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Practical Applications of

Don't Let Inflation Spike Your Financial Plan: A Goals-Based Analysis of Purchasing Power Erosion

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Overview

In *Don’t Let Inflation Spike Your Financial Plan: A Goals-Based Analysis of Purchasing Power Erosion*, from the Fall 2024 issue of ***The Journal of Wealth Management,*** **Michael Reynolds** and **Kevin Grisier** of The Glenmede Trust Company find that larger allocations to risky assets and longer-term planning horizons help reduce investors’ vulnerability to inflation shocks. They also find that being a net saver helps insulate an investor from inflation shocks, because the excess cash flow is available to replenish a portfolio’s purchasing power. The authors conducted Monte Carlo analysis for seven hypothetical high-net-worth investors using six distinct asset allocation strategies. Following inflation shocks, higher-risk portfolios had a greater probability of meeting the goals of all the hypothetical investors than lower-risk portfolios did.

Practical Applications

- **Portfolios with higher allocations to high-risk assets, such as equities, are less sensitive to the impacts of inflation shocks.** These portfolios have high expected returns that can help investors recoup losses in purchasing power.
- **Investors with longer time horizons are less impacted by inflation than those with shorter time horizons.** A longer time horizon increases the likelihood that investors can make up for losses.
- **Net savers can use their additional cash to offset losses in purchasing power.** This leads them to have a relatively lower sensitivity to inflation shocks than investors who are not net savers.

Authors: Michael Reynolds and Kevin Grisier
Source: *The Journal of Wealth Management*, Vol. 27, No. 2
Date of Article: Fall 2024
Report Written By: Amanda DeVos
Date of Report: Mar 19, 2025
Keywords: retirement, asset allocation, goals-based investing, inflation, performance measurement

Key Definitions

Inflation

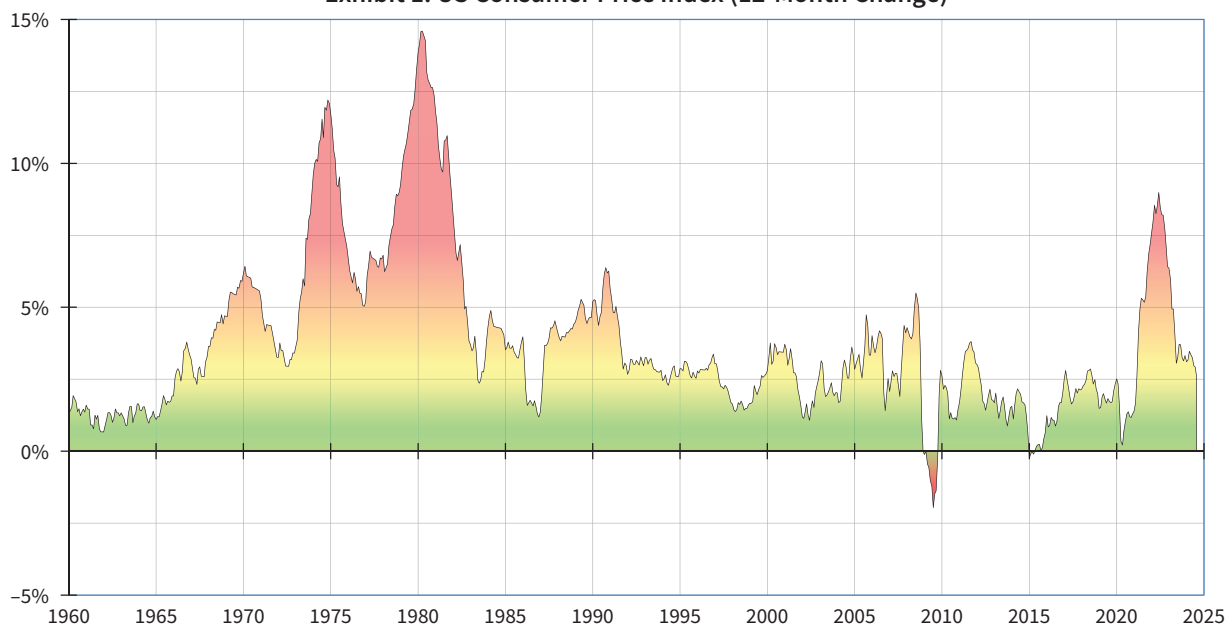
Inflation is a sustained upward trend in the prices of goods and services. It is inherently tied to the concept of money as a medium of exchange. Inflation reduces the purchasing power of money over time. For most of the past three decades, inflation has not been a significant problem in the economies of the developed world. However, US inflation surged markedly in 2021 before mostly recovering in 2023 (Exhibit 1). Short-term interest rates tend to move with the rate of inflation (Exhibit 2).

Discussion

Inflation influences whether investors meet their financial goals. It can impact asset returns and the cash required to meet goals. Also, tax brackets and future income sources like Social Security are adjusted based on inflation. How inflation affects a wealth plan depends on the characteristics of the investor and the portfolio design. Reynolds and Grisier developed a goals-based framework to test the sensitivity of various hypothetical high-net-worth investors and asset allocation strategies to inflation shocks. The asset allocation strategies are shown in Exhibit 3.

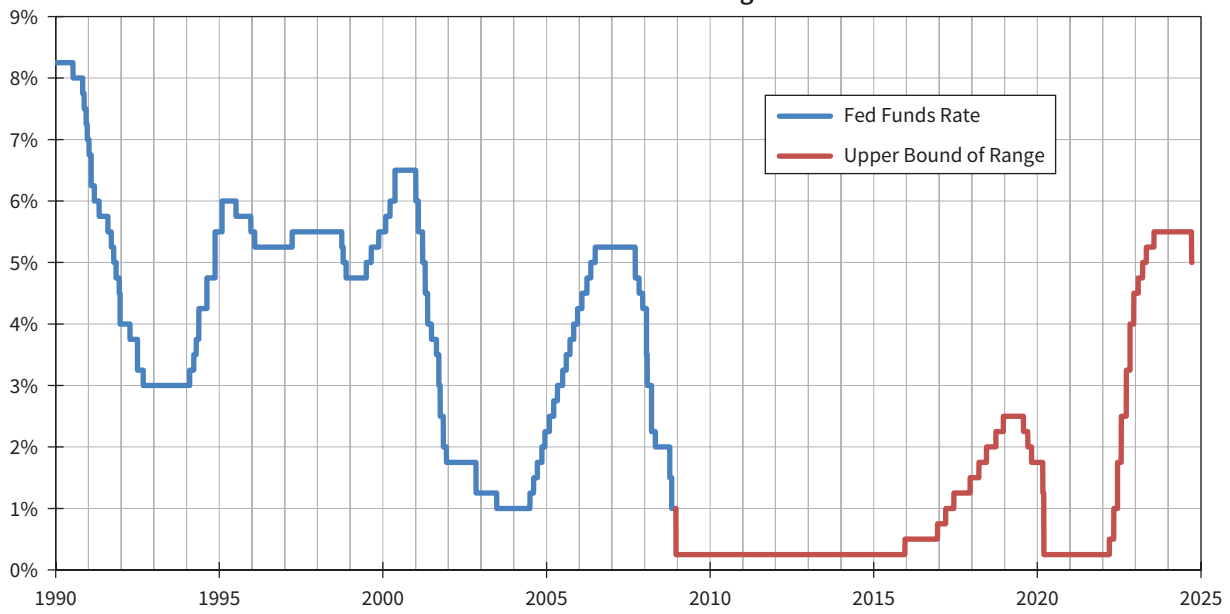
> "Inflation can have financial implications for households as they face rising costs of living. The natural question investors are asking themselves is how inflation can affect them and their ability to reach their financial goals."
>
> **—Don't Let Inflation Spike Your Financial Plan: A Goals-Based Analysis of Purchasing Power Erosion**

Exhibit 1: US Consumer Price Index (12-Month Change)



Source: Federal Reserve Bank of St. Louis (CPIAUCSL).

Exhibit 2: Federal Funds Target Rate



Notes: The Federal Funds target rate started being given as a range on December 16, 2008. Values shown after that date reflect the upper bound of the target range.

Monte Carlo Method, Monte Carlo Simulation

The Monte Carlo method is a technique for solving a problem by generating random numbers as the inputs to a modeled process and then observing the distribution of results over many trials. The technique is most useful for obtaining numerical solutions to problems that are too complicated to solve analytically. It originated in the 1940s as part of the Manhattan Project. The name of the technique refers to the famous Monte Carlo Casino.

Exhibit 3: Asset Allocation Strategies (%)

	Equities	Fixed Income	Cash
Capital Preservation	15	82	3
Income with Moderate Growth	30	67	3
Balanced	45	52	3
Growth with Income	60	37	3
Growth with Moderate Income	75	22	3
Growth	90	7	3

Goals-Based Framework

Reynolds and Grisier performed Monte Carlo analysis using a random sample of projected market behavior, representing hundreds of possible outcomes. Each iteration for a given combination of hypothetical investor and asset allocation strategy either passed or failed, based on whether the hypothetical investor's cash flow needs fully depleted the portfolio during the planning horizon. The total proportion of iterations that passed indicated the likelihood of success for the given asset allocation strategy and type of investor.

The authors used inflation shock scenarios of 6%, 9%, 12%, and 15%, as well as a baseline (no inflation shock scenario). In their analysis, an inflation shock was a two-year period with above-normal inflation and below-normal inflation-adjusted returns for equities and fixed income.

The authors examined the results for seven hypothetical high-net-worth investors. Each comprised a couple of the same age with a goal of retiring at age 65 and maintaining their standard of living. The planning horizon was through age 95, and pretax expenses were inflation-adjusted each year. Wage income was annual until retirement.

Retiree

- Age: 65
- Expenses: $325,000
- Investible assets: $8.5 million ($500,000 in cash, $5 million in taxable investment accounts, $3 million in a rollover IRA)

In the baseline scenario, the growth with income, growth with moderate income, and growth portfolios provided the highest probabilities of success, at 90%. During the inflation shock scenarios, the portfolios with higher allocations to stocks were less sensitive than those with higher fixed-income allocations, since the higher returns of stocks helped make up for the loss in purchasing power. When inflation was high, a traditionally low-risk portfolio became risky, as the probability of success fell drastically. For example, the capital preservation portfolio had a 70% probability of success in the baseline scenario, but it fell to 2% in the 15% inflation shock scenario. Meanwhile, the growth portfolio had a 63% probability of success in the 15% shock scenario.

Inheritor

- Age: 45
- Income: $200,000
- Expenses: $200,000
- Investible assets: $4 million ($200,000 in cash savings, $3.5 million in taxable investment accounts, $300,000 in a 401(k))

For this type of investor, the balanced through growth portfolios surpassed an 80% probability of success in the baseline scenario. Since the inheritors are not net savers, their retirement is funded entirely by their inheritance. Because of the composition of their

assets and the spending required to maintain their standard of living, the inheritor couple should opt for a portfolio with higher risk to increase the probability of success. Compared to the retiree couple, the inheritor couple was less sensitive to inflation shocks. Their longer time horizon better enabled them to make up for losses.

Retirement Prepper

- Age: 55
- Income: $650,000
- Expenses: $600,000
- Investible assets: $15 million ($500,000 in cash savings, $10 million in taxable investment accounts, $4.5 million in a 401(k))

In the baseline scenario, the retirement prepper couple had a more than 80% probability of success with every portfolio except for capital preservation, for which the probability was only 68%. As with the other hypothetical investors, higher-risk portfolios were less sensitive to inflation shocks because of their higher returns, and the retirement prepper was less sensitive to inflation shocks than the other types. Reynolds and Grisier noted that this was likely due to the couple having a longer time horizon than the retiree couple, and to their net saver status, which helped offset losses caused by difficult investment periods.

Young Business Owner

- Age: 40
- Income: $1 million
- Expenses: $450,000
- Investible assets: $8.15 million ($200,000 in cash savings, $1.25 million in taxable investment accounts, $1.7 million in an IRA, $5 million in a business)

Because of the $5 million stake in their business, the young business owner couple had highly distinct outcomes from the differing portfolios, even including the baseline scenario. For this type of investor, capital preservation had only a 12% probability of success, while the growth portfolio had an 85% probability of success. This fact, along with the continued poor performance of the lower-risk portfolios during the inflation shock scenarios, indicates that an investor of this type should favor portfolios with a higher allocation to risky assets.

Senior Executive Nearing Retirement

- Age: 60
- Income: $1 million
- Expenses: $850,000
- Investible assets: $25 million ($10 million in a concentrated position of small-capitalization stock, $500,000 in cash, $7.5 million in taxable investment accounts, $7 million in a rollover IRA)

In the baseline scenario, every portfolio had a high probability of success for this type of investor. The lowest probability was 88%, seen in the capital preservation portfolio; the highest was 93%, in the growth portfolio. However, the results from the inflation shock scenarios showed stark differences. For example, following a 12% inflation shock, the capital preservation portfolio had a 41% probability of success, while the growth portfolio's probability of success was 81%. The authors note that the high concentration of small-cap stocks contributed to the strong performance of the high-risk portfolios during inflation shock scenarios, as small-cap stocks can outperform inflation over the long run.

Divesting Business Owner

- Age: 65
- Expenses: $650,000
- Investible assets: $19 million ($10 million in a 10-year business installment sale note, $250,000 in cash, $6.5 million in taxable investments, $2.25 million in a SEP IRA)

In the baseline scenario, the divesting business owner couple needed to use the balanced through growth portfolios to surpass an 80% probability of success. Overall, this type of investor was the most sensitive to inflation shocks. In the 15% shock scenario, while the growth portfolio was the most successful, it had only a 52% success rate. The authors explained that this couple's high sensitivity to inflation was caused by the way the sale of their business was structured, using a 10-year installment note with fixed payments. As a result, high inflation caused the purchasing power of the payments to decrease. A cash sale, the authors argued, likely would yield better results than the installment sale, since the proceeds could be appropriately reinvested.

High Earner

- Age: 60
- Income: $2 million
- Expenses: $1.5 million
- Investible assets: $46 million ($1 million in cash, $35 million in taxable investments, $10 million in a rollover IRA)
- Additional information: The couple has $25 million in irrevocable trusts. They would like to make a lump-sum $5 million charitable gift at retirement and $100,000 in annual qualified charitable distributions beginning at age 70½.

With the exception of the capital preservation portfolio, the probability of success for all the other portfolios in the baseline scenario exceeded 85%. But differences emerged in the inflation shock scenarios. The growth with income portfolio, for example, had a 74% probability of success in the 12% shock scenario—the same probability that the capital preservation portfolio had in the baseline. However, in the 12% shock scenario, the probability of success for the capital preservation portfolio fell to only 22%.

Key Insights

Reynolds and Grisier evaluated the investors' sensitivities to asset allocation. The young business owner type was the most sensitive, due to the large amount of wealth held in the business. This meant that these investors had to use the remainder of their assets to achieve their goals.

Ranking investors by their sensitivities to inflation, the divesting business owner was the most sensitive, due to the interest payments on the installment note losing purchasing power. Investors who had longer time horizons and those who were net savers were generally less sensitive to inflation shocks. Reynolds and Grisier argue that investors should understand how inflation can impact the likelihood of their reaching their financial goals, which could affect their asset allocation decisions.

> "It is important for investors to understand how their financial plan can be exposed to the adverse impact of inflation shocks. For some investors, it may not have a material impact on the likelihood of achieving their financial goals. For others, the risks associated with inflation shocks may be cause for proactive change to an investment and/or wealth plan."
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Michael Reynolds is a vice president on Glenmede's investment strategy team. He is the senior research analyst responsible for macroeconomic and market research in support of Glenmede's investment strategies, policies, and portfolio construction methodologies applied to private wealth client portfolios. He is a regular commentator for local, regional, and national media outlets, including CNBC, Bloomberg, *The Wall Street Journal*, Reuters, Forbes, Yahoo! Finance, and CNN. He began his career with Glenmede participating in the management associate rotation program, where he gained experience in a variety of investment-related disciplines. Mr. Reynolds holds a BS in economics from the Wharton School at the University of Pennsylvania. He is a CFA® charterholder and a member of the CFA Society of Philadelphia and the Philadelphia Council for Business Economics.

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