



Performance Evaluation of Investment Avenues

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Abstract

This study evaluates the risk-adjusted performance of various investment avenues, including cryptocurrencies, traditional assets, and stablecoins, using key financial metrics such as the Sharpe Ratio, Sortino Ratio, Jensen's Alpha, and Maximum Drawdown. Findings suggest that gold, HDGO, and AMCFG offer the best risk-adjusted returns, making them ideal for risk-averse investors. BNB and ETH show strong returns but exhibit higher volatility, while USDT performs poorly due to its negative Sharpe Ratio and high downside risk. The study highlights the need for portfolio diversification, incorporating both high-return assets and stability-focused investments. Future research should explore machine learning models and sentiment analysis to enhance predictive accuracy in dynamic markets.

Keywords

Investment Avenues, Cryptocurrencies, Risk-Adjusted Performance, Sharpe Ratio, Portfolio Diversification

Introduction

Cryptocurrencies have emerged as a dynamic asset class, attracting both institutional and retail investors due to their high return potential and diversification benefits. However, their volatility and sensitivity to macroeconomic conditions necessitate a deeper understanding of risk-adjusted performance. This study evaluates key risk and return metrics, including Sharpe Ratio, Sortino Ratio, Jensen's Alpha, Maximum Drawdown, Value at Risk (VaR), Expected Shortfall (ES), and Tracking Error, to assess the comparative performance of major cryptocurrencies (BTC, ETH, BNB, USDT) and traditional assets (Gold, HDGO, AMCFG, etc.).

Literature Review

The performance of cryptocurrencies and traditional assets has been widely analyzed using various risk-adjusted metrics. This section reviews existing literature on key indicators relevant to this study:

- Risk-Adjusted Performance of Cryptocurrencies: Studies highlight Bitcoin and Ethereum's high Sharpe and Sortino Ratios, making them attractive for speculative investors.
- Comparative Analysis of Traditional and Digital Assets: Research suggests gold and equity indices maintain lower volatility and better stability.
- Downside Risk and Maximum Drawdown: Studies show Bitcoin experiences frequent large drawdowns, making it riskier than traditional assets.
- Value at Risk (VaR) and Expected Shortfall (ES) in Crypto Markets: Cryptocurrencies exhibit fat-tailed return distributions, leading to extreme losses.
- Stablecoins in Risk Management: Despite their low variance, stablecoins like USDT show occasional deviations from their pegged values.

Research Gap

Existing studies focus on individual risk measures or cryptocurrency volatility without integrating multiple financial performance metrics. This study addresses these gaps by analyzing multiple risk-adjusted performance indicators and evaluating the role of macroeconomic factors in cryptocurrency investment decisions.

Objectives of the Study

- To analyze the risk-adjusted performance of cryptocurrencies and traditional assets using key financial metrics.
- To evaluate the impact of macroeconomic factors on cryptocurrency performance.

Methodology

This study employs quantitative analysis using financial performance metrics such as Sharpe Ratio, Sortino Ratio, Jensen's Alpha, and Maximum Drawdown. Data is collected from historical price movements over a specific period. Statistical tools like R and Python are utilized for data analysis and visualization.

Results

The analysis evaluates different investment avenues based on key risk-adjusted performance metrics:

- Risk-Adjusted Return: Gold has the highest Sharpe Ratio (0.529), while USDT has the lowest (-26.73).
- Excess Returns: Gold and HDGO have the highest Jensen's Alpha, suggesting superior performance.
- Risk & Drawdown Measures: BTC and ETH show the highest drawdowns, indicating significant risk.
- Portfolio Diversification & Stability: Gold, HDGO, and AMCFG provide the best combination of high returns and low risk.

Discussion

- Risk-Adjusted Returns and Asset Efficiency: Gold, HDGO, and AMCFG exhibit high Sharpe Ratios, confirming their stability.
- Excess Return Over Market Expectations: Gold and HDGO outperform market expectations.
- Risk Exposure and Drawdowns: BTC and ETH have the highest drawdowns, showing high volatility.
- Stability and Portfolio Diversification: Traditional assets provide stability, while cryptocurrencies offer high return potential.

Implications for Investors

- Conservative investors should focus on gold, HDGO, and AMCFG for steady, risk-adjusted returns.
- Aggressive investors may benefit from BNB, ETH, and BTC but must tolerate higher volatility.
- Stablecoins like USDT are useful for capital preservation but lack significant return potential.

Conclusion

The study confirms that investment strategies should align with risk tolerance. While high-return assets like BNB and ETH provide opportunities, gold and HDGO remain the most balanced choices for investors prioritizing stability.

Limitations and Future Study

- Limitations: Limited dataset, exclusion of sentiment factors, and limited asset coverage.
- Future Study: Expanding the dataset, refining models, and incorporating AI-based forecasting techniques.

References

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