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Digital Asset Rating Agency GmbH
Transforming Investment into Sustainable Wealth

BITCOIN AT AN INFLECTION POINT

Network Economics and the Path to Institutional Adoption

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Executive Summary

Bitcoin has evolved from a cryptographic experiment into a globally recognized digital asset class, prompting significant interest in developing valuation frameworks that resonate with institutional investors and policymakers. This white paper, the first in a three-part Bitcoin 2.0 series, explores Bitcoin's emerging role in the global financial landscape, emphasizing the impact of geopolitical shifts, specifically de-dollarization, and pivotal regulatory developments in the United States and Hong Kong.

Leveraging rigorous data analysis alongside theoretical models, this report presents two primary valuation approaches: the Network Sustainability Model and the Gold Parity Model. Together, these frameworks highlight Bitcoin's potential trajectory as a strategic reserve asset and digital store of value in the coming decades.

By contextualizing Bitcoin within broader macroeconomic and regulatory trends, this white paper illustrates why Bitcoin's value proposition extends beyond speculative interest toward becoming a cornerstone of new global monetary dynamics.

Introduction

Since its inception in 2008, Bitcoin has progressed from an obscure project among cryptography enthusiasts to a household name capturing attention from technologists, investors, governments, and the general public. Bitcoin's price history, marked by multiple record highs and challenging bear markets, has fueled ongoing debate: is the current bull run indicative of Bitcoin's emergence as a recognized store of value, or merely another speculative bubble?

Today, Bitcoin stands at the crossroads of several powerful forces shaping its global role. Geopolitical pressures such as de-dollarization, coupled with evolving regulatory frameworks, are reshaping how Bitcoin is perceived and utilized worldwide. This landscape suggests Bitcoin's future will be influenced not only by market forces but also by macroeconomic strategy, political considerations, and institutional adoption.

This white paper examines these dynamics, analyzing the geopolitical context, regulatory milestones, and fundamental valuation models that together offer a comprehensive view of Bitcoin's prospective trajectory.

Global Monetary Shifts and Bitcoin's Strategic Position

The De-Dollarization and Reserve Asset Diversification

Global finance is experiencing a significant transformation. Governments and financial institutions are reassessing their reserve assets amid concerns about currency debasement, mounting sovereign debt, and the durability of U.S. dollar dominance in international trade. This phenomenon, known as de-dollarization, describes a gradual shift among nations to reduce dependence on the U.S. dollar for trade settlement and reserve holdings.

Historically, the U.S. dollar has served as the backbone for global finance and trade. However, increased use of financial sanctions and the politicization of international payment systems such as SWIFT, particularly visible during the Russia-Ukraine conflict, have highlighted risks for countries dependent on the dollar system. These developments have heightened interest in alternative reserve assets offering political neutrality and protection from systemic vulnerabilities.

Gold has traditionally served as a safe haven. Central banks worldwide have markedly increased gold purchases in recent years to diversify from fiat currency risks. In 2022 and 2023, central banks accounted for nearly 25% of global gold demand, acquiring over 1,000 metric tons annually.

Bitcoin presents compelling parallels in this environment. Its fixed supply of 21 million coins hardcoded into its protocol and decentralized architecture provide scarcity and neutrality similar to gold, earning it the moniker "digital gold." A 2024 VanEck analysis projects that as the international monetary system transforms, Bitcoin could emerge as a significant reserve asset alongside gold, potentially facilitating substantial global trade by 2050. Under VanEck's projections, central banks might allocate approximately 2.5% of their reserves to Bitcoin by mid-century, which would significantly elevate Bitcoin's market value and institutional relevance.

Recent industry reports suggest this shift may accelerate. Fidelity Digital Assets forecasts that 2025 could mark a defining year when nation-states, central banks, and sovereign wealth funds begin actively acquiring Bitcoin for strategic reserves. During periods of high inflation, currency pressure, and soaring sovereign debt, finite assets like Bitcoin represent an effective hedge against macroeconomic instability.

Sovereign experimentation reinforces this narrative. El Salvador's 2021 adoption of Bitcoin as legal tender marked the first national-level endorsement of Bitcoin as a treasury asset. The BRICS bloc engaged in discussions during 2023 about establishing alternative reserve currencies, potentially backed by commodity assets. Various nations and subnational entities are exploring pilot programs for Bitcoin accumulation or mining operations. Interest from countries including the Central African Republic, Brazil, and Bhutan signals growing recognition that Bitcoin could become an established component of official reserves.

These geopolitical trends point toward a future where Bitcoin may be held by central banks with the same regularity as foreign currency or gold, serving as a politically neutral, decentralized hedge in an increasingly fragmented global financial order.

Regulatory Frameworks and Market Infrastructure

Stablecoin Legislation and Treasury Demand

Regulatory clarity has emerged as a key driver of Bitcoin's institutional adoption. Two legislative milestones underscore this shift: the U.S. GENIUS Act and Hong Kong's Stablecoin Bill.

The recently enacted GENIUS Act establishes a comprehensive federal framework governing payment stablecoins. It mandates that stablecoins maintain 1:1 backing by low-risk reserve assets such as cash or U.S. Treasury securities. This legislation provides regulatory certainty, consumer protections, and stability within the U.S. digital asset ecosystem, encouraging broader adoption of blockchain-based payment solutions. While focused on stablecoins, the Act's emphasis on robust reserve backing increases demand for U.S. Treasury instruments, potentially benefiting Bitcoin indirectly as institutions build diversified digital asset portfolios.

Hong Kong is poised to implement its Stablecoins Bill by the end of 2025, creating a licensing regime for fiat-backed stablecoin issuers. This framework requires issuers to maintain high-quality liquid asset reserves and meet stringent transparency standards. The legislation aims to foster investor protection, stability, and confidence within Hong Kong's growing blockchain sector. Combined, these reserve standards could generate an estimated \$900 billion in additional global demand for treasury assets, representing capital flows that may complement Bitcoin's role as a store of value bridging regional reserve policies.

Strategic Relevance of Bitcoin

Beyond economic considerations, Bitcoin's decentralized design carries strategic significance. For nations experiencing hyperinflation, economic sanctions, or financial instability, Bitcoin offers a mechanism to preserve sovereignty and maintain commerce independent of traditional fiat controls. Policymakers recognize this defensive value: some U.S. political figures have proposed mining or stockpiling Bitcoin as a matter of national security, comparable to energy or strategic metal reserves.

Simultaneously, non-aligned states and geopolitical rivals view Bitcoin as a tool to reduce U.S. monetary dominance. With no nation controlling Bitcoin's protocol or network, it functions as neutral digital territory free from centralized manipulation. In

this era of multipolar financial power dynamics, Bitcoin stands as a unique mutual reserve asset capable of bridging mistrust between states through shared neutrality.

Valuation Frameworks

Bitcoin's unique characteristics and evolving role in the global financial system require specialized valuation models. This section presents two frameworks: the Network Sustainability Model and the Gold Parity Model. These offer insights into Bitcoin's potential long-term value. By analyzing Bitcoin's security economics and comparing its market capitalization to traditional store-of-value assets, these models illuminate factors driving Bitcoin's price trajectory and institutional adoption.

Network Sustainability Model

Bitcoin's monetary policy fixes total supply at 21 million coins. New issuance occurs through block subsidies awarded to miners, which halve approximately every four years. By the 2030s, these subsidies will approach near-zero, well before the final Bitcoin is mined around 2140. Network security, currently ensured by combined block subsidies and transaction fees, will ultimately depend primarily on transaction fees.

Bitcoin miners invest considerable resources, including electricity and hardware, to validate blocks and secure the blockchain. The cost to maintain these operations, estimated at \$30 to \$63 million daily, represents the network's security budget. Currently, this is financed predominantly through block rewards (6.25 BTC per block), supplemented by transaction fees.

As subsidies decrease, maintaining equivalent security levels requires rising transaction fees through either increased transaction volumes or higher per-transaction fees. A 2020 study by Nervos Network modeled average fees necessary at various Bitcoin price levels, assuming no block rewards. At a Bitcoin price of \$250,000, average fees would need to reach approximately \$850 to sustain current security levels. This implies either exponential growth in Bitcoin transaction volume with moderate fees, or significant fee increases as block subsidies diminish.

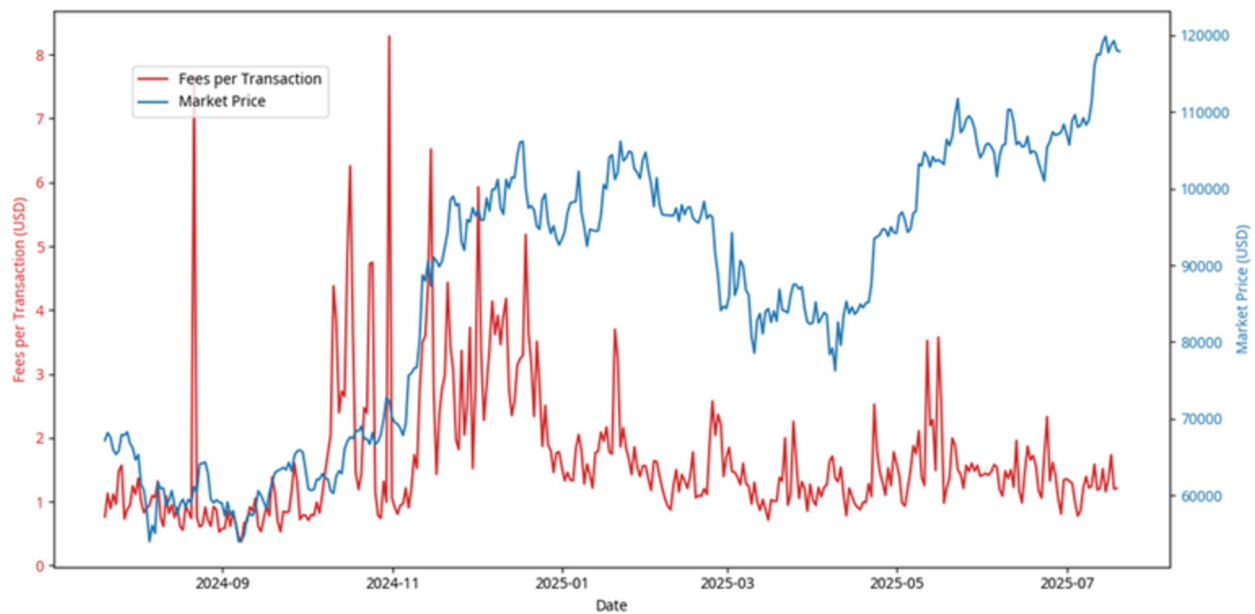


Figure 1: Average fees per transaction over time on the Bitcoin network

However, if Bitcoin's price appreciates substantially, the required fee in BTC terms decreases, making fee levels more feasible. At a hypothetical \$5 million per Bitcoin, \$850 equals just 0.00017 BTC, which is reasonable for high-value transactions.

The Network Sustainability Model therefore projects that Bitcoin will likely need to reach multi-million dollar valuations by mid-century to enable a smooth transition from subsidy-supported to fee-only security, preserving network integrity despite declining issuance incentives.

Gold Parity Model

Another valuation framework draws a direct comparison between Bitcoin and gold. Given Bitcoin's political neutrality, scarcity, and decentralized nature, it is often characterized as "digital gold." Many investors and industry leaders predict a future where Bitcoin achieves "gold parity," matching gold's total market capitalization.

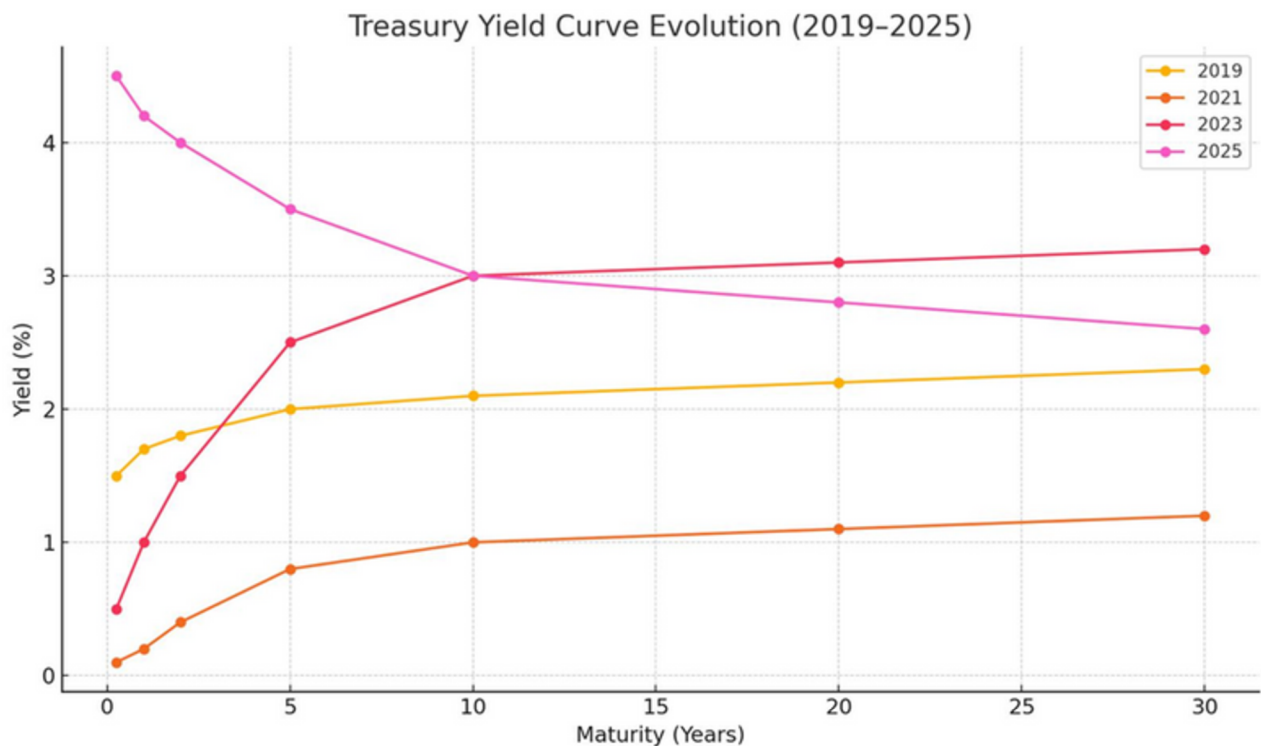
The World Gold Council estimates above-ground gold reserves at approximately 197,600 metric tons, representing a market capitalization near \$21 trillion at current prices. If Bitcoin reached this aggregate value with its fixed 21-million-coin supply, its price would approximate \$1,000,000 per BTC.



Figure 2: Market capitalization ratio between Bitcoin and gold over time

ARK Invest's 2023 "Big Ideas" report offers projections aligned with this vision, suggesting Bitcoin could reach \$1.48 million per coin by 2030. This forecast builds on increasing institutional adoption, growing recognition of Bitcoin as a store of value, and gradual integration into diversified investment portfolios. The gold parity thesis underscores Bitcoin's potential to complement or partially displace gold as a dominant wealth preservation instrument.

Exhibit 2: Yield Curve Evolution



The crumbling foundation of risk-free returns represents perhaps the most fundamental challenge to traditional portfolio construction. As we will see in the next section, this challenge is compounded by equally significant changes in how beta returns behave in the digital asset era.

Conclusion

Bitcoin's valuation and future role in global finance reflect a confluence of geopolitical trends, regulatory advances, and fundamental economic principles. Momentum from de-dollarization efforts and landmark regulatory acts in key financial jurisdictions strengthens the case for Bitcoin's emergence as a strategic reserve and store-of-value asset.

Analysis through the Network Sustainability and Gold Parity Models reveals that Bitcoin's price could appreciate to unprecedented levels, potentially reaching multi-million dollar territory, as it transitions to a secure, fee-supported network and approaches market capitalization parity with gold.

As nations, central banks, and institutional investors increasingly integrate Bitcoin into reserve strategies, Bitcoin's adoption could parallel that of traditional reserve assets. In a world facing currency debasement, geopolitical uncertainty, and fragmented monetary authority, Bitcoin's fixed supply, decentralization, and neutrality position it uniquely as a viable cornerstone of the emerging global monetary order.

We anticipate that Bitcoin will progressively establish itself as an essential component of institutional portfolios and national reserves. The convergence of geopolitical necessity, regulatory clarity, and network maturity will likely drive Bitcoin beyond its current speculative phase into a foundational role in global finance. As traditional monetary systems face mounting pressures from debt burdens and political fragmentation, Bitcoin is positioned to emerge not as an alternative to the existing order, but as its natural evolution. This transformation represents a fundamental shift in how value is stored and transmitted in the digital age.

This white paper represents the analysis and opinions of DARA. The views expressed are subject to change based on market conditions and new information. This document is for informational purposes only and should not be considered investment advice.

