

## Comparative Financial Performance and Market Efficiency of Cryptocurrencies Versus Traditional Assets: Evidence from India

Rimadeviba BharatSinh Gohil  
Dr Ajay Trivedi, PhD  
PhD Program  
Department of Commerce, Parul University  
Parul University, Waghodiya, Vadodara, Gujarat, India

### Abstract

This study compares the financial performance and market efficiency of cryptocurrencies and traditional assets in India. The rapid growth of digital currencies (e.g., Bitcoin, Ethereum, Tether [USDT], and Binance Coin) has attracted substantial investor interest. Using secondary data, the study evaluates return, volatility, and risk–return trade-offs for selected leading cryptocurrencies and traditional assets (e.g., equities, gold, bank deposits, fixed-income instruments such as post-office fixed-deposit schemes, mutual funds, and real estate).

In addition, 25 semi-structured interviews with Indian retail investors were used to document investment preferences and participation across asset classes. Results suggest that cryptocurrencies offer comparatively higher return potential but exhibit substantially greater volatility than traditional investments, which tend to demonstrate more stable and predictable performance. The study also discusses market efficiency and investor behavior in the Indian financial context, with particular attention to regulatory developments and market maturity.

**Keywords:** cryptocurrencies, traditional assets, market efficiency, volatility, India

### Introduction

In recent years, the global financial system has been reshaped by the emergence of cryptocurrencies. Bitcoin, introduced in 2009, has become a prominent investable asset class. Unlike traditional investments, cryptocurrencies rely on blockchain technology, enabling peer-to-peer transactions without conventional financial intermediaries, which has increased their appeal among digitally engaged investors.

In India, investors have historically allocated capital to traditional assets such as equities (e.g., the BSE Sensex), gold, and fixed deposits. These instruments are generally perceived as relatively safe because they are regulated and supported by established market infrastructures. Gold, in particular, has long been regarded as a trusted store of value in Indian households. However, increasing financial awareness and the search for higher returns have contributed to growing interest in cryptocurrencies.

Despite their potential, cryptocurrencies are characterized by substantial price volatility and heightened uncertainty. In India, the regulatory landscape for crypto assets continues to evolve, contributing to ambiguity for market participants. In contrast, traditional assets typically display greater stability and are governed by clearer regulatory frameworks. Accordingly, an important empirical question is whether cryptocurrencies meaningfully outperform traditional assets after accounting for risk.

This study also examines market efficiency, commonly framed by the Efficient Market Hypothesis, which concerns the extent to which asset prices reflect available information. Although traditional financial markets are often viewed as comparatively efficient, cryptocurrency markets remain relatively young and may exhibit different information-processing dynamics.

In India, institutions such as the Reserve Bank of India and the Securities and Exchange Board of India have continued to deliberate on policy and oversight related to cryptocurrencies. Nevertheless, retail participation has increased, reflecting shifting investor preferences and the diffusion of digital financial products.

Therefore, this research compares the financial performance and market efficiency of cryptocurrencies and traditional assets in India. The findings are expected to inform investors, researchers, and policymakers regarding the relative opportunities and risks associated with emerging digital assets in an evolving regulatory environment.

#### Literature Review

Sharma et al. (2019) described the growth of cryptocurrencies as an emerging investment option and reported that crypto assets are highly volatile and not yet fully understood. The authors emphasized the need for additional empirical research comparing cryptocurrencies with traditional assets.

Almeida and Goncalves (2023) synthesized prior research and concluded that cryptocurrencies may contribute to portfolio diversification. They further noted that cryptocurrencies can function as a hedge in certain conditions, although their behavior is not consistently comparable to that of traditional assets.

In a related bibliometric (cluster) review, Almeida and Goncalves (2023) examined more than 400 publications and observed that cryptocurrency investment research remains fragmented, with mixed and sometimes inconsistent findings relative to traditional financial assets.

Ghosh and Das (2025) examined cryptocurrency adoption and regulation in India and highlighted regulatory uncertainty and limited investor awareness as key challenges. At the same time, they documented growing interest in crypto assets among Indian investors.

Paldon (2025) reviewed the Indian context for digital assets and argued that, although cryptocurrency participation is expanding, clearer regulation is required to address associated risks while supporting responsible innovation.

#### Hypotheses

$H_0$ : There is no statistically significant difference in returns, risk, or market efficiency between cryptocurrencies and traditional investment assets in India.

$H_1$ : There is a statistically significant difference in returns, risk, or market efficiency between cryptocurrencies and traditional investment assets in India.

#### Method

This study was conducted as part of the PhD Program in the Department of Commerce at Parul University.

The study primarily relies on secondary data from publicly available sources, including CoinMarketCap and Yahoo Finance for cryptocurrency market data and the National Stock Exchange of India and Reserve Bank of India publications for traditional-asset indicators.

Relevant peer-reviewed articles, journals, and financial reports were also consulted to support conceptual framing and interpretation.

Bitcoin and Ethereum were selected as focal cryptocurrencies due to their prominence and market capitalization. The traditional-asset set included gold and equity market indices, along with commonly used investment categories in India. The analysis covers the period 2020–2025, during which cryptocurrency markets expanded rapidly and traditional markets experienced notable fluctuations associated with global and domestic economic conditions.

Data was analyzed using standard financial and statistical techniques, including return calculations, standard deviation as a measure of volatility, risk-adjusted performance metrics, and correlation analysis to evaluate co-movement between cryptocurrencies and traditional assets.

Results are presented using comparative summaries supported by tables and figures where appropriate. Overall, the study aims to clarify relative advantages, risks, and efficiency characteristics of cryptocurrencies compared with traditional investment assets in India.

#### Data Collection

The study uses secondary data obtained from reliable public sources for both cryptocurrency and traditional asset classes. Cryptocurrency prices, market capitalization, and return series were collected from CoinMarketCap and Yahoo Finance. Data for traditional assets, including equity indices, gold prices, and selected fixed income return indicators, were obtained from the National Stock Exchange of India, Reserve Bank of India reports, and other established financial sources.

The dataset covers 2020–2025 to capture recent trends in returns and volatility across the selected investment options. The selected cryptocurrency set focuses on Bitcoin and Ethereum, and the traditional-asset set includes gold and equity market indices.

To support interpretation of empirical results, prior literature (e.g., journal articles, books, and research reports) was reviewed to contextualize market efficiency and comparative investment performance. All data were organized for analysis and interpretation.

#### Data Analysis

The collected data were analyzed using financial and statistical techniques to compare cryptocurrency and traditional-asset performance. Returns were computed to evaluate profitability, and standard deviation was used as an indicator of price volatility and risk.

Risk-adjusted performance was evaluated using the Sharpe ratio to assess whether cryptocurrencies delivered superior returns after accounting for volatility. Correlation analysis was conducted to examine the relationship between cryptocurrency returns and traditional investment returns.

Findings are summarized using tables and figures to facilitate interpretation and comparison. Calculations were performed using Microsoft Excel and basic statistical procedures. The analyses collectively inform differences in returns, risk, and market efficiency between cryptocurrencies and traditional assets in India.

#### Results and Discussion

The results indicate that cryptocurrencies and traditional assets exhibit distinct investment characteristics. Across the study period, major cryptocurrencies such as Bitcoin and Ethereum

generated comparatively higher returns than several traditional investment options; however, these returns were accompanied by substantial price volatility, indicating elevated risk.

By comparison, traditional assets such as gold and equity market investments displayed relatively more stable performance. Although returns were lower than cryptocurrencies during certain sub periods, traditional assets generally involved lower volatility and were more consistent with long-term, risk-averse investment objectives.

Cryptocurrency prices appeared particularly sensitive to news, investor sentiment, and global macroeconomic conditions, which may contribute to deviations from informational efficiency and to abrupt price movements. Traditional markets, in contrast, appeared comparatively more structured and efficient, supported by mature institutions and established regulatory oversight. Overall, the findings suggest that cryptocurrencies may offer meaningful upside potential, but investors should anticipate greater uncertainty and the possibility of significant drawdowns. Traditional assets remain more suitable for conservative investors seeking stability. Consequently, the relative attractiveness of each asset class depends on investor objectives and risk tolerance.

The results further imply that cryptocurrencies are unlikely to replace traditional assets in the near term; instead, they may function as a complementary component within a diversified portfolio, subject to appropriate risk management.

### **Conclusion**

This study compared the financial performance and market efficiency of cryptocurrencies and traditional assets in India. Overall, the results indicate that cryptocurrencies offer greater return potential but are associated with substantially higher risk and pronounced price volatility. In contrast, traditional assets such as gold and equity investments demonstrated comparatively stable performance and may better align with the objectives of risk-averse investors.

Although participation in cryptocurrency markets in India has increased with broader adoption of digital financial products, regulatory uncertainty and persistent volatility remain key constraints. Traditional assets continue to benefit from long-standing investor confidence, established institutions, and clearer regulatory frameworks.

Taken together, the findings suggest that cryptocurrencies may serve as an alternative component of a diversified portfolio, particularly for investors with higher risk tolerance and a capacity to absorb short-term losses. However, the current evidence does not indicate that cryptocurrencies are positioned to replace traditional assets in the Indian financial market.

Overall, this study contributes to the literature on changing investment behavior in India and may support evidence-based decision making by investors, researchers, and policymakers.

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