Bitcoin:

The Future of University Endowments

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Contents

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Abstract

This report explores the potential for creating Bitcoin endowment strategies. It addresses common misconceptions surrounding Bitcoin, examines its financial performance, institutional adoption, defines the regulatory environment, and outlines the challenges and opportunities for university endowments. By leveraging Bitcoin's unique characteristics, institutions can diversify portfolios, enhance returns, mitigate risks, and engage with a new donor base. This report proposes a framework for understanding, accepting, and managing Bitcoin within an endowment framework. This analysis helps universities leverage Bitcoin to diversify with a safe and innovative asset, aligning with the future of finance and optimizing for long-term performance. The digital hard money principles embedded in the network secure the role of Bitcoin as the new digital gold for the future of finance.

1. What is Bitcoin?

Bitcoin represents a cryptographic monetary network secured by the world's most extensive decentralized blockchain. It leverages advanced cryptographic protocols to facilitate secure, trustless peer-to-peer transactions, thereby eliminating the necessity for centralized intermediaries [1]. The inherent security and investment performance characteristics of Bitcoin align precisely with the established priorities of traditional finance [2]. As an alternative investment vehicle, Bitcoin offers a valuable instrument for portfolio diversification and a potential hedge against inflationary pressures and economic uncertainties. These attributes position Bitcoin as a significant opportunity within the evolving financial landscape. In essence, Bitcoin embodies the future trajectory of finance, economics, and banking.

1.1 Technology

The operational foundation of Bitcoin rests upon its blockchain, with data securely recorded on distributed nodes, processed through a mining mechanism, and transactions disseminated via a peer-to-peer methodology.

Peer-to-Peer (P2P) Transactions: Bitcoin transactions are executed directly between two consenting parties, eliminating the involvement of any third-party intermediary.

Blockchain: The blockchain serves as a distributed public ledger, meticulously recording every Bitcoin transaction. This immutable record ensures transparency and integrity across the network.

Nodes: The network comprises numerous computers, or nodes, each responsible for storing and validating the entire blockchain. These nodes actively broadcast and verify new transactions, contributing to the network's consensus and security.

Mining: The process of mining involves batching and validating new entries into the blockchain through a proof-of-work mechanism. With the successful addition of each block, the network's cryptographic strength is augmented, and new coins are minted. A substantial proportion of Bitcoin mining operations now utilize renewable energy sources, contributing to grid stabilization [3].

1.2 Security

The security of the Bitcoin network is underpinned by advanced cryptography, specifically employing the SHA-256 hashing algorithm. The Bitcoin network has, to date, remained impervious to hacking or breaches. The same cryptographic principles that safeguard the network are widely employed in securing sensitive data, such as passwords, and form the basis of secure HTTPS communication. Consequently, Bitcoin is widely regarded as the most secure monetary network globally, surpassing the security paradigms of conventional online bank accounts, investment platforms, credit cards, and other digital monetary systems [4].

1.3 Economics

The economic incentive structure of Bitcoin is governed by a finite total supply of 21 million coins, guaranteeing scarcity despite its digital nature [5]. The active circulating supply, accounting for permanently lost coins, is approximately 15 million coins. On the supply side, the rate of loss currently exceeds the rate of new supply generated by mining, meaning Bitcoin is deflationary as of April 2024 [6]. This deflationary dynamic creates persistent upward price pressure. Approximately 1 million coins remain to be mined, enhancing the scarcity of the asset. The final bitcoin is projected to be minted in the year 2140. Currently, over 3.6 million coins are held in institutional treasuries, encompassing corporate entities, sovereign nations, and exchange-traded funds (ETFs) [7]. The digital hard money principles embedded in the network secure the role of Bitcoin as the new digital gold powering the future of finance.

2. Common Misconceptions

Numerous misconceptions persist regarding Bitcoin, often stemming from its innovative nature and rapid evolution as a disruptive technology. This section addresses key areas of confusion, providing evidence-based clarifications.

2.1 Volatility

Bitcoin has historically exhibited significant price volatility, a characteristic shared with many emerging assets. However, this volatility has demonstrated a consistent downward trend over time [8]. Dollar-cost averaging (DCA) strategies effectively mitigate associated risks. Bitcoin's volatility profile bears similarities to other high-growth technology assets, such as the Magnificent 7 stocks. Notably, traditional fixed-income instruments like bonds

have experienced heightened volatility since 2008 [9]. Bitcoin's volatility index has decreased by approximately 50% from March 15, 2024, to August 14, 2025 [10].

2.2 Scams and Money Laundering

The United States dollar remains the primary currency employed in global money laundering activities, by a significant margin. Annual money laundering volumes are estimated between $800 billion and $2 trillion, representing 2-5% of global GDP [11]. Real estate facilitates approximately 30% of money laundering operations, yet continues to attract substantial investment [12]. In contrast, illicit activity constitutes less than 0.2% of cryptocurrency on-chain transactions, amounting to approximately $51 billion [13]. Of this amount, Bitcoin accounts for roughly 15%, or $7.7 billion. The transparent design of Bitcoin makes it a poor medium of exchange to conduct illicit activity. Global credit and debit card fraud exceeds $33 billion annually and is projected to surpass $100 billion by 2030 [14,15].

2.3 Speculative Nature

As institutional Bitcoin adoption grows, along with regulatory clarity, Bitcoin's price action is no longer driven by retail speculation [16]. Exchange-traded funds (ETFs), such as Blackrock's IBIT, have amassed hundreds of billions in assets under management. More than half of the top hedge funds and registered investment advisors (RIAs) hold positions in Bitcoin ETFs. Corporate entities have been accumulating over 1,000 BTC per day since January 2024. Since 2020, many nations have actively pursued legalization of Bitcoin and permitted banking institutions to engage with the asset. The steady institutional buying pressure increases liquidity while reducing the volatility and speculative nature of the asset.

2.4 Regulatory Concerns and Legislative Clarity

Bitcoin enjoys substantial support from key U.S. governmental bodies, including Congress, the presidency, the Securities and Exchange Commission (SEC), the Commodity Futures Trading Commission (CFTC), and other federal regulators [17]. Proposed initiatives include the establishment of a Strategic Bitcoin Reserve, the repeal of SAB 121 to enable bank custody of digital assets, and the GENIUS Act for stablecoin regulation. The International Monetary Fund (IMF) has issued comprehensive guidance on Bitcoin [18]. The Bank for International Settlements (BIS) permits central banks to allocate up to 2% of their holdings to Bitcoin.

2.5 Energy Use

The majority of Bitcoin's electricity consumption is derived from renewable sources [3]. Bitcoin mining frequently utilizes stranded or wasted energy that would otherwise remain untapped. As the United States prepares to invest more in AI data centers than the entire Apollo program, energy consumption in this sector is projected to reach 23 GW by the end of 2025 [19]—already exceeding Bitcoin mining's 10 GW footprint. The energy expended in mining is integral to network security. States implementing Bitcoin mining for demand response have observed a reduction in power outages exceeding 30% [20]. In short Bitcoin's energy usage stabilizes local grids and secures the financial network of the future.

3. Bitcoin Financial Performance

Bitcoin represents a secure and scarce digital asset underpinned by advanced blockchain technology, positioning it as a transformative force in modern finance. Its inclusion in endowment portfolios has demonstrated innovative performance enhancements, delivering superior risk-adjusted returns compared to traditional assets. As a regulated and economically significant asset, Bitcoin signals a forward-looking commitment to the future of finance, emphasizing diversification and resilience. These qualities make it a vital element of a strategic investment approach, reinforcing its growing role as an essential asset class in academic and institutional portfolio strategies.

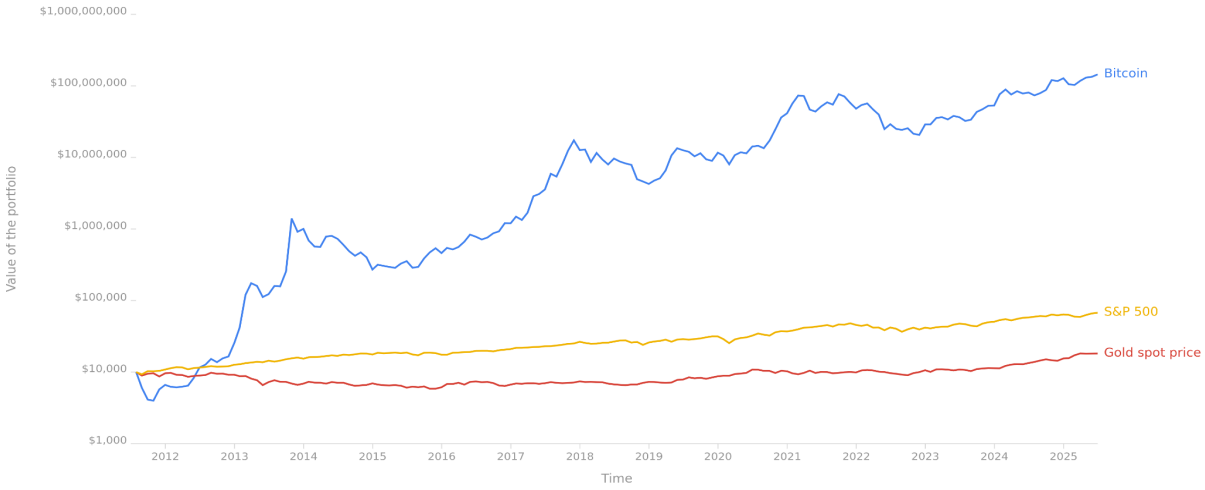

Figure 1. Performance of $10,000 in Bitcoin, S&P 500, and Gold since 2011. Data from Yahoo Finance, Coinbase.

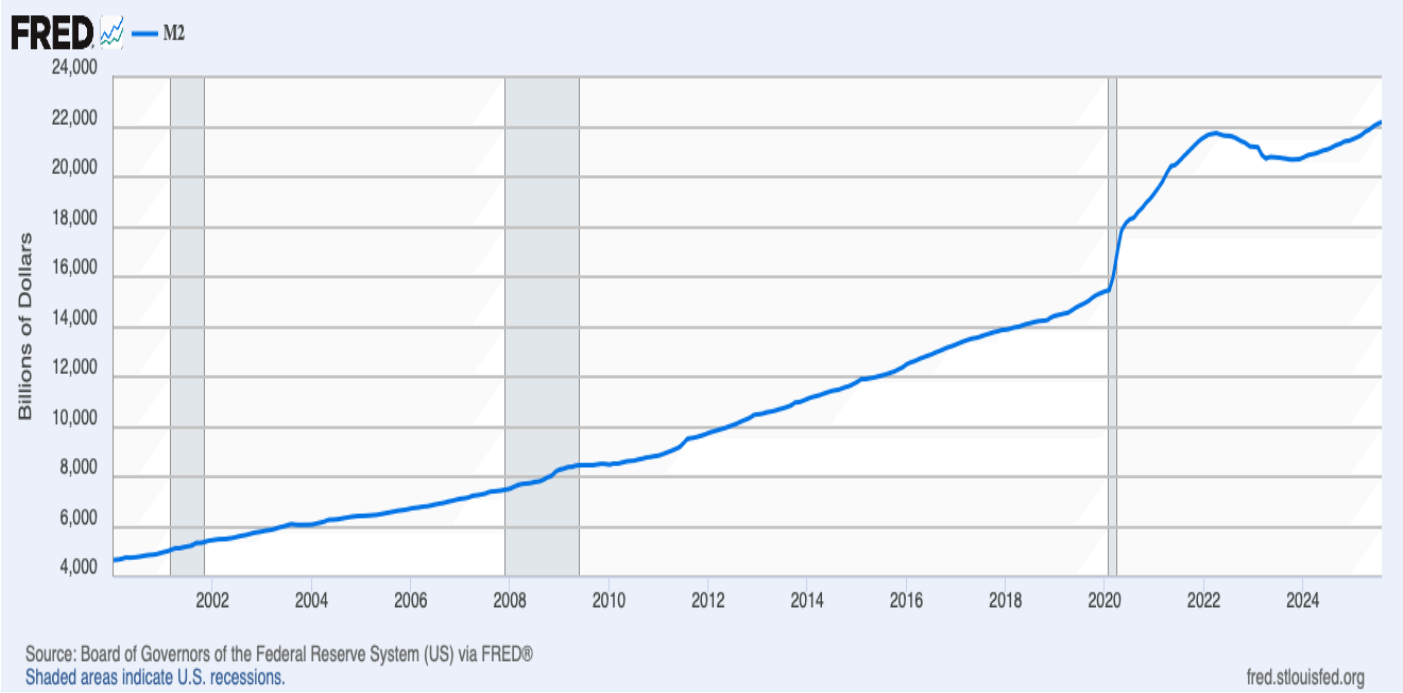

Figure 2. M2 Money Supply. Data from *Federal Reserve Bank of St. Louis, M2 Money Stock (M2SL).*

The Federal Reserve has increased the U.S. money supply at an average rate of just under 7% per year since the turn of the century. This ongoing monetary expansion helps explain why university endowments and other long-term funds struggle to keep pace with rising operating expenses. The true hurdle rate for asset performance is thus defined by the pace of currency debasement rather than nominal returns. Historically, Bitcoin has outperformed this threshold across multi-year investment horizons, offering a compelling inflation-hedging profile.

3.1 Bitcoin CAGR (Compound Annual Growth Rate)

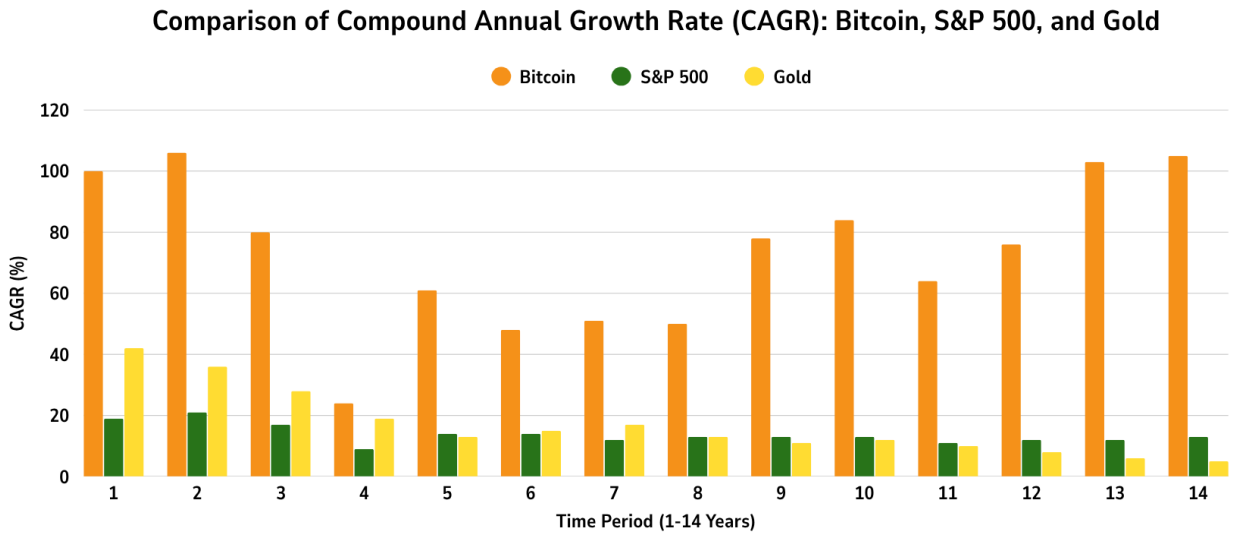

Figure 3. Bar Graph Comparing CAGR over 14 years for Bitcoin, Gold, and S&P 500

As of September, 6, 2025. (56) [A.1–A.4].

3.2 Bitcoin ROI

Time Period	Bitcoin ROI	S&P 500 ROI	Gold ROI
1 year	100%	19%	42%
5 years	973%	93%	86%
10 years	45,587%	231%	222%

Figure 4. A table that displays the comparative return on investment (ROI) for Bitcoin, Gold, and the S&P 500 across three time periods: 1 year, 5 years, and 10 years.

(56) As of September 6, 2025

4. Institutional Adoption

Bitcoin's integration into institutional portfolios has accelerated, with corporations, financial institutions, and nation-states utilizing Bitcoin treasury strategies as innovative long term investments.

4.1 Corporate Adoption

BlackRock: The iShares Bitcoin Trust (IBIT) is the most successful ETF in history. Larry Fink, CEO of Blackrock and the largest asset manager in the world, repeatedly refers to Bitcoin as digital gold. [21,22]

Strategy (Michael Saylor): MicroStrategy is currently the world's largest institutional holder of Bitcoin. CEO Micheal Saylor, pioneered the Bitcoin treasury strategy in 2020 to secure his company's cash reserve against the relentless inflationary pressure of monetary debasement [23,24,25].

Fidelity: Fidelity Digital Assets was launched in October 2018 as a dedicated institutional platform offering enterprise-grade custody and trading services for digital assets, focusing first on Bitcoin and later expanding its offerings. The platform provides "cold storage" solutions—offline, securely vaulted storage—a key differentiator targeting institutional needs. (offline, vaulted storage) [27,28]

4.2 Banking Adoption

JPMorgan became the first bank to take advantage of new regulatory clarity to begin their Bitcoin treasury. They partnered with Coinbase for institutional clients in 2025. Clients can now convert credit card reward points into USDC. [29]. This strategic partnership highlights the increasing integration between traditional finance and the Bitcoin ecosystem.

4.3 Nation-State Bitcoin Adoption

USA: The U.S. Strategic Bitcoin Reserve, established in 2025, marks a pivotal step in recognizing Bitcoin as a secure national asset. Growing bipartisan support reflects the government's commitment to integrating Bitcoin into the future of finance, fostering institutional adoption and regulatory clarity. [17]

United Arab Emirates: Abu Dhabi's sovereign wealth fund Mubadala disclosed a $500 million stake in BlackRock's iShares Bitcoin Trust (IBIT). Filing released May 2025. UAE expanding crypto exposure through sovereign wealth fund investments [31].

El Salvador: El Salvador became the first country to adopt Bitcoin as legal tender in September 2021, aiming to promote financial inclusion, attract investment, and provide more efficient remittance options. El Salvador's strategic Bitcoin reserve has demonstrated exceptional performance, positioning El Salvador as a model for sovereign digital asset strategies in emerging markets.

5. University Bitcoin Adoption

The wave of university Bitcoin treasury adoption is just beginning. Institutions of higher education are increasingly engaging with Bitcoin, both as an investment vehicle and a means of accepting donations. The exponential growth of Bitcoin can have a significant impact on endowments over multi decade time periods.

Harvard: Harvard University's Endowment has made an initial investment of $117 million into the BlackRock Bitcoin ETF. This allocation highlights the institution's forward-looking stance on the future of financial technology and its potential influence on portfolio performance. The move signals an acknowledgement of the struggles endowments face today and a notable recognition of Bitcoin as an emerging asset class. [32,33]

UPenn: The University of Pennsylvania received a $5 million donation in 2021. This donation would be worth significantly more, had the institution chosen to keep the donation in Bitcoin instead of liquidating it and converting it into fiat. [34].

King's College: The King's College, New York City, became the first university to accept Bitcoin for tuition payments, in 2014. (35) As the first institution of its kind to accept digital currency, The King's College positions itself as a forward-thinking participant in higher education finance. This decision reflects an innovative approach to integrating new technologies into institutional strategy and underscores the College's role as a leader in adopting modern financial practices.

6. Challenges for University Endowments

University endowments are navigating a complex landscape marked by significant fiscal pressures, operational challenges, and evolving demographic shifts. Political and regulatory changes are driving increased taxes, higher payout requirements, and limiting federal funding. Meanwhile, rising operating expenses continue to outpace inflation, and demographic trends contribute to enrollment declines, all of which create uncertainty and require strategic risk management to maintain long-term financial stability and prevent underperformance. Endowment managers face the ongoing task of balancing investment returns with maintaining sufficient liquidity to meet university commitments, while also adapting to the broader political and economic environment. Sophisticated risk frameworks and contingency planning have become essential to navigating this new terrain, emphasizing collaboration across university leadership and financial officers to manage volatility and funding risks effectively.

6.1 Taxes

University endowments have long supported their institutions through consistent asset payouts and by seeking high returns, often through significant investments in private markets. However, recent policy and regulatory changes now require greater liquidity, higher payout rates, and increased taxation, compounded by frozen federal funds and diminished research grants. Additionally, the loss of tax-exempt status and tighter restrictions on international student enrollment, a vital revenue source, present significant financial challenges, threatening the stability these endowments have traditionally provided. (36)

6.2 Operating Expenses

University endowments face rising operating expenses that are outpacing both inflation and revenue growth. In 2024, expenses rose by 6.5%, while inflation increased only 3.0%, with a four-year expense growth total of 27%. Endowment distributions now fund 14–16% of annual university budgets, and in some cases, up to 19%. At Harvard, expenses increased by 9% in FY 2024, reducing its operating surplus by over 75% despite its $50B+ endowment . Most institutions fell short of the 8% return needed to sustainably support these costs. Spending flexibility is also limited—50–80% of endowment assets are legally or donor-restricted . These challenges require strategic planning in spending, investment policy, and cost control to maintain long-term financial health [37-41].

Since 2000, the Federal Reserve's broad money supply (M2) has expanded at a compound annual growth rate of nearly 7%, significantly outpacing real GDP growth. This structural increase in liquidity has translated into persistent inflationary pressures, particularly within non-tradable sectors such as higher education. University operating expenses—driven by wage inflation, administrative expansion, and capital maintenance—have risen at an average annual rate exceeding 5%, eroding the real spending power of endowments. When the effective rate of monetary debasement serves as the hurdle rate for capital preservation, Bitcoin's multi-year performance demonstrates a consistent capacity to outperform traditional inflation-adjusted benchmarks.

6.3 Inflation

Inflation poses a significant challenge to university endowments by eroding the real value of investment returns and increasing operational costs. In 2022, operating expenses grew by 11.1%, while endowment spending rose only 4.8%, failing to keep pace with rising prices. Additionally, the Higher Education Price Index has historically exceeded CPI by about 0.8 percentage points annually, offering a more accurate benchmark for institutional cost inflation[42,43].

6.5 Enrollment Decline

Enrollment in higher education is experiencing significant declines, driven by demographic shifts and changing preferences. The number of U.S. high school graduates is projected to decrease by 15% between 2025 and 2037 due to the "demographic cliff," with public two-year colleges facing a 21% drop, private four-year schools a 16% decline, and public four-year institutions a 13% reduction (1). California alone anticipates a 9% decrease in high school graduates by 2031 (2). Overall college enrollment has fallen 13.5% between 2012 and 2022, with sharper declines seen at two-year institutions; conversely, graduate enrollment has grown more than 10%, signaling a shift toward advanced study even as the undergraduate base contracts (5) [44-46].

6.6 Risk Management

University endowments face growing risk from expanding alternative asset allocations, which can increase overall portfolio volatility (1). Effective risk management requires integrating Enterprise Risk Management (ERM) into strategic planning, emphasizing leadership and adaptability (2). However, nearly half of higher education institutions still lack a formal ERM framework, often due to limited leadership support and resources (3) [47–49].

7. Bitcoin Endowment Strategies

Bitcoin Endowment Strategies represent an innovative approach for university endowments seeking to integrate secure, advanced technology into their portfolios. By adding Bitcoin, these endowments embrace a scarce digital asset that offers diversification and potential enhancement

of economic performance under a regulated framework. This strategy positions universities to leverage the future of finance through a technological asset that aligns with long-term growth and risk management goals. Harvard's recent adoption of Bitcoin into its endowment marks a pioneering step, signaling broader institutional recognition of Bitcoin's role in modern endowment management.

7.1 Bitcoin Fundraising Campaigns (Understanding Bitcoin Alumni)

Bitcoin enthusiasts require a nuanced approach in fundraising efforts, one that acknowledges their unique perspective and values. Historically, Bitcoin adherents have viewed themselves as outsiders, drawn from cypherpunk subcultures, technology enthusiasts, and libertarian economic theorists. They converged around Bitcoin due to its countercultural and anti-authoritarian ethos. Today, Bitcoin represents an asset class valued in trillions of dollars. This community would welcome acceptance from traditional institutions, such as their alma maters. They constitute a substantial demographic with considerable wealth that has yet to be approached for university donations in a manner respectful of their needs and cultural context.

7.2 Accepting Bitcoin Donations

Many Bitcoin holders face substantial capital gains taxes upon liquidation of their assets, providing a strong financial incentive to donate to nonprofit institutions. Platforms designed for accepting Bitcoin donations are straightforward, efficient, and can be seamlessly integrated into existing university payment systems.

7.3 Bitcoin Education

University administrations would derive considerable benefit from dedicated Bitcoin training sessions. Comprehensive seminars elucidating the technological, cryptographic, financial, social, accounting, cultural, economic, historical, and misconceptions surrounding Bitcoin would enhance institutional understanding.

7.4 Custody

Secure custody solutions are paramount for universities integrating Bitcoin into their endowments. Professional consultation is advised in order to navigate this complex process and implement advanced measures such as multi-signature wallets and enterprise-grade storage options to ensure robust asset protection. Proper custody minimizes risks, as virtually all Bitcoin losses stem from inadequate custody solutions. With expert guidance, universities can confidently secure their digital assets and comply with evolving regulatory standards.

7.5 Tax Implications

Given Bitcoin's historical price appreciation, long-term holding is generally advisable. Monetary expansion, inflation, and established trends exert upward pressure on scarce assets like Bitcoin. The fixed supply of 21 million coins amplifies this effect. The optimal strategy involves borrowing against Bitcoin holdings to fund university expenses, thereby

avoiding capital gains taxes. This approach has demonstrated unparalleled endowment returns over the past decade. By employing this method, university endowments can simultaneously increase in value, cover operational expenses, and potentially appreciate significantly if historical patterns persist.

7.6 Benefits

Bitcoin presents university endowments with a compelling opportunity to engage with a secure, scarce, and innovative asset class that has demonstrated resilience and exceptional performance over time. As the best performing asset of the past decade, Bitcoin offers a unique hedge against inflation and monetary debasement, driven by its fixed supply of 21 million coins and increasing demand from both retail and institutional investors. With its transparent, decentralized technology, Bitcoin has never been hacked, further reinforcing its reputation as one of the most secure digital monetary systems available. For university endowments facing rising costs, uncertain funding, and long-term sustainability challenges, Bitcoin represents not just a diversification tool but a bridge to the future of finance. The growing institutional adoption—spanning corporations, banks, and even sovereign funds—signals a paradigm shift that universities can no longer ignore. As a safe, efficient, and increasingly accepted asset, Bitcoin aligns well with forward-thinking investment strategies. Its engineered scarcity and robust security model position it to meet rising demand in a digital-first financial world. By embracing this technology, universities can access a new donor base, preserve wealth in a volatile economic environment, and redefine their role in shaping the future of institutional finance.

7.7 Complexity

While the advantages and economic rationale for Bitcoin Endowments are compelling, the field remains complex and rapidly evolving. Universities must prioritize ongoing Bitcoin education alongside a comprehensive macroeconomic strategy to stay informed and adaptive. Continuous learning and market analysis are essential for navigating this dynamic, advanced environment and making sound financial decisions that secure future endowment performance.

8. Conclusion

Bitcoin Treasury Strategies offer university endowments a secure, advanced, and innovative framework for integrating Bitcoin into their financial portfolios. This approach not only diversifies investments but also leverages Bitcoin's scarce digital nature to enhance long-term performance and hedge against economic volatility. The growing adoption of Bitcoin Treasury Strategies by leading academic institutions, such as Harvard, underscores the asset's evolving role within a regulated financial ecosystem. By embracing this technology, universities can position their endowments at the forefront of the future of finance, transforming potential risks into sustainable opportunities.

The strategic implementation of Bitcoin into endowments also addresses key challenges faced by universities in today's complex macroeconomic environment. These strategies foster resilience by coupling Bitcoin's unique digital hard money principles with professional risk management and custody solutions. Furthermore, they facilitate engagement with a new generation of donors and stakeholders who prioritize forward-thinking financial stewardship. As this report outlines,

adopting Bitcoin within an endowment framework requires ongoing education, regulatory awareness, and adaptive management, empowering universities to optimize returns and secure their long-term economic health. The digital scarcity embedded in the blockchain secures the role of Bitcoin as the new digital gold for the future of university endowments.

9. About the Authors

Dr. John Dorrell
Economist

Dr. John Dorrell is a faculty member in the Department of Economics at the John H. Sykes College of Business, University of Tampa. Dr. Dorrell brings a rigorous and innovative approach to the study of digital assets. He holds a Ph.D. in Economics from Pusan National University in South Korea, an MBA from California State University, and a BS in Real Estate from Virginia Tech University.

Dr. Dorrell's research lies at the intersection of cryptocurrency and applied economics, with a focus on the evolving role of Bitcoin in institutional finance. His current work explores the economics of cryptocurrency, Bitcoin's integration with real estate markets, and the role of stablecoins in global financial systems. His recent co-authored paper, "Is Active Bitcoin Supply Decreasing? An Empirical Analysis," was published in the Journal of Economics and Finance in 2024.

A frequent speaker at international conferences—including engagements in Dubai, Tokyo, and Tampa—Dr. Dorrell is actively shaping academic and policy conversations around the adoption of Bitcoin in traditional financial ecosystems. He is also the founder of eCoinomics, a Bitcoin consulting firm specializing in strategic implementation and advisory services for institutions exploring cryptoassets.

Dr. Dorrell's work reflects a commitment to bridging theoretical economics with real-world application, particularly in the emerging domain of Bitcoin endowments and blockchain-based financial infrastructure.

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Wesley is a Florida native, Chemical and Biological Engineer, and has been a strategic consultant in the Bitcoin space for 8 years. He developed a love for science and research while working on mRNA silk bone implants for 3 years before switching to product development in the marketing world at a startup for 2 years.

Following the path of being on the cutting edge, he founded the Bitcoin Bay Foundation becoming the first Bitcoin meetup to incorporate as a 501(c)3 and inspiring over a dozen other groups to follow suit. With the aim of providing a blueprint for doing so nationally, Bitcoin Bay organizes and coordinates the Bitcoin community in the Greater Tampa Bay area.

Moving from local to state policy Wesley also serves as the Executive Director for the Florida Blockchain and Business Association. Again setting the standard for state policy with the passage of the nation's first Anti-Central Bank Digital Currency bill.

Based in Tampa, Wesley is working to build a prosperous, resilient, community on a sound money standard.

About eCoinomics

eCoinomics is a Bitcoin consulting firm.

Based in beautiful Tampa Bay, we foster a dynamic local community combined with Bitcoin networks across the globe. Our expert team collaborates closely with clients to develop a clear vision and implement tailored strategies that leverage the unique advantages of Bitcoin as a reserve asset. Our research focus is to apply real world economics to the nascent field of Bitcoin and digital assets.

We offer Bitcoin training for executives, and Treasury Strategies for individuals, family inheritance, and institutions.

Our mission is to onboard the world to the future of finance.

References

1. Nakamoto, S. (2008). Bitcoin: A peer-to-peer electronic cash system. https://bitcoin.org/bitcoin.pdf

2. Ammous, S. (2018). The Bitcoin standard: The decentralized alternative to central banking. Wiley.

3. Dorrell, J., Kancharla, A., & Ambrosia, M. (2022). Green Crypto Mining: A Quantitative Analysis of the Profitability of Bitcoin Mining Using Excess Wind Energy. J. Energy & Dev., 48, 1

4. WisdomTree Investments, Inc. (2025). WisdomTree Bitcoin Fund: Unaudited financial statements for the period ended March 31, 2025. https://www.wisdomtree.com/-/media/us-media-files/documents/resource-library/crypto-assets/btcw-10-q-for-the-period-ended-03-31-25.pdf

5. Alden, L. (2023). Broken money: Why our financial system is failing us and how we can make it better. Timestamp Press.

6. Ambrosia, M., Dorrell, J., & Stockwell, T. (2024). Is active bitcoin supply decreasing? An empirical analysis. Journal of Economics and Finance, 48(4), 1166-1186.

7. River. (2025). Bitcoin adoption report 2025. https://river.com/learn/files/river-bitcoin-adoption-report-2025.pdf

8. Wainwright, Z., & Kuiper, C. (2024). A closer look at Bitcoin's volatility. Fidelity Digital Assets. https://www.fidelitydigitalassets.com/research-and-insights/closer-look-bitcoins-volatility

9. MacroMicro. (n.d.). U.S. Treasury MOVE Index. https://en.macromicro.me/charts/35584/us-treasury-move-index

10. Bitbo. (n.d.). Bitcoin volatility. https://bitbo.io/volatility/

11. United Nations Office on Drugs and Crime. (n.d.). Money laundering: Overview. https://www.unodc.org/unodc/en/money-laundering/overview.html

12. KYC Hub. (n.d.). Money laundering statistics. https://www.kychub.com/blog/money-laundering-statistics/

13. Chainalysis. (2025, March). The 2025 crypto crime report. https://www.chainalysis.com/wp-content/uploads/2025/03/the-2025-crypto-crime-report-release.pdf

14. Rani, N., Sharma, P., & Arora, A. (2024). Credit card fraud detection using AI and machine learning techniques. IEEE Xplore. https://ieeexplore.ieee.org/abstract/document/11021207

15. Juniper Research. (2024, October 10). Losses from online payment fraud to exceed $362 billion globally by 2028. https://www.juniperresearch.com/press/losses-online-payment-fraud-exceed-362-billion/

16. River Financial. (2025). River Bitcoin adoption report 2025. https://river.com/learn/files/river-bitcoin-adoption-report-2025.pdf

17. Establishment of the Strategic Bitcoin Reserve and United States Digital Asset Stockpile – The White House https://www.whitehouse.gov/presidential-actions/2025/03/establishment-of-the-strategic-bitcoin-reserve-and-united-states-digital-asset-stockpile/

18. International Monetary Fund. (2025). Global financial stability report: Enhancing resilience amid uncertainty (April 2025 edition). https://www.imf.org/en/Publications/GFSR

19. Lobaccaro, G., et al. (2025). AI data centers could hit 23GW by 2030: A sustainability challenge. Joule. https://doi.org/10.1016/j.joule.2025.101961

20. Lawrence, B. (2025). Demand response strategies for a decentralized grid [Master's thesis, University of North Carolina]. https://doi.org/10.17615/gvsj-ss32

21. BlackRock. (n.d.). Institutions. https://www.blackrock.com/institutions/en

22. Coin World. (2025). BlackRock iBit Bitcoin ETF hits $1 billion AUM in – years. AInvest. https://www.ainvest.com/news/blackrock-ibit-bitcoin-etf-hits–billion-aum—years-/

23. BitBo. (n.d.). MicroStrategy Bitcoin treasury. https://treasuries.bitbo.io/microstrategy

24. CoinTelegraph. (2025). Michael Saylor's MicroStrategy turns – years buying Bitcoin. https://cointelegraph.com/news/michael-saylor-strategy–years

25. MicroStrategy. (2025). Strategy announces second-quarter – financial results. https://www.strategy.com/press/strategy-announces-second-quarter–financial-results_–

26. BitBo. (n.d.). Who accepts Bitcoin? https://bitbo.io/tools/who-accepts-btc/

27. Fidelity Digital Assets. (n.d.). Digital asset custody and trading platform. https://www.fidelitydigitalassets.com/trading-custody

28. Fidelity Institutional. (n.d.). Investment solutions and strategies: Digital assets. https://institutional.fidelity.com/advisors/investment-solutions/strategies/digital-assets

(https://www.cnbc.com/2018/10/15/fidelity-launches-trade-execution-and-custody-for-cryptocurrencies.html)

29. Estrada, S. (2025, May 15). JPMorgan's public blockchain move could set a new standard for institutional finance. Fortune. https://fortune.com/crypto/2025/06/18/jpmorgan-chase-partners-deposit-token-crypto-institutional-clients-coinbase-partnership/

30. Coin World. (2025, August 16). Bitcoin news today: Norway's sovereign wealth fund boosts Bitcoin holdings by 83%. Ainvest. https://www.ainvest.com/news/bitcoin-news-today-norway-sovereign-wealth-fund-boosts-bitcoin-holdings-83-2508/

31. Nasdaq. (2025). Abu Dhabi's sovereign wealth fund reveals $500 million investment in BlackRock's Bitcoin ETF. https://www.nasdaq.com/articles/abu-dhabis-sovereign-wealth-fund-reveals-500-million-investment-blackrocks-bitcoin-etf

32. Ortec Finance. (2025, July 10). New US administration policies could cause Harvard's endowment fund to plummet up to 40 percent. https://www.ortecfinance.com/en/about-ortec-finance/news-and-events/new-us-administration-policies-could-cause-harvards-endowment-fund-to-plummet-up-to-40-percent

33. Harvard Magazine. (2024). *Financial report fiscal 2024*. https://www.harvardmagazine.com/2024/10/financial-report-fiscal-2024

34. The Daily Pennsylvanian. (2021, June 2). Wharton receives $5 million Bitcoin donation, the largest crypto donation in Penn history. https://www.thedp.com/article/2021/05/wharton-crypto-donation

35. The King's College Is First U.S. College to Accept Bitcoin." *The King's College*, www.tkc.edu/stories/kings-is-first-u-s-college-to-accept-bitcoin/.

36. College Endowment Tax Is Leading to Hiring Freezes and Could Mean Cuts in Financial Aid." U.S. News & World Report, 8 Aug. 2025, www.usnews.com/news/best-states/massachusetts/articles/2025-08-08/college-endowment-tax-is-leading-to-hiring-freezes-and-could-mean-cuts-in-financial-aid.

37. Institutional Investor. (2024). *Most endowment returns aren't high enough to cover universities' costs*. https://www.institutionalinvestor.com

38. National Association of Scholars. (2024). *Priced out: The true cost of university endowments*. https://www.nas.org

39. Cambridge Associates. (2023). *Endowment spending amid record inflation*. https://www.cambridgeassociates.com/en-as/insight/endowment-spending-amid-record-inflation/

40. Commonfund. (2023). *Don't let inflation be a one-two punch for your endowment*. https://www.commonfund.org/blog/dont-let-inflation-be-a…

41. Monitor ICEF. (2024, December). *New research on the declining high school graduate pool for US higher education*. https://monitor.icef.com/2024/12/new-research-on-the-declining-high-school-graduate-pool-for-us-higher-education/

42. Nietzel, M. T. (2024, December 11). As 2025's demographic cliff looms, how far will college enrollment fall? *Forbes*. https://www.forbes.com/sites/michaeltnietzel/2024/12/11/as-2025s-demographic-cliff-looms-how-far-will-college-enrollment-fall/

43. Inside Higher Ed. (2024, December 11). College-age demographics begin steady, projected decline. https://www.insidehighered.com/news/admissions/traditional-age/2024/12/11/college-age-demographics-begin-steady-projected-decline

44. Public Policy Institute of California (PPIC). (2024). *The future of higher education enrollment in California*. https://www.ppic.org/publication/the-future-of-higher-education-enrollment-in-california/

45. National Conference of State Legislatures (NCSL). (2024). *Trends in higher education: Understanding policy and outcomes*. https://www.ncsl.org/education/trends-in-higher-education-understanding-policy-and-outcomes

46. Perdue, P. (2013). *University endowment management: An empirical analysis of endowment risks, asset allocations, and debt ratios*. Princeton University. http://arks.princeton.edu/ark:/88435/dsp01s1784k81m

47. University of Maryland, Baltimore. (2024). *Linking enterprise risk management and strategic planning at the University of Maryland, Baltimore*. EDUCAUSE Review. https://er.educause.edu/articles/2024/11/linking-enterprise-risk-management-and-strategic-planning-at-the-university-of-maryland-baltimore

48. Institute for Resilient Organizations, Communities, and Environments. (2025). *2025 DRU national higher education enterprise risk management survey*. https://resilient.uoregon.edu/dru/2025survey

49. Bitcoin Market Capitalization and Supply Data." CoinMarketCap, 2025, www.coinmarketcap.com/currencies/bitcoin/.