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REAL PERFORMANCE AND DOWNSIDE RISK OF STATIC MULTI-ASSET PORTFOLIOS ACROSS U.S. BUSINESS-CYCLE PHASES, 1930–2025

REÁLNA VÝKONNOSŤ A RIZIKO POKLESU STATICKÝCH MULTIAKTÍVOVÝCH PORTFÓLIÍ VO FÁZACH HOSPODÁRSKEHO CYKLU USA, 1930–2025

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Abstract: *This paper examines the real performance and downside risk of thirteen static multi-asset portfolios across U.S. business-cycle phases from 1930 to 2025. Using 1,149 monthly observations, it analyses equities, U.S. government bonds, gold, silver, real estate investment trusts, and selected portfolio combinations. Recession and expansion periods are identified using the NBER chronology, while nominal cumulative performance is expressed in real terms using the Fisher equation. The analysis compares average monthly returns, volatility, cumulative performance, maximum drawdown, the frequency of positive and negative months, and correlations among assets and strategies. Equity-oriented strategies generally deliver stronger long-run performance but exhibit higher volatility and deeper drawdowns, particularly during recessions. Strategies with larger allocations to government bonds and gold tend to be more resilient in adverse economic conditions. The findings indicate that static diversification can mitigate downside risk, although its effectiveness depends on business-cycle conditions and portfolio composition.*
Keywords: business cycle; real returns; multi-asset portfolios; downside risk; diversification
JEL Classification: G11, G12, E31, E32.

INTRODUCTION

Long-term investment in financial markets is associated with changes in the macroeconomic environment, and the cyclical evolution of the economy is one of the major determinants of asset returns and risk. Traditional allocation strategies are based on the premise that an appropriate combination of asset classes reduces portfolio volatility and protects capital against substantial losses. Investors, however, often assess performance in nominal terms, which, particularly during periods of elevated inflation, distorts the actual change in purchasing power.

The central research problem addressed in this study is the extent to which static diversification can preserve a portfolio's real value and mitigate the risk of substantial drawdowns across business-cycle phases over a horizon of almost a century.

The aim of the article is to evaluate and compare the real performance, volatility, and maximum-drawdown risk of selected static investment strategies and multi-asset portfolios in the U.S. market during expansion and recession phases from 1930 to 2025.

Based on this aim, we formulate the following research questions and hypotheses:

- **RQ1:** What is the difference between the nominal and real cumulative performance of static investment strategies over the long term?
- **RQ2:** What are the correlations among the individual asset classes and investment strategies?
- **H1:** Equity-oriented strategies achieve the highest real performance during expansions but experience substantially deeper drawdowns during recessions than diversified portfolios.
- **H2:** Including conservative and alternative assets—particularly bonds and gold—in a multi-asset portfolio stabilises real returns and reduces maximum drawdown during economic recessions.

The article is structured into four sections. The first summarises the theoretical background, the second describes the data for 1930–2025 and the methodology, the third presents the empirical results, and the fourth interprets them in the context of the existing literature, including the study's limitations and practical implications. The conclusion summarises the main findings.

1 THEORETICAL BACKGROUND

1.1 Static Asset Allocation and Diversification

Static (strategic) asset allocation is one of the fundamental approaches to constructing an investment portfolio. It builds on modern portfolio theory, according to which portfolio risk is determined not by the risks of individual assets considered in isolation, but by their weights, volatilities, and mutual covariances (Markowitz, 1952). An appropriate combination of asset classes can therefore achieve a more favourable trade-off between expected return and risk than a concentrated investment (Malkiel and Ellis, 2020). Diversification, however, primarily eliminates unsystematic risk; systematic risk arising from broad market and macroeconomic developments remains present even in a widely diversified portfolio.

Static allocation differs from tactical allocation in that the weights of individual asset classes are set in advance and are not continuously adjusted to expected market developments. Its advantages are simplicity, transparency, and independence from the quality of forecasts of expected returns and covariances. The sensitivity of optimisation models to errors in estimated input parameters is precisely why simple rules remain a relevant benchmark. DeMiguel, Garlappi, and Uppal (2009) compared fourteen optimisation models with an equally weighted strategy across seven datasets and found that none consistently outperformed it in terms of the Sharpe ratio or portfolio turnover because estimation error outweighed the benefits of optimal diversification. The fixed-weight static portfolios examined in this study therefore represent not merely a simplification, but a legitimate benchmark for evaluating more complex approaches.

Asset classes differ in their risk-return profiles and in their behaviour across business-cycle phases. Equities offer the highest potential long-run returns but are associated with greater volatility and deeper drawdowns. Government bonds tend to play a stabilising role, particularly during periods of heightened economic uncertainty (Malina, 2025). Alternative assets such as gold, silver, and real estate investment trusts (REITs) broaden the set of available return sources and may mitigate portfolio losses in certain periods (Privatbanka, 2020).

1.2 The Business Cycle as a Determinant of Asset Performance

The relationship between the macroeconomic environment and financial-asset returns has long been documented in the literature. Chen, Roll, and Ross (1986) showed that innovations in macroeconomic variables—specifically industrial production, expected and unexpected inflation, the spread between long- and short-term interest rates, and the credit spread—are systematically priced in the stock market. Fama and French (1989) further found that expected equity and bond returns vary countercyclically over time: they are lower near business-cycle peaks and higher near troughs. Realised portfolio performance is therefore not independent of the cycle phase in which it is measured, and comparing strategies over a single continuous period may lead to biased conclusions.

More recent literature applies a regime-based approach. Guidolin and Timmermann (2007) identified four regimes in the joint distribution of equity and bond returns—crash, slow growth, bull market, and recovery—and found that optimal allocations differed substantially across them. The instability of correlations between asset classes is equally important in practice. Connolly, Stivers, and Sun (2005) documented that the correlation between equity and government-bond returns declines as stock-market uncertainty rises, making the diversification benefit of bonds greatest precisely during periods of market stress. This phenomenon is known as a flight to quality and is one reason why defensive portfolio components are evaluated separately across cycle phases.

Empirical identification of cycle phases commonly relies on the chronology of the National Bureau of Economic Research (NBER, 2026), which defines expansions and recessions on the basis of a broad set of economic-activity indicators. Its use makes it possible to compare strategy performance across cycle phases without constructing a separate econometric classification and ensures comparability with the wider literature.

1.3 Inflation, Real Returns, and Defensive Assets

Evaluating long-term performance solely on the basis of nominal returns is misleading over a horizon of almost a century because it disregards the erosion of purchasing power (Česaná, 2025). The relationship between nominal and real returns is formalised by the Fisher equation, which also underpins the conversion used in the empirical part of this article.

Asset classes do not have the same ability to preserve the real value of capital. Using almost a century of data from the United States, the United Kingdom, and Japan, Neville et al. (2021) showed that unexpected inflation adversely affects traditional assets—both bonds and equities—whereas commodities earn positive returns during inflation shocks. Hoesli, Lizieri, and MacGregor (2008) concluded that equities and commercial real estate are positively related to anticipated inflation over the long run, but not to inflation shocks, which helps explain the mixed findings of the earlier literature on real estate as an inflation hedge.

Gold occupies a special position. Baur and Lucey (2010) distinguished between a hedge—an asset that is, on average, uncorrelated with equities or bonds—and a safe haven—an asset that is uncorrelated with them during market downturns. Using data from the United States, the United Kingdom, and Germany, they found that gold performs both functions relative to equities, although its safe-haven property is short-lived. The contribution of defensive portfolio components is therefore conditional on the cycle phase and cannot be regarded as constant.

Existing research focuses predominantly on individual asset classes or shorter periods and usually reports results in nominal terms. Less attention has been paid to systematically comparing a larger set of static multi-asset portfolios in terms of real performance and maximum-drawdown depth across business-cycle phases over a horizon exceeding nine decades. This article addresses that gap.

2 DATA AND METHODS

2.1 Input Data

The analysis uses monthly data for five asset classes—equities (Stocks), gold (Gold), silver (Silver), real estate investment trusts (REITs), and government bonds (Bonds)—together with inflation data from January 1930 to September 2025, providing a total of 1,149 monthly observations. Equity, gold, and silver data were obtained from Macrotrends (Macrotrends, 2010a, 2010b, 2010c), government-bond data from Professor Aswath Damodaran's database (Damodaran, 2025), and inflation data from FRED (FRED, 2024). Real-estate price developments through 1972 were represented by the Shiller dataset (Shiller, 2025), while REIT data were used from 1973 onward. Data available at frequencies other than monthly were converted to monthly values using compound-rate equivalence. After the launch of the relevant exchange-traded funds, the time series were extended using data from Google Finance (Google Finance, 2025), ensuring continuity through the end of the sample period.

The choice of monthly frequency represents a compromise between time-series length and sensitivity to short-term noise. Over a horizon of almost a century, monthly observations provide a sufficiently large sample for comparing business-cycle phases while suppressing the microstructure effects typical of daily data. All time series are denominated in U.S. dollars and enter the analysis in nominal terms; the inflation adjustment is applied only to cumulative performance, following the procedure described in Section 2.4.

Combining several data sources is common in empirical studies involving time series of this length, but it can introduce inconsistencies where the sources are linked for example, at the transition from the Shiller dataset to the REIT series in 1973. These inconsistencies cannot be fully eliminated and should be considered when interpreting the results, particularly when comparing performance levels across distant periods.

2.2 Business-Cycle Classification

Business-cycle phases were identified using the NBER chronology (NBER, 2026). The variable *Cycle* equals 0 during expansions and 1 during recessions. Of the 1,149 monthly observations, 966 fall within expansions and 183 within recessions. On average, expansions lasted 64.29 months and recessions 12.53 months.

Recessions therefore account for approximately 16% of all observations, reflecting the well-known asymmetry of the U.S. business cycle, in which expansions are, on average, several times longer than recessions. This asymmetry has a direct implication for interpreting the results: recession-period statistics are based on a substantially smaller sample and are therefore more sensitive to extreme episodes such as the Great Depression and the global financial crisis.

The binary expansion–recession classification simplifies the continuous evolution of economic activity. Its advantage, however, lies in its clarity and reproducibility because the NBER chronology is a generally accepted standard in the empirical literature. It should also be noted that the NBER identifies cycle peaks and troughs ex post and with a delay; the chronology therefore cannot be interpreted as a real-time signal. It is nevertheless fully suitable for the ex post evaluation of performance across cycle phases undertaken in this article.

2.3 Investment Strategies

Thirteen static investment strategies were constructed from the five asset classes: nine equity-bond combinations ranging from 90/10 to 10/90, an equally weighted strategy across all five asset classes (20/20/20/20/20), and three multi-asset portfolios with equal 25% weights for each component. Portfolio A consists of equities, government bonds, REITs, and gold; Portfolio B consists of equities, government bonds, REITs, and silver; and Portfolio C consists of government bonds, REITs, gold, and silver.

2.4 Methodological Framework

The mean monthly return, or the mean monthly inflation rate, was calculated as the arithmetic mean of the monthly values according to Equation (1):

$$\bar{r} = \frac{1}{T}\sum_{t=1}^{T} r_t \tag{1}$$

where $\bar{r}$ is the mean monthly return, r_t is the return in month t, and T is the total number of months in the period under review.

Cumulative performance was calculated by compounding monthly returns according to Equation (2):

$$CV = \prod_{t=1}^{T}(1 + r_t) - 1 \tag{2}$$

where CV is cumulative performance over the period under review, r_t is the return in month t, and T is the total number of months in the period under review.

Maximum drawdown is the largest decline in a portfolio's cumulative value from a previous historical peak and was calculated according to Equation (3):

$$MDD = \min_t \left(\frac{V_t}{\max\limits_{s \le t} V_s} - 1 \right) \tag{3}$$

where MDD is the maximum drawdown and V_t is the portfolio's cumulative value in month t; the maximum in the denominator is taken over all months $s \le t$. Within each cycle phase, the maximum drawdown was calculated separately for every continuous expansion and recession, and the deepest observed value was reported.

Relationships among the individual asset classes and investment strategies were assessed using the Pearson correlation coefficient calculated from monthly returns, with the statistical significance of the correlations evaluated using the corresponding p-values. The normality of monthly-return distributions was tested using the Shapiro–Wilk test at the 0.05 significance level.

The use of maximum drawdown alongside standard deviation is motivated by the fact that the two measures capture different dimensions of risk. Standard deviation measures the average dispersion of returns and is symmetric, penalising positive and negative deviations equally. Maximum drawdown, by contrast, depends on the specific path of the portfolio's value and quantifies the worst scenario an investor would have faced during the period under review. When returns have heavy tails, as also confirmed by the Shapiro–Wilk test in Section 3.2, symmetric volatility may understate tail risk; drawdown depth is therefore an appropriate complementary measure.

All measures were calculated both for the full sample and separately for the expansion and recession subsamples defined by the Cycle variable, allowing direct comparison of strategy behaviour across business-cycle phases. The resilience of the individual strategies is assessed descriptively, by jointly comparing recession-period mean monthly return, standard deviation, and maximum-drawdown depth; no composite index aggregating these measures into a single score was constructed. All calculations were performed in the R statistical environment.

Nominal cumulative performance was then converted into real terms using the Fisher equation, as shown in Equation (4):

$$CV_{\text{reál}} = \frac{1+CV_{\text{nom}}}{1+\pi} - 1 \quad (4)$$

where CV_{real} is real cumulative performance, CV_{nom} is nominal cumulative performance, and π is cumulative inflation over the same period.

3 RESULTS

3.1 Descriptive Statistics of Asset Classes and the Influence of the Business Cycle

Table 1 presents descriptive statistics for the monthly returns of the individual asset classes over the full sample period. Equities achieved the highest cumulative performance (30,914%), whereas REITs recorded the lowest (369%). Silver was the most volatile asset class and also experienced the deepest maximum drawdown (−89.9%).

Table 1: Descriptive Statistics of Monthly Asset-Class Returns and Inflation, Full Period 1930–2025 (n = 1,149)

Asset class	Mean monthly return	Standard deviation	Cumulative performance	Maximum drawdown	Positive months	Negative months
Equities (Stocks)	0.642%	5.334%	30,914%	−82.2%	676	470
Gold	0.542%	4.390%	17,139%	−62.0%	674	472
Silver	0.631%	7.241%	6,923%	−89.9%	567	569
REITs	0.182%	3.018%	369%	−72.5%	638	482
Bonds	0.344%	0.988%	4,782%	−27.0%	926	221
Inflation	0.256%	0.312%	1,777%	−23.4%	1,052	84

Source: authors' calculations based on historical monthly data

Separating the results by business-cycle phase shows that asset-class behaviour differs substantially between expansions and recessions. During expansions (n = 966), equities recorded a mean monthly return of 0.985%, a standard deviation of 4.458%, and a maximum drawdown of −42.0%. During recessions (n = 183), their mean monthly return turned negative at −1.168%, while volatility rose to 8.377% and the maximum drawdown deepened to −82.2%.

Gold and bonds followed a different pattern. Both asset classes generated positive mean monthly returns during recessions—0.833% for gold and 0.505% for bonds. The results thus indicate their more defensive character and their potential to mitigate the adverse effects of declining economic activity. Bonds were also the least volatile asset class in both phases of the business cycle, with a standard deviation of approximately 0.99% per month. Among the assets examined, they therefore served as a natural portfolio stabiliser.

The frequency of positive and negative months provides a complementary perspective on the return distribution. Bonds recorded positive monthly returns in 926 cases and negative returns in 221, consistent with their low volatility and stabilising role. Equities had 676 positive and 470 negative months, whereas positive and negative months for silver were almost evenly balanced (567 versus 569). Silver's high cumulative performance therefore did not result from a systematic predominance of positive months, but was concentrated in a smaller number of episodes with substantial price movements, consistent with its highest volatility and deepest maximum drawdown among the assets studied.

Changes in the price level warrant separate attention. Mean monthly inflation was 0.256%, and the price level rose in 1,052 months while falling in only 84, concentrated mainly in the deflationary episode of the 1930s. Cumulative inflation of 1,777% over the full period means that almost nineteen dollars were required at the end of the sample to preserve the purchasing power of one dollar in 1930. This illustrates why distinguishing between nominal and real performance is essential when evaluating long-term strategies.

Figure 1: Cumulative Asset-Class Performance and Cumulative Inflation (index, starting value = 100, logarithmic y-axis)
Source: authors' calculations in R based on historical monthly data

3.2 Correlation Structure and Normality of Return Distributions

The correlation analysis (Figure 2) shows that most asset classes exhibit low pairwise correlations, indicating their potential use in diversification. The strongest relationship was found between gold and silver ($r = 0.70$; $p < 0.001$). Equities displayed a moderate positive correlation with REITs ($r = 0.29$; $p < 0.001$), whereas their relationships with bonds ($r = -0.04$) and gold ($r = 0.01$) were virtually zero.

The correlations of individual asset classes with inflation were low in all cases (from −0.02 to 0.07) and statistically significant at the 0.05 level only for silver ($r = 0.074$), gold ($r = 0.061$), and bonds ($r = 0.058$).

From a portfolio-construction perspective, these results are favourable: the virtually zero correlations of equities with bonds and gold create scope to reduce total portfolio risk without a proportional decline in expected return, consistent with the logic of modern portfolio theory (Markowitz, 1952). It should also be recalled that full-period correlations may conceal time variation across business-cycle phases, as highlighted by Connolly, Stivers, and Sun (2005); the full-sample coefficient should therefore be interpreted as an average rather than a constant relationship.

Figure 2: Correlation Matrix of Monthly Asset-Class Returns and Inflation (lower triangle)
Source: authors' calculations in R based on historical monthly data

The Shapiro–Wilk test rejected the hypothesis of normally distributed monthly returns in every case (W = 0.650–0.909; $p < 0.001$). REITs displayed the greatest departure from normality (W = 0.650), whereas equities displayed the smallest (W = 0.909). The non-normality of the distributions is related mainly to extreme observations and heavier tails, which is relevant when evaluating portfolio risk.

3.3 Performance and Risk of Investment Strategies

Table 2 compares descriptive statistics for the selected investment strategies. As the equity allocation increases, both the mean monthly return and cumulative performance rise, but so do volatility and maximum-drawdown depth: the conservative 10/90 strategy recorded a maximum drawdown of −22.5%, compared with −78.3% for the more aggressive 90/10 strategy.

Among the multi-asset portfolios, the equally weighted 20/20/20/20/20 strategy achieved the highest cumulative performance (13,975%) with a maximum drawdown of −33.2%, which was shallower than those of the more concentrated Portfolios A, B, and C. Diversification across several asset classes therefore reduced risk without completely sacrificing long-run performance.

The comparison between the equally weighted 20/20/20/20/20 strategy and the 50/50 strategy is noteworthy. Both exhibit almost identical volatility (2.717% and 2.692% per month), yet the equally weighted strategy recorded a substantially shallower maximum drawdown (−33.2% versus −54.3%) at the cost of lower cumulative performance (13,975% versus 18,777%). Expanding the number of asset classes therefore reduced tail risk in particular at comparable levels of volatility, empirically confirming that standard deviation and drawdown depth capture different dimensions of risk.

A comparison of Portfolios A and B, which differ only in the substitution of silver for gold, further shows that this change increased portfolio volatility from 2.114% to 2.703% and deepened the maximum drawdown from −31.5% to −40.4%. The choice of a specific precious metal as a diversifying component is therefore not neutral: the defensive properties of gold do not automatically extend to silver, whose returns are more volatile and partly driven by industrial demand.

Table 2: Descriptive Statistics of Monthly Returns for Selected Investment Strategies, Full Period 1930–2025

Strategy	Mean monthly return	Standard deviation	Cumulative performance	Maximum drawdown
Strategy 90/10	0.613%	4.798%	30,010%	−78.3%
Strategy 70/30	0.553%	3.733%	25,446%	−68.2%
Strategy 50/50	0.493%	2.692%	18,777%	−54.3%
Strategy 30/70	0.433%	1.717%	12,069%	−35.7%
Strategy 10/90	0.374%	1.018%	6,748%	−22.5%
Strategy 20/20/20/20/20	0.468%	2.717%	13,975%	−33.2%
Portfolio A	0.427%	2.114%	10,313%	−31.5%
Portfolio B	0.450%	2.703%	11,312%	−40.4%
Portfolio C	0.425%	2.936%	7,899%	−38.9%

Source: authors' calculations based on historical monthly data

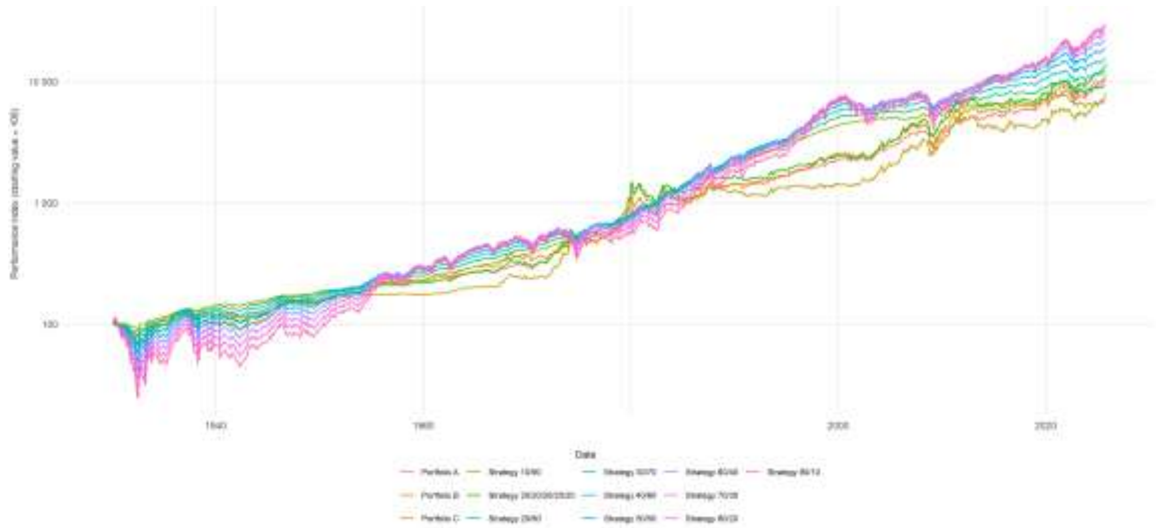

Figure 3: Cumulative Performance of Investment Strategies (index, starting value = 100, logarithmic y-axis)

Source: authors' calculations in R based on historical monthly data

The difference between nominal and real cumulative performance is substantial over a horizon of almost a century. With cumulative inflation of 1,777%, the 90/10 strategy's nominal performance of 30,010% corresponds to real performance of 1,504%; the 20/20/20/20/20 strategy declines from 13,975% to 650%, and the 10/90 strategy from 6,748% to 265%.

High nominal returns therefore do not automatically imply equally strong growth in an investor's real purchasing power.

Because the cumulative performance of every strategy is deflated by the same cumulative inflation rate, the inflation adjustment does not alter their ranking, but it substantially changes the interpretation of the levels achieved: for each strategy, the difference between nominal and real terms exceeds one order of magnitude. The answer to RQ1 is therefore that nominal measures systematically and materially overstate long-run real performance; over a horizon of almost a century, the extent of the overstatement is sufficiently large to change the qualitative interpretation of the results.

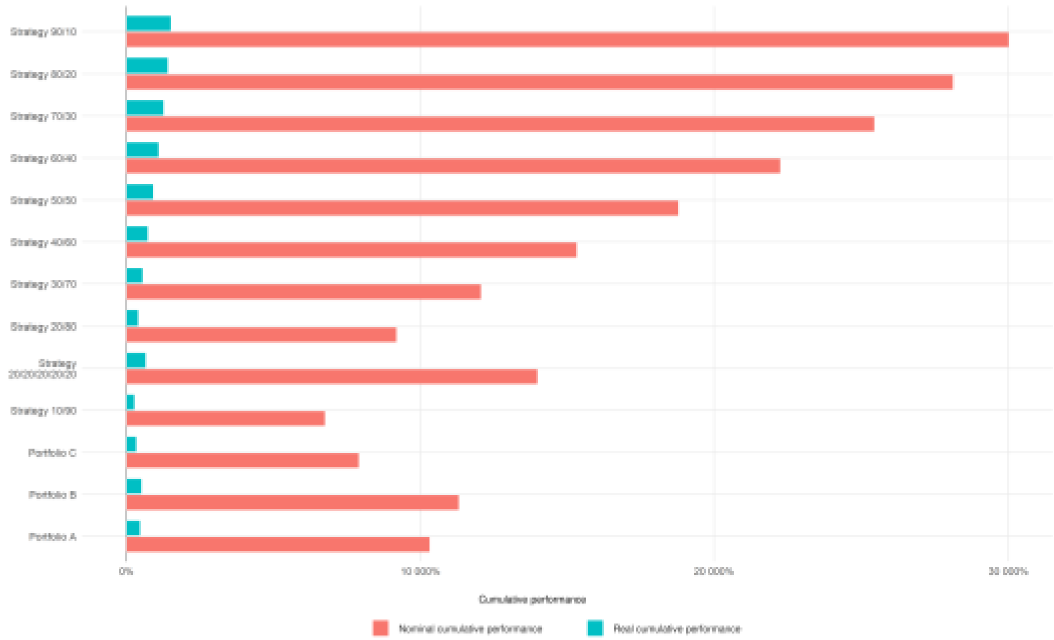

Figure 4: Nominal versus Real Cumulative Performance of Investment Strategies
Source: authors' calculations in R based on historical monthly data

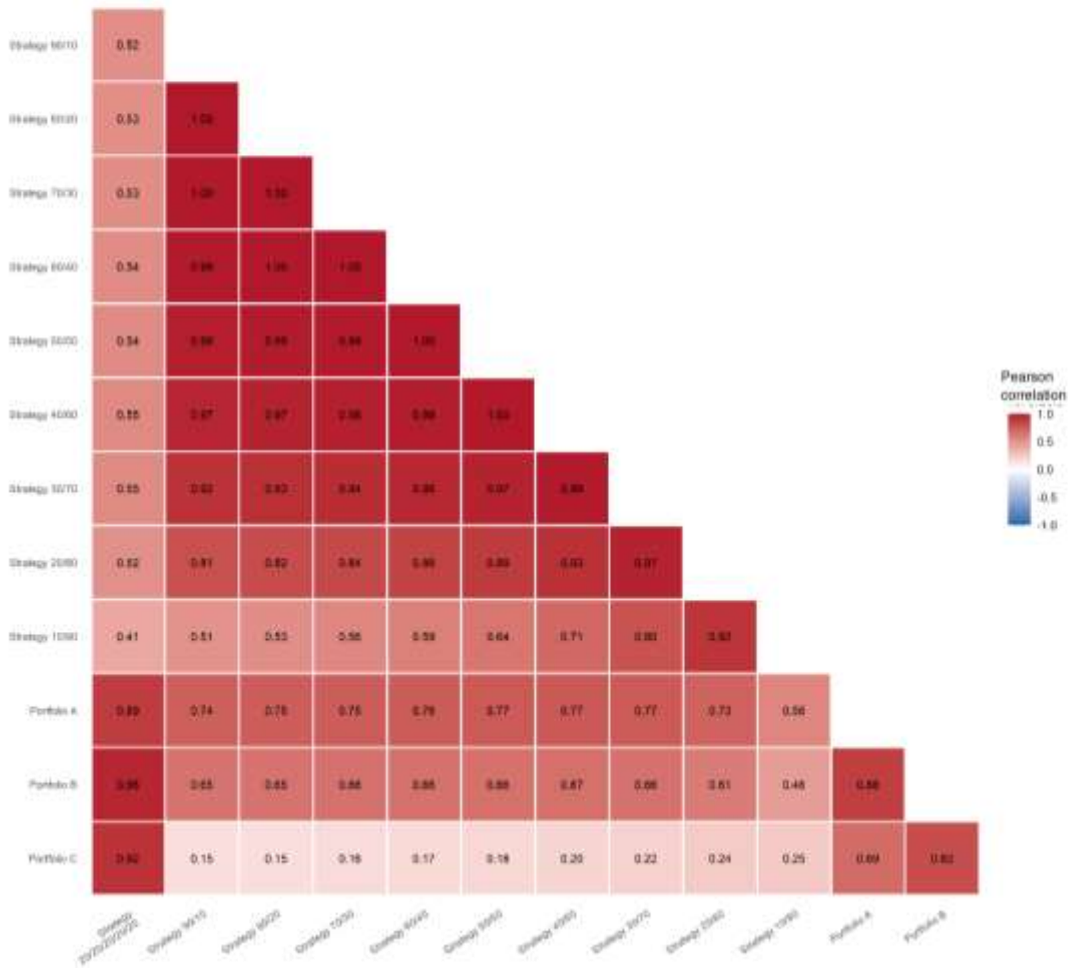

Figure 5: Correlation Matrix of Monthly Returns for Selected Investment Strategies
Source: authors' calculations in R based on historical monthly data

The correlation matrix (Figure 5) shows very high correlations among strategies with similar compositions; the correlation between the 90/10 and 70/30 strategies exceeds 0.99. Portfolio C, which contains no equities, is correlated with high-equity strategies at only approximately r = 0.15, whereas its correlation with the equally weighted 20/20/20/20/20 strategy reaches r = 0.92. Its diversification profile is therefore distinct.

4 DISCUSSION

The results confirm that the business-cycle phase is associated with the performance of individual asset classes and their portfolio combinations. H1 was supported: equity-oriented strategies, represented for example by the 90/10 strategy, achieve higher long-run performance, but at the cost of greater risk. The mean monthly equity return shifted from positive during expansions to negative during recessions, while volatility simultaneously increased and the maximum drawdown deepened. This result is consistent with Fama and French's (1989) conclusions regarding the countercyclical nature of expected returns, Guidolin and Timmermann's (2007) findings of markedly different risk-return profiles across market regimes, and Malkiel and Ellis's (2020) observation that the equity risk premium compensates for risks that become particularly pronounced during periods of market stress.

The results also support H2. Gold generated a mean monthly return of 0.833% during recessions and bonds 0.505%, in contrast to equities, supporting their use as stabilising components of diversified portfolios. This finding is consistent with Connolly, Stivers, and Sun (2005), who showed that the diversification benefit of government bonds relative to equities increases with market uncertainty, and Baur and Lucey (2010), who identified gold as a safe haven during equity-market downturns. It is also consistent with Malina (2025) and Privatbanka (2020) regarding the role of bonds and precious metals in mitigating market shocks. Nevertheless, Baur and Lucey's (2010) warning that gold's safe-haven property is short-lived also applies; it cannot therefore be interpreted as permanent portfolio protection.

Applying the Fisher equation revealed a substantial difference between the nominal and real performance of the strategies: with cumulative inflation of 1,777%, the 90/10 strategy's nominal performance of 30,010% fell to 1,504% in real terms. The equally weighted 20/20/20/20/20 strategy offered a more favourable combination of real performance and drawdown risk than the more concentrated Portfolios A, B, and C. This result accords with DeMiguel, Garlappi, and Uppal's (2009) findings on the competitiveness of equal weighting and with Neville et al. (2021) and Hoesli, Lizieri, and MacGregor (2008), who showed that the ability to preserve the real value of capital varies substantially across asset classes and types of inflation episode.

Several research limitations should also be considered when interpreting the results:

- Geographical scope: the analysis focuses exclusively on the U.S. market, so the results may not be directly transferable to other markets.
- Static nature of the strategies: the analysis evaluates fixed-weight allocations that do not adjust to the cycle phase; the results therefore cannot be interpreted as outcomes of tactically managed strategies.
- Exclusion of transaction costs and taxes: the calculations do not account for rebalancing costs, management fees, or taxes, all of which would reduce realised performance if included.
- Structural changes: the 95-year sample encompasses different monetary regimes, including the gold standard and the later fiat-currency regime, which may have affected the behaviour of gold and inflation in particular and limits comparability across periods.

For investment managers and long-term investors, the results imply that evaluating a portfolio solely on nominal measures provides a distorted view of its actual performance and that strategies should also be assessed in terms of inflation, volatility, and maximum drawdown. Including non-equity asset classes—especially bonds and gold—may reduce drawdown depth during recessions, while an equally diversified multi-asset strategy represents a relevant alternative for investors with lower risk tolerance.

CONCLUSION

The aim of this article was to evaluate and compare the real performance, volatility, and maximum-drawdown risk of thirteen static investment strategies in the U.S. market during expansion and recession phases from 1930 to 2025. The analysis used 1,149 monthly observations for five asset classes; cycle phases were defined using the NBER chronology, and nominal performance was converted into real terms using the Fisher equation.

Regarding the first research question, the results showed that the difference between nominal and real cumulative performance is fundamental over a long horizon: cumulative inflation of 1,777% reduced the 90/10 strategy's nominal performance from 30,010% to 1,504% in real terms and similarly reduced the performance of all other strategies. Evaluating investment outcomes exclusively in nominal terms therefore systematically overstates the actual growth in purchasing power. Regarding the second research question, the correlation analysis showed low pairwise correlations among most asset classes, with virtually zero relationships between equities and either bonds or gold, while strategies with similar compositions were almost perfectly correlated.

Both hypotheses were supported by the results. Consistent with H1, equity-oriented strategies dominated during expansions, but their mean returns turned negative and their maximum drawdowns deepened substantially during recessions. Consistent with H2, government bonds and gold generated positive mean returns during recessions, and including them in multi-asset portfolios stabilised real performance and moderated drawdown depth; the equally weighted 20/20/20/20/20 strategy achieved a favourable combination of real cumulative performance and tail risk. The findings thus document that the benefit of static diversification is manifested less in the level of the mean return than in limiting the worst scenarios faced by a long-term investor.

The article contributes by systematically comparing a larger set of static multi-asset strategies in real terms across business-cycle phases over a horizon exceeding nine decades. It thereby complements a literature that predominantly focuses on individual asset classes, shorter periods, or nominal measures. The validity of the conclusions is bounded by the limitations discussed in Section 4, particularly the exclusive focus on the U.S. market, the static nature of the strategies, and the exclusion of transaction costs and taxes. The results relate to the selected asset classes and the 1930–2025 sample period, and they therefore constitute a complementary analytical perspective rather than a general forecast or a standalone investment recommendation.

Future research could proceed in several directions. First, it could formally test the statistical significance of return differences across cycle phases using, for example, non-parametric tests given the rejection of normality. Second, the evaluation could be extended to risk-adjusted performance measures and their behaviour during individual crisis episodes. Third, incorporating transaction costs and alternative rebalancing rules would bring the results closer to real-world investment conditions. Finally, comparisons with other geographical markets and between static strategies and dynamic approaches that adjust allocations to the identified market regime (Guidolin and Timmermann, 2007), as well as extending the asset universe to instruments explicitly linked to inflation, offer further avenues for research.

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