



Bitcoin: The Crypto Craze

Key Macro Drivers and Implications for Fiduciaries

Washington, D.C. Estate Planning Council
October 18, 2021

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Expertise In

- Complex wealth management solutions for senior executives and ultra-high-net-worth individuals and families
- Sophisticated estate and financial planning
- Philanthropic planning and strategies

Sharon is president of Family Wealth, Eastern U.S. Region, for Wilmington Trust, N.A. She is responsible for overseeing the delivery of all Wealth Management services by teams of professionals, including planning, trust, investment management, family governance and education, family office, and private banking services, to high-net-worth clients located in the U.S. and internationally. Sharon also heads Wilmington Trust's National Divorce Advisory Practice.

Sharon has more than 25 years of experience in the wealth advisory arena and is a nationally recognized speaker and author in her field. She is frequently featured or quoted in publications such as the *Wall Street Journal* and *The New York Times*. Global media company *Forbes* features Sharon as a top Advisor in 2021 in two separate categories: One of the Top 100 Women Wealth Advisors in America, and a Best-In-New York Wealth Advisor. Leading business publication *Crain's* named Sharon to its 2020 inaugural list of the Most Notable Women in Financial Advice, an honor that recognizes leading women executives in New York City for their dedication to excellence in the financial industry and significant professional, civic, and philanthropic contributions. Sharon is a Fellow of the American College of Trust and Estate Counsel, a highly selective professional organization of preeminent peer-elected estate planning attorneys in the U.S. and internationally who are chosen based on outstanding reputation and exceptional skill. Sharon will be inducted into the Estate Planning Hall of Fame in 2021, a designation that recognizes individuals who have made outstanding lifetime achievements and contributions to the practice and profession of estate planning. This award is considered the height of accomplishment in this field. Only 125 people across the U.S. have received this award since its inception in 2004.

Sharon is a member of The Rockefeller University Committee on Trust and Estate Gift Plans, the New York Bankers Association Trust & Investment Division Executive Committee, the Estates, Gifts and Trusts Advisory Board for The Bureau of National Affairs and the Thomson Reuters Trusts & Estates Advisory Board. She chairs the Domestic Relations Committee of *Trusts & Estates* magazine, where she sits on the Board, and is on the Advisory Board of *Family Lawyer Magazine*. Sharon is a past chair of the New York City Bar Association's Trusts, Estates and Surrogate's Court Committee, and a past chair of the New York State Bar Association's Trusts and Estates Law Section Taxation Committee. She served on the Board of the American Brain Foundation and was a member of its finance committee.

Prior to joining Wilmington Trust, Sharon was Managing Director at Lazard, the internationally renowned global investment banking and management company. In her role as Head of Wealth Advisory of Lazard Wealth Management, she led the delivery of all wealth advisory services. Before that, she headed the Estate department at Fiduciary Trust Company International. Sharon began her career as a trusts & estates attorney at Rosenman & Colin (now Katten Muchin Rosenman LLP).

Sharon, who holds U.S., British, and Australian citizenships, earned a master of laws from the Boalt Hall School of Law at the University of California, Berkeley, and received a bachelor of arts and a bachelor of laws from the University of New South Wales, Australia.

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Expertise In

- Economic analysis
- Foreign exchange

Rhea is a Senior Economist with Wilmington Trust Investment Advisors (WTIA), a part of the M&T Bank family. She is responsible for monitoring and analyzing economic developments in domestic and international economies for the Investment Committee and the firm, as well as communicating the economic outlook to internal and external audiences. She is also a contributor to the firm's Wilmington Wire research blog.

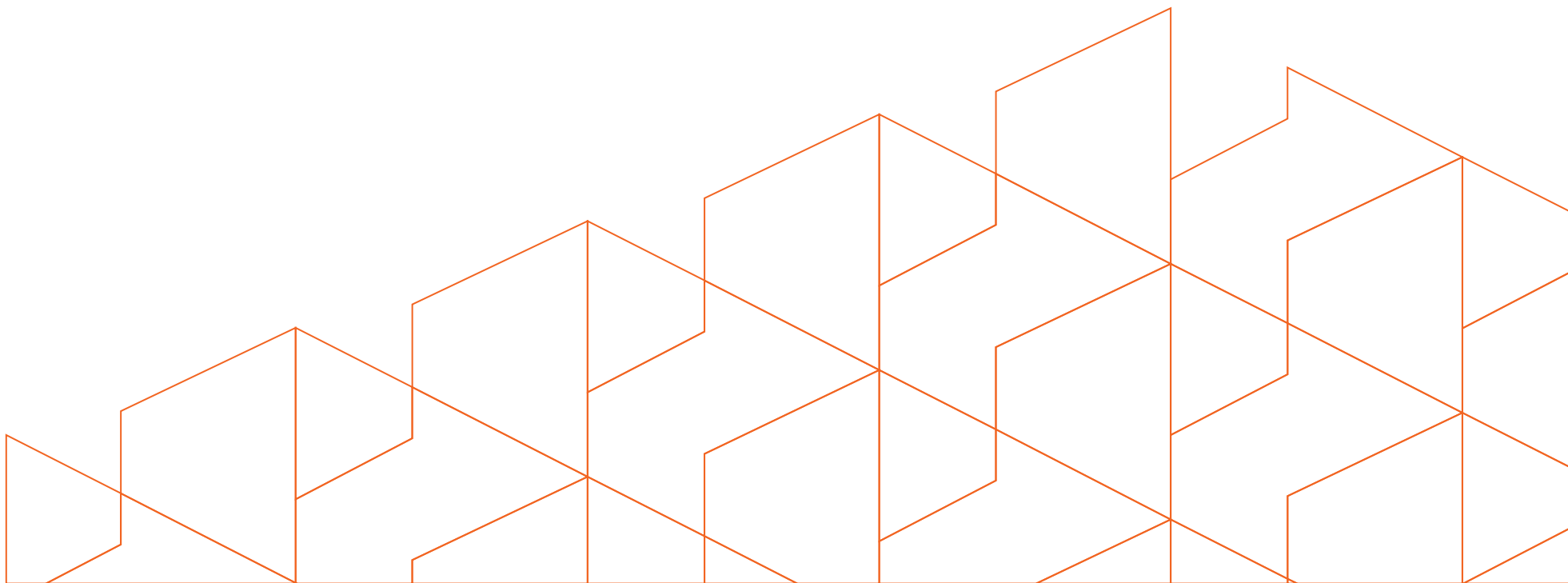
Prior to joining Wilmington Trust, she served as vice president in Foreign Exchange Sales at Lehman Brothers, where she provided primary sales coverage to institutional clients. Earlier in her career, she focused on foreign exchange research, where she helped to build models and write publications to explain currency market movements and trade ideas.

Rhea holds a bachelor's degree in economics and international studies with distinction from Yale University.

Bitcoin: The Crypto Craze

Key Macro Drivers

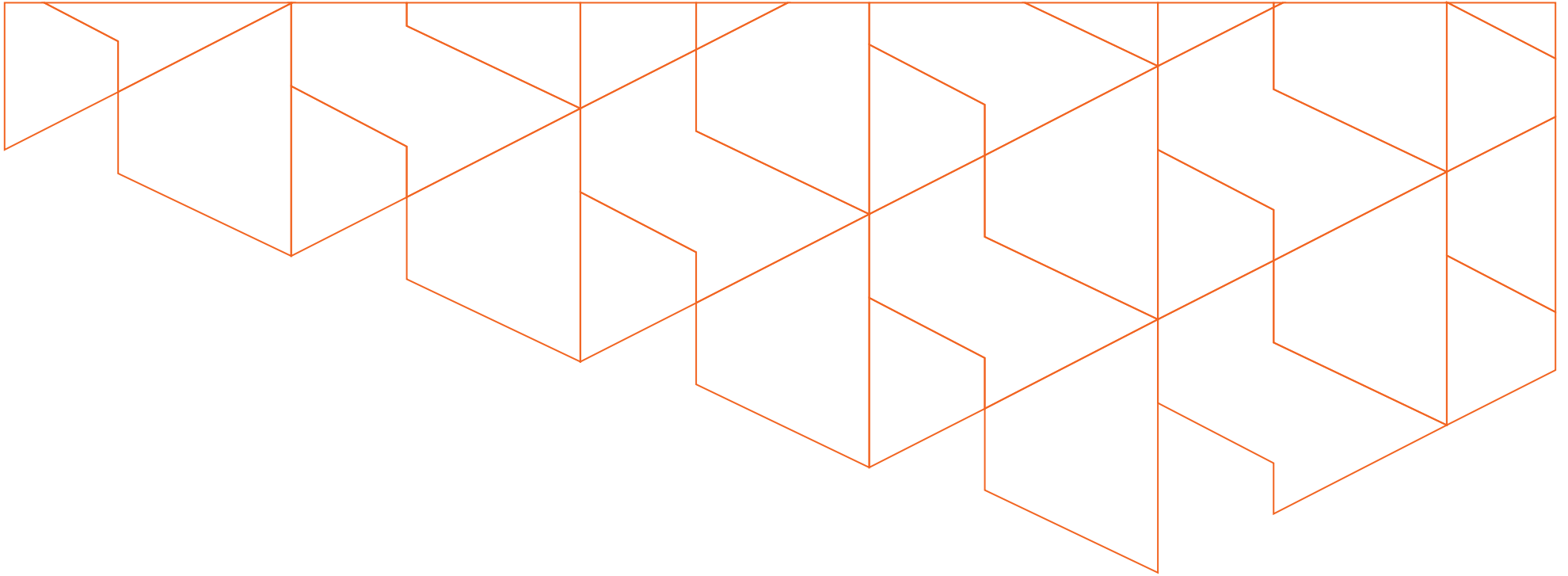
Rhea Thomas
Senior Economist
Vice President



Executive Summary

- **Bitcoin has received increasing investor attention since the pandemic**
- **Demand has been rising**
 - **Macroeconomic factors** bolstered by sanguine investor risk appetite, and search for inflation hedges
 - **Broadening investor interest** particularly from institutional investors and corporations
 - **Improving infrastructure** with new regulatory guidance, increasing involvement from established financial institutions
 - **Normalization** as traditional payment companies roll out digital currency strategies
- **At the same time, supply has been slowing**
 - **Decelerating supply growth** by design
 - **Investor holding periods increasing**
- **Evolving risks to monitor**
 - **Scalability/high transaction costs**
 - **Competition**
 - **Environmental concerns**
 - **Current lack of regulation and uncertainty about future regulation**
 - **Elevated volatility**

Past performance cannot guarantee future results. Indexes are not available for direct investment. Investment in a security or strategy designed to replicate the performance of an index will incur expenses such as management fees and transaction costs which will reduce returns. Investing involves risks and you may incur a profit or a loss. There is no assurance that any investment strategy will be successful.

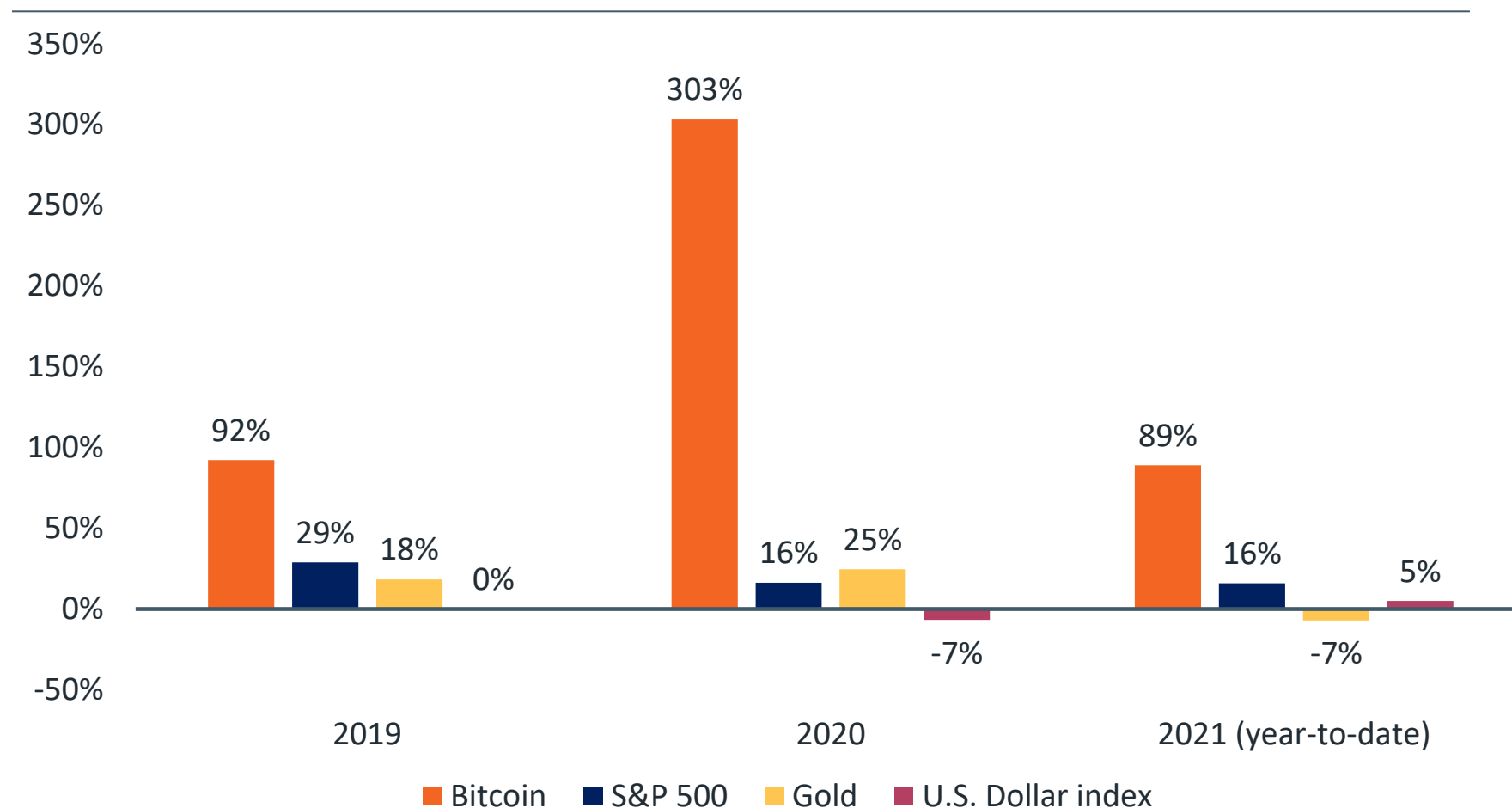


Section 1 **Bitcoin: Back in the Limelight**

Eye-Popping Returns Relative to Other Assets in Recent Years

Bitcoin has seen significantly larger returns compared to the S&P 500, gold and the U.S. dollar index.

Annual price return (%)



Data as of October 10, 2021. Source: Macrobond. Indexes are not available for direct investment. Past performance cannot guarantee future results. There are many significant differences among cryptocurrencies, stocks, commodities and traditional currencies, including, among others, their risks, how they are transacted, price fluctuations, investment history, and regulation. Please discuss these differences with a financial professional prior to considering any of these as a possible investment. Gold price uses London Bullion Market Association P.M. fixing. U.S. dollar index uses Intercontinental Exchange U.S. dollar index closing prices.

Bitcoin's Price Action: A Roller Coaster Ride

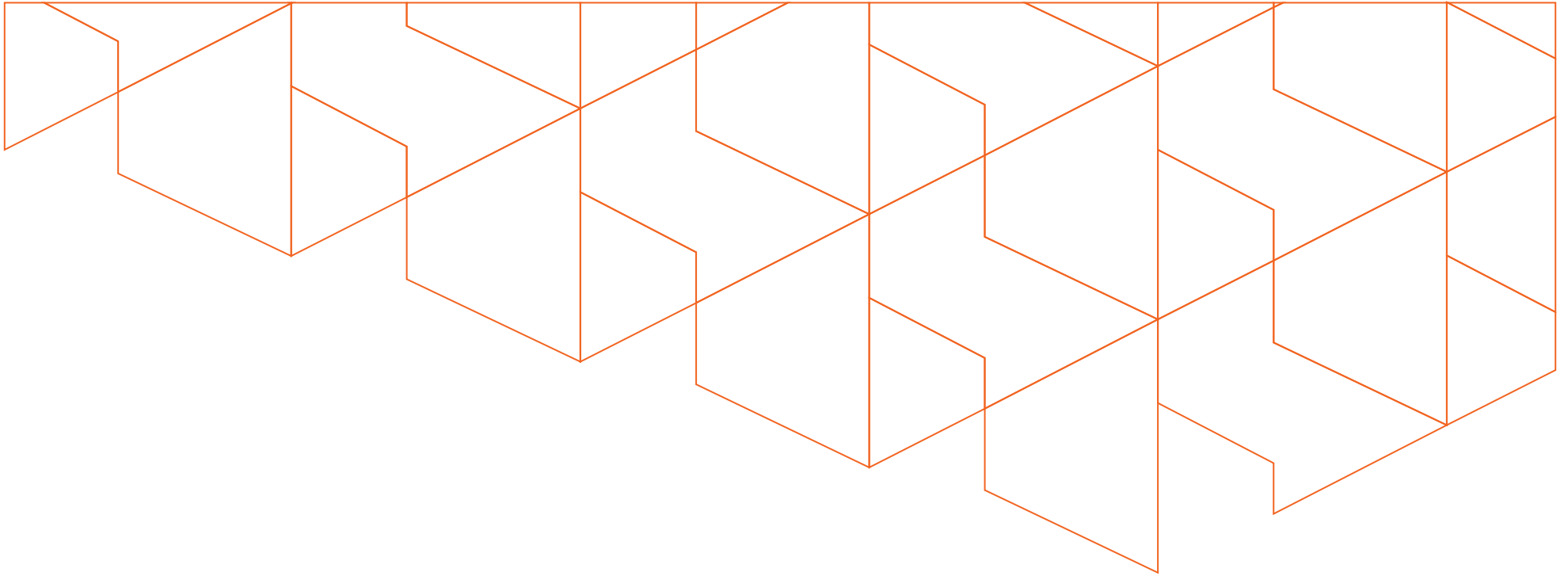
Bitcoin functions like a commodity, with prices driven by supply and demand. A combination of strong demand and slowing supply drove prices up in the wake of the pandemic. Demand softened in 2Q 2021 due to a regulatory crackdown in China, environmental concerns, and uncertainty around regulation in the U.S, but has recently picked up momentum again.

Bitcoin price (\$ per bitcoin)



Data as of October 10, 2021. Source: Macrobond.

The past is not indicative of future results. October 2016 chosen as starting date given rising mainstream investor interest in bitcoin picking up in 2017.

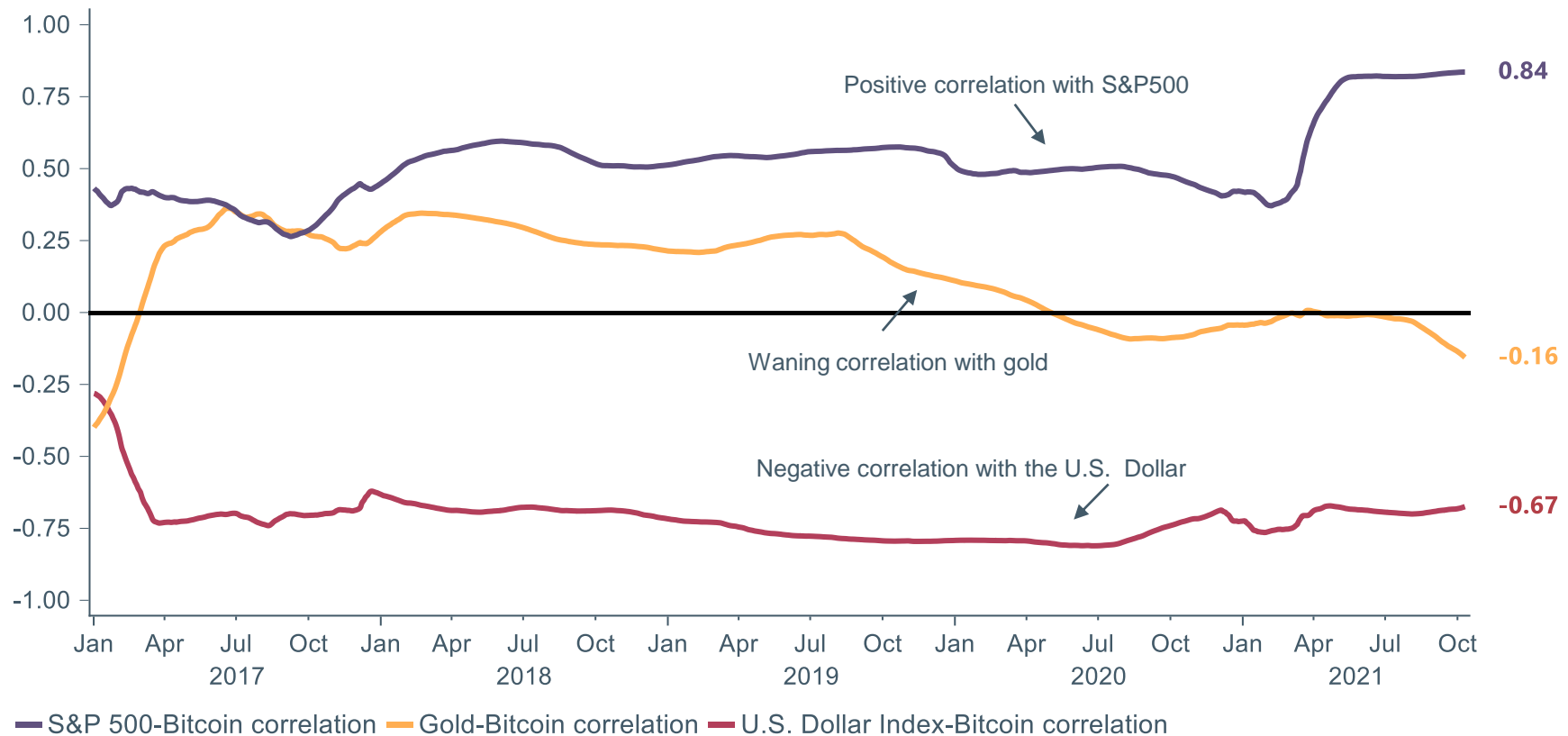


Section 2 Bitcoin: Recent Drivers of Demand/Supply

Macroeconomic Drivers Intensified in Wake of Pandemic

Inflation concerns have been rising due to unprecedented monetary and fiscal stimulus. Bitcoin has been perceived as an inflation hedge given its limited supply (in contrast to the U.S. dollar, but similar to gold). It has also tended to perform well when investor risk appetite has been strong (like the S&P 500).

Long term correlation between bitcoin and other assets (3-year rolling correlation of yearly return)



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Broadening Investor Interest

Bitcoin's investor base, long dominated by retail, is now expanding to corporations and institutions, including hedge fund investors such as Paul Tudor Jones, Bill Miller, Stanley Drukenmiller, and George Soros.

Tesla

Feb 2021 Purchased \$1.5 billion in bitcoin, announced plan to accept bitcoin as payment (though in May 2021, it suspended bitcoin payments due to environmental concerns; in July 2021, the company noted it will “most likely” resume acceptance once mining uses 50% renewable energy)

Black Rock

Jan/Feb 2021 Added bitcoin futures as potential investment for two of its funds

Mass Mutual

Dec 2020 Purchased \$100 million in bitcoin for general investment account

Square

Oct 2020 Purchased \$50 million in bitcoin; additional purchase of \$170 million brings bitcoin holdings to 5% of cash holdings as of Feb 2021

Microstrategy

Aug/Sep 2020 Purchased \$425 million of bitcoin, principal holding in treasury reserve strategy; total estimated purchases at \$5.3 billion as of Sep 2021

Signs of Improving Infrastructure

Involvement of established financial firms and regulatory guidance may help give institutional investors additional confidence to invest in cryptocurrency.

Fidelity

2019 First major institution to enter cryptocurrency custody space

**Office of the
Comptroller of the
Currency**

July 2020 Ruling clarified that federally chartered banks and thrifts may provide custody services for customers

BNY Mellon

Feb 2021 Announced plans to enter cryptocurrency custody space

**Purpose Investments
Evolve ETFs**

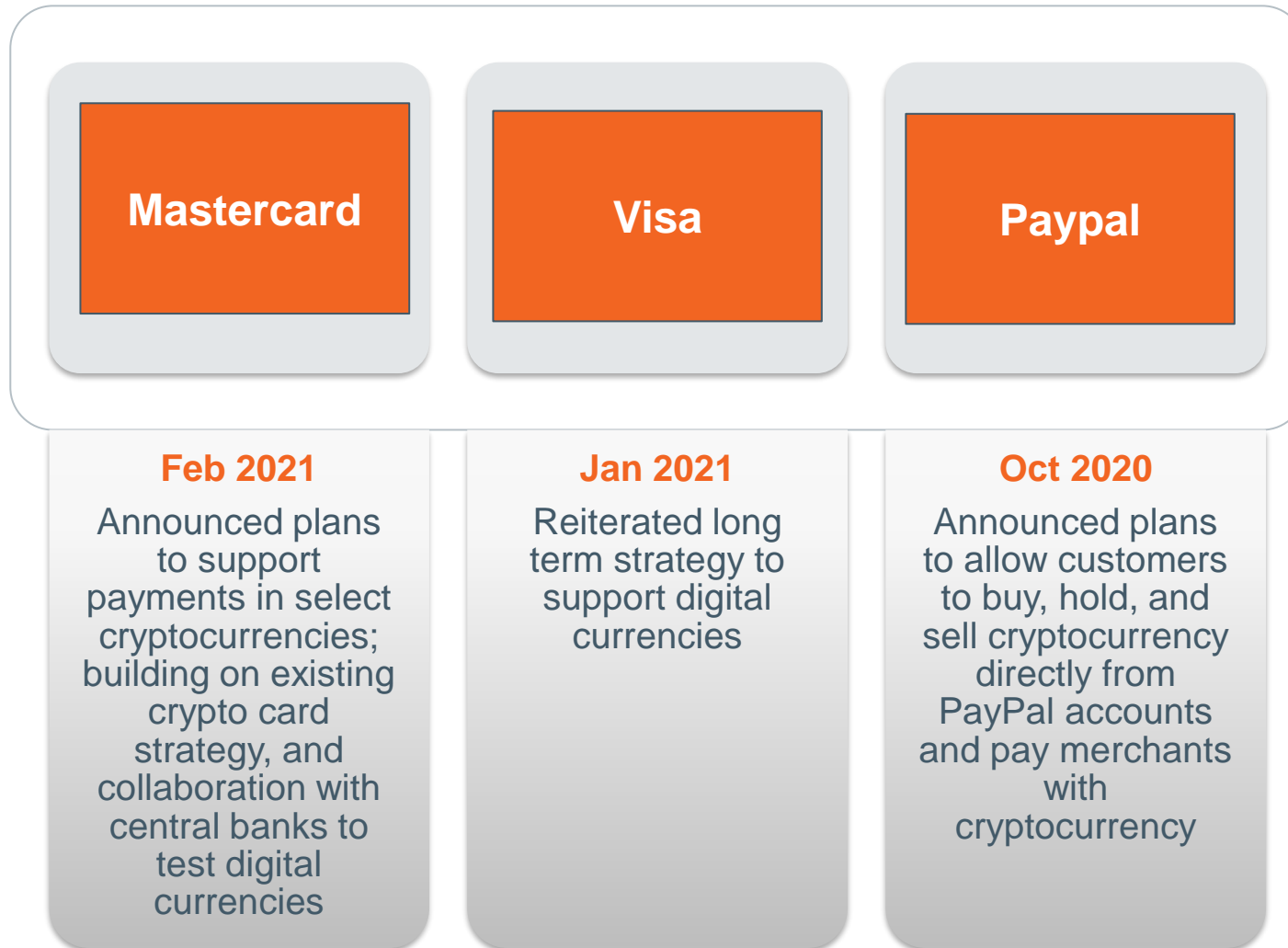
Feb 2021 Canadian securities regulators approved first bitcoin ETFs in North America, potentially paving way for eventual U.S. ETF approvals

**Northern Trust
U.S. Bank
State Street**

Jun-Oct 2021 Additional entries by major U.S. financial institutions into cryptocurrency custody space

Normalization: Payments Companies Increasingly Involved

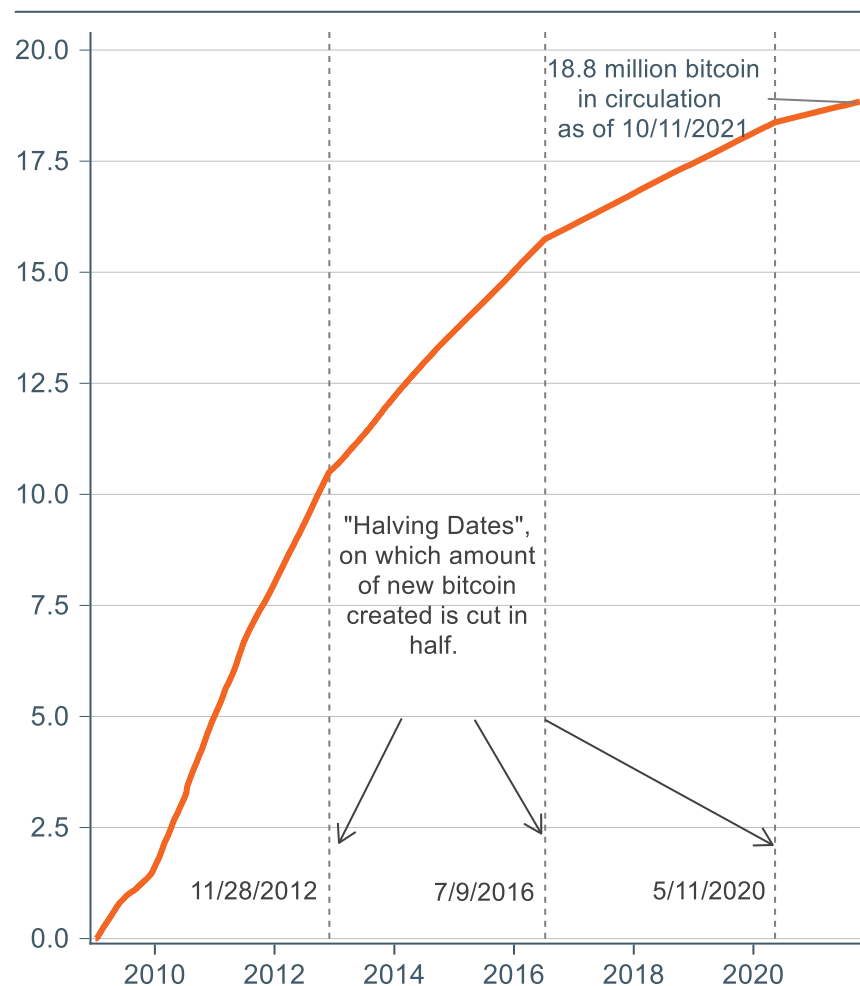
New digital asset strategies are moving toward bringing cryptocurrency into the mainstream.



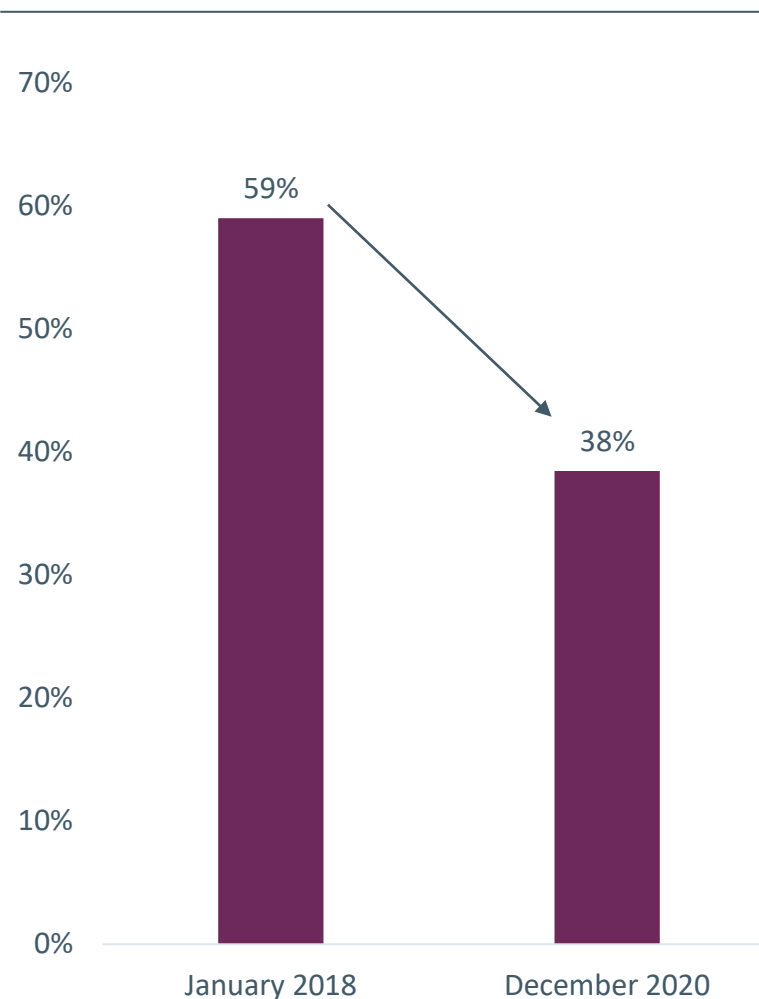
Slowing Supply Growth

Bitcoin was designed so total supply would not exceed 21 million, with *new* supply growth slowing steadily over time. The share of *existing* supply that is actively traded has also declined, suggesting investors are lengthening holding periods.

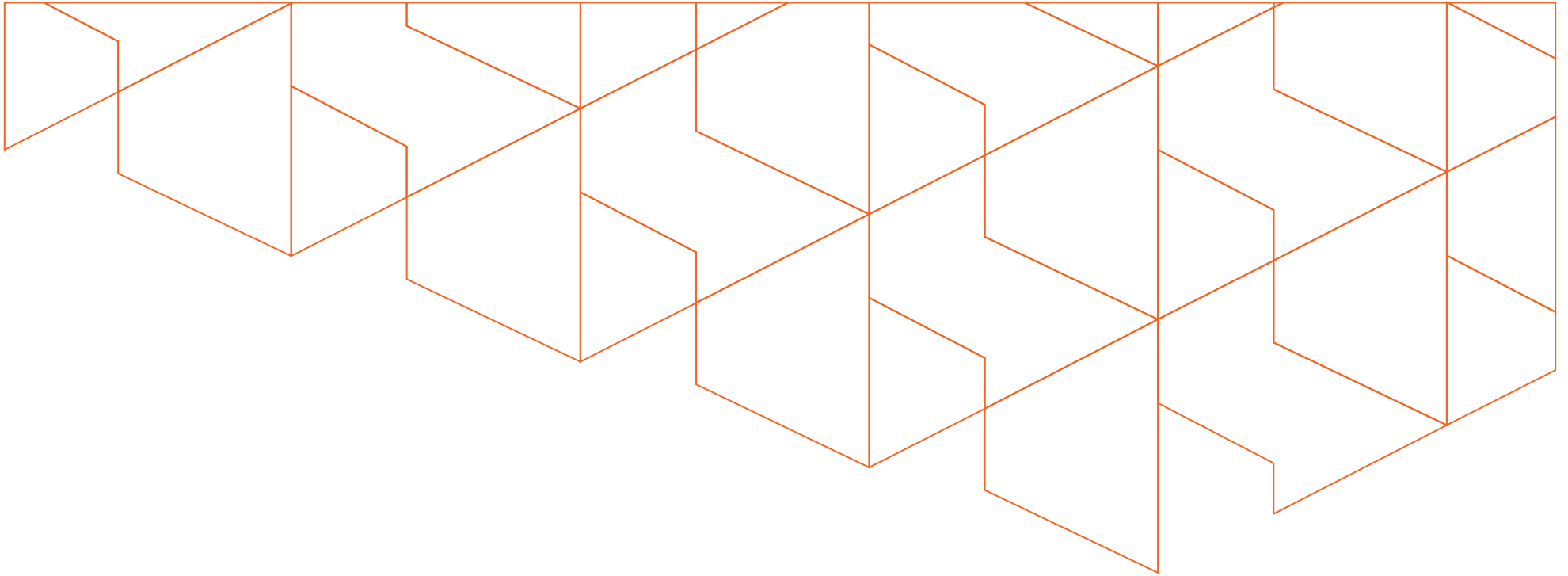
Bitcoin supply (total number of bitcoin mined, millions)



Bitcoin share of active supply that has been exchanged on bitcoin blockchain over past one year period (%)



Data as of October 11, 2021. Source: Macrobond, StormGain, CoinMetrics, Bitwise Asset Management



Section 3 **Bitcoin: Evolving Risks**

Does Bitcoin Pass the “Money” Test?

Use of a cryptocurrency as a form of “money” could potentially foster more fundamental demand. Bitcoin is not there yet, though some challenges such as scalability, transaction costs, and accessibility are moving in the right direction. Volatility remains a key hinderance.

Unit of Account

- Can it be used as a direct measure of the value of goods and services?

Medium of Exchange

- Is it a widely accepted form of payment for goods and services?

Store of Value

- Will it retain purchasing power in the future?

Lightning Network: Potential to Address Scalability Issues?

The Lightning Network is a payment system on top of bitcoin's blockchain that allows for swift, low-cost transactions for small purchases that are not feasible on the underlying bitcoin block chain because of high transaction costs and long processing times. The Lightning Network has been key in El Salvador's adoption of bitcoin as legal currency, and Twitter's roll out of a tipping function, both of which have been attributed to growth of the network. But the network is still a work in progress, and it is too early to tell whether it will be successful in solving bitcoin's scalability issues.

Total value locked in the Lightning Network (\$, millions)

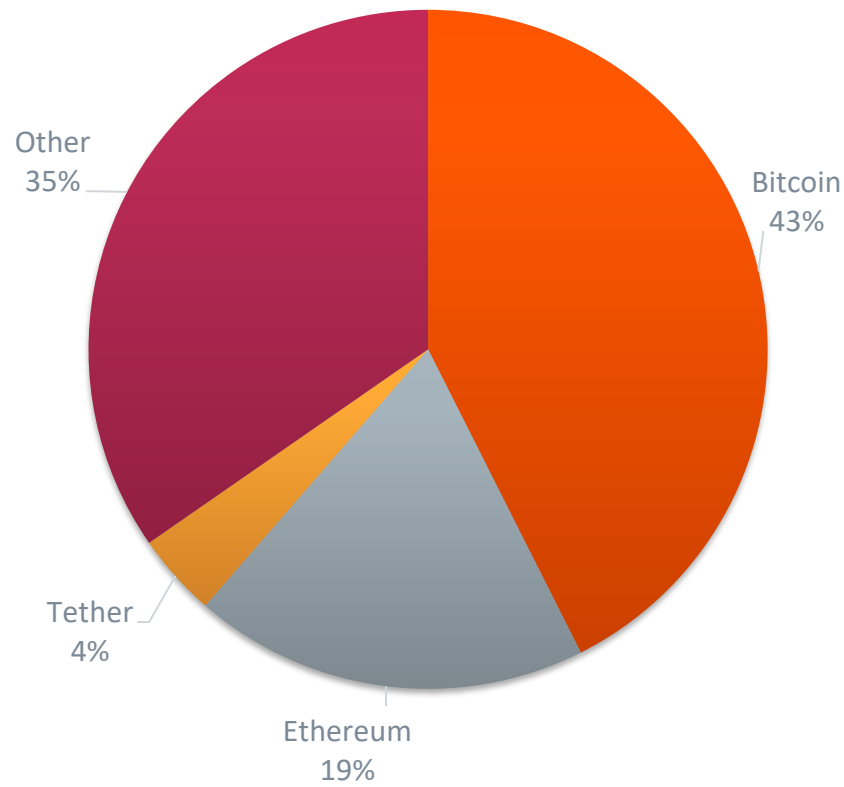


Data as of October 6, 2021. Source: Defipulse.com

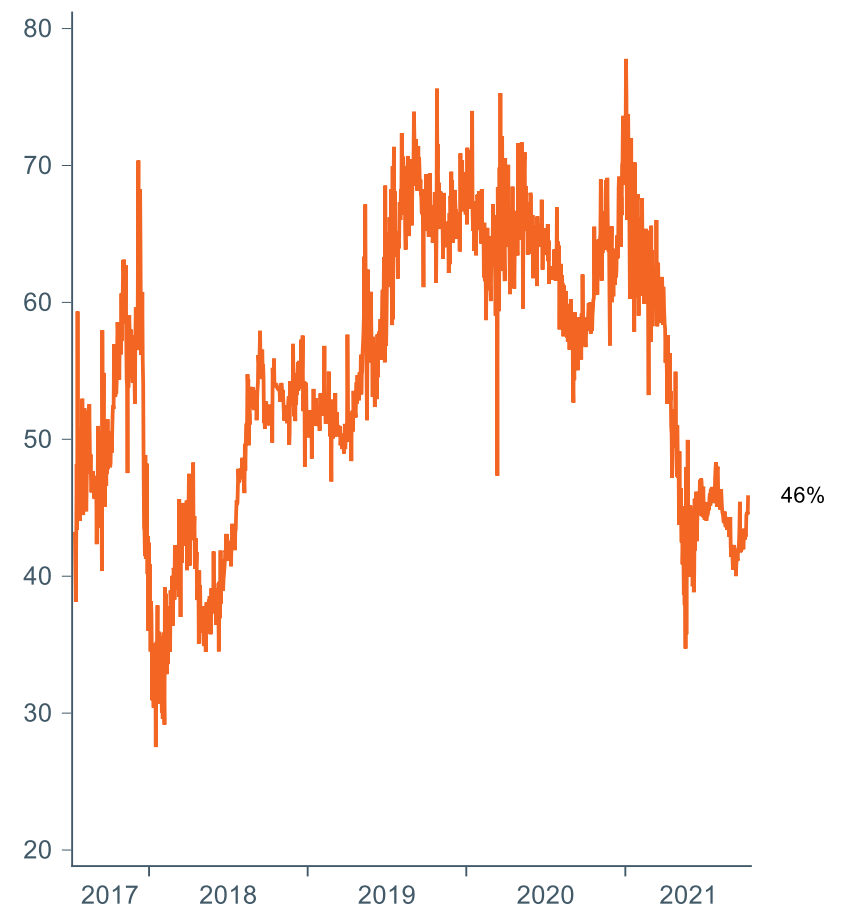
Bitcoin Remains the Dominant Cryptocurrency, For Now

Competition abounds, not just from the roughly 12,000 other cryptocurrencies in existence, but also from “stablecoins,” (backed by fiat currency, like Facebook’s Diem), and central bank digital currencies.

Share of total cryptocurrency market capitalization (%)



Bitcoin share of total cryptocurrency market capitalization (%)

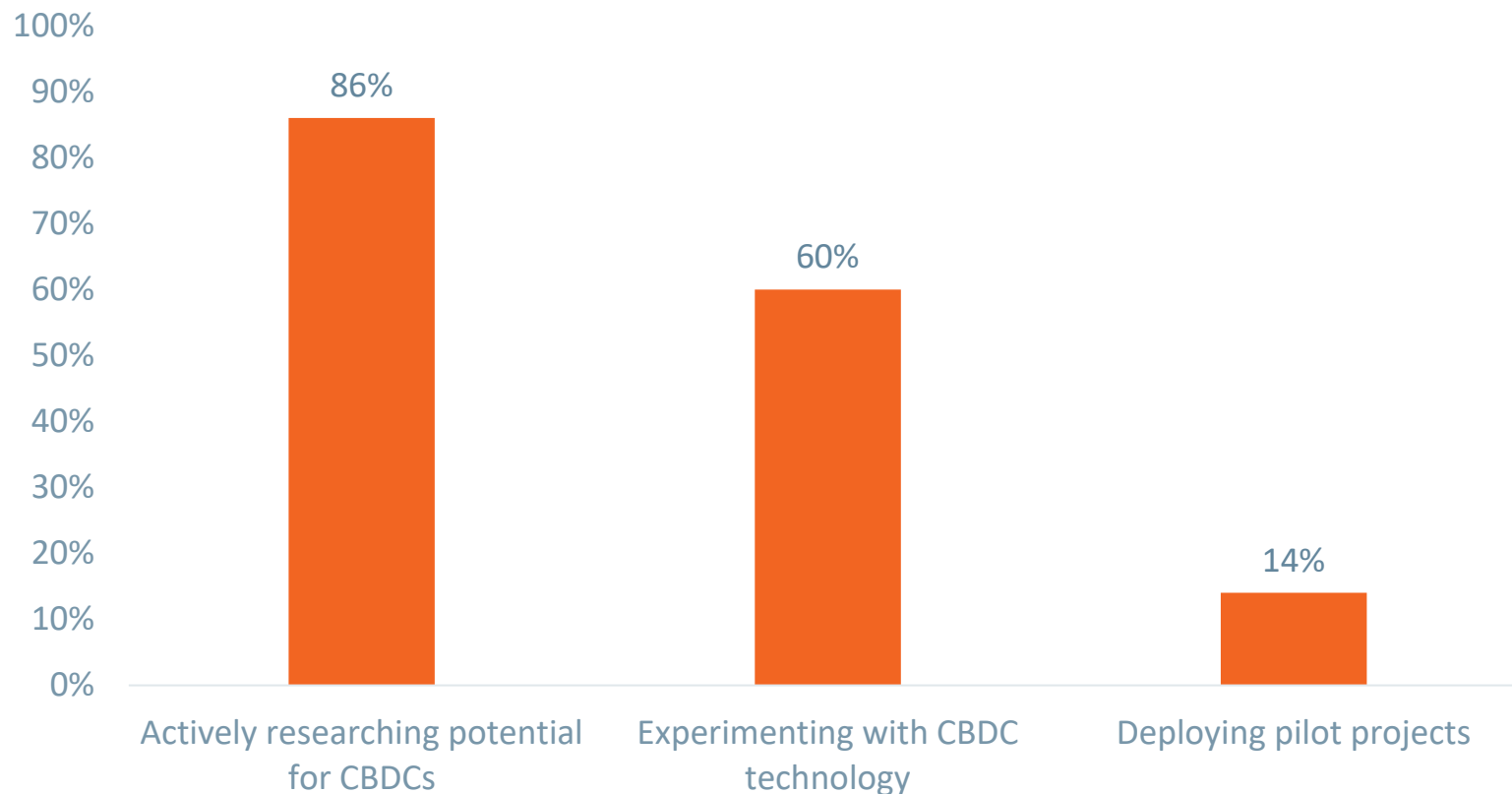


Data as of October 8, 2021. Source: Macrobond, CoinMarketCap.

Key Competitor: Central Bank Digital Currencies (CBDCs)

Central banks have increasingly been investigating the possibility of launching their own digital currencies, with 86% actively researching the issue as of 2021, up from roughly 65% in 2017.

Share of global central banks exploring central bank digital currencies(%)

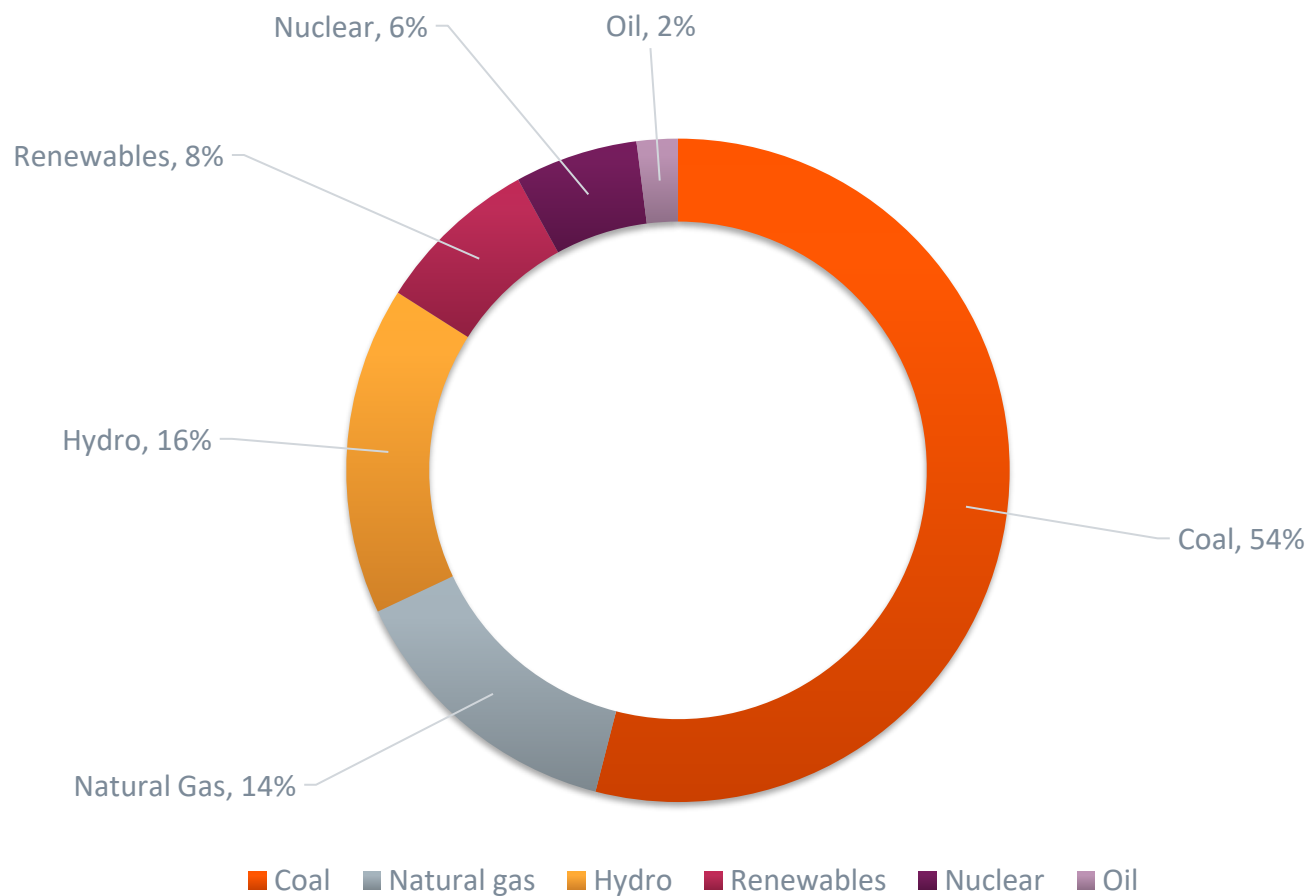


Data as of January 1, 2021. Source: Bank of International Settlements.

Bitcoin Not Finding it Easy to Be Green

Bitcoin mining, the process of verifying bitcoin transactions that keeps the system running, involves intensive computing power, and therefore heavy electricity consumption. A significant portion is powered by coal, raising concerns about the system's contribution to greenhouse gas emissions.

Bitcoin share of energy sources powering bitcoin mining(%)

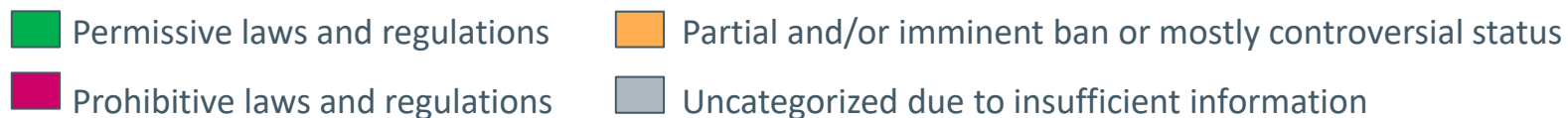
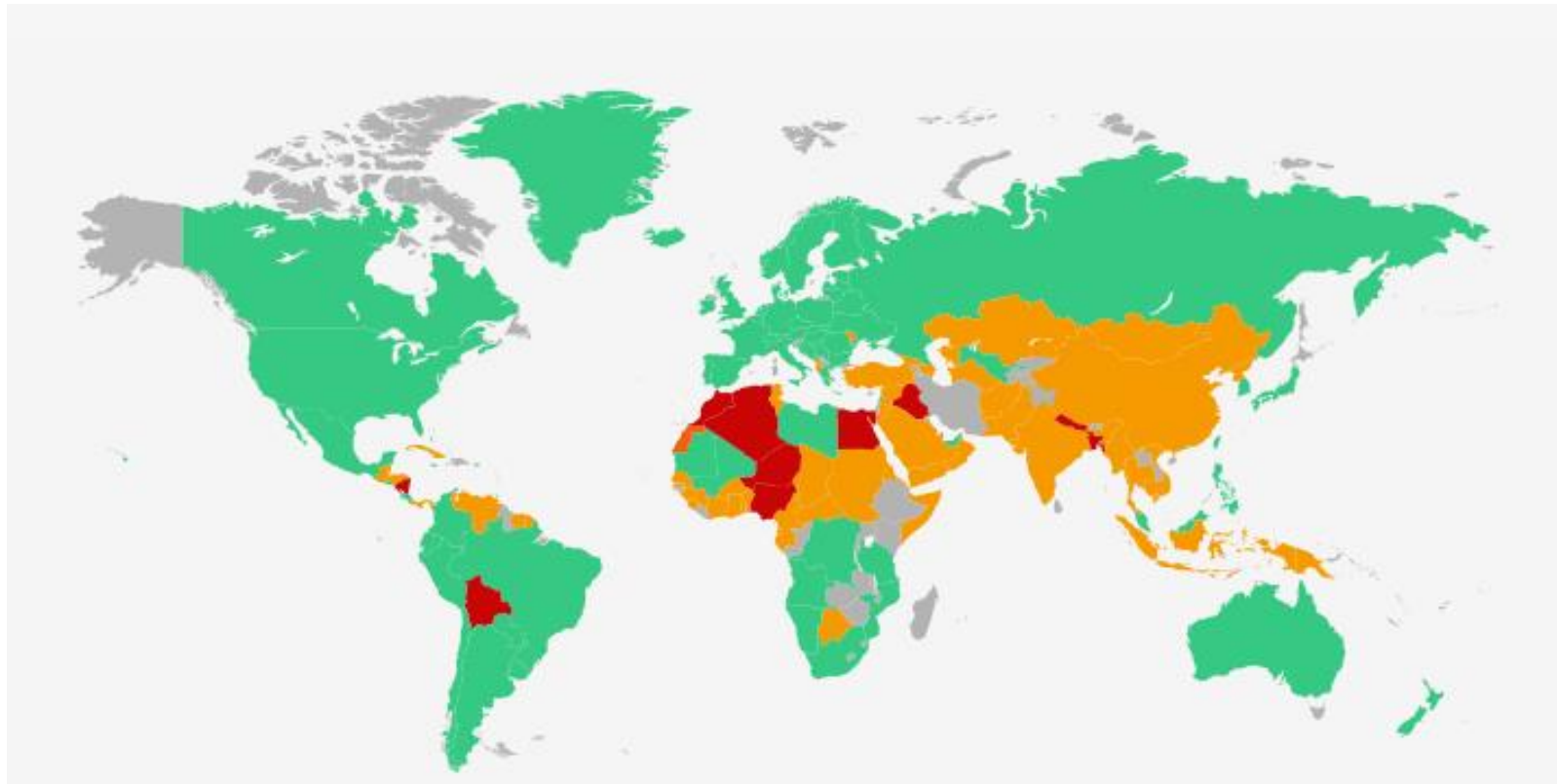


Data as of September 2020. Sources: Cambridge Center for Alternative Finance, Citi Research.

Regulation: Risks and Silver Linings?

Uncertainty around the scope and scale of cryptocurrency regulation remains a near term risk. Ultimately regulation should be supportive for bitcoin developing into a more mature asset class as it could mitigate some sources of volatility by providing a clear set of rules around the treatment of cryptocurrencies across financial institutions, helping to reduce fraud and manipulation, and providing investor protections.

Legal status of cryptocurrencies around the world

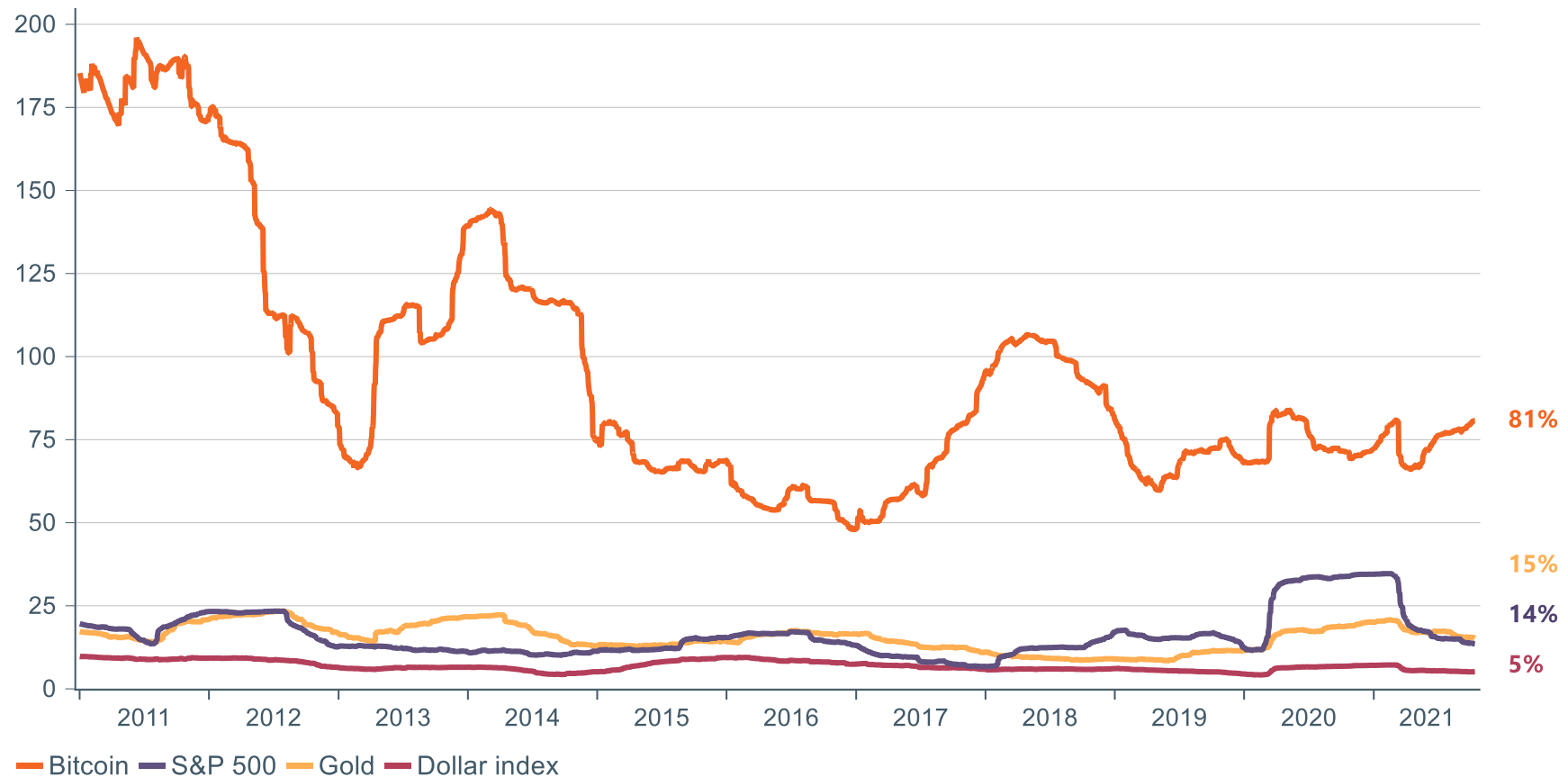


Data as of September 30, 2021. Source: World Economic Forum.

Bitcoin Returns Have Come With Significantly Higher Volatility

Bitcoin's volatility has declined relative to its early days but remains multiples above that of the S&P 500, gold, and the dollar.

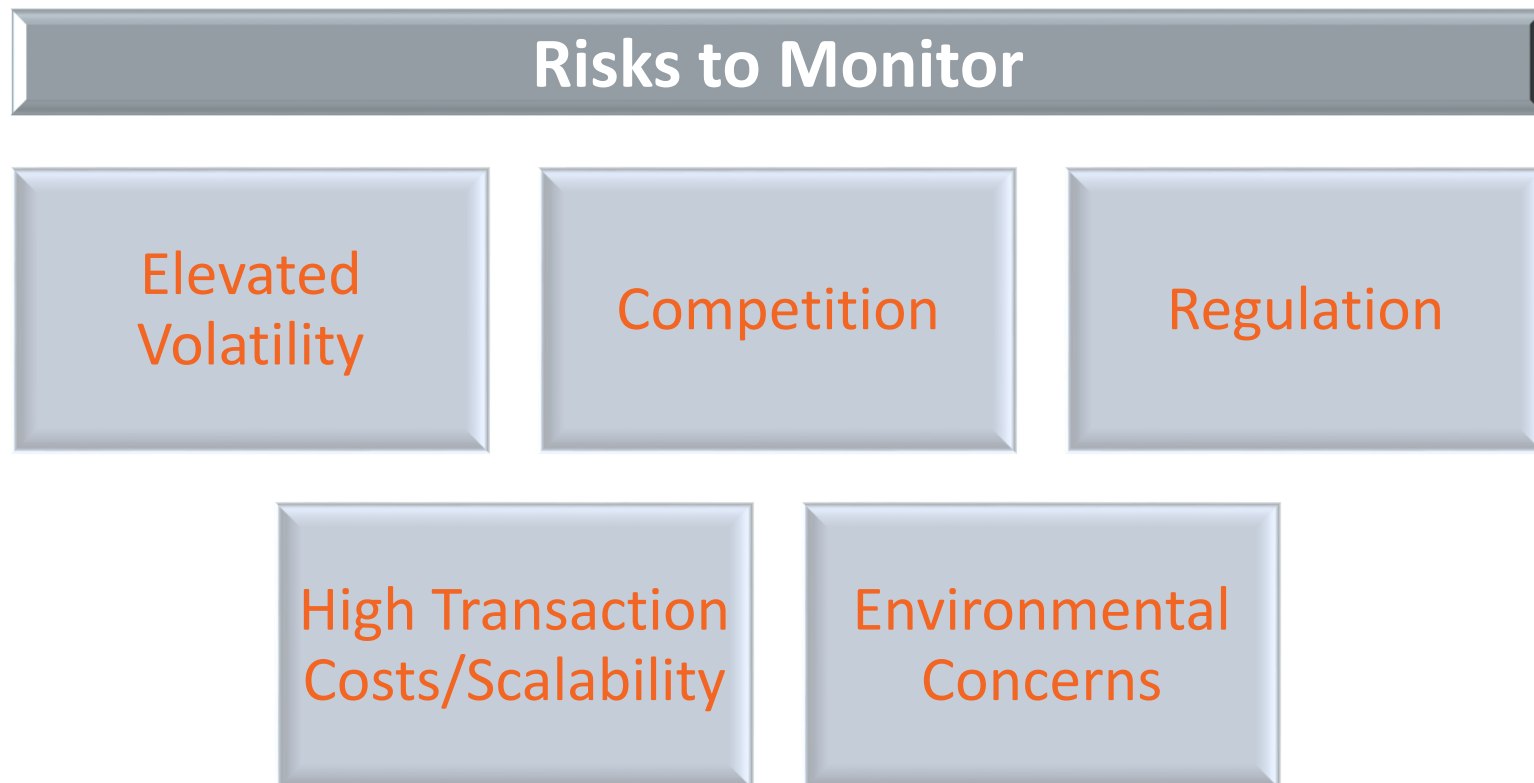
Bitcoin return volatility (rolling 1-year standard deviation of daily returns, annualized (%))



Data as of October 8, 2021. Source: Macrobond, WTIA. Past performance cannot guarantee future results. Indexes are not available for direct investment. Investment in a security or strategy designed to replicate the performance of an index will incur expenses such as management fees and transaction costs which will reduce returns. Investing involves risks and you may incur a profit or a loss. There is no assurance that any investment strategy will be successful.

Not Recommending Bitcoin in Portfolios, But Monitoring Evolving Risks

We believe cryptocurrencies are likely here to stay and to grow in prominence. In our view, there are several risks still in place, and we currently do not recommend bitcoin in client portfolios. We continue to watch these evolving risks closely.





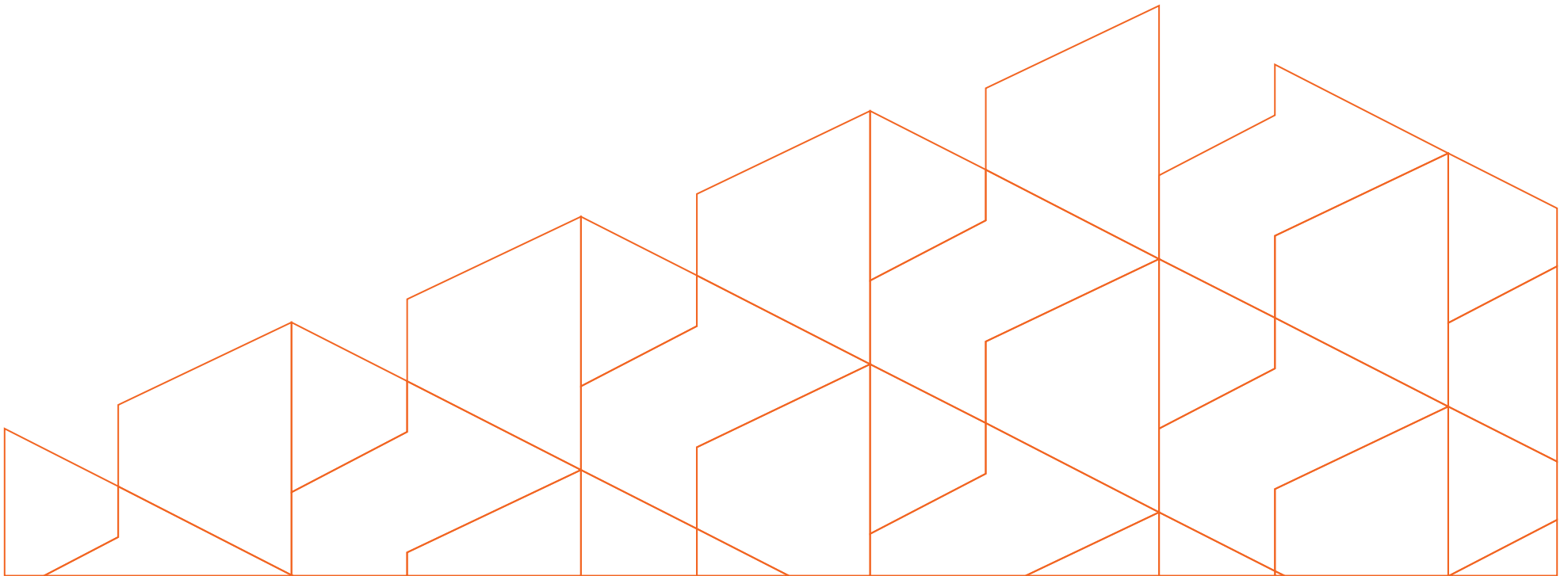
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Implications for Fiduciaries

Sharon L. Klein

President of Family Wealth, Eastern U.S. Region

Senior Vice President



The Prudent Investor Rule

Prudent Investor Rule is Law Governing Investment of Trust Assets

Under Prudent Investor principles:

- A Trustee:
 - Is required to pursue an overall investment strategy
 - Is required to consider all facts and circumstances
 - Is required to invest for total return
 - Is required to have skill
 - Is required to diversify, absent extenuating circumstances
 - Is authorized to invest in any type of investment



The Prudent Investor Rule

Prudent Investor Rule is Law Governing Investment of Trust Assets (continued)

Key point: The Prudent Investor Rule sets forth a standard of conduct

- Does not mandate any particular result
- Trustees are not judged in hindsight
- Compliance is determined in light of facts and circumstances existing at time of trustees' decision
- If trustees are careful to follow standard of conduct — and document fact they have done so — they can be insulated from liability, even though consequences of their actions are disappointing



The Prudent Investor Rule

Proper Documentation can Insulate a Trustee from Liability

Critical for trustees to document compliance with Prudent Investor Rule

- Adverse inference can be drawn from failure to maintain adequate records

Lack of documentation alone can be breach of trust

- Consider accountings for release from liability



The Prudent Investor Rule

Can Trust Provisions Provide Sufficient Protection?

Under prudent investor principles, Trustees must be vigilant to perform fiduciary duties, irrespective of trust language

Consider other strategies:

- Decanting/Judicial modification
- Investment direction agreements
- Splitting trusts
- Directed trusts



The Prudent Investor Rule

Can Trustees Rely on Exculpation Provisions?

- Authority of trustees is governed not only by trust instrument but also by statutes and common-law rules
- Trustees must act in good faith and in accordance with terms and purposes of trust and interests of beneficiaries



The Prudent Investor Rule

Protect Trustees by Engaging Trusted Professional Advisors

- Friends or family members appointed as trustees oftentimes are simply unaware of myriad of duties to which they are subject...and potential liability
- Can minimize fiduciary risk by hiring trusted professional advisors, cognizant of fiduciary responsibilities and how to fulfil them
- Delegation permissible under Prudent Investor principles
 - Can sever liability with proper delegation



Disclosures

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Risk Assumptions

All investments carry some degree of risk. The volatility, or uncertainty, of future returns is a key concept of investment risk. Standard deviation is a measure of volatility and represents the variability of individual returns around the mean, or average annual, return. A higher standard deviation indicates more return volatility. This measure serves as a collective, quantitative estimate of risks present in an asset class or investment (e.g., liquidity, credit, and default risks). Certain types of risk may be underrepresented by this measure. **Investors should develop a thorough understanding of the risks of any investment prior to committing funds.**

Reference to the company names mentioned in this presentation is merely for explaining the market view and should not be construed as investment advice or investment recommendations of those companies. Third party trademarks and brands are the property of their respective owners.

The gold industry can be significantly affected by international monetary and political developments as well as supply and demand for gold and operational costs associated with mining.

Cryptocurrency is not a legal tender of the United States. Cryptocurrency transactions are not recorded by any regulatory agency, banking institution, or investment firm. The value of a cryptocurrency can vary rapidly, even changing by the hour. The nature of digital currency may lead to an increased risk of fraud or cyber-attack. You are strongly encouraged to read the user agreements and disclosures specifically related to your ability to access your transaction, manage your transaction on a day to day basis and make a withdrawal in cryptocurrency stored with a third-party company.

Definitions

The S&P 500 Index measures the performance of approximately 500 widely held common stocks listed on U.S. exchanges. Most of the stocks in the index are large-capitalization U.S. issues. The index accounts for roughly 75% of the total market capitalization of all U.S. equities.