shifted from face-to-face meetings to virtual meetings over (The Pandemic's Impact on Fintech, 2021). Financial advisors can use Zoom or a YouTube live stream to host retirement sessions for thousands to millions of viewers.

There are other options from the traditional meetings with a financial advisor. As mentioned earlier, Robo-advisors automatically allocate portfolio holdings. Robo-advisors that use a Modern Portfolio Theory framework have demonstrated performance comparable, and in some cases superior, to the performance of traditional financial advisors at a lower cost (Beketov, 2018). As technology is increasingly available, households gain assistance with retirement planning tools. Target-date funds offer a simple option for portfolio allocation. These funds state the expected year of retirement, such as 2060, and gradually change the allocation from a large stock percentage holding to a more conservative bond holding near retirement. Brokerages are increasing the amount of target-date funds and incentivizing participants by offering them at lower expense ratios (Fandetti, 2013).

Finally, for workers not covered by employer-sponsored plans, some states have stepped in. Oregon is the first state to offer an exclusive state retirement plan. In 2020, all Oregon businesses were required to automatically enroll workers in the state plan (Corbin, 2019). Other states have followed Oregon's initiative and with similar programs.

To improve education and the use of innovative policies and products stakeholders in the U.S. retirement system should be aware of research in these areas. For example, developments in behavioral economics and awareness of successful programs and policies in other countries will be useful to improve the U.S. retirement system.

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