

Counterweight: The Case for Bitcoin as a Central Bank Reserve Asset

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ABSTRACT: We discuss the concept of international reserves as an integral aspect of central bank's monetary policy and how sound reserve management can prevent or mitigate the impact of economic and financial shocks. We then propose bitcoin as a new type of reserve asset that can function as a ballast to assist central banks maintain financial stability during an economic crisis. Bitcoin's unique properties as a digital asset, its antifragile nature, lack of correlation with traditional assets, and its immutable fixed supply schedule make it a viable safe haven that is functionally comparable to gold. When added to the central bank's reserve asset portfolio, Bitcoin's alternative financial system can also serve as a systemic hedge against the fragility of the present U.S. dollar-centric international monetary system.

1. Introduction

Central banks around the world employ reserve assets as a strategic tool to manage monetary policy and financial stability.¹ They hold reserve currencies to help insulate the local currency and the domestic economy against major swings in foreign-exchange rates. Central banks also traditionally hold reserves in case of emergencies.

International reserves may be understood as external assets held by a central bank to enable the conduct of international transactions, intervention in foreign currency markets, and maintain confidence in the exchange rate of the local currency. Ideally these reserves should be easily convertible to cash. Aside from providing liquidity when engaging in international transactions, there has also been a shift in the demand for international reserves beyond what is required for transactional purposes especially since after the 1997 Asian Financial Crisis. Many countries accumulate

¹ David S. Morency, Regulatory Implications of Cryptocurrency on the Bank of England, Perspectives on Business and Economics, Vol. 36, p. 9 (2018)

international reserves to provide some degree of self-insurance in case the economy experience economic and financial shocks. Further, by holding international reserves beyond what is needed for transactional purposes, central banks can ably defend against any speculative attack on their currency.² Overall, international reserves enable central bank to manage a stable exchange rate and achieve domestic financial stability.³

2. COVID-19 pandemic and the unprecedented quantitative easing

The lockdown, quarantine, health protocols and other mitigation measures in response to the COVID-19 health crisis immediately caused a decline in economic activities globally and significant disruptions in financial markets. To save businesses on the brink of default, support unemployed individuals and ease the shock on falling asset prices, many central banks injected unprecedented levels of monetary and fiscal stimulus into the financial system.⁴ Fortunately, the experience in the Philippines is more restrained compared to central bankers in developed countries. To support the short-term needs of the real economy and maintain market confidence during the economic crisis triggered by the pandemic, the Bangko Sentral ng Pilipinas (BSP), Philippines' central bank, deployed conventional and some unconventional monetary policy tools to complement the economic efforts of the Philippine government.⁵

In the Philippines, the COVID-19 pandemic frustrated the economy's longest expansion since 1999 when domestic growth rate crashed to - 0.2% in the first quarter of 2020. It initially wreaked havoc on the tourism and trade industry before eventually spreading out to the whole economy, quickly after placing many parts of the country under enhanced community quarantine (ECQ) on 16 March 2020. The ECQ forcibly halted economic activities that caused immense supply chain disruptions.⁶

The economic fallout from COVID-19 is expected to worsen notwithstanding the approval of vaccines from different pharmaceutical companies. Potential output growth could decline faster due to the staggering unemployment rate, declining capacity utilization rate, and closures of many businesses. The economic crisis has

² Winston Moore and Jeremy Stephen, Should Cryptocurrencies be Included in the Portfolio of International Reserves Held by Central Banks? *Cogent Economics & Finance*, p. 1-2 (2016)

³ *Id.*, p. 2. (2016)

⁴ Phil Bonello, Bitcoin's Quantitative Tightening vs. Central Banks' Quantitative Easing, *Grayscale Insights*, p. 3. (2020)

⁵ Eloisa T. Glindro, Hazel C. Parcon-Santos, Faith Christian Q. Cacio, and Marites B. Oliva, Shifting Macroeconomic Landscape and the Limits of the BSP's Pandemic Response, *BSP Working Paper Series*, Series No. 2020-05. (2020)

⁶ *Id.*, p. 4.

impaired productivity growth due to higher transactions costs, limited resource allocation, and lower mobility of goods and labor.⁷

As the world grapples with the economic crisis resulting from the COVID-19 pandemic, the consequences of government monetary and fiscal intervention must be assessed. As central banks in the developed world implement quantitative easing to expand the supply of money, their fiat currencies will tend to depreciate in value.

Quantitative easing (QE) refers to a what used to be an unorthodox⁸ monetary policy that involves a central bank or monetary authority purchasing financial instruments from financial institutions usually as a last-resort measure to inject money and credit into the economy and hopefully stimulate productive activities. As QE makes “cheap” money, there is a need for diversification in the asset portfolio to reduce inflation risks brought by QE.⁹ Interestingly, the QE programs by many central banks—from the 2008 global financial crisis up to the COVID-19 pandemic—also coincided with the rise in the value of bitcoin and other cryptocurrencies. As regards the COVID-19 pandemic, the move to reignite the money printing machines came immediately after the U.S. stock market crashed in March 2020 at the onset of the lockdowns, community quarantines, and business and work suspensions.¹⁰

The epic scale of money printing should be contrasted with Bitcoin and its unique attributes that enable its protocol to enforce an immutable monetary policy. While central banks unleash enormous level of QE, *quantitative hardening* takes place in Bitcoin protocol where new supply of bitcoin is programmatically reduced every four years in an event known as “**the halving**,” a native feature that is a core aspect of Bitcoin’s monetary policy.¹¹

3. The concept of international reserves

Reserves are typically held by central banks to meet several objectives such as to (1) support and maintain confidence in the policies for monetary and exchange rate management; (2) limit external vulnerability by maintaining liquidity to absorb shocks during times of crisis or when access to borrowing is limited; (3) inspire confidence to markets with respect to a country’s ability to meet external obligations; (4)

⁷ *Id.*, p. 7.

⁸ But today it seems to have become the new norm in the monetary policy of the United States and other developed countries.

⁹ Will Heasman, Bitcoin as a Hedge Against Coronavirus-Led Economic Chaos, *The Bitcoin Reserve Journal*, 26 April 2020 <https://journal.bitcoinreserve.com/bitcoin-as-a-hedge-against-coronavirus-led-economic-chaos/>

¹⁰ *Id.*

¹¹ Phil Bonello, Bitcoin’s Quantitative Tightening vs. Central Banks’ Quantitative Easing, *Grayscale Insights*, p. 2 (2020).

demonstrate that external assets back the domestic currency; (5) meet foreign exchange needs and other external debt obligations; and (6) maintain a reserve in case of disasters or emergencies.¹²

In some respects, the concept of an international reserve may be viewed as linked to the “store of value” aspect of money. To continuously trade in a global market, a country needs a sufficient level of liquidity. To have liquidity, a country needs to maintain reserves of currency and other assets. It is therefore a monetary policy question to determine which currency or asset should be used for the reserves. The composition of the international reserves is influenced by numerous factors such as the trust, stability of issuance, liquidity, returns, and even geopolitics.¹³

The reserve currencies and other assets are intended not only to settle trade balances. It enables a central bank to invest the country’s trade surplus. A reserve currency therefore requires deep and liquid pools of investable assets.¹⁴ Reserve assets require sufficient depth and liquidity that would allow exchange transactions to be processed in a sound and efficient manner. Reserves should be capable of being liquidated promptly and efficiently to provide the necessary resource for the implementation of certain policy objectives such as market intervention, maintaining balance of payments, debt-servicing, or insulate the country from external vulnerabilities. Obtaining the reserve asset from deep and liquid markets ensures that they can be easily absorbed by these markets without substantial impact on the trading prices received, or paid, by the central bank.¹⁵

It is important that a central bank should be able to preserve the value of reserves within conservative risk limits to allow the reserves to be available when they are needed. Consequently, reserve asset portfolios tend to be risk-averse where liquidity and security often precedes profit or carrying cost, involving a trade-off between risk and return guided by reserve management priorities.¹⁶ In this context, *liquidity* means the ability to quickly convert reserve assets into foreign exchange. To ensure that reserves are available only when they are needed most, liquidity usually receives the highest priority, but it usually involves the trade-off of accepting lower-yielding instruments. Liquidity is assessed in terms of liquidation time, liquidation costs and holding costs.¹⁷

¹² International Monetary Fund, Revised Guidelines for Foreign Exchange Reserve Management, p. 2. (2014)

¹³ Andreas Antonopoulos. (2020)

¹⁴ James Rickards, *The New Case for Gold*, p. 122. (2016)

¹⁵ International Monetary Fund, Revised Guidelines for Foreign Exchange Reserve Management, p. 23 (2014)

¹⁶ *Id.*, p. 7.

¹⁷ *Id.*

There is also a need to manage and control risks to amply protect asset values. For example, market and credit risks may lead to sudden losses and impair liquidity. Certainly, returns are an important outcome of the reserve assets. For many countries, they play a significant role in offsetting the costs associated with other central bank policies and domestic monetary operations and in fortifying central bank capital buffers.¹⁸ It should be clarified however that sound reserve management practices cannot substitute for sound macroeconomic management. In fact, misguided economic policies could pose great risk to a central bank's ability to manage its reserves.¹⁹

The United States dollar is still presently the world's dominant reserve currency, whether in developed countries or in emerging markets. Indeed, emerging markets are vulnerable to hot money capital inflows and outflows that can overwhelm them. Thus, many of the central banks in emerging markets, such as, the Philippines, Malaysia, Vietnam and Jordan have been increasing their gold reserves as a hedge against the instability of the U.S. dollar.²⁰ Gold has been traditionally regarded as a reserve asset for safety. Gold offers a good protection against the fluctuations of the dollar and therefore enables central banks to diversify risks.²¹

4. Considerations in managing central bank's reserve assets

Reserve management refers to a process that ensures the availability of adequate assets for the purpose of meeting a defined range of objectives for a country.²² Sound reserve management practices are important considering how they can optimize a country's overall resilience to economic and financial shocks.²³ Unsound reserve management practices could weaken the ability of authorities to respond effectively to economic and financial crises, aggravating their severity.²⁴ The country's specific circumstances determines the appropriate portfolio management policies regarding the reserve objectives, reserve adequacy, currency and asset composition, choice of investment instruments, degree of credit risk exposure, and acceptable duration of the reserve portfolio. Central bank reserves may also include liability positions derived from repurchase agreements, forward exchange, swap agreements, futures and options. Many countries, including the Philippines, also use derivative financial

¹⁸ *Id.*

¹⁹ *Id.*, p. 2-3.

²⁰ James Rickards, *The New Case for Gold*, p. 128 (2016)

²¹ Mario Draghi, former President of European Central Bank, remarks during his speech at the Kennedy School of Government, 09 October 2013.

²² International Monetary Fund, *Revised Guidelines for Foreign Exchange Reserve Management*, p. 2 (2014)

²³ *Id.*, p. 2.

²⁴ *Id.*

instruments as an integral part of reserve management operations to enhance liquidity, diversify or hedge exposure to risks.²⁵ In any case, the reserve management policy should ensure that assets are safeguarded, readily available, and enhance market confidence.²⁶

The level of diversification is a core component of a reserve management strategy as it can enhance the risk-return profile of the reserve asset portfolio.²⁷ Diversification may relate to currencies, financial instruments, and counterparties. It is usually based on the assessment of the attributes of the various currencies and assets and the correlations among them, bearing in mind that low correlation improves the overall risk adjusted returns of the reserve asset portfolio.²⁸ Another factor in the composition of the reserve portfolio involves an assessment on how various asset classes react under different economic scenarios. The composition should enable the reserves to maintain or appreciate in value when they are needed, especially in times of adverse market conditions. According to the International Monetary Fund, “greater portfolio diversification has recently been the necessary response to the reduction of rates on traditional safe assets and growing risks on other commonly held assets.”²⁹ Further, the asset allocation and the composition of the reserve portfolio should consist of “a mix of precautionary needs.” The acquisition costs, risk of possible disruptive impact on credit and financial markets as well as of excessive liquidation should also be considered in the strategic allocation for central bank reserves.³⁰

5. Gold as a reserve asset

The conventional wisdom is that owning gold serves as insurance against harsh economic climate and unstable monetary system.³¹ A reserve portfolio should ideally include gold because it is one of the rare asset classes that perform well in both inflationary and deflationary environment. Indeed historically gold has done well in inflation and deflation because it represents a real store of value.³² While some would argue that even gold is relatively volatile especially when measured in nominal dollars, this is only a consequence of the fluctuating value of the dollar and not by the value of gold.³³

²⁵ *Id.*, p. 8.

²⁶ *Id.*, p. 4.

²⁷ *Id.*, p. 3.

²⁸ *Id.*, p. 9.

²⁹ International Monetary Fund, Revised Guidelines for Foreign Exchange Reserve Management, p. 9 (2014)

³⁰ *Id.*, p. 9.

³¹ James Rickards, *The New Case for Gold*, p. 57. (2016)

³² *Id.*, p. 87.

³³ *Id.*, p. 85.

The Philippines' central bank, Bangko Sentral ng Pilipinas (BSP), holds gold as part of its international reserves for various reasons. Gold is an equity asset and it is no one's liability; this gives its holder a high degree of security because there is no counterparty risk. It is also ideal to hold gold during times of economic uncertainty, giving rise to the notion that gold is a safe haven. Further, gold offers diversification in the reserve asset portfolio because of its low correlation with other assets that the BSP manages. Furthermore, investors hold gold when inflation or expectations of inflation are high, employing the asset as a hedge against accelerating prices. Finally, it is important for the BSP to maintain a portion of its reserves in the form of bullion since the Philippines is a significant producer of gold.³⁴ True enough, a law was even enacted in 2019 to strengthen the Philippines' gross international reserves through fiscal incentives, *i.e.*, by granting tax exemptions, tax incentives and other privileges in favor of small-scale miners and accredited traders with respect to the sale of gold to the BSP.³⁵

While gold is widely regarded as a safe haven asset, there are still risks associated with it. If confronted with a major crisis in its monetary and financial system, the U.S. government for example could possibly resort to gold confiscation or a tax on gold profits measured in U.S. dollars, or both. Many of the gold stored at the Federal Reserve Bank of New York belong to foreign countries and the International Monetary Fund, but it could be theoretically confiscated—easily—by the U.S. Treasury to deal with an emergency economic situation. It is possible that the United States could actually expropriate all that gold, “convert it to U.S. government ownership, give the former holders a receipt, and tell them they can earn their gold back based on future compliance with new rules under a new U.S.-led international monetary system,” said James Rickards.³⁶ This scenario might seem unimaginable but history will show that in an economic crisis, extreme measures cannot be ruled out and they can include confiscation, bail-ins, asset freezes, special taxes, or profit taxes.³⁷

In addition, while gold has served as a global monetary standard for thousands of years, the world has become digital and globally interconnected.³⁸ Relying on heavy metal as a safe-haven reserve asset does not align well with technological progress and the ever-expanding digital economy. The digital world necessitates a paradigm shift, and it requires a money that is digital, portable, and accessible to everyone while still retaining the qualities of a store of value.³⁹

³⁴ Joni Teves, *A Heart of Gold: Gold at the Heart of Bangko Sentral ng Pilipinas Reserve Management*, *The Alchemist*, Issue 52 p. 6.

³⁵ R.A. No. 11256 (2019).

³⁶ James Rickards, *The New Case for Gold*, p. 138 (2016)

³⁷ *Id.*, p. 138.

³⁸ Phil Bonello, *Bitcoin's Quantitative Tightening vs. Central Banks' Quantitative Easing*, *Grayscale Insights*, p. 6 (2020).

³⁹ *Id.*

6. Bitcoin as cryptocurrency and digital asset

Bitcoin is a digital asset whose ownership is recorded on a shared public ledger that is updated concurrently by a decentralized network of users globally.⁴⁰ Before the invention of Bitcoin, any form of electronic payment are carried out through central intermediaries because of the risk of double-spending.⁴¹ The advent of Bitcoin “has unleashed a tidal wave of disruption and rethinking of global financial and technological system.”⁴² Bitcoin shifted the paradigm by proving that it is technically possible for parties to engage in cash-like digital transactions through the internet and even crossing borders, without the intervention of trusted third parties. According to an economist, Professor Saifedean Ammous:

“Bitcoin represents a new technological solution to the money problem, born out of the digital age, utilizing several technological innovations that were developed over the past few decades and building on many attempts at producing digital money to deliver something which was almost unimaginable before it was invented... Bitcoin was the first engineering solution that allowed for digital payments without having to rely on a trusted third-party intermediary. By being the first digital object that is verifiably scarce, Bitcoin is the first example of digital cash.”⁴³

The purpose of Bitcoin, the first cryptocurrency, and how it technically works were described by its inventor, Satoshi Nakamoto, in the abstract of the Bitcoin white paper:

“A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution. Digital signatures provide part of the solution, but the main benefits are lost if a trusted third party is still required to prevent double-spending.

We propose a solution to the double-spending problem using a peer-to-peer network. The network timestamps transactions by hashing them into an ongoing chain of hash-based proof-of-work, forming a record that cannot be changed without redoing the proof-of-work. The longest chain not only serves as proof of the sequence of events witnessed, but proof that it came from the largest pool of CPU power. As long as a majority of CPU power is controlled by nodes that are not

⁴⁰ Antony Lewis, *The Basics of Bitcoins and Blockchains*, p. 150 (2018).

⁴¹ Saifedean Ammous, *The Bitcoin Standard*, p. 169-170 (2018).

⁴² Chris Burniske & Jack Tatar, *Cryptoassets*, p. 9 (2018)

⁴³ Saifedean Ammous, *The Bitcoin Standard*, p. 168,170 (2018).

cooperating to attack the network, they'll generate the longest chain and outpace attackers. The network itself requires minimal structure. Messages are broadcast on a best effort basis, and nodes can leave and rejoin the network at will, accepting the longest proof-of-work chain as proof of what happened while they were gone."⁴⁴

While technical in nature, the abstract reflects valuable insights regarding the psychology of money and community, and the economic incentives required to effect rules that compel its participants to behave in the greater interest of the community.⁴⁵ In their book *Age of Cryptocurrency*, Michael Casey and Paul Vigna simplified the concept by also referring to the artifact that is blockchain:

"Bitcoin's blockchain ledger is a long chain of blocks, or groupings, of transactions occurring around the same time. The chain will continue to grow indefinitely so long as the system keeps operating. This chronological structure is crucial because it confers legitimacy on the oldest transactions, the idea being that later-dated attempts by a user to re-spend the same bitcoin balance is treated as illegitimate. By creating a time-stamped sequence of expenditures and receipts among every participant in the bitcoin economy, the system keeps track of where everybody's balances are at any given moment, as well as the identifying information attached to every bitcoin—and fraction of bitcoin—ever created, spent or received."⁴⁶

One of the key operational features of Bitcoin is *decentralized verification*, which allows Bitcoin to eliminate the need for trusted intermediaries. Such verification is accomplished by requiring transactions to be recorded by every node within the network so that they all share one common ledger of all balances and transactions.⁴⁷ Professor Ammous explained how transaction verification works in bitcoin's peer-to-peer network:

"In order for a node to commit a block of transactions to the ledger, it has to expend processing power on solving complicated mathematical problems that are hard to solve but whose correct solution is easy to verify. This is the **proof-of-work (PoW) system**, and only with a correct solution can a block be committed and verified by all network members."⁴⁸

⁴⁴ Satoshi Nakamoto, Bitcoin: A Peer-to-Peer Electronic Cash System (<https://bitcoin.org/bitcoin.pdf>) (2008).

⁴⁵ Michael Casey & Paul Vigna, *The Age of Cryptocurrency*, p. 120 (2016 Ed.).

⁴⁶ *Id.*, p. 123.

⁴⁷ Saifedean Ammous, *The Bitcoin Standard*, p. 171 (2018).

⁴⁸ *Id.*, p. 172.

Chris Burniske and Jack Tatar, in their book *Cryptoassets*, noted the purpose of decentralized verification that employs military-grade encryption, and what this feature means to the technology:

“Every transaction recorded in Bitcoin’s blockchain must be cryptographically verified to ensure that people trying to send bitcoin actually own the bitcoin they’re trying to send. Cryptography also applies to how groups of transactions are added to Bitcoin’s blockchain. Transactions are not added one at a time, but instead in ‘blocks’ that are ‘chained’ together, hence the term blockchain... cryptography allows the computers building Bitcoin’s blockchain to collaborate in an automated system of mathematical trust. There is no subjectivity as to whether a transactions is confirmed in Bitcoin’s blockchain: it’s just math.”

7. Bitcoin as a reserve asset

The present macroeconomic environment makes the case for a scarce, digital, non-fiat form of money that could store value and serve as a hedge against unrestrained QE. The U.S. Federal Reserve’s unlimited money printing must be juxtaposed to Bitcoin’s quadrennial halving event, the latest of which occurred in May 2020. During a halving, the amount of newly minted bitcoins, issued as a reward to miners when a block is confirmed, gets cut in half. Miners are natural sellers of bitcoins and because of the halving, they would have less quantity to sell. There is therefore a tendency that the imbalance between the surging demand and the diminishing supply could result in a parabolic appreciation in the value of bitcoin.⁴⁹

Increasingly, bitcoin is being considered by individuals and institutional investors (e.g. investment banks⁵⁰, hedge funds⁵¹ and large enterprises⁵²) as an inflationary hedge against a depreciating U.S. dollar. According to Michael Saylor, Chairman, President and Chief Executive Officer of MicroStrategy (MSTR), a U.S. publicly traded business intelligence company: “the global acceptance, brand recognition, ecosystem vitality, network dominance, architectural resilience, technical

⁴⁹ Phil Bonello, Bitcoin’s Quantitative Tightening vs. Central Banks’ Quantitative Easing, Grayscale Insights, p. 7 (2020).

⁵⁰ Ben Winck, Guggenheim Says it Could Invest up to \$530 million in a Bitcoin Trust as the Cryptocurrency Leaps to Record Highs, Markets Insider, 30 November 2020 (<https://markets.businessinsider.com/currencies/news/guggenheim-fund-bitcoin-investment-cryptocurrency-market-rally-grayscale-trust-btc-2020-11-1029849060>)

⁵¹ Will Hadfield and Emily Nicolle, Hedge Funds, Not Hipsters, May be Powering Bitcoin’s Second Big Rally, Financial News, 20 November 2020 (<https://www.fnlondon.com/articles/hedge-funds-not-hipsters-may-be-powering-bitcoins-second-big-rally-20201120>)

⁵² Joana Ossinger, MicroStrategy Buys More Bitcoin at Average Price Above \$19,400, Bloomberg, 04 December 2020 (<https://www.bloomberg.com/news/articles/2020-12-05/microstrategy-buys-more-bitcoin-at-average-price-above-19-400>)

utility, and community ethos of Bitcoin (are) persuasive evidence of its superiority as an asset class for those seeking a long-term store of value.” Bitcoin is also decentralized just like gold when it is self-custodied by its owner.⁵³

The rapidly increasing adoption of bitcoin seems to suggest that communities around the world are seeking alternatives to the U.S. dollar and fiat currencies as money that can effectively store value.⁵⁴ Bitcoin represents a decentralized network and system that enable undistorted economic activity, and it does this by embedding a fixed monetary supply that is distributed through market consensus mechanism. It is also through this consensus mechanism that bitcoin abolishes the need for active control, administration, intermediation and governance, while creating a voluntary alternative financial system.⁵⁵

a. Bitcoin’s utility value

A material element of bitcoin’s value is what the technology enables the users of the assets to do, *i.e.*, Bitcoin network’s utility value. Bitcoin’s *utility value* refers to what the underlying blockchain is utilized for, which triggers the demand both for (1) its use as a **decentralized payment system** and (2) its native unit of account (*numéraire*), bitcoin. Bitcoin’s blockchain is used to transact bitcoins and therefore much of the value is driven by demand to use bitcoin as a medium of exchange. Bitcoin can also be used as a **savings technology** because of its capacity to store value, hence a significant percentage of mined bitcoins is also demanded for this use case. Bitcoin as a decentralized payment system, savings technology, along with other use cases, temporarily bind bitcoins that draw them out of the circulating supply. Because more people demand bitcoin for many use cases, bitcoin’s value appreciates as more people exchange value to gain access to Bitcoin.⁵⁶

Bitcoin’s digital nature gives it an inherent advantage in terms of value transfer, liquidity and trading. As a digital asset, bitcoin has no physical form which allows it to be moved seamlessly – resembling how the internet can move the 1s and 0s to convey electronic messages and information. This electronic attribute sets bitcoin apart from traditional investment products and other alternative assets like art, real

⁵³ Will Heasman, Bitcoin as a Hedge Against Coronavirus-Led Economic Chaos, The Bitcoin Reserve Journal, 26 April 2020 <https://journal.bitcoinreserve.com/bitcoin-as-a-hedge-against-coronavirus-led-economic-chaos/>

⁵⁴ James Rickards, The Death of Money: The Coming Collapse of the International Monetary System, p. 254 (2014).

⁵⁵ Parker Lewis, Bitcoin Fixes This, 30 August 2019, <https://unchained-capital.com/blog/bitcoin-fixes-this/>

⁵⁶ Chris Burniske & Jack Tatar, Cryptoassets, p. 117 (2018).

estate, and fine wines. As compared to these asset classes, the liquidity of the market for bitcoin deepened quickly at the early phase of the asset's developmental history.⁵⁷

b. Cryptoeconomic fundamentals of Bitcoin

Bitcoin incorporates game theory and economic incentives that make “double-spending” or fraud way more expensive than obtaining rewards when helping secure the network.⁵⁸ The digital and distributed nature of Bitcoin also allows it to benefit from a network effect with each additional user enhancing its value. As more users trust the system, more trust accrues to the system.⁵⁹

The network validators in Bitcoin, known as *miners*, gather blocks of transactions together and compete to verify them by expending processing power to solve mathematical problems through a proof-of-work system. To encourage miners to participate in the network, these miners receive a fresh supply of bitcoins along with transaction fees.⁶⁰ Bitcoin's price appreciation incentivizes existing mining operators to maintain the security of the network; it also attracts more miners to participate thus making Bitcoin more robust. However, the amplified hash power supporting the network has no bearing on the output of bitcoins that can be mined. Instead, such increase in hash power only triggers the Bitcoin protocol's *difficulty adjustment*.⁶¹ The “hardcoded” difficulty adjustment in mining makes it a trustworthy technology that would restrict bitcoin's supply schedule from unpredictably rising. This makes bitcoin fundamentally different from other asset classes. Whereas typically the rise in the value of a commodity—such as gold—incentivizes more resources to be dedicated to its production thereby increasing its supply, in the case of bitcoin, allocating more resources (in terms of energy and equipment) to mine bitcoins will never result in the production of more bitcoins; Bitcoin's design makes this technically impossible. Adding more miners will only increase the processing power required to commit valid transactions to the Bitcoin network, which makes it more secure and harder to attack.⁶² Professor Ammous aptly describes this economic feature while comparing gold to bitcoin:

“Gold became the prime money of every civilized society precisely because it was the hardest to produce, but Bitcoin's difficulty

⁵⁷ Chris Burniske & Jack Tatar, *Cryptoassets*, p. 122 (2018).

⁵⁸ *Id.*, p. 205.

⁵⁹ Jeff Booth. *The Price of Tomorrow: Why Deflation is the Key to an Abundant Future* (p. 206). Stanley Press. (2020)

⁶⁰ Winston Moore and Jeremy Stephen, *Should Cryptocurrencies be Included in the Portfolio of International Reserves Held by Central Banks?* *Cogent Economics & Finance*, p. 2 (2016)

⁶¹ Ria Bhutoria, *Bitcoin Investment Thesis: An Aspirational Store of Value*, *Fidelity Digital Assets*, p. 7 (2020).

⁶² Saifedean Ammous, *The Bitcoin Standard*, p. 173 (2018).

adjustment makes it even harder to produce. A massive increase in the price of gold will, in the long run, lead to larger quantities being produced, but no matter how high the price of bitcoin rises, the supply stays the same while the safety of the network only increases.⁶³

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Because new coins are only produced with the issuance of a new block, and each new block requires the solving of the proof-of-work (PoW) problems, there is a real cost to the production of new bitcoins. As the price of bitcoins rise in the market, more nodes enter to compete for the solution of the PoW to obtain the block reward, which raises the difficulty of the PoW problems, making it more costly to obtain the reward. The cost of producing a bitcoin will thus generally rise along the market price.⁶⁴

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No matter how many people use the network, how much its value rises, and how advanced the equipment used to produce it, there can only ever be 21 million bitcoins in existence. There is no technical possibility for increasing the supply to match the increased demand. Should more people demand to hold Bitcoin, the only way to meet the demand is through appreciation of existing supply. Because each bitcoin is divisible into 100 million satoshis, there is plenty of room for the growth of Bitcoin through the type of asset well-suited for playing the role of store of value.”⁶⁵

Bitcoin’s monetary policy fixed a supply schedule that is “perfectly inelastic” and it effectively makes bitcoin resistant to supply shocks. This is because supply will always be unaffected by any changes in production capacity (*i.e.* increase in hash power) even in response to surging demand that drives the price of bitcoin higher. In contrast, even gold has never been immune to supply shocks despite the fact that it has been used as a store of value for millennia.⁶⁶

c. *Bitcoin is antifragile; systemic hedge*

The **antifragile** nature of Bitcoin is another advantage that makes it a suitable reserve asset. Bitcoin epitomizes Professor Nassim Taleb’s idea of *antifragility* because of bitcoin’s ability to gain strength from adversity and disorder. The Bitcoin network is not only secure and therefore practically impossible to hack, it is antifragile both in technical and economic terms. Technically speaking, while attempts to kill Bitcoin

⁶³ Saifedean Ammous, *The Bitcoin Standard*, p. 173 (2018).

⁶⁴ *Id.*, 179.

⁶⁵ *Id.*, p. 198.

⁶⁶ Ria Bhutoria, *Bitcoin Investment Thesis: An Aspirational Store of Value*, Fidelity Digital Assets, p. 7 (2020).

have so far failed, many of them simply made the network more robust by allowing coders to identify weaknesses and patch them up. Every thwarted attack on the network is a notch on its belt, another testament to participants and outsiders of the security of Bitcoin's blockchain.⁶⁷

From an economic perspective, the invention of Bitcoin created a novel *independent* alternative framework for international settlement that does not rely on any central intermediary. By independence, it means that the Bitcoin network operates separately from the existing financial infrastructure.⁶⁸ Bitcoin features an independent monetary policy that is safeguarded by a decentralized network of computers that maintain the Bitcoin blockchain through proof-of-work.⁶⁹ Ria Bhutoria explained the importance of proof-of-work in fortifying bitcoin's property as a store of value:

"Proof-of-work is an important design element that enforces bitcoin's fixed supply by making transactions irreversible. Proof-of-work provides evidence that a significant amount of computational work has taken place, though verifying that work took place is quick and easy relative to the effort and time it took to conduct the work."⁷⁰

The independent nature of Bitcoin also makes it an effective **systemic hedge** against the fragility of the U.S. dollar-centric international monetary system. As observed by Nick Neuman:

"Bitcoin held in self-custody runs on an entirely separate financial system than the traditional one, making it a systemic hedge. In other words, Bitcoin is not only a hedge against inflation, it's a hedge against failure of modern financial infrastructure such as banks, clearing and settlement networks, foreign exchange markets and payment rails. Bitcoin held in derivatives or on exchanges is not held in self-custody, and therefore it doesn't have the same systemic hedging properties."⁷¹

d. "Bitcoin is the supply schedule"

⁶⁷ Saifedean Ammous, *The Bitcoin Standard*, p. 230 (2018). "The rise of quantum computers could eventually pose an actual security threat to Bitcoin's encryption, where private keys could be determined from public keys, but there are already known methods that the Bitcoin protocol can adopt when necessary in order to become more quantum resilient, since the blockchain can be updated when there is broad consensus among participants." (Lyn Alden, 2020)

⁶⁸ Saifedean Ammous, *The Bitcoin Standard*, p. 205 (2018).

⁶⁹ Ria Bhutoria, *Bitcoin Investment Thesis: An Aspirational Store of Value*, Fidelity Digital Assets, p. 3 (2020).

⁷⁰ *Id.*, p. 10.

⁷¹ Nick Neuman, *Bitcoin: More Than An Inflation Hedge*, *Bitcoin Magazine*, 14 July 2020 (<https://bitcoinmagazine.com/articles/bitcoin-more-than-an-inflation-hedge>).

Bitcoin has been regarded as a new store of value and investment asset that is akin to gold due to its low correlation with traditional asset classes. But because of bitcoin's digital attribute, it also provides investors with mathematically-guaranteed scarcity and optimal mobility, which gives bitcoin some advantages compared to gold.

The supply schedule of Bitcoin is defined mathematically and set in code at the genesis of the protocol. Bitcoin provides for a maximum of twenty one (21) million units by 2140, and it gets there by cutting the rate of supply inflation every four (4) years. As of 2020, the supply schedule is at two percent (2%) annually, and in 2024 it will decrease to one percent (1%) annually.⁷² This inflation schedule is practically immutable⁷³ and is essential to Bitcoin's monetary policy, or in the resounding words of Nic Carter:

“Bitcoin's supply schedule cannot change, because Bitcoin *is* the supply schedule. Any alteration produces something that is decidedly non-Bitcoin.”⁷⁴

e. *Should central banks include bitcoin in their reserve portfolio?*

The predefined supply restrictions of Bitcoin is a key factor that makes the digital asset an attractive store of value. Indeed as fiat currencies perpetually expand in supply while contracting in terms of purchasing power, bitcoin has so far experienced a large increase in real purchasing power despite limited growth in overall supply.⁷⁵ The exclusion of trusted intermediaries—which eliminates counterparty risk—and the programmed fixed supply schedule makes bitcoin a strategic component of a reserve asset portfolio.⁷⁶ Unlike the foreign currencies held by a central bank in its international reserve, the supply schedule of Bitcoin is not controlled by any government, central bank or monetary authority. Rather, the supply is determined by a complex code that leverages mathematical proof.⁷⁷

In the present monetary global system, central banks hold reserves mainly in U.S. dollars, euros, British pounds, IMF Standard Drawing Rights, treasury bonds and gold. These reserve currencies and assets are used to settle accounts between central banks, and to stabilize the market value of local currencies or defend them against

⁷² Chris Burniske & Jack Tatar, *Cryptoassets*, p. 115 (2018).

⁷³ Saifedean Ammous, *The Bitcoin Standard*, p. 178 (2018).

⁷⁴ Nic Carter, *Don't Fear the Reaper*, Medium, 24 August 2020 (https://medium.com/@nic_carter/dont-fear-the-reaper-8bbb42358efb)

⁷⁵ Saifedean Ammous, *The Bitcoin Standard*, p. 181 (2018).

⁷⁶ *Id.*

⁷⁷ Winston Moore and Jeremy Stephen, *Should Cryptocurrencies be Included in the Portfolio of International Reserves Held by Central Banks?* Cogent Economics & Finance, p. 2 (2016)

speculative attacks. Should bitcoin's appreciation continue in the same manner as it has experienced over the past twelve years, it would eventually attract the attention of central banks who might consider its merit as a reserve asset.⁷⁸

Although many researches have been published to synthesize the data obtained since the network launched in 2009, bitcoin as a new asset class will require more time to build a price history and the cycles it goes through. But if bitcoin continues to appreciate significantly as projected based on its historical performance, this new asset will allow a central bank more flexibility with their monetary policy and international account settlement. Given that the supply of bitcoins is strictly limited and the demand for its use continues to grow, it may be prudent for a central bank to allocate a conservative amount for the acquisition of bitcoin considering the potential upside, *i.e.*, that bitcoin's value could significantly appreciate in the future. If bitcoin's price continues to rise, then the market value of their reserve currencies and assets (including gold) will decline relative to bitcoin. This could place central banks at a disadvantageous position and make them vulnerable to speculative attacks⁷⁹ if they delay adding bitcoin to their basket of reserves.⁸⁰

An international settlement currency should be neutral to the monetary policy of different countries. Bitcoin can also serve this important role considering how it replaces human-directed monetary policy with efficient and perfectly predictable algorithms.⁸¹ Niall Ferguson, author of the book *The Ascent of Money*, suggests that Bitcoin may also be regarded as the ultimate safe asset that is capable of protecting wealth from confiscation or expropriation in jurisdictions with poor investor protection as well from the scourge of currency depreciation.⁸²

It might be reasonably argued that while bitcoin could increase the absolute returns of the reserve portfolio, bitcoin would also make the portfolio substantially riskier and less stable. Nevertheless, it should be noted that bitcoin's wild volatility proved true early in its life when volume was low and the market was thin. In the past few years, bitcoin's volatility has calmed, but it still retains a low correlation with other assets.⁸³ Research also shows that the volatility of investment portfolios with bitcoin was only incremental and not significant. Further, the magnitude of the increase in volatility was much lower relative to the increase in gains. The result is a

⁷⁸ *Id.*, p. 210-211.

⁷⁹ Pierre Rochard, *Speculative Attack*, Satoshi Nakamoto Institute, <https://nakamotoinstitute.org/mempool/speculative-attack/> (2014)

⁸⁰ Saifedean Ammous, *The Bitcoin Standard*, p. 211 (2018).

⁸¹ *Id.*, p. 212.

⁸² Niall Ferguson, *The Ascent of Money*. 2nd Ed., p. 404 (2018).

⁸³ Chris Burniske & Jack Tatar, *Cryptoassets*, p. 102 (2018).

risk-adjusted returns that constantly improve in proportion to the bitcoin exposure.⁸⁴ Furthermore, some studies contend that adding Bitcoin to the reserve portfolio of a central bank would not substantially increase volatility. Instead, it could provide opportunities to offset exchange rate changes against major currencies.⁸⁵ Moreover, a research from Fidelity Digital Assets suggests that bitcoin's perceived volatility is only a necessary side effect of bitcoin's "perfectly inelastic supply and of borderless, relatively intervention-free market."⁸⁶ In any case, volatility can be expected to decline as market narratives converge, liquidity increases, institutional adoption expands, and regulated bitcoin derivatives and investment products such as exchange traded funds (ETF) are introduced in the market.⁸⁷

While it may be said that central banks should be careful of overinvesting in bitcoin, a relatively small portfolio amounts can result in significant returns and function as a systemic hedge to minimize the exposure to the vulnerabilities and the fragility of the U.S. dollar-based international monetary system. Smaller countries and developing nations have no control over Wall Street, but recessions in the United States and other developed economies also affect their prosperity and monetary policy. Bitcoin can fix this by providing an alternative financial system that is independent from the conventional financial system and unrelated to the existing financial markets.⁸⁸ Some studies even suggest that having zero exposure to bitcoin could actually become a financial risk.⁸⁹

While Bitcoin has existed for less than two decades, the digital asset is also quickly becoming more liquid as the adoption of cryptocurrencies as a new asset class become more mainstream and as the trading volume of cryptocurrencies continues to increase.⁹⁰ Indeed during the 2007-2008 global financial crisis, Bitcoin has not yet been launched and investors flooded into the age-old safe haven asset, gold, which almost tripled in price in two years.⁹¹ But now bitcoin offers an alternative safe haven that is

⁸⁴ Ria Bhutoria, Bitcoin Investment Thesis: Bitcoin's Role as an Alternative Investment Asset, Fidelity Digital Assets, p. 21, 22 (2020).

⁸⁵ Winston Moore and Jeremy Stephen, Should cryptocurrencies be included in the portfolio of international reserves held by central banks? Cogent Economics & Finance, p. 6 (2016)

⁸⁶ Ria Bhutoria, Bitcoin Investment Thesis: An Aspirational Store of Value, Fidelity Digital Assets, p. 5 (2020).

⁸⁷ *Id*

⁸⁸ Vlad Costea, The Impact of Bitcoin as a Reserve Currency in Developing Nations, The Bitcoin Reserve Journal, 09 April 2020 <https://journal.bitcoinreserve.com/the-impact-of-bitcoin-as-a-reserve-currency-in-developing-nations/>

⁸⁹ Adam Pokornicky, The Benefits of Investing in Bitcoin in a Modern Portfolio, 09 May 2020 (https://www.daim.io/post/investing_in_bitcoin)

⁹⁰ Winston Moore and Jeremy Stephen, Should cryptocurrencies be included in the portfolio of international reserves held by central banks? Cogent Economics & Finance, p. 8 (2016)

⁹¹ The price of gold initially fell in response to crash of asset prices and the financial meltdown, but gold's value eventually increased from \$682 in October 2008 to \$1,912 in September 2011.

even optimized for use in today's digital world.⁹² Coupled with the growing correlation between gold and bitcoin, bitcoin may exhibit a similar pattern to that of gold following the 2008 financial meltdown—but in greater magnitude.⁹³

Technological developments such as the Lightning Network enhances bitcoin's property as an alternative reserve currency because it makes the asset "more alive" or useful as a medium of exchange for payment transactions. As bitcoin can now be transacted globally and domestically without being hampered by slow and cumbersome confirmation process, it can graduate from a mere reserve asset to an actual reserve currency.⁹⁴ Gold and Bitcoin are both scarce assets yet Bitcoin's ability to allow finality of settlement in a natively electronic manner gives it a massive advantage over gold amid a rapidly developing digital economy.⁹⁵ In this era, bitcoin and other cryptocurrencies will naturally become attractive for digital natives. The emergence of bitcoin will offer a peer-to-peer alternative or "opt-out" to the prevailing monetary system.⁹⁶

f. Bitcoin's lack of correlation with traditional assets

It must be emphasized that Bitcoin has near-zero correlation to other capital market assets. This is partly due to the fact that bitcoin and other cryptocurrencies are relatively new asset classes such that many capital market investors do not yet trade in the same asset pools.⁹⁷ Bitcoin's correlation with other traditional assets continues to be low. This makes bitcoin an optimal diversification tool especially in the event of a financial contagion or an economic crisis.⁹⁸

Since 2019 and until August 2020, the correlation between Bitcoin and gold strengthened, which might have been triggered by the trade tensions between U.S. and China, the U.S-Iran escalation, and the market fear and uncertainty arising from the COVID-19 pandemic. This relationship between bitcoin and gold should demonstrate bitcoin's functional role as a safe-haven asset.⁹⁹ However, since

⁹² Paul Vigna and Michael Casey, *The Age of Cryptocurrency*, p. 297 (2015)

⁹³ *Id.*

⁹⁴ Nik Bhatia, *The Bitcoin Second Layer*, Medium, 08 August 2018,

<https://medium.com/@timevalueofbtc/the-bitcoin-second-layer-d503949d0a06>

⁹⁵ Nik Bhatia, *The Triumvirate of Liquidity*, Medium, 25 June 2020,

<https://medium.com/@timevalueofbtc/various-writings-for-tantra-labs-b0b7ddae52d8>

⁹⁶ Nomi Prins, *Collusion: How Central Bankers Rigged the World*, p. 250 (2018).

⁹⁷ *Id.*, p. 101 (2018). However, as bitcoin evolves as an established asset class and the profile of market participants in bitcoin expands to include those from conventional markets, bitcoin might become more correlated with other traditional assets. (Ria Bhutoria, *Bitcoin Investment Thesis: Bitcoin's Role as an Alternative Investment Asset*, Fidelity Digital Assets, p. 14 [2020]).

⁹⁸ Phil Bonello, *Bitcoin's Quantitative Tightening vs. Central Banks' Quantitative Easing*, Grayscale Insights, p. 8 (2020).

⁹⁹ *Id.*

September 2020, the price divergence between bitcoin and gold posed questions on the length of gold's decline and sustainability of bitcoin's rally. If the trend continues, this could incite a paradigm shift from "digital gold" to "drop gold" narrative.¹⁰⁰

g. Fragility of the present international monetary system

Fiat currencies have been in circulation since Bretton Woods practically collapsed in 1971, and sooner or later many of them would be inflated down to triviality by governments faced by constrained public finances. Bitcoin offers a recourse that can overcome the challenges of both the gold standard and the fiat standard due to its limited supply that is hardcoded in the software.¹⁰¹ As stated by its inventor, Satoshi Nakamoto:

"The nature of Bitcoin is such that once version 0.1 was released, the core design was set in stone for the rest of its lifetime."¹⁰²

The supply schedule is enforced automatically by code without any intervention from the government or any central intermediary. The supply schedule is well known to the public at large, and the quantities as well as the growth rates of bitcoins can be verified with certainty on the network's publicly shared ledger, and therefore this alternative system cannot be impacted by monetary policies conjured by the Federal Reserve and other influential central banks or international monetary agencies.¹⁰³ Just like gold as a safe have asset, holding bitcoin serves as an effective hedge against the risks brought by the prevailing monetary system.

Bitcoin can be held in the central bank's reserves and exchanged with relative ease when necessary to stabilize the local currency. Such reserves would hedge against the uncertainties in the medium to long-term future of the international monetary system. For example, one study concluded that Bitcoin can serve as a hedge in a global liquidity crisis, especially those resulting in subsequent currency devaluations.¹⁰⁴ Given that some central banks have already considered the purchase of cryptocurrency reserves, other central banks should also study the ramifications of employing bitcoin reserves as a financial stability tool especially to address the economic crisis triggered by the COVID-19 pandemic.¹⁰⁵

¹⁰⁰ Medio Demarco and Kevin Kelly, Bitcoin Outlook December 2020, Delphi Digital, p. 24. (2020)

¹⁰¹ A.Seetharaman, A.S.Saravanan, Nitin Patwa3 & Jigar Mehta, Impact of Bitcoin as a World Currency, Accounting and Finance Research <https://doi.org/10.5430/afr.v6n2p230> (2017)

¹⁰²Re: Transactions and Scripts: DUP HASH160 ... EQUALVERIFY CHECKSIG <https://satoshi.nakamotoinstitute.org/posts/bitcointalk/126/> (2010)

¹⁰³ A.Seetharaman, A.S.Saravanan, Nitin Patwa3 & Jigar Mehta, Impact of Bitcoin as a World Currency, Accounting and Finance Research <https://doi.org/10.5430/afr.v6n2p230> (2017)

¹⁰⁴ Matthew Beck, Hedging Global Liquidity Risk with Bitcoin, Grayscale Research, p. 14 (2019)

¹⁰⁵ David S. Morency, Regulatory Implications of Cryptocurrency on the Bank of England, Perspectives on Business and Economics, Vol. 36, p. 9 (2018)

h. COVID-19 pandemic as a catalyst

The COVID-19 pandemic is also accelerating the retail and institutional adoption and maturation of bitcoin as a new asset class and as a safe haven. Niall Ferguson viewed this as a natural and logical consequence of a historical milestone such as a global health crisis:

“First, we should not be surprised that a pandemic has quickened the pace of monetary evolution. In the wake of the Black Death, as the historian Mark Bailey noted in his masterful 2019 Oxford Ford lectures, there was an increased monetization of the English economy. Prior to the ravages of bubonic plague, the feudal system had bound peasants to the land and required them to pay rent in kind, handing over a share of all produce to their lord. With chronic labor shortages came a shift toward fixed, yearly tenant rents paid in cash. In Italy, too, the economy after the 1340s became more monetized: It was no accident that the most powerful Italian family of the 15th and 16th centuries were the Medici, who made their fortune as Florentine moneychangers.

In a similar way, Covid-19 has been good for Bitcoin and for cryptocurrency generally. First, the pandemic accelerated our advance into a more digital world: What might have taken 10 years has been achieved in 10 months. People who had never before risked an online transaction were forced to try, for the simple reason that banks were closed. Second, and as a result, the pandemic significantly increased our exposure to financial surveillance as well as financial fraud. Both these trends have been good for Bitcoin.”¹⁰⁶

i. Bitcoin can be self-custodied

A core feature of Bitcoin is *self-custody*. This allows its holder full control over the asset without relying on an intermediary to facilitate storage or to execute a transaction. The value of self-custody can be understood intuitively by actors that deal with traditional assets. In times of financial or economic crisis, individuals and institutions are inclined to hold more cash and physical gold simply because they grant the holder full control over the asset. At the onset of the COVID-19 crisis, there has been immense demand from people and institutions rushing to buy physical gold. But self-custody of bitcoin is relatively simpler and more secure compared to the self-

¹⁰⁶ Niall Ferguson, Bitcoin Is Winning the Covid-19 Monetary Revolution, Bloomberg, 30 November 2020, <https://www.bloomberg.com/opinion/articles/2020-11-29/bitcoin-and-china-are-winning-the-covid-19-monetary-revolution>

custody of gold. Settlement is also cheap and efficient due to the digital nature of bitcoin which can be conveniently verified on the blockchain.¹⁰⁷

8. Legal feasibility of including bitcoin as a central bank reserve asset

In the Philippines, its central bank – the BSP – is expected to exercise powers to preserve the international value of the Philippine Peso as well as maintain its convertibility into other freely convertible currencies.¹⁰⁸ To ensure the financial stability and convertibility of the Philippine Peso, the BSP holds international reserves that are adequate to meet any foreseeable demands for international trade.¹⁰⁹

Under the New Central Bank Act, the international reserves of the BSP “may include **but shall not be limited to** the following assets: (a) gold; and (b) assets in foreign currencies in the form of: documents and instruments customarily employed for the international transfer of funds; demand and time deposits in central banks, treasuries and commercial banks abroad; foreign government securities; and foreign notes and coins.”¹¹⁰ Considering that the composition of international reserves are not limited by law to traditional reserve assets such as gold and foreign currencies, BSP has included in its international reserve portfolio Special Drawing Rights (SDR), foreign investments, and various types of financial derivatives. Because the list of allowable reserve asset in Sec. 66 of the New Central Bank Act, as amended, is NOT exclusive, it is therefore legally feasible for the BSP to adopt bitcoin as a reserve asset that will be added to its international reserves.

9. Conclusion

The monetary system based on *fiat standard* is a product of the analog age. Fiat currencies managed by central banks – without backing of gold or other precious metals – proliferated after the Bretton Woods system collapsed in 1971 following the Nixon shock.¹¹¹ This fiat standard has allowed central banks to resort to unrestrained money printing as a monetary policy tool to resolve economic and financial crises. The U.S. Federal Reserve’s unprecedented levels of quantitative easing has resulted in the greatest expansion in the supply of U.S. dollar. On the other hand, the extraordinary monetary and fiscal stimulus in the time of COVID-19 has accelerated interest in

¹⁰⁷ Nick Neuman, Bitcoin: More Than An Inflation Hedge, Bitcoin Magazine, 14 July 2020 (<https://bitcoinmagazine.com/articles/bitcoin-more-than-an-inflation-hedge>).

¹⁰⁸ Sec. 64, R.A No. 7653, also known as the “New Central Bank Act” (1993).

¹⁰⁹ *Id.*, Sec. 65 (1993).

¹¹⁰ *Id.*, Sec. 66 (1993).

¹¹¹ Niall Ferguson, *The Ascent of Money*. 2nd Ed., p. 401 (2018).

bitcoin, making it easier for the new asset class to be regarded as a safe haven.¹¹² Truly, financial and economic crises are compelling advertisement for the notion of digital money.¹¹³ The continuous debasement of many fiat currencies, specifically the dollar, highlights the mischief that the invention of Bitcoin sought to remedy.¹¹⁴ Unlike fiat currencies, Bitcoin's supply schedule cannot be artificially increased.¹¹⁵

The fear of inflation following the dilution of the U.S. dollar, which is at the centerpiece of the present international monetary system, is one of significant factors forcing investors into safe-haven assets. There is now a rapidly growing number of individuals and institutions that regard bitcoin as an "insurance policy" that would assure cover against the unknown consequences arising from the economic crisis sparked by the pandemic and the havoc wreaked by the unconstrained money printing.¹¹⁶

Bitcoin creates a peer-to-peer system that is decentralized in nature and cannot be manipulated by anyone. Bitcoin permanently fixes the supply of its native currency at twenty one (21) million bitcoins. As an open, distributed ledger, it offers security and trust by verifying transactions through consensus instead of validation by a central intermediary.¹¹⁷ The immutable and programmed scarcity of bitcoin provides assurance that the value exchanged to hold bitcoin will be preserved into the foreseeable future. As more individuals and institutions collectively recognize bitcoin as a monetary good that is scarce relative to supply and demand, price stability will eventually become an emergent property of bitcoin.¹¹⁸

As a digital functional equivalent of gold, bitcoin could serve as a strategic international reserve asset for central banks. As a safe haven, bitcoin can act as a systemic hedge that could mitigate a central bank's exposure from the vulnerabilities of the dollar-centric global monetary system. Bitcoin can also serve as a ballast to ensure financial stability amid an economic turmoil, such as the crisis triggered by COVID-19. Further, Bitcoin's fundamentals are effectively insulated from the

¹¹² Will Heasman, Bitcoin as a Hedge Against Coronavirus-Led Economic Chaos, The Bitcoin Reserve Journal, 26 April 2020 <https://journal.bitcoinreserve.com/bitcoin-as-a-hedge-against-coronavirus-led-economic-chaos/>

¹¹³ Niall Ferguson, *The Ascent of Money*. 2nd Ed., p. 401 (2018).

¹¹⁴ The "genesis block" of Bitcoin carried the following text, which might suggest the impetus behind the invention of Bitcoin: "The Times 03/Jan/2009 Chancellor on brink of second bailout for banks."

¹¹⁵ Will Heasman, Bitcoin as a Hedge Against Coronavirus-Led Economic Chaos, The Bitcoin Reserve Journal, 26 April 2020 <https://journal.bitcoinreserve.com/bitcoin-as-a-hedge-against-coronavirus-led-economic-chaos/>

¹¹⁶ Ria Bhutoria, Bitcoin Investment Thesis: An Aspirational Store of Value, Fidelity Digital Assets, p. 17 (2020).

¹¹⁷ Jeff Booth, *The Price of Tomorrow: Why Deflation is the Key to an Abundant Future* (p. 200-201). Stanley Press. (2020)

¹¹⁸ Parker Lewis, Bitcoin Obsoletes All Other Money, 24 January 2020 <https://unchained-capital.com/blog/bitcoin-obsoletes-all-other-money/>

economic effects of the pandemic because bitcoin is uncorrelated with most traditional assets. Furthermore, the natively digital nature of bitcoin makes the sale or purchase of the asset impervious to lockdowns, quarantines, logistical constraints and market closures or suspensions.¹¹⁹

The Bitcoin ecosystem is expanding and maturing in many areas of its economy, such as in banking, trading, remittance, payments, lending and derivatives. As it grows, Bitcoin could eventually evolve as a widely-accepted global settlement system that will compete with the current international monetary system.¹²⁰ Such development would only reinforce the arguments in favor of adding bitcoin to the central bank's reserve asset portfolio to serve as a counterweight and a systemic hedge.

¹¹⁹ Ria Bhutoria, Bitcoin Investment Thesis: Bitcoin's Role as an Alternative Investment Asset, Fidelity Digital Assets, p. 27 (2020).

¹²⁰ Tur Demeester, The Bitcoin Reformation, Adamant Research, p. 13 (2019).