DC DIMENSIONS

How TIPS Can Boost Retirement Readiness

Dr. Zvi Bodie
President, Bodie Associates

Doug Longo
Head of Fixed Income Portfolio Strategists and Vice President

Oct 21, 2021

The recent surge in inflation shows how the cost of goods and services can increase quickly and unexpectedly. To help plan participants maintain a stable standard of living in retirement, plan sponsors can provide an investment solution designed to accumulate a stream of inflation-protected income using Treasury Inflation-Protected Securities (TIPS). As recent Dimensional research confirms, TIPS are the most appropriate asset to provide protection against unexpected inflation. That protection makes TIPS an ideal asset class for plan participants seeking inflation-protected income in retirement.

Let's examine how TIPS work and why they were created in the first place.

The goal of a retirement plan (when combined with Social Security) should be to enable retirees to maintain the standard of living they enjoyed in the years before retirement. Social Security itself offers inflation protection because benefits rise when the Consumer Price Index (CPI) increases, providing an income stream that is "constant" in terms of units of income. When the US Treasury Department designed and issued TIPS in January 1997, the purpose was to provide households with an asset class fully protected against inflation. Accordingly, the Treasury issued TIPS, which are bonds whose principal and interest payments are linked to the CPI.[1]

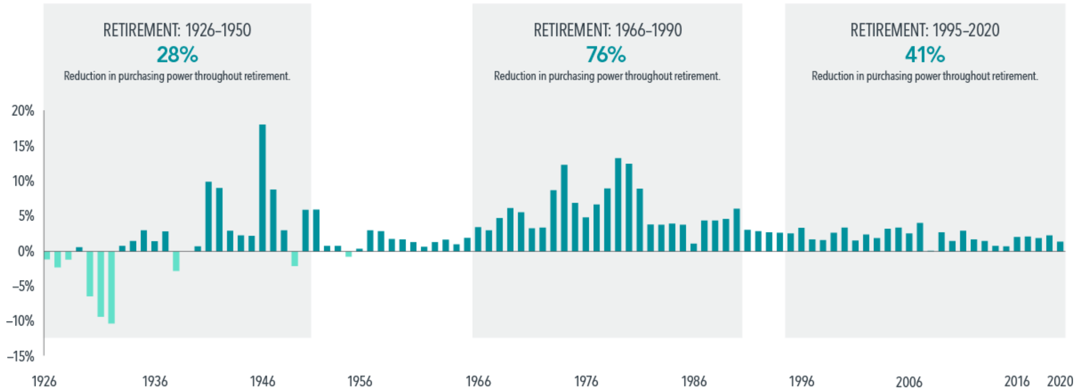
Exhibit 1 shows that investors who retired in 1926, 1966, or 1995—and spent 25 years in retirement—experienced a significant loss of purchasing power due to inflation. TIPS may provide a hedge against unexpected inflation because their principal is adjusted up (down) based on the actual inflation rate over the life of the securities. When TIPS mature, the investor receives the greater of the original principal amount or the inflation-adjusted principal. Therefore, TIPS can be the building blocks that provide real retirement income to supplement Social Security benefits.

Plan participants should hold a portfolio of TIPS designed to provide a stream of real (inflation-adjusted) income in retirement. A participant's consumption in retirement could be thought of as an annual series of cash flows (liabilities). We define the term "retirement liability" as the present value of that stream of retirement income. To eliminate interest rate risk associated with retirement income, what's needed is a strategy of hedging (or matching) that liability using a plan participant's investment portfolio. That strategy is known as duration matching.[2] As real (inflation-adjusted) interest rates increase, the present value (cost) of those future liabilities will decrease based on their duration and the rise in real rates. Conversely, as real interest rates decrease, the present value (cost) of those liabilities will increase based on their duration and the fall in rates. To adequately fund those future liabilities, the duration of the TIPS portfolio should match the duration of the liabilities.

As such, the value of the participant's liabilities and assets should move in tandem with changes in interest rates. As participants approach retirement and reduce their allocation to growth assets (which are generally equities), they should be systematically shifting to a portfolio of TIPS with a duration equal to the series of cash flows needed in retirement.

Exhibit 1

Annual Changes in Inflation and Loss of Purchasing Power



A 25-year retirement is assumed in calculating the reduction in purchasing power. Inflation is measured by annual changes in Consumer Price Index. Data from Stocks, Bonds, Bills, and Inflation Yearbook, Ibbotson Associates, Chicago. Roger Ibbotson is an Independent Director of Dimensional's US mutual fund board.

DIMENSIONAL'S TIPS STRATEGY

Dimensional Fund Advisors created a series of Target Date Retirement Income Funds that apply lifecycle research from the field of financial economics. A key principle is that people have two sources for funding retirement: financial capital (current savings) and human capital (expected future earnings). The balance of these change over time, with young plan participants having more human capital than financial capital and participants closer to retirement having more financial capital than human capital.

Through time, as human capital is converted into financial capital, it is important to try and balance the risk between growth and income assets. In a participant's early working years, Dimensional's funds focus on income-growth assets (a diversified portfolio of stocks and global bonds). Over time, as human capital depletes and financial capital grows, growth assets are gradually invested in a TIPS strategy. The TIPS investments seek to minimize the impact of interest rates and inflation on retirement consumption by matching the duration of the TIPS with the duration of the participant's consumption in retirement.

Once a participant reaches retirement, the focus of the allocation is on providing clarity and confidence about how much consumption the savings can support, so the majority of the assets in the funds are invested in an income risk management strategy that includes TIPS. Following this approach helps investors transition from their working life into retirement.

1. See Michelle L. Barnes, Zvi Bodie, Robert K. Triest, and J. Christina Wang, "A TIPS Scorecard: Are They Accomplishing Their Objectives?" *Financial Analysts Journal*, 66:5 (2018): 68–84.

2. Duration measures the sensitivity of an asset or liability to changes in yields. Duration matching is a common approach for managing a liability-driven investment strategy.