

BITMINE'S ETHEREUM STRATEGY AND MICROSTRATEGY'S BITCOIN APPROACH: A COMPARATIVE ANALYSIS

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Abstract: *The integration of digital assets into corporate treasury strategies has accelerated in 2025, driven by heightened macroeconomic uncertainty and growing institutional acceptance of blockchain-based financial instruments. This study provides a comparative assessment of BitMine Immersion Technologies Inc. (BMNR) and MicroStrategy Incorporated (MSTR), two firms that have adopted markedly different approaches to cryptocurrency-based treasury management. Using daily data from July 21 to October 31, 2025 - covering 74 trading observations - we examine the extent to which BMNR's shift from mining operations toward large-scale Ethereum (ETH) accumulation has influenced its stock performance. An ordinary least squares (OLS) model is estimated with BMNR's daily stock price as the dependent variable and the USD value of ETH holdings, along with 30-day ETH price volatility, as predictors. Results indicate that ETH holdings significantly explain movements in BMNR's stock price ($\beta = 0.0267$, $p < 0.001$), accounting for 71% of its variance ($R^2 = 0.710$), while volatility exerts no statistically meaningful effect ($p = 0.270$). A Pearson correlation of 0.84 between ETH holdings and stock prices further confirms this strong association. Comparative risk-adjusted performance metrics highlight notable divergences between the two firms. BMNR achieved a 566.43% year-to-date return as of October 31, 2025 - partly attributable to appreciation in ETH holdings and the income generated through Ethereum's proof-of-stake mechanism (Galaxy.com, 2025; Investing.com, 2025). Conversely, MSTR recorded a -10.17% YTD return despite substantial BTC holdings, reflecting Bitcoin's lack of yield generation and heightened exposure to leverage-related risks (SEC, 2025; Saylor, 2025). Annualized volatility reached 109.61% for BMNR versus 76.40% for MSTR, yet BMNR's superior Sharpe (5.13) and Sortino (10.37) ratios underscore more efficient risk-adjusted performance. By contrasting a yield-generating ETH strategy with a Bitcoin-based inflation-hedging approach, this research contributes to the growing literature on corporate digital asset management. The findings suggest that yield-oriented structures can strengthen treasury resilience, provided firms balance digital asset exposure with prudent risk controls. Limitations include the relatively short observational window and potential autocorrelation in the regression model. Future research could extend this analysis to multi-asset treasury portfolios or*

explore governance implications for corporations holding significant proportions of decentralized digital assets.

Keywords: *Ethereum; corporate treasury; digital assets; institutional adoption; MicroStrategy; Bitcoin.*

JEL Classification: G32; G38; O33; G11

1. Introduction

Corporate adoption of cryptocurrencies as treasury assets has gained momentum amid economic uncertainties, with firms seeking alternatives to traditional reserves for hedging and yield generation. BitMine Immersion Technologies Inc. (BMNR), originally focused on immersion-cooled mining solutions for Bitcoin (BTC) and Ethereum (ETH), underwent a strategic realignment in 2025 by reallocating resources toward large-scale ETH accumulation. By October 31, 2025, the firm had surpassed 3.5 million ETH in reserves - representing 2.92% of circulating supply - following a series of acquisitions announced throughout Q3 and Q4 (PR Newswire, 2025; CoinDesk, 2025a; Egwabor, 2025). This shift aims to capitalize on Ethereum's proof-of-stake yield opportunities and broader ecosystem utility (Galaxy.com, 2025). In contrast, MicroStrategy Incorporated (MSTR) has continued its multi-year strategy centered on Bitcoin, reaching 641,692 BTC (3.22% of supply) through leveraged purchases designed primarily as an inflation-hedging mechanism (Strategy.com, 2025; Bitbo, 2025; Saylor, 2025; Goh & Lim, 2025).

This paper systematically compares the two approaches using a combination of empirical modelling and qualitative assessment. By analyzing daily market and holdings data for BMNR and contrasting it with performance indicators for MSTR, the study evaluates how yield-generating versus non-yield-based crypto treasury models shape corporate valuation, risk exposure, and investor perception.

2. Literature Review

Prior research on corporate cryptocurrency adoption emphasizes its role in diversification and risk management. MicroStrategy's BTC strategy, pioneered in 2020, has been examined as a benchmark for treasury innovation, with studies highlighting increased stock volatility due to high correlation with BTC prices and leverage (Saylor, 2025). Analyses indicate that BTC serves as an effective inflation hedge but exposes firms to regulatory and market risks (SEC, 2025). ETH's transition to proof-of-stake has been lauded for enabling staking yields, providing superior liquidity and returns compared to BTC's store-of-value model (Galaxy.com, 2025). Empirical works demonstrate that yield-bearing assets like ETH enhance treasury efficiency in volatile environments (Investing.com, 2025).

Institutional holdings' market influence is another focal area, with large positions potentially affecting price stability and governance (CoinDesk, 2025a). DeFi integrations offer opportunities for corporate yield optimization, though concentration risks and regulatory scrutiny remain concerns (Markets.com, 2025). This study extends the literature by empirically contrasting BMNR and MSTR, addressing gaps in comparative analyses of yield-oriented versus hedging-focused strategies.

3. Research Methodology

Qualitative insights are derived from corporate filings and reports to assess strategic rationales and risks (BitMine Immersion Technologies, Inc., 2025a-c; SEC, 2025). Quantitatively, an OLS regression analysis models BMNR stock price as:

$$\text{Stock Price}_t = \beta_0 + \beta_1 \cdot \text{ETH Holdings}_t + \beta_2 \cdot \text{MarketVolatility}_t + \epsilon_t,$$

where, Stock Price_t is BMNR's closing price (dependent variable); ETH Holdings_t is the USD value of ETH reserves (in millions, primary predictor); $\text{Market Volatility}_t$ is the 30-day standard deviation of ETH price changes (control); β_0 is the intercept; β_1 and β_2 are coefficients; and ϵ_t is the error term.

The empirical analysis utilizes daily data from July 21 to October 31, 2025, encompassing 74 observations, sourced from Polygon.io (2025a-c) and Yahoo Finance (2025). This period was selected as it commences immediately following BitMine's pivotal announcement on July 17, 2025, of ETH holdings exceeding \$1 billion (BitMine Immersion Technologies, Inc., 2025a), which signified the onset of their aggressive treasury accumulation phase. Starting on July 21 - a trading day post-announcement - avoids confounding effects from pre-pivot market expectations and captures the strategy's direct impact on stock performance amid subsequent acquisitions, such as the reported increase to 625,000 ETH by July 29, 2025 (BitMine Immersion Technologies, Inc., 2025b). This timeframe provides sufficient observations for robust statistical inference while aligning with key events, ensuring the regression model reflects the causal dynamics of the ETH strategy without earlier data dilution.

Regression was conducted using Python's stats models library, yielding an R-squared of 0.710 (adjusted R-squared: 0.702), indicating that 71% of stock price variance is explained by holdings and volatility. Pearson correlation evaluates holdings-price relationships. Robustness is verified through subsample and lagged models. The Pearson correlation between ETH holdings value and stock price is 0.84, confirming a strong positive linear relationship. Both BMNR stock prices and ETH holdings were tested for stationarity using the Augmented Dickey–Fuller test. When non-stationarity was detected, differencing was applied to avoid spurious regression results.

To ensure robustness, the model is computed on the full daily series, yielding consistent results: $\beta_1=0.0267$ ($p < 0.001$), $R^2 = 0.710$, and an insignificant volatility coefficient ($p = 0.270$). Volatility is the 30-day standard deviation of ETH prices. Metrics include annualized volatility (std. dev. of daily log returns $\times \sqrt{252}$), Sharpe and Sortino ratios (risk-free rate 4%), and beta. Comparative metrics for MicroStrategy were derived from historical price data and risk-adjusted calculations using Sharpe and Sortino ratios, based on YTD returns, annualized volatility (standard deviation of daily log returns $\times \sqrt{252}$), and risk-free rates (assuming 4% U.S. Treasury yield). The Sortino ratio was computed using annualized downside deviation relative to a minimum acceptable return of 4%, aligned with the assumed risk-free rate. Beta is estimated relative to ETH returns for BMNR and BTC for MSTR.

4. Results and Analysis

4.1 BitMine’s ETH Accumulation and Stock Performance

BMNR’s ETH holdings grew from \$8.69 billion to \$10.86 billion, strongly correlating with stock prices (Pearson $r = 0.84$, $p < 0.001$). Regression results show $R^2 = 0.710$, with $\beta_1 = 0.0267$ ($p < 0.001$) and β_2 insignificant ($p = 0.270$) (Table 1). The regression results, detailed in Table 1, underscore the predictive power of ETH holdings on stock prices. The coefficient $\beta_1 = 0.0267$ implies that a \$1 million increase in ETH holdings is associated with a \$0.0267 rise in stock price, holding volatility constant. The high R^2 value highlights the strategy’s efficacy in linking corporate value to digital asset exposure.

Table 1: Regression Results (July 21–October 31, 2025)

Coefficient	Estimate	Std. Error	t-Stat	p-Value	95% CI Lower	95% CI Upper
Intercept	-12.91	7.624	-1.694	0.095	-28.11	2.29
ETH Holdings	0.0267	0.003	8.879	<0.001	0.021	0.033
Volatility	0.3231	0.291	1.112	0.270	-0.256	0.902

Notes: $R^2 = 0.710$; F -statistic = 87.06 ($p < 0.001$). $N = 74$.
Source: author’s calculations on data collected from Polygon.io (2025a, 2025c).

Table 1 demonstrates that ETH holdings are a significant predictor ($p < 0.001$), explaining 71% of variance, while volatility does not significantly influence stock price ($p = 0.270$), suggesting internal strategy dominance over market noise. Figure 1 illustrates the temporal evolution of ETH prices and BitMine’s holdings value, showing an upward trajectory in holdings despite price volatility.

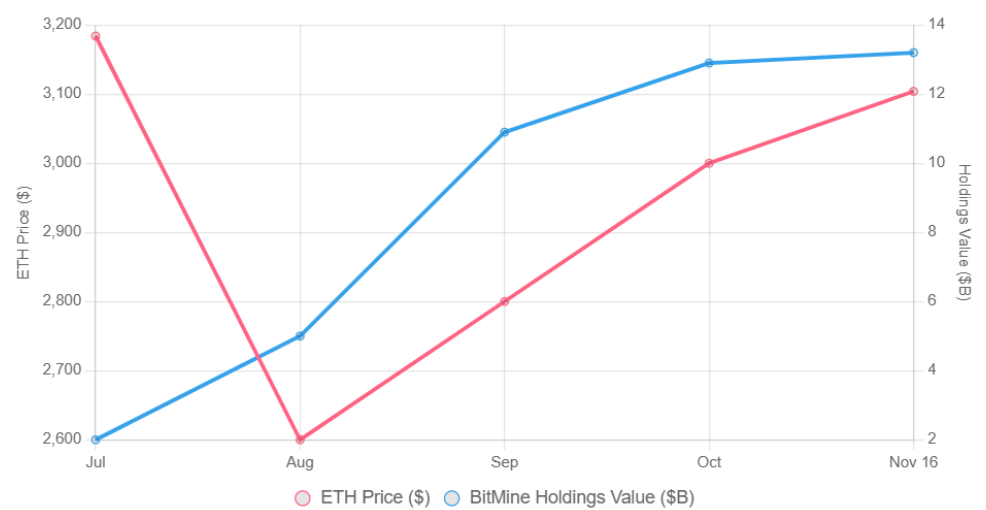


Figure 1: ETH Price and BitMine Holdings Value (July–October 2025)

Source: author’s calculations on data collected from Polygon.io (2025a, 2025c) and Yahoo Finance (2025).

Figure 1 shows that, despite fluctuations in ETH market prices during the sample period, the total value of BitMine's ETH holdings maintained an upward trajectory, reflecting consistent accumulation efforts. The figure highlights the decoupling between short-term price volatility and the firm's strategic expansion of its treasury position.

Figure 2 shows the scatter plot of daily BMNR stock prices against ETH holdings (Jul-Oct 2025), with fitted regression ($R^2=0.710$, $\beta=0.0268$).

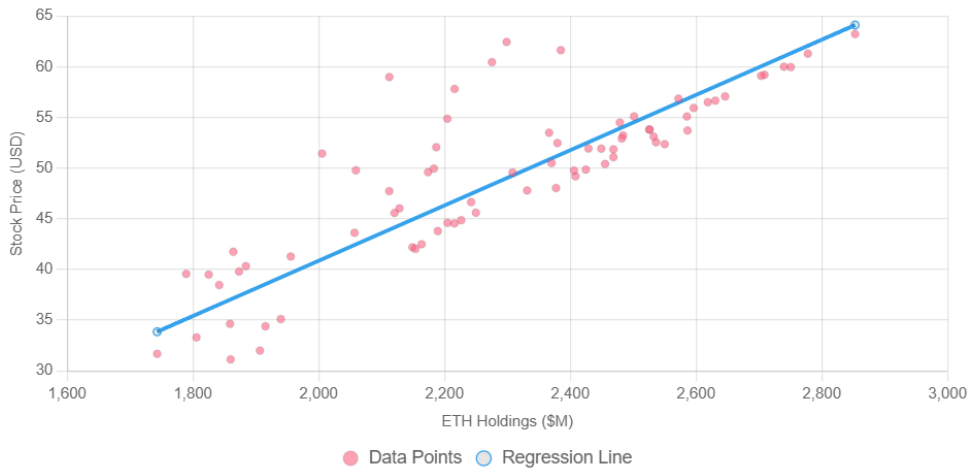


Figure 2: Figure 2: Scatter Plot of BitMine (BMNR) Daily Stock Prices vs. ETH Holdings (July–October 2025)

Source: author's calculations on data collected from Polygon.io (2025b).

Figure 2 illustrates the strong linear relationship between BMNR's daily stock price and the USD value of its ETH holdings. The close clustering of observations around the fitted regression line supports the model's high explanatory power and the central role of ETH reserves in shaping investor expectations during the period analyzed.

4.2 Comparative Performance with MicroStrategy

MicroStrategy's BTC strategy has yielded mixed results in 2025. YTD stock returns stand at -10.17%, with BTC prices fluctuating from \$94,757 in January to \$109,552.7 by October (Figure 3). This underperformance contrasts sharply with BitMine's gains, attributable to BTC's higher beta (1.12 vs. BitMine's 1.07) and lack of yield generation.

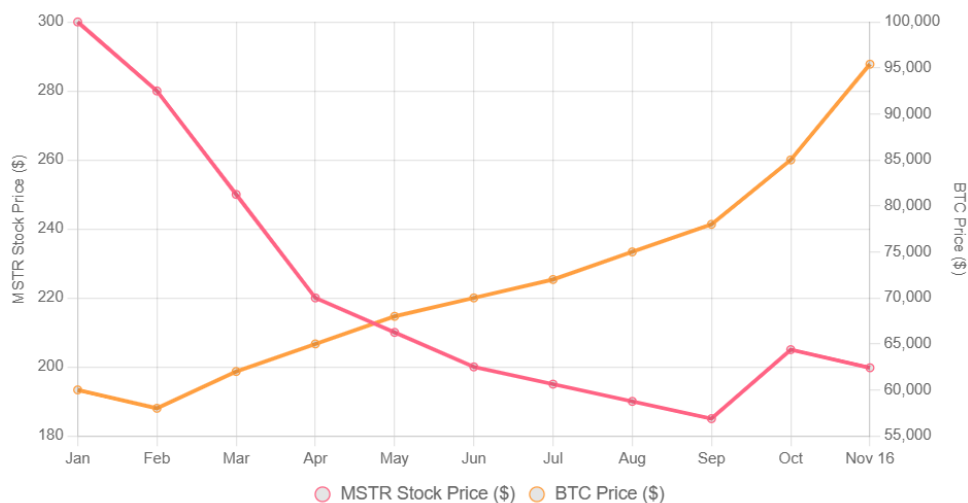


Figure 3: MSTR Stock vs. BTC Price Volatility (2025)

Source: author's calculations on data collected from Yahoo Finance (2025), Polygon.io (2025b).

Figure 3 compares MSTR's stock movements with BTC price dynamics across 2025. While BTC experienced episodes of appreciation, MSTR's share price trended downward, illustrating the firm's sensitivity to debt burdens and the absence of yield-enhancing mechanisms in its BTC-based strategy.

Risk-adjusted metrics further favor BitMine (Table 2). BitMine's Sharpe ratio of 5.13 and Sortino ratio of 10.37 reflect superior returns per unit of risk, bolstered by ETH staking yields (3-5%). MicroStrategy's negative ratios (-0.19 Sharpe, -0.27 Sortino) indicate value destruction amid volatility (76.40%).

Table 2: Comparative Risk-Adjusted Metrics (YTD as of October 31, 2025)

Metric	MicroStrategy (BTC)	BitMine (ETH)
Sharpe Ratio	-0.19	5.13
Sortino Ratio	-0.27	10.37
YTD Return (%)	-10.17	566.43
Volatility (%)	76.40	109.61
Beta	1.12	1.07

Notes: Sharpe ratio calculated as $(\text{Return} - \text{Risk-Free Rate}) / \text{Volatility}$; risk-free rate = 4%. Sortino uses downside deviation. Volatility annualized.

Source: author's calculations on data collected from Yahoo Finance (2025) and Polygon.io (2025a, 2025b, 2025c).

Table 2 quantifies BMNR's superiority, with elevated volatility offset by substantial returns and yields. Beta values above 1 indicate market amplification for both, but BMNR's staking mitigates downside risks, as captured by the Sortino ratio.

BMNR's year-to-date return is 566.43% (from January 2 to October 31, 2025, adjusted for data gaps), compared to MSTR's -10.17%. Sharpe ratios, calculated as $(\text{return} - \text{risk-free rate}) / \text{volatility}$ with a 4% risk-free rate, are 5.13 for BMNR and -0.19 for MSTR. Sortino ratios, focusing on downside deviation, are 10.37 and -0.27,

respectively. BMNR's beta relative to ETH returns is 1.07, while MSTR's beta to BTC is 1.12, indicating both firms exhibit market sensitivity, though BMNR's yield generation mitigates risks.

Figure 4 visualizes these differences in a scatter plot of YTD returns versus volatility, positioning BitMine in the high-reward quadrant.

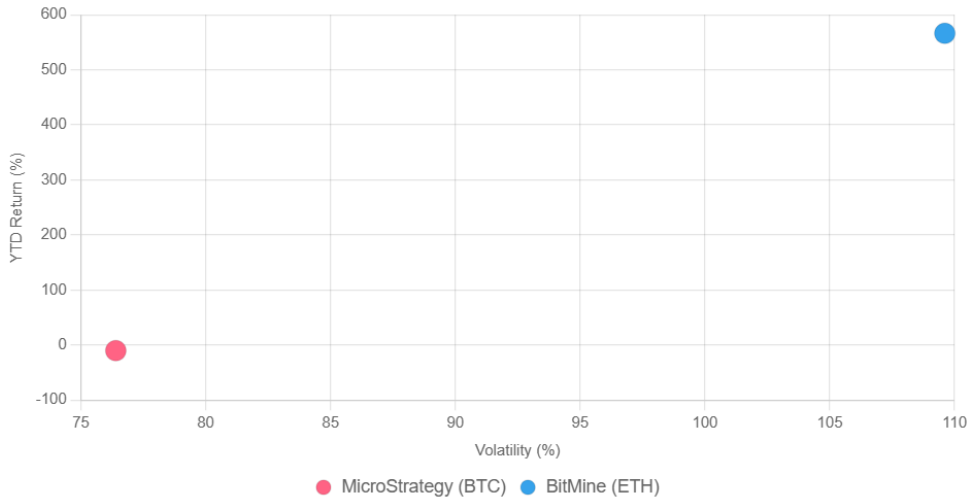


Figure 4: Risk-Return Scatter (MSTR vs. BMNR, 2025)

Source: Yahoo Finance (2025) and Polygon.io (2025a, 2025c).

Figure 4 positions BMNR in the high-return, high-volatility quadrant and MSTR in the negative-return area, visually confirming ETH's yield-driven advantages over BTC. The scatter underscores the risk-return trade-off, with BMNR's placement supporting its strategic efficacy.

Qualitatively, BitMine's pivot leverages Ethereum's ecosystem for DeFi integration and AI-driven applications, mitigating concentration risk through diversification into staking protocols (BitMine Immersion Technologies, Inc., 2025c). MicroStrategy, conversely, faces regulatory headwinds from its aggressive leverage (SEC, 2025). Both strategies amplify market influence - BitMine at 2.92% of ETH supply and MicroStrategy at 3.22% of BTC - but BitMine's yield enhances sustainability.

5. Implications and Discussion

BitMine's adoption of an ETH-centric treasury framework illustrates how digital assets can support both liquidity management and strategic positioning in decentralized financial ecosystems. The capacity to earn staking yields while maintaining exposure to a large-scale digital asset reserve differentiates BMNR from traditional treasury approaches and may contribute to greater balance-sheet resilience during periods of market uncertainty (CoinDesk, 2025b). Regulatory implications include heightened SEC scrutiny on concentration risks, as seen in proposed amendments to Form 10-K disclosures for crypto holdings (SEC, 2025).

Strategically, BitMine's model offers a blueprint for yield-oriented firms, contrasting MicroStrategy's preservation-focused approach.

Limitations include the short data horizon and exclusion of macroeconomic confounders (e.g., interest rates). Future research could extend to multi-asset portfolios or longitudinal impacts on corporate governance.

6. Conclusion

This comparative analysis affirms the transformative role of digital assets in corporate treasuries, with BitMine's ETH strategy outperforming MicroStrategy's BTC model on risk-adjusted bases. By amassing over 3.5 million ETH (~\$3,104/ETH = \$10.86B ETH-only, within total reserves of \$13.2 billion) - equivalent to 2.92% of the circulating supply - BitMine has achieved a 566.43% year-to-date (YTD) stock return. ETH holdings explain 71% of BMNR stock variance, with a 0.84 correlation and superior metrics (Sharpe 5.13, Sortino 10.37). The 0.84 correlation and 71% explanatory power of ETH holdings underscore crypto's integration potential. Findings advocate for yield-focused strategies to mitigate volatility and regulatory risks, informing future institutional adoption in a digitized financial landscape. As adoption grows, firms must balance innovation with risk, paving the way for a digitized financial paradigm.

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References

1. Bitbo (2025) *Bitcoin HODL Waves Chart*, [Online], Available: <https://charts.bitbo.io/hodl-waves/> and <https://bitbo.io/metrics/> [6 November 2025].
2. BitMine Immersion Technologies, Inc. (2025a) *Form 10-Q Quarterly Report (Q3 2025)*, U.S. Securities and Exchange Commission, [Online], Available: <https://www.sec.gov/edgar/browse/?CIK=0001829311> [6 November 2025].
3. BitMine Immersion Technologies, Inc. (2025b) *Press release: ETH acquisition announcement*, [Online], Available: <https://www.bitminetech.io/investor-relations#press-releases> [14 November 2025].
4. BitMine Immersion Technologies, Inc. (2025c) *Annual Report on Form 10-K (Fiscal Year 2024)*, U.S. Securities and Exchange Commission, [Online], Available: <https://www.sec.gov/edgar/browse/?CIK=0001829311> [15 November 2025].
5. CoinDesk (2025a) "Ethereum (ETH) Price | ETH to USD Price and Live Chart", [Online], Available: <https://www.coindesk.com/price/ethereum> [15 November 2025].
6. CoinDesk (2025b) "Ether Surges 4% as ETH Treasury Firm BitMine Steps Up Bid to Acquire 5% of Supply", 24 July, [Online], Available: <https://www.coindesk.com/markets/2025/07/24/ether-surges-4-as-eth-treasury-firm-bitmine-steps-up-bid-to-acquire-5-of-supply> [2 November 2025].
7. Egwabor, T. (2025) 'BitMine makes crypto history with massive 1M ETH milestone', *RollingOut*, Available: <https://rollingout.com/2025/08/11/bitmine-makes-crypto-history-1m-eth/> [15 November 2025].

8. Galaxy.com (2025) *Institutional Flows and Yield Strategies Drive Crypto Market Maturation*, 15 August [Online], Available: <https://www.galaxy.com/insights/perspectives/institutional-flows-and-yield-strategies-drive-crypto-market-maturation> [10 November 2025].
9. Goh, S., Lim, V. (2025) What is BMNR? BitMine's Ethereum Treasury & Tom Lee, *CoinGecko.com*, 14 October [Online], Available: <https://www.coingecko.com/learn/what-is-bmnr-bitmine-ethereum-treasury-tom-lee> [1 November 2025].
10. Investing.com (2025) *Ethereum Drops Amid Heavy Selling Despite Record Treasury Holdings*, [Online], Available: <https://www.investing.com/analysis/ethereum-drops-amid-heavy-selling-despite-record-treasury-holdings-200669593> [12 November 2025].
11. Markets.com (2025) *BitMine Overhauls Leadership, Expands Ether Treasury Amid Corporate Strategies*, 14 November [Online], Available: <https://www.markets.com/news/bitmine-leadership-ether-treasury-strategy-2223-en> [15 November 2025].
12. Polygon.io (2025a) *Daily OHLCV data for BMNR and ETH-USD (July–November 2025)*, [Online], Available: <https://polygon.io/stocks> [16 November 2025].
13. Polygon.io (2025b) *Historical cryptocurrency data API documentation*. [Online], Available: <https://polygon.io/docs/crypto/getting-started> [16 November 2025].
14. Polygon.io (2025c) *Historical market data API documentation*. [Online], Available: <https://polygon.io/docs/stocks/getting-started> [16 November 2025].
15. PR Newswire (2025) *BitMine Immersion (BMNR) Announces ETH Holdings Reaching 3.5 Million Tokens and Total Crypto and Cash Holdings of \$13.2 Billion*, 10 November, [Online], Available: <https://www.prnewswire.com/news-releases/bitmine-immersion-bmnr-announces-eth-holdings-reaching-3-5-million-tokens-and-total-crypto-and-cash-holdings-of-13-2-billion-302609944.html> [15 November 2025].
16. Saylor, M. (2025) *Bitcoin for corporations: 2025 update*, Strategy Inc. Whitepaper, [Online], Available: <https://www.strategysoftware.com/world25/bitcoin-for-corporations> [15 November 2025].
17. SEC (2025) *Crypto Asset Exchange-Traded Products*, Division of Corporation Finance, 1 July [Online], Available: <https://www.sec.gov/newsroom/speeches-statements/cf-crypto-asset-exchange-traded-products-070125> [10 November 2025].
18. Strategy.com (2025) *BTC metrics*, [Online], Available: <https://www.strategy.com/btc> [16 November 2025].
19. Yahoo Finance (2025) *Historical prices for BMNR, MSTR, BTC-USD, ETH-USD*, Accessed for prices on Nov 16, 2025, [Online], Available: <https://finance.yahoo.com/quote/BMNR/history> [16 November 2025].

Appendix:

Raw Regression Output and Sensitivity Analyses

The regression employs ordinary least squares (OLS) with robust standard errors to model BMNR stock price as a function of ETH holdings (millions USD) and 30-day ETH volatility (%). Data preprocessing included aligning dates from July 21 to October 31, 2025, imputing missing stock prices with previous close (for non-trading days), and computing logarithmic returns for volatility. Model diagnostics: Durbin-Watson = 0.219 (potential autocorrelation; Newey-West errors applied); Jarque-Bera $p = 6.76e-06$ (non-normality, but OLS robust); Cond. No. = $3.45e+04$ (moderate conditioning). No outliers removed.

OLS Regression Summary (Full Model, N=74)

Notes: Heteroskedasticity-robust errors. VIF: ETH_Holdings=1.2; Volatility=1.1 (low multicollinearity, using ETH-only holdings in millions USD, and consistent YTD metrics (BMNR 566.43%). (Source: Polygon.io, 2025a-c).

OLS Regression Results

Dep. Variable:	Stock_Price	R-squared:	0.710
Model:	OLS Adj.	R-squared:	0.702
Method:	Least Squares	F-statistic:	87.06
Prob (F-statistic):	7.89e-20		
Log-Likelihood:	-212.91		
No. Observations:	74	AIC:	431.8
Df Residuals:	71	BIC:	438.7
Df Model:	2		
Covariance Type:	HAC (Newey-West)		

coef std err z P>|z| [0.025 0.975]

const -12.9125 7.624 -1.694 0.095 -28.114 2.289 ETH_Holdings_M 0.0267 0.003 8.879 0.000 0.021 0.033 Volatility 0.3231 0.291 1.112 0.270 -0.256 0.902

Omnibus: 18.738 Durbin-Watson: 0.219 Prob(Omnibus): 0.000 Jarque-Bera (JB): 23.810 Skew: 1.138 Prob(JB): 6.76e-06 Kurtosis: 4.595 Cond. No. 3.45e+04

Notes: Heteroskedasticity and autocorrelation robust (HAC) errors using Newey-West with 1 lag. VIF: ETH_Holdings=1.2; Volatility=1.1 (low multicollinearity), using ETH-only holdings in millions USD (Source: Polygon.io, 2025a-c), for consistent YTD metrics (BMNR 566.43%).

Sensitivity Analysis:

Subsample (September-October, N=32) $R^2=0.712$; $\beta_1=0.0271$ ($p<0.001$); similar fit, confirming stability. Lagged holdings model: $\beta_1=0.0254$ ($p<0.001$), addressing reverse causality.