Inflation Risk Perception and Investment Decisions: Evidence from a Survey of Individual Investors

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Abstract

Investors who worry more about inflation hold a larger share of inflation-hedging assets: each extra point of inflation risk perception is associated with about 6.7 more percentage points allocated to hedges, holding age, financial literacy and risk tolerance constant. This study surveys 120 individual investors (simulated placeholder data in this draft) and tests three hypotheses with Excel. A one-way ANOVA shows hedge allocation differs across income groups, $F(2, 117) = 11.10$, $p < 0.001$, with high-income respondents allocating the most (55.0% vs 44.9% for low income). A multiple regression explains 51.9% of the variance in hedge allocation (adjusted $R^2 = 0.502$, $F(4, 115) = 30.99$, $p < 0.001$). Inflation risk perception and financial literacy are the strongest predictors; risk tolerance is marginally significant ($p = 0.049$) and age is not. The results suggest that how investors perceive inflation, not only their means, shapes portfolio choices.

Keywords: inflation risk, investment decisions, hedge allocation, financial literacy, ANOVA, linear regression

1. Introduction

Inflation erodes the real value of savings, so how investors respond to it matters for household wealth and for the design of financial products. The classical Fisher hypothesis predicts that nominal returns adjust to expected inflation, yet empirical work finds that many assets, especially equities, hedge inflation only imperfectly (Bodie, 1976; Fama and Schwert, 1977). Individual investors must therefore decide how much to hold in assets they believe will protect purchasing power, such as gold, equities, real estate and inflation-indexed bonds.

This paper asks whether investors' perception of inflation risk explains how much of their portfolio they place in such hedging assets, and whether that behaviour differs by income and financial literacy.

Objectives

1. Measure the relationship between inflation risk perception and the share of the portfolio held in inflation-hedging assets.
2. Test whether average hedge allocation differs across income groups.
3. Estimate the joint effect of inflation risk perception, financial literacy, risk tolerance and age on hedge allocation.

Research questions

- RQ1: Do investors who perceive higher inflation risk hold more hedging assets?
- RQ2: Does mean hedge allocation differ between low-, middle- and high-income investors?
- RQ3: Which factors remain significant once the others are controlled for?

Research gap and contribution

Most of the evidence reviewed in Section 2 is about asset returns: whether stocks, bonds, gold or real estate move with inflation (Bodie, 1976; Fama and Schwert, 1977; Gultekin, 1983; Baur and Lucey, 2010; Erb and Harvey, 2013). A second strand studies how people form inflation expectations and whether those expectations change their financial choices (Armantier et al., 2015; Malmendier and Nagel, 2016). Few studies link the two by asking how much of an individual investor's actual portfolio goes into inflation hedges, and how that share depends on perceived inflation risk, financial literacy, risk tolerance and income together.

This paper contributes by (1) measuring inflation risk perception directly and relating it to the share of the portfolio held in hedging assets, (2) comparing hedge allocation across income groups with a one-way ANOVA, and (3) estimating the joint effect of perception, literacy, risk tolerance and age in a multiple regression. The analysis is reproducible in Excel.

2. Literature Review and Hypotheses

Inflation and asset returns. Early studies found that stock returns were negatively related to inflation, contradicting the Fisher hypothesis (Bodie, 1976; Fama and Schwert, 1977; Fama, 1981). Modigliani and Cohn (1979) argued that investors misvalue equities when inflation rises, and Gultekin (1983) confirmed weak inflation hedging by equities across several countries. Gold is often held as an alternative hedge, though its protection is uneven across horizons (Erb and Harvey, 2013). Because no asset hedges perfectly, an investor's own judgement about inflation risk plays a large role in portfolio choice.

Perception of inflation. People dislike inflation partly for behavioural reasons: they fear losses in purchasing power and worry about its effect on living standards (Shiller, 1997). Prospect theory implies that perceived losses weigh more heavily than equal gains (Kahneman and Tversky, 1979), so investors who feel more exposed to inflation should act to protect themselves.

Financial literacy and income. Financial literacy is linked to more informed planning and a wider use of financial instruments (Lusardi and Mitchell, 2014). Higher-income investors also have more capital to diversify into assets such as real estate and gold, and more access to hedging products.

Hedging assets, risk and expectations. Later work shows that inflation sensitivity differs across individual equities and sectors, so security selection matters (Ang, Briere and Signori, 2012), and that gold hedges on average and acts as a short-lived safe haven in extreme stock market conditions (Baur and Lucey, 2010). Nominal bonds are risky for long-term investors, who may prefer inflation-indexed bonds (Campbell and Viceira, 2001), and the inflation risk premium varies over time (Bekaert and Wang, 2010). On the behavioural side, survey respondents act on their inflation expectations in incentivised choices (Armantier et al., 2015), and lifetime experience of inflation shapes expectations and financial choices (Malmendier and Nagel, 2016).

3.Summary of the 15 Reviewed Studies

Bodie (1976) examined the relationship between stocks and inflation and found that stock returns are negatively related to inflation, suggesting that equities may be a poor short-term hedge against rising prices. Fama and Schwert (1977) studied the relationship between asset returns and inflation and concluded that stocks are negatively related to inflation, while bonds and Treasury bills can provide a hedge against expected inflation. Modigliani and Cohn (1979) investigated equity valuation and introduced the concept of inflation illusion, explaining that investors may misvalue equities when inflation changes. Kahneman and Tversky (1979) developed prospect theory, which explains that individuals tend to feel the pain of losses more strongly than the pleasure of equivalent gains, influencing financial decisions under risk.

Fama (1981) explored the relationship between stock returns, real economic activity, and inflation, concluding that the negative relationship between stock returns and inflation may be explained by changes in real economic activity. Gultekin (1983) examined international evidence on stock returns and inflation and found no consistent positive relationship between them across different countries. Shiller (1997) investigated why people dislike inflation and found through surveys that individuals are concerned about inflation because it reduces purchasing power and erodes living

standards. Campbell and Viceira (2001) studied bonds for long-term investors and highlighted the suitability of inflation-indexed bonds for investors with long investment horizons, as these instruments help protect purchasing power against inflation.

Baur and Lucey (2010) examined gold as a hedge and safe haven and found that gold can hedge against stock market movements on average and act as a short-lived safe haven during periods of market stress. Bekaert and Wang (2010) investigated the inflation risk premium and concluded that inflation risk is reflected in financial asset prices and varies over time. Ang, Briere, and Signori (2012) studied inflation and individual equities and found that sensitivity to inflation differs across individual stocks and economic sectors. Erb and Harvey (2013) examined gold as a hedge against inflation and concluded that its effectiveness is unstable and depends on the investment horizon.

Lusardi and Mitchell (2014) investigated financial literacy and found that financial knowledge supports better financial planning and helps individuals understand and use a wider range of financial instruments. Armantier et al. (2015) studied inflation expectations and financial behaviour and found that individuals' expectations about future inflation influence their economic and financial decisions. Finally, Malmendier and Nagel (2016) examined how individuals learn from their past inflation experiences and concluded that personal experiences of inflation shape future expectations and influence financial choices.

In conclusion, the 15 reviewed studies demonstrate that inflation plays an important role in investment decisions by affecting asset returns, investor expectations, risk perceptions, and purchasing power. The findings suggest that no single investment provides complete protection against inflation under all economic conditions. Therefore, investors should consider their investment horizon, financial knowledge, risk tolerance, and inflation expectations when selecting investment instruments. Diversification across asset classes and careful financial planning can help investors manage inflation-related risks and make more informed investment decisions.

Hypotheses

- **H1:** Inflation risk perception is positively related to the share of the portfolio held in inflation-hedging assets.
- **H2:** Mean hedge allocation differs across income groups (low, middle, high).
- **H3:** Financial literacy and risk tolerance are positively related to hedge allocation after controlling for inflation risk perception and age.

3. Methodology

Design and sample. A cross-sectional survey of 120 individual investors. In this draft the responses are simulated (random seed 2026) to demonstrate the workflow; for the final paper, collect responses by questionnaire (for example, an online form shared with investors) and paste them into the workbook's Data sheet.

Variables

Variable	Role	Measurement
Hedge allocation (%)	Dependent	Share of portfolio in gold, equities, real estate and inflation-indexed bonds
Inflation risk perception (IRP)	Independent	Mean of Likert items, 1 to 5
Financial literacy (FL)	Independent	Mean of Likert/knowledge items, 1 to 5
Risk tolerance (RT)	Independent	Mean of Likert items, 1 to 5

Variable	Role	Measurement
Age	Control	Years
Income group	ANOVA factor	Low, Middle, High

Models

One-way ANOVA tests H2: mean hedge allocation is the same in all three income groups (H0) versus at least one mean differs (H1). The F statistic is the ratio of between-group to within-group mean squares.

$$F = \frac{SS_{between}/(k-1)}{SS_{within}/(N-k)}$$

Simple regression tests H1:

$$Hedge_i = \beta_0 + \beta_1 IRP_i + \varepsilon_i$$

Multiple regression tests H3 and RQ3:

$$Hedge_i = \beta_0 + \beta_1 Age_i + \beta_2 IRP_i + \beta_3 FL_i + \beta_4 RT_i + \varepsilon_i$$

Excel procedure. All statistics are computed with live formulas in the companion workbook, which is also checked against an independent calculation. Descriptives use AVERAGE, STDEV and CORREL. The ANOVA is built from COUNTIF, AVERAGEIF, SUMPRODUCT, FDIST and FINV. Regressions use SLOPE, INTERCEPT, RSQ and LINEST, with p-values from TDIST and FDIST. The same results can be reproduced with Excel's Data Analysis ToolPak (Regression; ANOVA: Single Factor). Significance level is 0.05.

4. Results

All figures below come from the simulated placeholder data and match the companion workbook; update them when real data replace it.

4.1 Descriptive statistics

The average respondent allocates 47.9% of the portfolio to inflation-hedging assets (SD = 9.34). Hedge allocation correlates most strongly with inflation risk perception (r = 0.63) and financial literacy (r = 0.41).

Variable	N	Mean	Std Dev	Min	Max
Age (years)	120	40.61	12.14	21.0	62.0
Inflation risk perception (1-5)	120	3.53	0.78	1.0	5.0
Financial literacy (1-5)	120	3.16	0.89	1.0	5.0
Risk tolerance (1-5)	120	3.03	0.93	1.0	5.0
Hedge allocation (%)	120	47.94	9.34	25.1	70.1

4.2 One-way ANOVA: hedge allocation by income group (H2)

Mean hedge allocation differs significantly across income groups, $F(2, 117) = 11.10$, $p < 0.001$, with a medium-to-large effect (eta squared = 0.16). The null hypothesis is rejected, so H2 is supported.

Group	n	Mean hedge allocation (%)
Low	30	44.89
Middle	65	46.62
High	25	55.05

Source	SS	df	MS	F	p-value
Between groups	1656.22	2	828.11	11.10	< 0.001
Within groups	8726.27	117	74.58		
Total	10382.49	119			

The critical value is $F(2, 117) = 3.07$ at the 5% level. High-income investors allocate 10.2 points more than low-income investors and 8.4 points more than middle-income investors; the middle and low groups differ by only 1.7 points. Because the ANOVA only says that some means differ, a post-hoc test (Tukey or Bonferroni) should confirm which pairs differ before reporting pairwise claims.

4.3 Simple regression (H1)

Hedge allocation rises by 7.51 percentage points for each one-point increase in inflation risk perception ($t = 8.80$, $p < 0.001$). Inflation risk perception alone explains 39.6% of the variation ($R^2 = 0.396$; standard error of estimate = 7.29). H1 is supported.

4.4 Multiple regression (H3)

The full model is significant, $F(4, 115) = 30.99$, $p < 0.001$, with $R^2 = 0.519$ and adjusted $R^2 = 0.502$.

Predictor	Coefficient	Std Error	t	p-value	Significant at 5%
Intercept	6.399	4.209	1.52	0.131	No
Age	0.080	0.050	1.60	0.111	No
Inflation risk perception	6.739	0.785	8.58	< 0.001	Yes
Financial literacy	3.330	0.692	4.81	< 0.001	Yes
Risk tolerance	1.299	0.653	1.99	0.049	Yes

Holding the other variables constant, one more point of inflation risk perception is associated with 6.74 more points of hedge allocation, and one more point of financial literacy with 3.33 more. Risk tolerance is only just significant ($p = 0.049$) and its effect is small. Age has no significant effect. H3 is supported, with the caveat about risk tolerance.

4.5 Assumption checks and post-hoc test

Check	Result	Reading
Levene test, equal variances across income groups	$p = 0.70$	Equal-variance assumption holds for the ANOVA
Tukey HSD, High vs Low	difference 10.16, $p < 0.001$	Significant

Check	Result	Reading
Tukey HSD, High vs Middle	difference 8.43, $p < 0.001$	Significant
Tukey HSD, Middle vs Low	difference 1.73, $p = 0.64$	Not significant
Shapiro-Wilk test on regression residuals	$p = 0.36$	Residuals are consistent with normality
Variance inflation factors	1.02 to 1.04	No multicollinearity concern
Durbin-Watson statistic	1.72	No strong autocorrelation

The post-hoc test shows the income effect comes from the high-income group; middle and low income do not differ. These checks were run in Python on the same data because Excel does not provide them directly; Levene and Shapiro-Wilk need an add-in or manual calculation in Excel, and VIF can be computed as $1 / (1 - R^2)$ from auxiliary regressions.

5. Discussion

The findings support the idea that perception drives protective behaviour: investors who feel more exposed to inflation hold more hedging assets, consistent with the loss-sensitivity argument of prospect theory (Kahneman and Tversky, 1979) and with Shiller's (1997) evidence that people worry about inflation. The financial literacy result fits Lusardi and Mitchell (2014): more literate investors are better placed to use hedging instruments. The income gap is concentrated in the high-income group, which is plausible given easier access to real estate and gold, though income may also proxy for wealth and advice.

For practitioners, advisers can tailor communication to clients' inflation concerns and invest in literacy programmes, since both raise hedge use. Asset managers can target high-income segments with inflation-linked products and widen access for lower-income investors.

6. Conclusion and Limitations

Inflation risk perception is the strongest predictor of how much of a portfolio is held in inflation-hedging assets, financial literacy adds explanatory power, and allocation differs by income group. The model explains about half of the variation in allocation.

Limitations to address in the final version:

1. **Data are simulated placeholders.** Real survey data may produce different estimates; every number in Section 4 must be refreshed.
2. **Cross-sectional design.** The results show association, not causation; perceptions may also follow from holdings.
3. **Self-reported allocations** may be inaccurate, and the sample may not represent all investors.
4. **Model checks.** Report residual plots, normality, equal variances (Levene's test for ANOVA), multicollinearity (VIF) and a post-hoc test before drawing firm conclusions.
5. **Hedge assets are grouped together.** Equities, gold and real estate hedge inflation differently, so separate models by asset class would be informative.

Future research could use panel data, add actual inflation rates, and compare periods of high and low inflation.

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